

THE VALIDITY OF THE TELEPHONE
APPREHENSION MEASURE

By

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CHAPTER I

INTRODUCTION

Anxieties such as writing anxiety, math anxiety, social-evaluation anxiety, and test anxiety are disruptive to a number of individuals in our society. "Fear," "anxiety," and "apprehension," as referred to throughout this paper, do not consist of a single isolated event, but rather a continuity of events which develop into an observable pattern of behavior.

Anxieties shape individual behavior, with the typical behavior associated with an anxiety being that of situation avoidance. However, situational avoidance is not always possible with individuals who suffer from social-communication anxieties. Humans are social beings who must communicate and it would be impossible for an individual to withdraw from all communication in all areas of life. Someone who has communication anxiety would experience a tremendous debilitating effect on his or her life. It is, therefore, vitally important that steps be taken to help people understand their own fears or anxieties so they may overcome them. To assist these individuals, some measuring instrument must be made available that would lead to recognition of the anxiety. Recently, self-report tests have been developed for people who suffer from social-communication anxieties; these tests generate awareness and often result in counseling aimed at eliminating the unwanted attitude or behavior.

In 1983, Steele and Reinsch developed a telephone apprehension

measuring instrument. It is the purpose of this paper to evaluate the validity of this telephone apprehension measuring instrument.

Importance of the Telephone

A telephone is available to almost all 200 million individuals in the United States. If as little as one percent of the United States population is hampered by telephone apprehension, there would be approximately two million individuals suffering from telephone apprehension. As telephone usage grows in our society, it is of great importance that scholarly research be conducted in this area.

Technological advances in the areas of video, computer, and telephone communication channels have opened new frontiers in communication. Both the private sector and the business world have been changed by the availability and the resulting usage of these new technologies. The low cost of the telephone has encouraged businesses and private individuals to greatly rely on the telephone. AT&T (1980) reported that in the United States approximately 175.5 million phones were in service, with approximately 46 million of these phones designated as business phones. World wide, it is estimated that there are at least 472 million phones in service (AT&T, 1980). Research in Pool's (1977) recent volume indicates that because of the telephone's widespread use and acceptance people have reduced their reliance on the personal letter, lost interest in maintaining their urban neighborhoods, permitted women to enter the working world, and managed to maintain family ties despite geographical dispersion. And upon examination of the role the telephone plays in maintaining contacts between individuals who are separated by a vast distance, the telephone has quite an impact on businesses as well as families.

Thorngren's (cited by Pool, 1977, p. 384) examination of contacts between organizations and regional offices in Europe (dealing only with telephone and face-to-face communication) indicated that approximately 80 percent of the total communication was achieved by the telephone. Other studies also support this supposition that business contacts are nurtured through telephone conversations. Conrath's (1973) study of a single Canadian manufacturing plant found that 12.86 percent of the communication episodes were conducted by telephone rather than face-to-face or writing. Volard and Davies (1982) indicate that Australian managers spend about six percent of their time on the telephone. Plotzke (1982) says that U.S. executives spend approximately 16 percent of the working day talking on the telephone. Klemmer and Snyder's (1972) observations of workers in a research and development laboratory indicated that they spent about seven percent of the work day talking on the telephone. These studies indicate the importance of the telephone as a communication channel to organizations.

In contrast to the apparent usefulness of the telephone, the opposite effect may be encountered when a telephone-apprehensive person is involved in such communication. For example, today's business world operates on the assumption that time is of the essence and the telephone-apprehensive person would seem likely to choose alternative and less efficient communication channels. This would affect upward communication in respect to information needed by the upper echelon in immediate situational decisions and downward communication in the ordering and delivering of products to consumers, and policy changes within the organization. Horizontal communication may be hampered by the lack of immediate information and this may result in overlapping work between

departments; furthermore, the telephone apprehensive person might be viewed as harboring information, which would create an uneasy climate within the individual's level of the organization and then possibly lead to the isolation of that individual.

Upon examining the usefulness and practicality of the telephone in the private sector, a distinct role for the telephone emerges. The average household initiates about four calls a day (Mayer, 1977). This reported telephone usage theoretically enables an individual to participate in eight (4 initiated and 4 received) telephone conversations per day, which may range from intimate to casual. In addition, the telephone has allowed each person to expand and nurture his friendships despite geographical locale. No longer is a person limited to his physical neighborhood; he or she can now develop a psychological neighborhood through telephone lines (Aronson, 1971). In a mobile society such as ours, the extended psychological neighborhoods have become part of our lives, and when these networks are disturbed a feeling of isolation occurs (Wurtzel and Turner, 1977). Furthermore, there is Pelton's (1981) suggestion that more and more interpersonal communication will be conducted over the phone. Our societal pace is fast, and the telephone allows the individual to "catch" the targeted person. It is this mobility, this "fast" pace which our society possesses, that tends to cause more difficulties for the individual who experiences telephone apprehension. Apprehension may cause individuals to choose relationships that can be nurtured by face-to-face exchanges or written channels. Apprehension may also mean indecisiveness on the phone, inability to confirm or call about dates, plans, and agendas.

Review of Literature

Telephone apprehension has received limited attention from communication scholars. In part, this is due to the lack of an instrument for measuring telephone apprehension. There are, however, three pieces of recent literature which attempt to alleviate this problem and present a measuring instrument. These papers are by Lewis and Reinsch (1982), Reinsch and Lewis (1983), and by Steele and Reinsch (1983).

Lewis and Reinsch's study (1982) deals with the various apprehensions that affect communication behavior in the business communication classroom. The study dealt with speech anxiety, communication apprehension, writing apprehension, and telephone apprehension. These first three items, speech anxiety, communication apprehension, and writing apprehension were measured with instruments that had been previously determined reliable; however, a telephone apprehension instrument did not exist and had to be developed. The measurement consisted of three Likert-type items (see Appendix A). Although Lewis and Reinsch found no significant differences in telephone apprehension among sub-populations they did find a moderate correlation between communication apprehension and telephone apprehension, which is not surprising since both concepts deal with interpersonal communication.

Lewis and Reinsch's telephone apprehension measurement was determined to have criterion-related validity when a one-way ANOVA showed a significant relationship between telephone apprehension and telephone behavior as measured by a single multiple-choice item from the questionnaire used by Wurtzel and Turner (1977). However, the internal reliability of their instrument was calculated at 0.692, and they

suggest that the development of a more reliable measure should be undertaken.

Reinsch and Lewis's (1983) study deals with the effects of communication apprehension on channel preferences in educational organizations. This study used written tests and interviews to obtain information on speech anxiety, communication apprehension, writing apprehension, and telephone apprehension. The measures previously used by Lewis and Reinsch (1982) were all determined reliable. The Telephone Apprehension Test used indicated an internal reliability of 0.55. The three-item test was then divided into one one-item test and one two-item test. Results indicated that telephone apprehension was correlated with communication apprehension. Results also indicated that channel preferences could be accounted for, in part, by apprehension scores.

Information obtained through interviews indicated that 16% (11) of the individuals had negative feelings toward the telephone and 31% (21) of the subjects claimed to know someone who was very uncomfortable using the telephone (Reinsch and Lewis, 1983).

The third piece of literature mentioned, Steele and Reinsch (1983), deals with the development of a new measuring instrument for telephone apprehension and a definition of the term "telephone apprehension." The instrument involved twenty Likert-type items. Each item was responded to on a five-point scale, with one indicating strong agreement, and five indicating strong disagreement. Composite scores ranged from twenty to one hundred, with the overall reliability being 0.940. Although reliability was quite high, validity of the test was not thoroughly evaluated.

The purpose of this paper is to determine the validity of the Steele and Reinsch (1983) telephone apprehension instrument. To evaluate

the validity of the telephone apprehension instrument we must first determine what type of anxiety we believe telephone apprehension to be, and then decide what concepts are related to the telephone. Anxieties are classified as either being trait-bound anxieties, or state-bound anxieties. Trait-bound anxieties have been defined by Beatty, Behnke, and McCullum (1978, p. 188) as stable personality traits; McCroskey (1977, p. 79), defines trait-bound anxiety as being "characterized by fear or anxiety with respect to many different types of oral communication encounters"; and Porter (1979, p. 252) defines the trait construct as being "stable over time and across context." In short, a trait anxiety is a stable personality characteristic. State anxiety has been construed by Beatty et al. (1978, p. 188) as "transitory conditions varying in intensity and fluctuating over time." McCroskey (1977, p. 83) defines state anxiety as "specific to a given oral communication situation." Porter (1979, p. 257) discusses state anxiety as being "sensitive to environmental changes." State anxiety is then, situational fear which varies in intensity and fluctuates over time.

The mechanics of using a telephone are common knowledge: one picks up the "receiver" and either initiates a conversation by speaking, or one receives a transmitted message by hearing. In telephone conversations, roles alternate and an individual is a transceiver (both transmitter and receiver). The anxiety experienced by some people concerning the use of the telephone stems from a fear of sending or receiving messages.

Constructs which have been empirically studied that are possibly related to the sending and receiving of messages over the telephone are speech apprehension, communication apprehension, and receiver apprehension. Because of their importance to the telephone apprehension construct, each

construct (speech apprehension, communication apprehension, and receiver apprehension) will be examined to see how it is defined and how it is related to telephone apprehension.

Speech apprehension, more commonly known as speech anxiety or stage fright, has been the subject of various studies. Definitions of speech anxiety are as varied as the studies. The first self-report instrument of speech anxiety was developed by Gilkenson in 1942. He proposed that anxiety was the individual fear in the presence of the audience, and he stated that his instrument was developed "for the purpose of securing a direct report of the subject's feelings as experienced, while making a particular speech at a particular time and place" (p. 143). Greenleaf (cited by Clevenger, 1959, pp. 134-135), states that "social speechfright" is an evaluation disability, occurring in social speech situations, and is accompanied by reactions of fear avoidance, and internal and external manifestations of tension. Low (cited by Clevenger, 1959) defines stage fright as:

... the emotional disturbance of the physical and mental behavior of the public speaker as it is manifested by observable characteristics; poor eye contact, nervous hand movements, restless shifting of the feet, awkward posture, body quivers, timid voice, embarrassment, and other physical and vocal cues empathetically perceived (p. 159).

In reviewing the above definitions of speech anxiety, there exist two aspects of speech anxiety that are prevalent: (1) the anxiety is situational in nature, making it a state anxiety; and (2) there are certain physical manifestations of tension.

According to Clevenger (1959), various methods have been used to measure speech anxiety, including observer-rating scales, self-report scales, and other measures of physiological changes. McCroskey (1977) in a more recent article, also indicates that various methods have been

used by researchers over the years. Scales developed by Gordon (1966), McCroskey (1970), and Beatty, Kruger and Springhorn (1976), are but a few examples of speech anxiety scales now in use. Self-report scales have been the most common method of collecting data, due to the cost of mechanical devices for indexing physiological changes, and the difficulty in obtaining reliable observer ratings. With the various scales available for measuring speech anxiety, the researcher must make a careful evaluation of the prospective scale based on empirical and statistical considerations. Although Gilkenson's (1942) scale is the oldest scale of speech anxiety, Friedrich's (1970) factor analytical research suggests that the instrument is not unidimensional.

One scale which has recently undergone rigorous testing is McCroskey's Communication Apprehension Scale (1970). McCroskey's PRCA (Personal Report of Communication Apprehension) scale has been used in various studies as a trait-bound anxiety scale, which measures a broad-base anxiety related to oral communication encounters rather than a variety of "types" of communication-bound anxieties; however, studies conducted by Porter (1979, 1981), Beatty, Behnke and McCullum (1978), Behnke and Beatty (1981), and Parks (1980) give support to the notion that the PRCA is not measuring a speech trait anxiety, but a speech state anxiety. Porter's (1981) analysis of the PRCA also provides a statistically derived shorter version of the instrument, consisting of thirteen items. With the PRCA being subjected to analysis to determine its reliability and validity as an interpersonal communication instrument, it seems an adequate measuring instrument of speech anxiety.

Another relevant concept in studying the telephone is communication apprehension. Communication apprehension has been defined as the level

of fear or anxiety associated with either real or anticipated communication with another person or persons (McCroskey, 1977). Although this definition of communication apprehension is broadly based, the concern of this paper will be with the oral aspect of communication apprehension.

Empirical research concerning communication apprehension has explored various areas. Three areas which are believed to be relevant to telephone usage are: interpersonal relationships, educational advancement, and organizational success. Research conducted in the interpersonal realm has indicated that communication apprehension affects verbal behavior (Jordan and Powers, 1978), dating behavior (Parks, Dindia, Adams, Berlin and Larson, 1980; McCroskey and Sheahan, 1978), and interpersonal perception (McCroskey and Richmond, 1976, 1979). These studies indicate that verbal behavior is impaired among highly apprehensive individuals and indicate that highly apprehensive people are seen as less attractive.

In education, communication apprehension research has indicated that highly apprehensive students refrain from discussion, ask fewer questions, and are perceived negatively by both instructors and fellow students (Crocker, Klopf and Cambra, 1978). If institutions of higher education continue using telephones for educational purposes, they need to address questions concerning telephone apprehension; colleges and universities may find the telephone apprehensive student avoids classes using the telephone, refrains from asking for clarification, and limits his participation in the class. Instructors who experience telephone apprehension, may be reluctant to answer questions and may be difficult to understand due to their verbal behavior.

Organizational communication apprehension has been found to affect the individual in relation to the organization in occupational choice

(Daly and McCroskey, 1975), employee satisfaction (Falcione, Daly and McCroskey, 1977), advancement (Scott, McCroskey and Sheahan, 1978), job retention, and interpersonal relations with peers (McCroskey and Richmond, 1979). The individual who experiences telephone apprehension may be similarly affected. Organizations may then suffer in message speed and organizational credibility.

Four measures have been developed which presumably measure communication apprehension. Lustig's (cited by Scott, McCroskey and Sheahan, 1978) Verbal Reticence Scale, Heston and Paterline's (cited by Scott, McCroskey and Sheahan, 1978) Unwillingness to Communicate Scale, and Burgoon's (1976) Unwillingness to Communicate Scale, are all measures which have been used to indicate communication apprehension; however, the test predictor of communication apprehension is Scott, McCroskey and Sheahan's (1978) Personal Report of Communication Apprehension in Organizations (PRCA-OF). This instrument was initially created to measure communication apprehension within organizations. It was developed by combining four items of the PRCA, five from Lustig's Verbal Reticence Scale, four from Heston and Paterline's Unwillingness to Communicate Scale, and seven new items directed toward organizational settings.

The final construct relevant to the telephone is reception. Apprehension research in the area of reception has been concerned with the degree individuals are fearful about misinterpreting, inadequately processing, and/or being unable to adjust psychologically to messages (Scott and Wheelless, 1977). Receiver apprehension, in a preliminary study, has been found to exist in a substantial number of subjects (Wheelless, 1975). Furthermore, receiver apprehension has been found to have deleterious effects on student achievement (Scott and Wheelless, 1977). It has also been indicated that the greater cognitive complexity of an individual,

the less likely the individual is to experience receiver apprehension (Beatty and Payne, 1981).

It appears that Wheelless (1975) has developed the only receiver-oriented instrument. Wheelless' Receiver Apprehension Test (RAT) has generated very little additional research; however, the research done by Beatty, Behnke and Henderson (1980) supports the validity of the RAT. Although empirical studies are lacking in the area of receiver apprehension, reception is an important part of telephone conversation and it is therefore, an important construct.

As previously mentioned, telephone apprehension is seen as a trait anxiety; therefore, a predictable pattern related to communication sensitivity should be prevalent. The determination of communication patterns has been established by the Conversational Self-Report Inventory (CSRI) (Hughey, 1983). This measuring instrument uses a forced-choice format which the subject completes to give a self-report of his or her own communication behavior and attitudes in most conversations. The instrument has been administered to more than 15,000 individuals and has proved to be a reliable and valid measure of communication patterns (Hughey, 1983).

The CSRI charts communication patterns based upon six standard requirements of a communication encounter:

1. Purpose (the intent of the communicators).
2. Climate (the mood or feeling generated by the encounter).
3. Transmission (the "speaking" part of communication).
4. Reception (the listening part of communication).
5. Coherence (the sequencing part of communication).
6. Problem Management (the detecting and coping with barriers to communication).

The six standard requirements of a communication encounter are connected into various patterns of communication sensitivity. The three

communication patterns are: Mastery Responsive, Flexible Responsive and Neutral Responsive.

The person may choose to impose his or her will on the conversation. This MASTERY RESPONSIVE (MR) mode is characterized by a person who chooses

1. to influence (in terms of purpose);
2. to generate a competitive climate (in terms of communicative climate);
3. to speak in a verbal dynamic way (in terms of transmission);
4. to listen in order to formulate his or her own messages; i.e., restricted listening (in terms of reception);
5. to be organized and to impose structure on others (in terms of coherence);
6. to handle problems once they come to a head; i.e., a problem handler (in terms of problem management).

The person may choose to respond by adapting to or by harmonizing him- or herself with the conversation. This FLEXIBLE RESPONSIVE (FR) mode is characterized by a person who chooses

1. to understand (in terms of purpose);
2. to generate a supportive climate (in terms of communicative climate);
3. to speak in an adaptive way with an emphasis on non-verbal output; i.e., nonverbal adaptive (in terms of transmission);
4. to listen to anything a person has to say; i.e., unrestricted listening (in terms of reception);
5. to adapt to the structure of others and to figure things out; i.e., to be insightful (in terms of coherence);
6. to detect and cope with the symptoms of conflict before things get out of hand; i.e., a problem preventer (in terms of problem management).

And, of course, a person may choose not to respond to the requirements of a conversation. This NEUTRAL RESPONSIVE (NR) mode is characterized by a person who chooses

1. to be aimless or purposeless in a conversation (in terms of purpose);
2. to be uninvolved (in terms of communicative climate);
3. to seldom speak, i.e., nonspeaking (in terms of transmission);
4. to listen to very little, i.e., nonlistening (in terms of reception);
5. to be confused and incoherent (in terms of coherence);
6. to be a problem avoider (in terms of problem management).

(Lyzenga and Hughey, 1982, pp. 11-13).

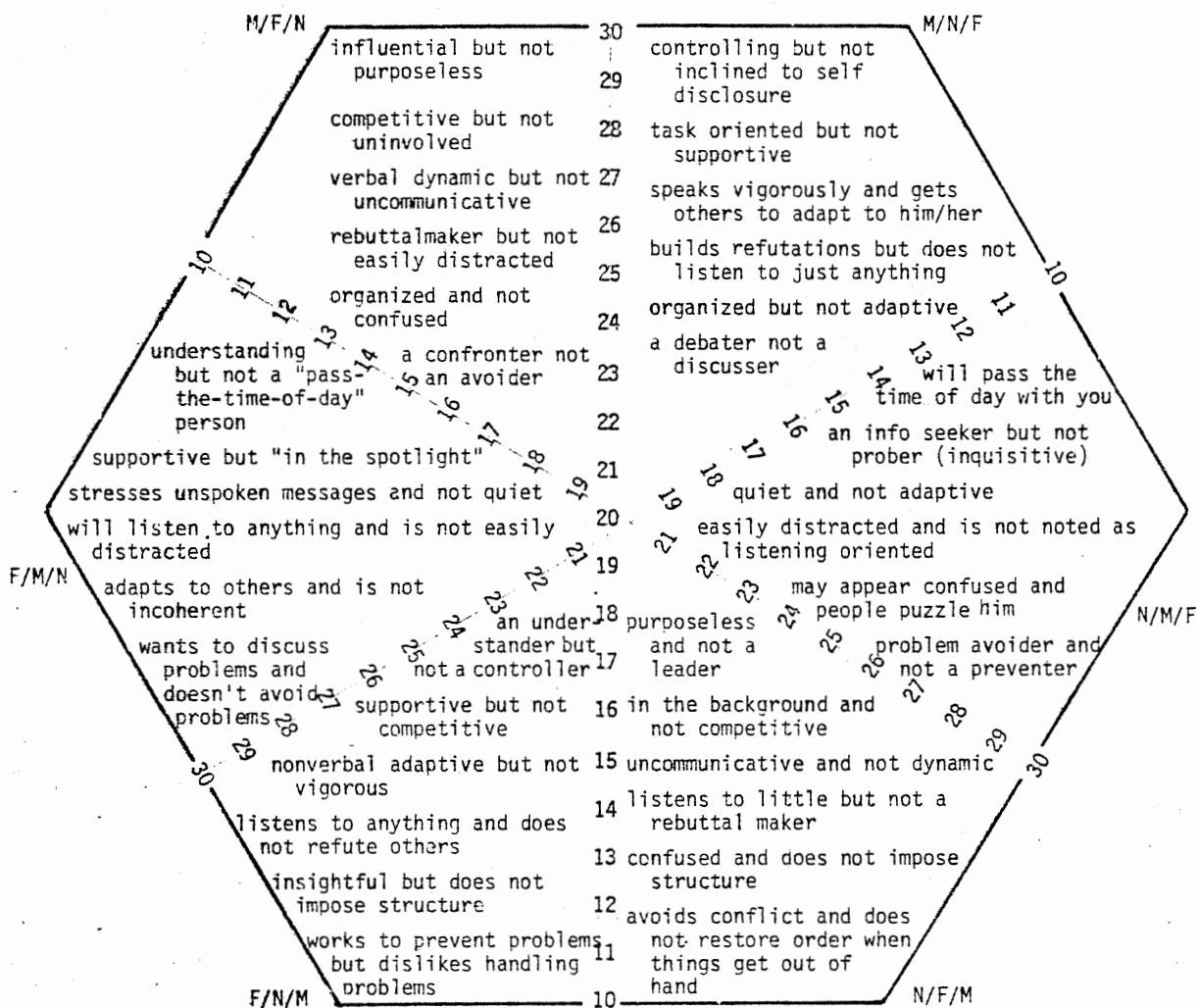
The three choices, MR, FR, and NR, to the six requirements are seldom found in an "across the board" pattern. It is the blending of the choices that gives a unique communication pattern to individuals. This blending of the MR, FR, and NR, allows these alternatives to be ranked into a conversational pattern. (For more information on determination of rank see Lyzenga and Hughey, 1982). These patterns consist of M/F/N, M/N/F, F/N/M, F/M/N, N/M/F, and N/F/M where M = Mastery Responsive, F = Flexible Responsive, and N = Neutral Responsive; and with the first mode of response indicated by the letter being the more dominant pattern. With the combining of the alternatives a more complex picture of the communication response pattern occurs (see Figure 1). (For more information on the CSRI, see Hughey, 1983.)

Rationale and Hypotheses

To determine the validity of the Telephone Apprehension Measure, correlations should exist between telephone behavior and related concepts such as speech apprehension, communication apprehension, and receiver apprehension. Kerlinger (1973) cites three types of validation: content, criterion-related, and construct. To determine the validity of the telephone apprehension instrument all three types of validity will be examined.

Content validity is the judgment of whether scale items are relevant to the property being measured (Kerlinger, 1973). To accomplish this type of judgment on validity, the telephone apprehension measure will be subjected to a panel of eleven judges. Responses from the panel of judges will be examined to answer the following research question:

Question 1. Are the items of the telephone apprehension instrument relevant to the property being measured?



Statistically each of the three scales were normalized using a Z-transformation before the patterns were mapped (n = 584; ZMR = [X - 18.1965]/2.0188; ZFR = [X - 23.2324]/2.1427; ZNR = [X - 18.5668]/1.8838).

Source: Lyzenga and Hughey (1982).

Figure 1. CSRI Patterns

Criterion-related validity is the ability to predict the behavior or aptitude associated with the underlying theory (Kerlinger, 1973). This type of validity is achieved through already established scales in the same area or through external verification. The lack of instruments in the area of telephone apprehension eliminates the possibility of comparisons with other scales. This leaves external verification for proof of criterion-related validity. The only two ways to achieve external verification are through direct observation or self-report. It would not be feasible to observe individuals daily. So the remaining verification available is self-report inventories. To achieve criterion-related validity each subject will be asked to place a numerical value on:

1. The number of phone calls he or she initiates in a day.
2. The number of phone calls he or she receives in a day.

They will also answer the Wurtzel and Turner (1977) multiple-choice question. Two hypotheses will be tested:

- H₁ There will be a negative and significant correlation between telephone apprehension and the self-report items on telephone calls initiated and received.
- H₂ Using the Wurtzel and Turner item, telephone usage will be predictable based on apprehension scores.

Construct validity is the determination of how much variance can be explained by related concepts. According to Kerlinger (1973, p. 461), "construct validity is one of the most significant advances of modern measurements. It is significant because it unites psychometric notions with theoretical notions."

In ascertaining construct validity of the telephone apprehension measurement, the related concepts previously mentioned are of vital concern. If the telephone apprehension test measures a trait anxiety it should correlate with trait anxiety scales and should correlate with a

specific pattern of communication. The two trait anxiety concepts related to telephone apprehension are communication apprehension and receiver apprehension. Two hypotheses will be evaluated:

H₃ There will be a positive and significant correlation between Telephone Apprehension and Receiver Apprehension.

H₄ There will be a positive and significant correlation between Telephone Apprehension and Communication Apprehension.

Because telephone apprehension is considered to be a trait anxiety, a particular pattern of communication should be prevalent. According to the categories of the CSRI, an apprehensive individual should be located in the Neutral Responsive areas..

H₅ Telephone apprehension scores will positively and significantly correlate with the Neutral Responsive scale of the CSRI.

The speech anxiety construct, as previously ascertained, is considered to be a state anxiety and is therefore subject to situational exigencies. Telephone apprehension, communication apprehension, and receiver apprehension are, however, all trait anxieties. The correlation of the trait anxiety concepts and the state anxiety concepts should be insignificant.

H₆ Speech Anxiety will be insignificantly correlated to Telephone Apprehension.

CHAPTER II

PROCEDURES

In the obtaining of data several issues must be confronted. Subjects, data collection technique, and statistical analysis must be determined before data can be gathered and analyzed.

Judges for content validity were four faculty members and seven graduate students in the Department of Speech Communication at Oklahoma State University. The judges were given a form containing a definition of Telephone Apprehension ("a fear or anxiety associated with the anticipated or actual use of the telephone as a communication channel"), a copy of the TAM, and two questions relating to the purposed measure.

Subjects used in determining criterion-related validity and construct validity were 434 students enrolled in the basic speech course at Oklahoma State University. There were 240 males and 194 females with ages ranging from 17 to 46. Classification of subjects indicated that 119 freshmen, 197 sophomores, 70 juniors, and 48 seniors participated. Subjects' colleges consisted of the following: Agriculture, Veterinary Medicine, Home Economics, Engineering, Education, and Business.

Data was collected in two intervals. First, the CSRI (Conversation Self Report Inventory) was administered to subjects at the beginning of the academic semester by class instructors. Second, the remaining scales, phone calls initiated, phone calls received, Wurtzel and Turner's (1977) multiple-choice item, Telephone Apprehension Measure (TAM), Receiver

Apprehension Test (RAT), Personal Report of Communication Apprehension (PRCA), and the Personal Report of Communication Apprehension - Organizational Form (PRCA-OF), were administered in the middle of that same academic semester by the same class instructors. The PRCA measure was used to measure speech anxiety, although various other scales do exist as previously indicated. Porter's (1981) analysis of the PRCA as a speech anxiety measure seems to indicate it is an adequate measure of the construct of speech anxiety. The scales were administered in booklet form (see Appendix B). Each booklet had instructions and contained 75 items. The PRCA-OF originally contained 20 items; however, two items were deleted as exact duplicates of two items in the PRCA, making this an 18 item measure. Included in the 75 item booklet were two items dealing with anonymity. The two items were added due to suggestions by a committee member that people may feel anonymous when using the telephone, therefore feeling free to say anything they desire. If this is true, a negative correlation between anonymity and telephone apprehension would be expected.

Reliability of the PRCA, PRCA-OF, RAT, TAM, and anonymity were determined. Numerical values of responses to some items were reversed so that in every case large numbers indicated higher apprehension.

The PRCA test used to measure Speech Anxiety and consisting of 13 items had 0.906 as its alpha reliability coefficient. The Speech Anxiety mean was 39.972 with a standard deviation of 9.387. The median was 39.917. Individual scores ranged from 15 to 64 within a possible range of 13 to 65 (see Table I).

The Communication Apprehension test used was the PRCA-OF, which consisted of 18 items. The alpha reliability coefficient was 0.869.

TABLE I
SPEECH ANXIETY

Item	Corrected Item- Total Correlation
I always avoid speaking in public if possible*	0.62407
Although I talk fluently with friends, I am at a loss for words on the platform.*	0.74535
I look forward to an opportunity to speak in public.	0.74422
I am fearful and tense all the while I am speaking before a group of people*	0.68203
My thoughts become confused and jumbled when I speak before an audience.*	0.69460
I feel relaxed and comfortable while speaking.	0.62901
I face the prospect of making a speech with complete confidence.	0.64029
I have no fear of facing an audience.	0.66560
I would enjoy presenting a speech on a local television show.	0.62676
I feel that I am more fluent when talking to people than most other people are.	0.54519
Although I am nervous just before getting up, I soon forget my fears and enjoy the experience.	0.63440
My hands tremble when I try to handle objects on the platform.*	0.38047
I look forward to expressing my opinions in meetings.	0.46982

*Polarity Reversed

N = 434, Alpha = 0.90591

The mean was 43.051 with a standard deviation of 9.621. The median was 42.929. Individual scores ranged from 20 to 72 within a possible range of 18 to 90 (see Table II).

The Receiver Apprehension Test (RAT) consisted of 20 items. The alpha reliability coefficient was 0.844 with the mean being 42.209 and a standard deviation of 7.952. The median was 41.648. Individual scores ranged from 20 to 69 within a possible range of 20 to 100 (see Table III).

The Telephone Apprehension Measure (TAM) consisted of 20 items. The alpha reliability was 0.938 with a mean of 42.956 and a standard deviation of 11.518. The median was 42.016. Individual scores ranged from 20 to 93 within a possible range of 20 to 100 (see Table IV). Factor analysis was then performed on the Telephone Apprehension Measure to further determine its unidimensionality. The unrotated factor loadings indicated the presence of a single major factor: Every scale had its primary loading on the first factor and every primary loading was in excess of 0.51 (see Table V). This appeared to support the assumption that the TAM is unidimensional.

The Anonymity measure, consisting of two items, had an alpha reliability coefficient of 0.407 with a mean of 6.79 and a standard deviation of 1.684. The median was 6.938. Individual scores ranged from 2 to 10 within a possible range of 2 to 10 (see Table VI).

Data collected were then subjected to statistical analysis performed with SPSS programs (Hull and Nie, 1981; Nie, Hull, Jenkins, Steinbrenner and Bent, 1975). The statistical tests performed were product-moment correlations with significance set at the 0.05 level. Telephone Apprehension was operationally determined as being beyond one standard deviation score above the mean. Results are reported in the next chapter.

TABLE II
COMMUNICATION APPREHENSION

Item	Corrected Item- Total Correlation
1. People can usually count on me to keep a conversation going.	0.42364
2. Conversing with people who hold positions of authority is something I really enjoy.	0.44376
3. I feel self-conscious when I am called upon to answer a question or give an opinion.*	0.47119
4. I am basically an outgoing person.	0.54361
5. When I have to represent my organization to another group I feel very tense and nervous.*	0.51681
6. I am afraid to express myself in a group.*	0.51990
7. When I'm with other people, I often have difficulty thinking of the right things to talk about.*	0.49086
8. I enjoy fielding questions at a meeting.	0.44852
9. I'm afraid to speak up in conversations.*	0.56397
10. In most situations, I generally know what to say to people.	0.41465
11. I enjoy talking to my subordinates.	0.37375
12. I talk less because I'm shy.*	0.60981
13. Talking to my supervisor makes me nervous.*	0.40806
14. I like to get involved in group discussions.	0.52840
15. Conversing with people who hold positions of authority causes me to be fearful and tense.*	0.49413
16. I enjoy representing my organization to other groups.	0.50593
17. I look forward to interviewing people applying for a job as my subordinate.	0.37638
18. I consider myself to be the silent type.*	0.59558

*Polarity Reversed
N = 434, Alpha = 0.86924

TABLE III
RECEIVER APPREHENSION

Item	Corrected Item- Total Correlations
I feel comfortable when listening to others on the phone.	0.33017
It is often difficult for me to concentrate on what others are saying.*	0.45558
When listening to members of the opposite sex I find it easy to concentrate on what is being said.	0.21488
I have no fear of being a listener as a member of an audience.	0.39278
I feel relaxed when listening to new ideas.	0.45584
I would rather not have to listen to other people at all.*	0.48311
I am generally overexcited and rattled when others are speaking to me.*	0.39670
I often feel uncomfortable when listening to others.*	0.45429
My thoughts become confused and jumbled when reading important information.*	0.44469
I often have difficulty concentrating on what others are saying.*	0.52520
Receiving new information makes me feel restless.*	0.55668
Watching television makes me nervous.*	0.34954
When on a date I find myself tense and self-conscious when listening to my date.*	0.27061
I enjoy being a good listener.	0.40417
I generally find it easy to concentrate on what is being said.	0.55409
I seek out the opportunity to listen to new ideas.	0.41123
I have difficulty concentrating on instructions others give me.*	0.36165

TABLE III (continued)

Item	Corrected Item- Total Correlations
It is hard to listen or concentrate on what other people are saying unless I know them well.*	0.51785
I feel tense when listening as a member of a social gathering.*	0.53431
Television programs that attempt to change my mind about something make me nervous.*	0.44983

*Polarity Reversed

N = 434, Alpha = 0.84376

TABLE IV
TELEPHONE APPREHENSION

Item	Corrected Item- Total Correlations
1. I look forward to telephone conversations.	0.62346
2. I feel it is difficult to converse over the phone.*	0.68914
3. I avoid speaking on the telephone whenever possible.*	0.65719
4. I find speaking on the telephone pleasant.	0.70735
5. I take pride in my speaking ability over the phone.	0.49895
6. It is easy for me to express myself on the telephone.	0.54438
7. I thoroughly enjoy speaking on the telephone.	0.71388
8. I feel rushed and pushed when I use the telephone.*	0.57242
9. When I have to talk on the phone I grow nervous and uncomfortable.*	0.58520
10. I hurry to finish the conversation when talking on the telephone.*	0.64965
11. I feel misunderstood when I use the phone.*	0.61451
12. I have problems expressing myself over the telephone.*	0.65933
13. I do not like to talk on the phone.*	0.78272
14. I feel inhibited using the phone.*	0.65831
15. I feel relaxed and comfortable when speaking on the telephone.	0.66685
16. I dread speaking on the phone.*	0.65215
17. I feel calm and comfortable using the telephone.	0.69214
18. I do not feel comfortable using the telephone.*	0.68445
19. I have feelings of frustration after most phone calls.*	0.48446
20. I avoid using the phone.*	0.65284

*Polarity Reversed
N = 434, Alpha = 0.93823

TABLE V
UNROTATED FACTOR STRUCTURE

Scales	Factors		
	1	2	3
T1	0.65527	-0.37563	-0.18904
T2	0.70144	-0.05967	0.00183
T3	0.68814	0.03415	-0.31859
T4	0.73440	-0.41816	-0.13863
T5	0.51628	-0.32276	0.19776
T6	0.56758	-0.21079	0.42278
T7	0.74514	-0.45369	0.00751
T8	0.58708	0.06272	0.02856
T9	0.60786	0.27932	0.08295
T10	0.66785	0.08840	-0.04828
T11	0.64141	0.27749	0.16976
T12	0.68910	0.18560	0.40589
T13	0.81548	0.01822	-0.28388
T14	0.67928	0.12500	0.07874
T15	0.68927	0.02313	0.15611
T16	0.68782	0.22620	-0.24901
T17	0.71549	0.01561	0.12487
T18	0.71335	0.19419	0.01342
T19	0.50998	0.28369	-0.03355
T20	0.68259	0.16547	-0.24564
Eigenvalues	9.38494	1.51670	1.23750
Percent of Total Variance	46.9	7.6	6.2

TABLE VI
ANONYMITY

Item	Corrected Item- Total Correlations
1. I feel free to say things over the phone I would not say face-to-face.	0.26215
2. When I talk on the telephone I feel anonymous.	0.26215

N = 434

Alpha = 0.40714

CHAPTER III

RESULTS

The purpose of this paper is to evaluate the validity of the telephone apprehension measuring instrument developed by Steele and Reinsch (1983). In reporting these results the stepwise progression that Kerlinger (1973) suggests for determining validity will be used. This stepwise progression consists of content validity, criterion-related validity, and construct validity.

Content validity was determined through a panel of eleven judges. Each judge was given a copy of the scale and asked to comment on two questions. The first question was: "Are any of the items unrelated to the concept of telephone apprehension? If so please explain." Four judges felt that all items were appropriate. The other seven judges offered a variety of comments. One proposed that the test be renamed "telephone aversion" or "telephone reluctance." Six made comments about particular items:

"Item number 1 seems independent of anxiety. I don't dread or look forward to it . . . when it happens I am, however, comfortable."

"Is there any way to separate those who are scared from those who see telephone conversations as an interruption (i.e., Item number 3 -- Someone might avoid the phone for a variety of reasons, just one of which might be apprehension. Perhaps one is not apprehensive but just prefers face-to-face conversations.)."

"Number 5 seems weak."

"Number 5, in my thinking, the issue of 'pride' and/or 'ability' is unrelated to the issue of apprehension. I'm not apprehensive about all things I don't do well (i.e., golf) and I am apprehensive about doing some things which I do well (i.e., spending, spending)."

"I do not quite understand number 8. Perhaps I cannot relate to the experiential factors of 'rushed' and 'pushed.'"

"Number 11; I feel that people misunderstand what I am saying or misunderstand me when I talk on the telephone."

Only one item (#5) was mentioned as many as two times.

The second question, "Are there other items or concepts which should be included in the scale? If so please explain," elicited a variety of responses. Four judges suggested no additional items. The other seven judges offered both general comments and specific suggestions which had situational factors as their premise:

"My problem is that a number of these items are situational with me (i.e., I do feel rushed when I'm talking long distance because of the money.)."

"I might want to add situational factors to feelings of telephone apprehension such as: talking to friends (serious and casual), telephone used in business, meeting (contacting) people for the first time on the phone, etc."

"Issues like problem solving, persuasion, etc., where it raises or lowers phone apprehension."

"My palms get sweaty when I use the phone."

"I have nightmares about having to use the telephone."

"Similar to Item 11: 'I feel others misunderstand me when I use the telephone.' Perhaps #12 gets at this, perhaps not."

"How much time spent using the phone daily?"

"I think through or practice phone calls before I make them."

"More or add 'I feel like you . . .' statements."

In answering the research question, "Are the items of the telephone

apprehension instrument relevant to the property being measured?," there did not appear to be any consensus that a major concept had been omitted. It was concluded that the TAM did possess content validity.

Subjects used for statistical analysis of criterion-related and construct validity consisted of 434 basic speech students, ranging in age from 17 to 46, with 240 male respondents and 194 female respondents. Criterion-related validity was determined through the asking of two questions relating to the behavior of the subjects in terms of telephone usage. The first question, "The number of phone calls I initiate in a typical day," resulted in a range from 0 to 25 with a median of 3.261 phone calls initiated a day. The second question, "The number of phone calls I receive on an average day," resulted in a range from 0 to 30 with a median of 3.152. Pearson product-moment correlation between the Telephone Apprehension Measure and the two questions showed initiated phone calls to be negatively correlated with the Telephone Apprehension Measure ($r = -0.2704$, $p = 0.000$) and phone calls received showed a negative, but weaker, relationship with the Telephone Apprehension Measure ($r = -0.1412$, $p = 0.002$) (see Table VII). These results support the first hypothesis.

Data was collected on Wurtzel and Turner's (1977) multiple-choice questionnaire item. This item was used to indicate an individual's telephone behavior and consisted of four statements: (1) I avoid using the telephone as much as possible; (2) I dislike using the telephone but use it when necessary; (3) I use the telephone whenever I have to; and (4) I enjoy using the telephone and use it at every opportunity. Each respondent was asked to choose the one statement which best summarized his or her attitude toward the phone. The question was then asked, "What scales would predict behavior?" A regression equation was derived using Wurtzel

TABLE VII

PEARSON CORRELATIONS: TELEPHONE APPREHENSION (TA),
 PHONE CALLS INITIATED (PI),
 AND PHONE CALLS RECEIVED (PR)

	TA	PI	PR
TA	----	-0.2704 (434) p=0.0000	-0.1412 (434) p=0.002
PI		----	0.6703 (434) p=0.000
PR			----

and Turner's question as a measure of behavior. The resultant equation was: Wurtzel and Turner (behavior) = 4.21422 - 0.03327 (Telephone Apprehension) + 0.00962 (Receiver Apprehension). The adjusted R^2 value (0.37256) was significant ($F = 129.55$, $p = 0.0000$); this supports the second hypothesis.

As it has been stated, criterion-related validity is the ability to predict the behavior or aptitude associated with the underlying theory (Kerlinger, 1973). The previous results were used to determine criterion-related validity. The following results were used to determine construct validity.

Pearson product-moment correlations were calculated on all test scores. Results are reported in Table VIII. Telephone Apprehension was significantly and positively correlated with Communication Apprehension, Receiver Apprehension, Speech Anxiety, and the CSRI Neutral Responsive scale (NT). Telephone Apprehension was negatively correlated with the anonymity scale (A). These data support all other hypotheses except hypothesis 6 which states that speech anxiety will be insignificantly correlated to telephone apprehension. This was not found; instead, we find a significant correlation. It was also suggested that an individual's feeling of anonymity would significantly effect telephone usage, therefore resulting in a significant correlation between anonymity and telephone apprehension. This relationship was not found.

In addition to analysis relevant to the hypotheses, additional, post hoc analyses of data were performed. Results of these analyses are described below.

Demographic data, age, sex, classification, and major, were collected. A frequency distribution indicated that age could be classified into six groups (see Table IX). Frequency distribution on classifications and

TABLE VIII
PEARSON CORRELATIONS

	TA	CA	RA	SA	NT	A
TA	-----	0.2740 (434) p=0.000	0.4576 (434) p=0.000	0.1268 (434) p=0.004	0.1431 (434) p=0.001	-0.0090 (434) p=0.426
CA		-----	0.4261 (434) p=0.000	0.6244 (434) p=0.000	0.6418 (434) p=0.000	-0.1834 (434) p=0.000
RA			-----	0.2438 (434) p=0.000	0.2609 (434) p=0.000	-0.2137 (434) p=0.000
SA				-----	0.4934 (434) p=0.000	-0.1929 (434) p=0.000
NT					-----	-0.1209 (434) p=0.006
A						-----

TA = Telephone Apprehension
CA = Communication Apprehension
RA = Receiver Apprehension
SA = Speech Anxiety
NT = Neutral Response (CSRI)
A = Anonymity

TABLE IX
FREQUENCY DISTRIBUTION OF AGE

Group	Age	Number
1	≤ 18	60
2	19	139
3	20	123
4	21	48
5	22-23	36
6	$24 \leq$	28

majors were represented. A series of one-way Analyses of Variance (ANOVAs) were then performed (see Tables X - XVII). To further verify significant findings, Duncan's New Multiple Range Test was employed (findings indicated by asterisks on ANOVAs).

Results of the ANOVAs and Duncan Test concerning demographic data indicated that age and sex had an influence on telephone apprehension.

Age was determined to affect telephone apprehension. Results indicated that younger subjects were less likely to experience telephone apprehension. Phone calls initiated and received were found to be insignificantly related to age, respondent's classification, and major.

Sex was found to be significantly related to telephone apprehension and was found to influence telephone usage. Females were found to initiate more phone calls than males (Male, $\bar{x} = 3.6167$; Female, $\bar{x} = 4.2474$), and to receive more phone calls than males (Male, $\bar{x} = 3.6000$; Female, $\bar{x} = 4.3144$).

One method for identifying high apprehensives is to designate as highly apprehensive any individual with a score more than one standard deviation unit above the mean. By this criteria 14% (62/n = 434) of the respondents experienced some degree of telephone apprehension. Another way to identify high apprehensives is to designate as highly apprehensive any individual who scored above 60, the midpoint of potential test scores. By this criteria 8.06% (35/n = 434) experienced some degree of apprehension.

Questionnaire results indicated that all TAM items were related to telephone apprehension and that no important concepts had been omitted. Statistical results indicated that TAM scores did account for reported telephone use and did significantly correlate with receiver apprehension

TABLE X
ANALYSIS OF VARIANCE: TELEPHONE
APPREHENSION BY AGE

Cell	\bar{X}^*	S'	n
Group 1	39.3667 ^{abc}	10.2311	60
Group 2	41.3813 ^{de}	10.8776	139
Group 3	44.1057 ^c	12.3107	123
Group 4	43.4375	9.8259	48
Group 5	46.9444 ^{bd}	13.3201	36
Group 6	47.4643 ^{ae}	11.0033	28
TOTAL	42.9562	11.5180	434

Source of Variance	SS	DF	MS	F Ratio	F Prob.
Between Groups	2433.2735	5	486.6545	3.786	0.0023
Within Groups	55010.4929	428	128.5292		
TOTAL	57443.7656	433			

* Means with the same superscript differ at the 0.05 level on the Duncan Multiple Range Test.

TABLE XI
ANALYSIS OF VARIANCE: PHONE CALLS
INITIATED BY AGE

Cell	\bar{X}	S'	n
Group 1	4.2167	3.3703	60
Group 2	3.9065	3.0878	139
Group 3	4.3008	3.1439	123
Group 4	3.8333	2.8978	48
Group 5	2.9444	2.5405	36
Group 6	2.7500	2.4589	28
TOTAL	3.8986	3.0664	434

Source of Variance	SS	DF	MS	F Ratio	F Prob.
Between Groups	95.8966	5	19.1793	2.065	0.0688
Within Groups	3975.6165	428	9.2888		
TOTAL	4071.5129	433			

TABLE XII
ANALYSIS OF VARIANCE: PHONE CALLS
RECEIVED BY AGE

Cell	\bar{X}	S'	n
Group 1	4.1333	3.2441	60
Group 2	3.8345	3.6626	139
Group 3	4.3415	3.2914	123
Group 4	3.8750	3.4433	48
Group 5	2.8056	2.1223	36
Group 6	3.5357	3.5222	28
TOTAL	3.9194	3.3702	434

Source of Variance	SS	DF	MS	F Ratio	F Prob.
Between Groups	74.5383	5	14.9077	1.317	0.2555
Within Groups	4843.6082	428	11.3168		
TOTAL	4918.1445	433			

TABLE XIII
 ANALYSIS OF VARIANCE: TELEPHONE
 APPREHENSION BY CLASSIFICATION

Cell	\bar{X}	S'	n
Freshmen	41.0000	1.0285	119
Sophomores	43.0711	0.7922	197
Juniors	45.3428	1.4604	70
Seniors	43.8542	1.7817	48
TOTAL	42.9562	0.5529	434

Source of Variance	SS	DF	MS	F Ratio	F Prob.
Between Groups	895.5779	3	298.5259	2.270	0.0798
Within Groups	56548.1445	430	131.5073		
TOTAL	57443.7188	433			

TABLE XIV
ANALYSIS OF VARIANCE: TELEPHONE
APPREHENSION BY MAJOR

Cell (College)	\bar{X}	S^2	n
Undecided	44.5714	10.4191	21
Agriculture	42.8000	12.0508	35
Veterinary Medicine	42.0000	11.8790	10
Home Economics	41.5217	11.7042	23
Engineering	44.1000	9.6431	10
Education	43.4375	10.5260	16
Business	42.5696	11.0825	230
TOTAL	42.9562	11.5180	434

Source of Variance	SS	DF	MS	F Ratio	F Prob.
Between Groups	242.5475	7	34.6496	0.258	0.9695
Within Groups	57201.2808	426	134.2753		
TOTAL	57443.8281	433			

TABLE XV
ANALYSIS OF VARIANCE: TELEPHONE
APPREHENSION BY SEX

Cell	\bar{X}		S'		n
Male	44.1667		11.0084		240
Female	41.4588		11.9788		194
TOTAL	42.9562		11.5180		434

Source of Variance	SS	DF	MS	F Ratio	F Prob.
Between Groups	786.7570	1	786.7568	5.999	0.0147
Within Groups	56656.7813	432	131.1499		
TOTAL	57443.5352	433			

TABLE XVI
 ANALYSIS OF VARIANCE: PHONE CALLS
 INITIATED BY SEX

Cell	\bar{X}	S^2	n		
Male	3.6167	2.5058	240		
Female	4.2474	3.6193	194		
TOTAL	3.8986	3.0664	434		

Source of Variance	SS	DF	MS	F Ratio	F Prob.
Between Groups	42.6822	1	42.6822	4.577	0.0330
Within Groups	4028.8125	432	9.3260		
TOTAL	4071.4946	433			

TABLE XVII
ANALYSIS OF VARIANCE: PHONE CALLS
RECEIVED BY SEX

Cell	\bar{X}		S^2		n
Male	3.6000		2.7577		240
Female	4.3144		3.9726		194
TOTAL	3.9194		3.3702		434

Source of Variance	SS	DF	MS	F Ratio	F Prob.
Between Groups	54.7573	1	54.7573	4.864	0.0279
Within Groups	4863.3784	432	11.2578		
TOTAL	4918.1328	433			

and related constructs. Post-hoc analysis revealed that telephone apprehension was higher among older respondents and among males. Males also reported initiating and receiving fewer calls than females. These results are discussed in the next chapter.

CHAPTER IV

DISCUSSION, SUGGESTIONS, AND CONCLUSIONS

This paper supports the validity of the Telephone Apprehension Measure. Content validity was determined by a panel of judges; criterion-related and construct validity were determined by statistical analysis based on six hypotheses.

Content validity was determined by eleven judges. Judges commented on two questions: "Are any of the items unrelated to the concept of telephone apprehension? If so please explain," and "Are there any other items or concepts which should be included in the scale? If so please explain." Answers to the first question ranged from renaming the test to various comments about certain items. Only one item, #5, was mentioned more than once. The two comments pertaining to #5 were: "It seems weak," and "In my thinking, the issue of 'pride' and/or 'ability' is unrelated to the issue of apprehension." The first response was too vague to be of use in modifying the test. The second comment may be absolutely correct. However, the person who has little pride in his ability is probably going to experience great apprehension while the person who displays great pride or ability would experience a lesser degree of apprehension. In either case it may be beneficial in following studies to substitute "have confidence in" for "take pride in."

Regarding the "other items" question, several responses were elicited. Examples of questions suggested are: "I feel others

misunderstand me when I use the telephone"; "How much time is spent using the telephone daily?"; "I feel like you . . ."; and "I think through or practice phone calls before I make them." "I feel others misunderstand me when I use the telephone" is a very relevant item; however a similar item, "I feel misunderstood when I use the phone," was included in the original 92 item telephone apprehension measure (Steele and Reinsch, 1983), and was eliminated on the basis of low item-test correlations. Therefore this question was not added to the instrument.

Data on "how much time is spent on the telephone daily" was collected in this study by asking how many phone calls were initiated and received per day by each individual -- this is a behavioral item rather than an attitudinal one. "I feel like you . . ." statements cannot be justified in a self-report instrument, due to the projection of a perceived attribution of another person; this type of statement does not allow for a self-report. "I think through or practice phone calls before I make them" is an item that would depend heavily on a situational context; it would seem to be beneficial to think through or practice any important telephone call, and this would not necessarily indicate apprehension.

The second question also asked judges "Are there other concepts which should be included in the scale? If so please explain." Judges commented on this by suggesting the addition of situational factors to the Telephone Apprehension Measure. The Telephone Apprehension Measure is considered to be a trait anxiety measure; therefore, consistent across context. The addition of specific situational circumstances would be more appropriate in measuring state anxiety.

These results indicate that the TAM has an adequate level of content validity. The judges suggested several changes but there was no consensus

concerning any content problems and several of the comments were more relevant to state anxiety measures than to the TAM and other trait measures.

Criterion-related validity was determined through the testing of two hypotheses. These hypotheses dealt with the self-reported behavior of respondents. Subjects indicated how many telephone calls they initiated and received in the average day, and the Wurtzel and Turner (1977) item gave a behavioral indicator of when the individual uses the telephone. Phone calls initiated and received were found to be fewer in number for telephone apprehensive individuals, supporting the first hypothesis. It was also determined that TAM scores plus RAT scores could predict an individual's telephone behavior (as measured with the Wurtzel and Turner item), supporting the second hypothesis. The confirmation of these hypotheses indicates that the TAM does relate to self-reports of actual telephone behavior and demonstrates that the TAM has adequate criterion-related validity.

Construct validity was determined by Pearson product-moment correlations between Telephone Apprehension, Receiver Apprehension, Communication Apprehension and the Neutral Responsive scale of the CSRI. Results revealed positive correlations between TAM scores and each of the other tests, supporting hypotheses 3, 4, and 5. These findings show that the telephone apprehension construct is related to other constructs as expected and indicates that the TAM has adequate construct validity.

Hypothesis six, the prediction that speech anxiety would not be significantly correlated to Telephone Apprehension, was rejected in this study. The Speech Anxiety scale was regarded as a measure of state anxiety (situational fear) and was, therefore, not expected to correlate with telephone apprehension, a trait anxiety (consistent fear across

context). The distinction between trait and state anxieties was one of the reasons specific situational questions were not added to the Telephone Apprehension Measure when suggested by judges determining the validity of the content. Why then did Speech Anxiety positively correlate with Telephone Apprehension?

Correlation between the two could be the result of Speech Anxiety and Communication Apprehension being viewed by respondents as closely related. This would explain why Speech Anxiety was highly correlated with Communication Apprehension. Further proof of this assumption is the close relationship between Speech Anxiety and Communication Anxiety found in Lewis and Reinsch (1982) and Reinsch and Lewis (1983). In each of these studies Communication Apprehension and Speech Apprehension had significant correlations. This close association would also explain why all trait anxieties (Receiver Apprehension, Telephone Apprehension, and Communication Apprehension) positively correlated with Speech Anxiety. Perhaps respondents do not draw a distinct difference between Communication Apprehension and Speech Anxiety, when both measures are collected at the same time. This finding does not undermine the validity of the TAM but does suggest that the presumed distinction between trait and state measures may not be as clear as assumed at the initiation of this study.

Post-hoc analysis indicated that both age and sex have an effect on telephone apprehension. The younger an individual is the less likely he or she is to experience telephone apprehension. Males were found to experience more telephone apprehension than females. Telephone apprehension may increase with age due to increased usage of the telephone, while telephone apprehension may affect sexes due to the different

conceptualization of the telephone; perhaps men use the phone for "business reasons" and women use the phone for "social reasons."

The results of this study indicate, therefore, that the TAM is a valid measure of the telephone apprehension construct. Furthermore, the findings permit a rough initial delineation of those who suffer from telephone apprehension: Some eight to 14 percent of the college students tested may be identified as high apprehensives; the high apprehensives tend to be older rather than younger and male rather than female. Thus far telephone apprehension has received little attention; however, with our "fast" paced society, both businesses and private sectors will be forced to deal with telephone apprehension.

The U.S. population may contain from 16 to 28 million individuals with a high degree of telephone apprehension. Some of these persons may find themselves in occupations which require regular telephone use. A larger number may occasionally be inconvenienced when required to place an order, make an appointment, or negotiate an agreement by phone. And if high apprehensives avoid the use of the phone they may find certain career paths closed or certain personal goals hindered. In contemporary U.S. society the telephone is used very frequently and those who are ineffective because of apprehension are at a disadvantage.

Measuring telephone apprehension is not enough; techniques to overcome this apprehension must also be developed. Speech Anxiety trainers have used counseling, and systematic desensitization in helping individuals to overcome their oral communication apprehension. Self-perception theorists use various methods to convince people that they are not as apprehensive as they believe, and this can help them to be

less apprehensive. A combination of these methods might be used to help individuals conquer their telephone apprehension.

Suggestions

Though this study supports the validity of the Telephone Apprehension Measure, further research is needed. Test selection is one possible area for improvement.

Selection of testing instruments for establishing construct validity is hardly an easy task. One must be sure that whatever instruments he or she selects measure the perceived construct adequately and are understandable to the subjects. In this study, all initial instruments, except the Telephone Apprehension Measure, had been established through various studies as reliable. However, the PRCA-OF included terms such as: "positions of authority," "represent my organization," and "subordinates," which may not have had clear referents when applied to college students. This may be corrected by replacing the somewhat unfamiliar words and principles with words which would convey more relevant concepts (e.g., "position of authority" -- professor; "represent my organization" -- represent my school, living group, or club; and "subordinates" -- high school students).

Conclusions

A society such as the United States, where a telephone is available to almost every individual and where telephone communication is heavily relied upon by both business and private sectors, needs to recognize those suffering from telephone apprehension and help them overcome this aversion to telephone usage. This study indicates that eight to 14

percent of the U.S. population experiences high telephone apprehension. Using these figures it is possible that between 16 million and 28 million people within the United States have high telephone apprehension.

This study has provided support for the validity of the Telephone Apprehension Measure. The TAM provides a reliable and valid initial measure of a significant construct. It is hoped that this research will encourage and facilitate more and better research in the area of telephone communication.

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APPENDICES

APPENDIX A

Lewis and Reinsch
TELEPHONE APPREHENSION

Item

1. I do not like to talk on the telephone.
 2. I enjoy talking on the telephone.
 3. When I have to talk on the telephone I grow nervous and uncomfortable.
-

APPENDIX B

COMMUNICATION ATTITUDE SCALES

Please answer each question.
All information will be treated as confidential.

NAME _____

MAJOR _____

SEX MALE _____ FEMALE _____

AGE _____

CLASSIFICATION SR _____ JR _____

 SOPH _____ FRESH _____

 OTHER _____ (INDICATE) _____

The number of phone calls I initiate in a typical day. _____

The number of phone calls I receive on an average day. _____

1. Please check the one statement which most nearly expresses your own opinion.
- I avoid using the telephone as much as possible.
- I dislike using the telephone but use it when necessary.
- I use the telephone whenever I have to.
- I enjoy using the telephone and use it at every opportunity.

Please respond to all remaining items by writing a number in the blank to indicate your agreement or disagreement. Use the following scale:
 1 = strongly agree; 2 = agree; 3 = undecided; 4 = disagree; 5 = strongly disagree.

2. People can usually count on me to keep a conversation going.
3. Conversing with people who hold positions of authority is something I really enjoy.
4. I feel self-conscious when I am called upon to answer a question or give an opinion.
5. I am basically an outgoing person.
6. When I have to represent my organization to another group I feel very tense and nervous.
7. I am afraid to express myself in a group.
8. When I'm with other people, I often have difficulty thinking of the right things to talk about.
9. I enjoy fielding questions at a meeting.
10. I'm afraid to speak up in conversations.
11. In most situations, I generally know what to say to people.
12. I enjoy talking to my subordinates.
13. I talk less because I'm shy.
14. Talking to my supervisor makes me nervous.
15. I like to get involved in group discussions.
16. Conversing with people who hold positions of authority causes me to be fearful and tense.
17. I enjoy representing my organization to other groups.
18. I look forward to interviewing people applying for a job as my subordinate.
19. I consider myself to be the silent type.
20. I look forward to telephone conversations.
21. I feel it is difficult to converse over the phone.
22. I avoid speaking on the telephone whenever possible.
23. I find speaking on the telephone pleasant.
24. I take pride in my speaking ability over the phone.

- _____ 25. It is easy for me to express myself on the telephone.
- _____ 26. I thoroughly enjoy speaking on the telephone.
- _____ 27. I feel rushed and pushed when I use the telephone.
- _____ 28. When I have to talk on the phone I grow nervous and uncomfortable.
- _____ 29. I hurry to finish the conversation when talking on the telephone.
- _____ 30. I feel misunderstood when I use the phone.
- _____ 31. I have problems expressing myself over the telephone.
- _____ 32. I do not like to talk on the phone.
- _____ 33. I feel inhibited using the phone.
- _____ 34. I feel relaxed and comfortable when speaking on the telephone.
- _____ 35. I dread speaking on the phone.
- _____ 36. I feel calm and comfortable using the telephone.
- _____ 37. I do not feel comfortable using the telephone.
- _____ 38. I have feelings of frustration after most phone calls.
- _____ 39. I avoid using the telephone.
- _____ 40. I feel free to say things over the phone I would not say face-to-face.
- _____ 41. When I talk on the telephone I feel anonymous.
- _____ 42. I feel comfortable when listening to others on the phone.
- _____ 43. It is often difficult for me to concentrate on what others are saying.
- _____ 44. When listening to members of the opposite sex I find it easy to concentrate on what is being said.
- _____ 45. I have no fear of being a listener as a member of an audience.
- _____ 46. I feel relaxed when listening to new ideas.
- _____ 47. I would rather not have to listen to other people at all.
- _____ 48. I am generally overexcited and rattled when others are speaking to me.
- _____ 49. I often feel uncomfortable when listening to others.
- _____ 50. My thoughts become confused and jumbled when reading important information.
- _____ 51. I often have difficulty concentrating on what others are saying.
- _____ 52. Receiving new information makes me feel restless.
- _____ 53. Watching television makes me nervous.
- _____ 54. When on a date I find myself tense and self-conscious when listening to my date.

- _____ 55. I enjoy being a good listener.
- _____ 56. I generally find it easy to concentrate on what is being said.
- _____ 57. I seek out the opportunity to listen to new ideas.
- _____ 58. I have difficulty concentrating on instructions others give me.
- _____ 59. It is hard to listen or concentrate on what other people are saying unless I know them well.
- _____ 60. I feel tense when listening as a member of a social gathering.
- _____ 61. Television programs that attempt to change my mind about something make me nervous.
- _____ 62. I always avoid speaking in public if possible.
- _____ 63. Although I talk fluently with friends, I am at a loss for words on the platform.
- _____ 64. I look forward to an opportunity to speak in public.
- _____ 65. I am fearful and tense all the while I am speaking before a group of people.
- _____ 66. My thoughts become confused and jumbled when I speak before an audience.
- _____ 67. I feel relaxed and comfortable while speaking.
- _____ 68. I face the prospect of making a speech with complete confidence.
- _____ 69. I have no fear of facing an audience.
- _____ 70. I would enjoy presenting a speech on a local television show.
- _____ 71. I feel that I am more fluent when talking to people than most other people are.
- _____ 72. Although I am nervous just before getting up, I soon forget my fears and enjoy the experience.
- _____ 73. My hands tremble when I try to handle objects on the platform.
- _____ 74. I look forward to expressing my opinions in meetings.

2
VITA

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Master of Arts

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