PREDICTORS OF JUDGMENT ACCURACY IN THE NONVERBAL COMMUNICATION OF PUBLIC SPEAKING ANXIETY: A SOCIAL RELATIONS ANALYSIS

DISSERTATION

Presented to the Graduate Council of the University of North Texas in Partial Fulfillment of the Requirements For the Degree of

DOCTOR OF PHILOSOPHY

By

Chris R. Sawyer, B.A., M.S.
Denton, Texas
August, 1992
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This study examined the encoding accuracy and decoding accuracy of individual speakers and audience members as predictors of the accuracy with which public speaking anxiety is communicated during speech performance. Previous research revealed that audiences tend to underestimate the state anxiety of public speakers and that a low-to-moderate, positive correlation exists between speaker self-report and audience-observed state public speaking anxiety. Two divergent theoretical perspectives, differential information processing and emotional communication processes, were proposed as explanations for this phenomenon. Predictors for each perspective were estimated by Kenny's 1988 Social Relations Model (SRM).

The study was conducted at a large metropolitan community college in the southwest region of the United States. Eighty subjects (40 males and 40 females) delivered two brief speeches before audiences of 20 fellow classmates. Immediately following each speech, speakers reported their state public speaking anxiety on the State-Trait Anxiety Inventory A-State (STAI A-State). Audience members recorded their observations of speaker state anxiety on an audience version of the STAI A-State. Correlations
between speaker self-report and audience-perceived state public speaking anxiety served as the estimate of judgment accuracy.

The full SRM explained 65.7% of the variance in communication accuracy. Actor effects, the most powerful predictor of communication accuracy, accounted for 49.5% of the variance. The interaction of actor and partner effects accounted for approximately 10% of the variance. A surprisingly low (5% of the variance) degree of accuracy was attributable to audience decoding skills. Interpretation of the findings and suggestions for future research are presented.
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Numerous investigators have examined the process by which individuals detect the emotions experienced by speakers (Buck, 1984; Buck, 1988; Denzin, 1983; Donohew, Sypher & Cook, 1988; Hyde, 1984; Patterson, 1987; and Sypher, Sypher, & Haas, 1988). Interestingly, while intense levels of affect have been reported by speakers during interpersonal encounters and public speaking situations, only a modest degree of an individual's emotional experience is communicated accurately to observers. It is not entirely clear, based upon previous research, whether these low correlations are simply the result of poor human encoding and decoding abilities or are attributable to insensitive research design.

College speech students frequently express feelings of embarrassment concerning classroom speaking assignments. Many of these students suspect that the anxiety which they experience during a public speech is detected by audiences. However, audience members often comment upon the apparent confidence and poise of these same speakers. Early studies of this phenomenon were marred by methodological and definitional shortcomings (Behnke, Sawyer & King, 1987, p. 138; Dickens, Gibson, & Prall, 1950; Dickens & Parker,
1951; Gilkinson, 1942). Behnke et al.'s (1987) replication of this previous research, which employed refined measurement techniques, confirmed that speaker-reported and audience-observed state speech anxiety are constructs which operate at only a moderate level of interdependence (Behnke et al., p. 139; Clevenger, 1959, p. 138).

A study explicating the mechanisms underlying this phenomenon promises to inform communication anxiety literature and speech communication pedagogy as well.

Statement of the Problem

The problem of this study was to provide an explanation of the accuracy with which public speakers communicate state anxiety to individual audience members during speech performance.

Purpose of the Study

The roles played by the following predictors of judgment accuracy in explaining the communication of public speaking anxiety were examined in this study:

1. encoding accuracy of public speakers
2. decoding accuracy of audience members
3. specific communication accuracy, the communication accuracy which is specific to a given speaker-audience member pair.
As a consequence of the study, recommendations for future research and pedagogical practice were proposed.

Significance of the Study

By examining the predictors of judgment accuracy related to the communication of public speaking anxiety, this study provided a test of falsification for an emerging theoretical perspective, the communication of emotion.

Definition of Terms

The following terms had restricted meaning and are thus defined for the study:

State public speaking anxiety is a temporary sense of dread or fear experienced during public speaking performance. This notion is roughly equivalent to the earlier usage of the term stage fright.

Speaker-reported public speaking anxiety is a state of anxiety experienced by public speakers during performance assessed via self-report measures.

Audience-observed public speaking anxiety is the level of speaker anxiety observed by members of the audience.

General accuracy is the overall level of agreement between the public speaking anxiety reported by speakers and that observed by their audiences. Operationally defined as the Pearson correlation
produced by speaker STAI A-State scores and audience observed STAI A-State scores.

**Encoding accuracy** is the tendency for an individual to reveal his or her emotional states via nonverbal behavior.

**Decoding accuracy** is the ability to decode the emotional states of others via nonverbal cues.

**Specific communication accuracy** is an individual's sensitivity to the nonverbal behaviors of another person with whom the receiver has an ongoing relationship.

**Basic Assumptions**

It was assumed that the perceptions of speakers held by each audience member were solely a function of the individuals, each speaker and each audience member, involved in the interaction. Audience-observed public speaking anxiety was not a product of discussion with or commentary by others.

It was also assumed that audience perceptions of speaker anxiety are derived from the behavior of speakers, and that speakers did not betray the nature of their own emotional state with verbal statements during or immediately following their presentations.

Further, it was assumed that speakers did honestly relate their state public speaking anxiety experiences on self-report measures of anxiety.
CHAPTER 2

REVIEW OF LITERATURE

Speaker-Versus Audience-Perceived Stage Fright

Early Studies

Communication scholars, contemplating the development of effective treatment strategies for stage fright, have searched for a means of accurately assessing performance related anxiety. Early studies described self-report, psychophysiological, and behavior observation methods of stage fright assessment.

Gilkinson (1942) proposed a self-report measure of the state anxiety experienced by college speech students while speaking before their classmates. Prior to this study, measures of student emotions experienced during performance involved speech anxiety but were generally too broad for practical benefit (p. 142). The initial version of Gilkinson's instrument, The Personal Report of Confidence as a Speaker (PRCS) was comprised of 128 items. Subjects (N = 420) were selected from a freshman level speech course at a large midwestern university. Each subject presented a speech to fellow classmates as part of the requirements for the course. Within 48 hours of their presentation, subjects were instructed to complete the PRCS, based on their most recent public
speaking experience, and were asked not to generalize to the aggregate of their public speaking background (p. 143). Following an item analysis of the original version of the PRCS, 104 items were deemed highly discriminating in the detection of state speech anxiety and were selected as the final version of the scale (p. 159).

Internal reliability for the PRCS was high ($r = .87$, Spearman-Brown prophecy = .93). Test-retest reliability, assessed 4 months later, was considerably less ($r = .60$) due to overall gains in speaker confidence from the initial test (p. 155). Validity for the scale was less promising however. Efforts to establish concurrent validity for the PRCS revealed a lack of correspondence between speaker self-reports of performance anxiety and observer impressions of anxiety-related speaking behaviors (pp. 157-158). Despite a high degree of inter-rater reliability ($r = .88$), audience impressions of speaker anxiety were only correlated moderately ($r = .53$) with speaker PRCS scores (p. 158). In addressing this finding, Gilkinson (1942) noted that,

> Validity is a problem in much of the research carried on in psychology and education, and presents particular difficulties in a study such as this one in which there is no objective and independent criterion upon which the variable in question, reported fear and confidence, can be checked. (p. 159).

Although Gilkinson used reliable measures of speaker-reported and audience-perceived performance anxiety, the relationship between scores produced by these instruments appeared attenuated.
Dickens, Gibson, and Prall (1950) reported the development of a technique for measuring audience observations of stage fright. After recognizing the validity problem of Gilkinson's (1942) self-report measure, these investigators proposed an experimental scale to be used by expert judges (p. 37). Specifically, their study sought to determine the reliability and validity of such a scale, the relative importance of vocal cues versus visual cues on impressions of speech anxiety, and the relationship between judgments of stage fright and subjective reports by speakers (pp. 37-38).

Forty male speakers presented 1-minute, non-humorous speeches before 61 expert judges. The speaker sample was selected from several hundred students enrolled in beginning and advanced college speech courses and conformed to a normal distribution of scores on Gilkinson's (1942, p. 144) self-rating stage fright scale. Judges were speech teachers and graduate students invited to participate in the study (p. 38). The presentations of each speaker were filmed. Immediately following each speech, judges rated the students on a 5-point scale of observable stage fright (p. 39). Speakers also completed the PRCS following the speech. Fifteen weeks after the first rating session, the same judges rated speaker anxiety from sound tracks of the speeches (p. 39). Five weeks following the second rating session, the same judges rated speaker anxiety from silent films of the presentations. In all cases, the judges' scores were averaged as a group mean.
Similar to Gilkinson's (1942) study, Dickens et al. (1950) reported a highly reliable measure of stage fright, but failed to confirm criterion-related validity. Inter-rater reliability for the observable signs of stage fright scale was high ($r = .98$) (p. 42). Despite this fact, the relationship between speaker-reported anxiety and that observed by expert judges was a moderate one ($r = .59$) (p. 42). Exposure to either vocal cues or visual cues alone produced a somewhat higher relationship but still far less than perfect ($r = .70$ & .69, respectively) (p. 45-46). The attenuation in this relationship was attributed, in part, to the communication skill of the speakers, "Common experience suggests that some speakers may quite skillfully conceal their inner trepidations. At the same time, it would seem logical to expect some degree of positive correlation." (p. 42).

Dickens et al. (1950) concluded that while the two methods tended to validate each other, the measures actually represent different phenomena. Thus, one should not expect the correlation between these variables to attain unity (p. 42).

Dickens and Parker (1951) attempted to apply psychophysiological measurement to stage fright assessment. Citing Gilkinson's (1942) and Dickens et al.'s (1950) observation scales as significant contributions to this line of research, Dickens and Parker attempted to determine (a) the level of physiological disturbance students experience during public speaking; (b) the interrelationship between physiological indicators of arousal,
Gilkinson's PRCS, and observers' reports of speaker anxiety; and (c) differences in these methods attributable to gender. One hundred subjects (50 males and 50 females) presented two, brief (3- to 5-minute) extemporaneous speeches before their classmates as an assignment in a basic college speech course (p. 252). Classmates rated each other for observable signs of stage fright using Dickens et al.'s (1950) scale. Speakers completed the PRCS following each of their performances. Physiological measures were taken immediately following the first speech and immediately before the second speech. Heart rate, systolic blood pressure, and diastolic blood pressure were selected as indicators of physiological stress (p. 253). Resting heart rate and blood pressure readings were taken on several nonperformance days during class meetings and were averaged to produce a normal level for each speaker (p. 241).

Across both speaking situations, physiological measures were correlated with judges' observations and speaker self-reports as $r = .50$ and $r = .05$, respectively (Dickens & Parker, 1951, p. 258). Speaker self-reports and judges' ratings were correlated at $r = .33$ (p. 258). Male speakers were more accurately decoded by their audiences than were female speakers ($r = .46$ and $r = .20$, respectively) (p. 259). These differences in decoding accuracy prompted Dickens and Parker to comment on the inherent weakness of the PRCS:

Considered in perspective, there were so many significant sex differences that it clearly necessitated treating the male
and female scores as separate sets of data. The possibility was suggested that quite different measuring techniques might have to be applied to the two sexes. In fact, the correlation coefficients for PRCS data indicated radically different introspective inventories should be devised. (p. 258)

The inclusion of physiological assessments neither provided criterion-related validity for the PRCS nor for the observer scale.

In a review of stage fright research, Clevenger (1959) compared the foregoing studies and suggested several hypotheses for future investigation. In his critique of these and other studies, however, Clevenger commented on the operational definition of stage fright in lieu of a precise verbal one (p. 135). Clevenger also pointed out the failure of self-report, psychophysiological, and audience-observation methods to establish concurrent validity in spite of their internal consistency (p. 137). Clevenger summarized the weakness of each measurement strategy:

It therefore seems that referring to a measure of any one of these as a measure of stage fright is not justified, since any one measurement will not bear a direct relation to any categorical definition of stage fright nor will it be likely to correlate well with any other dimension of measurement. (p. 138)

Clevenger advised future scholars to regard self-report, audience-observation, and physiological measures of stage fright as three separate variables (p. 138).

Commenting on the Gilkinson (1942), Dickens et al. (1950), and Dickens and Parker (1951) studies, Clevenger (1959) suggested
two hypotheses. In the first, he posited that a weak, positive relationship exists between self-report measures of stage fright and observational indices of specific behavior (p. 139). In the second, Clevenger also predicted that observers will notice less disruption in the speaker than the speaker will report having experienced (p. 137). These predictions concerning the relationship of speaker-reported and audience-observed speech anxiety remained unexamined for more than a quarter of a century.

**Recent Developments**

Behnke, Sawyer, and King (1987) proposed that psychometric limitations in previous studies could explain the attenuated relationship between speaker-reported and audience-observed speech anxiety. Specifically, they tested the following hypotheses:

1. Speakers' self-reported speech anxiety would be significantly higher than the speech anxiety detected by audiences.

2. A low to moderate correlation would exist between the level of speech anxiety reported by speakers and the level of speech anxiety detected by audiences (Behnke et al., 1987, p.139; Clevenger, pp. 139, 137).

Based on Spielberger's (1966) conceptualization, the notion of *stage fright* was interpreted as an anxiety state experienced during public speaking performance (Behnke et al., 1987, p. 138). Behnke et al. observed that although the PRCS was used as a state anxiety measure, its items were phrased as trait anxiety scales (p. 138). These investigators also pointed out that behavior observation
inventories are susceptible to less objective evaluations by speakers (Behnke et al., p. 138; Sypher, 1980; Sypher & Sypher, 1984). These limitations of design were thought to contribute to the attenuation of the relationship between speaker-reported and audience-observed speech anxiety.

In addressing these problems, Spielberger's (1966) STAI (A-State) was employed as a measure of both speaker self-reported and audience-observed public speaking anxiety. The STAI was selected because of its performance according to theoretical and empirical expectations in previous research (Behnke & Beatty, 1981; Behnke, Carlile, & Lamb, 1974; Carlile, Behnke, & Kitchens, 1977). Currently, the STAI is regarded as the most useful instrument for measuring state public speaking anxiety (Beatty & Andriate, 1985).

Participants in the Behnke et al. (1987) study were undergraduate students enrolled in introductory speech courses. Ninety-five speakers (54 males and 41 females) spoke to audiences of 15 to 25 fellow classmates. Each speaker presented a 3- to 5-minute extemporaneously delivered informative speech. Immediately following each presentation, speakers indicated how they felt during their performance, and audience members indicated how they thought the speakers felt during the performance.

Despite the empirical and logical improvements provided by the STAI (A-State), Clevenger's (1959) predictions were confirmed. Speaker-reported anxiety scores (Mean = 44.61; sd = 11.30) were significantly higher (t = 7.80, df = 188, p < .001) than mean
audience-observed speaker anxiety scores (Mean = 34.44, sd = 5.81). Also, a low to moderate, positive correlation was found between speaker STAI (A-State) scores and mean audience STAI (A-State) scores ($r = .375, p < .01$). Behnke et al. (1987) concluded that future research should clarify the mechanisms which underlie the communication of speech anxiety (p. 140).

**Alternative Interpretations**

**Differential Information Processing**

Studies of cross-situational consistency in personality research suggest that differences in actor and observer information processing affect the magnitude of self-other correlations. Since Mischel's (1968) seminal work, personality theorists have attempted to explain the generally low degree of convergence between self-reported and behaviorally manifested personality traits (Hogan & Nicholson, 1988; Kendrick & Funder, 1988; Shrauger & Schoeneman, 1979). The review of literature revealed consistent patterns in studies of self-reported versus other-observed data. Individuals who experience emotions or perform affect-related behaviors (actors) are described as having greater information concerning their own inner states than do outside observers (Funder, 1980, p. 476). Moreover, these experiences are thought to have greater importance to actors than to observers (p. 476). As a consequence,
actors generally rate themselves higher on measures of these states than do observers (Funder, 1980, p. 490).

Observers' perceptions of actor behavior are often shaped by memory based generalizations about the behavior of others (Burnstein & Schul, 1882; Markus, 1977). These schema are shared by many raters thus producing a systematic distortion within observer ratings (Shweder & D'Andrade, 1979, 1980). Characteristically producing high levels of inter-rater reliability while restricting the range of observation scores and, thereby, attenuating the self-other relationship observer schema may confound person-perception findings. Correlations of this type are illusory in that they merely represent the coincidence of observer stereotypes with the self-reports of actors.

This perspective could account for the findings of Behnke et al. (1987). Speakers have more information about their state anxiety than do audiences. Because performance anxiety experiences have greater salience to speakers than to audience members, speakers report significantly higher public speaking anxiety than that observed by audiences (p. 138). Also, because the schema audience members use to interpret the emotions of speakers restricts the range of observed public speaking anxiety, systematic distortion attenuates the self-other correlation. Behnke et al.'s finding of a smaller standard deviation for audience-observed public speaking anxiety ($sd = 5.81$) than that reported by speakers ($sd = 11.30$) provides support for this contention (p. 139). Thus, under
conditions of differential information processing, speaker-reported and audience-observed public speaking anxiety perform exactly as Behnke, Sawyer and King (1987) reported in their study.

**Emotional Communication Processes**

A resurgence of interest in the study of emotion and nonverbal communication has begun to emerge in recent research (Buck, 1984, p. 3). Scholarly activity in this area has been intense, suggesting a rich area of inquiry (Buck, 1988, p. 341; Donohew, Sypher & Cook, 1988, p. 287; Sypher, Sypher & Haas, 1988, p. 373). In general, researchers have attempted to define the linkages between emotional state, individual behavior, and communication (Denzin, 1983; Siegman, 1985). Particularly noteworthy are studies involving individual differences in the portrayal and discernment of emotions (Hall, 1980) and a renewed interest in vocal (Scherer, 1986) and facial behavior (Kirouac & Dore, 1983; Snodgrass & Rosenthal, 1985). Comparisons of self-reported and other-perceived emotional states are common to this body of literature.

Scholars contributing to this line of research use self-other correlations as a measure of accuracy in the nonverbal communication of emotion. While a large number of early person-perception studies employed difference-scores as a measure of accuracy or empathy (Bruner & Tagluri, 1954; Cline, 1964), Cronbach's (1955) and Cronbach and Furby's (1970) critique of difference-score reliability led to the decline of its use in person-
perception studies despite a number of methodological improvements (Bond, 1979; Manning & Dubois, 1962; Tucker, Damarin & Messick, 1966; Zimmerman & Williams, 1982). Eschewing the use of difference-scores, scholars conducting judgment studies have relied on correlations between self-reported emotions of actors and the observed emotional states detected by others (Rosenthal, 1982, p. 291). The resulting general accuracy tapped in these studies is described as attributable to the interaction between the encoding skill of actors and the decoding ability of observers (Buck, 1984, pp. 169 & 255).

Actors, according to Buck (1984, p. 169), are said to possess encoding accuracy to the extent that they reveal an emotional state through nonverbal behavior. Nonverbal receiving ability, in contrast, involves the ability to decode the internal states of others via nonverbal cues (p. 259). Interactions between encoding accuracy and decoding ability can confound the prediction of general communication accuracy (pp. 187-188). Encoding skill is used to conceal emotional states (Buck, 1984, p. 19; Patterson, 1987, pp. 116-119) in some situations. Thus, emotional states may not be accurately communicated because actors may lack encoding ability, receivers may lack decoding ability, and skillful actors may disguise their emotional states.

This perspective may explain Behnke et al.'s (1987) findings. Speakers who conceal the true level of their speech anxiety from their audiences produce an underestimate of public speaking anxiety
in observer ratings. Although many individuals in an audience are sensitive to the emotions of speakers, a portion of the audience lacks the ability to decode speech anxiety accurately. The net result is a low to moderate level of general accuracy. Sawyer and Behnke's (1990) study lends support to the notion that communication skill may account for judgment accuracy. Sawyer and Behnke found that audience members with high self-monitoring abilities were more accurate than were low self-monitoring abilities audience members in decoding the state anxiety of speakers. Thus, communication related factors, such as decoding skill, may explain the accuracy with which audiences detect the state anxiety of speakers.

Social Relations Perspective

Researchers of human communication must take into account the specific relationship between the individual participants of each dyad (Wilmot, 1980) because relationship effects may obscure the predictive power of variables relevant to the communication capabilities of individual subjects (Kenny & Nasby, 1980, p. 251). Kenny and his colleagues (Kenny, 1981; Montgomery & Kenny, 1982; Warner, Kenny & Stoto, 1979) have suggested the Social Relations Model (SRM) as a remedy for this problem. The SRM employs a variance-partitioning strategy (Pedhazur, 1982 pp. 174-220) that provides unbiased estimates for dispositional, situational and interactional components of social behavior (Malloy & Kenny, 1986,
pp. 204-205). This approach may be helpful in explaining the attenuation of self-other correlation (p. 205). Several researchers have noted the SRM's usefulness in studies of human judgment (DePaulo, Kenny, Hoover, Webb & Oliver, 1987; Kenny, 1988; Kenny & Albright, 1987; Sabatelli, Buck & Kenny, 1986).

As a mathematical expression, the SRM is composed of the following components:

\[ X_{ijk} = M + a_i + b_j + g_{ij} + e_{ijk} \]

Applied to a study of judgment accuracy, the term, \( X_{ijk} \), refers to overall judgment accuracy when one individual encodes a set of cues to another (Buck, 1984, p. 290; Sabatelli, Buck & Kenny, 1986, p. 515). This score has four components—the general level of judgment accuracy for a specific group of senders and receivers (\( M \)), an actor's sending accuracy (\( a_i \)), a partner's receiving ability (\( b_j \)), and the interaction between the sending accuracy of actors and the receiving ability of their partner (\( g_{ij} \)) (Buck, 1984, p. 290; Sabatelli et al., 1986, p. 515). The error term (\( e \)) contains variance attributable to a specific speaking occasion (Malloy & Kenny, 1986 pp. 208-210).

For judgment studies in which subjects are distinguished by their roles, teacher-student or speaker-audience member, accuracy scores are arranged in a block design, person-by-person matrix (Kenny & LaVoie, 1984, p. 151-152). Procedures for estimating SRM components are similar to a two-factor fixed effects analysis of variance (Dunn & Clark, 1987, pp. 138-207; Malloy & Kenny, 1986,
p. 210). However, by arranging data in a person-by-person matrix, SRM components function as random variables (Malloy & Kenny, 1986, p. 210; Kenny & LaVoie, 1984, p. 163-165). Therefore, conclusions derived from studies in which the SRM has been applied are more generalizable than are traditional fixed effects models (Malloy & Kenny, 1986, pp. 208, 210).

Applications of the model to the problem of accuracy in person-perception have produced interesting and insightful results. Sabatelli et al.'s (1986) analysis of nonverbal communication among married couples employed the SRM variance partitioning strategy. These investigators reported a larger proportion of variance attributable to actors (22%-48%) than to receivers (1%-10%) (p. 520). Similar findings were disclosed by Kenny and Albright's (1987) study in which actor variance was a much stronger predictor of judgment accuracy than variance attributable to partners, 40% to 3%, respectively (p. 399). Moreover, DePaulo et al's (1987) extensive treatment of the accuracy question revealed that substantial proportions of variance in accuracy were attributable to actor effects, while partner effects were comparatively small (p. 309). Combined, the relationship and occasion effect also claimed a sizeable amount of variance (p. 309). These studies suggest that accuracy in person-perception is largely a function of factors related to actor behavior with lesser yet significant portions of variance attributable to the relationship and partner components in the model.
Hypotheses

The preceding discussion takes note of the divergent interpretations of findings reported in the communication of speech anxiety. The first of these interpretations proposes that differences in observational perspective between speakers and their audiences produce an illusory correlation, an artifact with minimal significance. An alternative position characterizes the low degree of convergence between speaker-reported and audience-observed public speaking anxiety as a by-product of competing communication variables. In other words, by viewing the resulting correlation as a measure of accuracy, a more comprehensive picture of the underlying mechanisms of person-perception is possible. Because the two views are mutually exclusive, the present research should account for this apparent incongruity through an examination of the predictors of judgment accuracy related to the communication of public speaking anxiety. These predictors were operationalized using the SRM. Based upon the previous literature reviewed, the following hypotheses were tested:

H1: Speakers' self-reported speech state anxiety is significantly higher than the speech state anxiety attributed to them by their audiences.

H2: A low to moderate correlation exists between the level of speech anxiety reported by speakers and the level of speech anxiety detected by their audiences.
H3: A significant positive relationship exists between speaker encoding accuracy and overall judgment accuracy for the communication of public speaking anxiety.

H4: A significant positive relationship exists between the decoding accuracy of individual audience members and overall judgment accuracy for the communication of public speaking anxiety.

H5: A significant positive relationship exists between the specific communication accuracy of speakers and their audiences and overall accuracy for the communication of public speaking anxiety.

Correlations within the range .2 to .7 were considered low to moderate (Guilford, 1956; Williams, 1986 p. 132). Correlations of less than .2 were considered slight while those exceeding .7 were considered high (Guilford, 1956; Williams, 1986 p. 132).
CHAPTER 3

METHODOLOGY

General Procedures

Procedures for data collection for this study followed the general protocol established in the Behnke, Sawyer and King (1987) and Sawyer and Behnke (1990) studies. As part of the requirements for an introductory college speech course, students presented 5-minute informative and persuasive speeches before audiences consisting of 20 fellow classmates. Immediately following each speech subjects responded to the scale as follows: (a) speakers indicated how they felt during the speech performance, and (b) audience members indicated how they thought speakers felt during the performance. Versions of the STAI (A-State) were phrased to reflect the self-reports of the speakers and the observations of the audience members used in studies by Behnke et al. (1987) and Sawyer and Behnke (1990). All participants were told that the procedure was a standard practice in the course and that the procedure had an instructional purpose.

Population

This study was conducted in speech courses offered by a large, metropolitan community college located in the North Central
Texas region. Approximate enrollment in speech courses at this college was 1,500 students for the semester. Forty-eight percent of the student population was in the traditional college age range of 18 to 25 years. The remaining 52% consisted of non-traditional age students.

Selection of Sample

The minimum sample size for this study was based on Borg and Gall's (1983, pp. 262-265) recommendations. Assuming that the overall correlation for speaker-reported and audience-observed public speaking anxiety would be approximately the same ($r = .375$) found in the Behnke et al. (1987, p. 139) a minimum of 47 subjects was required for this study. However, in order to establish an adequate sample for the study, 80 students were selected from speech courses offered at Tarrant County Junior College in the spring semester, 1991. Because males and females differ with respect to nonverbal encoding and decoding skills (Hall, 1980) equal numbers of males and females were included in the study (40 males, 40 females).

Instruments

Spielberger's (1966) STAI (A-State) anxiety scale was selected as the state anxiety measure because it was designed to assess situational anxiety, such as public speaking. In previous research, the scale has performed according to theoretical

Research Design

During the spring semester, 1991, subjects were randomly assigned to present informative and persuasive speeches on specific days. Subjects were also assigned to act as peer-evaluators (audience members) on other days during the speaking round. All subjects were assigned to treatment conditions following a stratified random sample accounting for the gender of the participants.
Procedures employing the SRM require each subject to serve as both actor and partner, the stimulus for other subjects and subjects themselves (Kenny & LaVoie, 1984, p. 168). Following Tagiuri's (1969) recommendations, subjects interacted on two separate occasions (Kenny & LaVoie, 1984, p. 149 & 168; Malloy & Kenny, 1986, p. 205). SRM studies are, therefore, repeated measurement experiments.

Repeated measurements designs, such as those required in SRM studies, often involve blocking strategies in which subjects are randomly selected from a target population, classified by some logical scheme, and are subsequently assigned systematically to treatment conditions. Originally intended for round robin data structures, SRM person by person matrices can be used to estimate SRM parameters such as checkerboard, circle, and block designs (Kenny & LaVoie, 1984, p. 151). For judgment studies in which subjects are distinguished by their roles, teacher-student or speaker-audience members, accuracy scores often are arranged in a block design, person-by-person matrix (Kenny & LaVoie, 1984, pp. 151-152). In the present study, accuracy data were arranged in an person-by-person block design (80 subjects x 80 subjects) in which subgroups were assigned in this design according to the roles of speaker and audience member.

As illustrated in Table 1, an X indicates an accuracy score while a hyphen indicates that an observation is missing. This matrix describes a treatment group in which subjects were assigned to
subgroups or blocks according to roles in a public speaking situation. All ten subjects interact only with those in the other group.

Table 1. Symmetrical Block Design

| AUDIENCE MEMBERS | |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                  | SPEAKERS 1       | 2                | 3                | 4                | 5                | 6                | 7                | 8                | 9                | 10               |
| 1                 | -                | -                | -                | -                | -                | X                | X                | X                | X                | X                |
| 2                 | -                | -                | -                | -                | -                | X                | X                | X                | X                | X                |
| 3                 | -                | -                | -                | -                | -                | X                | X                | X                | X                | X                |
| 4                 | -                | -                | -                | -                | -                | X                | X                | X                | X                | X                |
| 5                 | -                | -                | -                | -                | -                | X                | X                | X                | X                | X                |
| 6                 | X                | X                | X                | X                | X                | -                | -                | -                | -                | -                |
| 7                 | X                | X                | X                | X                | X                | -                | -                | -                | -                | -                |
| 8                 | X                | X                | X                | X                | X                | -                | -                | -                | -                | -                |
| 9                 | X                | X                | X                | X                | X                | -                | -                | -                | -                | -                |
| 10                | X                | X                | X                | X                | X                | -                | -                | -                | -                | -                |

Data structures associated with the SRM conform to Campbell and Stanley's (1963, p. 50) counterbalanced design, in which experimental control is achieved through assignment of subjects to all treatment conditions. Among quasi-experimental designs, counterbalanced protocols present several advantages. Counterbalanced designs inherently control for internal threats to validity due to history, maturation, testing, instrumentation, regression, selection and mortality (p. 40). However, Campbell and
Stanley (1963) advised researchers using counterbalanced designs to control for potential effects due to multiple treatments, such as those prescribed in the SRM, by representing each data point in deviation form and by selecting a random effects model (pp. 40, 51-52). Parameter estimates derived from the SRM appear in deviation form (Kenny & LaVoie, 1984, p. 163-165; Kenny & Nasby, 1980, p. 252-253; Warner, Kenny, & Stoto, 1979, p. 149). Moreover, Malloy and Kenny (1986, p. 208) argued that the SRM is a random effects model, allowing for generalization to populations rather than to the particular persons studied.

Dependent Variable

Judgment accuracy was defined as a correlation between each speaker's self-reported state anxiety and each audience member's observed state anxiety for each speaker using STAI (A-State) scale items values as paired observations. Sawyer and Behnke (1990) used this same method to operationalize judgment accuracy in their study.

Experimental Control

Sections of basic speech communication courses comprised the intact groups from which data were gathered. Within each class, subjects were assigned to four blocks of 20 subjects each by stratified random sample controlling for gender (10 males, 10 females). Informative and persuasive speaking assignments were
treatment conditions under which observations of accuracy were made. Following Pedhazur's (1982, p. 513) recommendations concerning intact groups, coded product vectors representing the class in which each subject was enrolled, block assignment within each class, gender, and treatment condition were generated and regressed onto the dependent variable.

Estimating Model Parameters

Although complicated, the task of estimating SRM parameters was relatively straightforward (Kenny, 1981; Kenny & LaVoie, 1984; Kenny & Nasby, 1980; Warner, Kenny & Stoto, 1979). First, row, column, and cell means as well as the grand mean for all subjects were computed (Warner et al. 1979, p. 148). Next, unbiased estimated of actor (row), partner (column) and relationship (interaction) effects were computed (Warner et al., 1979, p. 149). Actor effects were computed by subtracting the grand mean from the row means for each subject. Partner effects were computed by subtracting the grand mean from the column mean of each subject. Relationship effects were computed by subtracting the grand mean, actor effect and partner effect from each cell mean. Last, actor, partner, and relationship effects were regressed onto the dependent variable. Variance estimates for each model parameter were estimated directly from a stepwise regression.
Analysis of Data

In order to ensure that data gathered in this study are similar to those in previous research, both a test for difference of means and correlational procedures were employed. Expected differences between speaker STAI and audience STAI scores were assessed using a one-tailed $t$ test. Also, the overall correlation between speaker STAI and audience STAI was computed via a Pearson product-moment correlation coefficient. These procedures were selected to test hypotheses one and two.

The present research tested the notion that the overall level of judgment accuracy in the communication of public speaking anxiety is the sum of the encoding accuracy of speakers, the receiving accuracy of audience members, and the effect of relationships between speakers and audience members. Confirming this additive model supports the communication of emotion perspective. The last term in the model assessed the illusory correlation interpretation. Systematic distortion, such as that predicted by the differential information processing position, results in residual variance (Crocker & Algina, 1986, pp. 105-106). The magnitude of the error term supports the differential information processing perspective. These procedures were used to test hypotheses three, four, and five.
CHAPTER 4

RESULTS

Reliability

Test-retest reliability for the speaker reported STAI (A-State) scale was .531 and the stability coefficient for the audience reported STAI (A-State) scale was .607 (Table 2). These moderate level correlations are to be expected in test-retest applications of this state scale (Rule & Travers, 1983, p. 276). State anxiety scores vary over time due to factors associated with adaptation to stimulus conditions (Spielberger, Gorsuch, & Luschene, 1970). Alpha reliabilities (Cronbach, 1951) for the speaker-reported STAI (A-State) scale and the audience-reported STAI (A-State) scale were .96 and .94 respectively (Table 2).

Howarth (1978) suggested using the mu index as a means of differentiating between state and trait scales, and described the mu index as follows: $\mu = 1 - \frac{\text{test-retest reliability}}{\text{coefficient alpha}}$ (p. 474). The mu index was used to confirm that the STAI (A-State) scale performs as a state measure (Logan & Loo, 1979). In the present study, the mu index for the speaker STAI was .447 and the audience measure was .354 (Table 3). These figures indicate that both the speaker and the audience measures were performing near the typical mu range for a state anxiety measure.
Table 2.

**Test-Retest and Coefficient Alpha Reliabilities for Speaker Self Reported and Audience Observed STAI (A-State)**

<table>
<thead>
<tr>
<th></th>
<th>Speaker Self Report</th>
<th>Audience Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test-Retest</strong></td>
<td>.531</td>
<td>.607</td>
</tr>
<tr>
<td><strong>Coefficient Alpha</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment One</td>
<td>.640</td>
<td>.707</td>
</tr>
<tr>
<td>Treatment Two</td>
<td>.639</td>
<td>.720</td>
</tr>
<tr>
<td>Overall</td>
<td>.96</td>
<td>.94</td>
</tr>
</tbody>
</table>

Table 3.

**Mu Index for Speaker and Audience STAI (A-State)**

<table>
<thead>
<tr>
<th></th>
<th>Speaker Self Report</th>
<th>Audience Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment One</td>
<td>.392</td>
<td>.329</td>
</tr>
<tr>
<td>Treatment Two</td>
<td>.393</td>
<td>.316</td>
</tr>
<tr>
<td>Overall</td>
<td>.447</td>
<td>.354</td>
</tr>
</tbody>
</table>

*Note:* Overall mu index should exceed .350 for state variables.
Hypotheses One and Two

Speakers reported significantly higher levels of state speech anxiety (mean = 46.394) than was observed by audiences (mean = 37.502, df = 159, mean difference = 8.891, t = 10.529, p < .0001). Expected difference between speaker STAI and audience STAI scores were assessed using a one-tailed t test for paired samples. The results of this statistical test are reported in Table 4.

Table 4. Difference Between Speaker STAI and Audience STAI

<table>
<thead>
<tr>
<th>t-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>159</td>
</tr>
</tbody>
</table>

Despite underestimating the extent to which speakers would report state anxiety during performance, audience members' perceptions tended to coincide with speaker self-reports. A moderate, positive correlation was found between speaker self-reported speech anxiety and the audience-perceived speaker anxiety (r = .418; p < .0001). The overall correlation between speaker STAI and audience STAI was computed using a Pearson product-moment correlation coefficient. The results of this statistical test are reported in Table 5. Hypotheses one and two were supported.
Table 5.

Relationship Between Speaker STAI and Audience STAI

<table>
<thead>
<tr>
<th>N</th>
<th>Covariance</th>
<th>Correlation</th>
<th>R-squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>160</td>
<td>35.675</td>
<td>.418</td>
<td>.175</td>
</tr>
</tbody>
</table>

Hypotheses Three, Four, and Five

A stepwise regression equation accounted for 65.7% of the variance in judgment accuracy ($F = 1020.915, df = 3/1599, p < .0001, R = .811$) Speaker encoding ability as a predictor of judgment accuracy was the first predictor entered into the equation ($F = 1563.303, p < .0001, R^2 = .495$). The results of step one are reported in Table 6.

Table 6.

Actor Effects (Speakers) as a Predictor of Judgment Accuracy

<table>
<thead>
<tr>
<th>DF</th>
<th>R</th>
<th>R-squared</th>
<th>Adj.R-squared</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1599</td>
<td>.703</td>
<td>.495</td>
<td>.494</td>
<td>.285</td>
</tr>
</tbody>
</table>
The interaction between speaker encoding ability and audience decoding ability as a predictor of judgment accuracy entered the equation next \((F = 438.984, p < .0001, R^2 = .604, \text{change} = .109)\). The results of step two are reported in Table 7.

Table 7.

**Relationship Effects (Interaction) as a Predictor of Judgment Accuracy**

<table>
<thead>
<tr>
<th>Regression Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF</td>
</tr>
<tr>
<td>1599</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis of Variance Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
</tr>
<tr>
<td>Regression</td>
</tr>
<tr>
<td>Residual</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

The receiving ability of audience members as a predictor of judgment accuracy entered the equation last \((F = 251.184, p < .0001, R^2 = .657, \text{change} = .053)\). The results of step three are reported in Table 8. Hypotheses three, four, and five were supported.
Table 8.

Partner Effects (Audience Members) as a Predictor of Judgment Accuracy

<table>
<thead>
<tr>
<th>Regression Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>DF</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>1599</td>
</tr>
</tbody>
</table>

Analysis of Variance Statistics

<table>
<thead>
<tr>
<th>Source</th>
<th>DF</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>3</td>
<td>169.210</td>
<td>56.403</td>
<td>1020.915</td>
</tr>
<tr>
<td>Residual</td>
<td>1596</td>
<td>88.176</td>
<td>.055</td>
<td>p = .0001</td>
</tr>
<tr>
<td>Total</td>
<td>1599</td>
<td>257.386</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: R-square change = .053

Blocking Effects

Class and block assignments each counted for less than 1% of the variance in accuracy (Tables 9 & 10 respectively). Neither class (F = .174, p < .6769, R² = .0001087) nor block (F = .315, p = .5756, R² = .0001971) was a significant predictor of the dependent variable.
Table 9.
Class Enrollment as a Predictor of Judgment Accuracy

<table>
<thead>
<tr>
<th>DF</th>
<th>R</th>
<th>R-squared</th>
<th>Adj. R-squared</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1599</td>
<td>.010</td>
<td>.0001087</td>
<td>-.001</td>
<td>.401</td>
</tr>
</tbody>
</table>

Table 10.
Block Assignment as a Predictor of Judgment Accuracy

<table>
<thead>
<tr>
<th>DF</th>
<th>R</th>
<th>R-squared</th>
<th>Adj. R-squared</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1599</td>
<td>.014</td>
<td>.0001971</td>
<td>-.0004285</td>
<td>.401</td>
</tr>
</tbody>
</table>

Audience member gender (Table 11) also accounted for less than 1% of the variance in accuracy and was not significant ($F = .852, p = .356, R^2 = .001$). Speaker gender (Table 12) accounted for approximately 1% of the variance in accuracy and was significant ($F = 18.422, p = .0001, R^2 = .011$). However, this variable was not entered into the full stepwise regression model due to the low magnitude of variance in accuracy attributable to speaker
gender. Blocking successfully controlled for spurious effects due to group membership, block assignment, gender of the speaker and gender of the rater.

Table 11.

**Audience Gender as a Predictor of Judgment Accuracy**

<table>
<thead>
<tr>
<th>DF</th>
<th>R</th>
<th>R-squared</th>
<th>Adj.R-squared</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1599</td>
<td>.023</td>
<td>.001</td>
<td>-.00009237</td>
<td>.401</td>
</tr>
</tbody>
</table>

Table 12.

**Speaker Gender as a Predictor of Judgment Accuracy**

<table>
<thead>
<tr>
<th>DF</th>
<th>R</th>
<th>R-squared</th>
<th>Adj.R-squared</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1599</td>
<td>.107</td>
<td>.011</td>
<td>-.011</td>
<td>.399</td>
</tr>
</tbody>
</table>

Note: Male speakers were more accurate encoders of state public speaking anxiety than their female counterparts.
Treatment Effects

Accuracy in detecting speaker state anxiety rose slightly among subjects during the second treatment condition ($r = .371, N = 1,600$) over that recorded in the first treatment condition ($r = .216, N = 1,600$). Treatment effects, as a predictor of the dependent variable (Table 13), accounted for a small yet significant portion of the variance ($F = 62.094, p = 0001, R^2 = .037$). Data in Table 14

Table 13.

Treatment Effects as a Predictor of Judgment Accuracy

<table>
<thead>
<tr>
<th>DE</th>
<th>R</th>
<th>R-squared</th>
<th>Adj.R-squared</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1599</td>
<td>.193</td>
<td>.037</td>
<td>.037</td>
<td>.394</td>
</tr>
</tbody>
</table>

Table 14.

Full Social Relations Model Including Treatment Effects

<table>
<thead>
<tr>
<th>DE</th>
<th>R</th>
<th>R-squared</th>
<th>Adj.R-squared</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1599</td>
<td>.834</td>
<td>.695</td>
<td>.694</td>
<td>.222</td>
</tr>
</tbody>
</table>

Note: Treatment effects account for 3.8 percent of model variance.
shows that treatment effects added unique variance to the full regression equation for the SRM ($F = 907.866, p = .0001$. $R^2 = .695$; change = .038)

Multicollinearity of Predictors

Multicollinearity, the confounding of model effects due to overlapping variance among predictors, can create specification errors in studies employing multiple regression (Pedhazur, 1982 pp. 232-247). However, multicollinearity generally presents no major barriers to the interpretation and determination of the magnitude of variance predicted by a regression equation (p. 245). SRM estimates may intercorrelate; therefore, multicollinearity should be examined. Data in Table 15 shows the intercorrelations among the predictors of judgment accuracy.

Table 15.

**Intercorrelations Among Predictors of Judgment Accuracy**

<table>
<thead>
<tr>
<th></th>
<th>Actor</th>
<th>Partner</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor</td>
<td>1.000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Partner</td>
<td>.238</td>
<td>1.000</td>
<td>-</td>
</tr>
<tr>
<td>Relationship</td>
<td>.163</td>
<td>.389</td>
<td>1.000</td>
</tr>
</tbody>
</table>
Gunst and Mason (1977) recommend testing multicollinearity through factor analysis. Provided that each predictor loads on only one orthogonal factor then multicollinearity is not a problem (p. 260). Data in Table 16 show that the predictors of judgment accuracy employed in this study each loaded on a single orthogonal factor. Therefore, multicollinearity was not a problem in this study. Table 16.

**Factor Loadings for Each Predictor of Judgment Accuracy**

<table>
<thead>
<tr>
<th></th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Actor</strong></td>
<td>-.071</td>
<td>.991</td>
<td>.111</td>
</tr>
<tr>
<td><strong>Partner</strong></td>
<td>-.196</td>
<td>.117</td>
<td>.974</td>
</tr>
<tr>
<td><strong>Relationship</strong></td>
<td>.978</td>
<td>-.073</td>
<td>-.194</td>
</tr>
</tbody>
</table>
CHAPTER 5

DISCUSSION AND CONCLUSIONS

Earlier studies on the communication of public speaking anxiety revealed low-to-moderate, positive correlations between the speakers' state anxiety and the anxiety perceived by their audiences. Furthermore, in these studies, audiences tended to underestimate the anxiety of speakers. In the present study, on both counts, speakers and individual audience members behaved in a manner consistent with previous research findings.

Actor Effects

The present study, as well as previous SRM research, shows that a large proportion of the variance in communication accuracy is attributable to the sending ability of actors. Attempting to explain the overwhelming strength of actor effects, DePaulo, Kenny, Hoover, Webb, and Oliver (1987) suggested that speaker expressiveness directly influences accuracy--the greater a speaker's expressiveness, the more accurately others judge the speaker's emotional state.

Under some conditions, the range of a subject's emotional expression is involuntarily attenuated, a phenomenon called inhibition (Buck, 1984, p. 215). However, humans are capable of
intentionally disguising their emotions (DePaulo & Rosenthal, 1979; Lanzetta, Cartwright-Smith, & Kleck, 1976). It is important to note that each process is based upon assumptions contrary to the other. Inhibition suggests innate emotional responses (Fowles, 1980; Gorenstein & Newman, 1980; Zuckerman, Buchsbaum, & Murphy, 1980) while deception requires a system of intentionally manipulated vocal and facial displays (DePaulo, Zuckerman, & Rosenthal, 1981). Scholars appear divided with respect to the mechanisms that regulate nonverbal expressiveness (Buck, 1984, pp. 214-254). Future researchers should attempt to resolve this difference of opinion.

The level of intensity with which a speaker experiences state public speaking anxiety might confound potential findings from this line of research (Beatty, 1988; McCroskey & Beatty, 1984). Frequently, anxiety states inhibit speaker expressive behaviors during performance (Mulac & Sherman, 1974). Therefore, fluctuating levels of state anxiety may affect the accuracy with which speaker emotional states are transmitted to others. Scholars attempting to explain the magnitude of actor effects should also examine the extent to which speaker state anxiety influences overall judgment accuracy.

In addition future researchers should examine the dispositional (Friedman, DiMatteo, & Taranta, 1980; Notarius, Wemple, Ingraham, Burns, & Kollar, 1982; Zuckerman, Larrance, Hall, DeFrank, & Rosenthal, 1979), psychophysiological (Buck, 1979), and
behavioral (Mulac & Sherman, 1974; Siegman, 1985) factors that distinguish more effective senders of emotional cues from their less expressive counterparts. A particularly interesting approach to the study of actor effects combines two or more of these research modalities. Recent research contains a number of studies, suggesting a potentially rich line of research. For example, Beatty and Behnke (1991) discovered that intensity of speaking task combined with level of public speaking trait anxiety predicts the physical responses of speakers during performance. Specifically, under conditions of low intensity speaking tasks, speakers with high communication apprehension experience higher heart rate than do speakers with low communication apprehension (p. 163). However, under high intensity speaking tasks, heart rates for high and low communication apprehensives were not significantly different (p. 164). Assuming innate emotional processes, accuracy would vary with the level of physiological activation associated with state anxiety. By extension, trait anxiety, a dispositional construct, may combine with task intensity, a situational variable, to predict communication accuracy as a function of physical response to stress, a psychophysiological measure. Thus, the convergence of theoretical perspectives may produce useful insights into emotional communication processes.
Partner Effects

Despite the relative importance of actor effects, most of the literature regarding individual differences in communication skill has been focused on what makes receivers more empathic (Goldstein & Michaels, 1985), rather than what makes senders more effective. Scholars have argued that nonverbal receiving ability, once proper measurement procedures have been developed, will explain the accuracy with which humans judge the emotional states of others. However, individual differences in receiving ability have failed to support this supposition. Although judgment accuracy increased among subjects over time, individual audience members appear to be no better at detecting the emotional states of public speakers than are partners in other dyads.

Partner variance, while low, suggests the phylogenous character of human decoding ability. Extending Gibson's (1966, 1977) notion of biologically relevant behavior, Sabatelli, Buck, and Kenny (1986) contended that human receiving ability has a linkage to human evolution. From this perspective, as a species, humans learn to recognize behaviors which suggest the emotional states of others and develop routinized responses to these behaviors. Under these conditions, decoding a facial expression or vocal cue becomes a function of merely noticing it (Buck, 1983). Because this ability does not vary greatly across receivers, the partner variable could not account for any more than a small but stable portion of variance associated with accuracy. Thus, audience members will interpret
the affective states of public speakers as they would in interpersonal encounters.

**Relationship and Occasion Effects**

The similarity between the findings of this study and those reported in other SRM accuracy studies underscores the role of relationship effects in the communication of emotion. Comparing accuracy between acquaintances with that produced by strangers has been the prevailing research strategy employed by social relations scholars to test relationship effects (Kenny, 1988; Kenny & Albright, 1987). However, relationships are defined as much by proxemics as by acquaintanceship (Anderson & Sull, 1985; Burgoon & Aho, 1982; Donohue, Weider-Hatfield, Hamilton, & Diez, 1985; Jordan, Street, & Putnam, 1983; Remland & Jones, 1989). Previous accuracy research in interpersonal relationships constrained the space between participants while public speaking situations portend a much wider array of proxemic options. Future researchers should examine the extent to which physical distance affects the accuracy with which speaker state public speaking anxiety is communicated to audience members.

While the communication of emotion perspective accounted for 65.7% of the variance in communication accuracy, no doubt some systematic distortion was present. For example, the relatively low mu index for audience STAI (A-State) suggests that audience members rated speakers in a manner consistent with shared
prototypes of how anxious public speakers behave (Cantor & Mischel, 1979). Recent advances in the study of communication behavior derived from implicit personality theory (Pavitt & Haight, 1986a, 1986b) allow for the explication of these shared cognitive generalizations. By identifying the extent to which an audience believes that speaker behavior is related to speaker state anxiety, and by treating the audience's implicit theory of speech anxiety as a covariate, future studies can improve the degree to which receiving ability predicts communication accuracy.

Future Social Relations Studies

In addition to the findings derived from the present study, the SRM suggests future lines of research using the communication of public speaking anxiety as an experimental situation. Kenny (1988) asserted that the SRM can be applied to other person-perception phenomena besides accuracy including consensus, assimilation and assumed similarity. Future researchers investigating the communication of public speaking anxiety should examine the following questions: (a) Consensus. To what extent will audience members agree when rating the state anxiety of common speakers? (b) Assimilation. To what extent will an audience member rate the state anxiety of different speakers in a like manner? (c) Assumed similarity. To what extent will a subject's self-reported public speaking anxiety affect that individual's perception of other speakers? Kenny (1984, 1986) has
developed computer software greatly simplifying the estimation of these person-perception phenomena.

Instructional Applications

College speech instructors should inform students that audiences consistently underestimate speaker state anxiety and are generally unable to detect speaker stage fright. Aside from traditional methods of instruction, such as lectures and outside reading material, speech communication professionals should implement a more elaborate and experiential classroom assignment. During a selected public speaking assignment, students serving as audience members should observe the state anxiety of fellow classmates with an abbreviated version of the STAI (A-State) anxiety scale. Likewise each speaker should be required to provide a self-report of his or her anxiety on a similar instrument. By allowing speakers to examine observations of fellow classmates in comparison with their own self reported anxiety, novice speakers enrolled in basic courses should find the relative lack of audience decoding skill helpful in managing performance related anxiety.

Students should also be made aware that half of the anxiety communicated during speech performance is a function of speaker behavior. Educators should train students to emit behaviors linked to audience perceived speaker confidence and to allay those which audiences associate with speaker anxiety.


