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Comparative Patterns of Anxiety and Depression in a Public Speaking Context

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Abstract

Levels of trait anxiety and depression were examined in the context of speech assignments in an introductory communication course. Low to moderate correlations were found between anxiety and depression at each of the public speaking milestones of anticipation, confrontation, adaptation, and release. Moreover, the shapes of the patterns of depression and anxiety were significantly different, with anxiety levels falling in a monotonic linear pattern and depression levels rising after the speech had ended, indicating a quadratic pattern of change. Findings indicate that speakers' depression, like speech anxiety, is a dynamic trait that is subject to subtle changes across speech milestones.

Anxiety about public speaking is a common fear among people from all walks of life (Gibson, Gruner, Hanna, Smythe & Hayes, 1973). Many individuals experience some degree of communication apprehension or “fear associated with real or anticipated communication with another person or persons” (McCroskey, 1984, p.13), and public speaking is perceived as a particularly stressful and anxiety-producing experience. Moreover, “public speaking anxiety represents a cluster of evaluative feelings about speech making” (Daly, Vangelisti, Neel, & Cavanaugh, 1989, p. 40), such that anxious speakers simultaneously experience several negative or distracting feelings associated with the public speaking context. For decades, Communication scholars have investigated many details surrounding the psychological and physiological aspects of public speaking anxiety, often with a view toward developing interventions that will minimize the negative effects of anxiety for public speakers. To date, however, little attention has been given to another corollary phenomenon that may hinder the communication effectiveness of individuals while making public presentations—speakers’ depression.

While anxiety is generally a response to perceptions of a present or future threat (Barlow, 1988; Behnke & Beatty, 1981), depression is often “a reaction to negative outcomes that have already occurred” (Luten, Ralph, & Mineka, 1997, p. 708). Thus, it is possible that some public speakers experience the greatest degree of anxiety *before* and during the speech, followed by increased feelings of depression *after* the speech has ended, especially if their perception or evaluation of the speech performance is negative. In addition to post-speaking depression, a persistent underlying depressive trait may negatively affect a speaker’s preparation and performance, further contributing to anxious feelings about the entire speaking experience. The negative effects of depressive thoughts have been explained using *learned helplessness theory* (Abramson, Seligman, & Teasdale, 1978). This theory holds that, because of previous negative experiences and/or perceived lack of control over external circumstances, some depressed individuals feel that whatever they attempt to do in the future will be futile. Student speakers with depressive thoughts, for example, might perceive an upcoming speech performance as doomed to failure, given past experience in similar contexts and/or low internal expectancies for success. According to learned helplessness theory, depressed individuals are likely to make negative internal attributions and blame anticipated or perceived failure on their own inability to succeed (Abramson et al., 1978), or in this case, to make an effective public speech.

Because researchers have not yet examined depression and its effects on competent communication in the public speaking context, the purpose of this study is to explore the possible association between public speaking anxiety and depression, particularly the patterns of change in the period before, during, and after giving a public speech. The results of this investigation could provide new insight into public speaking processes and have important implications for speech instructors as they prepare student speakers to deal with the negative feelings associated with public speaking. Ultimately, a better understanding of the impact of speakers’ depression in relation to speakers’ anxiety could enable speakers to engage in more effective and appropriate communication in public presentations, one of the primary goals of communication education.

Relationship between Anxiety and Depression

Both anxiety and depression are unpleasant emotions, separated from one another, in part, by the amount of arousal that each produces. Feelings of low pleasure and high arousal are associated with anxiety, while feelings of low pleasure and low arousal are associated with depression (Killgore, 1999). It has been shown that anxiety and depression are related conditions in both children and adults (Lonigan, Carey, & Finch, 1994). This finding of *overlap* between anxiety and depression suggests that they are interrelated and often occur together, and it has

been observed that "...both anxiety and depression are clinical states that represent the presence of a high degree of negative affectivity (Lonigan et al., 1994, p. 1000). In an experimental study involving individuals who were anxious, those who were depressed, and those who were both anxious and depressed, MacLeod and Byrne (1996) reported a relationship between depression and reduced positive expectancies as well as increased negative expectancies. In addition, these researchers observed a significant positive correlation between anxiety and negative expectancies.

The simultaneous occurrence of anxiety and depression may be explained in part by learned helplessness theory, which suggests that an underlying trait of depression contributes to feelings of negativity concerning future events. As an individual thinks about or prepares for an upcoming encounter, negative or depressive thoughts about the event may intensify feelings of anticipatory anxiety associated with the encounter. This psychological phenomenon should be of particular interest to instructors in public speaking courses where the goal is to educate and train students as competent public speakers. If a similar depression-anxiety relationship is found in the public speaking context, then a speaker's depressive thoughts may contribute to public speaking anxiety before, during, and after a speech performance. Such findings would suggest that, while nearly all speakers experience some degree of anxiety (fear that they *may not* succeed), depressed speakers also struggle with helplessness (belief that they *cannot* succeed).

An underlying assumption of depression and anxiety research is that measurable variations occur in the intensity of the psychological and/or physiological manifestations of both of these variables. In addition to anxiety reactions in response to specific stimuli associated with an actual public speech (e.g., Daly et al., 1989), some individuals experience a persistent life-long propensity toward speech anxiety, leading researchers to differentiate between *trait anxiety* as an enduring or underlying characteristic and *state anxiety* as a temporary condition related to a specific communication context (Reiss, 1997; Spielberger, Gorsuch, & Lushene, 1970; Taylor, 1953). Though trait anxiety is more stable than state anxiety, the use of narrow-band anxiety measurement has revealed that some individuals experience public speaking anxiety as a *dynamic trait* that is subject to subtle changes at various phases of preparing and delivering a public speech (see Behnke & Sawyer, 1998 for an explanation of this methodology). Such variations in trait anxiety differ from state anxiety in that they are reported by speakers, not during the preparation or delivery of an actual speech, but in relation to their underlying attitudes and/or reactions to public speaking in general. Variations in both state and trait anxiety have been observed by researchers as they examine speech anxiety across four milestones of public speaking events: *anticipation*, the minute preceding the speech; *confrontation*, the first minute of the speech; *adaptation*, the last minute of the speech; and *release*, the minute following the speech. For example, Behnke and Sawyer (1999) found that most speakers report the greatest trait anxiety before a speech, followed by significant decline throughout the speaking and post-speaking periods.

State-trait distinctions are also recognized by depression researchers (Dumenci & Windle, 1996; Endler, Macrodimitris, & Kocovski, 2003), but important differences may exist in how depression and anxiety function across speech milestones. For example, the somewhat rapid decline in anxiety during and after giving a public speech may not be mirrored by a similar pattern of reduced depression across the same time period. If depression is generally a more stable, trait-like condition that is less responsive to immediate stimuli, then the level of depression across the public speaking milestones would be less likely to change. On the other hand, if narrow-band measurement were to detect subtle variations in trait depression across the

speech milestones, scholars would have reason to consider depression as a dynamic trait similar to trait anxiety. Furthermore, if speakers perceive their performance to be a negative or unsuccessful experience, or if they feel insecure or embarrassed during the presentation, levels of depression might be found to increase after the speech, at the time when anxiety typically decreases. To examine these aspects of the relationship between anxiety and depression and the comparative patterns of change across public speaking milestones, the following hypotheses were advanced:

H₁: A positive correlation exists between public speaking anxiety and depression at each of the four public speaking milestones.

H₂: The shapes of the patterns of change in anxiety and depression differ across the four speech milestones.

Method

Participants

Participants included all 210 undergraduate students (84 male, 126 female) enrolled in an introductory speech communication course at a private university. Ages ranged from 18 to 46 years ($M = 19.72$, $SD = 2.24$). Participants included 65 freshmen, 83 sophomores, 42 juniors, 18 seniors, and 2 unspecified.

Procedure

Data were collected as part of a larger program of classroom evaluation authorized by the Institutional Review Board. Early in the semester, before receiving instruction about the first speech presentation for the course, participants were invited to complete a questionnaire including an informed consent form and basic demographic items. The body of the questionnaire consisted of a trait anxiety measure and a depression measure for each of the four public speaking milestones of anticipation, confrontation, adaptation, and release. Participants were asked to indicate how they generally feel at each of the four milestones whenever they are assigned to make public speaking presentations.

Measurement

Anxiety. Public speaking anxiety was measured using the A-trait scale of the State/Trait Anxiety Inventory (STAI) devised by Spielberger, Gorsuch, and Lushene (1970) and utilized by Behnke and Sawyer (1998) for measuring the milestones of public speaking situations. The abbreviated version of the A-trait scale consists of five short statements indicating various manifestations of calmness or anxiety (*I feel tense, I feel calm, I feel relaxed, I feel at ease, and I feel jittery*). Participants indicated their agreement or disagreement with each item using a 5-point Likert-type scale (1 = *Strongly agree*, 2 = *Agree*, 3 = *Undecided*, 4 = *Disagree*, and 5 = *Strongly disagree*). The STAI has consistently demonstrated reliability and validity in previous speech anxiety studies (Behnke & Beatty, 1981; Behnke & Sawyer, 1998; 1999). In the present study, the STAI yielded alpha reliabilities of .90 for anticipation, .91 for confrontation, .92 for adaptation, and .90 for release.

Depression. Depression was measured using an abbreviated version of the Goldberg Depression Screening Scale (DSS; Goldberg et al., 1987, 1988). The original DSS, developed for use in primary care settings to facilitate rapid diagnosis of depression, consisted of 9 items that indicated various psychological and physiological symptoms of depression. The 6 items selected for this study were those most clearly relevant to the public speaking context, namely loss of confidence, hopelessness, difficulty concentrating, loss of energy, loss of interest, and feeling slowed down. Three original items (weight loss, early waking, and feeling worse in the

mornings) were not used because they would lack validity in the narrowband research context spanning moments rather than days. Participants indicated their agreement or disagreement with each item using the same Likert scale as for the anxiety measure. This procedure provided interval data that enabled detection of subtle changes in depression across public speaking milestones, as contrasted with the categorical data generated by “Yes-No” scoring typically used for DSS measurement in clinical settings. The DSS has been shown to be a valid and reliable measure of depression as compared with research interviews by psychiatrists (Baughman, 1994; Grayson, Bridges, Duncan-Jones, & Goldberg, 1987; MacKinnon, 1994). Alpha reliabilities obtained for the abbreviated DSS in the present study were .78 for anticipation, .83 for confrontation, .83 for adaptation, and .77 for release.

Results

To test the first hypothesis, Pearson product-moment correlation coefficients were obtained between anxiety and depression at each of the four public speaking milestones. Low to moderate correlations were found to exist at anticipation ($r = .44, p < .001$), confrontation ($r = .45, p < .001$), adaptation ($r = .54, p < .001$), and release ($r = .37, p < .001$). Thus, the first hypothesis, which predicted correlations between anxiety and depression at each of the four milestones, was supported. Because anxiety and depression are conceptually related variables, validity of the detected correlation between them would be reduced if the two measures contained similar items. Therefore, to confirm the validity of measurement, a correlation matrix was created consisting of all items from both scales. Moderate to high correlations were found among the 5 STAI items, likewise among the 6 DSS items. By contrast, correlations among individual items across the two measures were low to negligible. The results of this analysis supported the use of DSS and STAI as valid measures of these orthogonal variables.

To test the second hypothesis, a repeated measures analysis of variance for trend was performed to determine the shape of the pattern for anxiety and depression scores obtained across the four public speaking milestones (see Figure 1). Results of the ANOVA indicated a statistically significant linear (monotonic descending) pattern for anxiety, $F(1, 209) = 895.90, MSE = 15424.33, \eta^2 = .81, p < .001$. Results also indicated a statistically significant quadratic pattern for depression, $F(1, 209) = 103.48, MSE = 601.81, \eta^2 = .33, p < .001$, as well as a secondary linear pattern inherent in the 4-point quadratic shape, $F(1, 209) = 26.51, MSE = 323.15, \eta^2 = .11, p < .001$. Cell means are listed in Table 1.

Discussion

The purpose of this study was to explore the relationship between anxiety and depression in the public speaking context. Given the association of these variables in other situations (Lonigan et al., 1994; MacLeod & Byrne, 1996), it stands to reason that they might also be related in the public speech performance context. The first hypothesis, predicting a positive relationship between anxiety and depression at each of the four public speaking milestones identified by Behnke and Sawyer (1998), was supported. Analysis indicated that, for the student speakers in this study, anxiety and depression had shared variance of 19% at anticipation, 20% at confrontation, 29% at adaptation, and 14% at release. Thus, at the time leading up to and during public speaking presentations, student speakers reported that they generally have negative feelings of both anxiety and depression. Because each of these emotions evokes specific unpleasant feelings, increased negative affect could distract speakers, interfere with fluent speaking, or otherwise reduce the effectiveness of the speech performance. Consistent with previous research findings, the speakers in this study generally have anxious feelings whenever they anticipate and deliver a speech, but anxiety levels quickly diminish for most speakers once

Figure 1. Patterns of Anxiety and Depression at Public Speaking Milestones

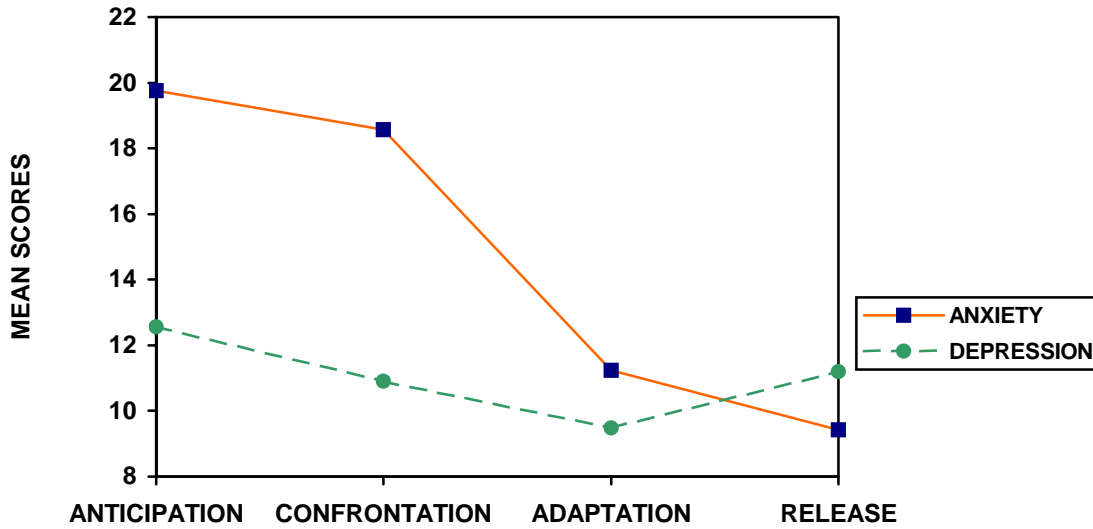


Table 1: Cell Means (and Standard Deviations) for Anxiety and Depression Across Speech Milestones

	<u>Anticipation</u>	<u>Confrontation</u>	<u>Adaptation</u>	<u>Release</u>
Anxiety	19.76 _a (4.04)	18.57 _b (4.45)	11.24 _c (4.90)	9.43 _d (4.91)
Depression	12.57 _e (4.51)	10.91 _f (4.38)	9.48 _g (3.72)	11.20 _f (4.50)

Note. Means in rows with different subscripts are significantly different at $p < .05$.

they begin their presentation. One explanation for the demonstrated correlation between anxiety and depression is that the more depressed speakers may very well experience speech anxiety that is especially intense or persistent, perhaps due to feelings of helplessness in face of the public speaking assignment. Learned helplessness theory (Abramson et al., 1978) would suggest that these speakers probably make internal attributions about their own inability to make a successful speech, based in part on past experiences of speaking which they perceive to be unpleasant or unsuccessful. Such negative self-talk would likely have the effect of increasing feelings of nervousness and anxiety before and during a public speech. For these speakers, becoming aware of increasing feelings of nervousness and anxiety would only serve to reinforce their negative expectancies, further intensifying their depressive thoughts and perpetuating the depression-anxiety cycle. For many depressed individuals, feelings of helplessness and hopelessness are also associated with low energy, listlessness, low motivation, and inability to focus (Abramson et al., 1978; Grayson et al., 1987). To the extent that such feelings are experienced during the days of

preparation leading up to a speech, the more depressed speakers may be less well prepared for presentations, which in turn could contribute to anticipatory anxiety and increasingly low expectancies. Thus, the findings of a significant correlation between anxiety and depression in the public speaking context, when interpreted in light of learned helplessness theory, help explain the ubiquitous phenomenon of public speaking anxiety.

The second hypothesis predicted different patterns of change for anxiety and depression at four milestones before, during, and after the speech. Results for anxiety were consistent with previous research (Behnke & Sawyer, 1998), with speakers reporting that they generally experience the highest anxiety just before a speech begins, then decreasing at each succeeding milestone as the speech progresses and concludes (see Figure 1). The analysis of variance for trend confirmed this monotonic descending function as a significant linear pattern ($\eta^2 = .81$). Overall, for the student speakers in this study, anticipating the speech is generally more anxiety-producing than the actual speech delivery, a perception that is often stated by student speakers: "I was nervous before I spoke, but once I got started it wasn't so bad." Anticipatory anxiety, which usually begins the moment the speech assignment is made, has been shown to be an unpleasant reality for most speakers (Behnke & Beatty, 1981; Behnke & Sawyer, 1999). Although various instructional strategies have been recommended as a means of reducing anticipatory anxiety (Hu & Romans-Kroll, 1995; Witt & Behnke, 2006), a common strategy for many speakers is simply to persist in their speaking despite anxious feelings, knowing that their anxiety will probably decrease as the speech unfolds. This positive attitude of persistence is understandably less likely to occur in depressed speakers who are inclined to negative expectancies and feelings of helplessness.

In sharp contrast to the linear pattern of anxiety reduction, changes in depression followed a significant quadratic pattern ($\eta^2 = .33$). After moderate but steady declines across the first three milestones, speakers reported that they generally experience a significant upturn in feelings of depression in the first minute after a speech concludes (see Figure 1). Perhaps their feelings of depression increase as speakers start to reflect on their performance. Because depression is "a reaction to negative outcomes that have already occurred," (Luten et al., 1997, p. 708), this upturn in depression scores was not unexpected. Depressed persons are likely to evaluate circumstances with pessimism or negativity (Lonigan et al., 1994), and sometimes speakers feel that their presentation fell short of initial expectations. Furthermore, the instructor's feedback, the audience's applause, or the impending grade for the speech may be negatively perceived by the speaker, adding further to a sense of depression and failure. Such responses reflect previous observations of "a cluster of evaluative feelings about speech making" (Daly et al., 1989, p. 40), and they lend support to the tenets of learned helplessness theory (Abramson et al., 1978). It stands to reason that the depressed speakers may begin to ruminate on their performance and critically evaluate the experience with thoughts such as, "Just as I expected—I knew I couldn't do it." Such negative affect would likely fuel their underlying depressive state, with the result of increased perceptions of discouragement or failure. It should be noted that these elevated depression scores were reported at release, the same moment when speakers reported significantly lower anxiety scores (see Figure 1), indicating that, as predicted, anxiety and depression function differently in the public speaking context.

Despite the significant quadratic trend, however, the ending level of depression at release was only slightly different from the beginning level of depression at anticipation, where the highest depression scores in the study were obtained. Because measurement of depression ceased at release (one minute after a speech ends), it is not known whether this increasing trend might

continue in the hours and days following a speech. It is possible that speakers' depression levels a few days after a speech might increase beyond the beginning levels; this issue remains a question for future research. Nevertheless, these results indicate that speakers' depression, like speech anxiety, is a dynamic trait that is subject to subtle changes in narrow-band research designs. The relative stability of depression levels across the four milestones is not totally unexpected, given the resistance of depression to momentary stimuli such as applause, instructor feedback, or even nervousness before an audience. This interpretation reinforces Killgore's (1999) observation that a common characteristic of depression is, in fact, low arousal. For example, a depressive state could minimize or reduce speakers' sensitivity to both positive and negative affective responses. This interpretation would account for the relatively stable depression scores across the speech milestones.

Overall, these findings support the notion that anxiety and depression are related yet separate conditions. For the speakers in this study, anxiety and depression were clearly associated, but anxious and depressive reactions differed in terms of the amplitude and timing of the patterns. These findings extend the tenets of learned helplessness theory to the public speaking context, where a depressed mood apparently has negative effects on speech performance and, in turn, may be intensified by the public speaking experience.

The results of this exploratory investigation suggest important implications for Communication scholars and students. Public speaking instructors seek to encourage their students to implement rhetorical principles in designing and presenting effective speeches. At the same time, speakers should learn to enjoy public speaking and to minimize negative internal consequences such as fear of failure and the belief that they cannot succeed. The fear of failure, or anxiety, has been extensively investigated, and many suggestions for ameliorating public speaking anxiety have been reported in the Communication literature. Depression, on the other hand, with its concomitant feelings of helplessness and hopelessness, is an equally important area of study designed to minimize the negative feelings described above, and yet speaker depression has been largely overlooked by Communication scholars. As data about speaker depression accumulate, the relationship between anxiety and depression can be further examined in order to determine how speaking anxiety and depression, in concert, contribute to negative internal consequences of public speakers in performance.

Limitations of the Study

Despite the contributions of this study, the results should be interpreted within the limitations of the research design. One limitation involves the interpretation of trait data across milestones of a speaking event. Although anxiety has been shown to be a dynamic trait-like condition and thus subject to valid and reliable measurement, documenting subtle variations in narrowband trait levels is a new procedure for the relatively enduring condition of depression. Another limitation involves the participants, students enrolled in a college-level speech communication course. Findings should be interpreted with caution when applied to public speakers in other contexts, where the different dynamics of self-perception, grading, and peer feedback may have an impact on results.

Conclusion

Because negative affect can distract speakers from performing their best and thereby diminish the effectiveness of the speech performance, the reduction of both anxiety and depression probably contributes to positive attitudes and more successful speaking presentations. Additional research to clarify the relationship between these variables could lead to instructional strategies aimed at reducing negativity and increasing speaking effectiveness. For example,

scholars should investigate the upturn in depression scores after the speech by extending measurement of depression levels to the hours or days following the speech performance. Such examination would serve to clarify the significance of rising depression scores at release. Future research should also include both state and trait investigations, as differences between state anxiety patterns and state depression patterns may be even more pronounced. As more is learned about this important relationship, attention can be given to developing strategies to help students anticipate and understand their negative perceptions about speaking in public.

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