

Fast track report

Scared saviors: Evidence that people high in attachment anxiety are more effective in alerting others to threat

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Abstract

Attachment-related anxiety has repeatedly been associated with poorer adjustment in various social, emotional, and behavioral domains. Building on social defense theory, we examined a possible advantage of having some group members who score high in attachment anxiety – a heightened tendency to deliver a warning message without delay. We led participants to believe that they accidentally activated a computer virus that erased an experimenter's computer. We then asked them to alert the department's computer technicians to the incident. On their way, they were presented with four decision points where they could choose either to delay their warning or to continue directly to the technicians' office. We found that anxious individuals were less willing to be delayed on their way to deliver a warning message. This result remained significant when attachment avoidance, extroversion, and neuroticism were statistically controlled. Results are discussed in relation to the possible adaptive functions of certain personality characteristics often viewed as undesirable. Copyright © 2012 John Wiley & Sons, Ltd.

One timely cry of warning can save nine of surprise. –
Joshua Thompson

Attachment theory (Bowlby, 1973, 1980, 1982) proposes that human beings possess an innate psychobiological system (the *attachment behavioral system*) that motivates them to seek proximity to significant others (*attachment figures*) when they need protection from threats. When attachment figures regularly respond sensitively to a person's needs, the person develops a sense of attachment security and acquires constructive strategies for coping with threats and regulating negative emotions. When a person's attachment figures are often unavailable, unreliable, or rejecting of bids for support, he or she may become chronically insecure with respect to close relationships. The main insecure attachment patterns in adulthood are *anxiety*, marked by extreme dependence and hyperarousal (called "hyperactivating" emotion-regulation strategies), and *avoidance*, marked by extreme independence, lack of intimacy, and self-disclosure ("deactivating" emotion-regulation strategies). These attachment orientations are relatively stable over time but can change through natural life experiences or effective psychotherapy (see Mikulincer & Shaver, 2007, for a review).

According to social defense theory (SDT; Ein-Dor, Mikulincer, Doron, & Shaver, 2010) – an extension of attachment theory – each of the major attachment orientations (secure, anxious, and avoidant) confers unique adaptive advantages that increase the *inclusive fitness* (see Hamilton, 1964) of members of groups. According to this view, groups comprising secure and insecure individuals (anxious and avoidant) with respect to attachment would have an adaptive advantage relative to more homogenous

groups with respect to attachment, particularly in times of threat. Specifically, when facing conditions of severe and acute stress, attachment-anxious people would detect potential problems and threats quickly and alert others to these problems (acting as sentinels); people who are avoidant with respect to attachment would act quickly to protect themselves without much deliberation, negotiation, or compromise; and secure people would attempt to collaborate with others to assure everyone's safety.

Research has supported these ideas, indicating for example that people scoring high on attachment anxiety have more rapid access to a sentinel-related schema (Ein-Dor, Mikulincer, & Shaver, 2011a) and are more likely to be the first to detect the presence of a threat (e.g., smoke; Ein-Dor et al., 2011a, Study 6; Ein-Dor, Mikulincer, & Shaver, 2011b). To date, however, research has not determined whether, upon detection of a threat, people scoring high on attachment anxiety tend to behave in the expected way, alerting others to the presence of the threat. In the study reported here, we examined this possibility using behavioral measures.

Attachment Theory and Research

Social and personality psychologists generally conceptualize adult attachment patterns as regions in a continuous two-dimensional space (e.g., Brennan, Clark, & Shaver, 1998). One dimension, attachment-related *anxiety*, reflects the extent to which a person worries that others will not be available or helpful in times of need. Anxious individuals exaggerate their

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sense of vulnerability and insistently call on others for help and care, sometimes to the point of being intrusive (e.g., Feeney & Noller, 1990). The second dimension, attachment-related *avoidance*, reflects the extent to which a person distrusts relationship partners' goodwill, strives to maintain independence, and relies on deactivating strategies for dealing with threats and negative emotions (e.g., Fraley & Shaver, 1997). Attachment security is defined by low scores on both anxiety and avoidance. Secure people generally cope with threats by relying on internal resources developed with the help of security-enhancing attachment figures or by effectively seeking support from others or collaborating with them (Shaver & Mikulincer, 2002).

The common view in the attachment literature is that the coping strategies used by secure individuals confer adaptive advantages whereas those used by insecure individuals are generally maladaptive (Mikulincer & Shaver, 2007). Ein-Dor and colleagues (2010) challenged this view and argued that in particular circumstances, the tendency of secure individuals to remain emotionally stable and socially connected in the face of threats might be counterproductive. For instance, when a serious danger arises, a secure person's tendency to stay close to significant others may reduce the person's ability to recognize the gravity of the threat or respond appropriately to it. In such cases, the presence of anxious individuals, who are hypervigilant to threats, may prompt other group members to seek safety. Avoidant individuals' concern with self-preservation may motivate them to find an escape route that may (unintentionally) benefit other group members. In other words, the common interpretation of attachment-related insecurities as maladaptive *per se* may, under some conditions, be misleading. Anxiety and avoidance may be beneficial for the survival of both the insecure individuals and members of their group.

People with High Attachment Anxiety Act as Sentinels

Research has indicated that people high on attachment anxiety often perform relatively poorly in groups (Rom & Mikulincer, 2003). Nevertheless, the strategies they characteristically use to deal with threats may be beneficial to inclusive fitness in certain kinds of threatening situations. Anxious people are vigilant in monitoring the environment for threats and are emotionally expressive and desirous of support when a threat is detected (e.g., Cassidy & Kobak, 1988; Feeney & Noller, 1990). They may benefit other people in their social surroundings by reacting quickly and vocally to early, perhaps ambiguous, cues of danger, a reaction that Ein-Dor and colleagues (2010) called *sentinel behavior*.

Supporting this view, Ein-Dor and colleagues (2011a) found that people with high scores on attachment anxiety had greater mental access to sentinel-related schemas. For example, when compared with their more secure counterparts, individuals high in attachment anxiety were more likely to write narratives comprising two core components of the sentinel schema: noticing ambiguous signs of danger and warning others about the threat (Study 1). When exposed to an experimentally created threatening situation (a room gradually filling with smoke because of a malfunctioning computer), the most anxious person in a group as found by Ein-Dor and colleagues (2011a) was the most likely to detect the presence of smoke (Study 6). Moreover, anxious individuals' ability to quickly detect a threat was

recently found to contribute to the effectiveness of their social group when dealing with a threat (Ein-Dor et al., 2011b). To date, however, it has been unclear whether the tendency to warn others about a threat, in line with anxious individuals' sentinel schema, is also manifested in their behavior.

The Present Study

In the present study, we examined, using behavioral measures, whether attachment anxiety is associated with the tendency to warn others about a threat. We led participants to believe that they accidentally activated a computer virus that erased an experimenter's computer. We then asked them to alert the department's computer technicians about the incident. On their way to the technicians' office, they were presented with four decision points where they could choose either to delay their warning or to continue directly to the technicians' office. We predicted that attachment anxiety would be related to less willingness to delay communicating the warning message.

Measures of insecure attachment have previously been associated with two general personality traits, neuroticism and extraversion (Nofle & Shaver, 2006). Research has shown that both attachment anxiety and neuroticism are independently associated with greater access to a sentinel schema and with quicker detection of threats (Ein-Dor et al., 2011a, 2011b). Indeed, attachment anxiety is believed to be part of the hyperactivation of a survival system that evolved in highly social contexts (i.e., the attachment system; see Mikulincer & Shaver, 2007, for a review). Neuroticism, in contrast, is a more general form of negative emotion and hypervigilance (John & Srivastava, 1999). In the present study, we used a social-behavioral measure (i.e., warning others of a threat) to distinguish between these two kinds of anxiety. We hypothesized that whereas attachment anxiety would predict people's tendency to warn others about a threat, neuroticism would not.

Research has also indicated that extroversion is associated with not only greater mental accessibility of the sentinel schema (Ein-Dor et al., 2011a) but also slower responses to threats (Ein-Dor et al., 2011b).

Because of the relevance of neuroticism and extroversion to people's reactions to threats, we controlled for these variables in our analyses of involving attachment anxiety in the present data analyses.

METHOD

Participants

Eighty Israeli undergraduates (28 women and 52 men aged 18–39, $M = 24.85$, $SD = 3.09$) participated in the study in exchange for coffee coupons.

Materials and Procedure

The study spanned two sessions. In the first session, participants completed two randomly ordered scales. We assessed participants' attachment orientation with a Hebrew version of the Experiences in Close Relationships measure – Short Form

(Wei, Russell, Mallinckrodt, & Vogel, 2007). Participants rated the extent to which each item was descriptive of their experiences in close relationships on a 7-point scale ranging from *not at all* (1) to *very much* (7). Six items assessed attachment anxiety (e.g., “My desire to be very close sometimes scares people away.”) and six assessed attachment-related avoidance (e.g., “I want to get close to other people, but I keep pulling back.”). In our study, Cronbach α was .73 for the anxiety items and .77 for the avoidance items. Mean scores were computed for each scale, and the two scores were not significantly correlated, $r(78) = .11, p = .35$.

Participants also completed the neuroticism and extraversion subscales of a Hebrew version of the Big Five Inventory (John, Donahue, & Kentle, 1991). They rated the extent to which each item described them on a 5-point scale ranging from *strongly disagree* (1) to *strongly agree* (5). Eight items assessed neuroticism (e.g., “Can be tense.”) and eight assessed extraversion (e.g., “Has an assertive personality.”). In this study, Cronbach α was .78 for neuroticism and .74 for extraversion. Trait scores were computed for each participant by averaging the relevant item ratings.

The second session was conducted two weeks later by a different experimenter, who was unaware of participants' scores on the first-session measures. Upon the participants' arrival to the laboratory, the experimenter told them a cover story, according to which they were going to rate the likeability of known artworks on a 7-point scale ranging from *not at all* (1) to *very much* (7). The experimenter then plugged a flash drive containing the experiment's software into a PC computer and ran the software. The female experimenter confirmed that the participants understood the instructions and then exited the room, closing the door behind her. The software was in fact a precontrived program designed to lead the participants to believe that they accidentally activated a notorious computer virus, which erased the experimenter's computer hard drive.

After the participants rated the third artwork, the following message popped up on the screen: “Error: MSV35.dll is corrupted. Rodenic Shanti [an anagram of the first author's name] requests access. Press OK to allow.” After OK¹ was pressed, an antivirus window popped up indicating multiple threat detections (Trojan horse PSW). One second later, a series of 10 pop-up windows appeared, indicating that all of the files on hard drive C:\ were being deleted (e.g., “deleting C:\Windows\System32\ActionCenter.dll”). Next, a black screen appeared with the single-line message, “C:\ is empty.”

When the participants let the experimenter know about the incident, the experimenter, who was a trained actress, performed as if she was aghast and said, “Oh my god, it's my boss's computer! The virus might have also infiltrated the university's servers! What shall I do?!” The experimenter then unplugged the flash drive that allegedly contained the computer virus, handed it to the participant, and added: “Please go and let someone know about the virus while I will see what I can do from here. Ask the Dean's assistant manager what to do; she sits at the end of the corridor.”

From this point on, participants were presented with four decision points where they could choose to delay their warning

or continue directly to alert the computer technicians. Specifically, as they exited the lab room (on their way to the Dean's assistant manager), a confederate stopped them and begged them to complete a short survey (decision point 1). After they arrived at the location of the Dean's assistant manager, they were told to contact the laboratory's manager, who was seated at the other end of the corridor. They were asked, at that point, to aid the Dean's assistant manager in photocopying an important report before they left (decision point 2). Next, on the door of the laboratory manager's room was a sign that read, “I'll be right back.” Participants chose either to wait or to seek further guidance (decision point 3). Finally, a confederate directed the participants to the computer technicians, and while they descended the staircase to the technicians' room, another confederate dropped sheets of paper, and participants chose whether to help the confederate or go directly to the technicians' room (decision point 4). Upon their arrival at the technicians' room, they were thanked and debriefed. All participants reported that they thought the incident with the computer virus was genuine and that they felt stressed by it. Only one participant reported that she felt a need to please the stressed research assistant as the reason for delivering the warning message. Omitting her from the analyses did not change the pattern of results.

Scoring Procedure

Participants' willingness to delay their warning was coded on a 5-point scale ranging from 0 to 4. For each situation in which the participants chose to delay, they received one point of delay. For example, a participant who answered the survey, photocopied the report, waited more than 1 minute by the laboratory manager's door, and helped to pick up the sheets of paper received a score of 4 on the delay scale. Overall, 40% of the participants answered the survey, 71.3% photocopied the report, 30% waited more than 1 minute by the laboratory manager's door, and 42.5% helped to pick up the sheets of paper. The mean delay score was 1.84 ($SD = 1.30$).

RESULTS

To determine whether attachment anxiety scores predicted less willingness to delay a warning, we used a linear regression analysis in which attachment anxiety and avoidance served as the predictors, and participants' willingness to delay the warning served as the outcome measure. Means, standard deviations, and intercorrelations between the main study measures are presented in Table 1. The regression analysis yielded a significant result, $F(2, 74) = 3.25, p = .03, R^2 = .12$. Consistent with predictions, the higher a person's attachment anxiety, the less he or she delayed delivery of the warning message ($\beta = -.33, p = .01$), but there was not a significant effect of avoidance ($\beta = .15, p = .19$). To control for neuroticism and extraversion, we ran a second regression analysis in which we first introduced the neuroticism and extraversion scores and then added the attachment scores in a subsequent step. Neither neuroticism ($\beta = -.03, p = .79$) nor extraversion ($\beta = -.09, p = .50$) significantly predicted participants' willingness to delay the

¹If the participants asked the experimenter what the message meant, she replied: “Oh, this is my first day as a research assistant, so I really don't know. Maybe you should press OK.”

Table 1. Means, standard deviations, and intercorrelations among the main study measures

5	4	3	2	1			
					1	Attachment anxiety	1
			1	.11	.39***	Attachment avoidance	2
		1	.05	.07	-.24*	Neuroticism	3
	1	.09	-.43***	.09		Extraversion	4
1	-.09	-.10	.09	2.90	3.15	Willingness to delay	5
1.84	3.57	2.64	2.90	1.08			Mean
1.30	.64	.73	1.12				SD

* $p < .05$;*** $p < .001$

warning message, and the addition of the attachment scores in the second step of the analysis significantly increased the amount of variance accounted for, $\Delta F(2, 69) = 3.37$, $p = .04$, $\Delta R^2 = .09$. The pattern of effects already described was maintained: the higher a person's attachment anxiety, the less he or she delayed in delivering the warning message ($\beta = -.31$, $p = .02$), but there was not significant effect of avoidance ($\beta = .12$, $p = .35$).²

Supplementary analyses revealed that men and women did not differ in their willingness to delay the warning message, $t(78) = .99$, $p = .33$, and that age was not significantly associated with participants' willingness to delay the warning message, $r(78) = -.08$, $p = .51$.

DISCUSSION

Social defense theory (Ein-Dor et al., 2010) proposes that in threatening situations, people who score high on attachment anxiety quickly detect the presence of threat and then alert other group members to the danger and the need for protection. Supporting this line of reasoning, we found that participants high in attachment anxiety were less willing to be delayed on their way to deliver a warning message. This result remained significant when extroversion and neuroticism – two relevant but more general personality traits – were statistically controlled. Our findings suggest that the schema-driven tendency to warn others about a threat, which characterizes attachment-anxious individuals (Ein-Dor et al., 2011a), is likely to be expressed behaviorally.

The findings also suggest a possible distinction between attachment anxiety and neuroticism. Research has shown that both attachment anxiety and neuroticism are related to hypervigilance and intense responses to threats (Ein-Dor et al., 2011a, 2011b; John & Srivastava, 1999). But in the present study, attachment anxiety, but not neuroticism, was related to greater willingness to warn others about a threat: a social outcome in line with anxious individuals' tendency to call on others for help and care in times of need. This finding suggests that although both attachment anxiety and neuroticism are related to fear of negative consequences, attachment anxiety is more closely related to seeking social support and social connections than is more general trait anxiety, which is closely

associated with neuroticism (e.g., Luteijn & Bouman, 1988). Future research should explore this possibility in depth.

Many species of animals benefit from having sentinels in their midst. For instance, various mammals (e.g., Fichtel, 2004) and primates (e.g., Coss, Ramakrishnan, & Schank, 2005; Riede, Bronson, Hatzikirou, & Zuberbühler, 2005) produce shrill alarm signals when they detect a potential threat. In similar ways, human group members can benefit from anxious individuals' hyperactivating strategies. The motivation underlying their inclination to act as sentinels remains to be delineated. One possibility is that attachment-anxious individuals are more pro-social and/or altruistic. Research has indicated, however, that people scoring high on attachment anxiety have relatively low altruistic tendencies (e.g., Feeney & Hohaus, 2001; Rholes, Simpson, & Blakely, 1995). In support of this claim, only one participant in the present study reported that she acted because of a felt need to please the stressed research assistant. Moreover, in three of the four decision points our participants were presented with, they were requested to provide support to others (complete a self-report survey, photocopy a report, and help pick up sheets of paper), but more anxious individuals were less likely than less anxious individuals to provide the requested help. This makes it seem unlikely that their motivation to be sentinels about a threat was motivated by a simple desire to be helpful.

Two other motives might be relevant to anxious individuals' tendency to warn others of a threat: their strong motivation to seek proximity to those who may aid them in a troubling situation, thereby helping to regulate their emotions (see Mikulincer & Shaver, 2007, for a review), and their need to pass the responsibility for the incident on to others. Future studies should explore these possibilities.

This research adds to a growing body of evidence for the adaptive nature of many individual differences (i.e., variation) in personality. For instance, (Nettle, 2006) argued that such variability can be understood in terms of tradeoffs among fitness costs and benefits: "Behavioral alternatives can be considered as tradeoffs, with a particular trait producing not unalloyed advantage but a mixture of costs and benefits such that the optimal value for fitness may depend on very specific local circumstances" (Nettle, 2006, p. 625). Here, we have shown that attachment-related anxiety, as predicted by SDT, offers certain social advantages: people high in attachment anxiety were eager to spread word of a troubling, socially threatening incident, a tendency that, in many real world situations, might save others from a serious threat (such as infection of a large network of computers).

²The interaction between attachment anxiety and avoidance was not significant, so we did not include it in the analyses reported here.

There are, of course, some limitations to our study. First, it was correlational in nature, which precludes confident conclusions about the direction of causality in the link between anxiety and the heightened tendency to warn others of threat. Theory and research on attachment, however, indicate that attachment orientations are formed initially in early childhood and are moderately stable over periods of years (see Mikulincer & Shaver, 2007, for a review). Thus, we believe that it is likely that the willingness to warn others is a manifestation of attachment anxiety, not vice versa. Second, it would be valuable in future studies to include other anxiety-related measures, aside from neuroticism, to better understand the distinction between attachment anxiety and other state and/or trait anxieties. We believe that hypervigilance and intense responses to threats are likely to be common components of anxiety-related phenomena. Socially oriented reactions, however, especially extreme dependency on others, are likely to be more closely related to attachment anxiety than to other forms of anxiety or neuroticism.

Despite the limitations, our findings add to the literature suggesting that variations in attachment orientations, and in personality differences more generally, contribute to human adaptability in various life domains – a possibility that attachment researchers have generally neglected when writing about the characteristics of anxious and avoidant individuals. Studies like the one reported here, which were suggested by SDT, offer a new perspective on the strengths of individuals who have long been viewed as deficient and poorly adapted.

ACKNOWLEDGEMENTS

We would like to thank the following people for their assistance in running this study: Danit Deutsch, Anat Trepberg, Sivan Sahar, Maya Neshet, Elinor Cohen, Shiran Zusmanovith, and Shulli Sardes.

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