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Explaining the Impact of Attachment Style on Evaluations of Supportive Messages: A Dual-Process Framework

Graham D. Bodie[1], Brant R. Burleson[2], Jennifer Gill-Rosier[2], Jennifer D. McCullough[3], Amanda J. Holmstrom[4], Jessica J. Rack[2], Lisa Hanasono[2], and Jerilyn Mincy[2]

Abstract

This article reports tests of hypotheses derived from a theory of supportive message outcomes that maintains that the effects of supportive messages are moderated by factors influencing the motivation and ability to process these messages. Participants ($N = 331$) completed measures of attachment style, which provided individual-level assessments of processing motivation, and responded to either a mildly or moderately severe problem, which manipulated situational motivation. They subsequently evaluated the helpfulness of comforting messages that varied in person centeredness and were attributed to either an acquaintance or a close friend. Although message evaluations were strongly influenced by person centeredness, this effect, as expected, was also moderated by attachment style and problem severity. Results are discussed in terms of the dual-process theory of supportive message outcomes.

Social support can powerfully affect the feelings, coping, relationships, and even health of recipients (for reviews, see Goldsmith, 2004; Uchino, 2004; Wills & Fegan, 2001). Unfortunately, not all support efforts are experienced as helpful (Dunkel-Schetter, Blasband,

[1]The Louisiana State University, Baton Rouge
[2]Purdue University, West Lafayette, IN
[3]Saginaw Valley State University, University Center, MI
[4]Michigan State University, East Lansing

Corresponding Author:
Graham D. Bodie, The Louisiana State University, 136 Coates Hall, Baton Rouge, LA 70803
Email: gbodie@lsu.edu

Feinstein, & Herbert, 1992; Lehman & Hemphill, 1990), and some support attempts can cause more harm than good (e.g., Ingram, Jones, Fass, Neidig, & Song, 1999). The quality of supportive messages is a major reason for this; high-quality emotional support—the "expression of care, concern, affection, and interest, especially during times of stress or upset" (Burleson, 2003, p. 552)—is consistently connected to positive outcomes. There is, however, growing evidence that the effect of message quality on various outcomes is moderated by a host of demographic, personality, cognitive, and situational factors (for review, see Bodie & Burleson, 2008).

One factor influencing the outcomes of supportive messages is an individual's attachment style or orientation (Bachman & Bippus, 2005; Jones, 2005; Lemieux & Tighe, 2004). Individual differences in attachment shape how individuals react to and interpret relational intimacy and behaviors enacted by close others (Bellow, Brandau-Brown, & Ragsdale, 2008; Collins & Feeney, 2004a). Whereas some individuals perceive close relationships as safe havens for support and comfort, others are less comfortable relying on relational partners and tend to worry whether others will be available when needed. Several studies document that individuals who are more "secure" in their relationships (i.e., are confident that others will be there when needed and are comfortable depending on others) report receiving more and better social support than their less secure counterparts (for review, see Mikulincer & Shaver, 2007, 2009). Studies also find that attachment orientations predict responses to particular types of supportive messages; for example, individuals with more secure attachment styles rate low-quality messages as worse than their insecurely attached counterparts (e.g., Jones, 2005).

Research investigating the role of attachment in responses to supportive messages has not yet given attention to when and why attachment style influences supportive message outcomes; rather, most extant research has only speculated about what people with particular attachment styles are likely to "expect" or "desire" (Jones, 2005; Lemieux & Tighe, 2004). Understanding the conditions that activate the use of attachment orientations when receiving supportive messages, as well as situating these effects under a conceptual framework, should have both theoretical and practical benefits. Theoretically, attachment orientation is one of many variables shown to moderate the effects of supportive messages on their outcomes; when and why these variables have additive and interactive influences on supportive message effects constitutes a puzzle that needs solving. From a practical standpoint, understanding the role of attachment in the comforting process may facilitate the development of more nuanced recommendations for individuals faced with comforting distressed others who have particular attachment orientations. Overall, a set of unified recommendations stemming from a coherent framework should provide a basis for better practice.

We suggest that individual differences in attachment orientation reflect underlying differences in how people are likely to process the supportive messages they receive. The next section outlines the framework of a recently developed dual-process theory of supportive message outcomes and then uses this framework to generate hypotheses about when and why different aspects of the situation and recipient, including attachment style, will differentially impact responses to supportive messages.

A Dual-Process Theory of Supportive Message Outcomes: Brief Overview and Current Focus

Dual-process models of message processing and effects postulate that (a) multiple factors influence the amount of scrutiny or thought that people give to the messages they receive on particular occasions, (b) the effects of messages vary as a function of the extent of processing by recipients, with message content having the strongest effect on outcomes when messages are extensively scrutinized, and (c) when message content receives little scrutiny, other factors (such as cognitive heuristics tied to certain environmental cues) may substantially influence recipient outcomes (Chaiken & Trope, 1999). Although these models are most familiar to communication scholars in the context of persuasion (e.g., Chaiken, 1980; Petty & Cacioppo, 1986),[1] their success with persuasion and attitude change suggests the potential of this approach for explaining the processing and effects of other types of functional communication. Bodie and Burleson (2008) recently proposed that a dual-process approach to the outcomes of supportive communication can help to explain (a) the effects of various moderating variables (message, source, receiver, and contextual factors) on recipient responses to supportive messages (e.g., message evaluations, changes in affect, coping, and behavior) and (b) differences in the persistence or endurance of changes in affect and coping stimulated by supportive communication.

Although the general dual-process framework broadly implies that aspects of supportive interactions may influence various outcomes, dual-process models developed in the realm of persuasion do not directly translate to the social support context. Indeed, dual-process models of persuasion tell us little about (a) which variables should have effects in a supportive context, (b) the operative mechanisms underlying affect change, (c) when people are likely to think a little or a lot about *supportive* message content, and (d) the outcomes important in a supportive context. Dual-process models developed in the domain of persuasion do, however, hold implications for theorizing about message processing in other contexts because they highlight important general features about how people work on information as they make relevant decisions and judgments.

Extending the logic of the dual-process framework to explain supportive message processing, factors moderating the effects of support messages should do so either by (a) influencing the ability and/or the motivation to elaborate on message content or (b) serving as cues that activate the use of low-cognitive effort decisional mechanisms (Bodie & Burleson, 2008; Burleson, 2009). In other words, supportive messages should vary in their effects as a function of how they (and accompanying elements of the situation) are processed by recipients. Thus, the effects of supportive messages are hypothesized to be a *joint function* of message quality and message processing. Specifically, the differences between the effects generated by better and worse supportive messages should increase in magnitude as these messages receive greater scrutiny from recipients. In contrast, when messages receive minimal scrutiny, message quality should have less of an effect on relevant outcomes; if message content is to make a difference, it must be noticed and processed by recipients.

One feature of supportive message content that regularly influences outcomes is verbal person centeredness (VPC). VPC is the extent to which messages explicitly acknowledge, elaborate, legitimize, and contextualize the feelings and perspective of a distressed other (Burleson, 1994). Thus, messages that exhibit low person centeredness (LPC) deny the other's feelings and perspective by criticizing or challenging their legitimacy, or by telling the other how he or she *should* act and feel. Moderately person-centered (MPC) comforting messages afford an implicit recognition of the other's feelings by attempting to distract the other's attention from the troubling situation, offering expressions of sympathy and condolence, or presenting explanations of the situation that are intended to reduce the other's distress. Highly person-centered (HPC) comforting messages explicitly recognize and legitimize the other's feelings by helping the other to articulate those feelings, elaborate reasons why those feelings might be felt, and explore how those feelings fit within a broader context.

Substantial research indicates that HPC comforting messages are evaluated more positively and have more positive outcomes than do either MPC or LPC comforting messages (Burleson et al., 2005); however, growing evidence indicates that the effect of VPC is moderated by several factors that may influence the extent to which supportive messages are thoughtfully processed (for review, see Bodie & Burleson, 2008). Consistent with other dual-process models, the current theory suggests that recipients carefully scrutinize supportive messages only when they are *able* and *motivated* to do so. Although both the ability and motivation to process supportive messages appear to be influenced by several individual and situational factors, little research has directly examined how factors related to supportive message processing influence message outcomes.

One recent study (Study 3; Burleson, 2008) indicates that problem severity—the degree of stress generated by a problematic situation—moderates the impact of VPC on evaluations of message helpfulness. Specifically, Burleson (2008) found that VPC had a larger effect on message evaluations when recipients were experiencing relatively more stressful situations than when they were experiencing comparatively mild forms of stress. Moreover, helper sex had a stronger influence on message evaluations in the mild stress condition than the moderate stress condition, suggesting that helper sex may operate as a heuristic cue triggering inferences about the quality of supportive messages (i.e., "women are more sensitive helpers than men"). The present study extends this line of research by examining the effects of attachment style, proposing that attachment-related anxiety and avoidance influence the motivation to process supportive messages under particular conditions.

Dimensions of Attachment

Attachment theory is generally attributed to Bowlby (1969, 1973, 1980), who observed that infants separated from their primary caregiver displayed diverse emotional reactions (e.g., crying, searching). These attachment behaviors are considered adaptive responses to separation from the attachment figure (i.e., primary caregiver), who may offer a "safe haven" in times of distress. From this perspective, children begin to develop internal

working models about their primary caregivers based on the nature of the responses they receive from them during separation. These internal working models guide how individuals develop future relationships (Bretherton & Munholland, 1999) and how they react to and interpret relational intimacy (Collins & Feeney, 2004a).

Applying the attachment behavioral system to adult romantic relationships, Hazan and Shaver (1987) described the emotional bond between adult romantic partners in terms of three categories: Individuals with a "secure" attachment style are comfortable with intimate relationships, enjoy becoming somewhat dependent on others, and do not often worry about abandonment. The "avoidant" style refers to difficulty in trusting other people and a general reluctance to get close. Finally, the "anxious/ambivalent" individual desires to be close with others but is apprehensive that others will not share this feeling.

Hazan and Shaver's (1987) assumption that patterns of attachment found in infants (i.e., a three-category structure) neatly translated to adult romantic relationships has not been fully supported empirically. Most current theorizing proposes two primary dimensions underlying adult attachment orientations (Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998), which have been confirmed in infant-parent relationships (Fraley & Spieker, 2003). One dimension is labeled *attachment-related anxiety* and references the extent to which individuals worry about the availability, sensitivity, and commitment of others. The second dimension is labeled *attachment-related avoidance* or how much individuals tend to rely on and open up to others, especially in times of distress. By crossing these two dimensions, individuals can be placed in one of four attachment styles or orientations (Bartholomew & Horowitz, 1991). *Secure* individuals are low in attachment anxiety and avoidance, whereas *fearful-avoidant* individuals are described as high on both dimensions. Individuals low in attachment anxiety but high in avoidance are classified as *dismissing-avoidant*, whereas individuals high in attachment anxiety but low in avoidance are classified as *preoccupied*.

Overall, attachment is thought to act as a relatively stable schema that "[influences] how new information is processed and construed" (Collins & Feeney, 2004a, p. 166). Thus, it is no surprise that attachment style influences responses to supportive messages (Herzberg et al., 1999; Larose, Moivin, & Doyle, 2001). Research shows that persons with a more secure attachment style report a desire to receive messages higher in person centeredness (Lemieux & Tighe, 2004). Other research reports that attachment style also influences the evaluation of messages that vary in person centeredness, with dismissive and preoccupied individuals evaluating LPC messages more positively than secures and fearful-avoidants (Jones, 2005). Although Jones (2005) did not find a difference in the evaluations of HPC or MPC messages, her study focused on individual message evaluations rather than patterns of discrimination between LPC, MPC, and HPC messages.

Petty and Wegener (1998) claimed that by varying the quality of experimental messages and assessing the size of the message quality effect on dependent variables, researchers can assess the extent to which those messages are cognitively processed (or elaborated on) by recipients; larger message effects signal more extensive processing. Thus, in research on supportive messages, larger effects for the factor of person centeredness (i.e., message quality) on evaluations of message helpfulness signal more extensive processing of those

messages. In line with others (e.g., Mikulincer & Shaver, 2009), we view attachment style as cognitively based schemata that have motivational consequences. Specifically, research suggests that a secure attachment style promotes greater attention to and processing of supportive interactions (i.e., it increases the motivation to attend to and process message content; see Miller, 2001). This logic leads to the hypothesis that individuals more comfortable with relational intimacy (low anxiety) and more comfortable relying on others in times of need (low avoidance) should be more motivated to process supportive messages intended to make them feel better in times of distress. Specifically,

> *Hypothesis 1 (H1):* VPC will exhibit a stronger linear effect on evaluations of message helpfulness for recipients low in attachment-related anxiety and avoidance than for recipients high in attachment-related anxiety and avoidance.

Research suggests that the attachment system is more prone to activation as stress increases. Thus, the influence of attachment orientation on coping efforts should be more apparent when people attempt to cope with situations that cause greater rather than lesser stress (Collins & Feeney, 2000; Feeney & Collins, 2001). In other words, as the severity of a given problem increases so too should attachment-related differences in responses to supportive messages. No studies to date have investigated whether the influence of attachment on responses to supportive messages systematically differ based on the severity of the problem being experienced. Jones (2005) used three situations likely to generate a high degree of stress (being rejected for a prestigious scholarship, parental divorce, and relationship dissolution). Similarly, although Lemieux and Tighe (2004) used two situations that varied in their degree of discomfort, they do not report whether discomfort moderated the relationship between attachment and support message preference. Thus, we hypothesize the following:

> *Hypothesis 2 (H2):* Problem severity will moderate the influence of attachment-related anxiety and avoidance on evaluations of message helpfulness such that anxiety and avoidance will more strongly affect supportive message evaluations under moderate than under mild stress.

Of course, supportive messages are generated by individuals with particular characteristics, and these characteristics have been shown to moderate the impact of supportive messages on their outcomes (for review, see Bodie & Burleson, 2008). When stressed, people report receiving a variety of support attempts from friends, family, and strangers (e.g., Dakof & Taylor, 1990). Different qualities of these support providers (e.g., sex, relationship status) not directly tied to support message quality should influence relevant outcomes more when motivation and/or ability to process is low (i.e., when stress is low rather than high) than when motivation and/or ability is high.

One cue particularly relevant to attachment is the degree of relational closeness between a support provider and recipient. Numerous studies show greater satisfaction with support efforts provided by those the recipient regards as particularly intimate or close (Clark et al.,

1998; Cutrona, Cohen, & Igram, 1990; Dakof & Taylor, 1990; Frazier, Tix, & Barnett, 2003; Hobfoll, Nadler, & Leiberman, 1986). As Pierce, Sarason, and Sarason (1991) suggested, these results may stem from the fact that individuals "develop sets of expectations about the availability of social support for each of their specific significant relationships" (p. 1028). Thus, relationship status may function as an environmental cue associated with a decisional heuristic for processing messages in support situations (e.g., "close friends provide helpful support in times of need"). Indeed, Fincham, Garnier, Gano-Phillips, and Osborne (1995) demonstrated that, when the status of a relationship is easily accessible from memory, this cue exerts a stronger influence on responses to supportive behavior than when it is less accessible from memory. Because people should be less motivated to process the content of supportive messages when confronting a mild stressor than a moderate stressor, we propose that relationship status should impact responses to supportive messages to a greater degree when people experience a mild as opposed to a moderate stressor.

> *Hypothesis 3 (H3):* Problem severity will moderate the effect of helper closeness on message evaluations such that (a) individuals exposed to a mildly severe problem will evaluate comforting messages attributed to a close friend more positively than messages attributed to a distant acquaintance, whereas (b) participants exposed to a moderately severe problem will not differentially evaluate comforting messages as a function of helper closeness.

Expectations about supportiveness from others are likely to stem from an individual's primary attachment orientation. Overall, secures (low anxiety, low avoidance) report higher expectations that close relational others are available and will provide needed support (Mikulincer & Shaver, 2007). Thus, secures may rely more heavily on a closeness heuristic when confronting a mild stressor than their insecure counterparts; insecure individuals may not believe that close others are responsible (high anxiety) and/or may not be comfortable relying on others for support (high avoidance) and should, therefore, not differentiate among relationship status when evaluating support attempts under mild stress. If this logic stands, message evaluations by secures (low avoidance, low anxiety) should be more influenced by relational closeness under mild stress conditions than the evaluations of their insecure counterparts, who may be less likely to differentially attribute the potential for support to different types of relationship partners. Thus,

> *Hypothesis 4 (H4):* The interaction between problem severity and relational status on message evaluations should be stronger for individuals low in attachment-related anxiety and avoidance than for those high in these dimensions.

Method

Participants

Participants included 331 college students attending a large Midwestern university (64% female, 75.9% White, 73.5% advanced class status, mean age = 20 years, 2 months).[2] Most

participants were majoring in liberal arts, consumer and family sciences, or education (59.8%) with science, engineering, technology, and agriculture majors representing 28.7%, business majors representing 7.6%, and health sciences and veterinary medicine majors representing less than 1% each.

Procedures

Participants were asked to imagine they were experiencing one of 12 scenarios, each of which involved an upsetting circumstance. The scenarios consisted of six problem situations, each of which was manipulated to create a mildly severe version (e.g., receiving a US$20 parking ticket) and a moderately severe version (e.g., getting one's car booted and having to pay US$350 in fines and fees to get the car released). Participants were then asked to imagine they ran into a peer helper (either a recent acquaintance or a close friend) with whom they discussed the upsetting situation; they subsequently read six different messages this helper might use that varied in level of person centeredness (two instances each of low, moderate, and high).[3]

Message evaluation. After reading each message, participants rated it on several 5-point semantic-differential scales. A series of principle-axis factor analyses with oblique rotation revealed a coherent index for message helpfulness consisting of three items: "helpful-unhelpful," "appropriate-inappropriate," and "effective-ineffective." Cronbach's alpha for the message evaluation index across situations and messages ranged from .76 to .90. Thus, our index for message evaluation was computed by averaging the scores for the three items for each level of person centeredness. A series of paired samples t tests confirmed that the LPC messages ($M = 2.27$, $SD = .91$) were perceived as less helpful than MPC messages ($M = 2.90$, $SD = .78$), $t(327) = 11.30$, $p < .001$, $r^2 = .23$, or HPC messages ($M = 3.94$, $SD = .65$), $t(327) = 25.95$, $p < .001$, $r^2 = .53$; MPC and HPC messages also differed from each other in the expected direction, $t(327) = 18.15$, $p < .001$, $r^2 = .34$.

Attachment dimensions. Participants completed the Experiences in Close Relationships (ECR) Inventory (Brennan et al., 1998), a 36-item self-report measure designed to assess two underlying dimensions of attachment—anxiety (18 items) and avoidance (18 items). Instructions had respondents consider how they "generally experienced relationships" when reading the items and then respond to each item using a 5-point scale ranging from *not at all* to *very much*. This measure allows for both dimensional and categorical examinations of attachment orientations, a feature that led us to use this measure over others available (e.g., Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987). Both scales exhibited excellent reliability ($\alpha_{anxiety} = .91$, $\alpha_{avoidance} = .90$).[4] The two dimensions were statistically independent, $r = -.02$, $p = .68$.

Manipulation checks. Validity of the experimental manipulations (i.e., problem severity and relationship closeness) was assessed by asking participants to respond to several 5-point items that concerned the support situation and putative helper. To measure problem severity, participants answered three questions that assessed the seriousness of the situation (1 = *not at all serious* to 5 = *very serious*), the severity of the situation (1 = *not at all severe* to 5 = *very severe*), and how upsetting the situation would be for them (1 = *not at all*

upsetting to 5 = *very upsetting*). This scale had adequate reliability (α = .87), and the three items were averaged to form an index of anticipated emotional upset. A 2 (problem severity: mild vs. moderate) × 6 (problem situation) mixed-model ANOVA was conducted to assess the validity of the severity manipulation; problem severity was treated as a fixed effect, problem situation was treated as a random effect, and the dependent variable was anticipated emotional upset. The ANOVA detected significant effects for problem severity, $F(1, 5) = 46.02$, $p < .001$, $\eta^2 = .81$, partial $\eta^2 = .90$, and the Severity × Situation interaction, $F(5, 319) = 5.53$, $p < .001$, $\eta^2 = .08$, partial $\eta^2 = .08$; the main effect for problem situation was not significant, $F(5, 5) = 2.51$, $p > .15$. Decomposition of the interaction with t tests indicated that, for all six situations, the moderately severe version of the problem situation generated significantly greater anticipated upset than the mildly severe version; however, the magnitude of this difference varied somewhat across the problem situations (see Table 1).Thus, the manipulation of problem severity was deemed successful.[5]

To measure relationship status (close friend vs. recent acquaintance), participants were asked "How much of a friend would you consider your close friend/recent acquaintance?" (1 = *distant acquaintance* to 5 = *best friend*), "How close are you to your close friend/recent acquaintance?" (1 = *not at all close* to 5 = *very close*), and "How strong is your relationship with your close friend/recent acquaintance?" (1 = *very weak* to 5 = *very strong*). The resultant three-item scale achieved excellent reliability (α = .93); higher scores mean that the respondent felt the relationship with the imagined other was closer. A 2 (relationship status: recent acquaintance vs. close friend) × 6 (problem situation) mixed-model ANOVA was conducted to assess the validity of the relationship closeness manipulation; relationship type was treated as a fixed effect, problem situation was treated as a random effect, and the dependent variable was relationship closeness. The ANOVA detected a significant effect for relationship type, $F(1, 5) = 1,325.40$, $p < .001$, $\eta^2 = .83$, partial $\eta^2 = .99$; the main effect for situation was marginally significant, $F(5, 5) = 4.19$, $p = .07$, $\eta^2 = .01$, partial $\eta^2 = .81$, and the Type × Situation interaction, $F(5, 315) = .20$, $p = .96$, did not achieve a conventional level of statistical significance. Results from a series of t tests presented in Table 2 supports the successful manipulation of relationship closeness.

Results

ANOVA techniques were utilized in evaluating H1, H3, and H4; in these analyses, attachment-related avoidance (low vs. high), attachment-related anxiety (low vs. high), problem severity (mild vs. moderate), and relational closeness (friend vs. acquaintance) served as two-level between-groups factors and message person centeredness served as a three-level repeated measure (low vs. moderate vs. high); the dependent measure was evaluation of message helpfulness. Given our sample size and positing that α = .05, power for tests of the between-groups factors was .60 for small effects ($f = .10$) and in excess of .99 for medium effects ($f = .25$) and large effects ($f = .40$). For tests of the repeated factor, power was .98 for small effects and in excess of .99 for medium and large effects. For tests of interactions between the between-groups and repeated factors, power was .93 for small effects and in excess of .99 for medium and large effects. H2 was evaluated with correlational methods;

Table 1. Means and Standard Deviations for Anticipated Emotional Upset of Mildly and Moderately Severe Versions of Six Problem Situations

Problem Situation	Severity Level	Mean Upset	SD	t	p
Test	Mild	1.98	.69		
	Moderate	4.16	.75	11.01	.001
Romance	Mild	2.58	.89		
	Moderate	4.13	.66	7.30	.001
Roommate	Mild	3.21	.92		
	Moderate	4.36	.76	5.17	.001
Scholarship	Mild	3.62	.59		
	Moderate	4.40	.64	4.78	.001
Job loss	Mild	2.68	.71		
	Moderate	3.78	.70	5.72	.001
Car	Mild	2.56	.95		
	Moderate	3.75	.70	5.31	.001

for this analysis, power was .57 for small effects ($r = .10$) and in excess of .99 for medium effects ($r = .30$) and large effects ($r = .50$).

H1 predicted that VPC would have a stronger linear effect on evaluations of message helpfulness for recipients low in attachment-related anxiety and avoidance than recipients high in these dimensions. To facilitate the evaluation of H1, we constructed a median split on the anxiety and avoidance variables. Participants scoring 2.67 or above on anxiety were considered to exhibit high anxiety (46.6%), whereas those scoring 2.66 or below on anxiety were considered low in anxiety (49.1%). Participants scoring 2.41 or above on avoidance were considered to exhibit high avoidance (49.1%), whereas those scoring 2.40 or below on avoidance were considered low in avoidance (46.6%).[6]

To test H1, a 2 (attachment anxiety) × 2 (attachment avoidance) × 3 (message person centeredness level) ANOVA utilizing trend analysis (polynomial regression) was conducted. Attachment-related avoidance interacted marginally with the linear trend for message person centeredness on evaluations of message helpfulness, $F(1, 299) = 3.14$, $p = .078$, partial $\eta^2 = .01$. This interaction was decomposed by examining the linear trend for message person centeredness at each level of avoidance. As predicted, the linear trend for message person centeredness was stronger for participants low in avoidance, $F(1, 160) = 398.86$, $p < .001$, $\eta^2 = .714$, than for participants high in avoidance, $F(1, 152) = 260.89$, $p < .001$, $\eta^2 = .632$. Subsidiary analyses indicated that, as anticipated, those low in avoidance viewed LPC messages as less helpful ($M = 2.16$, $SD = 0.90$) than those high in avoidance ($M = 2.35$, $SD = 0.91$), $t(312) = 1.81$, $p < .05$, $r^2 = .01$ (one-tailed test). Similarly, those low in avoidance viewed MPC messages as less helpful ($M = 2.77$, $SD = 0.80$) than those high in avoidance ($M = 3.01$, $SD = 0.74$), $t(312) = 2.66$, $p < .01$, $r^2 = .02$. Evaluations of HPC messages did not differ by those low in avoidance ($M = 3.96$, $SD = 0.64$) and high in avoidance ($M = 3.93$, $SD = 0.67$), $t(312) = 0.47$, $p > .60$. Neither was there a significant interaction between anxiety and VPC, $F(1, 299) = 1.24$, $p = .27$, nor was there a significant

Table 2. Means and Standard Deviations for Relational Closeness of a Close Friend and Recent Acquaintance of Six Problem Situations

Problem Situation	Relational Closeness	Mean Upset	SD	t	p
Test	Acquaintance	2.73	1.00		
	Friend	4.27	0.83	6.04	.001
Romance	Acquaintance	2.54	1.03		
	Friend	4.19	0.79	6.56	.001
Roommate	Acquaintance	2.79	0.86		
	Friend	4.17	0.71	6.65	.001
Scholarship	Acquaintance	2.79	0.83		
	Friend	4.15	0.82	6.12	.001
Job loss	Acquaintance	3.08	0.69		
	Friend	4.46	0.58	8.05	.001
Car	Acquaintance	2.75	1.08		
	Friend	4.30	1.25	5.85	.001

three-way interaction between anxiety, avoidance, and VPC, $F(1, 299) = 0.03$, $p = .87$. These results indicate that participants low in attachment-related avoidance discriminated more sharply among better and worse comforting messages than did participants high in avoidance; anxiety did not contribute to differential message discrimination.

Correlational analyses were utilized to evaluate H2, which proposed that attachment-related anxiety and avoidance would be more strongly related to message evaluations under moderate rather than mild stress conditions. Table 3 shows the correlations between the two attachment dimensions and ratings of message helpfulness for each level of problem severity (mild, moderate). Z tests were used to assess whether the magnitudes of the correlations between message evaluations and the attachment dimensions differed in the predicted fashion as a result of different levels of problem severity.

As shown in Table 3, the magnitude of the associations between attachment-related anxiety and evaluations of both LPC messages and MPC messages was, as predicted, significantly greater for participants confronting moderately severe problems than for participants confronting mildly severe problems. No other comparisons were significantly different, though it should be noted that the association between attachment-related avoidance and evaluations of MPC messages was statistically significant for those confronting a moderately severe problem but not for those confronting a mildly severe problem. These results provide partial support for H2.

H3 predicted that relationship status would more strongly influence message evaluations for mildly stressful situations than for moderately stressful situations. To test this hypothesis, we conducted planned comparisons evaluating the two-way interaction between VPC and relational closeness for participants confronting mildly versus moderately severe problems. In the mildly stressful condition, there was a marginally significant interaction between VPC and relationship status, $F(2, 330) = 2.51$, $p < .09$, $\eta^2 = .02$. Decomposition of this interaction shows that people dealing with the mild problem

Table 3. Correlations Between Attachment Dimensions and Message Evaluations, as Moderated by Problem Severity

Level of Message Person Centeredness	Attachment Anxiety				Attachment Avoidance			
	Mild Problem Severity	Moderate Problem Severity	z	p	Mild Problem Severity	Moderate Problem Severity	z	p
Low	.05	−.16*	1.90	.05	.08	.07	0.13	ns
Moderate	−.01	−.19**	1.81	.05	.09	.18*	0.83	ns
High	.08	.08	0.05	ns	.02	−.01	0.34	ns

Note: For mild problem severity, $n = 166$. For moderate problem severity, $n = 161$.
*$p < .05$. **$p < .01$.

evaluated HPC messages attributed to friends as significantly better than HPC messages attributed to acquaintances (see Table 4). As seen in Table 4, friends and acquaintances were seen as similarly helpful when producing LPC and MPC messages under mildly severe problem situations. The two-way interaction between VPC and relationship status was not statistically significant for participants exposed to moderately stressful situations, $F(2, 218) = 0.45$, $p = .64$.

H4 predicted that individuals with a low level of situational motivation (mild problem severity) and who were low on attachment-related anxiety and avoidance (comfortable relying on others and seeing others as responsive and receptive) would be more likely to rely on relational status as a cue when they evaluated supportive messages. To test this hypothesis, we conducted planned comparisons evaluating the effect of relationship status for participants confronting mildly versus moderately severe problems; these comparisons were performed separately for individuals high and low in attachment-related anxiety and high and low in attachment-related avoidance. Results indicated that there were no differences in message evaluations as a function of relationship status at any level of problem severity or attachment dimensions (all ps > .05). H4 was, therefore, not supported.

Discussion

The present study sought to discover (a) when and why attachment style influences evaluations of comforting messages that vary in person centeredness and (b) when people with particular attachment styles are more and less likely to attend to peripheral features of the support context when making message-related judgments. In pursuit of these objectives, we utilized a recently developed dual-process theory of supportive message outcomes that predicts that message content will have stronger effects on outcomes when recipients have the motivation and ability to attend to particular message features; when motivation and ability are low the theory predicts that peripheral aspects of the supportive interaction (i.e., cues) will have a stronger impact on outcomes.

Table 4. Message Evaluations as Moderated by Problem Severity and Relationship Status

Level of Message Person Centeredness	Mild Problem Severity				Moderate Problem Severity			
	Friend	Acquaintance	t	R^2	Friend	Acquaintance	t	R^2
Low	2.34 (.93)	2.37 (.93)	0.22	—	2.17 (.86)	2.18 (.93)	0.05	—
Moderate	2.94 (.67)	3.08 (.75)	1.27	—	2.70 (.86)	2.86 (.78)	1.23	—
High	4.05 (.64)	3.82 (.77)	2.12*	.03	3.93 (.61)	3.99 (.57)	0.63	—

Note: Means reported with standard deviations in parentheses. For mild problem severity, $n = 166$. For moderate problem severity, $n = 161$. All other p values were above .21.
*$p < .05$. **$p < .01$.

Much work on supportive message evaluation has focused on only one or a small subset of individual or psychological factors, explaining results in a largely post hoc fashion rather than investigating how these variables may work in similar ways to affect outcomes (e.g., compare Goldsmith, 2004; Reis & Collins, 2000; Uchino, 2004). The present study proposed attachment orientation as one individual difference affecting the motivation to process the content of supportive messages; this proposal situates attachment style in a comprehensive framework that can help to remedy the fragmentary nature of the literature on moderators of supportive message effects.

Evidence for our contention that attachment style influences processing motivation was found in results relevant to H1; specifically, VPC showed a significantly stronger effect on message evaluations for individuals low in attachment-related avoidance than for highly avoidant individuals. Attachment-related avoidance refers to the tendency to rely on others in times of need. Although such reliance may take many forms, these results suggest that this reliance manifests itself, at least partially, in the heightened scrutiny of message content. That is, our results suggest that a disposition to seek others in times of need motivates individuals to attend to and process supportive messages. Perhaps past experience with receiving quality support during times of need fosters a sense that supportive messages are likely to provide helpful information; this positive view of others' support should, in turn, foster a heightened willingness to attend to and process supportive messages. This possibility should be explored further in future research.

Contrary to H1, however, attachment-related anxiety was unrelated to discrimination of message content. Perhaps our study failed to simulate a supportive context conducive to finding this effect. Attachment-related anxiety refers to a concern about the responsiveness of others. In this study, participants were asked to imagine interacting with another individual who was directly responsive. Thus, differences in message discrimination as the result of attachment-related anxiety may have been attenuated; when a helper actually provides support, attachment-related anxiety may become an irrelevant schema and thus does not affect the extent to which this support is given heightened scrutiny. Future research should explore this possibility.

Past research (Jones, 2005; Lemieux & Tighe, 2004) focusing on the relationship between attachment and supportive message evaluation has ignored the potential of problem severity to influence the activation of the attachment behavioral system. Thus, this study sought to explore the influence of attachment-related cognitions under different levels of stress. Our results suggest that differences in attachment-related anxiety and avoidance predispose certain individuals to more sharply discriminate among LPC and MPC messages (but not HPC messages) when stress is relatively high but not when stress is relatively low. Specifically, attachment-related anxiety was negatively related to evaluations of LPC messages when stress was moderate but unrelated when stress was mild; avoidance was unrelated under both mild and moderate stress. In other words, individuals unconcerned about the responsiveness of others who are exposed to relatively high stress (and therefore motivated to process incoming support information) appear to be less comforted by messages that fail to acknowledge feelings and perspectives.

Interpreting this result with respect to traditional attachment categories, individuals exposed to moderately severe stress and reporting secure and dismissive attachment styles perceive LPC messages as less helpful than preoccupied and fearful-avoidants who perceive LPC messages as more helpful. Our results with regard to LPC message evaluations, interpreted with respect to attachment categories, differ slightly from those found by Jones (2005) who found that dismissives and preoccupieds viewed LPC messages more favorably than did secures and fearfuls.[7] This difference could have resulted from the current study utilizing a different attachment measure than did Jones. Whereas Jones used a categorical measure, our measure was continuous and consisted of 18 statements for each underlying dimension. Perhaps, as suggested by Fraley and his colleagues (Fraley, 1999; Fraley & Spieker, 2003; Fraley & Waller, 1998), interpreting results in line with traditional attachment categories (e.g., secure, dismissive) may misrepresent the data. Instead, he suggests the advantages of interpreting data with respect to underlying dimensions of attachment anxiety and avoidance. Future research should seek to replicate these results so as to better establish whether there is a consistent effect for attachment cognitions on supportive message evaluations, and whether this pattern is best captured by dimensional or categorical measures of attachment.

Our results further suggest that attachment-related anxiety and avoidance both affect the evaluation of MPC messages under a moderate degree of stress; neither is related to MPC message evaluations under mild stress. The pattern of significant correlations found for H2 indicates that, when stress is moderate, anxiety is negatively related to MPC evaluations, whereas avoidance is positively related. Thus, the more avoidant and less anxious individuals are with respect to attachment, the more helpful they view MPC messages.[8] High avoidance coupled with low anxiety describes an individual who tends not to be comfortable depending on others while not being particularly concerned about the responsiveness and attentiveness of others (i.e., "I'm OK. You're not OK"). In other words, this pattern describes the typical "dismissive" versus "preoccupied" contrast, with the latter evaluating MPC messages more negatively than the former. This pattern is consistent with recipients who are (a) not highly anxious about whether their partner is there in times of need and (b) not reliant on others when stressed (i.e., dismissives) being (c) less motivated

to scrutinize supportive message content; in fact, dismissive individuals may be more prone to deactivate any systematic thinking with respect to messages, especially in times of stress. Comforting messages that are ambiguous in the degree of support they provide (i.e., MPC messages that implicitly acknowledge feelings or attempt to distract) may therefore be seen as relatively helpful because the low-anxious/high-avoidant recipient is not motivated to scrutinize its content (see also Collins & Feeney, 2004b).

Attachment-related differences in evaluations of supportive messages have important theoretical and practical implications. Theoretically, it appears that attachment operates as an individual difference motivating the scrutiny accorded to message content. It appears that message content is a more important component of supportive interactions for individuals who are low in attachment-related avoidance than for those high in avoidance. Studies assessing the relationship between attachment dimensions and appraisals of social support consistently find that avoidant individuals are more likely to perceive support from others as less helpful and available than individuals low in attachment-related avoidance (see Mikulincer & Shaver, 2007, 2009).

The dual-process theory of supportive message outcomes also proposed that relationship status (receiving support from a close friend vs. a distant acquaintance) would more strongly influence message evaluations under mild than under moderate stress. Results for H3 revealed that HPC messages from friends were evaluated more positively than those from acquaintances under mild than under moderate stress; there were no other statistically significant differences.

This particular pattern of results is in line with the additivity hypothesis of the heuristic-systematic model (HSM) of social information processing (Todorov, Chaiken, & Henderson, 2002). According to the HSM, "when the judgmental implications of heuristic cues and arguments are consistent, heuristic and systematic processing can have independent and additive effects on persuasion" (Todorov, Chaiken, & Henderson, 2002, p. 199). In the present study, the judgmental implications of friendship and HPC message content are both positive, so the positive implications of the relationship adds to the impact of the HPC message. In fact, the cell representing a close friend presenting an HPC message under mild stress is the only case where an additivity effect should be evident as the judgmental implications of MPC messages are ambiguous and those for LPC messages are negative; thus, a positive interpersonal relationship with the helper would not be expected to add to the effect of LPC and MPC messages. As shown in Table 4, and bolstering the case for additivity, mean message evaluation is highest in the cell that combines an HPC message from a friend when confronting a mildly severe problem. As an additivity effect was not proposed a priori, future research is needed to replicate this effect with a variety of heuristic cues and a variety of messages that are unambiguously and ambiguously supportive.

Results from H4 were not consistent with our prediction that the interaction between problem severity and relational status would be stronger for low anxious and avoidant individuals than for those high in these traits. Perhaps the especially strong message effect weakens the possibility of finding a strictly cue effect, especially given our use of the message perception paradigm (Burleson & MacGeorge, 2002). Obviously, there is a difference between reading a message and actually experiencing upset and interacting with helpers in

real situations, and cues may show stronger effects in real rather than hypothetical situations.

Overall, the effect sizes observed in the current study for all variables other than message person centeredness were small to moderate in magnitude. Although these effects are theoretically important for providing confirmation of most of our hypotheses, their practical significance may be questioned. It is not that VPC does not make a difference under low motivation as our results show that people still attend to message content. Of course, there is a difference between low and no motivation. Our study employed a relatively low motivation condition, and results suggest that recipients in this condition not only pay attention to message content but also attend to the peripheral cue of relationship status (H3). We suspect that having participants assume they had experienced one of several problematic hypothetical scenarios substantially attenuated the intensity of their affective experiences as well as their thinking about those experiences; naturally, the attenuation of affect and thought was likely most pronounced for the more severe problem situations. Clearly, the hypotheses assessed in the current study need to be explored in the context of research employing methods that situate participants in real and involving circumstances, and thus generate more intense levels of affect and thought.

Despite their generally small magnitude, the effects observed in the current study generally confirmed the predictions derived from the dual-process theory of supportive message outcomes (Bodie & Burleson, 2008). These results suggest that a comprehensive dual-process approach to supportive communication can be developed and has important insights for both theorists and practitioners.

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Notes

1. Although dual-process models have been used to explain the varied effects of person perception and emotion regulation, among other phenomena, they have not yet been fully extended to explain other social functions. A rather different effort to apply the logic of the dual-process approach to therapy and counseling was presented more than 20 years ago by Petty, Cacioppo, and Heesacker (1984). Little development or extension of this model has occurred in the intervening years (see Barone & Hutching, 1993).

2. After inspection of response patterns, data from three participants were deleted. Two participants decided to respond with all ones across all variables, whereas the third responded with a continual pattern of "ACDC." Thus, all analyses reported below include 328 participants.

3. Although message order was initially random, all participants responded to messages in the same order (moderately person centered [MPC]1, highly person centered [HPC]1, MPC2, low person centeredness [LPC]1, HPC2, LPC2). As we did not randomly order the presentation of messages, we cannot rule out the possibility of an order effect.

4. One item from the avoidance scale ("I try to avoid getting too close to romantic partners") was inadvertently left off of the questionnaire.

5. Given (a) the successful manipulation of problem severity across all six situations and (b) the focus of the present article on motivational factors that influence the processing and outcomes of supportive messages, no further analyses of the problem situation factor are reported in this article. Indeed, the potential effect of situational differences on any of the subsequently reported results is to increase the error variance associated with the test under question and, consequently, increase Type II error. Thus, our tests should be considered conservative.

6. Percentages do not add up to 100 because there were several missing values (anxiety, $n = 12$; avoidance, $n = 14$).

7. Jones (2005) does not report results for MPC messages; however, our results for HPC messages match those of Jones.

8. We also ran regression analyses for this data. Results were consistent with our correlations. In the interest of space, regression analyses can be obtained from the first author on request.

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Bios

Graham D. Bodie is an assistant professor of communication studies at The Louisiana State University.

Brant R. Burleson is a professor of communication in the Department of Communication at Purdue University.

Jennifer Gill-Rosier is a doctoral candidate at Purdue University.

Jennifer D. McCullough is an assistant professor of communication at Saginaw Valley State University.

Amanda J. Holmstrom is an assistant professor of communication studies at Michigan State University.

Jessica J. Rack is a doctoral candidate at Purdue University.

Lisa Hanasono is a doctoral candidate at Purdue University.

Jerilyn Mincy is a recent graduate of Purdue University.