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The Nature of Parasocial Relationships

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ABSTRACT

The Nature of Parasocial Relationships

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The aim of the present investigation was to examine the nature of individuals' parasocial relationships (one-sided attachments to media figures, Horton & Wohl, 1956). Five studies were designed to assess the prevalence and strength of individuals' attachments to their favorite television characters, manipulate exposure to the character or control targets, and assess outcomes previously associated with a conspecific audiences or real-life friends. Our initial studies using multiple student samples and one nationally representative sample revealed that parasocial attachments are both relatively prevalent and are formed, at least in part, in service to belonging needs (Studies 1a and 1b). Using a social facilitation paradigm, Study 2 demonstrated that in comparison to a control image, an image of an attachment figure behaved as if it were a conspecific by facilitating performance on well-learned tasks and inhibiting performance on novel tasks. In Study 3, subliminal priming of a parasocial attachment figure encouraged greater desire to self-disclose and greater feelings of empathy than a control prime, to the extent participants were strongly attached. Similarly, in Study 4, subliminal priming of an attachment figure appeared to potentially buffer participants from the cognitive consequences of rejection among those with strong attachments, although these effects were different from both positive non-social primes as well as real-world friend primes. Finally, in Study 5, participants were exposed to their own parasocial attachment figure or a control target before and after completing

a difficult task. Assessments of participants' physiological reactivity to the task revealed that among participants exposed to their attachment figure, those with strong attachments maintained their initial blood pressure levels whereas control participants' blood pressure decreased over time. Altogether, these studies suggest that (1) parasocial attachments are common and partially motivated by belonging needs, (2) regardless of attachment strength, favorite television characters act like conspecifics, and (3) strong parasocial attachments may resemble real friends.

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> I started watching Peter when I was 12 years old. I am 52 now. His show was only 15 minutes long then and I watched him on our black and white T.V. In my little girl way, I fell in love with him. I would come home from school every day and comb my hair and put on a nice outfit (just in case he could really see me through the T.V. screen). … I remember the first time my friend invited me over because she had a color T.V. and I got to see my Peter in living color! Then the terrible day came when he told his audience that he was leaving the broadcast booth to travel overseas. I was heartsick and went straight to bed and cried myself to sleep. For the next few weeks I continued to watch the news in hopes that I would catch him giving a report in some far off region of the world. They came very rarely. I went on with my life but always wondered about him and how he was doing and if I would ever see him again. But of course he did come back in a big way… When I got the news of his cancer, I was shocked and heartsick. How could this happen to a man I thought was invinceable [sic]. … I called my Dad that morning and told him I felt as though someone in our family had died.
>
> --an anonymous forum poster on *thankspeter.com* discussing her "'life' with Peter"

After the death of Peter Jennings, a cursory internet search yielded page after page of posts similar to the one above. Multiple letters were written about the late newscaster wishing him well, prayers were posted asking for his spiritual well-being, and lengthy, eloquent tributes were posted to the trustworthy, dependable man seen as a father figure for many. Clearly, a subset of viewers formed a sort of attachment to Mr. Jennings despite the fact that very few, if any, of them ever had the opportunity to meet the man face-to-face. Even more difficult to understand may be the similar outpourings of grief when a *fictional* character on television dies or leaves the show. Television viewers will certainly never come face-to-face with fictional TV characters with whom they share a portion of their waking hours each week; yet some individuals seem to care deeply about these unreal characters. Again, a cursory internet search or even a chat with co-workers will reveal sadness that they now have to rely on reruns or DVD boxsets for their regular fix of Carrie Bradshaw (*Sex and the City*), Rachael and Ross (*Friends*), and the Scooby Gang (*Buffy the Vampire Slayer*).

Given that some individuals seem emotionally invested in one-sided relationships formed with media characters, these "relationships" seem suited for psychological study. In fact, two psychologists coined the term *parasocial relationship* and described these attachments as "seeming face-to-face relationship(s) between spectator and performer" (Horton & Wohl, 1956, p. 215). Since then, very few psychologists have considered the nature of individuals' parasocial attachments to media figures. In contrast, the phenomenon is not novel to communication scientists who have researched parasocial relationships in some depth in the last few decades.

Parasocial Relationships

Parasocial Attachment Strength

A large portion of the empirical literature pertaining to parasocial relationships relies on a measure of parasocial attachment strength or intensity, referred to at the Parasocial Interaction Scale (PSI Scale; Rubin, Perse, & Powell, 1985). The scale was originally formulated to assess parasocial relationships with newscasters. Some of the 20 items are specific to news anchors (e.g., "When my favorite newscaster reports a story, he or she seems to understand the kinds of things I want to know") and others are general enough that they can be adapted to other targets (e.g., "My favorite newscaster keeps me company when the news is on" and "I think my favorite newscaster is like an old friend"). The original PSI scale and a newer 10-item version have been revised in order to reference favorite soap opera characters, talk radio hosts, television talk show hosts, television shopping hosts, comedians, television personalities, performers, and television characters (Auter, 1992; Chory-Assad & Yanen, 2005; Cohen, 2003, 2004; Cole & Leets, 1999; Conway & Rubin, 1991; Eyal & Rubin, 2003; Gleich, 1997; Hoffner, 1996; McCourt & Fitzpatrick, 2001; Rubin, Haridakis, & Eyal, 2003; Rubin & Perse, 1987; Rubin & Step, 2000; Skumanich & Kintsfather, 1998; Tsao, 1996).

Who Forms Parasocial Attachments?

Even though most individuals can come up with a favorite television character when prompted, not everyone forms strong attachments to that character. Studies have inconsistently demonstrated differential attachment strength as a function of respondent gender, age, and education. In some studies, women have reported stronger parasocial attachments than men (Chory-Assad & Yanen, 2005; Cohen, 2003, 2004; Eyal & Rubin, 2003; Perse, 1990), and no gender differences have emerged in others (Cole & Leets, 1999; Gleich, 1997). Some studies have found a positive relationship between age and parasocial attachment strength (Gleich, 1997; Perse, 1990), one found a negative relationship (Auter, Arafa, & Al-Jaber, 2005), and others have failed to find any (Cohen, 2003). Despite these inconsistencies, researchers have reliably found evidence of parasocial attachment among diverse samples such as Americans, Arabs, Germans, Indians, and Israelis (Auter et al., 2005; Cohen, 2004; Gleich, 1997, Rubin et al., 1985; Sood & Rogers, 2000).

Function of Parasocial Relationships

Drawing upon theories of media uses and gratifications (Katz, Gurevitch, & Haas, 1973; Levy, 1979; Rosengren & Windahl, 1972; Rubin, 2002; Rubin & Rubin, 1985), many researchers have tried to determine the function that parasocial attachments serve for television viewers. Taking into account the research showing especially high media use among individuals who report being lonely or having problems in their relationships (Armstrong & Rubin, 1989; Perlman, Gerson, & Spinner, 1978; Perse & Rubin, 1990), many researchers initially thought that lonely individuals would compensate for their dearth of actual attachments by forming parasocial ones (e.g., Horton & Wohl, 1956; McCourt & Fitzpatrick, 2001; Rubin et al., 1985).

Contrary to expectations, there is little evidence that individuals with social deficits actively seek out media outlets to compensate for their lack of relationships. In fact, research suggests that lonely individuals watch more television than nonlonely individuals because they are in a more passive state; they are mainly using television to pass time (Perse & Rubin, 1990; Tsao, 1996). Regarding parasocial attachments in particular, numerous studies have failed to find an association between PSI scores and loneliness indices (Chory-Assad & Yanen, 2005; McCourt & Fitzpatrick, 2001; Rubin et al., 1985). Individuals with strong parasocial attachments appear no more likely to lack positive, meaningful relationships than those without parasocial attachments. If people do not form parasocial attachments to compensate for the lack of real ones, why do people form these one-sided relationships? One aim of the current investigation is to address that question.

Nature of Parasocial Attachments

In examining the nature of parasocial relationships, researchers have often looked at the characteristics of particular attachment figures referenced in their studies (for a review, see Giles, 2002). Type of attachment figure varies greatly from sample to sample. In one German sample, the majority of respondents named either a newscaster or talk show host as their favorite TV person (Gleich, 1997). Similarly, Israeli respondents named more newscasters and talk show hosts than fictional characters (Cohen, 2004). Conversely, the Americans in two samples were more likely to name a fictional television character (e.g., George Costanza on *Seinfeld*) than a nonfictional television personality (e.g., Oprah Winfrey) as their favorite (Chory-Assad & Yanen, 2005; Cole & Leets, 1999). In addition to national differences, gender differences arise such that male respondents prefer male television characters and female respondents show no preference (Chory-Assad & Yanen, 2005; Cohen, 2003; Gleich, 1997).

Even though group differences influence people's preferences for different types of attachment figures, researchers have argued that some characters and programs are particularly well suited for parasocial relationships. In particular, programs that eliminate barriers between the television character and the viewer should be associated with stronger parasocial attachments. Auter (1992) found that individuals rated their attachment to television characters that spoke directly to the camera or audience as more intense than characters that did not acknowledge the camera or audience. Even though individuals with strong parasocial attachments tend to enjoy the same types of television programming than those with weak parasocial attachments (Gleich, 1997; Tsao, 1996), individuals tend to form parasocial bonds with media characters that are most like real-life interaction partners—real people who speak directly to their audiences. Moreover, shows and characteristics described as realistic are more frequently sources of parasocial attachments than those perceived as unrealistic (Rubin & Perse, 1987).

Besides examining the characteristics of attachment figures and their shows, the nature of the parasocial attachments themselves have been studied from the perspective of traditional attachment theory (Bowlby, 1969, 1973, 1980). Suggesting that individuals' behavioral engagement patterns with real attachment partners can be extended to parasocial attachment partners, Cole and Leets (1999) found that individuals who typically seek extensive contact with relationship partners—those with anxious-ambivalent attachments—tended to have stronger parasocial attachments than those with secure attachments; in contrast, individuals who are more socially distant—those with avoidant attachments—have the weakest parasocial attachments. Drawing additional parallels between parasocial attachment figures and real relationship partners, Cohen (2004) found that anxious-ambivalent individuals predicted feeling more distress if their parasocial relationship ended (i.e., their figures' show was taken off the air) than secure or avoidant individuals. In addition, individuals who anticipate being more upset by a "parasocial breakup" as assessed via the Parasocial Breakup Scale (Cohen, 2003) also reported having strong parasocial attachments on the PIS scale. These findings all suggest that real world attachments to individuals seem to translate to parasocial attachments.

Just as the dissolution of parasocial relationships may shed light on their intrinsic nature, their development is also well worth considering. Rubin and McHugh (1987) suggested that parasocial relationships are similar to real ones in that they develop over time. They argued that for both real and parasocial relationships, exposure to a relationship target increases liking and intimacy (or understanding a character) over time, and as liking and intimacy grow, individuals grow to find the relationship important. To test their predictions, the researchers inquired about participants' exposure to their favorite performer's show, their attraction to the performer, parasocial interaction with the performer using the PSI scale, and the importance of developing a parasocial relationship with him or her (using items such as "When it's on, I would rather watch my favorite television performer's program that do anything else").

Rubin and McHugh (1987) failed to find an association between exposure and liking, but they did find a positive relationship between attraction and parasocial interaction that was, in turn, positively related to relationship importance. These findings are limited, however, by the redundant nature of the questionnaire items. For instance, it is not surprising that individuals who agreed with PSS items such as "I miss seeing my favorite TV performer when his or her program is not on" are more likely to endorse relationship importance items such as "When I'm unable to watch my favorite television performer's program, I really miss it." Similar overlap is apparent between attraction items and PSI items. Consequently, this study does not allow us to draw confident conclusions about the nature of parasocial relationships.

Even though there is minimal evidence drawing clear parallels between real relationships and parasocial ones, there appears to be sufficient theory (and suggestive anecdotal evidence) to argue for their correspondence. The primary aim of the current investigation is to demonstrate how parasocial relationships resemble interpersonal relationships. In general, we predict that individuals with strong parasocial attachments may feel and act as if their parasocial attachment figures are real friends.

The Present Research

The present research was designed to shed light on the nature of parasocial relationships. Specifically, we hoped to illustrate how parasocial relationships resemble actual relationships. First, we wanted to demonstrate a relationship between holding social motives and forming parasocial relationships. To do so, we conducted Studies 1a and 1b in which we measured participants' need to belong and their parasocial attachments both in a nationally representative sample of Americans and multiple college samples. We expected that to the extent individuals have high dispositional belonging needs, they will form strong parasocial relationships.

In subsequent studies, we hoped to draw parallels between parasocial relationships and real relationships. Just as exposure to other individuals or friends can produce a myriad of feelings and behaviors, we expected that participants' exposure to their parasocial attachment figure would produce similar effects. In Studies 2-5, we asked participants in pre-testing sessions about their favorite television character and their attachment to him or her. In later laboratory sessions, participants were exposed supraliminally (Studies 2 and 5) or subliminally (Studies 3 and 4) to an image of either their attachment figure or control images. We expected that supraliminal and subliminal exposure to a parasocial attachment figure would impact participants' performance on both well-learned and novel tasks (Study 2), feelings of empathy and desire to confide in others (Study 3), intellectual performance after suffering a social rejection (Study 4), and autonomic reactivity and performance under stress (Study 5). Furthermore, we predicted that parasocial attachment strength would moderate these effects. We thought that exposure to parasocial attachment figures to whom participants have a strong attachment would either produce much more robust effects than exposure to figures to whom participants have a weak attachment, or alternatively, they would produce categorically different effects, perhaps reflecting a fundamental difference in the nature of the attachment as a function of its strength.

Studies 1a and 1b: Relationship with the Need to Belong

Psychologists have long argued that belongingness is a fundamental human motive (Maslow, 1954). Much research suggests that people are driven to form and maintain positive, long-lasting relationships with others (see Baumeister & Leary, 1995, for a review). Those with unfulfilled belonging needs are at risk for a myriad of negative mental and physical health outcomes such as cardiovascular disease, depression, eating disorders, high blood pressure, immune system problems, and psychopathology (Cacioppo et al., 2000; DeLongis, Folkman, & Lazarus, 1988; Hagerty & Patusky, 1995; Joiner, Vohs, & Schmidt, 2000; Kelly, 2001; Kiecolt-Glaser, Gardner, Speicher, Penn, Holliday, & Glaser, 1984; Kistner, Balthazor, Risi, & Burton, 1999; Lynch, 1979; McDougall, Hymel, Vaillancourt, & Mercer, 2001; Stroud, Tanofsky-Kraff, Wilfley, & Salovey, 2000). In comparison to feelings of social isolation experienced in everyday life, transient rejection experiences occurring in the laboratory often produce hurt feelings and anger, lowered self-esteem, cognitive deficits, self-defeating behavior, aggression, and self-regulation deficits (Baumeister, DeWall, & Ciarocco, 2005; Baumeister, Twenge, & Nuss, 2002; Leary, 1990; Leary, Haupt, Strausser, & Chokel, 1998; Leary, Tambor, Terdal, & Downs, 1995;

Twenge, Baumeister, Tice, & Stucke, 2001; Twenge, Catansese, & Baumeister, 2002; Williams, Cheung, & Choi, 2000).

Given the negative consequences of social rejection and ostracism, it is hardly surprising that individuals are motivated to maintain a sense of belonging. Individuals with unfulfilled belonging needs try to repair broken social bonds through a variety of means—working harder on group tasks, conforming to others' opinions, mimicking others' behavior, and attending to social cues such as facial expressions and vocal tones (Lakin & Chartrand, 2005; Pickett, Gardner, & Knowles, 2004; Williams et al., 2000; Williams & Sommer, 1997). Some of these behaviors (e.g., mimicry and attention to social cues) operate at a nonconsious level. In other words, individuals with unfulfilled social needs seem to perform affiliative behaviors without conscious awareness or intention of doing so.

In the current research, we suggest that parasocial relationships are much like real relationships, and as such, individuals with high belonging needs are more likely to form parasocial attachments than those with low belonging needs. This is not to say that individuals seek out parasocial relationships to compensate for their lack of relationships or to directly replace failed relationships, but rather that individuals with dispositionally high needs for social acceptance and inclusion, those with a large "social appetite," will also be more likely to form strong parasocial relationships than their lower belonging needs counterparts. We tested this hypothesis in the first studies. Specifically, we measured individuals' chronic need to belong and the strength of their parasocial attachments. Using a nationally representative sample (Study 1a), we sought to determine the extent to which parasocial attachments are related to belonging needs in a broad sample of Americans. Given the lack of consensus regarding group differences in parasocial attachments, we also wanted to look for differences in attachment strength as function of demographic variables. Using a college student sample (Study 1b), we sought to replicate the association between parasocial attachment strength and the need to belong using a better measure of belonging needs. Altogether, we hoped to demonstrate across Studies 1a and 1b that individuals with high belonging needs are more likely to form strong parasocial attachments to their favorite television figure than those with low belonging needs.

Study 1a Method

Participants. A nationally representative sample was recruited through participation in Time-sharing Experiments for the Social Sciences (TESS), a National Science Foundation supported project that provides researchers with opportunities to collect data from randomly selected participants nationwide. Two hundred and fifty-five individuals completed the study in return for compensation (i.e., a WebTV subscription). One hundred and forty females and 115 males with ages ranging from 18 to 90 years old (M = 45.94, SD = 16.29) completed the questionnaires.

Materials and procedure. Via WebTV, participants completed a series of questionnaires and tasks for a number of researchers. Embedded in a packet of other questionnaires were two measures of particular interest. Because of space limitations, a single-item measure was used to assess individuals' dispositional belonging needs. Specifically, the item "I have a strong 'need to belong'" was selected from the Need to Belong Scale (NTBS; Leary, Kelly, Cottrell, & Schreindorfer, 2006) because of its face validity, brevity, and typically high factor loadings in our own research.[1] Secondly, a revised version of the PSI scale (Rubin et al., 1985) was included to assess parasocial attachment strength. The original PSI items that referred to respondents' favorite newscaster were revised to refer to their favorite television character instead. Only 14 of the original 20 items were used because they were more appropriate for a variety of targets (i.e., any characters appearing on television) and displayed adequate reliability in previous studies (e.g., Cole & Leets, 1999). After naming their favorite character, participants reported the extent to which they agreed with items such as “I think my favorite TV character is like an old friend” and “I miss seeing my favorite TV character when his or her program is not on” on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). See Appendix A for this revised measure.

Study 1a Results and Discussion

The PSI scale demonstrated adequate reliability ($\alpha = .91$, $M = 3.33$, $SD = .77$). Scores on the PSI scale were positively and significantly related to reported need to belong ($M = 2.55$, $SD = 1.10$), $r(251) = .24$, $p < .001$. To the extent individuals reported having a high need to belong, they formed strong parasocial attachments to their favorite television characters. This finding provides initial evidence that individuals’ parasocial attachments are associated with their need to belong. Moreover, this relationship can be generalized to a broad sample of Americans. Rather than being specific to the young adult samples usually studied in parasocial attachment research, parasocial attachments are also common among older participants. In fact, in the nationally representative sample, there was a small correlation between age and attachment strength, $r(255) = .13$, $p < .05$. No t-tests yielded significant differences on the PSI scale as a function of demographic variables (i.e., gender, race, education, discrete age categories). See Table 1 for the relevant means.

Study 1b was conducted in order to replicate the effect found in Study 1a. Specifically, we expected that within a college sample, belonging needs would be positively related to parasocial attachment strength. Because we did not have the space constraints of the TESS study, we were able to test this relationship using a well-validated measure of belonging needs rather than the one-item measure.

Study 1b Method

Participants. At the beginning of seven academic quarters, 1368 introductory psychology students (830 females, 538 males) took part in the study as a course requirement. Among the subset of participants who reported their age, the average age was 19.01 years (SD = .49).

Materials and procedure. Participants completed two scales of interest during large group sessions. One was a measure of belonging needs, the Need to Belong Scale (NTBS; Leary et al., 2006). Participants reported the extent to which 10 statements described them on a 1 (*not at all characteristic of me*) to 5 (*extremely characteristic of me*) scale. Some items are "I try hard not to do things that will make people avoid or reject me" and "I want other people to accept me." Participants again completed the revised PSI scale (Rubin et al., 1985). As in Study 1a, the PSI scale items referred to respondents' favorite television character. The two measures were distributed in counterbalanced orders.

Study 1b Results and Discussion

The revised PSI scale (M = 3.05, SD = .73) and the NTB scale (M = 3.30, SD = .70) demonstrated adequate reliability (α = .86 and .83 respectively). As predicted, the need to belong was positively associated with parasocial attachment strength, $r(1234) = .22$, $p < .001$. This correlation varied between quarters; correlations ranged from .13 to .28 with a median of .24. To the extent individuals had a high need to belong, they reported forming strong parasocial attachments to their favorite television character. These correlations provide additional evidence of a relationship between belonging needs and parasocial attachments. Individuals with a high need to belong are more likely to form a strong parasocial attachment to their favorite television character than those with a low need to belong.

In Studies 1a and 1b, we have established that a wide variety of individuals form attachments to their favorite television characters, and their attachments are stronger if they have dispositionally high belonging needs. Because the strength of individuals' parasocial attachments was associated with their dispositional needs for social inclusion and connectedness, it appears that social motives are, at least in part, a driving force behind the formation of parasocial attachments. To explore the extent that parasocial relationships actually mirror real relationships, we conducted four more studies. In Study 2, we sought to demonstrate that parasocial attachment figures act like "real" people by eliciting social facilitation effects.

Study 2: Parasocial Facilitation

Over a century ago, Triplett (1898) demonstrated that individuals perform simple motor tasks (e.g., riding a bicycle and turning a rod and reel) better when in the company of others than when alone. Since then, many researchers have conducted studies pertaining to social facilitation. In their meta-analysis of 241 studies, Bond and Titus (1983) found robust evidence that an audience facilitates performance on simple, well-learned tasks and hinders performance on complex, novel tasks. Many explanations for these effects have been put forward, and most famously, Zajonc (1965, 1980) argued that the mere presence of others increases arousal, and this drive enhances the performance of dominant responses, thereby facilitating performance on well-learned tasks and impeding performance on novel tasks. Others argue that the presence of an audience elicits evaluation apprehension, and self-presentational concerns interfere with the performance of complex behaviors (Baumeister, 1982; Bond, 1982). Consistent with distraction-conflict theory, other researchers argue that audiences cause distraction, and this leads individuals to divert attention away from the task at hand (Baron, Moore, & Sanders, 1978; Bruning, Capage, Kosuh, Young & Young, 1968; Huguet, Galvaing, Monteil, & Dumas, 1999). More recently, the biopsychosocial model of challenge and threat has been used to explain social facilitation effects (Blascovich, Mendes, Hunter, & Saloman, 1999). According to this model, social facilitation effects are mediated by distinct patterns of autonomic reactivity; specifically, completing a well-learned task in the presence of an audience provokes a challenge response (i.e., decreased vascular resistance and elevated heart rate), whereas completing a novel task in the presence of an audience elicits a threat response (i.e., increased vascular resistance and elevated heart rate). Even though researchers still debate the process by which social facilitation occurs, there is clearly a consensus that social facilitation occurs in the presence of others (for reviews, see Aiello & Douthitt, 2001; Bond & Titus, 1983; Geen, 1991; Geen & Gange, 1977; Guerin, 1986).

Just as an audience facilitates performance on well-learned tasks and impedes performance on novel tasks, we planned to illustrate parallel effects using a parasocial "audience." In other words, we expect that individuals who are exposed to their parasocial attachment figure will perform better on a simple task and worse on a complex task than individuals exposed to someone else's attachment figure. This prediction of parasocial facilitation was tested in Study 2.

Design

In order to determine whether exposure to a parasocial "audience" elicits social facilitation effects consistent with those found using a live, human audience, we conducted a study using a 2 (parasocial condition: attachment figure vs. control figure) × 2 (parasocial attachment strength: weak vs. strong) × 2 (task type: well-learned vs. novel) mixed-model design in which parasocial condition and attachment strength were between-subjects and task type was within-subjects.

Method

Participants. During a pre-testing session at the beginning of the quarter, introductory psychology students filled out a series of questionnaires including the revised PSI Scale (Rubin et al., 1985). We selected only participants who completed the PSI Scale in reference to one human television character (e.g., Chandler Bing) rather than a group of characters (e.g., the cast of *Friends*), animated characters (e.g., Homer Simpson from *The Simpsons*), or actors seen exclusively in film (e.g., Brad Pitt, Nicole Kidman). We also selected participants with scores in the top or bottom third of the distribution so that we could compare distinct groups of individuals with strong and weak parasocial attachments, respectively. In total, seventy-one undergraduates (46 females, 25 males) were recruited to participate in the study in return for course credit. Their average age was 18.86 years (SD = 1.00).

Materials and procedure. Two to six weeks after the pre-testing session, participants took part in the study individually in enclosed cubicles. On the computer desktop in each cubicle, an image of a television character was displayed. Matched on their pre-tested parasocial scores, pairs of participants were exposed to the same television character on the desktop. One member of the pair previously reported the character to be his or her favorite (*attachment figure condition*), and the second member had not done so (*control condition*). By using a yoked participants design, we hoped to eliminate any effects of idiosyncrasies associated with different television characters. In other words, any differences emerging between the attachment figure or control condition could not be attributed to the specific television characters displayed because characters were presented an equal number of times in each condition.

Before participants arrived, the experimenter changed the computer's background to display the appropriate character's image, posted "Media Experiment" signs on the cubicle doors, and placed copies of *TV Guide* on the desk. When participants arrived, the experimenter directed them into the appropriate cubicles and launched into the scripted cover story. She grumbled that the experimenter for the earlier media experiment apparently left his materials out. She then pulled down and crumpled up the signs on the doors and collected the *TV Guides* on the desks. Given that none of the participants reported being suspicious about the displayed image, the cover story seemed to have worked successfully.

After introducing the study, the experimenter asked the participants to complete two word-copying tasks used as measures of performance. These took the form of six-page booklets with 10 nonsense words (e.g., *nhijfie*, *ghusdmu*, *freants*) and 10 blanks on each page. Participants were instructed "to copy the strings of letters…onto the blanks provided as quickly as possible while still writing legibly." Every 20 seconds, a bell would sound on the computer, and participants would turn to the next page in the booklet. For each of the two copying tasks, participants had 120 seconds to copy as many of the 60 words as possible. Per instructions, all participants completed one task using only their dominant hand and one task using only their nondominant hand. The order of the tasks was counterbalanced. No participants reported being ambidextrous. The tasks completed using their dominant hand and their nondominant hand will henceforth be referred to as the *well-learned task* and the *novel task*, respectively.

Following the two copying tasks, participants completed a measure of mood, the Positive and Negative Affective Schedule (PANAS; Watson, Clark, & Tellegen, 1988). A mood measure was included to examine the role of affect in the study. In addition, participants also completed a brief demographics questionnaire and a question regarding handedness.

Results and Discussion

Two undergraduate research assistants, blind to participant condition, counted the number of words successfully copied in each condition as the measure of task performance. These performance data were entered into a 2 (condition: attachment figure vs. control) × 2 (attachment strength: strong vs. weak) × 2 (task type: well-learned vs. novel) repeated measures ANCOVA with condition and attachment strength as between-subjects factors, task type as a within-subjects factor, and mood as a covariate. Neither mood ($\alpha = .92$, $M = 4.70$, $SD = .99$) nor parasocial attachment strength ($\alpha = .93$, $M = 3.05$, $SD = .99$) impacted performance on either task. Predictably, there was a main effect of task type, $F(1, 66) = 44.82$, $p < .001$, partial $\eta^2 = .40$, such that participants performed better on the well-learned task ($M = 33.95$, $SD = 5.07$) than the novel task ($M = 11.16$, $SD = 4.08$). More importantly, analyses yielded a task type × condition interaction, $F(1, 66) = 4.04$, $p < .05$, partial $\eta^2 = .06$. Even though the tests of simple effects within task type did not reach significance (both Fs < 2.88 and ps >.09), the pattern of means supported both social facilitation and social inhibition patterns. Participants who were exposed to their parasocial attachment figure performed better on the well-learned task than the participants exposed to a control figure ($M = 34.96$, $SD = 4.39$ and $M = 32.93$, $SD = 5.59$, respectively). Conversely, participants who were exposed to their attachment figure performed worse on the novel task than the participants exposed to a control character ($M = 10.85$, $SD = 4.76$ and $M = 11.48$, $SD = 3.27$, respectively).[2] See Figure 1.

These findings suggest that parasocial attachment figures bear a resemblance to real life persons. Comparable to an audience of real persons, “audiences” including individuals’ parasocial attachment figures enhanced performance on well-learned tasks and impeded performance on complex, novel tasks. Importantly, condition did not impact participants’ mood, and mood was not associated with task performance. Consequently, these parasocial facilitation effects cannot be attributed to participants’ more positive mood in the attachment figure condition.

Contrary to predictions, task performance was not moderated by parasocial attachment strength. These findings suggest that attachment figures resemble real social audiences regardless of attachment strength. In the next study, we hoped to determine how strong parasocial attachments are different from weak attachments. Although the results of Study 2 imply that all parasocial attachment figures may be treated as conspecifics, it is possible that only strong attachments will be treated as friends. Specifically, in Study 3, we examined whether strong parasocial attachment figures would elicit characteristics associated with friendship (i.e., a desire to self-disclose and feelings of empathy) more so than weak attachment figures.

Study 3: Characteristics of Friends

Design

The study was designed to assess affective outcomes and behavioral intentions typically associated with friends as a function of parasocial attachment and exposure to that attachment figure. Specifically, we used a 2 (parasocial condition: attachment figure vs. control figure) between-subjects design with a continuous measure of parasocial attachment strength included as a moderator. Individuals' self-reported desire to self-disclose and feelings of empathy were our key dependent measures because previous research has shown self-disclosure to be more associated with friendships than acquaintanceships (Newcomb & Bagwell, 1995) and empathic feelings to more often arise in the context of a friendship than an acquaintanceship (Costin & Jones, 1992). If as expected, attachment figures to whom individuals have a strong attachment resemble friends, then the activation of these parasocial "friends" should elicit constructs associated with friendship—in this case, a desire to self-disclose and empathic feelings.

Method

Participants. Introductory psychology students took part in pre-testing sessions at the beginning of the academic quarter where they filled out the Parasocial Interaction Scale (Rubin et al., 1985). As in Study 2, only participants who reported an attachment to a single character portrayed by a human were selected for participation. One hundred and thirty-six students (92 females, 44 males) were selected for participation in return for course credit. Their average age was 18.91 years (*SD* = 1.31).

Materials and procedure. Two to six weeks after their pre-testing session, participants reported to a laboratory to take part in the study. After completing a series of tasks for a separate, irrelevant study, participants were told that they would be completing another study about perception and behavioral preferences. In reality, they completed (1) a parasocial attachment figure prime in the guise of a color perception task, (2) a measure of self-disclosure tendencies, (3) filler tasks for another study, (4) the same parasocial prime completed earlier, and (4) an empathy measure. All tasks were completed on the computer via Medialab and DirectRT programs (Jarvis, 2004).

The parasocial attachment figure prime consisted of 10 slides displaying a circle in shades of green and blue. Participants were asked to categorize each circle as blue or green as quickly as possible. Between these color perception slides, participants were exposed to images of a television character for approximately 10 milliseconds. Half of the participants were subliminally exposed to the face of their parasocial attachment figure as reported during pre-testing (*attachment figure prime*), and the other half were exposed to someone else's attachment figure (*control prime*). These subliminal images were directly preceded and followed by masking stimuli lasting 300 milliseconds each. When probed for suspiciousness at the conclusion of the study, participants reported seeing the forward and backward masks briefly, but no one reported seeing a television character.

After participants completed the first priming task, they filled out a Self-Disclosure Scale (Miller, Berg, & Archer, 1983). In this questionnaire, participants were instructed to indicate on a scale from 1 (*not at all*) to 6 (*fully and completely*) the extent to which they would like to discuss 10 topics (e.g., “my personal habits,” “my deepest feelings”) with another study participant. Participants then completed a series of unrelated tasks for another study. Next, participants completed the parasocial priming task again and filled out an Empathy Scale (Davis, 1983) that consists of seven statements such as “I am often quite touched by things that I see happen” and “When I see someone being taken advantage of, I feel kind of protective toward them.” Participants responded using a 1 (*doesn’t describe me well*) to 5 (*describes me well*) scale. Lastly, participants filled out a demographic questionnaire.

Results and Discussion

Desire to self-disclose. Participants’ responses on the Self-Disclosure Scale ($\alpha = .88$, overall $M = 3.01$, $SD = .91$) were averaged, their parasocial attachment scores ($\alpha = .92$, overall $M = 3.15$, $SD = .95$) from pre-testing were centered, and priming condition was dummy-coded (0 = control prime, 1 = attachment figure prime). Because sex differences are often found in self-disclosure (e.g., Buhrmester & Furman, 1987; Dindia & Allen, 1992; Murstein & Adler 1995), we took into account any potential sex differences in self-disclosure by including dummy-coded participant gender (0 = males, 1 = females) in our analyses. Specifically, we regressed self-disclosure onto prime condition, parasocial attachment scores, and gender, in the first step of the hierarchical regression analysis; the two-way interactions involving gender (prime × gender, attachment × gender) were added in the second step; the two-interaction of particular interest (priming condition × attachment strength) was added in the third step; for completeness, the three-way interaction was added in the fourth step. The summary of this regression analysis is displayed in Table 2 including the R^2 and ΔR^2 values. Although none of the regression equations reached significance, parasocial attachment strength emerged as a significant predictor in the first step ($\beta = .19$, $p = .03$) and remained significant when controlling for the interaction terms in subsequent steps.

Even though the priming condition × attachment strength interaction added in Step 3 did not predict participants' desire to self-disclose above and beyond the main effects and the two-way interactions involving gender [for Step 3, $\Delta R^2 = .001$, $F(1, 128) = .20$, $p = .66$], we conducted targeted analyses to explore predicted relationships. As depicted in Figure 2, the predicted priming condition × attachment strength interaction did not approach significance at the mean levels of all main effects and interactions, $\beta = .07$, $p = .76$. Tests of simple slopes as outlined by Aiken and West (1991) revealed that among participants primed with their attachment figure, attachment strength was marginally predictive of self-disclosure [$\beta = .23$, $t(128) = 1.89$, $p = .06$], but among those primed with the control character, attachment strength was not predictive of self-disclosure [$\beta = .16$, $t(128) = 1.41$, $p = .16$]. Thus, participants primed with their own parasocial attachment figure demonstrated a more robust relationship between attachment strength and desire to self-disclose than those primed with a control figure. Despite these small differences in strength of association, however, the most robust predictor of participants' desire to self-disclose was clearly their parasocial attachment scores.[3]

Empathy. Participants' responses on the Empathy Scale ($\alpha = .82$, overall $M = 3.80$, $SD = .72$) were averaged and entered into a hierarchical regression analysis parallel to that used above. In light of research demonstrating sex differences in feelings and expression of empathy (e.g., Cohn, 1991; Eisenberg & Lennon, 1983; Fox, Gibbs, & Auerbach, 1985), gender was included as a predictor in these analyses. Dummy-coded priming condition, centered parasocial attachment scores, and dummy-coded gender were entered in the first step, the two-way interactions involving gender were added in the second step, the interaction of interest (priming condition × attachment strength) was added in the third step, and the three-way interaction was added in the fourth step. A summary of this hierarchical regression including R^2 and ΔR^2 values is displayed in Table 3. The regression equation from the first step reached significance [R^2 = .11, $F(3, 131) = 5.50$, $p = .001$], with gender (β = .24, $p = .004$) and parasocial attachment strength (β = .19, $p = .03$) making significant contributions to the equation. The two interaction terms added in the second step [$\Delta R^2 = .003$, $F(2, 129) = .23$, $p = .80$], the priming condition × attachment interaction added in the third step [$\Delta R^2 = .01$, $F(1, 128) = 1.52$, $p = .22$], and the three-way interaction added in the fourth step [$\Delta R^2 = .01$, $F(1, 127) = 1.20$, $p = .28$] offered little additional predictive power. The two main effects suggest that females felt more empathic than males, and participants felt more empathic to the extent that they held strong parasocial attachments. As the interaction terms were added in each step, gender remained a significant predictor. Implying that the effect of parasocial attachment was qualified by an interaction, the attachment main effect diminished as interaction terms were added (parasocial attachment βs = .18, .10, and -.03 in Steps 2, 3, and 4).

When controlling for the main effects and other interaction terms, the priming condition × attachment strength interaction approached significance, β = .34, $p = .12$. To further explore these trends, we calculated simple slopes within each priming condition and found that participants primed with their own attachment figure felt more empathic to the extent they had a strong parasocial attachment, β = .24, $t(128) = 2.59$, $p = .01$. In contrast, participants primed with a control figure did not demonstrate a relationship between parasocial attachment strength and empathic feelings, β = .07, $p = .41$.[4]

Taken together, these findings provide initial support for our hypothesis. Among individuals who reported having strong parasocial attachments, subliminal exposure to their attachment figure resulted in a somewhat stronger desire to self-disclose and greater feelings of empathy—both characteristics of friendships. Although our omnibus tests of interest did not reach statistical significance, these data suggest that parasocial attachment figures may act like real friends for individuals who hold strong attachments. Given that passive, subliminal exposure to a parasocial attachment figure can elicit feelings and behaviors associated with friendship, parasocial relationships may provide additional social benefits. If parasocial attachment figures do, in fact, act like real friends, they may serve belonging needs to some extent. To investigate whether parasocial relationships can buffer individuals against the negative consequences of social rejection, Study 4 was conducted.

Study 4: Social Threat Buffer

A body of research has demonstrated that social relationships can protect individuals from negative outcomes associated with social rejection such as negative mood, heightened aggression, lowered self-esteem, and cognitive deficits. For instance, after reliving a past rejection experience, individuals exposed to concrete reminders of loved ones (i.e., photographs of friends) do not show decrements in mood that are common among rejected individuals without accessible relationship representations (Gardner, Pickett, & Knowles, 2005).

Moreover, research suggests that individuals with chronically accessible social representations are able to draw upon their social bonds in order shield themselves from rejection distress. Specifically, individuals with interdependent self-construals—those who define themselves in terms of relationships and group memberships—have a ready resource that they can draw upon in order to cope with social threats (Gardner, Knowles, & Jefferis, in press). In comparison to independent individuals who define themselves in terms of traits and preferences, interdependent individuals are less likely to suffer negative consequences of rejection such as aggressive tendencies and cognitive deficits. Only when individuals' interdependent self-representations are blocked do chronically interdependent individuals suffer rejection distress on par with chronically independent individuals.

Given that concrete and intangible representations of real friends and group memberships can shield individuals from the distress associated with a social threat, parasocial relationships may also buffer individuals from the negative consequences of rejection if strong parasocial attachments do, in fact, resemble friendships as Study 3 suggested. Thus, we expected that, like real friends, strong parasocial attachments can serve to protect individuals against the negative consequences of rejection. Moreover, we predicted that parasocial attachments would serve a protective function above and beyond a positive, but nonsocial, stimulus.

Design

To test our predictions, we conducted a study using × 3 (prime: parasocial attachment figure vs. friend vs. favorite travel destination) × 2 (parasocial attachment strength: strong vs. weak) × 2 (time of test: pre-test vs. post-test) mixed model design with prime and attachment strength as between-subjects factors and the time of test as a within-subjects factor. Because rejection experiences produce cognitive impairments (Baumeister et al., 2002), we assessed performance on a test of analytical reasoning before and after a rejection experience to determine the buffering capability of the intermediate parasocial prime. Comparable tests were used in previous research (Gardner et al., in press) to assess the buffering effects of accessible real relationships (i.e., individuals who have an interdependent self-construal) on intellectual performance following a rejection. Given that rejection experiences typically result in impaired intellectual performance, we expected that individuals primed with a positive nonsocial target—their favorite travel destination—and those primed with a relatively weak parasocial attachment figure would perform worse on the test following a social threat. In contrast, individuals primed with images of their friends and those primed with strong parasocial attachments should not demonstrate any deficits after a rejection experience.

Method

Participants. In a pre-testing session, introductory psychology students were asked to complete the Parasocial Interaction Scale (Rubin et al., 1985), report their favorite travel destination, and note whether or not they have a digital photograph of a friend that they would be willing to share with an experimenter. As in the two previous studies, only those individuals who completed the PIS in reference to one television character portrayed by a human were recruited for participation. Moreover, only those individuals who were willing to provide a digital photograph of a friend were allowed to participate in the study. In total, 77 students (57 females, 20 males) with a mean age of 18.70 years (*SD* = .84) participated in the study in return for partial course credit.

Materials and procedure. Within a week of the pre-testing session, participants were contacted by email and asked to email the experimenter a digital photograph of a friend. One to seven weeks after submitting the requisite photograph, participants took part in the study in individual, enclosed cubicles. Framed as an examination of individuals' analytical reasoning and perceptual abilities, the study consisted of five tasks in the following order: (1) an analytical reasoning pre-test, (2) the Cyberball game that serves as our rejection manipulation, (3) prime embedded within a color perception task, (4) an analytical reasoning post-test, (5) demographic questionnaires.

Each of the analytical reasoning tasks consisted of six questions taken from the analytical reasoning portion of the Graduate Record Examination. Participants were given six minutes to complete as many problems correctly as possible, and each test served as an indicator of intellectual performance. Following the first analytical reasoning task, participants completed the Cyberball mental visualization task that served as our rejection manipulation. Cyberball is a computer program created by Williams et al. (2000) that simulates an online ball-tossing game. Participants are told that they are tossing a virtual ball with two other participants over the computer network. Unbeknownst to the participants, the program was rigged so that the participant received the ball from the computerized confederates only two times out of 20 throws. Cyberball has been shown to effectively elicit a sense of rejection and distress in a number of studies conducted by different researchers (e.g., Eisenberger, Liebermann, & Williams, 2003; Gardner et al, in press; Zadro, Williams, & Richardson, 2005).

Following the Cyberball task, participants completed a color perception task similar to the one used in Study 3. Between each of the 10 trials in which they made color judgments, participants were subliminally exposed to one of three images. Participants were exposed to either an image of their favorite television character (*attachment figure prime*), the submitted image of a friend (*friend prime*), or an image of their favorite travel destination (*travel destination prime*). The television character and travel destination images were found on the internet, and all three sets of images were cropped and resized to be equivalent in size. After the priming task, participants completed the second of the two analytical reasoning tasks and a demographics questionnaire.

Results and Discussion

After scoring the analytical reasoning tests by counting the number of problems solved correctly, a change score was computed by subtracting participants' pre-test scores (*M* = 3.09, *SD* = 1.07) from their post-test scores (*M* = 2.56, *SD* = 1.47). Resultant positive numbers indicated improved performance, and negative numbers indicate worsened performance. Difference scores were used because we were interested in change in performance from pre- to post-test rather than absolute levels of performance on each individual test. Used as an indicator of parasocial attachment strength participants' PIS scores from pre-testing ($\alpha = .90$) were centered around the overall mean (*M* = 3.20, *SD* = .86). Priming conditions were dummy-coded with the travel destination prime serving as the control for each of the other two conditions. Change in test performance was regressed on parasocial attachment strength and the two dummy-coded variables representing the TV character prime (1 = TV character, 0 = friend and travel destination) and friend prime (1 = friend, 0 = TV character and travel destination) in the first step of the regression analysis, and the two attachment strength × prime interactions were added in a second step.

As evident in the hierarchical regression analysis summarized in Table 4, neither the first regression equation [$R^2 = .03$, $F(3, 73) = .84$, $p = .48$] nor the second equation [$\Delta R^2 = .08$, $F(2, 71) = 1.75$, $p = .18$] predicted change in test performance. Even so, parasocial attachment strength made a significant contribution to the second equation ($\beta = -.43$, $p = .04$), and the attachment strength × dummy-coded television character prime made a marginal contribution $\beta = .30$, $p = .07$. The main effect suggests that to the extent individuals have strong parasocial attachments, they perform more poorly after a social threat. We further explored the predicted two-way interaction (displayed in Figure 4) by using the simple slope procedures delineated by Aiken and West (1991). Tests of simple slopes revealed that among individuals primed with either their favorite TV character or a friend, test performance did not significantly change as a function of their parasocial attachment scores [television character: β =.19, $t(71) = .55$, p =.59; friend: β = -.23 $t(71) = -.73$, $p = .47$]. In contrast, performance significantly changed as a function of parasocial attachment scores for participants primed with their favorite travel destination, β = -.72, $t(71) = -2.11$, $p = .04$. In other words, to the extent that individuals had strong parasocial attachments, those primed with a nonsocial target performed significantly more poorly after rejection, those primed with a friend performed slightly more poorly after rejection, and those primed with a favorite TV character performed slightly better after rejection. Keeping in mind that parasocial attachment strength is generally predictive of impaired performance after social threat, it is remarkable that the only strongly attached individuals immune to this handicap are those primed with the TV character to whom they are attached.

We also conducted a series of analyses that were specific to our predictions. We had predicted that regardless of parasocial attachment strength, images of friends would serve to protect individuals against the consequences of rejection, and images of positive but nonsocial targets would fail to do so. Instead, we found that when collapsing across attachment scores, subliminal exposure to a friend was associated with a significant drop in performance [$t(24) = -3.17$, $p = .004$], but exposure to an image of a travel destination was only marginally associated with such a change, $t(24) = -1.67$, $p = .11$. Also, we had predicted that individuals with strong parasocial attachments who were exposed to their attachment figure would be protected from rejection-induced cognitive decrements. A paired t-test among participants in the TV prime condition who scored above the median on parasocial attachment revealed that their performance did not significantly drop after rejection, $t(13)= -.64$, $p = .54$. In contrast, paired t-tests for the travel destination [$t(11) = 3.05$, $p = .01$] and friend [$t(12) = 2.94$, $p = .01$] prime conditions for individuals high in parasocial attachment both showed significant drops in performance after rejection. These findings are consistent with our predictions in regards to parasocial attachments, but they are inconsistent with those pertaining to friends.

An unexpected finding was the main effect of parasocial attachment strength. We did not expect parasocial attachment strength to negatively predict change in test performance following rejection. Given that parasocial attachment commonly co-occurs with high belonging needs, it may be the case the individuals with strong parasocial attachments also have a high need to belong, and this results in heightened sensitivity to experiences of rejection. Unfortunately, we did not assess these participants' belonging needs in advance; future research is required to determine whether belonging needs do, in fact, mediate the relationship between parasocial attachment strength and rejection-induced cognitive deficits.

In contrast to Study 3's conclusions that strong parasocial attachments act much like friends, the behavior of individuals exposed to images of friends and parasocial attachment figures seemed to diverge as attachment grew stronger in Study 4. Given that these findings are at odds, it is especially worthwhile to continue examining the similarities between real friends and parasocial attachment figures. So, in Study 5, we hoped to determine the extent to which the impact of parasocial relationships on individuals' physiological responses and performance on a stressful task mirrors previous research with real life friends or, instead whether individuals' responses to attachment figures mirror those associated with pets.

Study 5: Autonomic Reactivity and Performance under Stress

In a two-part study, Allen, Blascovich, Tomaka, and Kelsey (1991) examined the impact of different types of relationships on autonomic reactivity and performance on a taxing task. In particular, these researchers invited participants into the lab to complete a difficult mental arithmetic task and measure their physiological responses. In a later session, participants completed a similar mental arithmetic task under one of three conditions. They completed the task in either the company of a friend and the experimenter, a pet dog and the experimenter, or the experimenter alone. Whereas participants' physiological reactivity and performance did not vary in the first session, group differences arose in the second session. Participants completing the difficult task in the company of a friend demonstrated higher physiological reactivity and worse performance than participants in the other conditions, presumably due to evaluative concerns. If, as suggested by the Study 3 findings, parasocial figures act like real friends among the highly attached, then exposure to parasocial attachment figures should heighten their autonomic reactivity and hinder their performance under stress. On the other hand, it is possible that parasocial attachment figures may supply a social relationship more similar to a pet dog, fulfilling social connection needs (Allen, 2003; Banks & Banks, 2002; Siegel, 1990; Viruès-Ortega & Buela-Casal, 2006), and even inducing feelings of empathy, but not representing an evaluative threat. Alternatively, parasocial attachment strength may not moderate physiological reactivity under stress. Like participants in Study 2 who performed relatively poorly on a difficult task when in the presence of their favorite television character, individuals exposed to their favorite character may display greater reactivity and worse performance regardless of their attachment strength. Thus, the resultant pattern of data will greatly inform our understanding of weak and strong parasocial attachments.

Design

In order to assess the impact of parasocial relationships on physiological reactivity and task performance, we conducted a study using a 2 (parasocial condition: own attachment figure vs. control figure) × 2 (parasocial attachment strength: strong vs. weak) × 4 (time of physiological measurement: beginning of the study vs. after initial exposure to figure vs.

between the two mental arithmetic tasks vs. after the second mental arithmetic task) mixed design with condition and attachment strength as between-subjects and the time of measurement as within-subjects.

Method

Participants. Fifty-seven introductory psychology students (40 females, 17 males) completed the Parasocial Interaction Scale (Rubin et al., 1985) during a pre-testing session. Their mean age was 18.73 years (SD = .89). Only individuals who completed the scale in reference to a single television character portrayed by a human will be eligible to participate.

Materials and procedure. Anywhere from two to eight weeks after the pre-testing session, participants took part in the experiment. Participants were run individually in a lab space consisting of an open room and enclosed cubicles. After participants arrived, the experimenter measured their systolic blood pressure, diastolic blood pressure, and pulse rate using a common blood pressure cuff. Because participants had just walked up multiple flights of stairs to the experimental laboratory, this assessment of physiological arousal included much noise, but this first assessment helped to familiarize participants with the process of measuring their arousal prior to the key measurement time points.

Participants were then taken into an enclosed cubicle where a television character's image was displayed on the screen. As in Study 2, participants were exposed to their own attachment figure (*attachment condition*) or another participant's attachment figure (*control condition*) in a yoked participants design. Participants were then asked to fill out demographics and filler questionnaires and to wait for the experimenter. A delay of a few minutes was included to facilitate the accurate measurement of participants' blood pressure and pulse rate and to ensure that participants had adequate time to notice the image displayed on the computer background.

After the brief delay, blood pressure and pulse rate were assessed for the second time, and this measurement served as a pre-test assessment of participants' physiological arousal.

Participants then spent a total of four minutes completing two difficult mental arithmetic tasks borrowed from Allen et al. (1991). Specifically, participants were given a four-digit number and asked to count backwards by 13s aloud while being tape-recorded. After two minutes, participants were stopped, and blood pressure was measured for a third time. Participants were then asked to complete a second mental arithmetic task by counting backwards from another four-digit number by 17s. Like the first arithmetic task, participants were again tape-recorded so that their responses could later be coded for accuracy. The rules of the arithmetic task were changed halfway through to guard against habituation and to closely mirror the procedure used by Allen and colleagues. At the conclusion of the arithmetic task, participants' blood pressure and pulse rate were assessed for a fourth and final time. The third and fourth measurements reflected participants' responses to the stressful task in the presence of their attachment figure or a control figure; their averaged physiological responses across these two assessments served as a cumulative post-test assessment of arousal. Participants also completed a scale assessing state anxiety and arousal (Mothersill, Dobson, & Neufeld, 1986). This scale consisted of six items pertaining to physiological arousal and negative aspects of anxiety, and participants used rating scale from 1 (*not at all true at this moment*) to 5 (*extremely true*). Lastly, participants were asked to report when they first noticed the character on the computer screen. Three participants who did not notice the image until they had partially completed the stressful tasks were eliminated from analyses.

Results and Discussion

Self-reported anxiety and arousal. To determine whether individuals' levels of felt anxiety and arousal varied as a function of condition and parasocial attachment (Parasocial Interaction Scale α = .86, overall *M* = 3.06, *SD* = .76), we centered participants' PIS scores and dummy-coded condition (0 = control character, 1 = favorite character) and gender (0 = male, 1 = female). We included gender in our analyses of each dependent measure because past research has shown gender to often influence perceptions of and performance on math tasks (Hyde, 1981; Rossi, 1983). We regressed the average of the three negative anxiety items (α = .82, overall *M* = 2.87, *SD* = .94) onto parasocial attachment strength, condition, and gender in the first step; the two-way interactions involving gender were added in the second step; the attachment × condition interaction was added in the third step; the three-way interaction was added in the fourth step. None of the regression equations reached significance (all ΔR^2s < .06, *F*s < 1.32, and *p*s > .27), and none of the individual variables or interaction terms reached significance (all βs = < |.40| and *p*s > .11). In a comparable analysis, the physiological arousal items (α = .57, overall *M* = 2.61, *SD* = .71) were regressed on attachment strength, condition, and gender in the first step of a hierarchical regression analysis, and the interaction terms were added in steps two, three, and four. Again, no regression equations reached significance (all ΔR^2s < .06, *F*s < 1.40, and *p*s > .25), and no individual variables or interaction reached significance (all βs = < |.43| and *p*s > .11). These data demonstrate that self-reported feelings of anxiety and arousal did not vary as a function of condition, strength of parasocial attachment. Our failure to find an interaction suggests that individuals with strong attachments to the displayed character did not differentially experience feelings of anxiety or arousal as a result of the stressful task.

Physiological data. Assessments of individuals' blood pressure and pulse rate served as implicit measures of generalized arousal. Before examining our central hypothesis, we wanted to first ascertain whether engaging in the mental arithmetic task did, in fact, elevated participants' systolic and diastolic blood pressure and pulse rate as would be expected following a stressful task. Specifically, we were interested in changes in blood pressure and pulse rate from the second assessment to the third and fourth assessments. As noted earlier, the third and fourth assessments were averaged together to provide a more reliable index of arousal resulting from the stressful task. A repeated measures ANOVA including all three indicators (systolic and diastolic blood pressure and pulse rate) and time of assessment (before or after the arithmetic task) yielded a significant effect of time, $F(1, 51) = 4.29$, $p = .04$, partial $\eta^2 = .08$. Contrary to predictions, however, arousal significantly decreased from pre-stressor (for systolic: $M = 108.92$, $SD = 11.34$; for diastolic: $M = 68.12$, $SD = 9.62$; for pulse: $M = 82.71$, $SD = 13.58$) to post-stressor (for systolic: $M = 108.07$, $SD = 10.47$; for diastolic: $M = 66.99$, $SD = 8.93$; for pulse: $M = 81.00$, $SD = 13.31$). This suggests that the mental arithmetic task was not particularly stressful.

Given that the arithmetic task was not stress inducing, we are no longer looking for potential buffering effects (i.e., the conditions under which individuals are protected from stress). Because arousal is generally decreasing over time, subsequent analyses should pinpoint the conditions under which arousal does not decrease. Under what circumstances are individuals *not* feeling calmer over time? In other words, what factors impact the rate of individuals' autonomic recovery? Given that Allen and colleagues (Allen et al., 1991) showed that friends (as opposed to pets or a nonintrusive experimenter) increased physiological arousal under stress, for the current task, if parasocial attachments act like friends among those with strong attachments, we would expect that among participants exposed to their favorite TV character, the strength of their attachment should be negatively associated with a decrease in arousal over time. In other words, a decrease in autonomic recovery rather than an increase in arousal might be seen across the task, to the extent that the parasocial figure is both present in the room and responded to as a friend.

Conversely, individuals with weak attachments to the visible, favorite character should become more relaxed throughout the course of the study. Alternatively, should parasocial figures act as pets rather than friends, one would expect no difference among those high and low in attachment across time – both should show similar decreases in arousal across the task.

To test our central hypotheses, we examined participants' systolic blood pressure, diastolic blood pressure, and pulse rate as a function of condition, parasocial attachment strength, and gender in three separate analyses. These tests of autonomic recovery can be carried out in multiple ways, but for ease of presentation, change scores (pre-task levels subtracted from post-task levels) were the outcomes analyzed, summarized in the tables, and depicted in figures.[5] To examine systolic blood pressure, we regressed change in systolic blood pressure onto centered parasocial attachment scores, dummy-coded condition, and dummy-coded gender in the first step, and the two-way interactions involving gender were added in the second step, the condition × attachment strength interaction in the third step, and the three-way interaction in the fourth step. This analysis is summarized in Table 5.

The regression equation including only the main effects reached significance [$R^2 = .15$, $F(3, 49) = 2.92$, $p = .04$] with gender significantly contributing to the equation, $\beta = .37$, $p = .01$. This effect suggests that at mean levels of the other predictors, men demonstrate greater autonomic recovery over time than women. The two-way gender interactions added some predictive power beyond that contributed by the main effects, $\Delta R^2 = .09$, $F(2, 47) = 2.73$, $p = .08$. In this second step, the condition × gender interaction reached significance, $\beta = .60$, $p = .03$.[6] Of particular interest, however, was the addition of the parasocial attachment strength × condition interaction. This interaction did significantly predict change in systolic blood pressure over and above the main effects and other two-way interactions, $\Delta R^2 = .02$, $F(1, 46) = 1.42$, $p = .24$. The addition of the significant three-way interaction (β = -.66, *p* = .04)[7] improved the predictive power of the regression equation in the fourth step, ΔR^2 = .07, $F(1, 45)$ = 4.71, *p* = .04. Important to our predictions, however, we also found that in the full model, a significant attachment strength × condition interaction emerged at the mean of every other predictor (β = .80, *p* = .02). This interaction is depicted in the top of Figure 5. Tests of simple slopes for each condition as a function of parasocial attachment (across mean gender) revealed that parasocial attachment strength was positively associated with change in systolic pressure among individuals exposed to their favorite character [β = 2.17, $t(46)$ = 1.24, *p* = .22], but attachment was negatively related to change among those exposed to a control character [β = -.75, $t(46)$ = -.44, *p* = .66].

To further probe this interaction, we ran supplemental analyses that allowed for within-person contrasts of arousal at pre-task versus post-task. In brief, we compared pre- to post-task levels of systolic blood pressure within strongly attached individuals exposed to their attachment figure (strong favorite), strongly attached individuals exposed to a control figure (strong control), weakly attached individuals exposed to their attachment figure (weak favorite), and weakly attached individuals exposed to a control figure (weak control). Systolic blood pressure dropped significantly from pre-task (*M* = 114.25, *SD* = 13.36) to post-task (*M*=108.97, *SD* = 11.88) among weak favorites, $F(1, 45)$ = 6.50, *p* = .01, partial η^2 = .13, but not among strong favorites (pre-task: *M* = 108.08, *SD* = 11.22; post-task: *M* = 107.74, *SD* = 6.27), weak controls (pre-task: *M* = 109.58, *SD* = 9.25; post-task: *M* = 109.19, *SD* = 9.09), or strong controls (pre-task: *M* = 113.67, *SD* = 11.43; post-task: *M* = 110.98, *SD* = 13.50), all other *F*s < 1.62, *p*s > .21. These patterns suggest that only those individuals exposed to a weak attachment figure displayed significant autonomic recovery.

Another hierarchical regression analysis and set of supplemental contrasts were conducted on participants' levels of diastolic blood pressure. As displayed in Table 6, main effects were again entered in the first step, the two-way interactions with gender were entered in the second step, and condition × attachment strength interaction was entered in the third step, and the three-way interaction was entered in the fourth step. The regression equation consisting of the main effects did not reach significance [$R^2 = .07$, $F(3, 48) = 1.13$, $p = .35$], and adding the two-way interactions involving gender did not improve the predictive power of the equation [$\Delta R^2 = .06$, $F(2, 46) = 1.69$, $p = .20$]. The addition of the predicted interaction had little impact as well [$\Delta R^2 = .02$, $F(1, 45) = 1.22$, $p = .27$]. The full model including all main effects and interaction terms approached significance [$\Delta R^2 = .05$, $F(1, 44) = 2.72$, $p = .11$] because parasocial attachment strength ($\beta = -.89$, $p = .03$), the attachment strength × gender interaction ($\beta = .92$, $p = .02$), and the predicted attachment strength × condition interaction ($\beta = .71$, p = .05) all reached significance.[8] Of particular interest was the significant condition × attachment interaction displayed in Figure 5. Tests of the simple slopes by condition revealed that parasocial attachment strength was positively related to change in diastolic blood pressure among those exposed to their favorite character [$\beta = 1.83$, $t(44) = 1.04$, $p = .30$] but negatively related to change in blood pressure among those exposed to a control character [$\beta = -.90$, $t(44) = -.54$, $p = .59$].

Again comparing blood pressure within participant across assessments, we found a pattern of data with diastolic blood pressure that closely mirrors that of systolic blood pressure. Specifically, diastolic blood pressure dropped significantly from pre-task ($M = 69.31$, $SD = 11.28$) to post-task ($M = 64.84$, $SD = 9.27$) levels among weak favorites, $F(1, 44) = 5.07$, $p = .03$, partial $\eta^2 = .10$, but not among strong favorites (pre-task: $M = 66.11$, $SD = 8.16$; post-task: $M = 64.94$, $SD = 7.18$), weak controls (pre-task: $M = 70.65$, $SD = 6.99$; post-task: $M = 70.33$, $SD = 6.79$), or strong controls (pre-task: $M = 72.46$, $SD = 11.67$; post-task: $M = 69.73$, $SD = 11.61$), all other Fs < 1.71, ps > .19. Again, these patterns suggest that only individuals exposed to their favorite TV character to whom they have a weak attachment displayed significant recovery.

Taken together, the systolic and diastolic blood pressure data suggest that exposure to a favorite TV character after completing a difficult if not stressful task will significantly impact physiological recovery. Among individuals exposed to their favorite TV character, speed of autonomic recovery is negatively associated with attachment strength. Thus, individuals with weak attachments to their visible character reacted in ways more consistent with the “pet hypothesis,” and those with strong attachments to their visible character reacted in ways more consistent with the “friend hypothesis.” Analyses also revealed the unexpected finding that parasocial attachment strength was related to faster recovery in the control condition, but these relationships were weak and partially attributable to higher levels of initial arousal among the strongly attached in the control condition.

Parallel analyses were conducted on pulse rate. As summarized in Table 7, the individual variables and interaction terms were entered in four steps. The regression equation consisting of the main effects only did not reach significance [$R^2 = .12$, $F(3, 49) = 2.15$, $p = .11$], the equation including the two-way interactions involving gender did not reach significance [$\Delta R^2 = .02$, $F(2, 47) = .47$, $p = .63$], and the equation including the predicted condition × attachment interaction did not reach significance [$\Delta R^2 = .01$, $F(1, 46) = .68$, $p = .41$]. The regression equation including all of the predictors approached significance, $\Delta R^2 = .08$, $F(1, 45) = 3.31$, $p = .08$. In the full model, the only predictor to make a significant contribution was the condition × attachment interaction, $\beta = -.70$, $p = .05$. Depicted in the bottom portion of Figure 5, the nature of this interaction is very different from those found with the systolic and diastolic blood pressure data. Tests of simple slopes within condition revealed that among individuals exposed to their favorite

TV character, parasocial scores were negatively associated with change in pulse rates [β = -1.31, $t(45) = -.93$, $p = .36$], and among those who viewed a control character, parasocial scores were positively associated with change in pulse rate [β = .29, $t(45) = .21$, $p = .83$]. These trends are contrary to our predictions.

Pulse rate comparisons within-subjects revealed no significant differences among individuals in either condition with strong or weak attachments, all Fs < 1.75, ps > .19. Pulse rates increased slightly for weak favorites (pre-task: $M = 76.06$, $SD = 10.29$; post-task: $M = 77.28$, $SD = 10.12$) and decreased slightly for strong favorites (pre-task: $M = 82.25$, $SD = 8.38$; post-task: $M = 80.87$, $SD = 10.09$), weak controls (pre-task: $M = 83.93$, $SD = 16.42$; post-task: $M = 81.79$, $SD = 14.52$), and strong controls (pre-task: $M = 86.29$, $SD = 15.03$; post-task: $M = 85.21$, $SD = 16.09$). Neither physiological recovery nor amplification was found using the pulse rate data. In other words, completing the mental arithmetic task had very little impact on participants' pulse rates.

Performance data. A coder blind to condition counted the number of times each participant made an error in counting backwards by the appropriate increment during each mental arithmetic task[9]. The sum of the errors across the two tasks served as our index of task performance ($M = 8.00$, $SD = 4.89$). As shown in Table 8, individual predictors and interaction terms were entered in four different steps, and none of the regression equations reached significance (all ΔR^2s < .08, Fs < 1.17, and, ps > .33). Moreover, no individual variables or interaction terms reached significance within any regression equation, all βs < |.23| and ps > .11. The predicted attachment strength × condition interaction did not even approach significance, β = .07, $p = .86$. See the pattern of means in Figure 6.

Despite our failure to find consistent evidence with pulse rate and task performance, the significant effects of condition and parasocial attachment strength on systolic and diastolic blood pressure suggests that individuals are responding differentially as a function of the static image displayed during the mental arithmetic task. These effects are especially compelling given that the arithmetic task was not very stressful and that the subtle, nonintrusive manipulation of character exposure likely lacks the power of real, live social audience. Altogether, Study 5 provides preliminary evidence that passive exposure to favorite television characters can significantly influence autonomic recovery, and the speed of individuals' recovery is related to the their parasocial attachment strength. Whereas very strong parasocial attachments are likely to slow recovery, weak attachments actually facilitate recovery. Thus, weak attachment figures act more like the pets of Allen et al. (1991), and strong attachment figures act more like their friends.

General Discussion

The current investigation was designed to illuminate the nature of parasocial relationships to favorite television characters, and of particular interest were relationships characterized by a strong attachment. Even though several unexpected findings emerged in the latter studies, the studies generally provided convergent evidence that favorite television characters resemble conspecifics, and those to whom one is strongly attached more closely resemble real friends in at least some respects.

Summary

More specifically, our initial studies (Studies 1a and 1b) examined the relationship between parasocial attachment strength and dispositional belonging needs. We had predicted that stronger parasocial attachments should be found among individuals highly motivated to form relationships—those with a high need to belong. Consistent with these predictions, a relationship between the need to belong and parasocial attachment strength was demonstrated in Study 1a with a nationally representative sample, and in Study 1b with a college student sample. Thus, the formation of parasocial relationships appear motivated, at least in part, by individuals' chronic drive to form social connections.

Furthermore, these initial studies suggested that the formation of parasocial relationships is not specific to college populations. Individuals in a nationally representative sample of Americans reported forming such attachments; their attachments were also, on average, more robust than those of our college students. Consequently, it may be the case that by using college students in most of our studies, we have constrained that range of parasocial attachments assessed and made it more difficult to find outcomes that vary as a function of parasocial attachment strength.

Having demonstrated the prevalence of parasocial relationships in Studies 1a and 1b, we sought to examine the nature of the attachment figures in subsequent studies. Shedding some light on the nature of these relationships, the parasocial facilitation findings from Study 2 are suggestive that individuals are responding to their parasocial attachment figures as a real social presence. When exposed to their favorite television character, individuals performed better on well-learned tasks and worse on novel tasks than individuals exposed to a non-favorite television character. Interestingly, parasocial attachment strength did not moderate the effect in this study, implying that regardless of individuals' attachment to their favorite television character, they responded to that character as if it were more "real" than a non-favorite television character. Recent research in our and other labs (Gardner & Knowles, 2007; Kiesler & Kiesler, 2004) has suggested that to the extent a television character or an inanimate object evokes positive emotion and associations with the self, it is more likely to be anthropomorphized and thus perceived as a real social target. Therefore, it is possible that favorite television characters (as compared to non-favorites) met this threshold of association with self and positive affectivity, regardless of parasocial attachment strength, and thus were responded to as real.

To further examine the nature of parasocial relationships and distinguish between attachments that vary in strength, we conducted studies three through five. In Study 3, we suspected that among individuals with particularly strong parasocial attachments, their attachment figures would act more like a friend than simply a real social target. In general, our predictions were supported. Even though strength of parasocial attachment predicted greater feelings of empathy and desire to self-disclose in our entire sample, it was only among individuals who were surreptitiously exposed to their parasocial attachment figure that these relationships reached significance. Given that a desire to confide in others and feelings of empathy are more often elicited within the contexts of close relationships than acquaintanceships, this study provides some preliminary evidence that favorite television characters with whom we have strong attachments may be more like friends than acquaintances or strangers.

We hoped in subsequent studies to further highlight ways in which strong parasocial relationships mirror real-life friendships, and in Study 4, in particular, we aimed to demonstrate one function potentially served by both friendships and parasocial relationships. Just as exposure to real friends serves to protect individuals against the negative consequences of rejection (Gardner et al., 2005), strong parasocial attachments should also serve this protective function. Thus, we anticipated that strong parasocial attachments would buffer individuals from rejection-inducted cognitive deficits. Consistent with predictions, individuals with strong parasocial attachments did not show a drop in performance following rejection if they had been primed with an image of their attachment figure, but their performance did drop if they had been primed with a positive, nonsocial image. Contrary to expectations, however, highly attached individuals primed with an image of a friend were not buffered from rejection.

Even though our primary hypothesis regarding the protective value of strong parasocial attachments was confirmed, the unexpected findings among individuals primed with friends are problematic. One procedural disparity between our study and previous work showing the protective value of friendships is duration of exposure to the friends' image—repeated 10 millisecond exposures in the current study and continuous exposure throughout the course of the previous study. A second disparity is the point of initial exposure; in our study, individuals were exposed to their friends' image after experiencing a rejection, and in the previous work, individuals were exposed to their friends' image before, during, and after the rejection. Perhaps the activation of real-life friendships serves to protect individuals from the onset of rejection distress rather than initiating recovery after a threat. If this were true, then friends and parasocial attachment figures may serve belonging in slightly different ways.

Whereas Study 4 uncovered an advantage of having strong parasocial attachments, Study 5 provided initial, albeit mixed, evidence of a cost associated with strong parasocial relationships. Initially aiming to test whether exposure to strong parasocial relationship figures during stressful experiences produces physiological outcomes consistent with the presence of friends or those consistent with the presence of pets (Allen et al., 1991), our failure to induce stress in our study prevented such a test. Instead of examining reactivity to stress, we examined physiological recovery, or the decline in initially elevated levels of arousal throughout the course of the study. The "friend hypothesis" would predict that parasocial attachments hinder recovery, and the "pet hypothesis" would predict that parasocial attachments facilitate recovery. Even though individuals' blood pressure typically decreased over the course of the study, to the extent individuals had strong parasocial attachments, exposure to that attachment figure led to the maintenance of initial levels of arousal. Collapsing across both indicators of blood pressure, it appears that parasocial attachment strength positively predicted changes in blood pressure when individuals were exposed to their attachment figure. In other words, autonomic recovery after completing the difficult arithmetic task was faster among individuals with weak attachments and slower among individuals with strong attachments. Thus, strong parasocial attachments seem to act like friends and weak parasocial attachments act more like pets.

Whereas systolic and diastolic blood pressure produced relatively convergent evidence in support of the friend hypothesis for the strongly attached and the pet hypothesis among the weakly attached, pulse rate and performance data were divergent from predictions and each other. Parasocial attachment strength was weakly and negatively associated with change in pulse rate among individuals exposed to their attachment figure; the cause of this reversal is unclear. Furthermore, no significant patterns emerged in the performance data. Even though we had hoped to find either a main effect of condition (exposure to a favorite character regardless of attachment) that would be consistent with the social facilitation findings from Study 2 or an interaction that would be consistent with either the friend or pet hypothesis (Allen et al., 1991), neither of these trends emerged in the performance data. This may be attributable to, at least in part, the nature of the math task. Because the experimenter did not repeatedly prompt individuals to complete the task more quickly as is common among researchers using similar serial subtraction tasks (e.g., Uchino, Kiecolt-Glaser, & Cacioppo, 1992), individuals may have completed the task at various speeds based on their mathematical ability, intrinsic motivation to perform well, regulatory focus, and other individual differences. In hindsight, if individuals had been prompted to speed up while completing the arithmetic task, they probably would have experienced more stress and generalized arousal as a result.

Even though some unexpected findings emerged from these studies, across all five of them, a number of general conclusions can be reached. First, the formation of parasocial attachments to favorite television characters is relatively common, and chronic belonging needs are predictive of their attachment strength. Moreover, regardless of attachment strength, favorite television characters act like real social audiences. Additionally, strong parasocial attachments may resemble real friends in that they significantly elicit empathic feelings and potentially a stronger desire to self-disclose. These strong parasocial attachments also seem to protect individuals against the negative consequences of rejection, and they may even play a role in moderating the physiological reactivity associated with difficult tasks.

Further Questions and Directions

How robust are these effects? Because most of the crucial effects revealed in the present investigation—such as the relationship between dispositional belonging needs and parasocial attachment strength—can be characterized as small or medium in size (Cohen, 1977), critics could argue that these findings hold very little meaning or significance. We would suggest, however, that these effects be considered in the context of "normal" human behavior. Given psychologists' and lay people's assumptions and theories about social relationships—how they form and grow through interdependent processes, mutuality, and interpersonal interaction, one could assume that dynamic interpersonal characteristics are necessary precursors to the formation of social bonds. Accordingly, one would not expect individuals to form one-sided attachments to television characters. Nonetheless, parasocial attachments are prevalent, and their strength is reliably predicted by dispositional belonging needs. In other words, in comparison to the presumed null effect, it is impressive that any effect emerges at all. Moreover, as argued by

Prentice and Miller (1992), effects are especially impressive when they emerge under minimal conditions. Because participants' incidental or subliminal exposure to images of television characters qualifies as minimal and nonintrusive, the fact that any effects emerge—even though they are relatively small—is striking.

What is the nature of the bond? In theory, parasocial relationships could be distinct from any known real-world relationship, or they could resemble relationships with unknown others such strangers and mere acquaintances or close others such as friends and romantic partners. By assessing outcomes attributable to exposure to a conspecific (i.e., social facilitation effects) versus exposure to a friend (e.g., empathy effects) based on prior research, we were able to distinguish between favorite television characters that resemble conspecifics and characters that act more like friends. Specifically, parasocial attachment strength moderated the impact of the manipulation on subsequent task performance in Studies 3 and 4 and physiological arousal in Study 5, but attachment strength did not moderate performance in Study 2. Whereas an audience of strangers or acquaintances can produce social facilitation effects (e.g., Bond & Titus, 1983; Zajonc, 1965) such as those found in Study 2, close relationship partners are more likely to increase autonomic reactivity under stress (Allen et al., 1991), elicit feelings of empathy and a desire to self-disclose (e.g., Berscheid & Reis, 1998), and serve as a social resource after a rejection experience (Gardner et al., 2005). Thus, individuals' favorite television characters act like real people regardless of one's attachment to the figure, but these attachment figures act like friends only among individuals with strong attachments.

Whereas the second study allowed us to distinguish between the presence or absence of a conspecific relationship and the final three studies allowed us to distinguish between strangers and friends, none of the studies assessed outcomes specific to familial bonds or romantic partners. Like the forum poster quoted in the opening paragraph, some individuals may form a parasocial attachment to the news anchor they see each night. In addition to belonging, these attachments may serve a variety of functions, and the attachment figure him or herself may act more like a close figure of authority such as a parent. Without assessing outcomes specific to these types of relationships, we are unable to sufficiently distinguish those parasocial attachments from others. Similarly, individuals may form a parasocial attachment to the romantic lead in a soap opera, and they may attribute aspects of a romantic partner onto this attachment figure. Again, future research will need to assess behavioral, affective, cognitive, or physiological outcomes associated with different types of relationships in order to fully illuminate the nature of parasocial relationships.

How stable are these attachment over time? Like their predecessors in the communication studies literature, these studies use cross-sectional samples to examine the causes and consequences of parasocial attachments. Because we only assessed parasocial attachment at pre-testing sessions, the current work cannot address the lifespan or course of parasocial relationships—a necessary component in understanding the nature of these relationships. Although the stability of parasocial attachments is an empirical question, in formulating and conducting these studies, we assumed parasocial attachments to be stable over time. Just as individuals with dispositionally high belonging needs try to maintain a sense of social connectedness over time, we expect that these individuals form and maintain strong parasocial relationships until they are no longer able to do so (e.g., when their show goes off the air) or new, more frequently viewed attachment figures emerge and supplant less visible attachment figures. Moreover, just as real relationships develop over time, parasocial relationships should also develop with time. In other words, a person is no more able to form a strong parasocial relationship overnight than a real friendship. This contemplation of attachment stability provokes a number of interesting questions.

For instance, would situational fluctuations in belonging needs (e.g., experiencing a rejection from a group) affect individuals' parasocial attachments or, at least, their assessment of these attachments? For instance, an experience of ostracism could potentially lead an individual to find more comfort in his or her parasocial attachment figure than he or she had previously. Among individuals with high belonging needs, would the dissolution of one parasocial relationship (e.g., an impending cancellation or growing frustration with a character) necessarily correspond with the formation of a new parasocial relationship? Because the forum poster quoted in the opening paragraph can no longer watch Peter Jennings on the news, she might grow more attached to a new news anchor.

Why don't the lonely use parasocial relationships as compensation? Given that the current results imply that parasocial relationships may partially fulfill belonging needs, the fact that lonely individuals do not appear to compensate for their social isolation with increased parasocial attachment remains puzzling. Other work has suggested that the lonely individuals often fail to utilize all of the belonging regulation strategies available for coping with their social isolation. Specifically, work from our own lab has demonstrated that after a rejection experience, most individuals will utilize available concrete reminders of social bonds (e.g., photographs of friends) to maintain a sense of connection and avoid rejection distress, but lonely individuals fail to do so unless explicitly instructed to reflect upon that social bond (Gardner & Jefferis, raw data). Thus, despite the functionality of parasocial attachments in protecting individuals' subjective sense of connection, lonely individuals may fail to seek out parasocial attachments to compensate for their lack of real life social bonds for the same reasons that lonely individuals fail to initiate the use of other indirect belonging regulation strategies. Unfortunately, research among the lonely has yet to reveal these reasons. Among other things, one potential moderator could be individuals' regulatory orientations—whether individuals focus on diminishing the anxiety associated with social isolation or instead focus on bolstering their social connections after social threat.

Implications

For individuals with strong parasocial attachments, these studies have some startling implications. If favorite television characters act like friends among those with strong attachments, those characters have much more of an impact on their attitudes, mood, and behavior than previously realized. For instance, through product placement on a favorite character's television show, an individual may judge that product more positively than he or she would have otherwise. Unlike real friends with whom individuals can maintain contact under most circumstances, individuals have little choice but to accept the cancellation of their favorite television character's show. Like the forum poster at thankspeter.com, individuals may feel tremendous grief at the dissolution of their parasocial relationships.

Fortunately, there are many positive outcomes associated with friendship and, thus potentially, with parasocial relationships. For individuals with strong parasocial attachments, watching a favorite television character's show may have positive implications for their subjective sense of connection, mood, and performance of simple tasks. Moreover, watching a favorite television character's show will elicit feelings of understanding and compassion. Individuals may even choose to confide in their favorite television character—a restorative behavior that could improve their psychological health (Pennebaker, 1999). Regarding the relationship between parasocial attachments and self-disclosure, I would like to add a relevant quote from an actress who portrays a detective in a special victims unit.

> I started to get fanmail, and it was a very different kind of fanmail. It wasn't, you know, "Hi, you're my favorite actress," but it was a lot of women actually disclosing their story and sharing with me things they had never told anyone.
>
> –Mariska Hargitay from "Law & Order: Special Victims Unit" speaking to Dave Davies on National Public Radio (September 20, 2005)

Certainly, disclosing to a Hollywood actress about one's experience with sexual victimization would seem illogical, but confiding such stories to Olivia, the sympathetic detective in the Special Victims Unit, seems more sensible – implying again that these "fans" were writing letters to Olivia, not to the actress who portrays her.

Conclusion

Even though social relationships are typically thought of as interpersonal bonds formed between two or more individuals, we know relationships extend far beyond the traditional human-to-human dyad. Given that we imbue our pets with human-like thoughts, feelings, and intentions, include our pets as part of our familial unit, anthropomorphize inanimate objects, and incorporate these non-human agents into our self representations, it is not a great leap in logic to consider television characters as relationship partners as well. Indeed, favorite television characters are seen as more "real" than non-favorites, and they actually elicit outcomes associated with a real social presence. Under some circumstances, these characters act like pets, and in others—especially when one's parasocial attachment is strong—these characters resemble friends. Underscoring our profoundly social nature, even from a two-dimensional medium, we can extract a social bond—a bond that has meaning and consequences for our thoughts, feelings, and behavior.

Footnotes

[1]In seven academic quarters, we included the 10-item Need to Belong Scale (NTBS; Leary et al., 2006) in mass-testing sessions. In two of the quarters, the chosen item yielded the highest factor loading; in four, it yielded the second highest loading; in one, it yielded the third highest loading.

[2]Given the previously demonstrated relationship between parasocial attachment strength and dispositional belonging needs, we reran this ANCOVA with pre-testing Need to Belong Scale scores (Leary et al., 2006; $\alpha = .82$, $M = 3.29$, $SD = .69$) as an additional covariate. Like the prior analysis, this one yielded a significant task type × condition interaction [$F(1, 65) = 4.02$, $p = .05$, partial $\eta^2 = .06$] and produced a similar patterns of means. Need to belong was not a significant covariate, $F(1, 65) = .48$, $p = .49$, partial $\eta^2 = .01$. Additionally, when a median split on NTBS scores is performed, and this predictor is entered into the ANCOVA as a dichotomous between-subjects factor rather than a continuous covariate, findings remain the same [task type × condition: $F(1, 62) = 4.17$, $p = .05$, partial $\eta^2 = .06$]. Thus, dispositional belonging needs did not play a significant role in the production of social facilitation and inhibition effects.

[3]In light of the relationship between parasocial attachment and belonging needs, we included pre-testing NTBS scores ($\alpha = .85$, M=3.50, SD=.72) and their interactions with priming condition, parasocial attachment, and gender in our multiple regression analysis. The inclusion of these terms had little effect on our findings. For self-disclosure, neither NTBS nor its interaction terms emerged as significant predictors, all βs < $|.17|$ and ps > .49. Parasocial attachment strength remained a significant predictor, $\beta = .49$, p=.05. Thus, parasocial attachment strength predicted desire to self-disclose above and beyond the effects of dispositional belonging needs. This suggests potential overlap between the parasocial attachment and self-disclosure constructs.

[4]Again, pre-testing NTBS scores were included in another regression to examine the potential role that dispositional belonging needs play in eliciting empathic feelings. By regressing empathic feelings onto NTBS scores, priming condition, attachment strength, gender, and all of their interaction terms, we found a significant main effect of belonging needs ($\beta = .21$, p =.02) such that individuals who reported having a stronger need to belong at pre-test later reported having stronger empathic feelings. No significant interactions with NTBS scores emerged. When NTBS scores and all of its interaction terms are included, the previously found effect of gender dropped to marginal significance, $\beta = .20$, p =.10. Thus, the previously reported gender effect can be partially attributed to differential belonging needs.

[5]For systolic blood pressure, diastolic blood pressure, and pulse rate, additional analyses were conducted in order to take into account levels at pre-task and post-task. Specifically, ANOVAs were run with time of assessment (pre-task vs. post-task) as a within-subjects factor, condition (favorite vs. control character), and gender (male vs. female) as between-subjects factors, and parasocial attachment strength as a continuous predictor. These three tests produced time of assessment × condition × parasocial interactions comparable to those conducted using difference scores. The interaction was significant for systolic blood pressure [$F(1, 45) = 4.17$, $p = .05$, partial $\eta^2 = .09$], marginal for diastolic blood pressure [$F(1, 44) = 3.02$, $p = .08$, partial $\eta^2 =$

.06], and trend-like for pulse rate [$F(1, 45) = 2.37$, $p = .13$, partial $\eta^2 = .05$]. See the main text and Figure 5 for a detailed depiction of the pattern of data.

[6]Regarding the significant condition × gender interaction on systolic blood pressure ($\beta = .62$, $p = .02$), further analyses revealed that males exposed to their favorite TV character ($M = -7.88$) show greater drops in blood pressure than males exposed to the control character ($M = -1.57$). In contrast, females exposed to their favorite TV character show a slight increase in blood pressure ($M = 2.68$), and the females exposed to the control image show little change ($M = -.86$).

[7]Pertaining to change in systolic blood pressure, a significant condition × parasocial attachment × gender interaction emerged ($\beta = -.66$, $p = .04$), and the pattern of data suggest that our predicted condition × attachment interaction is more robust among males than females. Caution is needed in interpreting this interaction, however, because the small cell sizes (i.e., three to four males per cell participants) call the reliability of this interaction into question.

[8]In addition to the condition × parasocial attachment interaction, one first order effect and another interaction significantly predicted change in diastolic blood pressure. The average effect of diastolic blood pressure change on parasocial attachment strength was significant, $\beta = -.88$, $p = .03$. Secondly, parasocial attachment × gender significantly predicted difference scores, $\beta = .92$, $p = .02$, such that parasocial attachment was positively associated with change in blood pressure among female participants, and attachment was negatively associated with change among male participants. Thus, as a function of attachment strength, females demonstrated slower recovery, and males demonstrated faster recovery.

[9]Five participants were removed from the performance analyses because they either failed to give permission to code their audiotapes or the recording was damaged and indecipherable.

Table 1

Study 1a: Mean Parasocial Interaction Scale Scores as a Function of Gender, Age, Race, and Education. Means with different subscripts differ at <.05.

Demographic variables	N	PSI mean
Gender		
Males	115	3.24_{A}
Females	140	3.40_{A}
Age		
18-29 years	52	3.23_{A}
30-44 years	70	$3.29_{A,B}$
45-59 years	70	3.27_{A}
60+ years	63	3.54_{B}
Race		
White, Non-Hispanic	186	3.23_{A}
Black, Non-Hispanic	22	3.38_{A}
Other, Non-Hispanic	9	3.01_{A}
Hispanic	30	3.52_{A}
2+ Races, Non-Hispanic	8	3.03_{A}
Education		
Less than High School	28	3.55_{A}
High School	76	3.26_{A}
Some College	76	$3.33_{A,B}$
Bachelor's Degree or Higher	75	3.20_{B}

Note. Means with different subscripts differ at $p < .05$.

Table 2

Study 3: Summary of the Hierarchical Regression Analysis for Variables Predicting Desire to Self-Disclose (N=135)

Variable	*B*	*SE B*	β
Step 1			
Prime	.06	.16	.03
Parasocial Attachment	.18	.08	.19*
Gender	.05	.17	.03
Step 2			
Prime	.08	.27	.05
Parasocial Attachment	.44	.15	.46**
Gender	.02	.22	.01
Prime × Gender	.00	.00	.00
Attachment × Gender	-.37	.18	-.33*
Step 3			
Prime	.09	.27	.05
Parasocial Attachment	.41	.17	.43*
Gender	.02	.22	.01
Prime × Gender	-.02	.33	-.01
Attachment × Gender	-.37	.18	-.33*
Prime × Attachment	.07	.16	.05
Step 4			
Prime	.10	.28	.05
Parasocial Attachment	.40	.20	.42*
Gender	.02	.22	.01
Prime × Gender	-.02	.34	-.01
Attachment × Gender	-.36	.24	-.32
Prime × Attachment	.10	.31	.07
Prime × Attachment × Gender	-.03	.37	-.02

Note. For Step 1, $R^2 = .04$, $F(3, 131) = 1.73$, $p = .17$. From Step 1 to Step 2, $\Delta R^2 = .03$, $F(2, 129) = 2.11$, $p = .13$. From Step 2 to Step 3, $\Delta R^2 = .001$, $F(1, 128) = .20$, $p = .66$. From Step 3 to Step 4, $\Delta R^2 < .001$, $F(1, 127) <..01$, $p = .93$.
*$p < .05$.

Table 3

Study 3: Summary of the Hierarchical Regression Analysis for Variables Predicting Empathic Feelings (N=135)

Variable	*B*	*SE B*	β
Step 1			
Prime	.12	.12	.08
Parasocial Attachment	.14	.06	.19*
Gender	.37	.13	.24**
Step 2			
Prime	.24	.21	.16
Parasocial Attachment	.14	.12	.18
Gender	.45	.17	.29**
Prime × Gender	-.17	.26	-.11
Attachment × Gender	.01	.14	.01
Step 3			
Prime	.26	.21	.18
Parasocial Attachment	.07	.13	.10
Gender	.45	.17	.29**
Prime × Gender	-.20	.26	-.13
Attachment × Gender	.00	.14	.00
Prime × Attachment	.16	.13	.14
Step 4			
Prime	.29	.21	.20
Parasocial Attachment	-.02	.15	-.03
Gender	.45	.17	.30**
Prime × Gender	-.23	.26	-.15
Attachment × Gender	.13	.18	.15
Prime × Attachment	.37	.24	.34
Prime × Attachment × Gender	-.31	.28	-.23

Note. For Step 1, $R^2 = .11$, $F(3, 131) = 5.50$, $p = .001$. From Step 1 to Step 2, $\Delta R^2 = .003$, $F(2, 129) = .23$, $p = .80$. From Step 2 to Step 3, $\Delta R^2 = .01$, $F(1, 128) = 1.52$, $p = .22$. From Step 3 to Step 4, $\Delta R^2 = .01$, $F(1, 127) = 1.20$, $p = .28$.
*$p < .05$. **$p < .01$.

Table 4

Study 4: Summary of the Hierarchical Regression Analysis for Variables Predicting Change in Test Performance (N=77)

Variable	*B*	*SE B*	β
Step 1			
Parasocial Attachment	-.26	.19	-.15
Condition Dummy 1 (1=Character, 0=Others)	.19	.40	.07
Condition Dummy 2 (1=Friend, 0=Others)	-.21	.41	-.07
Step 2			
Parasocial Attachment	-.72	.34	-.42*
Condition Dummy 1 (1=Character, 0=Others)	.16	.40	-.06
Condition Dummy 2 (1=Friend, 0=Others)	-.18	.41	-.06
Attachment × Condition Dummy 1	.91	.49	.30†
Attachment × Condition Dummy 2	.49	.46	.18

Note. For Step 1, $R^2 = .03$, $F(3, 73) = .84$, $p = .48$. From Step 1 to Step 2, $\Delta R^2 = .08$, $F(2, 71) = 1.75$, $p = .18$.
†$p < .10$. *$p < .05$.

Table 5

Study 5: Summary of the Hierarchical Regression Analysis for Variables Predicting Change in Systolic Blood Pressure (N=53)

Variable	*B*	*SE B*	β
Step 1			
Condition	.76	1.98	.05
Parasocial Attachment	1.18	1.30	.12
Gender	6.10	2.19	.37**
Step 2			
Condition	-6.13	3.59	-.41†
Parasocial Attachment	1.82	2.32	.18
Gender	1.21	3.02	.07
Condition × Gender	9.65	4.24	.60*
Attachment × Gender	-1.07	2.76	-.09
Step 3			
Condition	-6.18	3.58	-.41†
Parasocial Attachment	.01	2.77	.00
Gender	1.15	3.01	.07
Condition × Gender	9.55	4.22	.60*
Attachment × Gender	-.58	2.78	-.05
Condition × Attachment	3.02	2.53	.21
Step 4			
Condition	-6.31	3.44	-.42†
Parasocial Attachment	-4.99	3.52	-.51
Gender	.71	2.90	.04
Condition × Gender	9.85	4.07	.62*
Attachment × Gender	5.89	4.00	.50
Condition × Attachment	11.32	4.54	.80*
Condition × Attachment × Gender	-11.67	5.38	-.66*

Note. For Step 1, $R^2 = .15$, $F(3, 49) = 2.92$, $p = .04$. From Step 1 to Step 2, $\Delta R^2 = .09$, $F(2, 47) = 2.73$, $p = .08$. From Step 2 to Step 3, $\Delta R^2 = .02$, $F(1, 46) = 1.42$, $p = .24$. From Step 3 to Step 4, $\Delta R^2 = .07$, $F(1, 45) = 4.71$, $p = .04$.
†$p < .10$. *$p < .05$. **$p < .01$.

Table 6

Study 5: Summary of the Hierarchical Regression Analysis for Variables Predicting Change in Diastolic Blood Pressure (N=52)

Variable	*B*	*SE B*	β
Step 1			
Condition	-.97	1.89	-.07
Parasocial Attachment	.71	1.24	.08
Gender	3.42	2.13	.23
Step 2			
Condition	-4.31	3.62	-.32
Parasocial Attachment	-2.55	2.31	-.29
Gender	1.40	2.93	.09
Condition × Gender	4.32	4.23	.30
Attachment × Gender	4.45	2.73	.42
Step 3			
Condition	-4.24	3.61	-.31
Parasocial Attachment	-4.13	2.71	-.47
Gender	1.35	2.92	.09
Condition × Gender	4.11	4.22	.29
Attachment × Gender	4.83	2.74	.46†
Condition × Attachment	2.73	2.47	.21
Step 4			
Condition	-4.07	3.55	-.30
Parasocial Attachment	-7.84	3.48	-.88*
Gender	1.02	2.87	.07
Condition × Gender	4.07	4.14	.28
Attachment × Gender	9.63	3.96	.91*
Condition × Attachment	9.14	4.58	.71†
Condition × Attachment × Gender	-8.90	5.40	-.56

Note. For Step 1, $R^2 = .07$, $F(3, 48) = 1.13$, $p = .35$. From Step 1 to Step 2, $\Delta R^2 = .06$, $F(2, 46) = 1.69$, $p = .20$. From Step 2 to Step 3, $\Delta R^2 = .02$, $F(1, 45) = 1.22$, $p = .27$. From Step 3 to Step 4, $\Delta R^2 = .05$, $F(1, 44) = 2.72$, $p = .11$.
$^{\dagger}p < .10$. $^{*}p < .05$.

Table 7

Study 5: Summary of the Hierarchical Regression Analysis for Variables Predicting Change in Pulse Rate (N=53)

Variable	*B*	*SE B*	β
Step 1			
Condition	2.17	1.49	.20
Parasocial Attachment	-.74	.98	-.10
Gender	-2.94	1.65	-.24†
Step 2			
Condition	.34	2.83	.03
Parasocial Attachment	-1.78	1.83	-.25
Gender	-4.23	2.38	-.35†
Condition × Gender	2.49	3.34	.21
Attachment × Gender	1.45	2.17	.17
Step 3			
Condition	.36	2.84	.03
Parasocial Attachment	-.79	2.20	-.11
Gender	-4.20	2.39	-.34†
Condition × Gender	2.55	3.35	.22
Attachment × Gender	1.18	2.21	.14
Condition × Attachment	-1.66	2.01	-.16
Step 4			
Condition	.45	2.77	.04
Parasocial Attachment	2.59	2.83	.36
Gender	-3.90	2.34	-.32
Condition × Gender	2.35	3.28	.20
Attachment × Gender	-3.19	3.22	-.37
Condition × Attachment	-7.27	3.65	-.70†
Condition × Attachment × Gender	7.88	4.33	.60†

Note. For Step 1, $R^2 = .12$, $F(3, 49) = 2.15$, $p = .11$. From Step 1 to Step 2, $\Delta R^2 = .02$, $F(2, 47) = .47$, $p = .63$. From Step 2 to Step 3, $\Delta R^2 = .01$, $F(1, 46) = .68$, $p = .41$. From Step 3 to Step 4, $\Delta R^2 = .08$, $F(1, 45) = 3.31$, $p = .08$.

†$p < .10$.

Table 8

Study 5: Summary of the Hierarchical Regression Analysis for Variables Predicting Number of Errors on the Mental Arithmetic Task (N=49)

Variable	*B*	*SE B*	β
Step 1			
Condition	-.75	1.40	-.08
Parasocial Attachment	1.51	.94	.23
Gender	-1.25	1.54	-.12
Step 2			
Condition	.62	2.68	.06
Parasocial Attachment	1.42	1.71	.22
Gender	-.31	2.18	-.03
Condition × Gender	-1.94	3.17	-.19
Attachment × Gender	.21	2.07	.03
Step 3			
Condition	.62	2.71	.06
Parasocial Attachment	1.34	2.07	.20
Gender	-.32	2.21	-.03
Condition × Gender	-1.94	3.21	-.18
Attachment × Gender	.22	2.10	.03
Condition × Attachment	.14	1.96	.02
Step 4			
Condition	.64	2.74	.07
Parasocial Attachment	1.06	2.69	.16
Gender	-.33	2.24	-.03
Condition × Gender	-1.96	3.25	-.19
Attachment × Gender	.60	3.16	.08
Condition × Attachment	.62	3.54	.07
Condition × Attachment × Gender	-.70	4.27	-.06

Note. For Step 1, $R^2 = .07$, $F(3, 45) = 1.17$, $p = .33$. From Step 1 to Step 2, $\Delta R^2 = .01$, $F(2, 43) = .01$, $p = .82$. From Step 2 to Step 3, $\Delta R^2 < .001$, $F(1, 42) = .01$, $p = .95$. From Step 3 to Step 4, $\Delta R^2 = .001$, $F(1, 41) = .03$, $p = .87$.
No predictors approached significance at $p < .05$.

Figure 1.

Study 2: Number of words copied as a function of task type and prime condition.

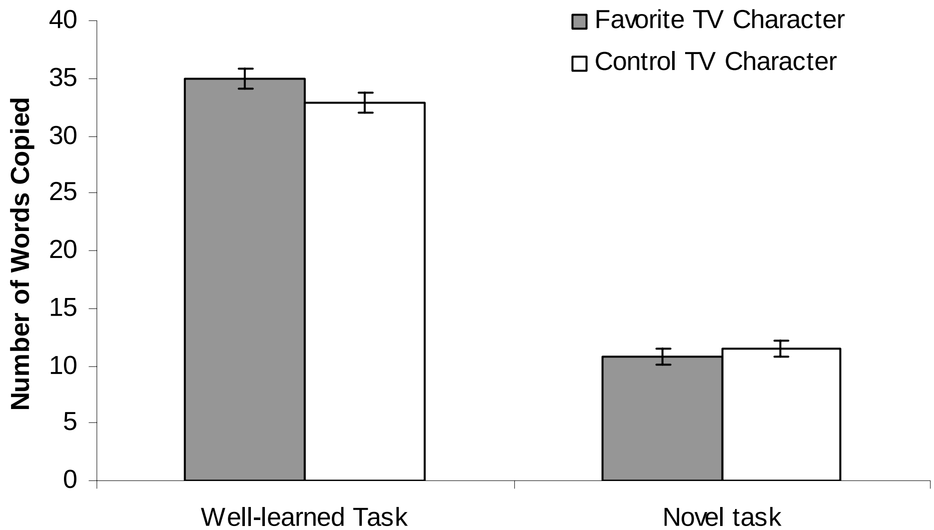


Figure 2.

Study 3: Self-reported desire to self-disclose as a function of parasocial attachment strength and prime condition.

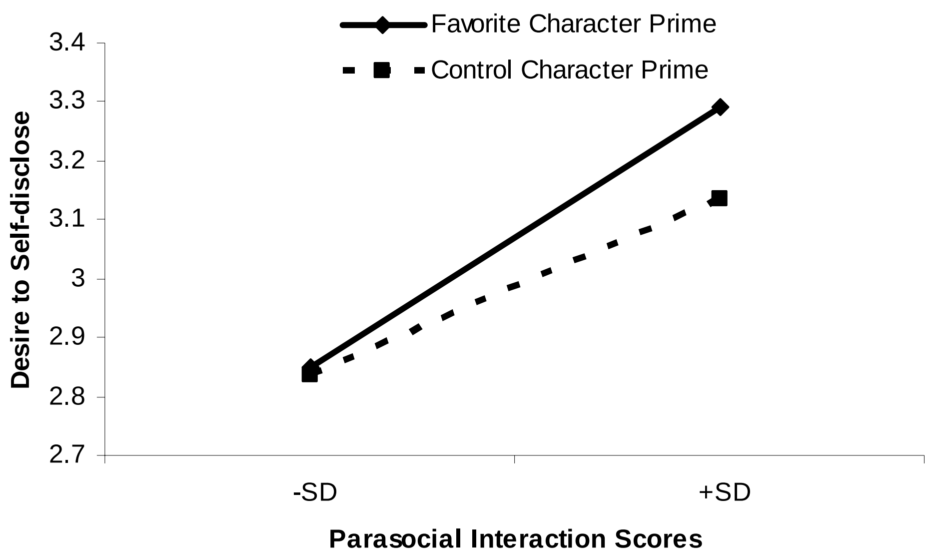


Figure 3.

Study 3: Self-reported empathy as a function of parasocial attachment strength and prime condition.

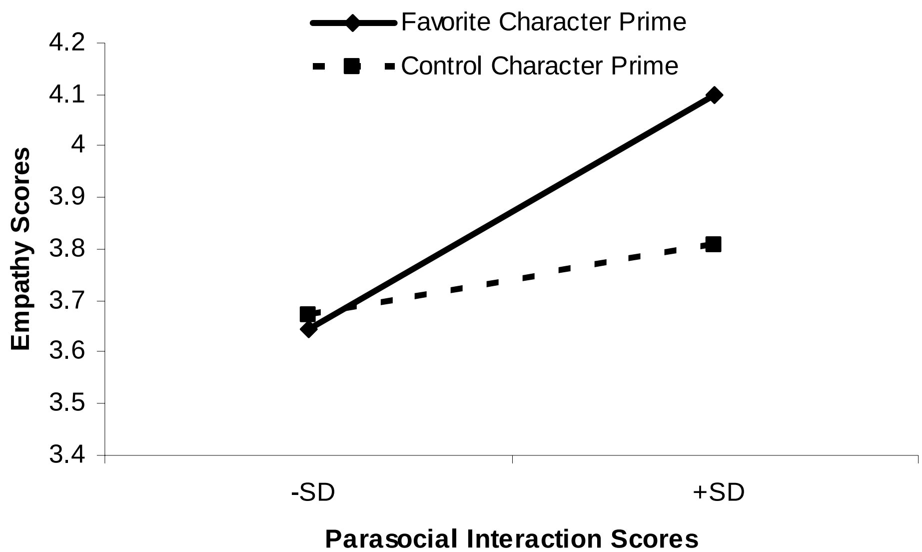


Figure 4.

Study 4: Change in test performance (post-test – pre-test) as a function of parasocial attachment strength and priming condition.

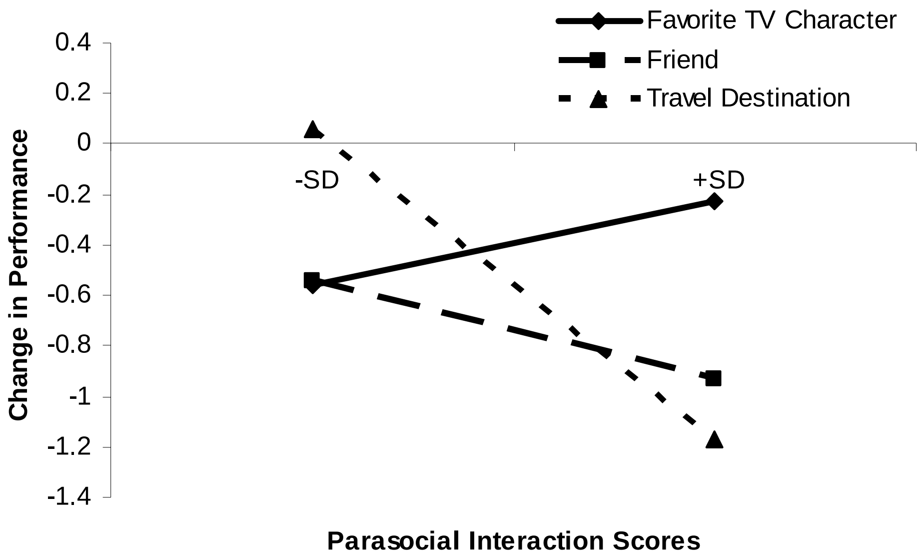
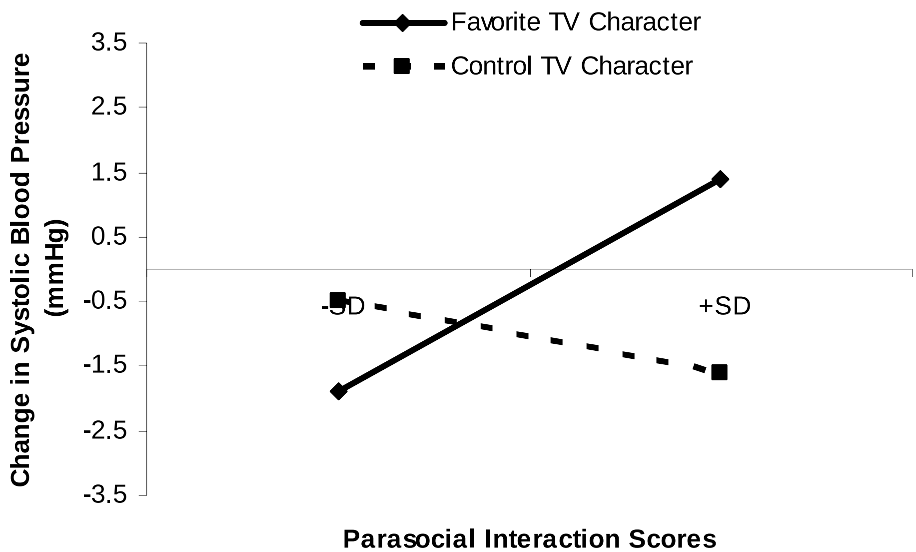
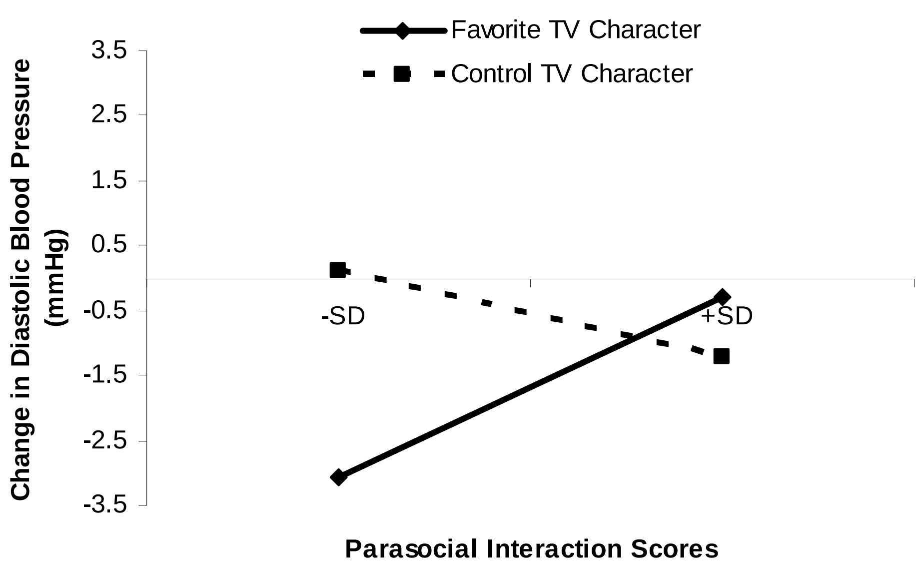
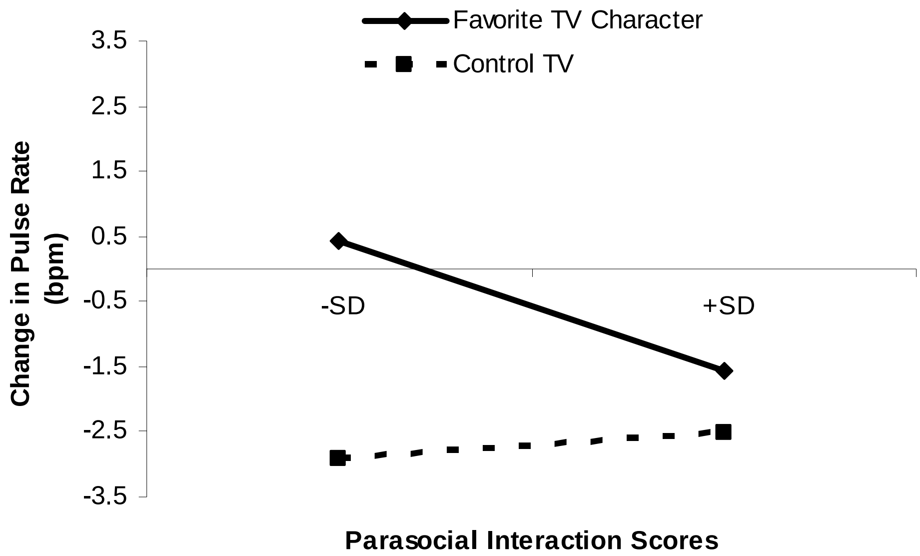


Figure 5.

Study 5: Change in systolic blood pressure, diastolic blood pressure, and pulse rate as a function of condition and parasocial attachment strength.



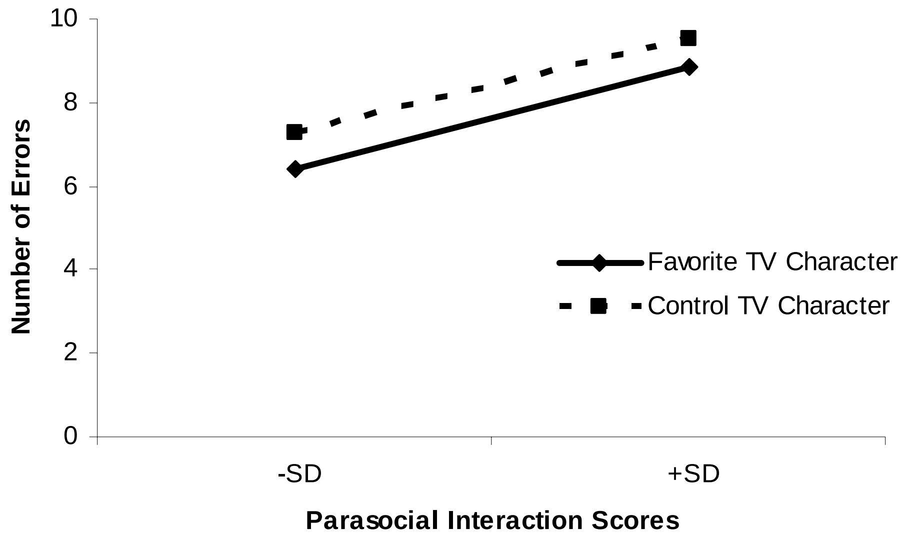




Favorite TV Character
Control TV
3.5
2.5
1.5
0.5
-0.5
-1.5
-2.5
-3.5
Change in Pulse Rate (bpm)
-SD
+SD
Parasocial Interaction Scores

Figure 6.

Study 5: Number of errors on the mental arithmetic task as a function of condition and parasocial attachment strength.



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Appendix A

Revised Parasocial Interaction Scale (Rubin et al., 1985)

Who is your favorite television character? ____

Please answer the following questions pertaining to your favorite TV character stated above. Write the appropriate scale item in the blank at the end of each statement.

1 = strongly disagree
2 = somewhat disagree
3 = neutral
4 = somewhat agree
5 = strongly agree

1. I think my favorite TV character is like an old friend.
2. I am not satisfied when other characters replace or overshadow my favorite TV character.
3. My favorite TV character makes me feel comfortable, as if I am with friends.
4. I would like to meet my favorite TV character in person.
5. My favorite TV character seems to understand the things I know.
6. I like hearing the voice of my favorite TV character in my home.
7. When my favorite TV character shows me how he or she feels about some issue, it helps me to make up my own mind about the issue.
8. I look forward to watching my favorite TV character's show.
9. I like to compare my ideas with what my favorite TV character says.
10. My favorite TV character keeps me company when his or her program is on television.
11. I see my favorite TV character as a natural, down-to-earth person.
12. When I'm watching the program my favorite TV character is on, I feel as if I am part of the group.
13. If there were a story about my favorite TV character in a newspaper or magazine, I would read it.
14. I miss seeing my favorite TV character when his or her program is not on.