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AUTHOR Ayres, Joe; Miura, Steven Y.
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ABSTRACT

The conceptual, construct, and predictive validity of available instruments for coding relational control is considered in this paper. It approaches conceptual validity by offering a logical analysis that compares each instrument with formative ideas in interactional theory. It then advances data concerning the construct and predictive validity of the instruments. The final portion of the paper discusses the results and suggests that the instrument devised by C. E. Sulzki and J. H. Beavin exhibits the strongest overall validity pattern. (Author/FL)

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Abstract

This paper considers the conceptual, construct, and predictive validity of available instruments for coding relational control. Conceptual validity is approached by offering a logical analysis that compares each instrument with formative ideas in interactional theory. Data is then advanced concerning the construct and predictive validity of the instruments. The final portion of the paper discusses these results and suggests the Sluzki and Beavin instrument exhibits the strongest overall validity pattern.

by

Joe Ayres

Department of Speech

Washington State University

and

Steven Y. Miura

Department of Speech

University of Hawaii - Hilo

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RELATIONAL COMMUNICATION INSTRUMENTATION: VALIDITY

Since the presentation of the double-bind concept, a considerable amount of speech communication research (Parks, 1977; Wilder, 1979) has been rooted in the formative ideas advanced by Gregory Bateson (1935, 1958, 1972). One important line of this research has been concerned with developing instruments for coding relational communication. That is with coding who offers and who accepts control in a relationship. The authors of the six instruments that have been developed for this purpose generally provide adequate evidence that their procedures can be used reliably [Sluzki & Beavin, 1965, 1977; Mark 1971; Rogers & Farace, 1975 and Ericson & Rogers, 1973 (these two instruments are nearly identical and are therefore treated as one in this paper); Ellis, Fisher, Drecksel, Hoch, & Wertel, 1976; Folger & Sillars, 1977 and Sillars & Folger, 1978 (these were also treated as one instrument here); and Folger & Puck, 1976]. Little evidence exists however concerning the validity of these instruments. The purpose of this essay is to provide evidence concerning the conceptual, construct, and predictive validity of these six instruments.

From the standpoint of conceptual validity the introduction of each scheme was justified largely by presenting it as a conceptual refinement of its predecessor(s). In their presentations, however, none of the authors after Sluzki & Beavin compared their instrument with the conceptual foundation provided by Bateson (1935, 1958). It would appear our understanding of the conceptual validity of the schemes could be enhanced by a logical analysis directed toward determining the homology between the schemes and Bateson's conceptual base as well as by systematically considering the logic of the refinements each approach offers.

In addition to this conceptual validity analysis, the instruments' construct and predictive validity is examined empirically. This was accomplished by applying each of the schemes to the same data set and comparing their respective performances. The subsequent sections of this paper address the conceptual, construct, and predictive validity (Cronback, 1949) of these instruments. The discussion section of the paper considers the relative merits of these approaches in terms of each of these three types of validity.

CONCEPT VALIDITY

Our review of conceptual validity proceeds by identifying ideas which constitute the assumptive base for relational control instrumentation and by comparing each instrument with this assumptive base and with one another. This exercise can be likened to explorers who use a mountain peak to serve as a reference point. The explorers are able to maintain their proper course by constant reference to the peak. Like the explorers, we need to identify our reference point and make constant checks to determine if we are on course.

In their quest to find order in human relationships, Bateson and his colleagues offered three seminal ideas that undergrid how we think about relationship control (message hierarchy, relationship types, and interaction). First, message hierarchy means that any given message makes a comment at more than one level. This sentence demonstrates this potential by being itself and also talking about itself. The fountainhead for this concept can be found in the theory of logical types (Haley, 1977). This theory points out that something cannot be itself and contain itself at the same time. Bateson and his colleagues realized the interaction sequences they were studying constantly violated this logic. Thus, the double-bind theory of schizophrenia (Bateson, Jackson, Haley, & Weakland, 1956) emerged and so did a basic principle of interaction analysis -- examine messages in context at several levels of analysis.

Secondly, in a study of Iatmul culture, Bateson (1935, 1958) suggested that two basic relationship types (symmetrical and complementary) could be used to explain basic patterns in this culture. That is, some aspects of Iatmul culture were seen to rest on relationships demanding equality and others on relationships demanding cooperation. For example, boasting by one group countered by boasting by another was seen as symmetrical while the relationship between an uncle and a nephew from different groups was seen as complementary.

Thirdly, Bateson (1958) emphasizes the necessity of studying symmetrical and complementary relationships from an interactional perspective in which "we have to consider not only _A_'s reactions to _B_'s behaviour, but we must go on to consider how these affect _B_'s later behaviour and the effect of this on _A_" (p. 176). In terms of communication, the interactional perspective forces one to consider how the communicative behaviors of each person affect and are affected by the communicative behaviors of each other person (Jackson, 1959; Watzlawick, Beavin, & Jackson, 1967; Weakland, 1967). The interactional perspective commits one's investigations to at least a dyadic level of analysis.

These three notions will serve as our reference point for assessing relational control instrumentation. The conceptual validity analysis, then, amounts to posing the following three questions: 1. How well do the instruments take into account message levels? 2. Do the instruments examine messages for their interactive properties? 3. Do the instruments adequately identify symmetrical and complementary exchanges? Each of the six extant instruments advanced for coding relational control will be summarized, then discussed in terms of these questions.

In essence, Sluzki & Beavin's (1965, 1977) instrument compares the structures of contiguous messages for similarity or difference. If two adjacent acts are similar, one codes them as symmetrical (S). If the acts are different, one codes them as complementary (C). Control direction is also identified in complementary exchange by determining which message defines the relationship and which message reflects acceptance of the definition. Offering to control is referred to as a "one-up" (↑) maneuver while allowing the other to control is considered a "one-down" (↓) move. The authors indicate, for example, an instruction followed by an instruction would normally be considered a symmetrical exchange, while a question followed by an answer would be an example of a complementary exchange. It should be emphasized that these authors offer examples of this nature to illustrate how transactions <u>might be coded</u> -- not as hard and fast rules that they must be coded this way in all instances. Symmetrical and complementary exchange patterns are derived by looking at two messages simultaneously -- never by examining one message in isolation from its mate(s). Sluzki & Beavin's coding procedures have been applied to the following hypothetical interaction to provide an illustration of their basic approach:

		Transaction	Message Score
A_1:	What are you having?		-↓
		C	
B_1:	Oh, I think I'll have a steak.		↑↑
		C	
A_2:	Yeah, that sounds good.		↓↓
		C	
B_2:	Besides, I haven't had a steak in awhile.		↑S
		S	
A_3:	Let's both have the steak and lobster combination.		SS
		S	
B_3:	No, we should have prawns instead of lobster.		S↑
		C	
A_4:	Okay. The prawns are probably tastier.		↓S
		S	
B_4:	You also get a larger portion.		S-

In terms of the criteria set forth at the beginning of this section, one has to conclude that this coding procedure adequately copes with the interactional criterion. At a minimum, relational control needs to be coded by considering conjoint acts. Bateson and Jackson (1964) present this notion in the following manner:

> There is, strictly speaking no such thing as a complementary piece of "behavior". To drop a brick may be either complementary or symmetrical; and which it is depends upon how this piece of behavior is related to preceding and subsequent behaviors of the vis-a-vis (p. 273).

Since Sluzki & Beavin assign two separate codes to each message (except, of course, the first and last message), they explicitly account for the negotiation process whereby each message may redefine a previous message and may itself be redefined by a succeeding message. This is illustrated in the example when B_2 is first coded ↑ in relation to A_2 but redefined as S when compared with its subsequent A_3 mate.

From the standpoint of message levels, the scheme limits itself to the audible-linguistic level with "a heavy emphasis" on how things are said over what is said. This approach then tends to consider only a single rather than multiple levels of messages.

Our last criterion concerns whether the approach allows one to identify the symmetrical and/or complementary nature of a relationship. The scheme does allow for an unambiguous identification of symmetry and complementarity since message pairs are classified as either one or the other, i.e., they are treated as mutually exclusive.

Mark offered a revision of the Sluzki and Beavin scheme in 1971. His basic justification for the revision hinged on the "problem of mobilization or how an individual becomes a principal speaker" (p. 224). With this in mind, he developed a three-digit procedure to code each message: "The first digit refers to speaker's sex or speaker's number, the second digit follows the grammatical rules for forms of speech .... The third digit refers to <u>what</u> a particular speech comes in <u>response</u> to" (pp. 225-226, emphasis added). Once three-digit codes are assigned to messages, Mark then proceeds to combine contiguous codes via a set of rules in order to obtain "relational scores". Nine pairs of relational scores are possible based on the three basic types of control directions (i.e. ↑ , ↓ , and S codes). Thus, according to Mark's procedures, the hypothetical interaction cited earlier would be coded in the following manner:

		Three-digit code	Control Direction	Relational Score
A_1:	What are you having?	119	↓	
B_1:	Oh, I think I'll have a steak.	224	↑	↓↑
A_2:	Yeah, that sounds good.	121	↓	↑↓
B_2:	Besides, I haven't had a steak in awhile.	223	↑	↓↑
A_3:	Let's both have that steak and lobster combination.	133	SS	↑S
B_3:	No, we should have prawns instead of lobster.	242	↑	S↑
A_4:	Okay. The prawns are probably tastier.	127	↓	↑↓
B_4:	You also get a larger portion.	223	↑	↓↑

Since Mark assigns only one relational control code (with the exception of SS) to each message, the scheme largely ignores the interaction of exchanges as it is embodied in a process of definition/redefinition. The control code is arrived at by treating messages as reactions to previous messages. In the dialogue above, for example, B_2's message was coded as ↑ and will remain so, no matter what happens in subsequent messages. This is of course different than Sluzki and Beavin's procedure for coding and then recoding the same act. Thus, Mark's scheme basically codes how an act defines a previous act but not how the act itself is redefined.

Further, while in Sluzki and Beavin's scheme message scores are assigned after the determination of the transaction type they have participated in, Mark and subsequent researchers designate message scores prior to the classification of transactions. In other words, message scores with Sluzki & Beavin's scheme are based on interact coding, thereby placing priority on the exchange. In contrast, Mark places greater emphasis on individual message acts by coding them first, then deriving transactions from them.

In terms of our criteria, Mark's scheme loses much of the flavor of the interaction by focusing only on the reactive nature of the messages. One can argue that the scheme treats relational definition but not redefinition. From the standpoint of message levels, Mark includes much more emphasis on what is said than Sluzki & Beavin yet retains their concern for form. It appears this refinement allows Mark to account better for communicative levels. However, Mark loses ground when one considers the ability of the instrument to provide a clear identification of symmetry and compelmentarity because the instrument produces a series of ambiguous message pairs in which maneuvers toward symmetry are paired with either ↑ or ↓ moves (S↑, S↓, ↑S, and ↓S). It is uncertain as to whether these message pairs should be treated as additional types of symmetry and/or complementarity. Since each pair consists of different codes, they can be considered complementary. On the other hand, each pair can be considered symmetrical by virtue of its "meaning". For example, a transaction designated as ↑S could mean that a person's attempt to control the definition of the relationship (↑) has been rejected by another's move toward equality (S) rather than toward acceptance of his/her controlling maneuver. Because the second person seemed to have refused to accept the first person's offer of control, it can be implied that the exchange is one of competition which essentially makes the transaction more symmetrical than complementary. This difficulty seems to arise because these pairs are an artifact of the instrument's coding procedures. In this scheme, relational scores are determined after individual message acts are coded which contrasts with Sluzki & Beavin's method of determining relational scores from the exchange and then assigning control codes to each message act on the basis of its participation in the exchange. This series of message pairs (S↑, S↓, ↑S, and ↓S) then seem to arise out of a set of coding procedures and have little theoretical basis. For this reason, the instrument fails to clearly identify symmetrical and complementary relationship types.

Ericson & Rogers (1973) and Rogers & Farace (1975) offer a refinement of Mark's three-digit coding procedure. These nearly identical schemes follow Mark's basic procedure and code messages as reactions to preceding messages -- not as both actions and reactions. Since these schemes are similar to Mark's in most respects, we will not sketch them here. One aspect of the approach, however, needs to be highlighted. These authors code acts for their "neutral" properties (i.e. exchanges that are minimally concerned with relational definition). Thus, their scheme includes ↑ (up), ↓ (down), and → (across) control modes. The neutral category has some important implications relative to the theoretical base. Bateson (1972, p. 67) provided two mutually exclusive relational control categories, symmetry and complementarity, with symmetry being characterized by competition and complementarity by cooperation (Watzlawick, et. al., 1967, pp. 68 and 69). Neutralization doesn't seem to be either of these things. The authors see the idea as a natural part of symmetry but it seems strange indeed to think not competing (i.e. being neutral) can be part of competing. It appears neutralization raises the possibility of a third relationship type rather than being part of either of Bateson's two basic types. One could argue at length about whether such a move strengthens or weakens our understanding of relational control. The real test of the notion hinges on whether it identifies meaningful patterns. Since it is generally treated as a form of symmetry or complementarity (Rogers, 1972) one cannot tell from current research reports whether considering neutrality as a totally different relational type would be useful. It does clash with Bateson's notions by breaking with the bi-polar logic he employed but may signal a useful shift in that logic.

In essence, these schemes have the same strengths and weaknesses as Mark's. They deal with the levels of communication better than Sluzki & Beavin do but lose some of the interactive flavor of exchange by coding at a definitional level and by employing rigid rules for coding message acts. They provide a means of identifying purely symmetrical and/or complementary exchanges but also include a variety of "neutral" exchange patterns that are not clearly seen as either complementary or symmetrical. The two schemes do, however, refine Mark's scheme by more carefully separating the form of the response from the nature of the response and by adding the neutral category.

Very similar comments could be made about the Folger & Sillars (1977) and Sillars & Folger (1978) refinements of the Ericson & Rogers scheme since they accept all of Ericson & Rogers' categories. These authors do provide a possible refinement of the Ericson &

Rogers approach though by: 1. coding sentences for their $\downarrow$, $\uparrow$, or $\rightarrow$ properties by using Ericson & Rogers rules; 2. having judges rate these same sentences on a 1-5 dominance/submissive scale; 3. comparing the judges' perceptions with the Ericson/Rogers' code. Since Sillars & Folger argue that the coding rules should mesh with a judge's sense of an interaction, they suggest several changes in the Ericson & Rogers coding rules in order to more adequately account for the way their judges evaluated the sentences.

The Ellis, et. al. (1976) coding instrument, presented as a refinement of the Rogers & Farace and Ericson & Rogers instruments, is immediately recognizable as a reactive device. In the instructions for coding, Ellis, et. al., emphasize the importance of the message act: "As a system for analyzing the relationship dimension of human communication, each act should be coded as it relates to the previous act. .... The ultimate key to making coding judgments, then, is to utilize the previous act as the point of reference" (p. 1). It should also be noted that due to this react orientation the first message act does not receive a code.

The scheme does offer an interesting refinement of react coding though by suggesting that messages are not just one-up or one-down moves. According to these authors, some messages are strong one-up or one-down moves and others are weak one-up or one-down moves. This scheme, then, provides a wider variety of judgments about the strength of control maneuvers. Interestingly this refinement is not thoroughly linked to relationship types. One wonders, for example, why $\uparrow+$ $\uparrow+$ interactions and $\uparrow+$ $\uparrow-$ interactions are both considered to be competitive symmetry. If the +'s and -'s are significant enough to be coded, they should be significant enough to create finer discriminations in relationship types.

Ellis, et. al., also retain the one-across contribution of Rogers & Farace and Ericson & Rogers. Ellis (1976) recognizes that the one-across conception seems to clash with the essential nature of symmetry. Ellis attempted to deal with this clash by arguing that → → codes should be called equivalent symmetry rather than neutralized symmetry. Since this does not appear to be a substantive change in Ericson & Rogers position, our earlier comments about the one-across category apply with equal strength to its appearance in this instrument.

Also, in a effort to modify Mark's (1971) and Ericson & Rogers' (1973) schemes, Folger & Puck (1976) developed a coding scheme designed to trace the "relationship level of communication through an analysis of questions and their responses in an interaction" (p. 6). Initially, this scheme appears to consider both definition and redefinition since one of its objectives was to obtain a "measure based not only on a relationship bid but also on the way the bid was received" (p. 6). However, in actuality, Folger & Puck focus on how certain types of questions are responded to. In applying their scheme to physician-patient-parent interviews, Folger & Puck were able to identify a physician's degree of "dominance" or "submission" and "affiliation" in his/her questioning behavior. Thus, rather than providing information on the nature of the relationship as negotiated by the participants, Folger & Puck's scheme offers insight into how an individual behaves in a relationship.

This scheme seems motivated by two basic concerns: (1) providing an economical way of coding transcripts through coding only questions, not entire interactions and (2) treating questions in a more valid manner. The first concern seems quite worthwhile given the large amount of data generated by other coding schemes. This goal though has not yet been achieved. One needs to know how likely one is to come to the same conclusion when only questions are coded rather than entire transcripts. Secondly, the authors present a strong case that previous schemes did not adequately code questions because the schemes treat them as basically one-down moves when questions seem capable of functioning as one-up or one-down moves.

The Folger & Puck approach to coding relational control handles Bateson's notions of communicative levels fairly well by incorporating rules that require one to focus on a comment's content to determine the relational meaning of question forms. The scheme does encounter difficulty in the interactional area by only coding in a reactive manner rather than "interactively". Assuming one is willing to make some minor inferences, the scheme provides relatively clear procedures for identifying symmetry and complementarity.

Overall, it appears these instruments have different conceptual strengths. Sluzki & Beavin capture the essential nature of the definition/redefinition process while Mark and the others account for the notion of message levels fairly well. Each scheme also offers important potential conceptual refinements of the previous approach. Rogers and Farace offer the idea of "across" exchange patterns; Ellis, et. al., offer ways to code the strength of the control bid; Folger and Sillars remind us that the interactors' perceptions should be taken into consideration; and finally, Folger & Puck underline the importance of questions. One cannot conclude from this analysis that any one instrument is superior to the others, but one can use the analysis to help select the instrument best suited to their research problem. For example, one interested in police/citizen exchanges might choose to employ the Folger & Puck instrument because of the prominent role of questions in such situations.

DATA COLLECTION

In order to provide empirical data concerning the construct and predictive validity of the six instruments reviewed above, it was necessary to gather data to which all these instruments could be applied. The general data gathering procedures used in this study are described below.

The investigation was initiated by following a procedure outlined by Gold, DeLeon, and Swensen (1966). In order to maximize the potential for the emergence of symmetrical and complementary exchanges, subjects were paired according to responses they gave to a set of forty one (41) items drawn from the MMPI. Subjects with relatively high scores were paired to form dominant/dominant dyads, Ss with low scores were paired to form submissive/submissive dyads and those with high and low scores were paired to form dominant/submissive dyads. It was thought the dominant/dominant and submissive/submissive pairs would be more likely to engage in competitive exchanges and the dominant/submissive dyads in cooperative exchanges. Once the pairings were accomplished each dyad was asked to discuss which of two advertizements was superior and come to a joint decision.

Since the MMPI pairing procedure was only used to optimize the potential of obtaining competitive and cooperative exchanges, it was necessary to determine if an interaction did indeed contain these properties. To this end a panel of 10 judges was asked to determine from listening to the recordings whether both speakers in each interaction appeared dominant or submissive, or whether one speaker appeared dominant while the other appeared submissive. This was accomplished by having the judges evaluate each speaker on a seven-point scale ranging from "very dominant" to "very submissive". Two criteria were employed to determine whether an interaction would be included in the study. First, an agreement level of .80 (8 of the 10 judges) on the seven-point scale for each dyadic interaction had to be achieved. Second, a dyad was considered competitive(i.e. or symmetrical) only if the difference between the judgments made of one speaker and the judgments made of the other speaker did not exceed one scale point. Since symmetry and complementarity represent a dichotomy of relationship types, interactions that were not judged as competitive were considered cooperative. Using these criteria 14 competitive and 15 cooperative dyads were identified.

These competitive and cooperative interactions were coded using all six instruments and subsequently examined for construct and predictive validity. The interactions contained an average of 58 interacts each for a grand total of 1566. Since each interaction was coded by two coders, a total of 3132 interacts formed the data base for this study.

CONSTRUCT VALIDITY

This section of the paper offers an empirical examination of the construct validity of relational control instrumentation. To extend our explorer analogy, analyzing the construct validity of instruments is like one explorer finding his or her location by asking another explorer where s/he is. That is, construct validity concerns whether the instruments code the same data in similar ways. In order to provide such evidence, we examined convergent and discriminant validity (Campbell & Fiske, 1959) of the Sluzki & Beavin (SB); Mark (MA); Rogers & Farace (RF); Sillars & Folger (SF); Ellis, Fisher, Drecksel, Hoch, and Wertel (EL); and Folger & Puck (FP) instruments by applying them to the data described in the preceeding section. By having two coders use each instrument to code each transcript it was possible to obtain reliability estimates by directly comparing their coding while using each instrument (Holsti, 1969, p. 140). However, some simplifications were necessary in order to develop the validity comparisons. In particular since the schemes all provide a number of different subcategories for symmetry (S) and complementarity (C), there was no way to determine which subcategory in one instrument should be paired with a given subcategory of another scheme. Therefore, it was necessary to treat each subcategory in terms of its generic form (i.e. complementarity or symmetry). Those interested in how well the instruments identify Bateson's basic S and C distinctions will have little trouble with this simplification. However, those interested in finer distinctions may feel, with some justification, that this simplification violates the essential nature of the refinements offered by these instruments.

The construct validity comparisons presented in Table I were developed from the composite data for all 29 dyads.

[Insert Table I about here]

Information concerning reliability, convergent validity, and discriminant validity can be derived from Table I. The reliability data concerns how consistently the same data was placed in the same category by two different coders employing the same instrument. The convergent validity values basically concern whether measures of the same trait are highly related to one another. Discriminant validity is based on the principle that "two measures should not correlate highly with one another if they measure different traits even though a similar method is used" (Hlemstadter, 1964, p. 141). According to Helmstadter:

> Discriminant validity is suggested when (1) values in the validity diagonal are higher than the values in the heterotrait-heteromethod triangle adjacent to it; (2) the validity diagonal values are higher than those found in heterotrait-monomethod triangles (so that the trait variance is larger than the method variance); and (3) the same pattern (regardless of the size of the coefficients) is found in all heterotrait (both monomethod and heteromethod triangles) (p. 143).

With respect to reliability, all of the instruments were used with considerable consistency. The only values falling below .80 were the EL and FP instruments in identifying symmetry (.67 and .55 respectively). The complementary condition was more reliably coded with all the instruments than the symmetry condition. The reader may wonder how the EL instrument, for example, could code C at the .92 level of reliability but S at only the .67 level since a high level of C reliability would dictate a high reliability of S in a dichotomous set. These reliability figures though are not based on a dichotomous code but on the entire range of categories in each instrument. It was necessary to collapse the data into two categories to make the validity comparisons but not to develop the reliability coefficients.

The succeeding presentation proceeds by discussing convergent validity and then discussing discriminant validity. Helmstadter points out that convergent validity is evidenced when "entries in the validity diagonal are significantly different from zero .... (Helmstadter, 1964, p. 143)". All of the convergent validity values for complementarity in Table I and all but 3 of the symmetry values (FP with SB, RF, and EL) are significantly different from zero at the .05 level or beyond. It is interesting to note that all of the validity coefficients for complementarity are all higher than those for symmetrical counterparts. For instance, the convergent validity values for the SB and RF instruments are .55 for S and .86 for C. A similar relationship holds for every such comparison. A t test for dependent measures indicated that all of these differences, except the EL/SF values, are statistically significant.

One can extend this analysis of convergent validity by averaging the correlations (Guilford, 1965, p. 348) for each instrument vis a vis each other instrument and subsequently determining which approach emerges with the highest average value. The respective averages for complementarity are MA, .87; SF, .87; SB, .87; EL, .82; RF, .81; and FP, .72. The analogous averages for coding symmetry are MA, .76; SF, .69; EL, .61; SB, .56; RF, .48; and FP, .27. On this basis one would have to conclude that the

MA, SF, and SB instruments reveal the highest degree of convergent validity when coding complementarity and that the MA instrument emerges with the highest degree of convergent validity for coding symmetry. The FP instrument exhibits the lowest degree of convergent validity on both C and S.

When one applies the criteria for determining discriminant validity to these data, one finds that all the instruments have higher validity coefficients for the complementary codes than the salient heterotrait-heteromethod or heterotrait-monomethod values. For example, when one compares the RF with the SB instrument, the convergent value for C is .86 while the heterotrait-heteromethod values are .58 and .59 respectively and the heterotrait-monomethod value is .31. Since there is only one correlation coefficient inside each heterotrait-monomethod and heterotrait-heteromethod triangle all the comparisons must necessarily meet the criterion that the patterns of correlations within each triangle be consistent. One has to conclude that the complementarity codes have a high degree of discriminant validity. In essence, C tends to be stable regardless of the method used to measure it.

In terms of discriminant validity, when symmetry is the trait at issue, the convergent validity values for all comparisons are higher than the adjacent heterotrait-heteromethod values except when the SF or FP instruments are involved in the comparison. A similar but weaker pattern is present when convergent validity values for S are compared with the appropriate heterotrait-monomethod values. On the basis of these data one has to conclude the RF and FP instruments do not share the same construct domain as the other instruments when S is the trait being coded.

Overall, one has to conclude that the convergent and discriminant validity of these instruments is quite good. Clear differences do emerge in the relative strengths of the instruments though. The MA instrument exhibits the strongest convergent and discriminant validity pattern with the FP instrument reflecting the weakest convergent and discriminant pattern.

PREDICTIVE VALIDITY

Predictive validity concerns whether an instrument accurately predicts an event. To extend our explorer analogy, if our explorers get where they thought they were going, then they exhibit a degree of predictive validity. In the present case, will one or the other of the instruments identify the competitive and cooperative pairs described in the data collection section of this paper better than the other schemes?

In order to test the predictive strengths of the approaches, we reasoned that competitive pairs would use a higher proportion of symmetry in their interactions than cooperative pairs would. Instruments sensitive to this sort of pattern would reflect a higher proportion of symmetry when applied to the competitive pairs than when applied to the cooperative pairs. Table II presents the results of this analysis.

Insert Table II about here

A one tailed difference of proportions test (Blalock, 1972, pp. 228-20) applied to these data indicates that the RF, FP, and SB instruments code significantly more symmetrical exchanges in the competitive condition than in the cooperative condition while the SF, EL, and MA approaches do not. Obviously, these results differ greatly from the construct validity results. These differences are discussed below.

CONCLUSION

The interactional view, as advanced by Bateson and his colleagues, provides a clear charter for much of our work in interpersonal communication. In particular, the approach provides a means of thinking about relational control patterns. Bateson's suggestion that one examine extant communication behavior in order to identify symmetrical and complementary relationships has been seriously attended to by communication scholars. One thesis of this paper has been that by systematically comparing our operationalizations with Bateson's formative ideas avenues for improving both should emerge. Our review of the available approaches for coding relational control indicates each of them fail in one respect or another to fully operationalize Bateson's notions. Perhaps the difficulty lies in the fact that Bateson's conception demands concurrent and equal attention to interaction, message levels, and relationship types. A difficult, perhaps impossible, task to accomplish with any operationalization. The very process of developing a category system to help identify significant patterns simplifies and to some extent distorts any phenomena. The crucial question isn't whether Bateson's notions are captured completely by instrumentation but whether they are captured sufficiently. This of course doesn't mean conceptual validity can be ignored. Quite the contrary, the conceptual comparison allows one to know which instruments treat which notions best. For example, the fact that Sluzki & Beavin neatly capture the interactive nature of exchange by focusing on similarity and difference while Mark loses some of that interactive flavor in order to account better for message levels enable one to choose one instrument when the exchange process is of prime importance and the other when message concerns are paramount. Such information should also be useful in future revisions of these instruments. For example, it seems quite possible a significant improvement in the Sluzki & Beavin approach might be accomplished by extending the notions of similarity and difference to include content as well as form.

To return to the question of whether these schemes retain enough of the flavor of Bateson's notions to be useful, the validity sections indicate that the instruments generally performed well in both the construct and predictive arenas. In the construct domain the MA instrument demonstrated the strongest convergent and discriminant validity, but most of the others also reflected robust construct validity patterns. The RF and FP approaches were the only instruments that reflected rather weak construct validity. However, those same two instruments exhibited the highest degree of predictive validity while the MA instrument failed to exhibit a statistically significant degree of predictive validity.

These results are somewhat perplexing. Why should the MA instrument suceed well in the construct arena and yet fail in the predictive arena while the RF and FP instruments show a reverse pattern? These data indicate the difference between these instruments is in the way in which symmetry is coded. Perhaps the RF and FP instruments force a higher proportion of symmetrical codes than the other instruments through establishing rules that recognize a greater range of symmetrical transactions.

Of course, the primary concern here is with identifying which instrument provided the best conceptual, construct, and predictive validity and only secondarily with why such a pattern emerged. With this in mind it should prove worthwhile to examine the overall pattern of results. It appears that each instrument has different strengths and weaknesses in the conceptual arena and, thus, no instrument has a clear conceptual advantage. However, when one examines the construct and predictive data only the SB instrument provides good construct validity and good predictive validity. All the others provide either good predictive validity or good construct validity but not both.

Once again it is interesting to speculate what there is about the SB instrument that allows it to be successful in both the construct and predictive arenas. It seems that the only consistent difference between the other schemes and the SB scheme is in the flexibility they allow. All the other instruments establish rigid categories for determining what sorts of comments will be ↑ , ↓ , or → . The SB approach differs directly by allowing one to be quite flexible about what sorts of interactions will be ↑ and ↓ . To be precise, the SB scheme relies on a coder's judgment to make these determinations while the other instruments rely on a set of a priori rules to do so.

Overall, the MA instrument has the best construct validity but poor predictive validity. The SB instrument, on the other hand, has good construct validity with respect to both symmetry and complementarity yet retains the ability to identify cooperative and competitive dyads. Therefore, while each instrument has unique strengths that might be suited to a particular project, the overall pattern of these data suggest that the most valid instrument for coding relational control is the Sluzki & Beavin approach.

TABLE I: Convergent and Discriminant Validity of Six Relational Control Instruments

		SB S	SB C	RF S	RF C	EL S	EL C	SF S	SF C	FP S	FP C	MA S	MA C
SB	S	(.83)											
	C	.32	(.91)										
RF	S	[.55]	.59	(.82)									
	C	.58	[.86]	.31	(.92)								
EL	S	[.79]	.69	[.58]	.80	(.67)							
	C	.59	[.94]	.69	[.87]	.71	(.92)						
SF	S	[.74]	.74	[.57]	.69	[.91]	.78	(.86)					
	C	.52	[.91]	.69	[.78]	.63	[.95]	.66	(.91)				
FP	S	[.14]	.33	[.23]	.30	[.17]	.34	[.53]	.17	(.55)			
	C	.19	[.78]	.29	[.72]	.44	[.53]	.32	[.83]	.22	(.80)		
MA	S	[.78]	.67	[.76]	.61	[.83]	.76	[.90]	.65	[.50]	.24	(.96)	
	C	.50	[.93]	.63	[.85]	.73	[.93]	.72	[.96]	.33	[.68]	.58	(.98)

SB = Sluzki & Beavin

RF = Rogers & Farace

EL = Ellis, Fisher, Drecksel, Hoch, and Wertel

SF = Sillars & Folger

FP = Folger & Puck

MA = Mark

C = Complementary

S = Symmetry

(solid triangle) = heterotrait-monomethod correlations

(dashed triangle) = heterotrait-heteromethod correlations

[ ] = validity coefficients

( ) = reliability coefficients

TABLE II: Proportion of Symmetrical Transactions Coded in Cooperative and Competitive Interactions

	Competitive Interactions					
	SB	RF	EL	SF	FP	MA
Number of symmetrical Transactions coded	231	316	235	267	27	289
Total Number of Transactions coded	808	808	780***	808	108***	808
Proportion	.29	.39	.30	.33	.25	.35
	Cooperative Interactions					
Number of symmetrical Transactions coded	187	240	214	253	17	261
Total Number of Transactions coded	758	758	728	758	112	758
Proportion	.25	.32	.29	.33	.15	.34
Z =	1.78*	2.89**	0.43	0.00	2.00*	0.42

* $p < .05$

** $p < .01$

*** = The total N for the EL instrument is slightly lower than the other N's because the 1st act in an exchange is not coded when one is using this instrument. The N for the FP is greatly lower than the other N's because only question/response pairs are coded when this instrument is used.

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