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The measurement of affectionate communication

Kory Floyd [a] & Mark T. Morman [b]

[a] Assistant professor of communication , Cleveland State
University ,

[b] Assistant professor of communication , Baylor University ,
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The Measurement of Affectionate Communication

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Affection is central to the communicative processes of personal relationships. While several empirical investigations have examined the communication of affection, there is little consistency from study to study in how affectionate communication is operationally defined, making it difficult to interpret the findings of such research and to compare findings across studies. The present paper reports the results of a multi-phase scale development procedure and two supplemental studies, involving a total of 781 participants, utilizing and validating a new self-report measure of affectionate communication. The resulting scale, the Affectionate Communication Index, is offered as a practical and psychometrically sound operational definition for the overt communication of affection in personal relationships.

KEY CONCEPTS Affection, affectionate communication index, father-son dyads, scale development

The importance of affection in human social interaction has been recognized by researchers and clinicians alike for some time. For example, Rotter, Chance, and Phares (1972) referred to "love and affection" as one of six fundamental human needs. Frank (1973) and Koch (1959) both stressed the importance of affection and warmth in therapeutic interventions, and others have indicated that affection plays a critical role in developmental psychological processes (e.g., Bowlby, 1953; Harlow, 1974).

Affectionate communication is also critical for relational development and definition. Most forms of emotional expression carry some type of relational meaning in addition to their literal meaning (Watzlawick, Beavin, & Jackson, 1967). For example, when one relational partner expresses fear or anxiety to another, he or she is also implicitly communicating a perception of trust for the other. With affectionate expressions, however, the relational meaning is often more overt. Thus, when one partner says "I love you," the expression communicates an explicit meaning about the other and about the state of their relationship. Indeed, relational development is often

punctuated by the occurrence of such expressions (for example, relational partners often remember the first hug, the first kiss, or the first time the words "I love you" were spoken; see Owen, 1987).

While several investigations have examined affectionate interaction within personal relationships, there is little consistency from study to study in how affectionate communication is operationally defined and studied. This makes it difficult to interpret the findings of such investigations and to compare findings across studies. One explanation for this lack of consistency is that there are few existing measures of affectionate communication that are both psychometrically sound and practical to administer. The goal of the present series of studies is to formulate and validate an empirically grounded, self-report measure of overt affectionate communication and demonstrate its utility with various relationship types. The following section reviews approaches to operationally defining affectionate communication, detailing the issues and limitations that give rise to our current efforts.

APPROACHES TO STUDYING AFFECTIONATE COMMUNICATION

Studies of affectionate communication have taken a number of approaches to defining the construct operationally; this section reviews three primary approaches. First, however, it is important to distinguish between *affection* and *affectionate communication.*[1] Affection represents an internal psychological state of positive, often intimate regard for another. Operational definitions, such as the affection subscale of the Role Behavior Test (Foa & Foa, 1974), focus on feeling liked and trusted. Indeed, some studies have used scales such as Rubin's (1970) liking and love scales as operational definitions of affection (e.g., Sprecher, 1987).

The focus of the present studies, however, is on the *communication* of affection, which we conceptualize as an individual's intentional and overt enactment or expression of feelings of closeness, care, and fondness for another. Efforts at studying affectionate communication have generally taken one of three approaches to operationalizing the construct. The first approach has been to measure affectionate behavior without providing an explicit definition of the particular behaviors assessed. Noller (1978, p. 317), for example, examined the videotaped interactions of 87 parent-child dyads and recorded "the number of instances of interactive behavior that would normally be regarded as affectionate (e.g., kissing, cuddling, hugging)." Although example behaviors were given, no list of the specific behaviors coded was provided and no criteria were offered for judging whether a behavior was considered as affectionate (see also Walters, Pearce, & Dahms, 1957). The breadth of this approach makes it difficult to interpret the findings and particularly impedes efforts to compare these findings with others.

A more common approach has been to use observers to code the frequency of behaviors specified *a priori*. Early studies adopting this method focused on relatively few behaviors, most of them nonverbal. For example, Lovaas, Schaeffer, and Simmons (1965) coded only kissing and hugging as displays of affection (see also Acker, Acker, & Pearson, 1973). Later research expanded the operational definition to include more behaviors, but retained the emphasis on nonverbal behaviors (e.g., Acker & Marton, 1984). This approach is advantageous because the specific behaviors being assessed are specified, thus allowing the results to be interpreted with reference to particular behaviors.

However, these operational definitions are still limited in at least two ways. First,

they focus heavily on nonverbal expressions of affection, nearly to the exclusion of the verbal component. While there can be no argument that affection is often expressed nonverbally, a number of studies attest to the importance of verbal affectionate behaviors (e.g., Owen, 1987; Shuntich & Shapiro, 1991). Second, the ecological validity of the behaviors as referents for affection is unknown. That is, the extent to which these operational definitions of affectionate communication match the native experience of participants was not assessed. Of course, this is a risk engendered whenever referents for a construct are specified by the researcher. The possibility always exists that some referents will not match participants' own native definition, while other referents considered important to the participants will not be included (for further discussion on this point, see Parks & Floyd, 1996).

These limitations were addressed by Twardosz, Schwartz, Fox, and Cunningham (1979) in their system for live coding of affectionate behavior. Their system includes four classes of affectionate behavior: (1) smiling and laughing; (2) affectionate words, such as verbal statements expressing love, praise, or friendship; (3) active affectionate physical contact, including kissing, hugging, and patting; and, (4) passive affectionate physical contact, such as sitting on another's lap. Using these categories, Twardosz et al. developed a system and training manual for the coding of affectionate behavior. They reported acceptable interobserver agreement scores and assessed concurrent validity by showing relative agreement between coding scores and raters' written descriptions of the behaviors observed in each interaction. The coding system was later used in a two-year study of interaction between children and their day care supervisors, and acceptable interobserver agreements were again obtained (Twardosz, Botkin, Cunningham, Weddle, Sollie, & Schreve, 1987).

While the Twardosz et al. (1979) measurement model represents some substantial improvements over prior approaches, it entails at least two liabilities for researchers who wish to study affectionate communication. First, the system is time- and labor-intensive to use. Twardosz et al. (1987) reported requiring 22 coders to collect data at various locations, and another 21 to conduct reliability checks. Moreover, the training system for coders is elaborate, requiring coders to study a training manual, pass a quiz regarding behavioral definitions, watch and respond to a videotape of interaction, and practice by watching live interactions. Twardosz et al. (1987) also indicated that the retraining of coders was periodically necessary when reliability scores fell below a given threshold.

The second limitation is that the coding system requires that participant behavior be directly observed by coders, either live or via a videotaped interaction. While this form of data collection certainly has its merits, the need to observe participants' interactions may preclude researchers from collecting data on expressions of affection that may not naturally occur in settings in which participants know their behaviors are being observed. For example, while affectionate expressions such as smiling or putting one's arm around another's shoulder might occur with relative frequency in public or observed settings, individuals may reserve other expressions such as kissing or saying "I love you" for more private surroundings.

The third approach to measuring affectionate communication, in which participants provide self reports of their behaviors, may address these limitations. Some research has focused on single behaviors; Owen (1978), for example, measured the verbal expression of love in romantic relationships by having participants keep a daily diary for a five-month period. This approach required far fewer coders and

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considerably less training than did the method used by Twardosz et al., and allowed data to be collected relative to relational behaviors that researchers would have a difficult time directly observing. Additional examples of this approach are found in Booth-Butterfield and Trotta (1994), who also studied the verbal expression of love, and in Leiber, Plumb, Gerstenzang, and Holland (1976), who focused on sexual interaction within married couples.

In an attempt to measure a broader range of affectionate behaviors while still addressing the limitations of the Twardosz et al. coding system, Floyd (1997a, b; Floyd & Morman, 1997) developed a 13-item self-report measure of affectionate communication. The items were drawn from referents used in prior studies and included both verbal (e.g., saying "I like you") and nonverbal (e.g., kissing) behaviors. Respondents were asked to indicate on a seven-point scale how often they engaged in each behavior within a target relationship. Content validity of the items was assessed by having 60 undergraduates read the items and mark any that they felt were not valid forms of expressing affection. Any item that was so marked by at least ten percent of the coders would have been discarded; however, all items were retained. The scale has also demonstrated high internal reliability (see Floyd, 1997a; Floyd & Morman, 1997) and has the pragmatic advantage of being short and easy to administer.

Despite its advantages, this scale still entails a number of limitations. Because the items were drawn from previous studies, it is difficult to know how isomorphic they are with native experiences of affection. The most serious shortcoming of the scale, however, is the lack of evidence for its psychometric adequacy. Floyd did report acceptable internal reliability. Further, in these studies, the scale successfully discriminated between relationships hypothesized to be affectionate and nonaffectionate. However, the construct validity of the scale and its stability have not been tested. This, of course, is a limitation plaguing most existing operational definitions of affection, and one that must be addressed for the integrity of future research efforts.

The purpose of the present research program, therefore, is to develop a self-report measure of affectionate communication that is grounded in the native experience of affection and that demonstrates multiple forms of psychometric adequacy. The primary studies, described below, were used to develop the scale and test its validity and reliability. We then used the scale in two supplemental studies to address theoretic questions and further assess the scale's psychometric properties with various relationship types.

PRIMARY STUDIES: SCALE DEVELOPMENT
Initial Item Generation

Our goal in this phase was to generate a pool of referents for affectionate communication to serve as potential items for the scale. Of primary concern was that the items have validity as native referents for affection; thus, we began with an inductive approach to item generation. Participants (N = 218; 55% female) at a large Southwest university were asked to think of how they communicated in their close relationships and to respond to the open-ended question, "How do you communicate your affection for each other? That is, how do you let each other know that you like and care about each other?" Respondents were asked to list on paper as many of their ways of communicating affection as they could recall.[2]

Each respondent's questionnaire was reviewed by the investigators and every

item offered as a form of expressing affection was typed onto a master list. After eliminating duplicates, this review resulted in a list consisting of 67 original items.[3] A perusal of the items caused some concern that certain items (e.g., study together, get drunk together) may not have face validity as referents for the *expression* of affection, which was the objective of the measure. Thus, a second procedure was used to reduce the item pool by eliminating items that did not have face validity as expressions of affection.

Fourteen male and 20 female undergraduates at a large Southwest university and a large Midwestern community college reviewed the list of 67 items and indicated which items they believed were truly *forms of communicating affection to others*.[4] They were asked to circle those items and to leave all others blank. Due to the small sample size, we took a conservative approach to eliminating items by retaining those items that were rated as valid forms of communicating affection by at least half of the respondents. This process eliminated 33 items, leaving 34 for inclusion in the scale.[5] These procedures provided a pool of referents for communicating affection that were derived from participants' native delineations of the construct and assessed for face validity as indicators of the expression of affection. We next assessed this 34-item scale for its factor structure, internal reliability, and construct validity.

Factor Structure, Internal Reliability, and Construct Validity

In this phase, participants completed a 34-item version of our affectionate communication scale in reference to their most affectionate personal relationship to allow us to assess the factor structure of the scale and its internal reliability. We also assessed convergent and discriminant validity by having participants complete measures of closeness, psychological affection, psychological distance, and social desirability. Although our scale is a measure of affectionate *communication* rather than the psychological state of affection, we predicted that these constructs would be positively related. Following the intuitive and empirically supported notion that affectionate communication occurs most frequently in highly personal relationship, we also predicted that it would correlate positively with the closeness of the target relationships and negatively with the extent to which relational partners feel psychologically distant from each other. Finally, to ensure that our scale is not measuring respondents' tendencies to give socially desirable answers, we measured social desirability and predicted that it would not correlate with scores on our scale.

Two hundred eighty-two participants (67% female) were recruited from communication courses at a large Southwest university, a large Northwest university, and a large Midwest university to participate in this phase.[6] Half of the respondents reported on their most affectionate opposite-sex relationship and the other half on their most affectionate same-sex relationship. The target relationships were most often romantic in nature (48%), followed by familial (28%), and friendship (21%; the remaining 3% did not specify). They ranged in duration from three months to 39 years, with an average duration of 8.71 years ($SD = 7.77$). Respondents completed the 34-item version of our scale and measures of psychological affection, relational closeness, psychological distance, and social desirability. *Psychological affection* was measured with the six-item affection subscale of the Role Behavior Test (Foa & Foa, 1974), which addresses the extent to which the target relationship is characterized by sharing, trust, and attempts to please the relational partners (alpha = .93). *Relational closeness* was assessed with the Relationship Closeness Inventory (RCI: Berscheid, Snyder, & Omoto, 1989). The RCI measures closeness as a function of the frequency of interaction, the

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strength of mutual influence, and the diversity of shared activities (alpha ≈ .91). *Psychological distance* was measured using the Mutual Avoidance subscale of the Communication Patterns Questionnaire (Christensen & Sullaway, 1984; Noller & White, 1990). The subscale includes three items assessing respondents' tendencies for mutual avoidance of discussion, mutual withdrawal, and mutual withholding (alpha = .75). *Social desirability* was measured with Crowne and Marlowe's (1960) Social Desirability Scale. The scale is comprised of 33 statements and respondents are instructed to indicate which statements pertain to them. The statements address the extent to which respondents are concerned about the social desirability of appropriateness of their thoughts and behaviors.

Factor structure. To determine their underlying factor structure, the 34 items were subjected to principal components factor analyses. Following Burgoon and Hale (1987), we tried several solutions that met the following criteria: (1) all factors had to have eigenvalues exceeding 1.0; (2) the scree test had to indicate reasonable incremental improvement in variance accounted for by the addition of a given factor; (3) all factors had to include at least three items with primary loadings of .50 or better and secondary loadings of .30 or below; and (4) all items within a given factor had to have a primary loading of .50 or better. Among factor solutions meeting these criteria, we chose the solution accounting for the most variance.

An initial solution produced five factors with eigenvalues exceeding 1; however, based on Cattell's scree test, a three-factor solution seemed more viable. The interest here lay not in supporting a theoretically predetermined set of factors, but in determining if the items can be used to create and subsequently measure the concept of affectionate communication. The most viable and interpretable factor solution was provided by an oblique rotation which retained 19 items in three factors accounting for 53.8% of the variance. KMO test of sampling adequacy was .93; Bartlett test for sphericity was significant at $p < .00001$. Factor loadings, coefficient alphas, means, average inter-item correlations, and factor intercorrelations are provided in Table 1.

TABLE 1
Factor Loadings and Descriptive Statistics for Principal Components Factor Analysis with Oblimin Rotation

Item	Nonverbal	Verbal	Support
Hold hands	.94	-.03	-.11
Kiss on lips	.90	-.16	-.02
Kiss on cheeks	.88	-.10	-.02
Give massages to each other	.73	-.19	.08
Put arm around shoulder	.72	.14	.11
Hug each other	.65	.00	.29
Sit close to each other	.60	.23	.16
Look into each other's eyes	.58	.29	-.03
Wink at each other	.58	.28	-.23
Say "You're a good friend"	-.27	.84	.17
Say "I like you"	.29	.71	-.08
Say "I love you"	-.08	.66	.20
Say "You're my best friend"	.09	.58	.21
Say how important relationship is	.28	.50	.23

TABLE 1 (cont.)

Factor Loadings and Descriptive Statistics for Principal Components Factor Analysis with Oblimin Rotation

Item	Nonverbal	Verbal	Support
Help each other with problems	.04	-.02	.77
Acknowledge each other's birthday	.09	-.14	.73
Share private information	-.03	.05	.68
Give each other compliments	.07	.25	.50
Praise each other's accomplishments	-.01	.28	.50
Coefficient alphas	.91	.80	.77
Means	3.99	4.22	6.05
Average correlation of items	.53	.44	.40
Factor intercorrelations			
Factor I	1.00	.65	.44
Factor II		1.00	.60

The first factor included items such as hugging, holding hands, sitting close, and kissing on the cheek, and was labeled *nonverbal expressions of affection*. Items loading on the second factor included saying "I love you," saying "You're a good friend," and saying that the relationship is important, and was labeled *verbal expressions of affection*. Factor three included items such as giving compliments, helping with problems, and sharing private information, and was labeled *social supportiveness*.

To further determine the viability of the three-factor solution, especially when the dimensions are allowed to be correlated, we entered the data into Hamilton and Hunter's (1988) PACKAGE program, which is a least squares, oblique multiple groups program for calculating confirmatory factor analysis, with three dimensions identified. The confirmatory factor structure is provided in Table 2.

TABLE 2

Confirmatory Factor Analysis Loadings

Item	Nonverbal	Verbal	Support
Hold hands	.88	.56	.31
Kiss on lips	.80	.45	.32
Kiss on cheeks	.80	.54	.33
Put arm around shoulder	.80	.69	.50
Sit close to each other	.75	.66	.55
Hug each other	.71	.66	.56
Look into each other's eyes	.68	.58	.40
Give massages to each other	.66	.38	.34
Wink at each other	.55	.45	.25
Say how important relationship is	.73	.87	.64
Say "You're my best friend"	.41	.77	.53

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TABLE 2 (cont.)
Confirmatory Factor Analysis Loadings

Item	Nonverbal	Verbal	Support
Say "I love you"	.64	.74	.38
Say "I like you"	.56	.69	.46
Say "You're a good friend"	.19	.55	.52
Help each other with problems	.35	.44	.73
Give each other compliments	.43	.56	.65
Praise each other's accomplishments	.37	.58	.65
Share private information	.26	.41	.62
Acknowledge each other's birthday	.29	.40	.52

Construct validity. One-tailed Pearson correlations, provided in Table 3, were used to test the scale's convergent and discriminant validity, using both the individual factor scores and the combined score summed across factors. As expected, all three subscales were positively correlated with relational closeness and affection, negatively correlated with psychological distance, and not associated with social desirability, providing support for the scale's validity. Not surprisingly, the total scale scores followed the same patterns.

TABLE 3
Factor Intercorrelations and Construct Validity Correlations

	Closeness	Distance	Affection	Desirability
Verbal	.18**	-.15*	.47***	.06
Nonverbal	.28***	-.22**	.51***	.05
Support	.16**	-.19**	.51***	-.02
Total ACI	.25***	-.22**	.58***	.05

* $p < .05$
** $p < .01$
*** $p < .001$

Having examined the factor structure of the scale and verified its internal reliability and convergent and discriminant validity, we conducted a final procedure to ascertain its test-retest reliability and further verify its discriminant power.

Stability and Discriminant Power
In this phase, we assessed the scale's stability over time. Although the level of affectionate communication characterizing a relationship would certainly be expected to change over time, we reasoned that in most relationships, the rate of change would be relatively slow. Thus, we expected to see little change in respondents' reports of affectionate communication in their relationships within the two-week duration of this phase. We also used the known-groups method to test whether the scale would discriminate between groups known in advance to be high and low in affection. A total of 57 *respondents*, divided into two samples, were used in this phase. Sample A

consisted of 28 participants (61% female; mean age = 21.64, *SD* = 1.52) recruited from communication courses at a large Southwest university. Sample B consisted of 29 participants (80% female; mean age = 23.84, *SD* = 6.44) recruited from communication courses at a large Midwest community college.

Those in Sample A completed the affection scale in reference to their most affectionate relationship; fourteen days later, they did the same. Those in Sample B were asked to select someone with whom they had some type of relationship, but with whom they did not feel close and were not affectionate. They completed the scale once in reference to that relationship. Stability was tested by comparing the scale's scores on each factor from Sample A at Time 1 and Time 2. The results indicated little change over time. Scores on the verbal dimension were 4.83 (*SD* = 1.16) at Time 1 and 4.68 (*SD* = 1.06) at Time 2. A pairwise comparison revealed a nonsignificant difference, t (27) = 1.43, $p > .05$; moreover, the scores were positively correlated, $r = .87$, $p < .001$. The nonverbal dimension produced scores of 4.69 (*SD* = 1.05) at Time 1 and 4.88 (*SD* = 1.00) at Time 2. The difference between these scores is nonsignificant, t (27) = 1.04, $p > .05$, and the scores are positively related, $r = .89$, $p < .001$. Finally, the supportiveness dimension produced scores of 6.17 (*SD* = 0.63) at Time 1 and 6.12 (*SD* = 0.66) at Time 2. These scores do not differ significantly, t (27) = 0.67, $p > .05$, and are positively correlated, $r = .83$, $p < .001$.

Discriminant power was tested by comparing the scores between known-divergent groups: Sample A, which represents highly affectionate relationships, and Sample B, representing nonaffectionate relationships. (Sample A scores used were those collected at Time 1.)[7] A MANOVA with the three factors (verbal, nonverbal, and supportiveness) as dependent variables produced a significant multivariate effect, $\Delta = .24$, F (3, 55) = 57.26, $p < .001$, $R^2 = .76$. Accompanying univariate effects for each factor were significant in the direction predicted, and are provided in Table 45.

TABLE 4
Univariate Comparisons for Sample A and Sample B

ACI Factor	Sample A mean/SD	Sample B mean/SD	F (1,57)	p	η²
Verbal Affection	4.65/1.30	1.65/0.72	123.91	<.001	.68
Nonverbal Affection	4.69/1.05	2.34/0.71	142.36	<.001	.71
Supportiveness	6.16/0.70	3.92/1.32	64.18	<.001	.53

Discussion

Collectively, these procedures provided a set of referents for affectionate communication that are both grounded in individuals' native experience and that demonstrate convergent and discriminant validity, internal and test-retest reliability, and the ability to discriminate between affectionate and nonaffectionate relation-ships. The result of these efforts was a 19-item Affectionate Communication Index (ACI). Having developed this self-report measure of affectionate behavior, we subsequently used the instrument in two supplemental studies to test theoretic predictions and further assess psychometric adequacy with samples comprised of different relationship types. Thus, the findings of these studies are of interest not only because of their implications for our understanding of affectionate communication in the relationships we examined, but also because they provide additional evidence of

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the utility and validity of the ACI. The first study examined the communication of affection in the relationships of fathers and adult sons and addressed its association with closeness, communication satisfaction, gender role ideology, and affective orientation. The second study employed a laboratory procedure to determine whether relational affection is associated with nonverbal immediacy and expressivity between adult platonic friends.

SUPPLEMENTAL STUDY ONE: AFFECTION BETWEEN FATHERS AND SONS

In this study, we used the ACI to address affectionate behaviors between fathers and their adult sons. The father-son relationship is at once among the most significant and least understood same-sex relationships in many men's lives. As part of a larger research program addressing adult paternal relationships, we had pairs of fathers and adult sons complete the ACI and examined the scale's associations with construct validity assessments and theoretic outcomes.[8] As an additional assessment of the scale's construct validity, we predicted that affectionate communication in father-son relationships is positively associated with relational closeness and with their self-reported communication satisfaction. Specifically,

> H1: Affectionate behavior between fathers and adult sons is positively associated with relational closeness and communication satisfaction.

Affectionate communication is often described as a prototypically feminine behavior. This is one explanation for the common finding that women are more affectionate than men: for women, affection is a gender-affirming behavior, but for men it is gender-disaffirming (see, e.g., Floyd & Morman, 1997; Morman & Floyd, in press, 1998). According to this reasoning, biological sex is not the causal mechanism accounting for difference, but rather, it is a surrogate for one's psychological gender role identity (see Bem, 1974; Reeder, 1996). Therefore, affectionate behavior should be positively associated with how feminine an individual is, regardless of his or her biological sex; it should likewise be negatively associated with how masculine one is.

One reason that femininity might be associated with affectionate behavior is that feminine individuals generally have higher affective orientation (Booth-Butterfield & Booth-Butterfield, 1990, 1994). Affective orientation refers to the extent to which people are aware of their emotions and use them to guide their communication processes. Affectively oriented individuals, therefore, should be more "in tune" to their feelings of love, caring, and affection for others and, because they rely on those cues to guide their interaction, they should be more affectionate than those who are not affectively oriented.

This reasoning led us to advance the following hypothesis:

> H2: Affectionate behavior is positively predicted by femininity and affective orientation, and negatively predicted by masculinity.

Participants were 120 men comprising 60 pairs of fathers and adult biological sons. The fathers ranged in age from 40 to 79 with an average age of 50.80 years ($SD = 8.04$). The sons ranged in age from 16 to 45 with an average of 22.59 years ($SD = 6.06$). Nearly

all (91.2%) of the fathers were married at the time of the study while nearly all of the sons (80.7%) were single, having never been married (an additional 15.8% of the sons were married at the time of the study).

Procedure. Father-adult son dyads were recruited for the study by volunteer research assistants at a large community college in the Midwest. Participating dyads were each given a pair of questionnaires to complete, one for the father and one for the son. Participants were asked to complete their questionnaires independently and not to share or discuss their answers with each other until after both had turned in the questionnaires.

Measures. Affectionate communication was measured with the 19-item version of the ACI. Information on the scale's factor structure and alpha reliabilities is reported below. *Closeness* was measured with the single-item Inclusion of Other in the Self (IOS) Scale developed by Aron, Aron, and Smollan (1992). *Communication satisfaction* was assessed with the 19-item Interpersonal Communication Satisfaction Inventory (Hecht, 1978). Scale items were adapted here so as to address participants' general patterns of communication with each other, rather than in a specific conversation (e.g., we changed "I felt I could talk about anything with the other person," to "I feel I can talk about anything with this person"). Coefficient alphas were .91 for fathers and .94 for sons. *Masculinity and femininity* were assessed with the masculinity and femininity subscales of the Bem Sex Role Inventory (Bem, 1974). Fathers' coefficient alphas were .76 for masculinity and .76 for femininity; sons' were .73 for masculinity and .81 for femininity. *Affective orientation* was measured with the 20-item Affective *Orientation* Scale developed by Booth-Butterfield and Booth-Butterfield (1990, 1994). The items address the extent to which respondents are aware of their feelings, can discern between different levels of emotional intensity, and allow their feelings to guide their actions. Coefficient alphas were .86 for fathers and .88 for sons.

Results And Discussion

Factor structure. A principal components factor analysis performed on the 19 ACI items produced five factors with eigenvalues exceeding 1. The Bartlett test of sphericity was significant at $p < .0001$; KMO test of sampling adequacy was .79. Based on Cattell's scree test, however, a three-factor solution seemed more viable. Criteria for retaining items were identical to those identified in the previous study. The rotated factor solution using oblique rotation produced three factors collectively accounting for 51.07% of the variance. The rotation produced essentially the same factor structure as was identified above, with the exception that the two items failing to achieve adequate primary loadings (sit close to this person, and kiss this person on the lips) were dropped from the nonverbal affection subscale. Alpha scores were .73 for nonverbal affection, .81 for verbal affection, and .76 for social support.[9]

Hypotheses. One-tailed Pearson correlations, provided in Table 5, indicated that both fathers' and sons' closeness scores were positively associated with their levels of verbal, nonverbal, and supportive affectionate communication. Moreover, sons' verbal, nonverbal, and supportive affectionate communication scores were positively correlated with both fathers' and sons' communication satisfaction. Fathers' and sons' communication satisfaction were associated with fathers' nonverbal and supportive affectionate communication scores. These results provide additional evidence for the construct validity of the ACI within the context of father-adult son relationships.

To address the second hypothesis, fathers' and sons' verbal, nonverbal, and

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TABLE 5
Correlations Between Fathers' and Sons' Affection Scores, Closeness, and Communication Satisfaction

	Fathers' Closeness	Sons' Closeness	Fathers' Comm. Satis.	Sons' Comm. Satis.
Fathers' ACI Scores				
Nonverbal	.42**	.43**	.34**	.38**
Verbal	.42**	.34**	.18	.20
Support	.54**	.62**	.52**	.53**
Sons' ACI Scores				
Nonverbal	.24*	.42**	.30*	.44**
Verbal	.23*	.51**	.35**	.43**
Support	.42**	.58**	.48**	.63**

$*p < .05$
$**p < .01$

supportive affectionate communication scores were regressed in a stepwise manner on fathers' and sons' masculinity, femininity, and affective orientation. Due to the small sample size, the alpha criterion for inclusion in the regression equation was set at .10. Fathers' *verbal affectionate communication* was predicted by fathers' affective orientation, $\beta = .26, p = .060$, and then by fathers' masculinity, $\beta = .23, p = .093$, adjusted $R^2 = .10$. Sons' verbal affectionate communication was not significantly predicted by any of the variables entered. Fathers' *nonverbal affectionate communication* was predicted by fathers' affective orientation, $\beta = .35$, $p = .01$, adjusted $R^2 = .12$. Sons' nonverbal affectionate communication was predicted by sons' femininity, $\beta = .38$, $p = .006$, adjusted $R^2 = .14$. Fathers' *supportive affectionate communication* was predicted by fathers' affective orientation, $\beta = .37$, $p = .004$, and then by fathers' masculinity, $\beta = .34$, $p = .008$, adjusted $R^2 = .28$. Sons' supportive affectionate communication was predicted by fathers' affective orientation, $\beta = .37$, $p = .004$, and then by sons' femininity, $\beta = .32$, $p = .012$, adjusted $R^2 = .29$.

These results provide qualified support for the second hypothesis. As predicted, affective orientation and femininity were important predictors of verbal, nonverbal, and supportive affectionate communication. The overall pattern was one in which fathers' affection was most consistently predicted by their affective orientation; those fathers who reported greater awareness of, and reliance on, their emotions reported expressing more affection toward their sons. For sons, femininity was the most consistent predictor; those sons who described themselves as more feminine reported expressing more nonverbal and supportive affection to their fathers.

The finding that affective orientation was the important predictor for fathers, while femininity was the important predictor for sons, may reflect a generational difference in one's orientation toward femininity. Having largely been raised in an era of more stringent adherence to gender-specified roles, fathers may be more reluctant than sons to describe themselves as feminine. This may at least partially account for why fathers' femininity did not figure in any of the equations. Because affective orientation is one aspect of prototypical femininity, it may be more predictive of

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fathers' behaviors if they are reluctant to label themselves as feminine. Conversely, greater attention to androgyny and an accompanying relaxation of gender role boundaries in recent years may make sons less inhibited about describing themselves in feminine ways, thus accounting for why sons' femininity may have played a larger role than fathers'.

Contrary to the prediction, however, fathers' masculinity was a significant positive predictor of fathers' verbal and supportive affection. It may be that affectionate behavior is related to one's femininity regardless of one's masculinity; that is, people who are highly feminine are highly affectionate regardless of how high or low on masculinity they are. The characterization of affection as a prototypically feminine behavior leads one to anticipate that it is negatively associated with masculinity, but this prediction may incorrectly assume that masculinity and femininity are mutually negating constructs. Bem's (1974) research on androgyny may provide reason to question this assumption. Additional research on the association of affection with gender role orientation, using diverse samples, is warranted before further conclusions are drawn.

SUPPLEMENTAL STUDY TWO: CONNECTIONS TO NONVERBAL BEHAVIOR AMONG PLATONIC FRIENDS

Immediacy and expressiveness are often associated with affection as being among the prototypical characteristics of communication in affectionate relationships (Burgoon & Hale, 1988). In this study, we addressed whether one's self-reported level of relational affectionate communication would be associated with the levels of nonverbal immediacy and expressiveness observed in an actual interaction. Specifically, we advanced the following prediction:

> H3: Self-reported relational affectionate communication level is positively associated with observed nonverbal immediacy and expressiveness.

Subjects were 35 men and 35 women, comprising 35 dyads of adult platonic friends who were participating in a larger experimental procedure on the effects of expectancy violations in affectionate behavior.[10] Ages ranged from 18 to 44, with a mean of 21.11 years (*SD* = 4.68). There were 18 dyads of same-sex friends (nine each of male-male and female-female pairs) and 17 dyads of opposite-sex friends in the study.

Procedure and measures. Upon arrival at the communication laboratory, subjects were told that they would be engaging in a conversation regarding their thoughts and feelings about their friendship with each other. After subjects consented to participate, they were seated next to each other in the data collection area of the lab, a converted living room with comfortable swivel chairs and a coffee table. Two topics of conversation taken from a game designed to promote dyadic disclosure were provided to subjects as a means of guiding their conversation.[11] Subjects were encouraged to use the topics to generate conversation, but to allow the conversation to proceed as naturally as possible. Because we wanted to observe subjects' naturally occurring levels of conversational immediacy and expressiveness, no instructions or inducements were given regarding subjects' use of these behaviors during the conversation. At the conclusion of the conversation, subjects were separated. One member of each dyad, selected with the toss of a coin, completed the 19-item ACI in

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reference to the friendship.

The levels of nonverbal immediacy and expressiveness exhibited during the interaction by the person completing the ACI were coded from the videotapes by four trained coders who were blind to the hypothesis. The specific behaviors coded were drawn from among those commonly used in studies on behavioral immediacy and related behaviors, including Burgoon, Stern, and Dillman (1995), Guerrero and Burgoon (1996), Manusov (1995), and Palmer and Simmons (1996). Behaviors were coded using 7-point bipolar adjective scales, wherein higher scores indicate a greater presence, frequency, or intensity of the behavior. Specific immediacy behaviors were: involvement, engagement, frequency of touch, physical proximity, lean, immediacy, body orientation, and postural attentiveness (alpha = .81). Expressiveness behaviors were: animation, vocal expressiveness, frequency of gestures, and facial expressiveness (alpha = .72). Coders received approximately six hours of individual and collective training and practice, which included discussing the properties of each group of nonverbal behaviors and practicing coding off of videotapes from similar studies. Intercoder reliabilities, based on Ebel's intraclass correlation (Guilford, 1954), were .91 for immediacy and .89 for expressiveness.

Results and discussion. To address the hypothesis, subjects' coded nonverbal immediacy and expressivity scores were regressed in stepwise procedures on their verbal, nonverbal, and supportive affectionate communication scores. Subjects' immediacy was predicted by their nonverbal affectionate communication, $\beta = .53$, $p < .01$ and verbal affectionate communication, $\beta = .39$, $p = .03$, adjusted $R^2 = .30$. Subjects' expressiveness was predicted by their nonverbal affectionate communication, $\beta = .56$, $p < .01$, verbal affectionate communication, $\beta = .45$, $p = .02$, and supportive affectionate communication, $\beta = .42$, $p = .02$ adjusted $R^2 = .38$. Hypothesis three is supported.

In this study, we applied the ACI to adult platonic friendships and assessed whether its scores would be associated with the level of nonverbal immediacy and expressiveness observed in actual interaction. The results indicate that the verbal and nonverbal subscales successfully predicted nonverbal immediacy and that all three subscales successfully predicted nonverbal expressiveness. These findings further demonstrate the scale's utility by verifying its ability to predict not only self-reported perceptions about relational states (e.g., closeness, communication satisfaction) but also actual behaviors that would be expected to characterize affectionate relationships. Future research may provide additional evidence for the predictive validity of the ACI by applying it to other nonverbal behaviors as well as verbal behaviors.

GENERAL DISCUSSION

Affectionate communication is critical for the development and maintenance of personal relationships. Despite its importance, however, systematic research on affectionate behavior has suffered from a lack of operational consistency that may render interpretations of results tenuous and hinder efforts to compare findings across studies. As noted above, the most psychometrically sound measures of affectionate communication available are time- and labor-intensive (and, as a result, economically costly) to administer, while the more practical extant measures often have unknown validity. Our goal in the present research program was to offer a new instrument for the measurement of affectionate communication that is economical, easily administered, grounded in ecologically valid operational indicators of affection, and high in psychometric adequacy. Our efforts in the scale-development procedures and the

empirical studies presented herein have resulted in the Affectionate Communication Index.

The Affectionate Communication Index

Because we specifically wanted to construct a scale that would reflect normative referents for expressing affection, we adopted a grounded theory approach and began by asking respondents to indicate how they expressed affection in their relationships. This gave us an initial list of referents from which to proceed. Our second procedure to assess the face validity of the items as expressions of affection gave us greater confidence that the remaining 34 items represented behaviors that were truly normative referents for affectionate communication. Factor analysis produced three highly interpretable factors representing verbal, nonverbal, and supportive aspects of affectionate communication, further reducing the number of items to 19. Scores were positively correlated with relational closeness and psychological affection, negatively correlated with psychological distance, and uncorrelated with social desirability, giving us confidence in the convergent and discriminant validity of the instrument. Further, scores discriminated between affectionate and nonaffectionate relationships, and remained stable over a fourteen-day period.

Of course, no instrument, regardless of its psychometric properties, can be considered a contribution to the scholarly community unless its utility in addressing theoretically interesting questions has been demonstrated. We thus employed the instrument in two supplemental studies, each addressing different issues with different procedures and different relationship types. In the first of these studies, we addressed affectionate communication in the relationships of fathers and their adult sons. Further attesting to the psychometric adequacy of the ACI, scores were positively associated with the closeness of these relationships and with their reported levels of communication satisfaction. Moreover, as expected, psychological femininity and affective orientation were positive predictors of self-reported affectionate behaviors. Importantly, this study also provided reason to question the prediction that affectionate communication is negatively associated with masculinity, an issue that warrants additional attention in research on other relationship types.

The second supplemental study employed an experimental procedure involving the coded nonverbal behaviors of 70 platonic friends. Scores on the verbal and nonverbal subscales successfully predicted the amount of immediacy displayed during the experimental interaction, while scores on the verbal, nonverbal, and supportive subscales were significant predictors of expressiveness. This demonstrates the utility of the ACI in predicting actual behaviors that would theoretically be expected to characterize affectionate relationships.

Conclusions and Limitations

Considered collectively, these studies give us confidence that the ACI is comprised of ecologically valid referents for affectionate communication. We also conclude that the measure is stable, internally consistent, psychometrically sound, and useful in addressing theoretically important concepts with multiple relationship types. The instrument should be of equal utility to researchers interested in the antecedents, correlates, and consequences of affectionate behavior. Importantly, it provides an operational definition for affectionate *communication*, rather than for the psychological state of affection, allowing behavioral and cognitive-emotive questions

regarding affection to be addressed in tandem. Because of the intercorrelations between the three subscales, one may use the ACI to generate an overall score for affectionate communication or three individual scores representing its verbal, nonverbal, and supportive aspects, thus allowing for either a multivariate or univariate approach. The scale also offers the pragmatic advantage of being quick and easy to administer. As a 19-item instrument, the ACI takes most respondents only a few minutes to complete and requires minimal time for data entry and calculation.

As with any study, there are limitations to the studies presented here that must be acknowledged. We hope, by virtue of the approach taken in these studies, to have created a measure of affection applicable to a range of relationships. Because respondents in the construct validity and stability phases of scale development most often reported on romantic relationships, the scale may be especially applicable to the communication of romantic affection. Of course, many behaviors in the final version of the instrument (e.g., kissing, hugging, saying "I love you") could be performed in romantic or nonromantic ways, so we do not consider the scale's validity to be restricted to romantic relationships. Indeed, the supplemental studies demonstrated its utility in studying platonic friendships and familial relationships as well as romantic unions.

In a test of its discriminant validity, the ACI was shown to be unrelated to social desirability. However, as with any self-report measure, the risk exists that subjects will complete the measure in such a way as to appear appropriate, normative, or socially attractive rather than to reflect actual behavior. Thus, researchers using the ACI (and consumers of their work) must be cognizant of this potential when interpreting results. It should be remembered, however, that the social desirability bias is by no means exclusive to self-report instruments. While some would invoke the social desirability effect as a way to discredit self-report methodologies, it must be remembered that any method—including behavioral observation and experimental designs—risks the effect if participants know their behaviors or attitudes are being measured. Triangulating data-collection methodologies is probably the most effective option for reducing the risks associated with individual methods.

While the age ranges of our samples were fairly large, mean ages were often in the mid-20s, reflective of prototypical undergraduate samples. Because younger samples were used during the initial development phases of the scale, the items may exclude some referents that would be important to older respondents. Some have suggested that individuals in this age range are ideal as respondents in a study of relationships, given the heightened importance often placed on relationships at that period in life (e.g., Berscheid et al., 1989). We hoped partially to address the age limitations of our initial samples by conducting the first supplemental study with older adult men and their adult sons. However, additional research comparing affectionate communication across age groups is certainly warranted, to ascertain whether the construct operates differently according to one's place in the life cycle.

There are many questions yet unanswered about affectionate communication in personal relationships that researchers could use the ACI to address. For example, how do relational partners negotiate their developmental trajectory with respect to expressing affection, and to what extent do such expressions serve as critical incidents in relational development? How do partners react to expectancy-violating levels of affection, and under what circumstances are unexpected expressions of affection considered negative rather than positive events? What effects does affectionate

behavior have on one's social attractiveness, one's perceived status, or one's persuasive ability?

These are issues, of course, that must be deferred to later studies; however, the ACI provides a validated and practical operational definition of affectionate communication that could be used to investigate such questions. As such, the ACI can be of use to researchers interested in a variety of interpersonal processes, including relationship development and de-escalation, interpersonal expectancies and expectancy violations, communication motives, social influence, intimacy negotiation, dialectic tensions, and the effects of sex and gender role orientation on communication patterns.

NOTES

1   In the present paper, we use the terms "affectionate communication, "affectionate behavior," "affectionate expression," and "affectionate interaction" synonymously, unless otherwise noted.
2   Ages ranged from 18 to 45, with a mean of 21.47 years ($SD = 4.58$). At the time of the study, respondents had completed an average of 3.28 years of college ($SD = 1.71$).
3   The original 67 items are available on request of the first author.
4   Ages ranged from 17 to 43, with a mean of 25.18 years ($SD = 7.26$). At the time of the study, respondents had completed an average of 3.15 years of college ($SD = 1.49$).
5   These items, and the number of times each was selected as a form of expressing communication, are available on request of the first author.
6   Ages ranged from 18 to 60, with an average of 22.19 ($SD = 6.38$).
7   A second MANOVA comparing Sample B to the Time 2 Sample A scores provided the same results.
8   Additional data from this study are reported in Morman and Floyd (1998).
9   Factor loadings are available on request of the first author.
10 Portions of this study are also reported in Floyd and Voloudakis (in press; 1997).
11 Each dyad received two of the following questions (administration counterbalanced across the sample): "What is something you really like about your relationship?" "How would you describe what your relationship with each other is like to someone else?" "When do you feel closest to each other?" and "Discuss one of your earliest memories of each other."

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