Published in final edited form as:

J Psychol. 2006 January ; 140(1): 69–79.

Depression Proneness and Reactions to a Depressive Stimulus

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Abstract

In the context of a project examining depression vulnerability and cigarette smoking, this study tested whether depression-vulnerable people differed from less vulnerable people in their reactions to a depressive stimulus. Regular smokers with a history of depression, but not currently depressed ($n = 63$) and never-depressed smokers ($n = 64$) listened to audiotapes of confederates reading depressive and non-depressive scripts, and reported their reactions. Neither history of depression nor self-reported depression proneness predicted reactions to depression. However, depression proneness positively correlated with beliefs about depression contagion. Likewise, stronger depression-related contagion beliefs and lower levels of empathic responding predicted behavioral rejection of the depressive stimulus.

Depression Proneness and Reactions to a Depressive Stimulus

Extensive research shows that depression elicits rejection from others (see Segrin & Dillard, 1992, for review), but of course not everyone who comes in contact with depressed people rejects them. To understand the interpersonal environment confronted by depressed people, and its possible role in maintenance of depression, it would be helpful to know more about individual differences in the tendency to reject those who are depressed. In the research reported in this article we explored whether being prone to depression oneself would be one such individual difference. If depression-prone people have more empathy for those suffering from depression, because they understand how debilitating it can be, then they might be less rejecting of the currently depressed. This result would be consistent with findings that prior experience with a particular need facilitates empathy for others with that need (Batson et al., 1996) and with research linking higher trait empathy in one person with less rejection of another (Joiner, Alfano, & Metalsky, 1992).

However, depression-prone people might actually be especially likely to reject depressed others. For example, people who have recovered from major depression commonly report fear of recurrence of their depressive symptoms (Coyne & Calarco, 1995; Coyne et al., 1998; Kirk et al., 2000). They might therefore wish to avoid people or situations perceived as likely to trigger another episode. This possibility would be consistent with a large body of literature that shows that depression can be contagious, inducing negative affect in others (Joiner & Katz, 1999). Moreover, an actual negative mood induction may not be necessary to produce rejection of a depressed person by a recovered-depressed person; instead, the belief that a particular interaction will induce negative mood may be sufficient.

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The research reported in this article was funded by the National Cancer Institute (1R15CA77732-01). Some of these data were presented at the annual convention of the Association for Advancement of Behavior Therapy, New Orleans, November 2000.

Clearly, it would be helpful to know more about the determinants of reactions to depression, as they have the potential to influence the quality of social support that a depressed person receives. Theory and previous research suggest that depression-prone people might have either especially positive (because of their empathy) or especially negative (because of their fear of contagion) responses to depression in others. We examined these possibilities in the context of a study of depression vulnerability and coping among cigarette smokers.

Method

Participants

Participants were 127 adults (63 men and 64 women) who responded to advertisements for a study of how smoking relates to coping and negative feelings. All participants met the following inclusion criteria: (a) age 18 or over, (b) not currently depressed, (c) no major depressive episode or treatment for depression within the past two months, (d) no current suicidality, (e) regularly smoking at least 10 cigarettes a day, a requirement of the larger project in which this study was included (Haaga et al., 2004; Pearlman et al., 2004). Participants were classified as “Recovered-Depressed” (RD, $N = 63$) or “Never-Depressed” (ND, $N = 64$) on the basis of a structured clinical interview. Recovered-depressed participants had to meet an additional criterion: positive history of major depressive disorder by DSM-IV criteria (American Psychiatric Association, 1994).

Measures

Eligibility and Diagnosis—Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979). The BDI is a 21-item self-report measure of current depressive symptom severity with extensive evidence of high reliability and convergent validity (Beck, Steer, & Garbin, 1988). Participants with BDI scores ranging from 0–14 were accepted as eligible for this study.

Beck Scale for Suicide Ideation (BSI; Beck, Steer, & Ranieri, 1988). The BSI is a 21-item self-report measure of suicidal ideation and intention that is highly correlated with clinical ratings of suicidal ideation (Beck, Steer, & Ranieri, 1988). The first five questions provide an overview of suicidality, and were used to screen for potentially suicidal people. Individuals scoring 0 on this measure were eligible to participate in the study.

Structured Clinical Interview for Diagnostic and Statistical Manual-IV (SCID-I/NP; First, Gibbon, Spitzer, & Williams, 1995). Portions of the SCID were administered to ascertain lifetime major depression and current major depression. Interviewers were clinical psychology doctoral students under the supervision of a licensed clinical psychologist (David A.F. Haaga). All diagnostic interviews were audiotaped for later evaluation of interrater agreement. A subset of SCID audiotapes (10% of total sample, $n = 8$ RD, $n = 4$ ND) was randomly selected for an independent diagnostic evaluation conducted by the supervising psychologist who was unaware of the original diagnosis. There was 100% agreement between the diagnoses.

Depression Proneness Inventory (Alloy, Hartlage, Metalsky, & Abramson, 1987). The DPI is a 10-item self-report measure of vulnerability to depression in response to stress. Participants respond to face-valid items (e.g., “Are you the type of person who easily becomes very depressed, sad, blue, or down in the dumps?”) on a 1–7 Likert scale. The DPI has been shown to have high test-retest reliability after one month ($r = .88$) and high internal consistency ($\alpha = .90$; Alloy et al., 1987). It was used in this study to supplement depression history, providing a potentially more sensitive measure of current depression vulnerability (Just, Abramson, & Alloy, 2001).

Presentation of Depressive and Non-Depressive Stimuli—Audiotapes were created to function as depressive and non-depressive stimuli. In each audiotape, a confederate read a script depicting problems experienced at work and in a personal relationship. The script appears in the Appendix. The problems were constant across tapes; however, the manner in which the confederate spoke and the reactions expressed to the problems varied. The tapes began with the following instruction: “Imagine that the person you are about to hear is an acquaintance you have known for a few months. Imagine also that you have just asked this person how he has been feeling lately, and that this tape is a recording of his response to you”. Each participant listened and responded to both depressive and non-depressive versions of the audiotapes. Male and female versions of these tapes were created, with the female version presented to female participants and the male version presented to male participants, based on studies that examined rejection in same-sex roommate pairs (e.g., Joiner et al., 1992). Because a major stylistic difference between non-depressed and depressed speech is that depressed speech is significantly more monotonous (Gotlib & Robinson, 1982), the actors were coached to use a monotonous tone of voice when reading the depressive script.

Assessing Reactions to Depressive and Non-Depressive Stimuli—Immediately following the presentation of each of the stimulus tapes, participants completed the following questionnaires:

Willingness to Interact Scale (WILL; Coyne, 1976). The WILL is a 9-item measure assessing a participant’s willingness to interact with specific targets (in this study, the confederate speaking on the audiotapes). For example, one item asks: “Would you like to meet this person?”. Responses are recorded on a 1 (“definitely yes”) to 6 (“definitely no”) scale. The WILL shows adequate internal consistency ($\alpha = .85$; Joiner & Metalsky, 1995).

Evaluation of Target on Revision of Rosenberg Self-Esteem Questionnaire (RSEQ; Swann, Wenzlaff, Krull, & Pelham, 1992). The RSEQ consists of the 10 items of the Rosenberg (1965) Self-Esteem Scale, reworded so that it serves as a measure of the esteem that one holds for another person (e.g., “I feel that she is a person of worth, at least on an equal plane with others”). The RSEQ has high internal consistency ($\alpha = .86$; Joiner et al., 1992) and convergent validity (Swann et al., 1992).

Communication Emotional Response Scale (CERS; Batson, O’Quin, Fultz, Vanderplas, & Isen, 1983). The CERS is a 14-item measure of empathic and distressed reactions elicited by the target stimulus. Each item consists of a single adjective, which participants endorse on a 9-point scale anchored by the descriptors “not at all” and “extremely”. The empathy subscale used in this study includes descriptors such as sympathetic, soft-hearted, compassionate, and moved. It is highly internally consistent ($\alpha = .92$; Batson et al., 1996).

Beliefs about Depression Contagion—This measure contains five items created for the current study, measuring the extent to which a participant believes that interactions with the audiotaped target would cause the participant to become depressed. Responses could range from 1 (“strongly agree”) to 4 (“strongly disagree”). A sample item was “I believe that talking with this person would make me depressed”. Coefficient alpha was .76.

Procedure

Participants first completed the informed consent, then the BDI and BSI. Those scoring ≤ 14 on the BDI, and 0 on the BSI, were eligible to continue. Participants who were not eligible for further participation were given appropriate treatment referrals, compensated, and excused. Those eligible to continue completed the main components of the study in random order: SCID, reactions to the stimulus tapes, other measures needed for the larger study of which this is a part. The reactions questionnaires were presented in one of four random orders. The order of

presentation of the stimulus tapes was counterbalanced, and the tapes were separated by at least one other component of the study (e.g., presentation of non-depressed tape, SCID, presentation of depressed tape). Following the completion of the assessments, the participants were debriefed, compensated, and offered low-cost therapy referrals if appropriate.

Results

Validity of Depression Vulnerability Measures and Depressive Stimuli

As expected, RD participants ($M = 31.63$, $SD = 9.57$) scored significantly higher on the Depression Proneness Inventory than did ND participants ($M = 22.95$, $SD = 8.72$), $t(116) = 5.14$, $p < .0001$. This difference supports the convergent validity of both indicators of depression vulnerability.

Next, we evaluated the validity of our depression stimuli by testing whether, in the sample as a whole, the depression - rejection effect found in previous samples was replicated, using paired-samples t-tests comparing responses to the audio-taped depressive stimulus with responses to the control stimulus. WILL scores reflecting the extent to which the participant would reject the target were, as expected, significantly higher for the depressed target ($M = 38.52$, $SD = 9.83$) than for the nondepressive target ($M = 27.34$, $SD = 11.91$; $t(123) = 9.55$, $p < .0001$). Likewise, RSEQ scores reflecting negative evaluations of the audiotaped individual were significantly higher following the depressive stimulus ($M = 28.72$, $SD = 5.65$) than following the control stimulus ($M = 19.37$, $SD = 5.14$), $t(119) = 14.61$, $p < .0001$.

Associations of Depression Vulnerability with Reactions to Depressive Stimulus

Table 1 presents descriptive statistics for all reactions measures for the RD and ND groups. As expected, RD and ND groups did not provide significantly different reactions to the control stimulus. Furthermore, RD and ND groups did not provide significantly different reactions to the depressive stimulus as measured on the CERS empathy scale, $t(123) = 1.38$, the contagion beliefs measure, $t(124) = 1.85$, the WILL, $t(124) = .39$, or the RSEQ, $t(124) = .77$. The continuous measure of depression vulnerability (DPI) also did not relate significantly to empathic responses ($r = -.03$), WILL scores ($r = .12$), or RSEQ scores ($r = .08$). The DPI did, however, correlate significantly with contagion beliefs ($r = .40$, $p < .001$).

Secondary Analyses With Reactions to a Depressive Stimulus

Our initial hypotheses focused on two potentially different reactions that depression-vulnerable people might have in response to the depressive stimulus. One possibility was that the depression-prone would respond with greater rejection of the depressive stimulus, because they have developed stronger beliefs about the contagiousness of depression. Alternatively, they might respond with less rejection than would those who are not vulnerable to depression because they have greater empathy toward other depressed people. However, depression history and self-reported depression proneness did not appear to contribute to the level of rejection that the participants expressed in their responses to the depressive stimulus. Given no main effect of depression vulnerability on rejection, we could not test the role of empathy and contagion beliefs as mediators between depression vulnerability and rejection (Baron and Kenny, 1986). However, the direct relations among empathy, contagion beliefs, and rejection can be explored in the sample as a whole, and may help to identify potential mediators of a depression-rejection relationship (as suggested by Joiner et al., 1992).

Although contagion beliefs were positively correlated with both the behavioral (WILL) and evaluative (RSEQ) measures of rejection, empathic responses were negatively correlated only with WILL (see Table 2). The relatively low magnitude of the negative correlation between empathic responses and contagion beliefs suggests that they do not represent opposite poles of

the same construct. Therefore, it seems likely that empathy and contagion beliefs would contribute significantly to rejection, even when the contribution of one is controlled for the other.

To test this possibility, set-wise hierarchical regression analyses (cf. Cohen & Cohen, 1983; Joiner, 1994) were conducted for WILL and RSEQ scores following the depressive stimulus. For each dependent variable, the main effects for empathy and contagion beliefs were entered first as a set, followed by the set including the empathy $\times$ contagion beliefs interaction. Because the empathy $\times$ contagion beliefs interaction was nonsignificant in both models, the assumption of homogeneity of covariance was met. As expected, lower levels of empathic responses predicted greater rejection as measured by the WILL, $t(122) = -2.78$, $p < .01$, when the significant contribution of contagion beliefs was controlled. Likewise, controlling for the influence of empathic responses, stronger contagion beliefs predicted higher levels of rejection on the WILL, $t(122) = 4.43$, $p < .001$. Consistent with the results of the correlational analysis, empathic responses did not significantly predict RSEQ rejection scores, $t(122) = -.98$. Controlling for empathic reactions, strong contagion beliefs significantly predicted higher RSEQ scores, $t(122) = 4.03$, $p < .001$.

Discussion

The goal of this research was to investigate the influence of depression vulnerability on the reactions of participants to a depressive stimulus. Consistent with previous analogue studies of depression rejection (e.g., Sacco and Dunn, 1990), participants responded with greater rejection to a depressive than to a non-depressive stimulus. Although we had proposed that the RD and ND groups might respond differently to the depressive stimulus, no significant differences emerged between RD and ND groups in their rejection of the depressive stimulus as measured by the WILL or RSEQ. Likewise, self-reported depression proneness was not significantly related to rejection or negative evaluation of the depressive stimulus. Similarly, depression vulnerability did not appear to increase or decrease empathic responding.

This study suggested that depression-vulnerable people might be more likely than others to believe that interactions with the depressed person depicted on the audiotape would elicit their own depressed mood. In fact, higher levels of self-reported depression proneness were significantly related to stronger depression-related contagion beliefs. However, depression history did not predict beliefs about depression contagion. These discrepant results support the distinction between depression history and self-reported depression-proneness.

With regard to the secondary analyses examining the extent to which empathic responses and depression contagion beliefs contribute to rejection, the results provide partial support and suggestions for further exploration. As expected, participants who responded with lower levels of empathy to the depressive stimulus also responded with higher levels of behaviorally avoidant rejection; however, the relationship between empathic responses and evaluative rejection was not significant. These results suggest that the emotional response of empathy may influence one's behavioral reactions toward a depressed person, but not necessarily, or not to the same degree at any rate, the esteem in which one holds the person.

The secondary analyses also revealed meaningful relationships between depression-related contagion beliefs and rejection; specifically, stronger contagion beliefs predicted higher levels of behaviorally avoidant and evaluative rejection, even when controlling for the contribution of empathic reactions. These results represent a contribution to the literature on contagion and rejection in that they suggest that beliefs about contagion alone (regardless of actual contagion) may mediate the depression-rejection relationship. A more stringent test using both depression contagion and contagion beliefs measures remains to be conducted.

The current study presented several potential limitations. First, because the hypotheses were tested with an analogue method, their applicability to live interactions remains to be tested. Secondly, because we recruited specifically for smokers, we may have attracted a sample that was less interested in depression status and depression beliefs than if we had recruited solely based on depression criteria. Although this sampling procedure may have limited the generalizability of the results, it may also have conferred an advantage by limiting the extent to which participants reported reactions in line with what they think would be expected of a recovered-depressed person or a never-depressed person. Finally, we used a new, previously unvalidated measure of beliefs about the contagiousness of depression. However, the significant relations found in the current study between this measure and depression proneness and rejection provide preliminary evidence of its validity.

Our results have implications for future research. In the context of Coyne's (1976) proposal that depressed people elicit rejection in part through negative mood induction in their interaction partner, the significant relation in the current study between depression-related contagion beliefs and rejection warrants further investigation. These results suggest that a cognitive variable, rather than an emotional response, may be a significant mediator of the depression-rejection relationship. Given the potentially important relationship between contagion beliefs and rejection, it may be useful for public health awareness campaigns to identify and normalize fears of depression contagion, and suggest that family members and friends of depressed people seek support for themselves if needed.

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Appendix

The script for the non-depressive tape stimulus is presented below. The underlined portions are those sections that varied between non-depressive and depressive versions.

“I’ve been better, I think. I’m having a rough time at work right now. We’ve got a big project we’re working on - it’s pretty important for the company. I’ve had so much else going on, that I’ve fallen really far behind on the part that I have to do. I’ll be ok if I just put in a little more time at work - at least until the deadline. It’s coming up really soon. I’m pretty good at working under pressure though, so I’ll just work hard for the next few days, and it’ll be fine.

And I think I’m in trouble with my girlfriend because I’m not calling her much anymore. We were supposed to go out last night, and I cancelled. I’ve just been hanging out with friends - I’m having a lot of fun with them lately. I really like talking to them - it makes me feel good to have people around. All in all, I think I’m doing ok. It’s busy at work, but I’ll just work harder until that’s over. I know my boss still thinks pretty well of me, and I can make things up to my girlfriend - I’ll just go see her more often - go out with her. I think she’ll like that.”

The depressive script reads: “I’m not doing very well actually. I’m having a terrible time at work. We’ve got a big project we’re working on - it’s pretty important for the company. But

I've been so tired lately, that I've fallen really far behind on the part that I have to do. I just can't get motivated to work on it, and now I don't know how I'll ever meet my deadline. It's coming up really soon. I can't seem to think straight when I try to work - I just want to go to sleep all the time. On top of that, I think I'm in trouble with my girlfriend because I'm not calling her much anymore. We were supposed to go out last night, and I cancelled. I don't want to talk to her or to anybody really. I never want to go out with friends - most of the time, I just sit at home, maybe watch some TV. Being with other people just gets me down. I don't know what to do to make my life any better at this point. I feel like a failure - and I think probably my boss and my girlfriend think I'm a failure too. I don't know if they really care about me, anymore. You know my girlfriend - do you think she thinks I'm a failure?"

Acknowledgements

We are grateful to Daniel Brown, Alicia Fields, Kelly Godfrey, April Hendrickson, Charisse Hipol, Siobhan Sharkey, and Andrea Stoudt for assistance in conducting this research.

Table 1
Means and Standard Deviations for Reactions Measures

	RD (n = 64)		ND (n = 62)	
<u>Following Depressive Stimulus</u>				
CERS Empathy Scale	32.63	(11.09)	29.74	(12.30)
Contagion Beliefs Measure	11.44	(2.69)	10.50	(2.97)
WILL	38.92	(10.96)	38.24	(8.60)
RSEQ	28.25	(4.20)	29.01	(6.64)
<u>Following Control Stimulus</u>				
CERS Empathy Scale	24.35	(10.65)	26.17	(11.03)
Contagion Beliefs Measure	9.03	(2.61)	9.06	(2.97)
WILL	26.47	(12.19)	28.21	(11.65)
RSEQ	18.75	(5.19)	19.97	(5.21)

Note. Numbers are means with standard deviations in parentheses. CERS = Communication Emotional Response Scale; WILL = Willingness to Interact Scale; RSEQ = Revised Rosenberg Self-Esteem Questionnaire.

Table 2
Zero-Order Correlations Among Reactions Measures

Scale	1	2	3	4
1. CERS Empathy	-			
2. Contagion Beliefs	-.18 [*]	-		
3. WILL	-.29 [*]	.41 ^{**}	-	
4. RSEQ	-.15	.37 ^{**}	.47 ^{**}	-

Note. CERS = Communication Emotional Response Scale; WILL = Willingness to Interact Scale; RSEQ = Revised Rosenberg Self-Esteem Questionnaire.

*
p < .05;

**
p < .01