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ABSTRACT

A study by Malcolm R. Parks reported in "Communication Monographs" called into question the cross-situational validity of the Personal Report of Communication Apprehension (PRCA). Park's study, however, is flawed in many ways. He does not provide an adequate definition of "situation." Both the type of factor analysis he chose (orthogonal rotation) and his use of a two-factor solution for interpretation of the data reflect inaccurate assumptions. Given these problems, his study provided no real test of the cross-situational consistency of the PRCA. In fact, given the inappropriateness of Parks's design for testing the PRCA, the amount of cross-situational consistency he observed was quite remarkable. Another study used 295 teachers and 295 of their friends as the subjects of a test of the PRCA's cross-situational validity. The teacher subjects completed PRCAs for themselves and for their friends, and then their friends completed an identical task. Results indicated that the PRCA was a cross-situationally consistent predictive instrument. (JL)

CROSS-SITUATIONAL CONSISTENCY OF THE PRCA: ANOTHER VIEW

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Abstract

A study previously reported by Parks (CM, August, 1980) is reexamined. It is concluded that, as reported, the Parks study does not provide a valid test of the cross-situational consistency of the PRCA. However, the results relating to the second factor observed in the Parks study are interpreted as support for the cross-situational consistency of the PRCA. A new test of the cross-situational consistency of the PRCA is reported. The results indicate that the PRCA is a cross-situationally consistent predictive instrument.

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CROSS-SITUATIONAL CONSISTENCY OF THE PRCA: ANOTHER VIEW

In a recent issue of CM, Parks reports a study which raises a significant question concerning the validity of the Personal Report of Communication Apprehension (PRCA).[1] The purpose of this paper is to examine that study with an eye toward its implications for both the construct of communication apprehension (CA) and the commonly employed PRCA measure. Additional data also will be presented which bear upon this issue.

The construct of CA was originally set forth, along with four measures presumed to tap the construct, in 1970.[2] CA is defined as "an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons".[3] Although this parent construct permits operationalization of CA as either a generalized trait of an individual or an individual's response to a given situation or class of situations, most of the early research relating to the construct pursued the individual trait approach.[4] More recently, increased attention has been directed toward CA from a less global perspective,[5] and measures have been developed to explore CA in various classes of communication contexts as well as in individual settings.[6]

In order to place the Parks study in proper context, it should be noted that he does not question the conceptualization of the CA construct.[7] Rather, Parks' focus is on the question of whether the PRCA is an appropriate operationalization of that construct for measurement of CA as a generalized trait of an individual. Thus, this paper will also focus on that question.

The Validity Question

For a trait-like measure to claim validity it must be demonstrated that scores on the measure are predictive of behaviors/choices/orientations across contexts that the parent construct would predict. This, of course, does not imply a need for perfect prediction. Not even the most ardent trait theorist would claim such predictability for individual traits. Individual contexts, as well as other traits, introduce considerable error variance into such predictive processes. Trait-like orientations are presumed to be predispositions toward response, not absolute precursors of response. The more extreme the predisposition, the more likely it is to impact behavior in any given context. Weak predispositions (usually represented by moderate scores on such measures) often are not associated with responses at all (or to only a minor degree) because other traits or contextual elements are much more important to response decisions. In the case of CA, and the PRCA as an operationalization of CA, it would be expected that high and low scores should be associated with different behaviors/choices/orientations across a variety of situations. To the extent that CA is associated with approach-avoidance responses to communication, for example, it would be expected that persons with high CA scores generally would be more inclined to avoid communication, persons with low CA scores generally would be more inclined to approach communication, and persons with moderate scores would fall somewhere in between, since their choices presumably would be impacted more by other traits and contextual elements than by their level of CA.

As Parks notes, considerable previous research has been directed toward testing the validity of the PRCA across varying contexts.[8] While Parks claims that most of these tests "have been limited to a single type of situation--giving a public speech,"[9] nothing could be further from the truth. In fact, of the 49 references in the McCroskey report concerning the validity of the PRCA,[10] only one involved public speaking as either an independent or a dependent variable. Indeed, the

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PRCA has been found to be predictive of behaviors/choices/orientations across an extremely diverse range of contexts and studies, including such things as amount of talking in a small group setting, length of employment in a service organization, choice of seating in a classroom, preference for housing, use of rhetorical interrogatives, productivity in brainstorming groups, amount of self-disclosure, age when married, degree of perceived leadership, and a variety of interpersonal perceptions. Subsequent to Parks' report, Behnke and Beatty have reported a correlation of .68 between the PRCA and state anxiety in a public speaking situation.[11]

In short, the PRCA has been found to demonstrate predictive validity across an extremely varied array of contexts and situations. It is not an exaggeration to state that the PRCA has a stronger case for predictive validity across contexts than any other measure yet developed in the field of Speech Communication. What, then, is the issue raised by the Parks study? A careful reading of his report indicates his concern: "A strong and sufficient test would require that the same subjects' responses to a variety of situations be assessed."[12] Additionally, "an adequate and logically sufficient test of cross-situational consistency requires active comparisons of clearly different situations". The crucial criteria, then, appear to be (1) same subjects, and (2) different situations. Ignoring the fact that several studies cited in the McCroskey report meet both of these criteria,[13] let us evaluate the study reported by Parks.

The Parks Study

A critical problem confronting us when we attempt to evaluate this study of the cross-situational consistency of the PRCA is Parks' failure to provide a constituent definition of his term "situational". What is a situation? In common usage (dictionary type) situation can refer to position, location, or place. Or it can refer to circumstances, case, or condition. Within the field of communication the term appears to be used interchangeably with setting, context, and environment. Thus, we may take "situation" to mean the setting, context, and environment within which communication takes place. There are, for example, public "situations", dyadic "situations", and small group "situations". Also, there are threatening "situations" and non-threatening "situations". In addition, there are familiar "situations" and unfamiliar "situations". This definitional issue is particularly problematic for this study, as we will note below.

Parks chooses to define situation operationally. To do this, 150 items describing communication situations were generated. These were subjectively grouped and 35 items were selected for use in this study. Subjects were asked to rate each item to indicate how anxious they would feel or have felt in such a situation along a nine-point continuum ranging from "1" representing "not anxious" to "9" representing "very anxious". The presumed neutral position on such a scale would be "5". It should be stressed that although this scale may appear to be a ratio scale so that a marking of the "1" position would indicate absolutely no anxiety and every other marking would represent some degree of anxiety, it is not such a scale. Rather, it is a normal bipolar scale with only the extreme ends defined for the subject, much like semantic-differential-type scales. The scale is analogous to a bipolar scale ranging from "good" to "bad". Marking at either extreme would indicate an extreme response of good or bad. Marking in the middle would indicate neither good nor bad, a neutral or undecided response.

Parks decided to allow groups of these items to operationally define "situations". Factor analysis with varimax (orthogonal) rotation was employed to identify groups of items. Two groups were isolated.

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The choice of orthogonal rotation analysis was unfortunate, because it assumes absolutely zero correlation between groups of items (or situations in Parks' terminology). In fact, such a rotation procedure absolutely guarantees there will be no correlation among factor scores.[14] Now, if indeed PRCA is correlated with the amount of anxiety or fear experienced by people across communication situations, it follows that such situations are likely to have some things in common (at least the fact that they cause some fear or anxiety). In short, they are likely to be correlated at least to some extent. Figure 1 represents the presumed relationships among situations and CA. As noted in the figure, situation A and situation B are presumed to have some things in common. Any valid measure of CA, labelled C in this instance, is presumed to share some variability with both A and B, some with A, and some with B. Beyond this, some variance would be shared by A and B but not with C, represented in the figure by D. Use of orthogonal rotation creates a situation such as that illustrated in Figure 2. The overlap in variance of A and B is mathematically eliminated, necessarily eliminating association which C shared with both A and B. In this instance, PRCA is purported to tap CA that is common across situations, precisely the type that is eliminated by creating criterion variables which are uncorrelated. Use of oblique rotation analysis would overcome this problem, but would not satisfy Parks' desire that the "two" situations to be examined be totally uncorrelated.

It is also questionable whether a two-factor solution for these data was the most appropriate. The criteria applied (eigenvalue of 1.0 and scree test) are very imprecise when dealing with two factors. It is possible that a single factor solution would be more parsimonious (the unrotated solution, unfortunately, is not reported) or that there were really more than two factors. Confirmatory factor analysis could provide some insight into this question, but no such analyses are reported.

For our present purposes, let us assume the two-factor solution is the best interpretation of the data. Now it becomes incumbant upon us to determine the nature of these two factors. Parks claims that the major distinction between the two factors is that the first factor is composed primarily of "situations in which the subject was likely to know the other people involved--roommates, friends, parent, family, dating partners, etc." (the reader will note the use of the plural form of situation here) while the second factor is composed primarily of "situations in which participants were less likely to know one another--talking with strangers or acquaintances in dyadic or group settings in which the subject was often the center of conversations" (note again the plural form of situation).[15] Thus, we are asked to accept the factors as representing two groups of "situations"--one familiar, the other unfamiliar situations.

The argument for this interpretation is less than compelling. Consider, for example, items 29 and 30. Both meet Parks' criteria for acceptable loadings. Item 29, loaded on the "unfamiliar" factor, reads: "Striking up a conversation with an opposite-sex stranger on a plane". Item 30, loaded on the "familiar" factor, reads: "Asking a stranger for directions in a strange city". Or consider item 6, loaded on unfamiliar factor--"Asking a friend to lend you five dollars". Or consider item 3, loaded on the "familiar" factor--"Saying hello to a stranger of the same sex who smiles at you on the street". Obviously, the familiar-unfamiliar distinction is both false and misleading.

Fortunately, Parks provides data in his report which permits an appropriate interpretation of his obtained factors. These data are the mean anxiety scores reported by his subjects for each item. The correlation between the mean anxiety scores for each item and the factor loading for each item on the first factor is

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-.74. The correlation between the mean anxiety scores for each item and the factor loading for each item on the second factor is .77. If we use only the five best items for each factor (those with the highest loadings, therefore the defining items) these correlations increase to -.92 for the first factor and to .87 for the second factor. Clearly, the distinction between factor 1 and factor 2 is not degree of familiarity, it is degree of anxiety reportedly experienced.

Interpretations and Conclusions

Parks reports modest, but significant, correlation (r = .29) between the factor scores on factor 2 and the PRCA and no significant correlation between the factor scores on factor 1 and the PRCA. He interprets this as indicating a lack of cross-situational consistency for the PRCA because it is predictive of "unfamiliar" situations but not of "familiar" situations. A far more appropriate interpretation, as noted above, is that PRCA is predictive of anxiety felt in communication situations which create anxiety but is not predictive of anxiety felt in situations in which there is no anxiety. As Spielberger has noted, differences in trait anxiety will be activated to produce differential state anxiety and subsequent behavior only when threatening stimuli are actually present.[16]

An examination of the mean anxiety levels of the 20 items with their highest loadings on the first factor, as reported by Parks,[17] reinforces this conclusion. As Parks notes, the mean anxiety felt for these 20 items was 3.68, with a standard deviation of 1.08. This indicates that for this group of items a person would have to mark a response over two standard deviations away from the mean to fall into the anxious side (a reponse of "6") of the bipolar continuum! It is hard to conceive of anyone, even the highest communication apprehensive, responding in such a manner to an item such as "Asking someone you are with what time it is", item 14 of Parks' scale and one of the three highest loaded items on the first factor.

What then of the cross-situational consistency of the PRCA? As presented, the study provides no real test of the cross-situational consistency of the PRCA. If situation is to be defined in terms of these two factors being two situations, we have nothing but an artifact being studied--an artifact based on inappropriate factor analytic procedures and level of anxiety associated with items. However, I would argue that the data do provide a real test of cross-situational consistency of the PRCA, if properly interpreted. Five items (referred to as situations by Parks on p. 228) have strong (above .60) and clean loadings on the second factor. These five items represent very diverse situations: 2. Asking a person out whom you haven't dated before. 12. Calling someone you don't know on the phone. 16. Expressing your opinion to a TV newsperson. 28. Interviewing for a job. 31. Asking a question in a large class. The modest correlation of .29 reported by Parks indicates that, indeed, the PRCA is predictive of amount of anxiety felt across these situations. This is "cross-situational consistency".

Whether a correlation of the magnitude of r = .29 should be seen as meaningful, however, clearly is open to differing interpretations. On the one hand, only between 8 and 9 percent of the variance in reported/situational anxiety is predictible from the PRCA scores. On the other hand, Mischel suggests a correlation of .20 as a criterion for a meaningful relationship between a trait measure and behavior.[18] Unfortunately, application of this criterion in the present instance is questionable, since Parks was studying generalized self-reports of situational anxiety rather than actual behavior.

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Given the bias in the PRCA instrument toward public speaking situations (10 items of 25) and the lack of such situations among the sample employed by Parks, the degree of cross-situational consistency observed is quite remarkable. Given a more representative sample of situations (across interpersonal, group, meeting, and public speaking contexts), we might expect a much higher degree of relationship. The results of the Parks study, given its limitations, are particularly encouraging.

Although, as noted previously, the first factor cannot be defined primarily in terms of familiarity of the subject with the other person(s) in the situation, the question Parks raises concerning the predictive power of the PRCA for amount of anxiety a person feels in an enduring communicative relationship may be well taken. Other things being equal, it is likely that in long-term or intimate relationships the situational constraints of the relationship override such trait orientation as CA. In a specific test of this hypothesis, Richmond found the PRCA was predictive of state anxiety during the initial stage of acquaintance but was completely unassociated with state anxiety in a later stage.[19] Noteably, she found that this decreased predictability was not due to a reduction in state CA over time. Rather, situational constraints introduced by the other dyad member in some cases increased state CA over time and in other cases decreased it. Thus, although the length of the relationship is a poor predictor of the amount of state CA experienced, it is a good predictor of the magnitude of the relationship between trait CA and state CA.

We must exercise caution, therefore, in applying the PRCA as a predictive tool. This instrument is probably most predictive, as are most trait-like, personality-type measures, when the situation is relatively ambiguous for the subject. We should not expect such an instrument to be highly predictive of state responses when the person is asking what time it is, nor for that matter when talking to oneself while alone in a room.

Cross-Situational Data

Until recently, virtually all of the research which has been directed toward validating the PRCA has focused on single situations at a single time.[20] These are the situations in which a trait measure would be expected to be least predictive.[21] While the results of some studies have not been entirely supportive, the overall pattern of results presents a very strong case for the predictive validity of the PRCA. Nevertheless, in the absence of data testing the validity of the PRCA within the context most appropriate to its conceptualization, same subjects-across situations-across time, the case must remain open.

The first consideration in designing this study was determining the type of data to be sought. The recent work of Block provided guidance.[22] After careful review of research in the area of personality (CA as measured by the PRCA is seen as a trait-like personality-type variable), Block delineated three types of data which research in this area can seek. He refers to these as R data, S data, and T data. R data are derived from observers' evaluations of individuals in the context of their natural lives, usually obtained from some type of rating-scale system. S data are derived from self-reports of individuals regarding their behavior or internal feelings in their natural lives. T data are derived from standardized, laboratory situations wherein selected, specific, readily identified behaviors are observed. Block reports that, within the area of personality research, well-designed and conducted studies which use R and S data demonstrate "undeniable and impressive personality consistency and continuity residing within the individual being studied."[23] On the other hand, he notes that studies using T data, due to the unnatural environment of most laboratory situations and the attendant response biases introduced, are "extremely erratic, sometimes positive but often not".[24]

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In the Parks study all of the results were based upon S data. On the basis of the Block review, the decision was made to seek both S data and R data. S data were easily obtained by use of the PRCA instrument. It was necessary to develop an appropriate method of obtaining observers' evaluation of our subjects in their natural lives to generate R data.

Measurement. The 25-item PRCA was employed to generate the S data. The internal reliability estimate for this instrument in this study was .94.

The design of this study (see below) required use of untrained observers providing evaluations based on observations of different subjects in different communication situations across varying lengths of time. Because of this extreme variability in observation conditions, it was necessary to generate a rating scale for communication apprehension that was general in nature and applicable across both subjects and observers. In order to accomplish this objective, the PRCA instrument was reworded to reflect an observer's rating rather than a self-report. This was accomplished by removing personal pronouns and substituting grammatically appropriate versions of "this person" in their place. Post-study interviews indicated the observers had little difficulty completing the measure. The internal reliability estimate for this instrument in this study was .95.

Procedure. The study involved 590 subjects and observers. Half of the subjects (n = 295) were elementary and secondary school teachers (ages 23-64) voluntarily enrolled in graduate classes in instructional communication. The remaining subjects (n = 295) were friends of these individuals. The teacher-subjects were assigned random identification numbers for use by both themselves and a friend. Each of these subjects was asked to complete the PRCA on themselves and to complete the revised version of the scale on a "friend you know well and who knows you well." After completing and returning these instruments, the subjects were given an identical set and asked to have the selected friend complete them overnight, seal the completed measures in an envelope provided, and return the next day. Thirty-two subjects (from an original sample of 327) were unable to secure data from the selected friend, due to their unavailability or unwillingness to participate. These subjects were excluded from the data analysis.

The above procedure yielded S data in the form of self-reports from 590 subjects and R data in the form of observer ratings from the same number of subjects. This use of friends as observers requires several observations. First, it should be recognized that these observers must be classified as completely untrained. There was no instruction given as to what to look for or what to consider. In addition, the use of friends may mitigate against the observation of behavior generated by high apprehension. As noted previously, Richmond found that trait communication apprehension (as measured by the PRCA) is significantly associated with state anxiety reported in dyadic encounters involving new acquaintances, but is not associated with state anxiety reported in longer-term relationships.[26] Thus, it may be that friends are less likely to observe behavior produced by anxiety than are other people. Consequently, the method employed here should be considered a highly conservative test of the relationship between self-report and observed communication apprehension. This concern is supported by the fact that the mean scores on the rating scale were substantially lower (64.2) than those on the self-reports (72.7). The standard deviations of the scores, however, were very similar.

Even with these potential problems, the choice of friends as observers probably is the best that is realistically possible. Only friends and spouses can share the natural environment of an individual with minimal impact on that individual's behavior. More highly trained observers would be likely to alter

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behavior by their very presence. In addition, the friends' observations came prior to being aware they were to provide data, thus mitigating against biased or overly sensitized observations. The best observation of behavior across situations across time comes from observers who, in the course of their natural lives, are present across situations, across time. The people who best meet this qualification are friends.

Results. A Pearson correlation was computed to estimate the relationship between our S and R data. The result was $r = .46$, $p < .001$. Thus, to the extent that our observer-reports are valid indicators of communication behavior across communication situations, across time, the PRCA is a cross-situationally consistent predictive instrument. In this study the PRCA was able to predict a little over 21 percent of the variance in the observer ratings.

Summary

This paper re-examined the results of the previous study on the cross-situational consistency of the PRCA reported by Parks and reported new data bearing on the validity of the PRCA as a cross-situational predictor. It was concluded that the conclusions drawn by Parks were inappropriate and that the results of his research actually should be interpreted as at least marginally supportive of the validity of the PRCA instrument. The results of the study reported above are supportive of the revised interpretation of the Parks results. This study indicates the PRCA is a cross-situationally consistent predictive instrument.

Footnotes

1. Malcom R. Parks, "A Test of the Cross-Situational Consistency of Communication Apprehension," Communication Monographs, 47 (1980), 220-232.

2. James C. McCroskey, "Measures of Communication-Bound Anxiety," Speech Monographs, 37 (1970), 269-277.

3. James C. McCroskey, "Oral Communication Apprehension: A Summary of Recent Theory and Research," Human Communication Research, 4 (1977), 78.

4. For a summary of this research, see McCroskey, "Oral Communication Apprehension ...," 78-96.

5. See, for example, Virginia P. Richmond, "The Relationship Between Trait and State Communication Apprehension and Interpersonal Perceptions During Acquaintance Stages," Human Communication Research, 4 (1978), 338-349.

6. James C. McCroskey and Virginia P. Richmond, The Quiet Ones: Communication Apprehension and Shyness (Dubuque, IA: Gorsuch Scarisbrick Pub., 1980).

7. It should be noted that Parks incorrectly refers to shyness as the "conceptual twin" of communication apprehension. Although this error has been made by others (for example, McCroskey, "Oral Communication Apprehension..."), the constructs are quite distinct, see McCroskey and Richmond. Also, this distinction is stressed in Arnold H. Buss, Self-Consciousness and Social Anxiety (San Francisco: W. H. Freeman and Company, 1980). Parks' confusion on this issue may come as a function of the earlier writings on CA or the tendency of writers on shyness to avoid defining the term.

8. For a summary of this research, see James C. McCroskey, "Validity of the PRCA as an Index of Oral Communication Apprehension," Communication Monographs, 45 (1978), 192-203.

9. Parks, p. 222.

10. McCroskey, "Validity of the PRCA..."

11. Ralph R. Behnke and Michael J. Beatty, "A Cognitive-Psychological Model of Speech Anxiety", Communication Monographs, 48 (1981), 162.

12. Parks, p. 224.

13. McCroskey, "Validity of the PRCA..."

14. Parks' failure to understand this facet of his procedure is illustrated by his report of a needless test of the correlation between the two factor scores; Parks, p. 228.

15. Parks, p. 228.

16. Charles D. Spielberger, Anxiety and Behavior, (New York: Academic Press, 1966), Ch. 1.

17. Parks, p. 228.

18. Walter Mischel, "On the Interface of Cognition and Personality: Beyond the Person-Situation Debate", American Psychologist, 34 (1979), 740-754.

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19. Richmond

20. McCroskey, "Validity of the PRCA..."

21. For a discussion of this issue, see James Jaccard and John A. Daly, "Personality Traits and Multiple-Act Criteria", Human Communication Research, 6 (1980), 352-366.

22. J. Block, "Advancing the Psychology of Personality: Paradigmatic Shift or Improving the Quality of Research", In D. Magnusson and N. Endler (eds.), Personality at the Crossroads: Current Issues in Interactional Psychology, (Hillsdale, NJ: Erlbaum, 1977).

23. Block, p. 45.

24. Block, p. 45.

25. McCroskey, "Validity of the PRCA..."

26. Richmond.

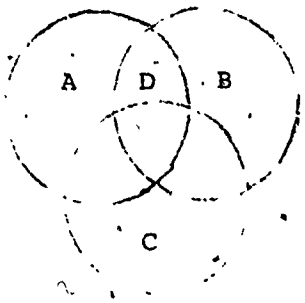

Figure 1. Correlated Situations

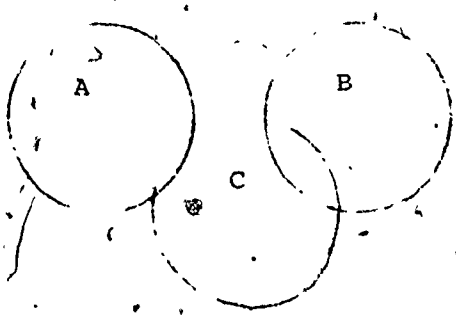

Figure 2. Uncorrelated Situations