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An Analysis of Social Behaviors in Stressful Situations Using Q-Sort Data

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Peer Review

This work has undergone a double-blind review by a minimum of two faculty members from institutions of higher learning from around the world. The faculty reviewers have expertise in disciplines closely related to those represented by this work. If possible, the work was also reviewed by undergraduates in collaboration with the faculty reviewers.

Abstract

Theories suggest that humans may respond to stressful situations by engaging in certain social behaviors aimed at minimizing the effects of stress. Though these social responses during stress have been investigated in many ways, this study adds to the literature by using a standardized Q-sort technique to examine them. When participants characterized situations as more stressful, they reported a greater tendency to distance themselves from others and lesser expressions of warmth. For female participants only, when situations were described as more anxiety-inducing, participants reported greater seeking of assurance. Though male and female participants did not differ with respect to their reports of the stressfulness of situations, they did differ with respect to their reported behaviors in those situations, with female participants reporting more expressing of warmth and male participants reporting more distancing from others.

Keywords

social support, stress, Q-sort

INTRODUCTION

The particular benefits of social support on many positive physiological processes and for physical health are well established (House, Landis, & Umberson, 1988; Uchino, Cacioppo, & Kiecolt-Glaser, 1996). The effects of social support on these outcomes hold even with the addition of control variables such as age and initial health status, indicating the high relevance of social support in this context. Supportive others may play an instrumental role in encouraging an individual to engage in specific protective behaviors, such as exercising, refraining from smoking, or visiting the doctor regularly (Cohen, 1988; Gallant & Dorn, 2001). Social support could exact its effects on health by bringing about physiological changes within an individual, directly or indirectly influencing neuroendocrine, immune, or cardiovascular responses (Cohen, 1998; Uchino et al., 1996). Indeed, social support does appear to influence a variety of responses.

Researchers have focused particular attention on the role of social support in the context of psychological stress. Contrary to the beneficial effects of social support, stress is associated with poorer health behaviors (Ng & Jeffery, 2003) and negative physiological effects (Frankenhaeuser, 1991). It appears, however, that social support may buffer these negative effects of stress (Thorsteinsson & James, 1999). Cohen and Wills (1985) proposed the buffering hypothesis, which suggests that social support is mainly useful precisely during times of stress, since social support moderates potentially harmful effects of stressors. Several laboratory investigations have demonstrated that negative responses to a laboratory stressor can be moderated by the presence of an unknown confederate (Fontana, Diegnan, Villeneuve, & Lepore, 1999), a friend (Kamarck, Manuck, &

Jennings 1990), and even a dog (Allen, Blascovich, & Mendes, 2002). Studies from outside the laboratory have suggested that social support may be related to the development of coping strategies in the face of stressors (Kim, Suh, Kim, & Gopalan, 2012; Wang & Gan, 2011). Social support may even influence the development and course of trauma symptoms associated with experiencing a severe stressor (Tsai, Harpaz-Rotem, Pietrzak, & Southwick, 2012).

Interestingly, there appear to be gender differences in the relationships among stress, social support, and coping. Social support variables may account for more of the variance in performance of health behaviors for women than those variables do for men (Gallant & Dorn, 2001). Women seem to be particularly responsive to social support manipulations aimed at reducing physiological responses to stressors (Linden, Chambers, Maurice, & Lenz, 1993). Women also may be more effective at providing social support in laboratory situations (Glynn, Christenfeld, & Gerin, 1999).

Some may argue that such gender differences are actually just part of a larger pattern of differentiated responses to stress. Shelley Taylor and colleagues' tend-and-befriend model describes a pattern of stress response in women that diverges from the traditional fight-or-flight view (Taylor et al., 2000). Tend-and-befriend describes a pattern of response to stress that includes efforts to increase comfort and security for oneself and close others (tending), while also establishing and nurturing connections with others who can support those efforts (befriending). The tend-and-befriend perspective suggests that this pattern of responding to stress with care and affiliation has evolved as an adaptive mechanism for women, and is mediated in part by the action of the hormone oxytocin (Taylor et al., 2000). Women tend to have larger social

networks than men (McLaughlin, Vagenas, Pachana, Begum, & Dobson, 2010). Women are likelier than men to report engaging in tending and befriending behaviors, whereas men are likelier to report engaging in fight or flight behaviors in times of stress (Turton & Campbell, 2005). Women are likelier to exhibit more support-seeking than do men, both in general (Felsten, 1998) and in the wake of a significant stressor (Norberg, Lindblad, & Boman, 2006).

Although the tend-and-befriend pattern has been conceptualized as the female alternative to the fight or flight pattern, some research has examined elements of the model in male participants. For example, one study examined the role of oxytocin in men's responses to a social support manipulation and determined that the hormone enhanced the stress-buffering effects of social support (Heinrichs, Baumgartner, Kirschbaum, & Ehlert, 2003). Interestingly, a recent study using only male participants also reported evidence of befriending (von Dawans, Fischbacher, Kirschbaum, Fehr, & Heinrichs, 2012). In that study, men displayed more trust and sharing with another person after having experienced a laboratory stressor. That study suggests that not only may men be capable of benefitting from the physiological processes associated with tend-and-befriend, but they may also display an orientation toward befriending in at least some situations.

Researchers have used various methodologies for studying patterns of stress, social support, and related outcomes. In particular, researchers have studied the relationship between stress and social behavior using sets of questionnaires that ask participants to self-report the amount of stress they are experiencing and that ask them to indicate the degree to which they have, seek, or utilize social support. Early

in the study of the impact of social support, the most common measures were questionnaires meant to assess social integration by examining the existence and interconnections among social ties (Cohen, 1988; Cohen, Gottlieb, & Underwood, 2001). However, other conceptualizations of social support gave rise to interest in measuring social support in different ways. Measures of perceived support, which focus less on actual received support and more on an individual's beliefs or satisfaction, allow researchers to assess quality of relationships, instead of studying only quantity of relationships (Cohen et al., 2001; Cohen, Mermelstein, Kamarck, & Hoberman, 1985).

Social support, as well as social responses to stress, also can be assessed using a Q-sort technique (Wagerman & Funder, 2009). Q-sorts require respondents to sort items into categories such that a specific number of items must be assigned to each level. Fewer items may be assigned to the highest and lowest levels, and more items must be assigned to the middle levels, so that the resulting pattern of placement resembles a normal curve. This procedure thus limits the number of descriptors a respondent can place in the extreme categories. Turton and Campbell (2005) developed a four-factor Q-sort instrument to examine specifically the fight, flight, tend, and befriend behavioral response patterns. Other Q-sorts, such as the Riverside Behavioral Q-Sort (Funder, Furr, & Colvin, 2000; Furr, Wagerman, & Funder, 2010), while not designed explicitly for the sole purpose of assessing social support, also contain items relevant to social support and tending-and-befriending.

The relationships among stress, social behavior, and psychological and physical health outcomes have been studied in a multitude of ways. Though many studies have examined the reliance on social

support that exists prior to the onset of a stressor, far fewer investigations have examined participants' tendencies to exhibit befriending behaviors during or following a stressor (von Dawans et al., 2012). The International Situations Project (ISP) allows us to examine the question in a different manner. The ISP's employment of the Q-sort technique for collecting data on characteristics of situations and behaviors allows for a new look at these relationships.

MATERIALS AND METHODS

We collected the data reported in this paper as a part of Psi Beta and Psi Chi's National Research Project for 2012-2013, the International Situations Project (Grahe, Guillaume, & Rudmann, under review). The protocol for this study was approved by the Human Subjects Review Board at our institution.

Participants

Seventy-eight participants provided useable data at our site, a mid-sized comprehensive university in the Midwest. We recruited these participants from introductory psychology courses and compensated them with partial course credit. Though 81 participants consented to participation and were shown to a computer terminal by a research assistant, data were saved to the study database for only 78 participants. Data from the other three participants were lost due either to a computer problem or a failure by the participant to submit the data at the end of the session. Forty-three participants reported their gender as female and 35 reported their gender as male. The participants ranged in age from 18 years to 36 years, with a mean age of 19.33 years. A large majority (greater than 90%) of our participants were U.S.-born native English speakers. With respect to ethnicity, 75.6% of the participants in this sample self-

identified as Caucasian, 12.8% of participants identified as African American, and the remaining small number of participants self-identified as other ethnicities.

Materials

Participants completed two Q-sort assessments, the Riverside Situational Q-Sort (RSQ; Wagerman & Funder, 2009) and the Riverside Behavioral Q-sort (RBQ; Funder et al., 2000; Furr et al., 2010). The RSQ lists 89 descriptors that could potentially apply to situations. Respondents must sort the descriptors into 9 levels (1 through 9, with placement in higher levels indicating that the descriptor is more characteristic) according to how uncharacteristic or characteristic that descriptor is of a particular situation. In the manner of Q-sorts, the levels are set up such that a specific number of descriptors must be assigned to each level. Fewer descriptors may be assigned to the highest and lowest levels, and more descriptors may be assigned to the middle levels, so that the resulting pattern of placement resembles a normal curve. This placement forces the respondent to limit the number of descriptors in the extreme categories. The RBQ lists 68 descriptors of thoughts and actions. As with the RSQ, respondents sort the descriptors into levels 1 through 9, according to how uncharacteristic or characteristic the descriptors are of the behaviors exhibited in a given situation.

Procedure

Participants in this sample followed the protocol for the International Situations Project (Grahe et al., under review). Participants reported to a computer laboratory and were greeted by a research assistant who set them up at a workstation. Participants completed a computerized protocol that introduced the study and gathered demographic data. The computer program then prompted participants to

describe what they were doing at 7:00 p.m. on the previous day. Next, the participants completed the RBQ and RSQ referencing the situation they described. After completing the two Q-sorts, participants were debriefed and their participation was complete.

When analyzing the data, we selected particular items from the RSQ and RBQ that would allow us to examine the relationship between stressful situations and social behaviors. From the RSQ, we selected the following situational descriptors for analysis: “Situation entails frustration,” “Situation would make some people tense and upset,” “Situation includes one or more small annoyances,” “Situation entails or could entail stress or trauma,” and “Situation is potentially anxiety-inducing.” From the RBQ, we selected the following descriptors for analysis: “Seeks reassurance,” “Expresses warmth,” “Keeps others at a distance; avoids development of any sort of interpersonal relationship,” and “Makes or approaches physical contact with others.” We chose to set our level of significance (alpha) at .050 for all analyses. We did perform a large number of analyses, which increased our family-wise error rate. We considered but ultimately decided against implementing a Bonferroni correction to reduce the individual level of significance for each analysis, because we determined that the resulting level of significance was overly conservative. However, it is important to note that this choice does increase our overall likelihood of committing a Type I error.

RESULTS

In order to examine the relationships among the RSQ items of interest and the RBQ items of interest, we conducted a set of Pearson product-moment correlation analyses, the results of which are

summarized in Table 1. Of particular note were the significant negative relationships between the RBQ item “Expresses warmth” and several of the RSQ items, and the significant positive relationships between the RBQ item “Keeps others at a distance...” and several of the RSQ items. Participants described themselves as less expressive of warmth in situations they characterized as entailing more frustration, $r(76) = -.343, p = .002$, and in situations that would be likelier to make some people tense and upset, $r(76) = -.268, p = .018$. Participants described themselves as more likely to keep others at a distance in situations they characterized as entailing more frustration, $r(76) = .257, p = .023$, in situations that would be likelier to make some people tense and upset, $r(76) = -.394, p = .000$, in situations more characterized by small annoyances, $r(76) = .277, p = .014$, and in situations more likely to be characterized by stress or trauma, $r(76) = .275, p = .015$.

Because theories of stress suggest that women and men may exhibit different behaviors in response to stress, we decided to analyze results for female participants and male participants separately as well. Examining the same variables for female participants only, we found that neither expressing warmth nor distancing from others was statistically significantly associated with stress-related characteristics of the situation. However, three relationships approached significance: the relationship between expressing warmth and the degree to which the situation entails frustration, $r(41) = -.286, p = .063$, the relationship between expressing warmth and the degree to which the situation was characterized as entailing stress or trauma, $r(41) = -.301, p = .050$, and the relationship between distancing from others and the degree to which the situation was characterized as entailing stress or trauma,

	RSQ30	RSQ33	RSQ34	RSQ48	RSQ66	RBQ26	RBQ32	RBQ40	RBQ58
RSQ30	1	.344**	.123	.273*	.136	.090	-.343**	.257*	.029
RSQ33		1	.282*	.072	.119	.057	-.268*	.394**	.028
RSQ34			1	.068	-.124	-.056	-.030	.277*	-.124
RSQ48				1	.372**	.142	-.147	.275*	-.142
RSQ66					1	.182	-.082	.130	-.051
RBQ26						1	.041	-.010	-.143
RBQ32							1	-.273*	.074
RBQ40								1	-.199

Table 1. Correlations among RSQ and RBQ Items of Interest (All Participants).

RSQ30 = "Situation entails frustration." RSQ33 = "Situation would make some people tense and upset." RSQ34 = "Situation includes one or more small annoyances." RSQ48 = "Situation entails or could entail stress or trauma." RSQ66 = "Situation is potentially anxiety-inducing." RBQ26 = "Seeks reassurance." RBQ32 = "Expresses warmth." RBQ40 = "Keeps others at a distance; avoids development of any sort of interpersonal relationship." RBQ58 = "Makes or approaches physical contact with others." ** $p < .01$, * $p < .05$

($r(41) = .286$, $p = .063$). Additionally, for female participants only, the RBQ descriptor of seeking reassurance was positively associated with the RSQ descriptor indicating that the situation is potentially anxiety-inducing, $r(41) = .302$, $p = .049$.

Examining the same variables for male participants only, three interesting relationships were apparent. Male participants indicated less expressing of warmth when situations were characterized by entailing frustration, $r(33) = -.468$, $p = .005$. Additionally, male participants indicated more distancing from others in situations characterized as likelier to make people tense and upset, $r(33) = .483$, $p = .003$, and in situations more characterized by small annoyances, $r(33) = .437$, $p = .009$. These relationships were particularly interesting given their relatively larger Pearson correlation coefficients compared to those that emerged when examining the

same variables in the entire sample or in female participants.

In order to determine whether there were gender differences with respect to participants' reports of the characteristics of the situations in which they found themselves or with respect to participants' behaviors in those situations, we conducted a series of independent samples t -tests. On the RSQ, male and female participants did not differ in their characterization of the situations with respect to stress level. On the RBQ, female participants did report greater expressions of warmth than did male participants, $t(76) = 3.154$, $p = .002$. Male participants reported more keeping others at a distance, $t(76) = -2.277$, $p = .026$.

DISCUSSION

The patterns observed in the data suggest that when participants characterized

situations as more stressful, they reported a greater tendency to distance themselves from others and lesser expressions of warmth. This outcome is contrary to our predictions. The tend-and-befriend theory implies that humans will choose to engage in positive social behaviors during situations perceived as stressful. However, the data here point to the opposite pattern, such that in situations characterized as stressful, participants expressed less warmth towards others and actively distance themselves from social connections. Of course, the theory does predict gender differences, with befriending behaviors being typical of women's responses to stress. For female participants only in our sample, when situations were described as more anxiety-inducing, participants reported greater seeking of assurance. We do see a somewhat clearer pattern of distancing in male participants, which is consistent with other work that suggests that males report less utilization of social support than do females (Turton & Campbell, 2005).

The nature of our sample may have influenced our results. Though we did not collect data on participants' reproductive history or family status, based on the demographics of the student group from which we sampled, we can assume that most participants were nulliparous and childless. As the tend-and-befriend does emphasize childrearing, and it could be that in this presumably mostly childless sample, the tend-and-befriend pattern has not been fully activated. The necessity of the particular social connections that are emphasized in tend-and-befriend may not be fully salient. The nature of stressors experienced by the studied group may also have played a role in the observed patterns. The stressors experienced by college students may be qualitatively different than those experienced by other groups.

Although the data presented here

came from a sample of students at a single university, preliminary results from the larger International Situations Project suggest high consistency in responses on the RSQ and RBQ in various samples, especially among samples from different institutions in the United States (Grahe et al., under review). Therefore, it is reasonable to conclude that the results reported here would be applicable to the larger population of university students. However, these data may not necessarily generalize to people of other age groups. Future investigations may include a broader age to further examine the generalizability of this work.

The Q-sort technique used in this study allowed us to examine relationships among characteristics of situations and behaviors in times of stress in an interesting way. Future investigations may seek additional means to examine these relationships. In particular, future work may employ manipulations that allow researchers the opportunity to observe participants' actions in the face of stressors, similar to work conducted by von Dawans and colleagues (2012).

These data are interesting in light of the research that suggests that social support can be a beneficial coping mechanism during times of stress. Social support, used effectively during stressful situations, appears to dampen the physiological effects of stress. Given this, an avenue of future research may focus on interventions that specifically encourage utilization of social support during stress. If interventions can be developed that increase the likelihood that people will choose befriending behaviors, those interventions may contribute to participants' improved psychological and physical health.

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