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A TEST OF A COMMUNICATION PARADIGM

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A TEST OF A COMMUNICATION PARADIGM

By

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ABSTRACT

THE DEVELOPMENT OF SELF THROUGH INTERACTION:
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By

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The recent history of the social sciences has been marked by an increasingly diffuse and insistent discussion of the proper nature of a truly scientific study of human behavior. As a result of that discussion there is some agreement that the traditional logical positivist model of science is inappropriate for the study of the most unique and important aspects of human behavior, but there is still no consensus regarding what should succeed that model. This study sought to develop and test some aspects of a promising alternative model.

The general perspective adopted in the study flows from the branch of modern analytic philosophy known as action theory. In this perspective, man is conceptualized as a creature of freedom and choice, typically engaged in intentional, goal-directed behavior, and capable of acting rather than merely being acted upon. The model for scientific explanation and prediction in this perspective is a variant of the practical syllogism in which the conclusion follows with practical, rather than nomic or logical, necessity. There appear to be at least four sources of practical necessity: the task or goal, the rules of others, the self-concept of the actor, and the situation in which action occurs.

Within this perspective, all human action necessarily involves rules, and all action requiring coordination with others necessarily involves communication and communication rules. A general rules-based

theory of human communication is therefore central to the study of human action. One such theory argues that human communication is best studied in a systems context and that three levels or types of communication systems--mass, organizational, and interpersonal--may be defined on the basis of their typical functions, structures, and processes. This study tested certain implications of the general theory for communication in interpersonal systems.

More specifically, the theory argues that the primary function of interpersonal communication is to generate consensus on individual self-concepts. The self-concept is defined as a set of socially validated rules which specify the relationships between the individual and objects in his environment. The self-concept is developed through a four-stage process of role-taking, each stage of which is associated with typical communication contents, styles, and relationships. The four stages, in hypothesized order of development, are labelled basic, reflective, appropriative, and synesic, and correspond respectively to the learning, evaluation, internalization, and adaptation of role requirements. This study was design to test for the existence of the sequence specified by the theory.

In the study, seven groups were asked to perform coordination tasks and to complete self-concept descriptions of a focal person in each group at three points in time. Each descriptive statement was coded as representing one of the four role-taking stages. Using a general model of development derived from the traditional theory of biological evolution, a developmental stage was defined as the time point at which descriptive statements representing that stage reached a maximum relative frequency. The specific expectations guiding the study

were that the statements in four of the groups would show a developmental progression from basic to reflective to appropriative to synesic. Statements from the remaining three groups were expected to display a truncated progression from appropriative to synesic.

The results of the study partially confirmed the theory. Statements from the initial four groups appeared to follow a developmental sequence, but from basic to appropriative to reflective to synesic. Statements from the remaining three groups displayed vestiges of the full sequence in which the reflective and appropriative stages again appeared to be reversed. On the basis of these results, it seems likely that some measurable developmental sequence exists. The interior stages of that sequence, however, are theoretically and operationally ambiguous and probably should be collapsed into a single stage.

Dedicated to Marie Hershey Smith

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CHAPTER I

THEORETICAL RATIONALE

INTRODUCTION

A scant twenty years ago the deductive-nomological model of the logical positivists provided the only widely accepted paradigm of scientific theory and explanation. But the positivists were unsuccessful in defending their position against the increasingly radical and diverse attacks of such critics as Polanyi (1958), Kuhn (1962), Feyerabend (1962), and Toulmin (1972). McMullin (1976, 655) has summarized this struggle: "Logical positivism was, perhaps, the most ambitious foundationalism in the entire history of philosophy, outdoing even that of Aristotle. And as we all know, it collapsed." This study is ultimately grounded in that collapse.

The decline of positivism has had two immediate effects. First, it has added impetus to the recognition and development of alternative patterns of lawful explanation (Achinstein, 1971). Second, and perhaps more important, the controversy surrounding positivism has reintroduced fundamental questions about the applicability of any conception of science based on universal causal laws to the study of the most distinctive and important facets of human behavior (see, e.g., Krimerman, 1969, especially Section IV). Although these questions cannot be finally resolved, their discussion has produced a rapid proliferation of scientific paradigms based on noncausal conceptions of necessity. Thus social scientists may now choose from a diversity of specific paradigms in each of

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three general perspectives: laws, systems, and rules (Cushman, 1975, 1977; Cushman and Pearce, 1977).

As discussed by Cushman (1975), the laws perspective embraces positivist, conventionalist, and natural necessity variants, all centered on a conception of causal (nomic, empirical) necessity. The systems perspective embraces general systems theory and various forms of mathematical modeling, all centered on a conception of logical (definitional, mathematical) necessity. The rules (or actions) perspective is relatively new and therefore incompletely developed. To the extent that it presents a distinct alternative to the laws and systems perspectives, it derives from the branch of modern analytic philosophy known as action theory (see especially: White, 1968; Mischel, 1969, 1974; von Wright, 1963, 1971), but traces its heritage through the later Wittgenstein and Kant to Aristotle. In contrast to the traditional forms of the laws perspective, it stresses such concepts as choice, action, teleology, intentionality, meaning, and practical reasoning. The rules perspective currently embraces the practical inference model of von Wright (1971) and, less clearly, the evolutionary model of Toulmin (1974), both centered on a conception of practical (experiential, teleological) necessity.

It cannot be overstressed that the rules approach, especially as developed in communication theory by Cushman and his associates (Cushman and Whiting, 1972; Cushman and Florence, 1974; Cushman and Craig, 1976; Pearce, 1976; Pearce and Cushman, 1977), is an attempt to articulate and philosophically ground a fundamentally different approach to the scientific study of human behavior. Such an approach takes seriously the conception of man as a creature of choice and freedom, capable of acting rather than merely being acted upon. The primary challenge facing the

new approach is to discover sources of necessary regularities in human action. Rules specifying the actions necessary to achieve intended goals form one such source of regularities.

In general, this study will follow Cushman and Craig (1976) in extending the rules approach to the consideration of interpersonal communication and will test for the existence of developmental sequences in the rules systems hypothesized as primary sources of regularity in interpersonal communication. To that end, the remainder of this chapter will be divided into five sections: (1) a brief interpretive review of the basic distinctions of action theory and the possible sources of practical necessity in human action; (2) a summary of the general theory of communication proposed by Cushman and Craig (1976) and the integration of that theory into the general perspective developed in this study; (3) a summary and critical analysis of the process of self-concept development hypothesized by Cushman and Craig (1976); (4) articulation of a general model of development appropriate for the study of developmental processes in normative systems; and (5) generation of a design for testing for the existence of the hypothesized developmental sequence. The second chapter of this study will provide a detailed discussion of the methods used to test for the existence of the hypothesized developmental sequence. The third chapter will report the results of the test. The fourth and final chapter will summarize and discuss the implications of the study.

THEORETICAL REVIEW AND DEVELOPMENT

Action Theory and Practical Necessity

The action theory tradition centers on a conception of man as a powerful generative mechanism in nature (cf. Harre and Secord, 1972), an organism which is able to act, to <u>do</u> things. It therefore incorporates a fundamental division of human behavior into two distinct categories. Movements are habitual, unreflective, conditioned, and therefore essentially reactive behaviors, governed by nomic necessity and thus most amenable to lawful explanation. Actions are intentional, reflective (or at least conscious), planned, and therefore essentially purposive behaviors, governed by practical reasoning and, at least on some occasions, practical necessity, and thus amenable only to teleological explanation. More specifically, actions are conceptualized as having both an "inner" and an "outer" aspect. The inner aspect consists of the agent's intention; the outer aspect consists of two parts: a muscular activity, and the consequences which are brought about by that activity (von Wright, 1971).

Four important distinctions follow from this discussion. First, as von Wright (1971) argues, the two parts of the outer aspect of an action can be unified if and only if they are subsumed under a common intention in a teleological explanation. By way of illustration, let us suppose that an individual opens a window in a room and that as a consequence the temperature in the room drops, the curtain flutters, a piece of paper is blown to the floor, dust enters from outside and collects on the furniture, and a child in the room is chilled, contracts pneumonia, and dies. Under an action interpretation, certain of these consequences

are selected from the infinitely detailed mosaic of ongoing reality and endowed with significance or meaning according to whether the individual intended to cool the room, murder the child, and so on. Thus intentions form organizing principles which give significance to behaviors and events. Further, it is precisely this overlay of significance which eludes causal and logical explanations.

Second, as the above discussion suggests and as virtually all action theorists agree (see, e.g., Taylor, 1964; Toulmin. 1969), intentionality is a defining characteristic of action. But intentions are fully predicable only of individual human actors. Therefore the study of human action, sciencific or otherwise, must in some way incorporate the point of view of the actor. As Cushman and Craig (1976, 47) have stated the argument: "Any explanation of human action requires an understanding of the actor's view of his relationship to those objects which he deems relevant to that action. We need a map of the environment as it appears to the actor."

Third, the bifurcation of human behavior into movements and actions requires the development of methods of explaining and understanding intentional, purposive action. Following Anscombe (1958), von Wright (1971) has proposed a variant of the practical syllogism as a teleological model of explanation for history and the social sciences which can serve as a formal alternative to the covering law model of the natural sciences. In its simplest and most powerful version, the practical syllogism takes the following form:

> Major Premise: $\underline{A}$ intends to achieve $\underline{x}$.
> Minor Premise: $\underline{A}$ considers that he cannot bring about $\underline{x}$
> unless he does $\underline{y}$.
> Conclusion: Therefore, $\underline{A}$ sets himself to do $\underline{y}$.

The practical syllogism is nothing more than an inverted and formalized version of a teleological explanation in which a problematic behavior is explained by referring it to some intention or goal of the actor. As such, the practical syllogism can be used as an explanatory model in such fields as history, ethics, and everyday discourse, in addition to the social sciences. But when the practical syllogism is adopted as an explanatory model in the social sciences, it must meet certain additional criteria of adequacy. As noted by Cushman and Pearce (1977), any theory or metatheoretical model of explanation must employ premises which are both general and necessary. When applied to explanations based on the practical syllogism, the criterion of generality requires that the intention indicated by the major premise must be formed by a number of actors or by a single actor in a plurality of situations. Similarly, the minor premise is derived from the perception that some means is necessary to achieve the intended goal, and this necessary means-end relationship must be common to a number of actors or to a single actor in a plurality of situations. When applied to explanations based on the practical syllogism, the criterion of necessity requires that the conclusion be in some sense necessary rather than accidental or contingent. As von Wright has argued at length (1971), the conclusion of a practical syllogism follows with practical, as opposed to logical or empirical, necessity. More specifically, Smith (1977) has identified two senses of practical necessity incorporated by the practical syllogism. First, if we adopt von Wright's (1971, 1972) definitions of intentions as categorical, then one form of practical necessity is the obligation that an actor feels or experiences to initiate action by virtue of having formed an intention to achieve a goal. That is, under this definition, to have an intention

means that the actor must initiate action which is sufficient to achieve
the intended goal. This sense of necessity is implicit in the major
premise of a practical syllogism. It should be noted that if a range of
actions are sufficient to achieve an intended goal, knowledge of the
actor's intention will allow us to predict only that he must choose one
of the possible actions; it does not allow prediction of the specific
action he will choose. In examining this range of possible alternatives,
however, it may be the case that the actor perceives (thinks, believes)
that unless he performs some specific action he will fail to achieve his
goal. This leads to the second sense of practical necessity, the obliga-
tion an actor experiences to initiate specific actions which he perceives
as necessary to achieve an intended goal by virtue of some analysis of
the available means for achieving that goal. This sense of necessity is
implicit in the minor premise of a practical syllogism.

The fourth implication of our discussion is that the adoption of
a rules perspective based on the practical syllogism requires us to
identify sources of influence on human action which produce regularities
which are both general and necessary. There would appear to be four
such sources: the nature of the goal or task, the expectations or rules
of others, the self-concept of the actor, and the situation in which
action must occur. These may be loosely termed the sources of practical
necessity. The precise manner in which each source can invest the con-
clusion of a practical syllogism with practical necessity may be summarized
as follows (see Smith, 1977, for a more detailed discussion).

An examination of the task or goal as a source of practical neces-
sity leads to the recognition of three distinct types of tasks: natural
or physical, social, and personal. In order to accomplish a natural task,

it will be practically necessary for the actor to align his actions with the laws of nature. That is, if an actor seeks a physical effect, it will be necessary for him to instantiate some sufficient cause of that effect. In order to accomplish a social task, the actor may have to align his actions with a logic of coordination and/or systems of consensual rules which define the necessary methods to follow in achieving the goal. In order to accomplish a personal task, the actor must align his actions with some set of private experiences and analyses which are definitive of success. Personal tasks appear to be of little scientific interest. Natural tasks, insofar as they require coordination with others or are performed in a social context, will incorporate a social dimension.

An examination of rules or the expectations of others as a source of practical necessity leads to the recognition of two types of practical rules, standardized usages and environmental prescriptions. Standardized usages are systems of rules generated to coordinate action with regard to a common goal. Environmental prescriptions are rules generated by collectivities and individuals in the actor's environment which specify the appropriate means for achieving a goal. Performance of a standardized usage will be practically necessary if the actor must coordinate his actions with the collectivity generating it. Adherence to an environmental prescription will be practically necessary if the penalty for noncompliance is action by the generating collectivity or individual to prevent the attainment of the actor's goal.

If we define the self-concept of an actor as the set of information he has concerning his relationship to objects in his environment, then elements of the actor's self-concept may entail self-concept rules

of action which carry the force of normative necessity. Because these rules form a necessary part of the actor's conception of his goals, action in accordance with them is also practically necessary. Further, when action is performed in a social context, compliance with the normative necessities of others may be practically necessary if noncompliance would prevent the actor from achieving his goal, or if attributes or roles in the actor's self-concept require compliance.

Finally, insofar as action must take place in a particular situation, and insofar as that situation restricts the range of means which are sufficient to achieve the actor's goal, selection from the restricted range of means will be practically necessary. If only one means is permitted in a situation, performance of that particular means will be practically necessary. To the extent that situations are conceptualized as unique concatenations of forces and events, theories based on situational analyses will lack generality and hence will be of only limited scientific value.

Given these distinctions, we may now specify the interrelationships among action, rules and communication. At a minimum, all action involves a task or goal pursued by an actor in some situation. Thus, at a minimum, the derivation of practical necessity in any action situation will require consideration of the self-concept rules of the actor. Thus, under this analysis, all theories proposed in the action perspective must also be rules theories. To continue the analysis, rules in the form of the expectations of others become central to the derivation of practical necessity given a social task, the need for coordination, action performed in a social context, or self-concept rules that legitimate the expectations of others. In particular, some natural tasks and

all social tasks require the actor to coordinate with others. Such coordination generally, but not invariably, requires communication. In these instances, the communication rules of the actor and those with whom he coordinates will become crucially important. Thus, under this analysis, theories proposed in the action perspective will generally, but not invariably, incorporate consensual rules and communication rules.

Summary of the General Theory

The most fully developed theory in this variant of the rules perspective is that proposed by Cushman and his associates, cited above. This theory, which forms the basis for the present study, is restricted to that subset of action which involves communication, coordination, and consensual rules. More specifically, Cushman and Pearce (1977) accept the traditional action theory distinction between action and movement, but then go on to subdivide action into coordination situations and information processing situations. The former require communication and function to regulate consensus among individuals with regard to a common task; the latter do not require communication and function to regulate perception and thought. Thus the domain of the theory is coordinated action. The primary tenets of the theory are as follows (Cushman and Pearce, 1977, 12):

> (1) There exists a class of human action which involves conjoint, combined and associated behavior, (2) that the transfer of symbolic information facilitates such behavior, (3) that the transfer of symbolic information requires the interaction of sources, messages and receivers guided and governed by communication rules, and (4) that these communication rules form general and specific patterns which provide the basis for the explanation, prediction and control of communication behavior.

Operating within this general perspective, Cushman and Craig (1976) have argued that communication is a form of human action which is best understood within a systems framework. Given such a focus, communication systems may be analyzed in terms of their typical functions, structures, and processes. At the most general level of analysis, the primary function of communication within a system is to regulate consensus in order to coordinate action. The structure of a communication system is the set of code and network rules which regulate the content and procedures of communication. The processes of communication systems are the application, adaptation, and evolution of communication rules for the achievement of recurrent or changing goals.

Within this general systems conceptualization, different levels or types of communication systems may be differentiated on the basis of their typical functions, structures, and processes. Cushman and Craig distinguish three such levels. Cultural communication systems function to regulate consensus with respect to cultural institutions. Their typical networks are nations, cultures, classes, subcultures, regions, communities, and families. Their typical codes are languages, dialects, and accents. Their typical processes are diffusion and the enactment of customs and rituals. Social organizational communication systems function to regulate consensus with respect to production. Their typical networks are organizations, groups, and roles. Their typical codes are jargon and technical terminology. Their typical processes are control, leadership, information exchange, bargaining, negotiation, and discussion. Interpersonal communication systems function to regulate consensus with respect to individual self-concepts. Their typical networks are dyads and small cohesive groups. Their typical codes are personal styles and

references. Their typical processes are the development, presentation, and validation of individual self-concepts.

The analysis of the three levels of communication systems, which has been greatly abbreviated here, forms the core of Cushman and Craig's general theory of communication. For present purposes, three implications of that analysis seem to be particularly important. First, although the general theory is firmly rooted in a conception of consensual systems of rules, those rules are organized with reference to fundamental recurrent tasks and encompass at least some aspects of individual self-concepts. Thus the theory incorporates elements of the task, the expectations of others, and self-concepts of individual actors as sources of practical necessity, although reducing all three to shared normative necessity.

Second, the proposed systems analysis is meant to be used as an analytical tool rather than as a description of actual communication systems. That is, any actual communication system may include elements of all three levels of communication systems. Thus, for example, interpersonal processes frequently occur within organizational systems, and organizational processes occur within the broader context of cultural processes and institutions. Thus, in practice, communication systems must be differentiated on the basis of the relative predominance of one level of structures, processes, and functions.

Third, an alternative way of saying that elements of all three levels may be found in existing communication systems is to say that different tasks are pursued by the same system, and that pursuit of those different tasks will be governed by different systems of communication rules. Those communication rules, or standardized usages, will be

generated and enforced by different classes of generative mechanisms, which include, broadly speaking, cultures, organizations, and self-concepts. Thus the analysis of communication in existing systems would be expected to reveal shifts from the pursuit of one goal guided by one standardized usage to other goals and standardized usages, although one goal and standardized usage might predominate.

Given this general theory of communication, Cushman and Craig then develop a theory of interpersonal communication in somewhat greater detail. As indicated by the above discussion, the self-concept emerges as the dominant focus in their study of interpersonal communication. Following Mead (1934) Cushman and Craig (1976, 48) provide a preliminary definition of the self-concept as "the information an individual has regarding the relationship of objects or groups of objects to the individual." But they then introduce a major theoretical development by noting (p. 48):

> Some self-object relationships, in addition to providing information about an individual's relationship to an object, prescribe a plan of action for the use of that object in certain situations . . . [which] would serve as a rule governing an individual's actions in certain circumstances.

Cushman and Craig therefore conclude (p. 49):

> The composite of all the rules an individual has regarding the relationship of objects to him is his self-conception. These rules provide organization which serves to guide human action. It is the stability of this set of rules which makes an individual's actions predictable.

Several features of this definition require comment. First, it should be noted that a rules definition of the self-concept is somewhat narrower than the traditional Meadian definition. Specifically, those self-object relationships which do not prescribe a plan of action (i.e., rule) are excluded from the definition of a self-concept. Second, it is

unclear in context whether these self-concept rules are located in the individual (i.e., are personal rules) or in agreements between the individual and others with whom he interacts (i.e., are consensual rules). The latter interpretation appears to be more fruitful for communication theory and thus will be accepted here. Thus, the self-concept emerges as a social agreement, formed through interaction and therefore embedded in and constituted by communication.

This interpretation has two important implications for the present study. First, those persons with whom an individual interacts will be able to provide descriptions of the individual's self-concept rules which are at least as accurate as descriptions provided by the individual. Second, under this interpretation the self-concept becomes a dynamic construct in the sense that it will evolve constantly as the individual interacts with new and different individuals and collectivities. That this is the interpretation preferred by Cushman and Craig is indicated by their discussion of the process of self-concept development, which is discussed in the following section.

Developmental Theory of Interpersonal Communication

Again following Mead (1934), Cushman and Craig (1976) argue that the self-concept is developed through a process of role-taking. This process begins whenever an individual occupying a socially defined position is able to imaginatively recreate the expectations of others for him in that position. This procedure allows the individual to see himself as an object, and it is through the adoption of this perspective of an imaginatively created other that the self comes into existence. Both the development and maintenance of this perspective presuppose interaction

with others and therefore communication. As the individual gradually

occupies a range of roles, he is correspondingly made aware of an

increasing range of possible self-object relationships. But this form

of role-taking does not permit the individual to acquire any unique

aspects of self. Therefore Cushman and Craig, following Turner (1956)

and Lauer and Boardman (1971), argue that individual or unique self-

concepts are developed through a four stage process of role-taking. They

describe the nature of each developmental stage and the order of develop-

ment as follows (pp. 49-50):

> Basic role-taking is the process whereby an individual imagina-
> tively reconstructs the attitudes and expectations of cultural
> and social organizational positions and is consequently able to
> anticipate and respond to the expectations of others . . . .
> Reflective role-taking is the evaluation of various role require-
> ments in regard to an individual's likes and dislikes . . . .
> Appropriative role-taking entails an individual's evaluation of
> some aspect of a role positively and the reduction of that self-
> object relationship to a permanent part of his personality or
> self-conception . . . . Synesic role-taking is the imaginative
> construction of the other's self-conception such that not only
> is his behavior anticipated, but an understanding of his feelings,
> perceptions, and definition of the situation is gained. Synesic
> role-taking occurs when a person can separate some other individual
> from his roles and respond to him as a self.

This developmental sequence forms the basis of Cushman and Craig's

third and final set of distinctions. Put briefly, they argue (pp. 50-53)

that depending on an individual's location in the developmental sequence,

we would expect certain aspects of his communication to take on charac-

teristic forms. The most important aspects are communication contents,

styles, and relationships. Thus an individual at the basic level of

role-taking will generate message contents which are role-prescribed,

display a conventional communication style marked by low risk and low

disclosure, and enter into communication relationships which are inde-

pendent of the unique elements of the self. An individual at the

reflective level will generate message contents which are <u>role-evaluative</u>, display an <u>intrapersonal</u> communication style marked by low risk and high disclosure, and enter into communication relationships which are <u>counter-dependent</u> on the unique elements of the self. An individual at the appropriative level will generate message contents which take the form of <u>means-ends</u> statements, display a <u>manipulative</u> communication style marked by high risk and low disclosure, and enter into communication relationships which are <u>dependent</u> on the unique elements of self. And an individual at the synesic level will generate message contents which are <u>other-oriented</u>, display an <u>open</u> communication style marked by high risk and high disclosure, and enter into communication relationships in which the unique aspects of the self-concepts of the individual and the person with whom he interacts are made <u>interdependent</u>.

Cushman and Craig's complete theory may therefore be summarized as follows. Communication systems may be categorized as cultural, social organizational, or interpersonal systems on the basis of their typical functions, structures, and processes. The generative mechanism for communication behavior in interpersonal systems is the self-concept of each of the interactants. The self-concept is defined as an organized system of consensual rules which govern and guide action and which are developed through a four stage process of role-taking. The location of an individual in this developmental sequence is then hypothesized as determinative of the individual's communication contents, styles, and relationships. The pivotal point of the entire theory is the proposed model of self-concept development. If this developmental sequence can be demonstrated to exist, and if each stage is typified by characteristic patterns of communication behavior, the theory would provide us with a powerful model

for explanation and prediction across a wide range of communication situations. It is this potential richness that justifies the test of the developmental sequence to be undertaken in this study. That test must center on two related issues. First, methods must be devised to establish the existence of the various stages. Second, a method must be found for tracing the progression from stage to stage through the developmental sequence.

Before turning to these issues, however, it is first necessary to clarify one potential source of ambiguity in the theory. Cushman and Craig (1976, 50) introduce their distinctions on communication contents, styles, and relationships with the following statement:

> Once we locate a given individual's set of self-conception rules we can then treat those rules as the generative mechanism for explaining, predicting and controlling the regulation of consensus in regard to the self-conception. This can be accomplished by developing categories of interpersonal communication behaviors which are tautological with the set of self-conception rules. The categories of behavior will contain the same distinctions as the role-taking levels, but the subject matter will be the regularities of communication behaviors.

This and similar statements seem to imply that all of the four levels of role-taking will be manifested in interpersonal communication. But Cushman and Craig also argue (p. 50):

> Basic and reflective role-taking are processes one employs to learn and evaluate previously established roles and their expectations. These two levels of role-taking presuppose the existence of mechanisms other than the self-conception to generate such roles. Basic and reflective role-taking are thus restricted to the cultural and social organizational levels of communication systems. Appropriative role-taking and synesic role-taking are processes that one employs to develop, present and validate individual self-conceptions. These two levels of role-taking presuppose the existence of the self-conception as the mechanism generating behavior. Appropriative role-taking and synesic role-taking are thus restricted to the interpersonal level of communication systems.

This argument indicates that the process of self-concept development, and

thus in a sense the self-concept, is bifurcate. Basic and reflective role-taking occur only in cultural and social organizational systems; appropriative and synesic role-taking occur only in interpersonal systems. This has several implications for the current analysis.

First, it serves to place the self-concept and its influence in terms of the broader theory. If we take the self-concept as the point of departure in studying communication, the unique aspects of the self-concept developed at the appropriative and synesic levels of role-taking will be irrelevant in cultural and social organizational systems. That is, we would expect the aspects of the self-concept which are displayed in those systems to be tautologous with the systems of cultural and social organizational rules defining roles and acceptable ranges of personal role evaluations. Thus, although individuals obviously possess unique self-concepts when interacting in cultural or social organizational systems, explanation and prediction can proceed solely on the basis of the rules (standardized usages) generated by the system for all members of the system. When we turn to interpersonal systems, however, the situation is exactly reversed. Basic and reflective aspects of the self become irrelevant and analysis necessarily focuses on the unique (but consensually established) aspects of the self-concepts of individual interactants.

The second implication is methodological. Given the above analysis, if we wish to trace the development of self-concepts through the entire four stage developmental sequence we would appear to have only two general options. One option is to trace self-concept development across different systems, e.g., from cultural to interpersonal. The other option is to organize a system at the cultural or social organizational

level and force it or allow it to change into an interpersonal system.
This issue will be considered in greater detail in the final section of
this chapter. First, however, it is necessary to resolve the prior
issues of determining the nature of developmental stages and tracing the
progression from stage to stage through the developmental sequence. This
will require examination of the general nature of developmental models,
to which task we turn next.

General Models of Development

Given the proposed sequence of self-concept development, it then
becomes necessary to address the question of how to represent and recog-
nize developmental changes as manifested in communication. The answer to
this question requires the articulation of a general model of develop-
mental processes that is appropriate for use in the study of normative
systems. Unfortunately, few precedents exist to guide discussion.
Although the dynamic nature of much of human thought, language, and
action has long been recognized (see Berlo, 1960, for the classic state-
ment of this insight in communication), and although developmental theory
holds great promise as a method of discovering or imposing a deeper level
of structure on dynamic processes, the abstract nature of developmental
processes seems to have been but little examined in the social sciences.
Feldman and Toulmin (1976), in one of the few full treatments of this
subject in the social science literature, identify two general develop-
mental models for use in cognitive psychology. These models are differ-
entiated primarily by the nature of the developmental stages they propose.
This reflects Feldman and Toulmin's basic argument that the way in which
developmental stages are conceptualized will determine the nature and

and significance of change through a developmental sequence. One of the general models is based on formalized essentialistic stages and is best exemplified by Piaget's theory of cognitive development (Piaget, 1952, 1971, 1973, among many others). The second general model is based on stages identified as clusters of correlated characteristics and is best exemplified by the classical theory of biological evolution.

The position taken here will be that a modified form of the population model of development proposed by evolutionary theory is most appropriate for use in establishing stages and tracing developmental change in normative systems. The formalized model will also be examined, however, for two reasons. First, Piaget's theory is quite probably the most widely disseminated and fully researched developmental theory in the social sciences. Further, this theory is an exemplar of the growing trend, evident since the decline of logical positivist models of science, of using logico-mathematical formalisms as the starting points of theory. Although certain severe problems arise whenever such formalized systems are used as the basis for ontological claims in empirical and normative realms, there is a distinct possibility that the use of the general developmental model incorporated in Piaget's theory will become prescriptive in the construction of social scientific theories of development. Thus it becomes important to establish the strengths and limitations of such an approach. Second, the discussion of the formalized model will make it possible to highlight by contrast certain crucial modifications required when the evolutionary model is applied in normative systems. We therefore begin our discussion by examining Piaget's developmental theory.

In the following discussion, no attempt will be made to do justice

to the full richness of Piaget's theory of cognitive development. We will instead confine our focus to the implications of several of its main features. Piaget's basic argument is that every normal child passes through an invariant sequence of four cognitive stages, culminating in the possession of a set of "formal operations" which are said to be definitive of "mature cognition" (Piaget, 1952). The essence of each stage is represented by a static "mental structure" which is given a precise theoretical formulation in terms of a set of formal logical propositions. The stages themselves are linked by a relationship of logical "inclusion," which is interpretted in the sense that any given stage, say S_n, is conceived as a necessary prerequisite for the succeeding stage, S_{n+1}. Unfortunately, it is unclear what ontological status Piaget claims for his mental structures--whether they have an empirical neurological existence, a merely formal hypothetical existence, or, less clearly, whether they exist in the real but nonempirical "mind" of the child (cf., e.g., Piaget, 1971, 80, with Piaget, 1973, 19). Regardless, these mental structures are said to underlie behavior, and their operation is claimed to be discernible through the careful (albeit typically unsystematized) interpretation of children's responses and activities.

Although Piaget's theory is precise, elegant, and profoundly heuristic, two significant problems arise when it is applied to the description and explanation of actual behavior. First, as Feldman and Toulmin (1976) have stressed, it is difficult to see how a cognitive stage constituted by a single timeless and formalized essential structure can in any sense be said to develop into another cognitive stage characterized by a different essential structure. Rather, each stage seems to spring into existence fully developed, much as Athena is said to have

sprung fully armed and mature from the head of Zeus. This rapid discontinuous transition from one stage to another across a complete sequence is abstractly represented by a simple step function model of stage transition, and it is this which represents the first of the two alternative models of developmental change identified by Feldman and Toulmin. In itself, there is nothing wrong with characterizing human cognition as following a discontinuous sequence of development. Indeed, discontinuities and divergences may be characteristic of much of human thought and action (Zeeman, 1976). But, ironically for a formal system, such a model is highly problematic when used as the basis of empirical claims because of the severe difficulties involved in the mathematical representation of such discontinuities (Thom, 1975), and thus the difficulties in confirming or disconfirming the nature of stage transitions on the basis of quantitative observations across a population of subjects or spectrum of tasks.

The second problem also derives from the discontinuous nature of Piaget's developmental model. If cognition at any stage can be characterized by a single formal structure, and if this structure does not itself display an internal developmental history, then we would expect it to be manifested in all forms of applicable behavior at approximately the same time. That is, the transition to a new stage is characterized by the model as immediate, persistent, and therefore irreversible. Earlier stages characterized by complete formal structures cannot coexist with the new complete structure except insofar as they are "included" in it. Thus the model is, in a sense, static, resting more on a series of definitive self-contained stages than on a dynamic developmental process. When applied to the concerns of this paper, the problems associated with

the adoption of this model become immediately obvious.

When defined as a social agreement, the self-concept becomes a dynamic construct, capable of change and development each time an individual enters a new communication system. Further, the fact that an individual has reached the theoretical endpoint of the proposed developmental sequence (i.e., the synesic level of role-taking) in some communication system carries with it no implication that the individual's behavior will be completely synesic in that system or that his communication behavior will display any synesic characteristics in other communication systems. Earlier role-taking levels, and the communication skills which they imply, may not only coexist with later levels but may be dominant in certain appropriate systems and situations. Finally, it should be noted that the implication of immediate and complete change across all applicable behaviors has proven problematic for Piaget's theory in at least two ways. First, as has been apparent since the earliest research on the model, a particular stage structure is generally manifested across the spectrum of applicable activities only gradually, not immediately (Feldman and Toulmin, 1976, 442). This has forced Piaget to augment his theory with the concept of horizontal decalages (which may be loosely translated as "blockages") which impede the spread of the new structure. This addition to the theory has been criticized as inelegant at best and question-begging at worst. Second, the criterion for stage transition has become the first appearance of the new structure in any task or behavior. This insures the discontinuous nature of the developmental process (at least at the level of the individual), But may not have much meaning for the explanation and prediction of the child's behavior in other contexts and situations.

The problems described above are, in one form or another, typical of any attempt to characterize a diachronic process in terms of formalized synchronic stages. Thus, if these problems are to be avioded, an alternative general model of development must be discovered. Feldman and Toulmin (1976) have argued that such a model underlies the classical theory of biological evolution. As will be discussed below, this model incorporates a fundamentally different conception of the nature of developmental stages and, with certain modifications, can serve as a general model of developmental processes in normative systems.

Prior to the articulation of the current theory of organic evolution by Darwin and others, biological species were defined in terms of Aristotelian essences. That is, a species was defined by identifying a set of essential characteristics which were assumed to be universal and invariant across all relevant members of the species. These defining characteristics were thought to form a unitary and static structure composed of necessary connections among the characteristics. Individuals which did not fit the essentialistic definition of the species were dismissed as freaks, accidents of nature, mere aberrations. Given this essentialistic typology, the notion of species gradually changing into qualitatively different species was logically impossible, and the early evolutionary theories were dismissed on just such formal grounds.

As is well known, the evolutionists countered the formalist attack with the empirically supported argument that what were then considered to be species displayed only widespread associations or correlations of traits. These correlations represented only "predominant statistical means or peaks within a broader distribution of characteristics across the population" (Feldman and Toulmin, 1976, 435). Further, the range of

characteristics was seen as constantly changing as the result of random mutations by individual members of the species. Qualitative change was seen as the result of the redistribution or diffusion of characteristics which acquired survival value in the face of environmental changes, or demonstrated inherent advantage in a relatively static environment.

If the population distribution model of biological evolution is adopted as a general model of developmental processes applicable in the social sciences, then development must be conceptualized as the more or less gradual redistribution of characteristics or structures across some population of individuals, or the manifestation of some set of character-istics or structures across the range of relevant activities of a focal individual. Such redistributions may take either of two general forms. In one form, a characteristic is replaced with a qualitatively different but functionally similar characteristic. An example of this type of development in biological evolution would be the replacement of gills by lungs in amphibians, which allowed them to live permanently on land. In the second form of redistribution, a new characteristic is added to existing characteristics such that the organism gains a new range of capabilities without losing any previously developed capabilities. An example of this type of development would be the emergence of symbolic language usage in man. Regardless of which form of development is envi-sioned, however, the abstract representation of a developmental sequence under a population distribution model changes from a step function model of stage transition to what might be called a multi-modal growth curve composed of a series of linked sigmoid ("diffusion") curves. Under such a model, each curve would trace the transition from one stage to another.

One significant advantage of the population distribution model is

that developmental sequences may be conceptualized as, in a sense, reversible or repeatable. That is, if qualitative change results from the redistribution of some set of characteristics through a process of selection on the basis of functional utility, it is conceivable that a reversal of circumstances or environment could produce a reversal in the distribution of characteristics. Further, even if it were possible to specify an endpoint for the developmental process on theoretical grounds, a population distribution model could still countenance a "regression" to an earlier stage of development under appropriate circumstances. This regression could then provide the starting point for a repeated sequence of development when circumstances become favorable for such development. This latter potential is crucial in modeling the development of the self-concept as proposed by Cushman and Craig (1976).

Under that theory, change from one developmental stage to another involves the acquisition of new skills or potentialities, without the loss of previously acquired abilities. For example, the change from the appropriative level to the synesic level of role-taking means that the focal individual acquires the ability to respond to the unique aspects of at least one other person's self-concept. The acquisition of this ability does not imply, however, that the focal individual will always or even generally enter into synesic relationships. To the contrary, it is assumed that an individual who has attained the synesic level of self-concept development in some communication relationships will still retain the ability to "regress" to, say, the basic level of role-taking when required to learn a new role in a new communication system. This suggests that the developmental sequence formulated by Cushman and Craig may be used as the basis for two related but distinct types of claims.

The _genetic_ claim warranted by the theory is that whenever an individual first develops a complete self-concept he will follow the proposed developmental sequence. What may be called the _cybernetic_ claim warranted by the theory is that whenever an individual with a fully developed self-concept enters a new communication system he will adapt to that system by recapitualating the appropriate segments of the genetic developmental sequence--from basic to reflective in a new cultural or social organizational system; from appropriative to synesic in a new interpersonal system. The study reported here tests the cybernetic claim of the theory.

The adoption of the population distribution model of development is not, of course, without its costs. In particular, two issues arise with this model which are unproblematic with the formalistic model. First, with the population distribution model the criteria for determining what constitutes a stage, and thus more importantly what constitutes a transition from one stage to another, become in a sense arbitrary. That is, it must be recognized that such a conceptualization of development implies that stage transitions will not be discovered in nature or language or rules or thought, but will be imposed by the decisions of researchers.

In general, two types of criteria may be used for locating the emergence of a stage under a population distribution model. First, a stage may be said to emerge whenever the absolute value of the distribution of a characteristic or group of characteristics in a population reaches some theoretically important value. Any absolute value may be used, depending on the theory involved, but three levels appear most frequently in practice. These are the first appearance of the characteristic, the attainment of a critical level in the distribution of the

characteristic, or dominance of the characteristic. To take a crude hypothetical example, we might want to argue that a culture becomes "civilized" whenever literacy reaches some level of distribution in the population. This level could then be specified as the point at which one member of the population becomes literate (first appearance), whenever a certain theoretically significant proportion of the population becomes literate, say twenty per cent (critical level), or whenever all or most of the population becomes literate (dominance). The first appearance criterion is generally, perhaps necessarily, favored in essentialistic models; the critical level and dominance criteria are generally used in theories which apply an evolutionary model to processes of genetic development. The second general type of criterion is a change in the relative frequency of appearance of a characteristic or group of characteristics across a range of different types of characteristics. Such a criterion presupposes that the focal individual or group has completed an original developmental sequence, and thus is appropriate only for testing the cybernetic claim of the controlling developmental theory. A relative frequency criterion will be developed for use in this study.

The second issue that arises whenever an evolutionary model is adopted concerns the nature of the proposed developmental stages. The basic claim of the evolutionary model is that we need not, perhaps ought not, characterize a particular stage in terms of a single structure, activity, or set of criterial features. Instead, stages should be characterized in terms of a spectrum of structures or activities which are interrelated in some theoretically important way, but which are not isomorphic or _essentially_ similar. A primary function of theory thus is to specify the general nature of the similarities which bind the various

proposed structures and activities into recognizable stages. This

requires that theory be guided by a nonformal and nonessentialistic

principle of definition. In his later work, Wittgenstein argues that

such a principle of definition is characteristic of meanings discovered

in natural languages. He then proposes the idea of "family resemblances"

as a guiding metaphor in the search for definitive similarities in theory

(Wittgenstein, 1958, sections 66-67):

> Consider for example the proceedings we call "games." I
> mean board-games, card-games, ball-games, Olympic games, and
> so on. What is common to them all?--Don't say: "There _must_ be
> something common or they would not be called 'games.'"--but
> _look_ _and_ _see_ whether there is anything common to all.--For if
> you look at them you will not see something that is common to
> all, but similarities, relationships, and a whole series of them
> at that. To repeat: don't think, but look.--Look for example at
> board-games, with their multifarious relationships. Now pass to
> card-games; here you will find many correspondences with the
> first group, but many common features drop out and others appear.
> When we pass next to ball-games, much that is common is retained,
> but much is lost . . . . And we can go through many, many other
> groups of games in the same way; can see how similarities crop
> up and disappear. And the result of this examination is: we see
> a complicated network of similarities criss-crossing and over-
> lapping; sometimes overall similarities, sometimes similarities
> of detail.
>
> I can think of no better expression to characterize these
> similarities than "family resemblances"; for the various resem-
> blances between the members of a family: build, features, color
> of eyes, gait, temperament, etc., etc. overlap and criss-cross
> in the same way.--And I shall say: "games" form a family.

In terms of the present theory, it should be stressed that the

self-concept is conceptualized as a normatively structured complex of

shared meanings which is formed through and embedded in communication.

A self-concept stage may then be defined as a set of rules or self-

concept elements which share a family resemblance based on functional

similarity. These family resemblances are then hypothesized as being

reflected in typical communication contents, styles, and relationships.

Further, these family resemblances should be manifested in any descrip-
tion of the self-concept of an individual when that description is based
on interaction with the individual. This suggests a method of determin-
ing self-concept stages and testing for the existence of the proposed
developmental sequence, which issues are discussed in the following
section.

Design Considerations

The purpose of this section is to devise a means to verify the
existence of the developmental sequence proposed by Cushman and Craig.
To that end, the section will consider four interrelated issues. First,
a means of determining an individual's role-taking level at any point in
time and in any communication system will be proposed. This is primarily
a measurement issue. Second, a method of tracing the development of
individual self-concepts through a complete developmental sequence will
be proposed. Third, criteria will be stipulated for establishing stage
transitions. Finally, the expected results of the proposed study will
be listed.

Turning to the measurement issue first, Cushman and Craig have
argued (1976, 50) that the Twenty Statements Test (TST) devised by Kuhn
and McPartland (1954) provides a valid and reliable method of establish-
ing role-taking levels (this claim is partly substantiated by Spitzer,
Couch, and Stratton, 1969). In its original form, the TST asks an indi-
vidual to imagine himself in a familiar role or activity (generally
specified by the researcher) and then respond to the question "I am
_____." with twenty descriptive statements. These statements are then
taken as a description of the individual's self-concept in that role or

activity. If the TST is administered across a broad spectrum of roles and activities, those statements which appear repeatedly can be interpretted as a general description of the individual's unique structure of self-concept elements. Less common statements are interpretted as role-specific self-concept descriptions. Perhaps more important, if the self-concept is conceptualized as a consensual agreement between the individual and those with whom he interacts, it seems reasonable to argue that these other persons can provide descriptions of that agreement that are at least as valid as the description provided by the individual. Thus, following a similar line of argument, Spitzer, Couch, and Stratton (1969) have proposed a modified version of the TST to supplement the original version. The modified TST asks individuals with whom a focal individual interacts to respond to the question "X is _____." with twenty descriptive statements. These statements are then combined with the statements generated by the focal individual to define the focal individual's self-concept.

Given a set of statements generated by the TST, role-taking levels can be established by having trained coders assign each statement to one of four groups corresponding to the four levels of role-taking. All of the statements assigned to any group should display a family resemblance based on the complex of similarities proposed by the theory as definitive of that role-taking level. In the only study to date which has adopted this procedure, Craig (1977) has found that at least two of three trained coders could agree on the categorization of a statement in ninety-one to ninety-five percent of all instances across four sets of data. Complete consensus among all three coders was found in fifty-one to sixty-three percent of all instances across the four sets of data.

On the basis of these findings, this coding procedure will be accepted as sufficiently reliable for purposes of this study.

Given a set of coded statements describing a focal individual, the genetic role-taking level of that individual can be established directly, but it will vary on the basis of the particular criterion (i.e., first appearance, critical level, or dominance) selected to establish stage transitions. Establishment of the focal individual's cybernetic sequence of role-taking levels will require data from several points in time and the articulation of a specific relative frequency criterion for establishing stage transitions. This criterion will be discussed below.

Given this discussion, it is now possible to outline general procedures for verifying the existence of the proposed developmental sequence. In this design, a focal individual is located within a newly created communication system which is organized for the purpose of achieving some coordination task. Given the need for coordination and interaction with other members of the system, a straightforward deduction from the Cushman and Craig theory is that the focal individual's self-concept will evidence developmental change over time. This developmental change should be reflected in TST inventories completed at several points in time by the focal individual and other system members.

As was previously noted, however, the precise nature of developmental change will depend on the type of communication system into which the focal individual is entered. If entered into a "pure" cultural or social organizational system, change would be expected only from the basic stage to the reflective stage of role-taking. If entered into a "pure" interpersonal system, change would be expected only from the appropriative stage to the synesic stage of role-taking. Thus, if we

wish to trace a complete sequence of self-concept development, only two options appear fruitful. First, it would be possible to trace the development of specific self-concept rules or elements as an individual interacted across a range of different types of communication systems. This option has been rejected for the present study because of its prohibitive expense and the severe problems of measurement and control which it presents. The second option is to locate a focal individual in a cultural or social organizational system and then force or allow the system to change to an interpersonal system. Cushman and Craig's general analysis suggests a simple method of executing this option.

Following McKeon (1957), Cushman and Craig (1976, 37) argue that the present age is marked by a dramatic increase in and acceptance of diversity, occasioned by the decline in power of socio-cultural and social organizational institutions and the corresponding rise in power of individual and relational systems of norms. Confirmation of this analysis in this culture is provided by the recent decline in and even ridicule of a broad range of socio-cultural rituals and institutions and the strong emphasis in productive organizations on the socio-emotional aspects of work groups and organizational structures and procedures. This trend has two important implications for the study of self-concept development.

First, it suggests that there is a constant pressure to transform cultural and social organizational communication systems into interpersonal communication systems. In other words, it seems reasonable to expect that the pressure for diversity is manifested in the imposition of interpersonal functions on all or nearly all contemporary communication systems. Barring stringently enforced sanctions imposed by the

relevant culture or organization, these interpersonal functions can be expected to eventually dominate those systems. In terms of the present study, this suggests that if a group of individuals were organized into a weak social organizational communication system in which roles and role functions were clearly specified but not overtly enforced, the system would gradually evolve into an interpersonal communication system. Under these circumstances, we would expect the self-concept of an individual within the system to display cybernetic development across the entire four stage sequence of self-concept development. Further, if a group of individuals were given a productive task and permitted to organize any type of communication system they desired in order to accomplish the task, the above analysis suggests that the group would organize initially as an interpersonal communication system and remain that way. Under these circumstances, we would expect the self-concept of a focal individual within the system to display cybernetic development only from the appropriative to the synesic stage of the proposed sequence of self-concept development. The study reported below attempted to create and monitor both types of systems.

The second implication of the increase in diversity and the dominance of interpersonal systems is that we would expect to find appropriative and synesic characteristics dominating most self-concept descriptions, especially those of socially mature individuals. From what little evidence has been collected and informally analyzed by researchers at Michigan State University and Pennsylvania State University, this expectation seems to have been confirmed—appropriative and synesic characteristics dominate TST inventories, even when the inventories are gathered on individuals described as incumbents of cultural or organizational

roles. Further, Craig (1977) has found that sixty-eight to seventy-four percent of all codifiable statements derived from TST inventories on "self," someone "known well," and someone "lived with" are appropriative. This is in marked contrast to the findings of Kuhn and McPartland (1954) who, more than twenty years ago, discovered that what are here classified as basic and reflective characteristics dominated TST inventories.

In light of these findings, if socially mature subjects are used to study self-concept development, most or all of those subjects may be expected to be at the appropriative or synesic stages of genetic self-concept development. Any cybernetic development occasioned by entering a subject into a new communication system must be traced against this genetic background. Accordingly, an appropriate criterion for cybernetic development would be the relative frequency of appearance of TST statements representing each developmental stage. More specifically, the cybernetic claim of Cushman and Craig's developmental theory would be confirmed if, given self-concept descriptions of a focal individual at several points in time, the relative frequency of statements representing each self-concept stage reached a maximum in the order specified by the theory. That is, we would expect the relative frequency of statements representing the basic stage to reach a maximum first, then reflective, then appropriative, then synesic, in that order.

Based on this analysis, the following descriptive study was executed in an attempt to verify the existence of the proposed sequence of self-concept development. In that study, an aggregation of socially mature individuals was divided into groups of five or six individuals. Each group was required to perform the same coordination task. One subset of groups (Subset "A") was made up of groups which were initially

organized as weak social organization communication systems. All of the
remaining groups (Subset "B") were allowed to organize in any manner they
chose, with the assumption being that they would organize as interper-
sonal communication systems. Within each group, one volunteer was chosen
as the focal individual. That individual and the other members of the
group completed limited TST inventories on the focal individual at three
pragmatically selected points in time. The TST statements were then cate-
gorized by a group of trained coders.

Three specific results were expected. First, it was expected that
statements describing focal individuals in Subset "A" would reflect a
complete sequence of cybernetic self-concept development in which the
relative frequency of basic statements would reach a maximum first,
reflective second, appropriative third, and synesic fourth. Second, it
was expected that statements describing focal individuals in Subset "B"
would reflect a limited sequence of cybernetic self-concept development
in which the relative frequency of appropriative statements would reach
a maximum first, followed by synesic statements. Third, as a check on
the assumption that the groups in Subset "B" would organize as interper-
sonal communication systems, it was expected that the relative frequency
of basic and reflective statements would either be zero in Subset "B" or
would be lower than in Subset "A." It was not expected that any basic
or reflective statements that did appear in Subset "B" would follow the
hypothesized developmental sequence.

The precise methods followed in this study are reported in Chap-
ter II; results are described in Chapter III and discussed in Chapter IV.

CHAPTER II

METHODOLOGY

The purpose of this chapter is to outline in detail the precise

procedures followed in testing for the existence of the sequence of self-

concept development proposed by Cushman and Craig (1976). The justifi-

cation for these procedures was developed in the preceding chapter. This

chapter will be divided into two major sections. The first section will

detail the procedures followed in gathering descriptions of the self-

concepts of seven focal individuals at three points in time. The second

section will detail the procedures followed in coding these self-concept

descriptions into role-taking stages.

Data Collection Procedures

The study was executed by the author, hereinafter referred to as

the principal researcher, and two trained research assistants. The

subjects for the study were the members of a graduate survey course in

interpersonal communication conducted during the 1977 Summer term at

Michigan State University. The study was executed during a regularly

scheduled class period and was designed to function as an integral part

of the content of the course.

During the class session immediately preceding the session in

which the study was conducted, an announcement was made informing the

class that the next session would be built around a communication exer-

cise in which research data would be collected. Attendance was requested

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but specifically described as nonmandatory. Class members were further informed that participation in the exercise did not require participation in the data collection procedures, and that such latter participation was both voluntary and anonymous.

The actual study was begun approximately three minutes after the scheduled starting time for the fifty-minute class. At that time, thirty-seven of the forty-nine students enrolled in the class were present. These students were divided into five groups of five individuals each and two groups of six individuals each. Students were assigned to groups on the basis of the order of appearance of their names on an alphabetized class roster. Those students who arrived late but before the exercise was actually begun were briefed by one of the research assistants on what they had missed and assigned to one of the five-member groups. This resulted in a final sample of seven groups of six individuals each. The size of the groups had been set at five to seven members in order to both get the maximum number of groups given the size of the class and to insure a large enough body of data from each group to allow computation of relatively stable role-taking levels. The exercise itself can be conducted with groups ranging from about four to about twelve members. Two students arrived after the exercise had begun. These students were briefed by the research assistants on a series of group dynamics distinctions and assigned to circulate among the groups collecting observations on those distinctions for use in a later session.

After forming the groups, the principal researcher announced that they were to participate in a communication exercise which was designed around two purposes. Those purposes were described as the collection of data on "interaction patterns" for use in a scientific research project

and to provide the class with a common body of experiences for discussion in later sessions. It was then repeated that participation in the exercise would not require participation in the data collection procedures.

The principal researcher then asked for a volunteer from each of the groups. The nature of the volunteer's duties was not described. The first volunteer in each group was selected and designated as the "focal person" for that group. As might be expected in a graduate class, about one-half of all of the students volunteered. The groups were then informed that they would be asked to describe the focal person in their group at several points in time during the exercise and that these descriptions were to be based on who they thought the focal person was as evidenced by his interaction in the group.

The exercise was initiated by passing out an instruction sheet to each of the groups. Two different types of instruction sheets were used (see Appendix "A"). One type (Form I) included three sections: the nature of the task the group was to perform, the rules governing the exercise, and the social organizational roles which had to be filled in order to perform the exercise. The second type (Form II) was identical to Form I except that the third section describing necessary roles was deleted. The four groups of Subset "A" (designated A1, A2, A3, and A4) received Form I; the remaining three groups (designated B1, B2, and B3) comprised Subset "B" and received Form II. One of the central assumptions of the study was that the groups receiving Form I would organize initially as weak social organizational systems, which would then be transformed over time and interaction into interpersonal systems. The groups receiving Form II were expected to organize initially as interpersonal systems and remain that way throughout the exercise. After all

groups had received the instruction sheet, they were told to quickly devise a strategy which would allow them to perform the task they had been given.

The exercise used as a coordination task for this study is known informally as the Lego Block Exercise. Lego blocks are small, plastic, interlocking building blocks of various sizes, shapes, and colors. In the variant of the exercise adopted for this study, a master model is constructed and displayed in a remote part of the classroom. Each group then sends one or more observers to study the master model and teach the other group members how to build an exact replica of it. The groups are then given a brief period in which to practice building the replica as quickly as possible. The exercise concludes with a competition among all of the groups to see which group can build the model most quickly. The amount of time necessary to run the exercise, and the time it will normally take to win the exercise, can be controlled by an experienced instructor within narrow limits by varying the number of blocks used and the complexity of the master model. The exercise can be used to illustrate a very broad range of principles in communication, leadership, and group dynamics. The exercise was selected for this study because it provides a task requiring coordination and the opportunity for extended interaction among group members, both of which have been identified by Cushman and Craig (1976) as prerequisites for self-concept development.

As originally planned, the Lego exercise was to be run three times, with TST inventories being completed after the initial planning period and after each run of the exercise. This design would have provided data on role-taking levels at four approximately equal intervals of time. The decision to collect data at these time points was based on

two considerations. First, the Cushman and Criag theory provides no estimate of the amount of time or interaction necessary to produce a change from one developmental stage to the next. Second, the proposed data collection points fall at natural breaking points in the group interaction and thus would not interfere with the development of that interaction.

In the event, however, it was possible to run the exercise only twice, thus providing data at only three rather unequally spaced points in time. This change was necessitated by the unexpectedly poor performance of one of the groups on the exercise. On the first run of the exercise, using an extremely simple eleven-piece model which was reproduced in competition by four of the seven groups in less than six seconds, group B1 encountered severe and inexplicable difficulties in constructing its initial replica of the master model. As a result, it was necessary to extend the time allotted for the first run of the exercise from the planned ten to twelve minutes to an eventual seventeen minutes. But even with this additional time, group B1 was unable to solve the task and was forced to forego the first competition. As a result of this delay, there was sufficient time remaining in the scheduled class period to allow only one more run of the exercise. Because of the pronounced failure of group B1 to achieve its assigned goal, there is some question as to the appropriate interpretation of the data derived from that group. This latter issue will be discussed in Chapter IV.

The data collection procedures employed in the study were as follows. After allowing the groups to organize and plan strategy for seven minutes, initial TST inventories were distributed to each group member (see Appendix "A"). Instructions for completing the TST were

read by the principal researcher to the class as a whole. These instruc-
tions, which are reproduced in Appendix "A," asked each group member to
provide descriptions of both self and the focal person. The group mem-
bers were not required to provide a full twenty statements but only as
many as they thought important. This procedure was adopted for two
reasons. First, it greatly reduced the amount of time required for data
collection. Second, because it was assumed that few of the group members
would have any knowledge of the focal person other than that gained
through interaction in the group, it seemed reasonable to expect that
many of the statements collected on a complete TST inventory would be
spurious and unreliable, generated not out of careful and extended obser-
vation but out of the need to complete the inventory. Except for the
focal persons, self descriptions were not used in this study. The TST
instructions again stressed that participation in the data collection
aspects of the exercise was voluntary and anonymous. All forty-two
subjects provided data, although two subjects failed to complete the
time three questionnaire. The time one and time two responses of these
subjects were retained in order to maintain groups of equal size for
analysis.

As soon as all subjects had completed the initial TST inventory,
the TST forms were collected and the exercise resumed. The remainder
of the first run of the exercise lasted seventeen minutes. At the
completion of the first competition, TST forms were again administered
and collected. The second run of the exercise lasted twelve minutes and
was again followed by administration of the TST (the form used for data
collection at the second and third time points is reproduced in Appen-
dix "A"). Thus TST inventories were collected after a cumulative total

of seven, twenty-four, and thirty-six minutes of interaction. The time used to complete the TST inventories was excluded from total interaction time.

Coding Procedures

The statements derived from the TST inventories were coded into role-taking stages by a group of three trained coders. The coders were selected and trained in the following manner. Five individuals were initially recruited for training as coders from an undergraduate course in communication at Michigan State University. All five met the following minimum criteria: (1) a cumulative grade point average of 3.00 or higher; (2) a major or minor in communication; and (3) junior or senior class standing. All of the coders received academic credit in a communication independent study course for their participation.

The formal training program consisted of a series of five training sessions lasting for two or three hours each. The first training session centered on a detailed discussion of the Cushman and Craig theory, conducted by the principal researcher. Although the nature of each of the proposed role-taling levels was discussed exhaustively at the first and all subsequent sessions, at no time were the developmental claims of the theory mentioned. The next three sessions were devoted to practice coding and discussion of TST statements generated by undergraduates describing a "best friend." The general procedure followed in these sessions was to have the coders categorize a group of statements, and then discuss each statement to resolve any disagreements in categorization. The guiding principle for these discussions was to develop a shared set of arguments for the categorization of various classes of

statements, not merely to impose a rigid set of categories. In general, the arguments were articulated by coders who had, in the opinion of the principal researcher, correctly categorized the statement under discussion. The fifth session was devoted to a discussion of statements generated by the coders which they thought would be problematic if encountered during actual coding.

Following the fifth training session, the coders were given a list of 258 new TST statements again generated by undergraduates as descriptions of a "best friend." The purpose of this coding exercise was to allow selection of three coders from the original group of five on the basis of reliable similarity of coding patterns. It was hoped that the use of this subset of coders would lead to higher levels of intercoder agreement than those reported by Craig (1977). The subset was selected on the basis of simple percentages of agreement among all possible pairs of coders. These percentages are listed in Table 1. Coders 1, 3, and 4 were selected for use in the actual study on the basis of these pretest findings. It should be stressed that the final coders were selected purely on the basis of the amount of intercoder agreement. No attempt was made to determine if the coders were making theoretically "correct" categorizations.

Coding procedures for the final study were as follows. All TST statements were typed onto master lists, with the statements grouped by rater and time point. That is, for example, all statements generated by subject 1 of group A1 at time three would appear on the master list as a group. The master lists gave no indication, however, of the identity of either the rater or the time point for any group of statements. The purpose of grouping the statements was to provide the coders with

Table 1. Percentage of Intercoder Agreement, Pretest Selection.

Coder	1	2	3	4	5
1	----	52.7	74.8	69.4	58.1
2	52.7	----	56.6	57.4	47.3
3	74.8	56.6	----	70.9	60.1
4	69.4	57.4	70.9	----	56.6
5	58.1	47.3	60.1	56.6	----

contextual information to assist them in their categorizations. The coding instructions included a brief description of the data collection situation, an explanation of the statement groupings, a review of the role-taking distinctions, and an admonition against discussing any of the statements during coding. Coders were not informed of the number of focal persons involved or that the statements had been collected at multiple points in time. The twelve master lists were ordered differently for each coder. Coding instructions and the ordered and coded TST statements are reproduced in Appendix "B."

CHAPTER III

RESULTS

The purpose of this chapter is to array the results of the study

described in Chapter II. The discussion will be divided into two brief

sections. The first section will report coding results and describe the

general analytical procedures adopted. The second section will discuss

the results of the study with reference to the expectations developed in

Chapter I. The implications of these findings will be discussed in Chap-

ter IV.

Coding and Analytical Procedures

The forty-two subjects in the study generated a total of 595 TST

statements describing seven focal persons. Two of these statements

were deleted as accidentally redundant (see Appendix "B"), leaving a

total N of 593 statements. The statements were coded into role-taking

levels by the three selected coders. The percentage of intercoder agree-

ment for each pair of coders was as follows: Coder 1 versus Coder 3,

75.0%; Coder 1 versus Coder 4, 66.7%; Coder 3 versus Coder 4, 71.1%.

These figures are almost identical to those generated in the coder selec-

tion pretest (see Table 1), giving some indication of high conceptual

stability among the coders.

Of the total of 593 TST statements, the three coders were in

complete consensus on the categorization of 342, or 57.7%. At least two

of the three coders agreed on the categorization of 574 of the statements

or 96.8%. These figures are slightly higher than those reported by
Craig (1977), but generally comparable.

Turning to the analysis of the data, three problems immediately
arise. First, given the disparity between the figures for consensual
agreement and majority agreement among the coders, the issue arises of
which criterion to select for use in analysis. Unfortunately, pragmatic
arguments can be made in favor of either criterion of agreement and
thus, in the absence of any overriding theoretical concerns, the selec-
tion becomes in a sense arbitrary. In this study, therefore, analyses
will be reported using both criteria and the results compared. For
these analyses, "consensual" agreement will mean that all three coders
agreed on the categorization of a particular statement; "majority"
agreement will mean that at least two of the three coders agreed on the
categorization of a particular statement.

The second problem arises from the fact that the subjects were
instructed to use as many or as few statements as they thought necessary
to describe the focal person. Thus the number of statements describing
any given focal person varied by group and by time point. Using a major-
ity criterion of agreement, the total number of statements generated by
the groups in Subset "A" varied from seventy-eight to eighty-three;
across the groups in Subset "A" the number of statements averaged 31.0
at Time 1, 27.3 at Time 2, and 22.8 at Time 3. The total number of
statements generated by the groups in Subset "B" varied from seventy-
nine to eighty-nine; across the groups in Subset "B" the number of state-
ments averaged 31.0 at Time 1, 28.3 at Time 2, and 25.7 at Time 3. Using
a consensual criterion of agreement, the total number of statements
generated by the groups in Subset "A" varied from forty-nine to fifty-six;

across the groups in Subset "A" the number of statements averaged 20.0 at Time 1, 17.0 at Time 2, and 14.8 at Time 3. The total number of statements generated by the groups in Subset "B" varied from forty-two to forty-four; across the groups in Subset "B" the number of statements averaged 19.7 at Time 1, 10.7 at Time 2, and 12.7 at Time 3. In order to allow comparison across groups, subsets, and coding criteria, all data from the study will be reported in terms of percentages instead of raw scores.

The third problem arises from the fact that data were collected at three points in time to establish the existence of a four stage developmental sequence. With data from four perfectly selected points in time, it would be possible to observe each role-taking stage reach its maximum relative frequency at a different time point, assuming the theory is correct. This would yield a 1-2-3-4 pattern of maximum relative frequencies, with basic characteristics reaching a maximum at Time 1, reflective at Time 2, appropriative at Time 3, and synesic at Time 4. With only three time points, however, a pattern confirming the theorized sequence would necessarily contain ties (e.g., 1-2-2-3, or 1-1-3-3, or even 1-3-3-3). Thus support for the theory will be claimed if each stage reaches its maximum relative frequency at a time point which is less than or equal to the time point that the succeeding stage reaches its maximum relative frequency.

Results

The primary results of the study are reported in Tables 2-5, and are illustrated in Figures 1-5. Although the study was designed as primarily descriptive, the results will be analyzed using the expectations

developed in Chapter I as an organizing focus.

The first and most important expectation of the study was that, in groups A1-A4, each role-taking level would reach its maximum relative frequency in the order proposed by the developmental sequence: basic-reflective-appropriative-synesic (B-R-A-S). This expectation was only partially confirmed by the data. As indicated by Tables 2-4, and as illustrated by Figure 1, the general developmental progression is in the expected order. If we use the majority and consensual data as separate estimates of the same sequence, TST statements indicating basic role-taking processes emerge first in seven out of eight instances, and then decline sharply. In only one instance (A4-majority coding) do basic statements reach a maximum later than the corresponding reflective, appropriative, and synesic statements. Similarly, in seven out of eight instances, TST statements indicating synesic role-taking processes reach a maximum at Time 3. In only one instance (A3-consensual coding) do synesic statements reach a maximum earlier than the corresponding basic, reflective, and appropriative statements. The expected relationship between reflective and appropriative statements, however, failed to materialize. Instead, in five out of eight instances, appropriative statements reached a maximum before reflective statements. In only one instance (A2-consensual coding) did appropriative statements reach a maximum after the reflective statements, as stipulated by the theory. In general, only two of the eight complete sequences illustrated in Table 4 (A2-majority coding and A3-consensual coding) correspond to the theoretically postulated sequence. On the basis of this data, it would appear that the actual developmental sequence is basic-appropriative-reflective-synesic (B-A-R-S).

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Table 2. Percentage Distribution of TST Statements across Role-taking Levels at Three Points in Time, Majority Coder Agreement.

Group	Basic			Reflective			Appropriative			Synesic		
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
A1	05.3	04.0	00.0	05.3	20.0	15.8	68.4	60.0	52.6	21.1	16.0	31.6
A2	23.3	00.0	04.3	03.3	07.7	04.3	53.3	69.2	60.9	20.0	23.1	30.4
A3	19.2	03.3	00.0	07.7	10.0	18.2	61.5	73.3	54.5	11.5	13.3	27.3
A4	12.9	16.1	08.3	06.5	03.2	08.3	67.7	45.2	41.7	12.9	35.5	41.7
$\bar{A}$	15.2	05.9	03.2	05.7	10.2	11.7	62.7	61.9	52.4	16.4	21.8	32.8
B1	03.0	03.6	00.0	09.1	10.7	22.7	57.6	60.7	59.1	30.3	25.0	18.2
B2	07.1	00.0	00.0	07.1	03.1	03.4	53.6	56.3	51.7	32.1	40.6	44.8
B3	05.9	00.0	00.0	02.9	09.5	08.3	85.3	85.7	75.0	05.9	04.8	16.7
$\bar{B}$	05.3	01.2	00.0	06.4	07.8	11.5	65.5	66.6	61.9	22.8	23.5	26.6
$\overline{A+B}$	11.0	03.9	01.8	06.0	09.2	11.6	63.9	63.9	56.5	19.1	22.6	30.1

Table 3. Percentage Distribution of TST Statements across Role-taking Levels at Three Points in Time, Consensual Coder Agreement.

Group	Basic			Reflective			Appropriative			Synesic		
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
A1	04.0	00.0	00.0	04.0	15.4	15.4	64.0	61.6	53.8	28.0	23.1	30.8
A2	30.0	00.0	05.9	05.0	07.1	05.9	45.0	57.1	58.8	20.0	35.7	29.4
A3	23.5	00.0	00.0	00.0	10.5	07.7	58.8	68.4	53.8	17.6	21.0	38.5
A4	22.2	13.6	00.0	00.0	04.5	18.8	61.1	36.3	18.8	16.7	45.4	62.5
$\bar{A}$	19.9	03.4	01.5	02.3	09.4	12.0	57.2	55.9	46.3	20.6	31.3	40.3
B1	00.0	00.0	00.0	04.5	07.7	00.0	63.6	61.5	66.7	31.8	30.8	33.3
B2	05.6	00.0	00.0	05.6	00.0	07.1	50.0	40.0	35.7	38.9	60.0	57.1
B3	05.3	00.0	00.0	00.0	00.0	06.7	84.2	88.9	66.7	10.5	11.1	26.7
$\bar{B}$	03.6	00.0	00.0	03.4	02.6	04.6	65.9	63.5	56.4	27.1	34.0	39.0
$\overline{A+B}$	12.9	01.9	00.8	02.7	06.5	08.8	61.0	59.1	50.6	23.4	32.4	39.8

Table 4. Time Point of Maximum Relative Frequency of TST Statements
Representing Each Role-taking Stage.

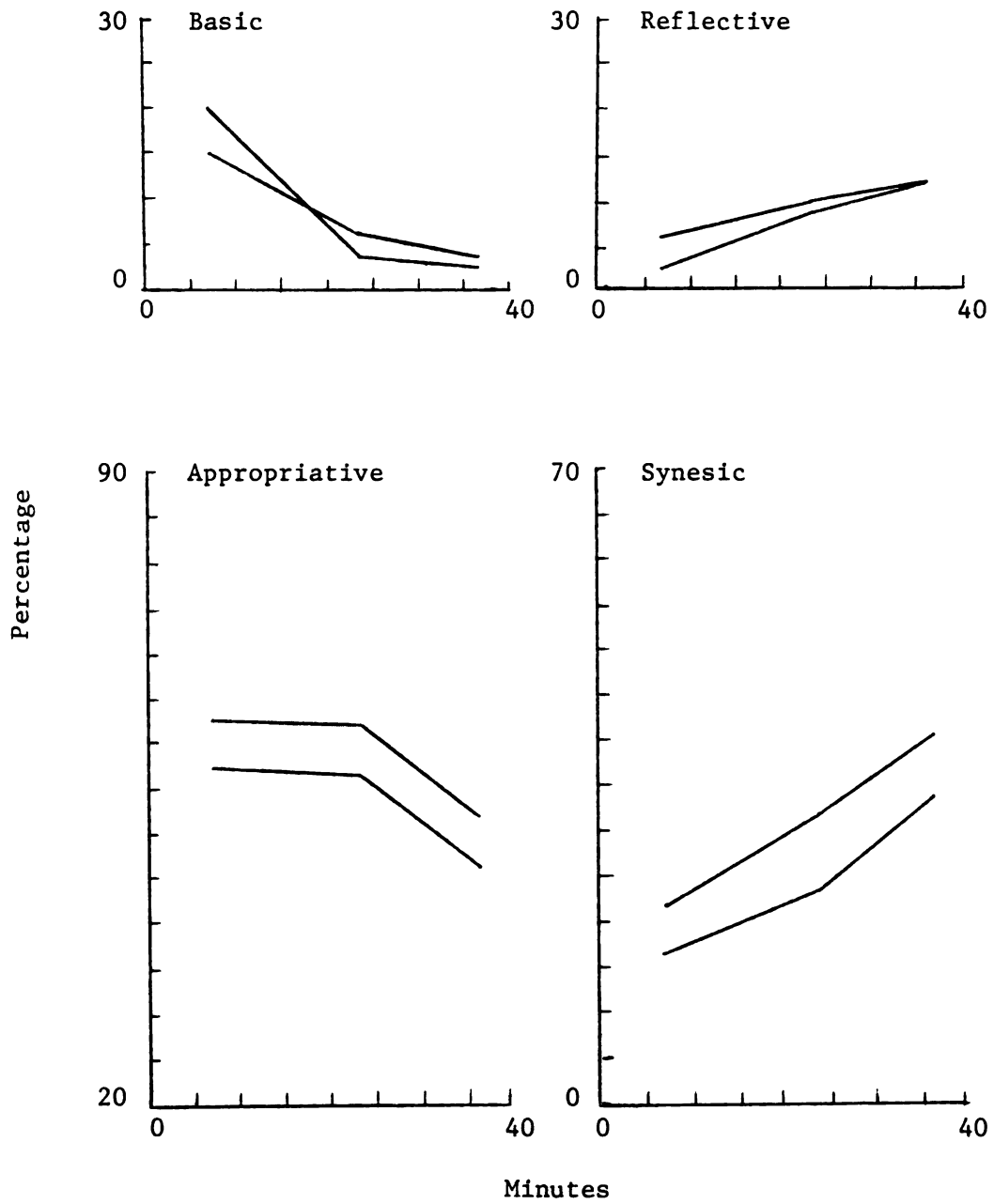| Group	Majority Coding				Consensual Coding			
	Bas.	Ref.	App.	Syn.	Bas.	Ref.	App.	Syn.
A1	1	2	1	3	1	2	1	3
A2	1	2	2	3	1	2	3	2
A3	1	3	2	3	1	2	2	3
A4	2	3	1	3	1	3	1	3
$\overline{A}$	1.25	2.50	1.50	3.00	1.00	2.25	1.75	2.75
B1	2	3	2	1	–	2	3	3
B2	1	1	2	3	1	3	1	2
B3	1	2	2	3	1	3	2	3
$\overline{B}$	1.33	2.00	2.00	2.33	1.00	2.67	2.00	2.67
$\overline{A+B}$	1.29	2.29	1.71	2.71	1.00	2.43	1.86	2.71

Figure 1. Distribution of TST Statements across Role-taking Levels, Average of Groups A1-A4, Majority and Consensual Coder Agreement.
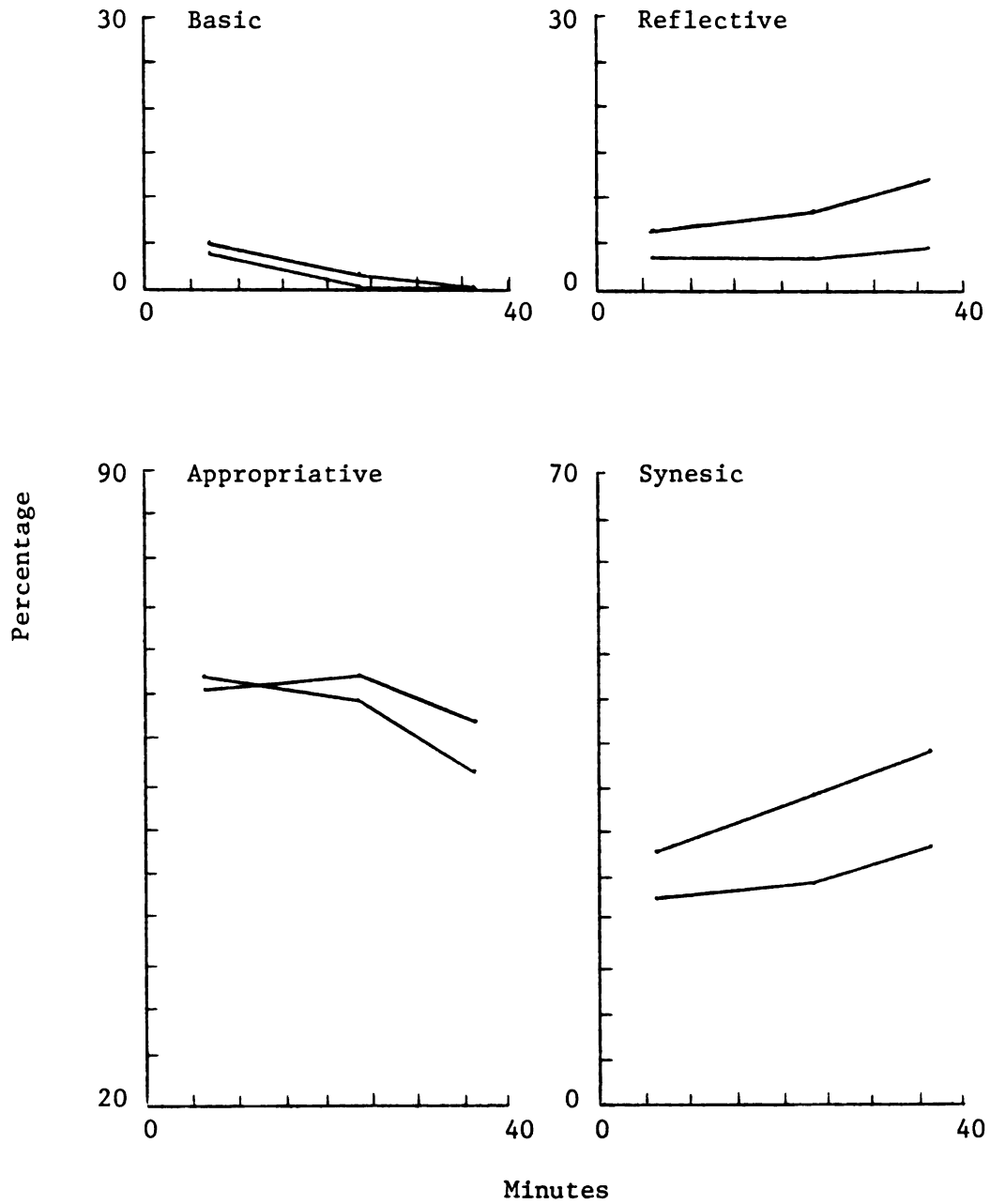
Figure 2. Distribution of TST Statements across Role-taking Levels, Average of Groups B1-B3, Majority and Consensual Coder Agreement.

Table 5. Average Percentage of TST Statements across Role-taking Stages.

Subset	Majority Coding				Consensual Coding			
	Bas.	Ref.	App.	Syn.	Bas.	Ref.	App.	Syn.
A	08.1	09.2	59.0	23.7	08.3	07.9	53.1	30.7
B	02.2	08.6	64.7	24.3	01.2	03.5	61.9	33.4

The second expectation was that groups B1-B3 would display a restricted developmental sequence, changing only from the appropriative to the synesic level of role-taking. In one sense, this expectation was confirmed. As indicated by Tables 2-4, and as illustrated by Figure 2, synesic statements reached their maximums at or after the time point at which appropriative statements reached their maximums in five out of six instances. In only one instance (B1-majority coding) did synesic statements reach their maximum before appropriative statements. As noted below, however, these findings are open to alternative interpretations.

The third expectation was that if any basic and reflective statements emerged in groups B1-B3 they would be smaller in relative frequency than in groups A1-A4, and would display no consistent pattern. Again, this expectation was partially confirmed. As indicated by Table 5, the relative frequency of basic statements in groups B1-B3 was only a small fraction of the relative frequency of such statements in groups A1-A4, regardless of coding procedure. The relative frequency of reflective statements was also lower in groups B1-B3, but less dramatically so. In only one instance (B1-consensual coding) did a stage fail to emerge.

More importantly, as indicated by Tables 2-4, and as illustrated by Figure 2, basic and reflective statements do appear to follow a

consistent pattern in Subset "B." Furthermore, as again indicated by
Tables 2-4, and as illustrated by Figures 3 and 4, this pattern appears
to be largely identical to the pattern displayed by groups A1-A4. That
is, although the basic and reflective stages are somewhat attenuated in
Subset "B," they bear the same relationship to the appropriative and
synesic stages as in Subset "A." This can be seen most clearly if
groups B1-B3 are interpretted as displaying a full developmental sequence
and the order relationships among the stages are compared with those
discovered in the analysis of groups A1-A4. If such a procedure is
adopted, statements indicating basic role-taking processes reach maximums
at Time 1 in four out of five instances and then decline sharply. In
only one instance (B1-majority coding) do basic statements reach a maxi-
mum later than the corresponding reflective, appropriative, and synesic
statements. Statements indicating synesic role-taking processes reach
maximums at Time 3 in four out of six instances. However, in four
instances in two groups (B1-majority coding and B2-consensual coding)
synesic statements reach a maximum before one or more of the correspond-
ing basic, reflective, or appropriative statements. Finally, although
the majority coding data are ambiguous on this point, the consensual
coding data display the same reversal between reflective and appropria-
tive stages as was discovered in the analysis of the Subset "A" data.
Overall, as indicated by Table 4, the Subset "B" data appear to support
a B-A-R-S developmental sequence.

Taken as a whole, the data from all seven groups in the study
provide strong support for the existence of a developmental sequence in
role-taking. This sequence may, however, follow a B-A-R-S order rather
than the hypothesized B-R-A-S order. This issue will be discussed at
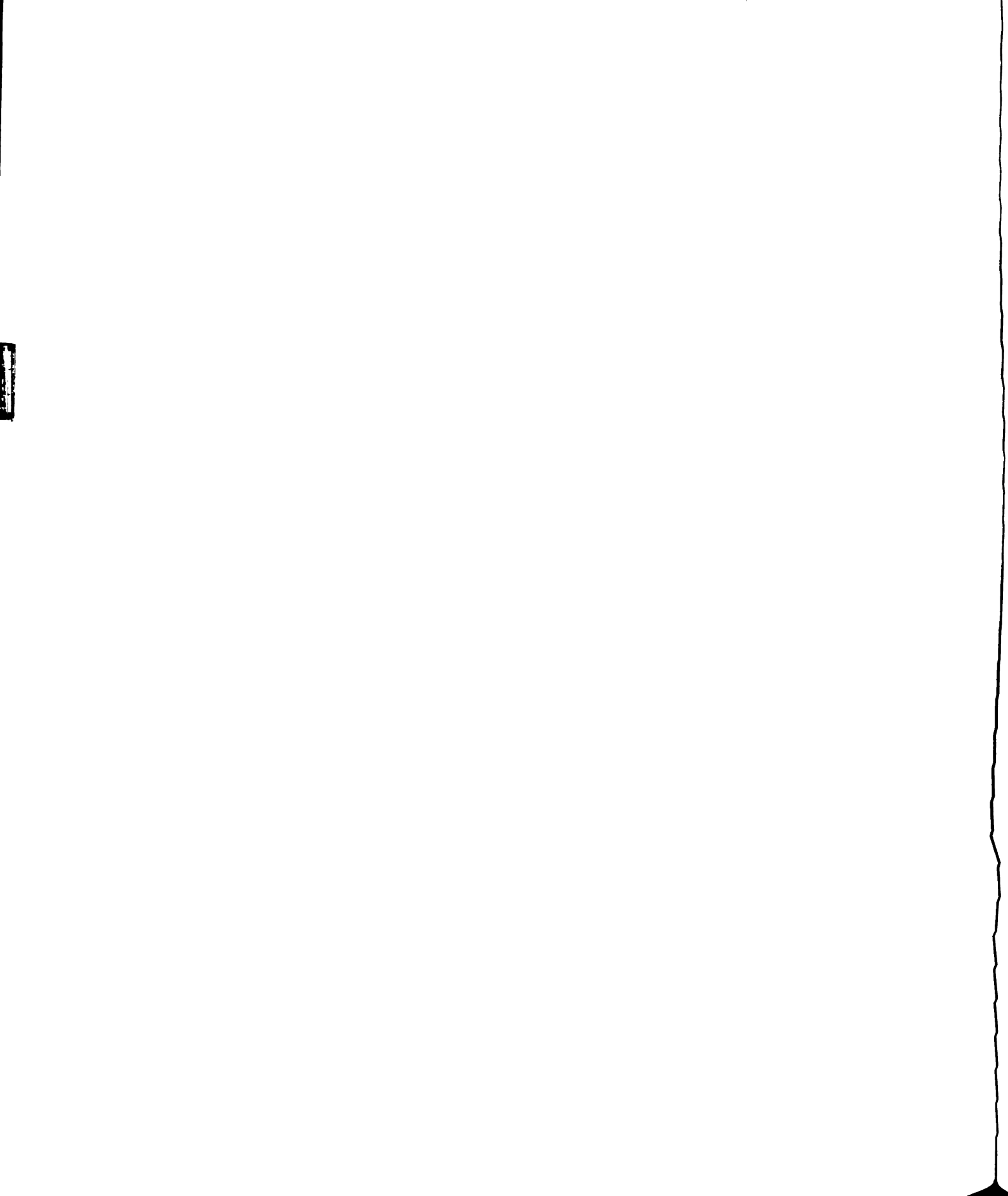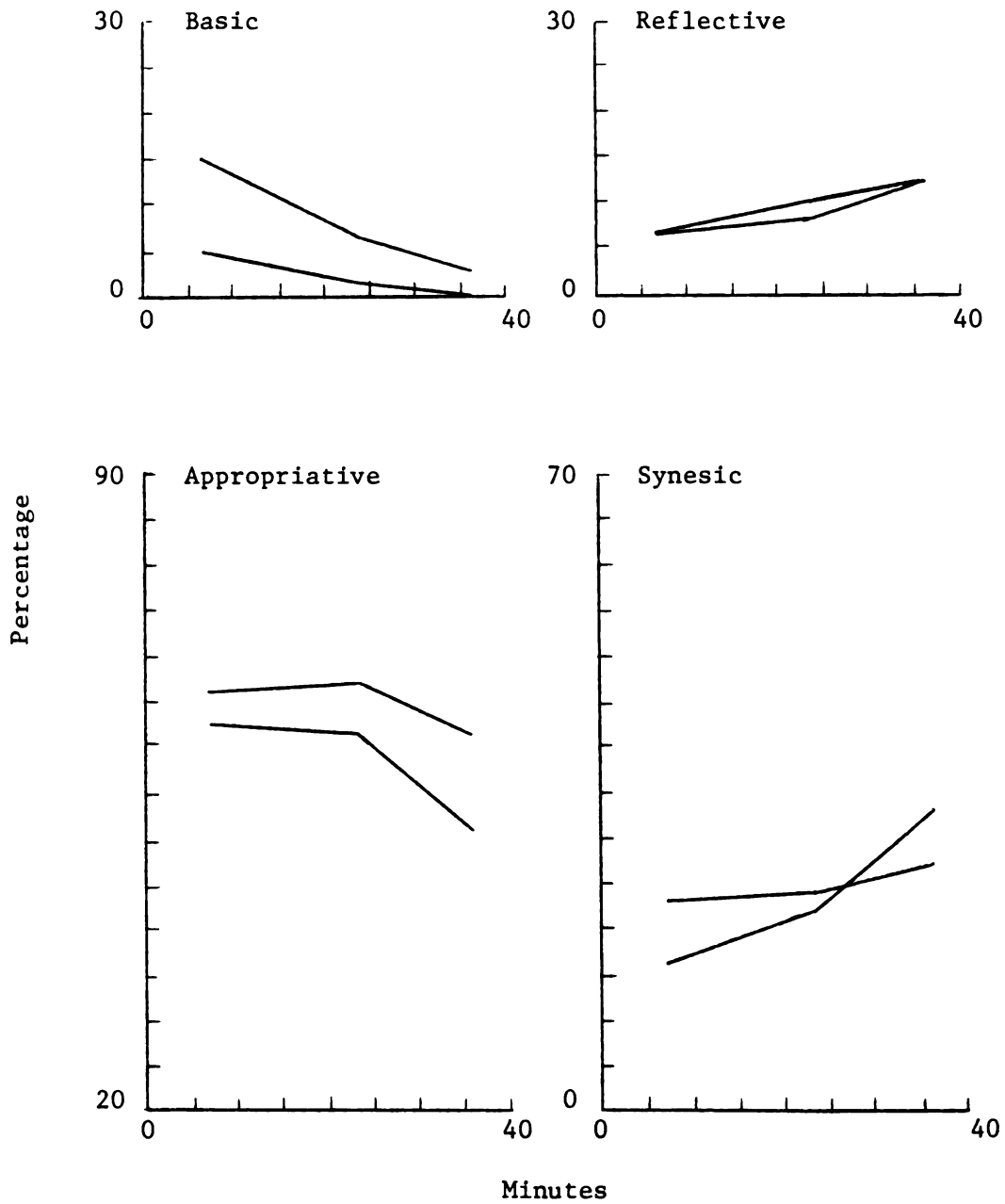
Figure 3. Distribution of TST Statements across Role-taking Levels, Average of Groups A1-A4 and Groups B1-B3, Majority Coder Agreement.
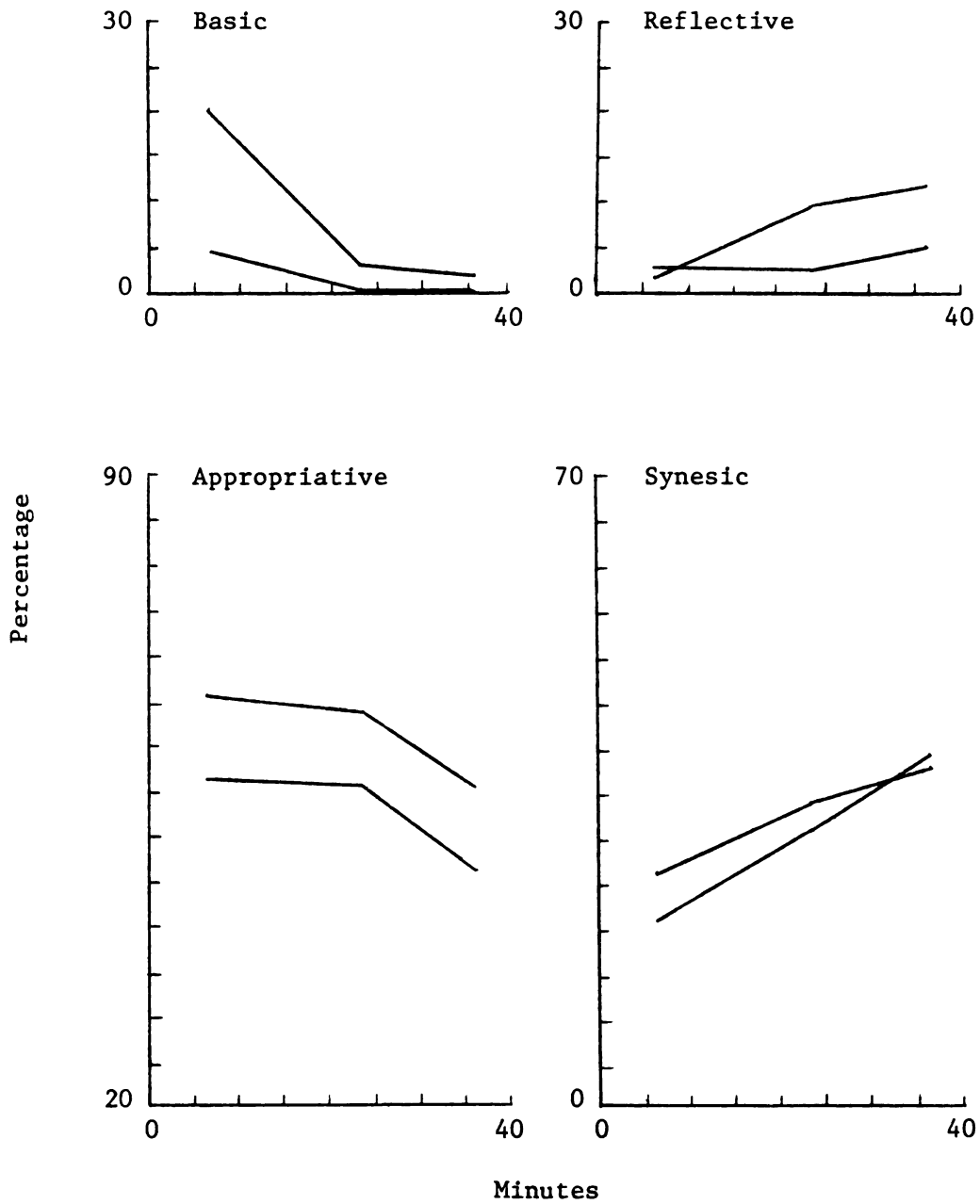
Figure 4. Distribution of TST Statements across Role-taking Levels, Average of Groups A1-A4 and Groups B1-B3, Consensual Coder Agreement.
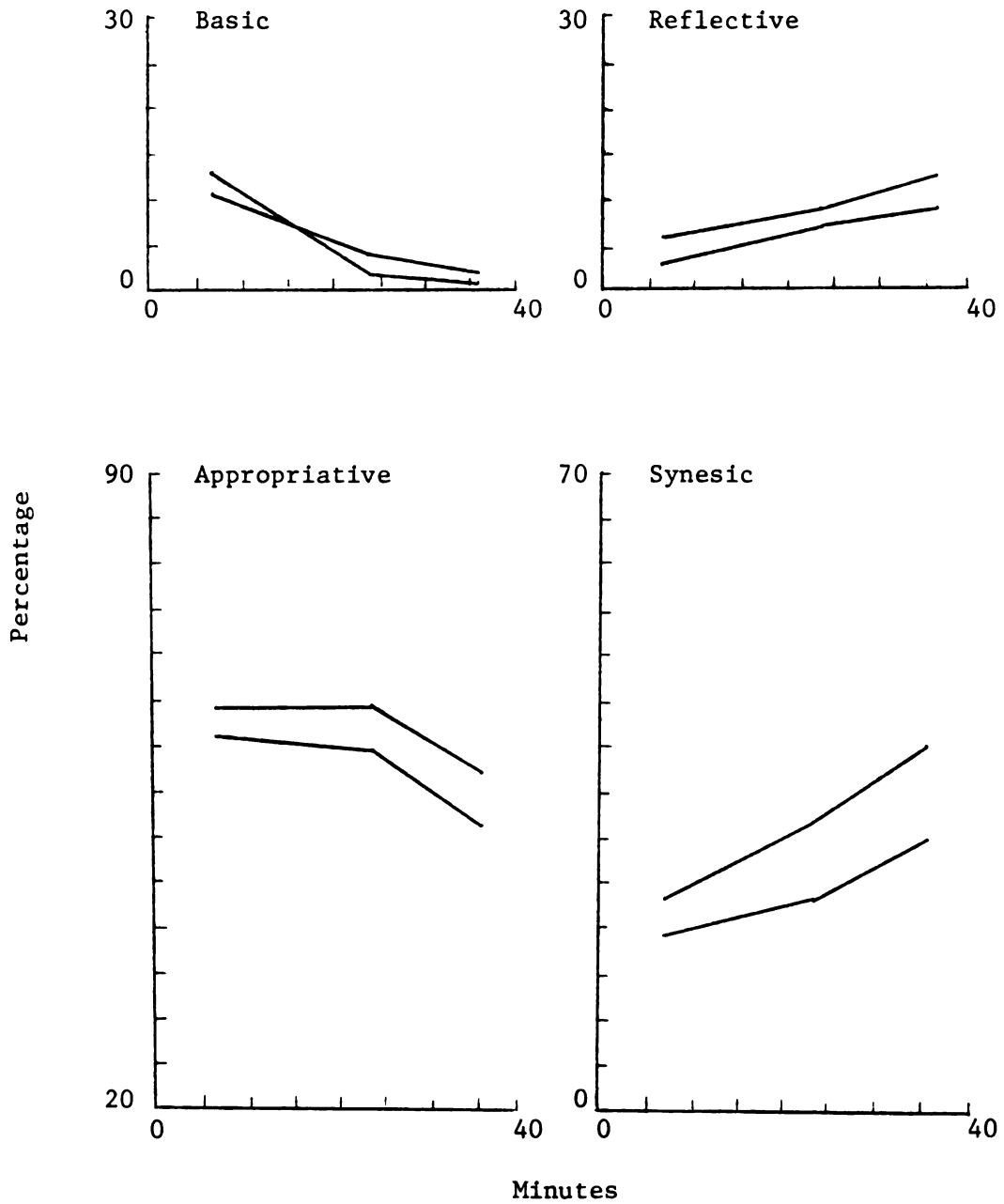
Figure 5. Distribution of TST Statements across Role-taking Levels, Average of All Groups, Majority and Consensual Coder Agreement.

length in the final chapter.

One final discovery requires comment. All analyses in this chapter were reported using both a majority and a consensual coding criterion. As indicated by Tables 2-5, and as illustrated repeatedly by Figures 1, 2, and 5, the two criteria appear to provide extremely similar results, at least in applications involving aggregated data. This suggests that the issue of which criterion is superior may be largely irrelevant.

CHAPTER IV

DISCUSSION

The study reported above represents a first attempt to establish
the nature and existence of developmental progression in the adaptation
of individual self-concepts to new communication systems and coordina-
tion tasks. As such, it is marked with a certain crudeness of concep-
tion and execution. One purpose of this chapter will therefore be to
critique the study in an effort to identify a range of refinements for
use in future research. But although the study may have been somewhat
inelegant, the data presented in Chapter III, especially as illustrated
in Figures 1-5, are strongly indicative of a stable and consistent
developmental pattern. The second purpose of this chapter will be to
examine the nature and implications of that pattern. Because these two
purposes are necessarily interdependent, they will be pursued concur-
rently in the first section of this chapter. The second section of the
chapter will briefly discuss the research implications suggested by the
results of the study.

Critique and Analysis

All of the data reported in Chapter III, across both subsets and
both coding criteria, support the idea of some form of developmental
progression in individual self-concepts conceptualized as normative
social agreements. The endpoints of the progression appear to be those
postulated by Cushman And Craig (1976). That is, the sequence almost

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invariably begins with the appearance of statements indicating basic role-taking processes, and ends with an increase of statements indicating synesic role-taking processes. Beyond this point, however, any interpretation becomes more tenuous. In particular, there are two marked deviations from theoretically grounded expectations. The first of these is the appearance of a full developmental progression in at least two of the three groups which were expected to organize initially as interpersonal communication systems (Subset "B"). The second and more crucial deviation is the discovery that statements indicating reflective and appropriative role-taking processes reach their maximum relative frequencies in reverse order from that postulated by the theory, although both maximums appear to occur on the average between the endpoints of the developmental sequence, as expected. Each of these deviations will be examined in turn.

The appearance of a full developmental progression in Subset "B" appears to be readily explicable. It should be recalled that all of the groups were presented with a productive task and thus, but for the contemporary pressure to transform all communication systems into interpersonal systems, all of the groups would have been expected to organize at least initially as social organizational systems. What appears to have occurred in the groups in Subset "B" is the emergence of the highly attenuated vestiges of that organizational process. This interpretation is supported by the low relative frequency of appearance of both basic and reflective statements, and by the immediate and almost complete disappearance of basic statements after Time 1. That the full sequence developed even in attenuated form provides some evidence for the generality of the proposed sequence.

The apparent reversal in the order of appearance of the reflective and appropriative stages of development is much more complex and obscure. Ignoring the omnipresent and therefore trivial possibility of random fluctuation, there are four general sources of error, any or all of which could have produced the findings reported here. These sources of error include measurement, design, control, and theory. Each will be discussed separately.

Turning to the measurement issue first, it is conceivable that the reversal of the reflective and appropriative stages was a function of ambiguity in the coders' conceptualizations of one or both of these stages. An examination of the percentage of statements in each coding category which met the consensus criterion provides some support for this interpretation. While 63.6% of all statements coded as basic and 77.0% of all statements coded as synesic reflected a consensus among all three coders, only 41.3% of all statements coded as reflective and 54.6% of all statements coded as appropriative reflected a consensus among all three coders. This suggests the need for more careful and thorough coder training for these two stages.

Further, an examination of those TST statements coded as reflective reveals that more than one-half (twenty-six out of forty-six; see Appendix "B") are descriptive of psychological states or moods. These included such descriptors as "nervous," which appeared four times, and "calm," which appeared seven times. Such statements, which appeared much less frequently in the TST descriptions of "best friends" used for coder training and were generally coded as appropriative in that context, are at best only ambiguous indicators of reflective processes. Thus, for example, Craig (1977) instructed his coders to classify any TST

statements which they interpretted as descriptive of transitory psycho-
logical states as uncodable. Whether this extreme procedure is adopted
or not, these findings again suggest the need for more careful defini-
tion and training with regard to the reflective and appropriative levels
of role-taking. As indicated by the proportion of psychological state
descriptors discovered in this study, such refinements may dramatically
alter the incidence and order of maximum frequency of reflective state-
ments.

Turning next to the issue of design, three serious criticisms can
be leveled against the study reported here. First, the number of groups
employed in the study was so small that severe abnormalities in even a
single group in either subset could strongly distort the results. This
may have been the case with group B1, which was completely unsuccessful
in achieving the assigned goal on the first run of the exercise. Quite
possibly as a result of these problems B1 was the only group in which
synesic characteristics declined steadily across all three time points
(as measured by the majority criterion; synesic statements remained
approximately stable across the three time points as measured by the
consensual criterion), while appropriative characteristics remained
virtually unchanged, and basic characteristics weakly emerged only on
the majority criterion. In order to avoid this problem, future studies
should follow the obvious but costly expedient of increasing the total
sample size.

The second design problem is that the number of measurement
points used may have been too few to capture the actual developmental
processes. This is especially pertinent given that the unexpected stage
reversal occurred in the "interior" of the hypothesized developmental

sequence, and it is precisely this region which was least well investi-
gated by this design. Further, it is conceivable that some or all of
the groups had failed to complete the developmental sequence in the
allotted thirty-seven minutes of interaction. Again, this could have
seriously distorted the results. These problems can be easily rectified
in future research by increasing the number of measurement points and
extending the period of interaction.

The third design problem is the use of pragmatic criteria to
establish measurement points. The use of such criteria relies on the
assumption that development progresses at essentially the same temporal
rate for all individuals in all groups. If this highly questionable
assumption is not met, then measurement at any point in _time_ provides
us with an ambiguous cross-section of individuals at different points
in cybernetic development. This is a variant of the consideration that
led to the adoption of the population distribution model of development
in the first place. Further, given the shapes of the relative frequency
curves for the basic and synesic stages which were discovered in this
study (as illustrated especially by Figures 3 and 4), failure to meet
this assumption would be least problematic for establishing the first
and last stages of the developmental sequence, but again highly problem-
atic for establishing the order of the interior stages. One method of
minimizing this problem in future research would be to measure devel-
opmental time in terms of "interacts," with an interact defined as a
reciprocal communication exchange between the focal person and any group
member. Groups could then be more nearly matched for purposes of com-
parison and analysis.

Issues of control are of course inherent in the selection of

a research design, but are separated here for clarity and emphasis. There appear to be two problems of control in the study. First, focal persons were permitted to select the role they wished to occupy in the exercises, and were allowed to change roles during the course of inter- action. To the extent that different roles offer differential opportu- nities for interaction and development, this would tend to exacerbate the rate of development problem noted immediately above. This can be rectified by placing all focal persons in the same role in future stud- ies of self-concept development in cultural or social organizational systems. Second, each run of the exercise ended with a competition among all of the groups. The two groups that won (A2 and A4) thus experienced markedly different experimental conditions than the five groups that lost (especially B1). The implications of these variations for self-concept development are ambiguous, but their existence makes comparison across groups problematic. The problem, actual or illusory, can be avoided in future research by using noncompetitive coordination tasks.

Given the above list of actual and potential problems with the study, it is impossible to determine with any certainty whether the reflective and appropriative stages of development are really reversed. Still, it may be the case that the reported results provide an accurate representation of a rather robust developmental pattern, and thus the theory would have to be revised to match the research results. Bearing in mind the definitional problems surrounding the reflective stage, one potentially fruitful revision of the theory would take the following form.

It should be recalled that Cushman and Craig (1976, 49) describe

reflective role-taking as "the evaluation of various role requirements in regard to an individual's likes and dislikes" and appropriative role-taking as "an individual's evaluation of some aspect of a role positively and the reduction of that self-object relationship to a permanent part of his personality or self-conception." Thus reflective and appropriative role-taking overlap precisely on the issue of evaluation. The result is to make it difficult or impossible to separate positive reflective processes from appropriative processes, and thus to restrict the reflective level to negative evaluations of role requirements. This is especially curious in light of the fact that Cushman And Craig do not isolate negative synesic statements, but accept them as appropriative. To use examples from Cushman and Craig (1976, 53), "thoughtless," "not helpful," and "obstructive" are all identified as appropriative statements. One solution is to argue that while individuals may progress to or through (negative) reflective stages, these are primarily of clinical interest and do not represent a general and stable level of role-taking. Thus the appropriative and reflective stages could be combined into a single stage, forming a three stage developmental model. It should be noted that such a model would accord very closely with the data reported in this study.

Research Implications

While the findings of this study do not provide unequivocal support for the Cushman and Craig theory, they appear to be sufficiently suggestive to warrant continued research on the theory. This research should proceed along four general lines. First and most important, additional studies are required to resolve the issue of the precise

order of development of the interior stages of the hypothesized sequence.
Such research should incorporate the refinements outlined in the preced-
ing section. If warranted and possible, the theory should be revised
along the lines suggested above. Regardless, a central concern of this
research must be to firmly delineate the reflective stage of develop-
ment. Second, research is necessary to investigate the nature of self-
concept development in communication systems marked by strong, enforced,
and persistent role requirements. This research becomes critical if the
developmental model is revised along the lines suggested above. Third,
research is necessary to link developmental stages, and the self-concept
rules upon which they are based, to stable communication contents,
styles, and relationships, as indicated by the original Cushman and
Craig theory. Alternatively, it may be fruitful to attempt to delineate
developmental stages through the analysis of communication interactions.
Fourth, although the necessary expense and effort would be prodigious,
research is necessary to test the genetic developmental implications of
the theory.

One significant methodological implication of the study should be
noted in conclusion. Rather obviously, the standard Twenty Statements
Test elicits a full set of twenty descriptive items. In this study,
however, subjects were permitted to use any number of statements they
thought were sufficient to reflect the salient aspects of self and focal
other. On the average, these subjects chose to use only about four
statements to describe the focal person and six statements to describe
themselves. Further, as indicated by the data reported in Chapter III,
the average number of statements used declined over time. This means
that the number of statements declined after increasing interaction with

and knowledge of the focal person. These results might simply be an artifact of the particular data collection procedures employed in this study, although the precise reasons why this artifact might have been created are opaque. If the results are not artifactual, they suggest that the use of a standard TST may lead to the listing of essentially spurious characteristics, especially if the person being described is not well known to the rater. Further, the decline in the number of statements used over time suggests that data collected at earlier points in time may be markedly less reliable than that collected at later points in time. Both of these possibilities imply the need for further refinement of the Twenty Statements Test.

APPENDICES

APPENDIX A

EXPERIMENTAL MATERIALS

EXPERIMENTAL MATERIALS

Instructions for Lego Exercise (Form A)

TASK: The task facing you group has two parts. First, you must build an exact replica of the model provided for each exercise. Second, you must practice building the replica until it can be built from scratch in a minimum amount of time. The speed of your group will be determined in a competition against all other groups. Your goal is to win that competition. Experience has shown that with a model of this complexity the winning time in the competition will be about 4 seconds. Therefore your specific goal should be to learn how to build the replica in 4 seconds or less.

RULES:

1. The replica you build in competition must be identical in every respect with the model.

2. Any person in your group who sees the model is <u>prohibited</u> from touching any of the group's building materials.

3. Every person in the group must contribute to building the replica in some way.

ROLES: There are three jobs that have to be filled in the exercise. Some jobs require more than one person to fill them. These roles are:

1. PLANNER--observes the model and tells the group how to build the replica.

2. WORKER--actually constructs the model and performs in competition. More than one worker will be necessary.

3. COORDINATOR--leads the group in constructing the replica; integrates planning and construction.

Instructions for Lego Exercise (Form B)

TASK: The task facing your group has two parts. First, you must build
an exact replica of the model provided for each exercise. Second, you
must practice building the replica until it can be built from scratch in
a minimum amount of time. The speed of your group will be determined in
a competition against all other groups. Your goal is to win that compe-
tition. Experience has shown that with a model of this complexity the
winning time in the competition will be about 4 seconds. Therefore your
specific goal should be to learn how to build the replica in 4 seconds
or less.

RULES:

1. The replica you build in competition must be identical in every
    respect with the model.

2. Any person in your group who sees the model is <u>prohibited</u> from
    touching any of the group's building materials.

3. Every person in the group must contribute to building the replica
    in some way.

Directions for Twenty Statements Test (Oral)

Each of you should have received a questionnaire that looks like this (display questionnaire).

Please make a note of the number that appears on the sheet. That will be your identification number throughout this exercise.

Your duty is to make a list of words or short phrases that best describe you in the present situation, that is, participating in a competitive classroom exercise.

After completing the list on yourself, please describe the focal person in your group in the same manner.

In both cases, list only as many characteristics as you think are important and necessary for a full and accurate description. You do not have to list 20 characteristics, but you may if you like. We would like you to list at least 5 characteristics, however.

Please do not show your list to the focal person at any time.

All data collected here will be kept completely anonymous. If you do not want to participate in the exercise, simply leave your form blank. You are under absolutely no obligation to participate.

You will be asked to describe the focal person and yourself in this manner several more times during the exercise.

Preliminary Questionnaire

IDENTIFICATION NUMBER: _____

AGE: _____   NUMBER OF YEARS OF COLLEGE: _____

SEX: _____   APPROXIMATE GRADE POINT: _____

YOUR SELF-CONCEPT:

1.   11.

2.   12.

3.   13.

4.   14.

5.   15.

6.   16.

7.   17.

8.   18.

9.   19.

10.   20.

FOCAL PERSON'S SELF-CONCEPT:

1.   11.

2.   12.

3.   13.

4.   14.

5.   15.

6.   16.

7.   17.

8.   18.

9.   19.

10.   20.

Follow-up Questionnaire

IDENTIFICATION NUMBER: _____

DESCRIPTION OF: SELF   FOCAL PERSON   (CIRCLE ONE)

1.   11.

2.   12.

3.   13.

4.   14.

5.   15.

6.   16.

7.   17.

8.   18.

9.   19.

10.   20.

APPENDIX B

CODING MATERIALS

APPENDIX B

CODING MATERIALS

Coding Instructions

1. Attached is a list of statements derived from a series of Twenty
Statements Tests. Your job is to code them along the distinctions we
have discussed. Mark each statement B, R, A, or S, as appropriate.
The four role-taking levels are formally defined as follows:

> Basic: Statement describes some social, cultural or
> organizational position or role occupied by the
> person. E.g., "mother."
>
> Reflective: Statement describes the person's reaction to or
> evaluation of a role he occupies. E.g., "frus-
> trated mother."
>
> Appropriative: Statement describes some characteristic that the
> person has adopted as a permanent part of his
> self-concept. E.g., "aggressive."
>
> Synesic: Statement describes the person's adaptation to
> the unique aspects of other people's self-
> concepts. E.g., "understanding."

2. The TST statements you will code were generated by graduate students
participating in a competitive communication exercise in an interper-
sonal communication class. Some of the statements are descriptions of
Self; others are descriptions of a Focal Person working in the same group
as Self. All statements describe Self or Focal Person in "a competitive
classroom exercise."

3. You will notice that the statements are grouped together in blocks.
Each block consists of statements generated by a single person. You may
use other statements in the block to give you contextual information for
coding any statement. The various blocks are not arranged in any pattern
so please don't search for one.

4. Code the statements as quickly as possible. Do not agonize over any
statement. Do not go back to a statement once you have coded it. Try
to code all of the statements. If you simply cannot code a statement,
leave it blank. Please do not discuss these statements with any other
coder before you have finished coding them.

5. Thank you and good luck.

Coded TST Statements

A1-F-1
AAA	vocal
AAA	resistant
BBB	leader
RAA	interested
AAA	questioning
AAA	observant
ARA	slow
AAA	energetic
SSS	sympathetic
SSS	helpful to others
RAA	dominant
AAA	innovative

A1-F-2
ARA	slow
SSS	helpful
AAS	willing
AAA	vocal
RAR	nervous
SAA	responsible
RAA	not involved
RAA	resister
RRR	rattled

A1-F-3
RAA	slower
AAA	less helpful
RAS	willing
SSS	cooperative
AAA	vocal
SSA	more interested
AAS	adaptable

A1-2-1
SSS	helpful
ARA	quick
AAA	competitive
AAA	unsocial
AAA	task-oriented
SSS	friendly

A1-2-2
AAA	competitive
AAA	task-oriented
SSS	helpful

A1-2-3
AAA	quiet
SSS	friendly
SSS	helpful

A1-3-1
AAA	expressive
ARR	mature
AAA	self-assertive

A1-3-2
| AAA | careful |
| AAS | coordinative |

A1-3-3 NO DATA

A1-4-1
AAA	diligent
AAA	task-oriented
RRR	calm and collected
SSS	considerate
SAS	gentle
SSS	compassionate

A1-4-2
RRR	calm
AAA	courteous
SAS	supportive
AAA	reserved
SSS	considerate

A1-4-3
SAS	supportive
SSS	considerate
AAA	bright

A1-5-1
RAA	businesslike
RAA	somewhat introverted
AAR	present wise knowledge (because of age)
BAA	challenger
ASA	polite but not gushy
SSS	friendly

A1-5-2
RAR	introverted
RAR	didn't say much
AAA	interested in competing
AAA	task-oriented

A1-5-3
RRR	calm
AAA	not too helpful
RAR	confusing
AAA	non-assertive

A1-6-1
AAR experienced in education
AAA inquisitive
AAA intelligent
BBA information gatherer
AAA assertive

A1-6-2
ABA focal center
ABB observer
BAR experienced
BAS guidance

A1-6-3
RRR calm
AAA directive
ARA suggestive

A2-F-1
BBB Christian
SSS cooperative
RSS contributing
AAR leading
AAA evaluating
AAA thinking

A2-F-2
ARA passive
AAA observant
SSS supportive
AAA evaluative
AAR not actively involved

A2-F-3
ASA more active
AAA evaluative
AAA observing
RSA enthusiastic
SSS helping

A2-2-1
AAA dominant
RBB decision-maker
AAA smart
SSS helpful
AAA quick
ARA alert
BBB leader
BBB leader (DELETED)
BBB coordinator

A2-2-2
AAA quiet

RRR dominant leader
AAS serious
AAA smart
SSS considerate

A2-2-3
SSS helpful
AAA smart
SAS interested
RRR background leader
AAA quiet

A2-3-1
AAA instructive
AAA expects cooperation
AAA anxious to reach goal
AAS unconcerned about competition

A2-3-2
AAA quiet
SSS cooperative
RAR contributed little except
       upon request
AAA anxious to reach group goal

A2-3-3
AAA instructive
SSS cooperative
SSS contributed more

A2-4-1
AAS involved

A2-4-2
AAS interested
AAS informative
ASA generated task for self
       in group

A2-4-3
ASS offered useful suggestions
AAA involved in task
AAA observant

A2-5-1
BBB planner
BBB leader
RRR good organizer
AAR insightful
BBB coordinator
AAS able to adjust
SSS friendly--able to encourage

A2-5-2

SSA	encourages
AAA	competitive
RAA	somewhat reserved
AAS	good comments
SAA	seeks out underlying meaning
RAS	interested

A2-5-3

AAA	made sure to check
AAA	accurate
BBB	coordinator
AAA	good ideas
ABA	observer

A2-6-1

AAA	polite
AAR	self-assured
SSS	cooperative
SSS	good natured

A2-6-2

AAA	quiet
SSS	cooperative
SSS	helpful
RAA	well organized

A2-6-3

SSS	integrated with group
SSS	helpful
AAS	not forceful

A3-1-1

SSS	friendly
SSS	cooperative
SAR	open-minded
AAA	professional
AAA	mature
ARR	secure
AAA	intelligent

A3-1-2

AAS	motherly
AAA	honest
AAR	adept
SSS	cooperative
AA-	dextrous
AAA	intelligent
SSS	friendly

A3-1-3

AAA	rule-conscious

AAA	intelligent
AAA	capable
AAA	mature
SSS	cooperative
RRR	calm
SSS	friendly
ASA	listens well

A3-1-2

RAS	interested
AAR	cheerful
BBB	volunteer
RBB	go-getter
RAR	slightly nervous

A3-2-2

AAA	dominating
AAA	task-oriented
AAA	takes over
ABB	loner
RAA	forceful

A3-2-3

SSS	helpful
RRA	lesser role
AAA	dominating

A3-F-1

BBB	leader
BBB	advisor
RAA	sometimes dictatorial
AAA	persuasive
AAA	decisive
AAA	diplomatic

A3-F-2

AAA	diplomatic
AAA	directive
SSS	cooperative
RAA	impatient

A3-F-3

RRA	less dictatorial
ASS	willing to cooperate

A3-4-1

AAR	fast and sharp
BBB	married
AAR	talkative
AAA	blend
AAA	hyper-minded

A3-4-2
AAA   slow
AAA   blend
AAA   formal
RRR   not happy
AAR   give up fast
RAR   not motivated
AAA   honest

A3-4-3
SSS   cooperative
AAR   fast
AAA   formal
RAR   motivated

A3-6-1
BSR   looks wise
AAA   seems to have some
      self respect

A3-6-2
AAR   she was strict about
      rules
AAA   a little slow

A3-6-3
AAA   she observed more
RAA   less participation
AAR   again a little strict

A3-7-1
SSS   friendly
SAA   nice
AAA   smart
AAR   active

A3-7-2
SAA   nice
RAA   organized
AAA   smart
SSS   friendly
RRR   calm

A3-7-3
AAR   cheerful
SSS   friendly

A4-1-1
BBB   leader
ABB   organizer
ABB   planner
AAA   goal-oriented

A4-1-2
BBB   worker
SSS   helpful
AAA   goal-oriented
ABB   achiever

A4-1-3
SSS   helpful
ARA   goal-achiever
RRR   fast worker

A4-F-1
SSS   cooperative
AAA   aggressive (didn't sit back)
SSS   friendly
SAS   negotiative
SSS   helpful

A4-F-2
SSS   helpful
SSS   friendly
SSS   cooperative
AAA   aggressive
ASA   courteous
RAR   anxious (jumped the gun)

A4-F-3
RAA   anxious
SSS   friendly
ASA   courteous
SSS   helpful
SSS   cooperative

A4-3-1
AAR   willing
BBB   young
BRR   good looking
AAB   risk-taker

A4-3-2
SSS   friendly
AAR   humorous
SSS   supportive
SSS   helpful
SSA   kind
AAA   skilful

A4-3-3
SSS   friendly
SSS   supportive
SSA   kind
AA-   facile
SSS   cooperative

A4-4-1
<u>RAA</u> organized
<u>AAA</u> to the point
<u>ABR</u> neat
<u>RAA</u> high degree of
involvement
<u>AAA</u> assertive

A4-4-2
<u>BBB</u> worker
<u>AAA</u> rapid completion
of task
<u>SSS</u> easy to work with

A4-4-3
<u>AAA</u> assertive
<u>SSS</u> cooperative
<u>RRR</u> fast worker

A4-5-1
<u>AAA</u> willing to take risk
<u>AAA</u> capable of leading
<u>AAA</u> curious
<u>RAR</u> adventurous
<u>SAA</u> able to accept feedback
<u>AAR</u> open
<u>ASA</u> needing followers
<u>AAA</u> self-centered
<u>AAA</u> able to make quick
decisions

A4-5-2
<u>AAA</u> quiet, reserved
<u>SSS</u> cooperative
<u>AAS</u> not dominant
<u>SSS</u> friendly
<u>AAA</u> curious
<u>AAA</u> competitive
<u>AAR</u> self-disclosing

A4-5-3
<u>AAA</u> quiet
<u>AAR</u> committed
<u>SAA</u> responsible
<u>AAA</u> reserved

A4-6-1
<u>AAA</u> leadership
<u>AAR</u> positive
<u>AAR</u> optimistic
<u>ABA</u> authoritive
<u>AAA</u> hard-working

A4-6-2
<u>BBB</u> worker
<u>AAA</u> quiet
<u>AAR</u> efficient
<u>BBB</u> follower
<u>SAA</u> responsible

A4-6-3
<u>SSS</u> cooperative
<u>BBB</u> follower
<u>AAR</u> efficient
<u>BBB</u> follower (DELETED)

B1-1-1
<u>SSS</u> genial
<u>AAR</u> controlled
<u>AAR</u> slightly aloof
<u>AAA</u> organized
<u>SAA</u> pleasant
<u>SSS</u> socially directed versus
task directed
<u>AAA</u> shy
<u>RAR</u> slightly nervous

B1-1-2
<u>AAA</u> quiet
<u>RAR</u> disorganized
<u>SAR</u> pleasant
<u>AAR</u> controlled
<u>ABB</u> a follower, not a leader
<u>RRR</u> confused
<u>SAR</u> selective in whom talked to
(few communication links)
<u>ARA</u> passive

B1-1-3
<u>AAA</u> quiet
<u>ARA</u> passive
<u>RAA</u> uninvolved
<u>AAA</u> small contributions in talk
<u>AAS</u> shows interest

B1-2-1
<u>SAA</u> pleasant
<u>AAR</u> easy going
<u>AAA</u> vivacious--energetic
<u>AAA</u> diplomatic

B1-2-2
<u>BBS</u> information giver
<u>SSA</u> pleasant
<u>SSS</u> cooperative

B1-2-3
ASS   gave information
ASS   gave suggestions on how
      to get information
SSR   pleasant

B1-3-1
SSS   friendly
ARR   mild-mannered
RRR   reserved, self-conscious
RAA   try hard to do good

B1-3-2
ARR   uncertain
SAA   nice
ARR   thorough
AAA   eager

B1-3-3 NO DATA

B1-4-1
SSS   friendly
SSS   helpful
AAA   intelligent
AAR   wise
AAA   domineering
AAA   leading
SAA   thoughtful
AAA   witful

B1-4-2
AAA   slow
SSS   helpful
AAR   wise
AAA   bright
SAA   good

B1-4-3
SSS   helpful
AAA   smart
SSS   friendly
SAA   good
AAA   informative

B1-F-1
SSR   take responsibility for
      getting things done
AAA   organized
SSS   helpful
AAA   task-oriented
SSR   concerned
ABR   often act as leader

ABR   work harder if interested in
      job being done

B1-F-2
AAA   concerned with getting job
      done
SSA   enjoy working as a group
      to achieve goal
AAA   aggressive
RRR   discouraged when our plans
      didn't work out
AAR   felt responsible
SSS   works well with others

B1-F-3
AAA   goal-oriented
AAR   feel responsible
SSA   concerned about group effort
AAA   like to delegate duties
RRA   good organizer to get job
      done
RRA   able leader to get job done

B1-6-1
AAA   meek
AAA   intelligent
SSS   cooperative
AAS   experience in working with
      groups

B1-6-2
AAA   hard working
SSS   cooperative
AAA   unorganized
AAR   does not think abstractly

B1-6-3
RAR   progressively intuitive
SSS   more liking

B2-1-1
SSS   helpful
AAA   quiet
ABB   follower--listens to
      directions
SSA   considerate
AAA   cooperative

B2-1-2
SSS   helpful
SSA   considerate
AAA   fairly quiet

B2-1-2 (continued)

SSS	cooperative
SAA	pleasant
AAA	hard working
AAA	task-oriented
ARA	patient

B2-1-3

RAA	less quiet than before
SSS	helpful
SSA	considerate
SAA	nice
SSS	cooperative
SAA	pleasant

B2-F-1

AAA	quiet
SSS	helpful
AAA	observant
AAA	interested
AAA	reflective

B2-F-2

SSS	cooperative
SAS	thoughtful
AAR	questioning
ASA	listening
SSA	willing to follow someone who knew what she was doing

B2-F-3

SAS	enjoy others' company
AAA	will do necessary task
SAS	let others who have skill perform
AAA	interested
SAR	had fun
SAS	cooperated

B2-3-1

SSS	cooperative
SAA	pleasant
AAA	mildly quiet
RAR	somewhat nervous
AAR	humorous

B2-3-2

SSS	cooperative
ARA	patient
AAS	follows directions
RRA	reserved

B2-3-3

SSS	cooperative
ARA	patient
AAA	watchful
RRR	calm
AAR	humorous

B2-5-1

BBB	leader
ASS	contributes a lot
AAA	agressive
SSS	cooperative

B2-5-2

ASS	participative
SSS	helpful
AAA	quiet
SSS	cooperative

B2-5-3

ARA	passive
SSS	cooperative
SSS	helpful
AAA	quiet
BSS	contributed

B2-6-1

RRR	apparently relaxed
RAA	relatively unconcerned with task
AAA	intending to lead--with center of attention status
AAA	knowledgeable

B2-6-2

AAA	quiet
SSS	helpful
SSS	cooperative
AAR	unassuming
BAA	help with planning task
SSS	friendly

B2-6-3

SSS	helpful
SSS	friendly
SSS	cooperative
AAR	consistent

B2-7-1

SSS	friendly
SSS	cooperative
ABA	not a leader

B2-7-1 (continued)

RAS	concerned
AAS	makes careful decisions

B2-7-2

RAA	organized
AAA	quiet
AAR	efficient
ARR	competent

B2-7-3

AAA	quiet
AAR	efficient
AAS	takes what's given
AAR	inventive

B3-1-1

BBB	leader
RAA	organized
AAA	outspoken
AAA	put work on someone else
AAA	fitting the status quo
AAR	responsive
ABB	listener

B3-1-2

AAA	slow
AAR	weak with workers
RAA	unorganized
ASR	depended on other people
AAA	quiet

B3-1-3

AAA	lazy
AAA	slow
AAA	quiet
RAA	unorganized
AAA	unhelpful

B3-2-1

AAA	intelligent
AAA	logical
AAA	confident
AAA	directive
RAA	capable
RAA	organized
AAA	learn quickly

B3-2-2

RAA	organized
AAA	methodological
RAR	unsure
AAA	slow

B3-2-3

AAA	intelligent
RAA	motivated
RAA	capable
SSS	cooperative
RAA	organized
AAA	confident

B3-3-1

AAA	outspoken
SSS	likes people
AAA	self-confident
AAA	quiet mannerism

B3-3-2

AAR	confident
AAR	smooth
AAA	sure of self
AAA	quiet

B3-3-3

AAA	confident
AAA	excited
AAR	helpful

B3-5-1

AAA	shy
AAA	intelligent
AAR	humble
AAR	insecure

B3-5-2

RAA	interested in experiment
AAA	gave less output than expected
AAA	less smart

B3-5-3

RAA	interested in project
RAR	enthusiastic
AAA	fast

B3-6-1

AAR	strong
AAA	domineering
ARA	open
AAR	fair
AAR	decisive
AAR	honest
AAR	analytic

B3-6-2

AAR	strong

B3-6-2 (continued)
RAA	planned
RAS	coordinated
RAR	in control

B3-6-3
SAR	good
RAS	coordinated
SSS	supportive

B3-F-1
SSS	part of the group
AAS	source to generate discussion
AAA	flexible
AAA	task-oriented
RBA	possible leadership role
RRR	happy more than work effectively

B3-F-2
RAA	leadership capacity
SSS	helpful
AAA	task-oriented

B3-F-3
AAA	task-oriented
RAA	organized
SSS	helpful
SAA	pleasant
BAA	contributed
AAA	shared work load

BIBLIOGRAPHY

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Achinstein, P. Law and Explanation. Oxford: Clarendon Press, 1971.

Anscombe, G. Intention. Oxford: Basil Blackwell, 1957.

Berlo, D. The Process of Communication. New York: Holt, Rinehart and Winston, 1960.

Craig, R. Levels of Role-taking in Conceptions of Self and Others: Evidence for a Generative Mechanism. Unpublished manuscript, Department of Speech Communication, Pennsylvania State University, 1977.

Cushman, D. Alternative Theoretical Bases for the Study of Human Communication. Paper presented to the Speech Communication Association, Houston, Texas, 1975.

Cushman, D. The Rules Perspective as a Theoretical Basis for the Study of Human Communication. Communication Quarterly, 1977, 25, 19-30.

Cushman, D. and Craig, R. Communication Systems: Interpersonal Implications. In G. Miller (Ed.) Explorations in Interpersonal Communication. Beverly Hills: Sage Publications, 1976.

Cushman, D. and Florence, T. The Development of Interpersonal Communication Theory. Today's Speech, 1974, 22, 11-15.

Cushman, D. and Pearce, W. Generality and Necessity in Three Types of Theory about Human Communication, with Special Attention to Rules Theory. Human Communication Research, 1977, 3, 344-352.

Cushman, D. and Whiting, G. An Approach to Communication Theory: Toward Consensus on Rules. Journal of Communication, 1972, 22, 217-238.

Feldman, C. and Toulmin, S. Logic and the Theory of Mind. In N. Arnold (Ed.) Nebraska Symposium on Motivation, 1975. Lincoln, Nebraska: University of Nebraska Press, 1976.

Feyerabend, P. Explanation, Reduction, and Empiricism. In H. Feigl and G. Maxwell (Eds.) Minnesota Studies in the Philosophy of Science. Minneapolis: University of Minnesota Press, 1962.

Harre, R. and Secord, P. The Explanation of Behavior. Totawa, New Jersey: Rowan and Littlefield, 1972.

Krimerman, L. (Ed.) The Nature and Scope of Social Science: A Critical Anthology. New York: Applton, Century, Crofts, 1969.

Kuhn, M. and McPartland, T. An Empirical Investigation of Self-Attitudes. American Sociological Review, 1954, 19, 68-76.

Kuhn, T. The Structure of Scientific Revolutions. Chicago: University of Chicago Press, 1962.

Lauer, R. and Boardman, L. Role-taking: Theory, Typology, and Propositions. Sociology and Social Research, 1971, 55, 137-147.

McKeon, R. Communication, Truth and Society. Ethics, 1957, 67, 89-99.

McMullin, E. Two Faces of Science. Review of Metaphysics, 1976, 30, 655-675.

Mead, G. Mind, Self and Society. Chicago: University of Chicago Press, 1934.

Mischel, T. Human Action. New York: Academic Press, 1969.

Mischel, T. Understanding Other Persons. Oxford: Basil Blackwell, 1974.

Pearce, W. The Coordinated Management of Meaning: A Rules Based Approach to Interpersonal Communication. In G. Miller (Ed.) Explorations in Interpersonal Communication. Beverly Hills: Sage Publications, 1976.

Pearce, W. and Cushman, D. Research about Communication Rules: A Critique and Appraisal. Unpublished manuscript, Department of Communication, University of Massachusetts, 1977.

Piaget, J. The Origins of Intelligence in Children. New York: Free Press, 1952.

Piaget, J. Psychology and Epistemology. New York: Grossman, 1971.

Piaget, J. Main Trends in Interdisciplinary Research. New York: Harper, 1973.

Polanyi, M. Personal Knowledge: Towards a Post-critical Philosophy. Chicago: University of Chicago Press, 1958.

Smith, T. Practical Inference and Its Implications for Communication Theory. Unpublished manuscript, Department of Communication, Michigan State University, 1977.

Spitzer, S., Couch, C. and Stratton, J. The Assessment of Self. Iowa
City, Iowa: Sernoll Publications, 1969.

Taylor, C. The Explanation of Behavior. London: Routledge and Kegan
Paul, 1964.

Thom, R. Structural Stability and Morphogenesis: An Outline of a
General Theory of Models. Reading, Pennsylvania: W. Benjamin,
1975.

Toulmin, S. Concepts and the Explanation of Human Behavior. In
T. Mischel (Ed.) Human Action. New York: Academic Press, 1969.

Toulmin, S. From Logical Analysis to Conceptual History. In
P. Achinstein and S. Barker (Eds.) The Legacy of Logical
Positivism. Baltimore: Penguin, 1972.

Toulmin, S. Rules and Their Relevance for Understanding Human Behavior.
In T. Mischel (Ed.) Understanding Other Persons. Oxford:
Basil Blackwell, 1974.

Turner, R. Role-taking, Role Standpoint, and Reference Group Behavior.
American Journal of Sociology, 1956, 61, 316-328.

White, A. The Philosophy of Action. London: Oxford University Press,
1968.

Wittgenstein, L. Philosophical Investigations. New York: Macmillan,
1958.

Wright, G. Norm and Action. London: Routledge and Kegan Paul, 1963.

Wright, G. Explanation and Understanding. Ithaca, New York: Cornell
University Press, 1971.

Wright, G. An Essay in Deontic Logic and the General Theory of Action.
Amsterdam: North-Holland Publishing, 1972.

Zeeman, E. Catastrophe Theory. Scientific American. 1976, 234, 65-83.