CODER AGREEMENT ON CONTENT ANALYSIS OF INTERACTION OF PRESCHOOL CHILDREN

by

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

One of the distinguishing features of science is its relentless effort to become more objective. In the social sciences agreement among coders on the classification of data has been a primary method used in assuring objectivity. Studies of coder agreement have customarily been with small samples or groups. Investigators have studied training, preparation of instructions to be used by the coders, construction of the categories to be used by the coder, and the characteristics of the coder himself. Very little research has been done with large groups of coders as subjects.

I. THE PROBLEM

Statement of the problem. The purpose of this study was to investigate the resulting coder agreement obtained from three groups of coders, differing in number and previous experience, who classified the interactions of preschoolers on a power dimension of personality defined as a dominance-submission continuum. The interactions were content from diary records which are part of the data of the Longitudinal Studies in Personality of the Woman's College, University of

North Carolina.

In order to facilitate exploration of the problem and analysis of the data, four questions were posed.

1. With clear, simple category definitions can coders achieve an agreement of 75 per cent on a dichotomization of dominance-submission without extensive training?
2. Can fine distinctions classified by sub-categories be made with an agreement of 75 per cent?
3. What differences, if any, are associated with the three groups of coders in relation to the first two questions?
4. What is the relationship of the modal response of the smallest group of coders to the modal response of the total group?

Importance of the study. There are three major justifications for this research. The first is a very practical one related to a specific problem. The diary records of the Longitudinal Studies of Personality are a source of extensive and expensive data; the phase of data collection is now at a point where analysis of the preschool period in the life of the subjects should be made. If quantification is to be attempted, the use of coders is dictated by the nature of the records. A measure of coder reliability is needed in reporting any interpretations from the records.

The second justification for the research lies in its relevance to methodology in general in the behavioral sciences. Many types of records and reports of human behavior are written in prose: interviews, case study materials, diary-type observation records, and autobiographical materials are examples. For summarization, condensation, or interpretation of any type, the human coder must intervene. It is desirable that increasingly more should be learned about the role of the coder and the biases to which he is subject.

The final justification for the research lies in the subject matter of the content which will be used in the study of the coder. The subject matter is the interaction of preschoolers; more precisely, the interaction of the preschoolers on the dominance-submission dimension of personality. There is increasing awareness of interaction or communication as a participant in personality development.

Assumptions. Four assumptions were made in this study. It was assumed that:

1. interaction can be studied from total set diary records, i.e., a unit can be identified which will meet the criteria of an interaction as defined in this study;
2. the relationship between the interaction as perceived first by the observer and then by the coder will reflect the actual interaction;
3. the quantitative description of the interactions

as perceived by the coders is meaningful;[1]

4. the power dimension defined in this study as a dominance-submission continuum, is all pervasive; that is, some power factor is operating on the part of every person in every interaction.

II. THE DEFINITIONS

Interaction. An interaction in this study consists of reciprocal influence of one preschooler and one other person which resulted in some overt behavior on the part of both recorded by the observer on the diary record form.

Units of interaction. In this study the recording unit is the single act of one person identified in the material to be coded by columns labeled: initial act, response, further response. The recording unit is also the unit of enumeration; the unit which will be counted. The context unit is the complete interaction.[2] The instruction: "Read all of the interaction horizontally across the page before making a decision," enables the coder to place each recording unit in context. (See Appendix B)

Dominance-submission. The concept of dominance-submission used in this study has the following characteristics:

1. It is a dimension operating at the interactive

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[1]Bernard Berelson, Content Analysis in Communication Research (Glencoe, Illinois: The Free Press, 1952), pp. 18-20.

[2]Ibid., pp. 135-136.

level of personality, i.e., in face-to-face situations.

2. It may manifest itself in socially desirable or socially undesirable acts of communication.

3. It is a dimension of power or influence; the influence may be wielded exploitively (for ego's satisfaction) or sympathetically (with alter in mind).[3]

4. It is conceptualized as a continuum with positive power on the dominance half of the continuum and negative power on the submission half.

Dichotomy and serial. Dichotomy as used in this study means a choice between two categories, the dominance category or the submission category. Serial is used to indicate a choice among sub-categories one through ten under dominance and sub-categories eleven through eighteen under submission.

A discussion of the literature relevant to this research is the consideration of Chapter Two in this study. Chapter Three deals with the actual methods used in the selection of content material, the selection of coders, the development of category system, and the procedures applied in the data collection. The analysis of the data in Chapter Four is

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[3]R. H. Turner, "Role-taking, Role-standpoint, and Reference Group Behavior," American Journal of Sociology, LXI (January, 1956), 321.

organized in terms of answers to the four questions posed in the statement of the problem. The final chapter presents a resumé of the thesis, a summary of conclusions drawn from the data analysis, and suggestions for continued research.

CHAPTER II

THE REVIEW OF THE LITERATURE

The review of the literature focused upon the problem involved in coding; an effort was made to evaluate procedures discussed in the literature as a basis for the development and application of procedures in this study which would reduce error as it had been tentatively identified in previous work. Two major problem areas identified were: (1) the development of a system of categories to be applied in coding, and (2) the implementation of the system. The latter includes the decision-making process required of the coder, the selection of coders, and per cent agreement among coders obtained in similar studies.

I. THE DEVELOPMENT OF A CATEGORY SYSTEM

The methodological theory for the development of a system of categories lies in the context of "content analysis." Definitions of content analysis have been ably reviewed by Bernard Berelson.[1]

The definition of content analysis most appropriate for this study was that of Janis:

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[1]Bernard Berelson, Content Analysis in Communication Research. (Glencoe, Illinois: The Free Press, 1952), p. 15.

> 'Content analysis' may be defined as referring to any technique for the classification or sign-vehicles; which relies solely upon the judgments--which, theoretically, may range from perceptual discriminations to sheer guesses--of an analyst or group of analysts as to which sign-vehicles fall into which categories; on the basis of explicitly formulated rules; provided that the analyst's judgments are regarded as the reports of a scientific observer. The results of a content analysis state the frequency of occurrence of signs--or groups of signs--for each category in a classification scheme."[2] [Italics in the original]

Schutz's definition of content analysis, also appropriate to this study, was more general. He defined it as "...descriptions of human behavior, particularly linguistic."[3]

Berelson identified the general assumptions underlying content analysis of any type of material:

> 1) Content analysis assumes that inferences about the relationship between intent and content or between content and effect can validly be made, or the actual relationships established. We say "inferences" (i.e., "interpretations") because most studies utilizing content analysis have been limited to inferences;... 2) Content analysis assumes that study of the manifest content is meaningful. This assumption requires that the content be accepted as a "common meeting-ground" for the communicator, the audience, and the analyst. That is, the content analyst assumes that the "meanings" which he ascribes to the content, by assigning it to certain categories, corresponds to the "meanings" intended by the communicator and/or understood by the audience...3) Content analysis assumes that the quantitative description of

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[2] Irving L. Janis, "Meaning and the Study of Symbolic Behavior," Psychiatry, VI (1943), 429, cited by Bernard Berelson, Content Analysis in Communication Research, (Glencoe, Illinois: The Free Press, 1952), p. 15.

[3] William C. Schutz, "Theory and Methodology of Content Analysis" (unpublished PhD Dissertation, The University of California, Los Angeles, 1950), p. 3.

> communication content is meaningful. This assumption implies that the frequency of occurrence of various characteristics of the content is itself an important factor in the communication process, under specific conditions.[4]

These theoretical considerations gave adequate support to the use of written observation records of children as material for content analysis.

Wispe and Thayer pointed out that categories may be derived from the material to be analyzed or constructed from a body of theory. The advantage of deriving them from the material to be analyzed is that they may more adequately cover that specific material; on the other hand, if categories are to be used in the development of, or testing of hypotheses, they gain in perspective from relevance of theory.[5]

Cartwright was more emphatic in his approach:

> One of the most serious criticisms that can be made of much of the research employing content analysis is that the 'findings' have no clear significance for either theory or practice...Unfortunately, it is possible for a content analysis to meet all the requirements of objectivity and quantification... without making any appreciable contribution to theory or practice...Unless the findings of a content analysis have implications for some theory, however vaguely formulated, the study can merit serious attention only on the highly tenuous claim that some day the significance of the findings will become apparent.[6]

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[4]Berelson, op. cit., pp. 18-20.

[5]Lauren G. Wispé and Paul W. Thayer, "Some Methodological Problems in the Analysis of the Unstructured Interview," Public Opinion Quarterly, XVIII (Summer, 1954), 223.

[6]Dorwin P. Cartwright, "Analysis of Qualitative Material," Research Methods in the Behavior Sciences, Leon Festinger and Daniel Katz, editors (New York: The Dryden Press, 1953), pp. 447-448.

These comments indicated that though the major purpose of this study was not the content itself, the classification system on which the coders were studied should be relevant to a body of theory.

The personality framework proposed by Freedman, Leary, Ossorio, and Caffey, was used as the researcher's frame of reference. They suggested a triparite division of personality, which they proponed to be a schema for studying the "total personality." Level One, the public level, consists of ratings of behavior or performance. The data are obtained by observation.

> "Thus a unit of social or interpersonal behavior may be classified by observers in a way very different from the way in which it would be classified by the subject or the activity under observation."[7]

Level Two, termed the conscious level, has data which consist of what the subject says about himself, i.e., self-report. Level Three is the private level, unconscious to even the subject, in this level data consist of ratings from projective material.[8] A scheme has been developed for systemitizing the three levels and integrating the findings. Their schema for interpersonal behavior has sixteen possible divisions but there are four nodal points: dominance-submission and hostility-affliation.

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[7]Mervin B. Freedman, Timothy F. Leary, Abel G. Ossorio, and Herbert S. Coffey, "The Interpersonal Dimension of Personality", Journal of Personality, XX (December, 1951), 147.

[8]Ibid., pp. 147-148.

Any personality may be described in relation to distance from these points.[9] This researcher proposes that they have identified the two most important dimensions of interactive personality as power (dominance-submission) and sociality (hostility-affliation). Discussing the development of their system they said, "In classifying social behavior we are attempting to describe an action, i.e., interaction process, accordingly, the appropriate descriptive term is a verb." They used as synonyms for dominance the words direct, command, and order; synonyms for submit were defer and obey.[10] They continue..."It is to be noted that judgment of interpersonal mechanism is quite independent of the concrete form or medium of their expression."[11]

Dominance has been studied frequently before, attesting to its ability to be identified and thus its all-pervasiveness in interaction. Jack used as areas in her concept (a) attempts to carry out own purposes; (b) attempts to master a situation; (c) instances of force; (d) attempts to gain recognition.[12] Anderson objected to this definition on the grounds that it made no distinction between dominative and integrative behavior.

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[9] Ibid., p. 150.

[10] Ibid., p. 151.

[11] Ibid., p. 154.

[12] Lois M. Jack, "An Experimental Study of Ascendant Behavior in Preschool Children," University of Iowa Studies in Child Welfare, Vol. IX, No. 3, Part I (Iowa City: University of Iowa, 1934), p. 11.

Yielding he considered as an example of integrative behavior exhibited by a secure individual.[13] Chittenden, building upon the work of these two, defined a concept of assertiveness which she labeled as "overt attempts to influence the behavior of another."[14] She suggested that the apparent disparity lies in differences in purpose; Jack's ascendancy being defined in terms of effort and the success of such efforts; Anderson's interest lying in the purpose involved for the subject.[15]

It is illuminating to consider that Jack was interested in power operating at the interpersonal level while Anderson was primarily interested in sociality as a reflection of the private or motivating level of personality. Freedman's personality schema would provide an avenue for clarifying such apparent discrepancies.

Gellert suggests in her discussion of Jack's and Anderson's terms that they have somewhat differently defined personality. She proposed as categories for the study of dominance-submission the following general classification which she defined

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[13]Harold H. Anderson, "Domination and Integration in the Social Behavior of Young Children in an Experimental Play Situation," Genetic Psychology Monographs, Vol. XIX, No. 3. (Provincetown, Mass.: The Journal Press, 1937), pp. 345-347.

[14]Gertrude Chittenden, "An Experimental Study in Measuring and Modifying Assertive Behavior in Young Children," Monographs of the Society for Research in Child Development, Vol. VII, No. 1, Serial No. 31 (Iowa City: University of Iowa, 1934), p. 11.

[15]Ibid., p. 9.

more completely and later modified in her study.[16]

Domination
Mandate, Positive. Spontaneous order or suggestion.
Mandate, Negative.
Dominates play; instructs.
Suggests orientation.
Countermandate; domination in response to domination.
Calls attention.
Boasts.
Aggression, per se; physical aggression.
Non-compliance; self defense; resistance.

Submission
Comply; submit.
Agreement, verbal; verbal concession.
Asks permission, directions, or orientation.
Imitates; spontaneously copies.
Withdraws.

In their conceptualization of personality Stern, Stein, and Bloom define dominance as "achieving assertive, autocratic ascendancy over others." Deference is the term similar to submission. It is termed "sycophantic submission to the opinion or preference of another."[17]

Lois Murphy proposed a continuum of "ego-orienting" behavior-response patterns. She delineated the three major points on this as activity (where assimilation of other preponderates); reciprocity (where assimilation of and accommodation of other are in near equilibrium); and passivity (where accommodation of other preponderates). These major points were exemplified with verbs or verbals as definition.[18]

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[16]Elizabeth Gellert, "Patterns of Dominance, Submission, and Resistance in the Interaction of Young Children: A Study of Inconsistency as a Function of Variation in the Social Environment" (unpublished PhD dissertation, Harvard University, Graduate School of Education, 1956), pp. 16-18.

[17]George G. Stern, Morris I. Stein, and Benjamin S. Bloom, Methods in Personality Assessment. (Glencoe, Illinois: The Free Press, 1956), p. 70.

[18]Lois Barclay Murphy, Personality in Young Children, Vol. I (New York: Basic Books, Inc., 1956), pp. 286-287.

Murray identified five needs having to do with human power: dominance, deference, similance, autonomy, and contrarience. He described two needs, aggression and abasement, as a sado-masochistic dichotomy.[19]

Bales developed a system of twelve categories for interaction process analysis. The twelve categories were: shows solidarity, shows tension release, agrees, gives suggestion, gives opinion, gives orientation, asks for orientation, asks for opinion, asks for suggestion, disagrees, shows tension, shows antagonism.[20]

The Factor E, identified by Cattell, is labeled "Dominance-Ascendance-v-Submissiveness." He commented that dominance appears to be a social quality rather than a matter of will. Alpha and Beta forms indicated its appearance as "ascendant, adventurous, expressive, elated, widely-interested, vigorous-active", or as "egotistic, willful, extrapunitive, embittered, and conceited..."[21] These suggest both socially approved and unapproved aspects of the factor.

Rating scales used at The Woman's College for rating children in The Longitudinal Studies were reviewed and verbs

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[19]Henry A. Murray, Explorations in Personality (New York: Oxford University Press, 1938), p. 82.

[20]Robert F. Bales, Interaction Process Analysis (Cambridge, Massachusetts: Addison-Wesley Press, Inc., 1950), pp. 8-9.

[21]Raymond H. Cattell, Description and Measurement of Personality (Yonkers-on-Hudson, New York: World Book Company, 1946), p. 482.

extracted from them which might be useful. Roberts and Ball indicated in a study using the ascendance-submission scale that it showed "practically no relation to any of the others."[22]

In discussing their research on the development of a test for identifying dominance, Gough, McClosky, and Meehl have this to say:

> Instructions were included defining the dimension of dominance. It was an interesting observation that none of the students seemed to feel a need for this specification...This fact is mentioned in support of the contention that the concept "dominance" for all its complexities, is a functioning term which they apply in their everyday evaluation. ...In short the concept "dominance" appears to have both empirical content and social relevance.[23]

Wright lends support to the contention of the "everyday" functioning of some terms.

> Molar phenomena of child behavior evidently can be observed dependably on the basis of definitions that identify these phenomena as objects of common--even if partly inferential--perception. Nor can this be very surprising. Common perception of the same phenomena work well in everyday life. It normally enables us to adapt most of our actions with marvelous efficiency to friendliness, anger, fear, affection, seeking recognition, and the like, as these occur all around us hour by hour. So it turns out, moreover, despite the biasing effects of subliminal interests upon ability to see things as they are in real life. Then why should the same ability be

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[22]Katherine Roberts and Rachel Ball, "A Study of Personality in Young Children by Means of a Series of Rating Scales", Journal of Genetic Psychology, VII (March, 1938), 147.

[23]Harrison G. Gough, Herbert McClosky, and Paul E. Meehl, "A Personality Scale for Dominance," Journal of Abnormal and Social Psychology, XLVI (July, 1951), 361.

unequal to the disinterested observations of science?[24]

Wright suggested three prominent dimensions on which categories of observational child study differ: literal objectivity, psychological specificity, and theoretical integration. To show the connection possible between the three he used as an example Heinicke's category seeking affection.

> This category refers to a commonly perceived mode of action; and, for purposes of observing and recording, Heinicke does not alter its everyday core meaning or reduce it to subordinate, mediating behavior items. Neither does he leave seeking affection in the lay network. On the contrary, he subsumes it under the general relations category of succorance, which, in turn, is derived from a still more general psychoanalytic model.[25]

In summary, the literature on the development of a system of categories dealing with personality indicated that for maximum usefulness the categories should be clearly related to theoretical concepts and system. However, there was strong support for the idea that a category may refer to a commonly perceived operation and be given a lay definition, yet still be subsumed under a more general dimension relevant to an even more general theory. The literature suggested also that the coder does not have to know the theoretical considerations in order to apply effectively the category system.

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[24]Herbert F. Wright, "Observational Child Study," Handbook of Research Methods in Child Development, Paul Mussen, editor (New York: John H. Wiley & Sons, Inc., 1960), p. 120.

[25]Ibid., p. 125.

II. THE IMPLEMENTATION OF THE SYSTEM: THE CODERS

The decision-making process. When a satisfactory mode for defining categories has been achieved, a method for implementing the definitions must be developed. Cartwright discussed three types of systems of classification which involve different decision-making processes. The classification was originally developed by Lazarsfeld and Barton. Dichotomies call for a judgment of presence or absence of an object or quality. It is an either-or type classification, one choice made from two possible choices. Serials are used when an indication of more than presence or absence is desired, rather a measure of intensity or ranking. No assumptions are made in efforts to locate an absolute zero. Variables establish a serial order, designate equal intervals, and designate absolute zero. Psychological variables have not reached this level of classification at the present time.[26]

Factors involved in the decision-making process have been discussed by Schutz. He indicated that frequently a judge (coder) is asked to answer more than one question before reaching a final decision; he suggested that it is difficult for coders to do this and further, that no check is available on how adequately they answer more than one question involved in

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[26]Cartwright, op. cit., pp. 443-444, citing The Policy Sciences, pp. 155-192.

a decision.[27] He advocated as, one possible approach to the study of the process of judging, presenting categories in a series of dichotomies. He implemented this in an experiment involving the use of two sets of instructions. One set, called binary, presented the decision-making process as a series of dichotomous steps. The other set, called polynary, offered the same final categories and simply asked that the decision be made, no effort being made to trace how the judge handled various smaller decisions within the final one. In discussing his results Schutz said:

> If there is scant evidence for each of the criteria upon which a final decision is based, putting all of the criteria together aids the judge... favors the Polynary method...The concentration effect has to do with focusing the judges' attention upon a particular decision which he would otherwise have a tendency to overlook. This effect seems to favor Binary.[28]

These results indicated that both types of decision-making processes offer advantages and suggest the possibility of combining them so that one forms a "checking" system on the other.

Units of an interaction must be identified if classifying on a quantitative basis is to proceed. Berelson identified distinctions in the unitizing process in content analysis.

> The recording unit is the "smallest body of content in which the appearance of a reference is

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[27]Schutz, op. cit., pp. 41-41a.

[28]Ibid., p. 91.

> counted."...The context unit is "the largest body of content that may be examined in characterizing a recording unit."[29]

Wispe summarized the issue relating to categories and identification of units:

> In the final analysis both the different kinds of categories and the various kinds of scoring units have their unique advantages and peculiar limitations, and ultimately the investigator must make his decision based upon the categories and units of measurement most commensurate with the purposes and goals of the research.[30]

Frequently in content analysis coders are required to unitize material and classify material. This makes it difficult to study judges on either issue. In Taylor's study of prediction of delinquency from case study records, three judges were asked to review the data and make independent predictions concerning possible future delinquency of 141 boys. They achieved an overall rating agreement of above .80 (r) but examination of the index of agreement on items from which they based their rating indicated correlations ranging from .32 to .43 on fifty-nine protocols. Though their ratings were highly correlated they did not use the same indices for decisions; this indicated the difficulty of classifying and unitizing simultaneously.[31]

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[29]Berelson, op. cit., p. 135.

[30]Wispe, op. cit., p. 227.

[31]Donald Taylor, "An Analysis of Prediction of Delinquency Based on Case Studies," Journal of Abnormal and Social Psychology, XLII (January, 1947), 54-55.

In Dollard's study of analysis of tension as revealed in case study records, three types of units were used: words, then sentences, then thought units. The results indicated though correlations between coders on tension measurement was high, they did not use the same division of thought units.[32] Kaplan and Goldsen in reviewing studies by Janis, Fadner, and Janowitz indicated that the reliability of the same categories was reduced from .97 to .75 when unitizing and classifying was combined.[33]

The results of these studies suggested the wisdom of separating the processes of unitizing and classifying (or eliminating the process of unitizing and focusing on classifying) when major interest was a study of coder agreement on classification.

Collaboration is often used by coders in defining the categories or clarifying criteria. In a study by Spiegelman, et al, using the dichotomous decision method developed by Schutz, the researchers commented in reviewing their results that tape-recordings of the discussion sessions indicated they were used by the coders primarily for criticizing the criteria;

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[32] John Dollard and O. H. Mowrer, "A Method of Measuring Tension in Written Documents," Journal of Abnormal and Social Psychology, XLII (January, 1947), 15.

[33] Abraham Kaplan and Joseph Goldsen, "The Reliability of Content Analysis Categories," Harold Lasswell, Nathan Leites, and Associates, Language of Politics (United States of America: George W. Stewart, Publisher, Inc., 1949) pp. 111-112, citing Irving Janis, Raymond Fadner, and Morris Janowitz, "The Reliability of a Content Analysis Technique," Public Opinion Quarterly, VII (1943) 293-296.

thus they suggest that non-directed discussion does not increase reliability; "possibly, greater precision in such statements (of criteria) would make any discussion superfluous." Continuing, the authors said, "In the present experiment, the negative results suggest that the opposite hypothesis should be tested, namely that more 'information' available increases the ambiguity".[34]

King, et al, reported that "the thorough collaboration of the observers increased inter-observer agreement considerably;" from 20.0 per cent to 93.3 per cent as indicated by their data.[35] The observers in their study, in effect, developed the criteria for the categories which does not answer the question raised by Spiegelman of the effect of applying already well defined classifications. In the King study as additional background information on the children was introduced, the agreement decreased and remained at a lower level then that achieved at the point where criteria had been clearly defined. There were two subjects in this study.[36]

The selection of the coders. Cartwright presented what might be termed operational criteria for selection of coders:

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[34]Marvin Spiegelman, Carl Terwilliger, and Franklin Fearing, "The Reliability of Agreement in Content Analysis," Journal of Social Psychology, XXXVII (May, 1953), 186.

[35]G. F. King, J. C. Erhmann, and D. M. Johnson, "Experimental Analysis of the Reliability of Observations of Social Behavior," Journal of Social Psychology, XXXV (May, 1952), 154.

[36]Ibid., p. 157.

> For satisfactory coding, certain skills and abilities are essential. The coder must be a sensitive person, well differentiated in respect to symbolic materials. He must be able to detect subtle differences of meaning but also to neglect differences that do not make a difference for a specific purpose. In other words, he must be able to make use of the genotypic categories required by the analysis outline. In most social-psychological research, this means that the coder must have some acquaintance with the concepts of social psychology. If the analysis outline requires only phentypic categories or categories defined in terms of everyday usage, the coder may well be an intelligent layman. A reasonably good level of intelligence is the minimal requirement for any content analysis.[37]

That more than one coder is needed is well stated by Feigl:

> If there be any "truths" that are accessible only to privileged individuals, such as mystics or visionaries--that is, knowledge-claims which by their very nature cannot independently be checked by anyone else--then such "truths" are not of the kind that we seek in the sciences. The criterion of intersubjective testability thus delimits the scientific from the nonscientific activities of man.[38]

Serving as a coder involves adopting a point of reference. George Herbert Mead discussed the term communication by saying that it "is not simply a process of transferring abstract symbols; it is always a gesture in a social act which calls out in the individual himself the tendency to the same act

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[37]Cartwright, op. cit., p. 461.

[38]Herbert Feigl, "The Scientific Outlook: Naturalism and Humanism," Herbert Feigl and Mary Brodbeck, editors, Readings in the Philosophy of Science. (New York: Appleton-Century-Crofts, 1953), p. 11.

that is called out in others."[39] Bales says this point of reference as an observer of interaction is not very different from perception of behavior as a participant in interaction.

> In other words, the observer assumes that the other, or group member, is attempting to empathize with the actor and, at the same time, is testing his own reaction to what he perceives--all of this as a basic process in communication. The observer carries the complication one step further by trying to empathize with the other or group members as the group member perceives the actor. All categories are described in terms which assume the point of view of the group member toward whom the action is directed. The actor...is the actor as seen by the other, as seen in turn by the observer. Although this point of view is theoretically complicated, in practice there seems to be little confusion about it, apparently because it is so similar to the point of view from which we ordinarily apprehend action when we are one of the participants.[40]

The coder of content analysis sees through the words of the observer; this is a somewhat more restricted view than that of the observer.

Few hard and fast rules for selecting coders are given. Seedorf, in a study of evaluation of oral interpretation of a reading comments: "While the individual judgment represents an important personal evaluation, it may not represent very well the evaluation expected from larger audiences."[41] In this

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[39] George Herbert Mead, The Social Psychology of George Herbert Mead. Edited by Anselm Strauss. (Chicago: The University of Chicago Press, 1956), p. 294.

[40] Bales, op. cit., p. 39.

[41] Evelyn Seedorf, "An Experimental Study in the Amount of Agreement Among Judges in Evaluating Oral Interpretation," Journal of Educational Research, XLIII (September, 1949), 21.

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[41]Evelyn Seedorf, "An Experimental Study in the Amount of Agreement Among Judges in Evaluating Oral Interpretation," Journal of Educational Research, XLIII (September, 1949), 21.

study several groups of judges were used.

> It became evident that the more judgments that are pooled, the more the extremes seem to disappear and the more evident becomes an apparent agreement among judges. Apparently, when a large group of judges, forty or more are used, in evaluating oral interpretation, a high correlation will be obtained, due to cancellation of errors among the respective judges.[42]

Levels of agreement. The type of material which is to be coded apparently influences to a great extent the per cent agreements or correlations which can be obtained. Mayman and Kutner's study on reliability in analyzing Thematic Apperception Test Stories reports per cent agreement by two senior psychology students as 89 per cent agreement when determining a subject's identification with a TAT character.[43] Rafferty, et al, presented a report of a study on personality assessment from "running records" which were "descriptive and inclusive." From these records behavior was analyzed for need value (importance to individual) and level of expectancy (probability for success). Scoring was done by a manual of examples. To check rating reliability, correlations were computed for mean child score between the two observers (who also rated all observations) and one independent rater (who scored observations of ten randomly

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[42] Ibid., p. 11-12.

[43] Martin Mayman and Bernard Kutner, "Reliability in Analyzing Thematic Apperception Test Stories," Journal of Abnormal and Social Psychology, XLII (July, 1947), 367.

selected children from each of two samples.) Range of correlations on probability for success was from .00 to .93 with median r of .72 for one pair; .05 to .87 with median of .49 for another pair; and .11 to .95 with median r of .63, for the third pair.[44]

Clarke, Rosenzweig, and Fleming reported a study, the purpose being to determine the reliability of the scoring manual for Rosenzweig Picture Frustration Study which consists of samples illustrating scoring. Project I of the study using four scorers, paired in six possible combinations plus a third judge who inspected their scores and made a final decision, yielded a range in pair agreement from 51 per cent to 83 per cent. The judge's average agreement with one of the pair was 61 per cent. "In only 10 per cent of the responses was scoring so problematic as to occasion different judgments by all three examiners."[45]

Woodward points out that:

> Errors due to possible coding unreliability have had much less attention paid to them than they deserve. Coding is a process often involving some fairly sophisticated judgments, but at the same time it is a routine operation that rapidly loses interest for many people.[46]

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[44]Janet Rafferty, Bonnie Tyler, and F. B. Tyler, "Personality Assessment From Free Play Observation," Child Development, XXXI (December, 1960), 695.

[45]Helen Jane Clarke, Saul Rosenzweig, and Edith Fleming, "The Reliability of the scoring of the Rosenzweig Picture-Frustration Study," Journal of Clinical Psychology, III (October, 1947), 366.

[46]Julian Woodward and Raymond Franzen, "A Study of Coding Reliability," Public Opinion Quarterly, XII, (Summer, 1948), 253.

Three open-ended questions from a Fortune survey were used; three coders served as subjects. There were 740 questionnaires. Analysis was by per cent of replies placed in each category. Average difference in per cent of items range from .6 per cent to 2.2 per cent. They commented: "It is apparent that the objectivity of coding must differ with the subject matter of the code."[47]

Stevenson reported in his study of social interaction that "trained individuals" achieved r's of .82 to .86; Kendall's coefficient of concordance was used for the evaluation.[48]

Earlier researchers pointed to a problem which still exists:

> The conditions for a composite measure of variation are not fulfilled by a simple average of the forty-nine individual coefficients of variation, because the amount of material in the separate categories varies greatly and reclassification of an item in one class would have greater proportionate influence in the composite coefficient than would reclassification of the same item in another class.[49]

It is difficult to make any general evaluation of these results because they are reported in such varying forms as per cent agreement and correlation coefficients. An agreement of

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[47] Ibid., p. 257.

[48] Harold W. Stevenson, and Nancy D. Stevenson, "Social Interaction in an Interracial Nursery School," Genetic Psychology Monographs, Vol. 61 (Provincetown, Massachusetts: The Journal Press, 1960), pp. 51-52.

[49] Stuart A. Rice, and W. Wallace Weaver, "Verification of Social Measurements," Social Forces, VIII (September, 1929), 22.

75 per cent seems to be a reasonable expectation and even this may be termed a rather high level when there are several coders and several categories.

The review of the literature indicated though coding reliability is of major importance in much of the work in the social sciences the evidence on which reliability of the method rests is, after many years, only tentative; understanding of the processes involved is limited. Much more attention has been given to the development of categories than to understanding the decision-making processes of the coder. Efforts have focused on increasing the level of coder agreement through collaborations of varying types. Few studies of large groups of coders existed; they are needed if we are to have knowledge of the variation in classification of the same behavior which exists among coders.

CHAPTER III

METHODS AND PROCEDURES

The study consisted of two phases: (1) a pre-study using six coders which explored the possibility of using a multi-dimensional categorization of records, and (2) the major phase of the research in which a single dimension of personality, dominance-submission, was chosen for analysis and three groups of coders were the subjects. The purpose was to explore the differences, if any, in terms of coder agreement, revealed by the three groups which varied in number and training.

I. THE PRE-STUDY

Five randomly selected diary records at age three, and five randomly selected diary records at age four were pulled by the researcher. They were typed and divided by the researcher into interactions using as the criteria for division this definition:

> Interaction: the words and actions of the actor (preschooler) and the reaction of another. It remains one interaction so long as: (1) the coping mechanism is same in all aspects, and (2) the initial stimulus remains the same.[1]

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[1]See Appendix B, p.

These ten diary records, marked into interactions, were given to three persons who were experienced in coding tape-recorded interviews, referred to hereafter in the pre-study as Group A; these same ten diary records, marked into interactions, were given to three nursery school teachers, hereafter referred to in the pre-study as Group B. Along with these records each coder was given a sample record as coded by the researcher and the pre-study instruction sheet, Appendix B. There were eight categories for coding, the seven dimensions of interaction as conceptualized by Stern, Stein, and Bloom;[2] and one additional category for use when the coder felt insufficient information was available for coding. Each of the six subjects independently coded the records. Table I indicates the results of the pre-study.

The low average coder agreement for Groups A and B of 44 per cent was not considered acceptable for continuing the use of the coding with that system of classification. Limitations in the method included:

1. Difficulty in identifying the person whose action should be scored;
2. Disagreement in applying criteria for determining validity of any group of sentences classified as an "interaction"; this resulted in a large use

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[2]George C. Stern, Morris I. Stein, and Benjamin S. Bloom, Methods in Personality Assessment (Glencoe, Illinois: The Free Press, 1956), pp. 70-71.

TABLE I

CODER AGREEMENT IN THE PRE-STUDY

GROUP A		GROUP B	
Coders	% Agreement	Coders	% Agreement
Coders 1 and 2	.42	Coders 1 and 2	.42
Coders 1 and 3	.44	Coders 1 and 3	.40
Coders 2 and 3	.52	Coders 2 and 3	.42
Average*	.46	Average*	.41

*NOTE: Average for the three coder pairs

of category H, insufficient information for coding; and

3. Overlap in categories when more than one dimension of interaction was being categorized simultaneously but only one classification could be made for any single interaction.

The power dimension emerged as one most frequently recorded. On the basis of the results and difficulties ascertained, four decisions were made to simplify the form of the interactions: (1) to underline the name of the individual whose action was to be classified, (2) to study only one dimension of interaction, (3) to use force-choice method in classifying, and (4) to substitute a more satisfactory operating definition of interaction.

II. THE MAJOR RESEARCH

The content materials. The source of the content material for the study was diary records in the Longitudinal Studies in Personality, sponsored by the Institute for Child and Family Development and housed in the School of Home Economics, Woman's College, University of North Carolina. The program was designed with the assumption that the long-term study of the uniqueness of the individual is a valuable contribution to research.

There are twenty-one children in the study which began in 1958. All of the children should have completed nursery

school at the end of the spring term, 1963. The oldest child in the study was eleven years old at the time of the investigation. All of the children in the study were white and of upper middle socio-economic background. There are nine boys and twelve girls; all except two had been in the nursery school for a period of not less than one semester at age three and one semester at age four. The two who did not meet this criterion were eliminated from selection of their records.

A thirty-minute weekly diary record of each child in the Longitudinal Study was taken during the time the child was enrolled in nursery school. The observer-recorder was usually a graduate assistant enrolled in pursuit of a degree in Child Development. The researcher served in the data collection as observer-recorder for two semesters. Instructions given the observers were to take total-set records including as much of the setting as possible.

Stratified random sampling was employed in selection of the records to be used for content analysis. Stratification was in terms of age; fifty per cent of the records were chosen from three year old observations; fifty per cent from four year old observations. Names of ten children were selected randomly for the study; these were divided alternately into age three and age four. The records of these children were arranged by date and assigned cardinal numbers. One record (and an alternate) was randomly selected as the record to be used in the study. The criterion adopted was that the first

three interactions in each record would be retained. If a record failed to yield three interactions, it was eliminated and the alternate (provided for randomly) was used. This process of random selection yielded a sample of one record for each of five, three-year old children and one record for each of five, four-year old children, or ten records. The three year old records included one boy and four girls; the four year old records included two boys and three girls. Five observers had taken the records. The dates on the records ranged from 1958 to 1961.

The records were divided into interactions using the operational definition on page four of this thesis. In the thirty interactions there were a total of sixty-six acts. (See Appendix B for the interaction sheet.) Each act in the interaction was arranged horizontally across the page. The three interactions from one record followed each other simultaneously down the page. Descriptive material related to the interaction was retained. The name of the individual whose action was to be classified was underlined in each act. Below each act boxes were placed in which the code letter and number were placed.

Selection of the categories. The pre-study indicated that more than one dimension of the interactive level of personality could not effectively be simultaneously coded by a forced choice method for many items would have scoring

potential for several dimensions of interaction. The power dimension, defined in this study as a dominance-submission continuum, was chosen as the dimension for study.

Criteria for development of categories were:

1. Simplicity. The matter of coding becomes so inextricably a matter of language that therein lies the difficulty. Single words then are the most simple definitions. Terms should be identifiable in the common language of the people.
2. Clarity. Verbs were chosen as the most descriptive words in our language for describing behavior: action, being, or state of being covers the level of interaction. This relates to a stated definition of personality, in this case the overt, interacting level.
3. Completeness. The sub-categories should provide for the classification of all steps along the continuum of a dimension. The sub-categories should be related to a specific psychological concept.
4. Unambiguousness. Each category should stand alone; there should be no overlap from one step to another or effort should be made to eliminate ambiguity.
5. Relevance. The categories should be relevant to theory as well as specific practice.

The theoretical and research literature was searched for descriptions of dominance and submission. An extensive list of verbs was compiled which reflected the central theme of scales.[3] The words were sifted for meaning using Webster's Unabridged Dictionary, 3rd Edition. They were grouped, then regrouped by definition in an attempt to eliminate overlap in fine distinctions. The following a priori categories were selected:

CATEGORIES AND THEIR DEFINITIONS

DOMINANCE	SUBMISSION
1. ADVISES recommends a course of action, gives requested information, suggests	11. REQUESTS asks or petitions for information, assistance, permission
2. DIRECTS regulates activities or course of them, assigns roles, leads activity	12. IMITATES follows or copies as a pattern, not in jest
3. HELPS aids or provides protection of own volition without being requested to do so	13. ASSISTS provides support upon being requested to do so
4. ATTACKS uses actual physical force against another person, uses to get an object	14. WITHDRAWS retreats goes away from
5. THREATENS promises punishment, reprisal, or discomfort	15. EVADES avoids confrontation with, attempts to change conversation

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[3]See pages 10- in this study for sources in the literature.

6. DISAPPROVES
   passes unfavorable judgment upon

7. RESISTS
   exerts oneself to counteract

8. RIDICULES
   makes fun of, teases

9. BOASTS
   gives oral expression to one's pride in self or a possession or a relationship

10. IGNORES
    willfully disregards

16. CONCEDES
    gives up or yields after resisting

17. AGREES
    concurs, is in harmony with, acquiesces

18. APPROACHES
    comes near, takes preliminary steps to

Whether the criteria were met remained a matter of judgment. The major aim of the research was to study coder agreement. It was beyond the limits of this study to apply a scaling technique to the sub-categories. The point at which the dichotomy (dominance-submission) approached neutrality was conceptualized by the researcher as categories three and thirteen, helps and assists.

The categories provided for a dichotomous choice first; followed by a serial choice. The coder was asked first to decide if the act was dominant or submissive; then he was asked to indicate the most descriptive label for the act; the latter in effect, was asking him to indicate a degree of dominance or submission but it eliminated the assignment of a number as evidence of a degree. The serial choice, i.e., choosing a sub-category, served as a check. For example, if the choice of the major category was dominance followed by the choice of

sub-category from the submissive definitions, inconsistency would be noted by the coder; the instructions requested him not to do this; he would then of necessity re-evaluate his decisions.

No major definition of dominance or submission was given to the coders; the sub-categories were the range of definitions.

Selection and description of the coders. The content for coding and a system of classification established, there remained the selection of subjects to serve as coders.

All of the three groups of coders selected as subjects met the minimal requirement of a good level of intelligence indicated by the fact that all were at least juniors in college; in addition, all had some knowledge of social psychology as will be indicated following.

The eighty subjects who served as coders in this study were students (1) enrolled in two sections of social psychology, a course open to juniors and seniors in the undergraduate program as well as graduate students, (2) a class of graduate students enrolled in Current Trends in Child Development, and (3) six individuals designated as "experts" because of their professional training and experience which will be more fully described. For the purposes of this study, a coder was classified as U, undergraduates; G, graduate students; or E, experts. Eliminated from the study were twelve undergraduates and one graduate student because they were not present for Session

one; this left the remaining eighty subjects as noted before. Group I was composed of the forty-nine undergraduates who participated in the study. The subjects were enrolled in the fall semester course in social psychology, one section meeting in the morning, one in the afternoon. The subjects were female, juniors or seniors in college. They were, with the exception of approximately four students, majors in either sociology or psychology.

Group II was composed of graduate students. The twenty-five graduate students who participated in the study were enrolled in Social Psychology or Current Trends in Child Development; in a few cases they were enrolled in both courses. There were three males and two female foreign students among the graduate students. The programs in which the students were enrolled included special student (attending without permission to pursue a degree), three candidates for the PhD in Child Development, Master's degree candidates in Child Development, and Master's degree candidates in Education. There were both married and unmarried members. The background preparation was varied; two ministers, one physical education teacher, one college teacher in psychology, one day care center owner and operator, several in-service teachers in the public school and two homemakers. All had sufficient training in social sciences to meet the prerequisites for enrollment in the courses.

Group III was composed of the six experts. Of the six white, female experts, all except two had Master's degrees.

The two who did not were near completion of these degrees and both had taught in the college demonstration nursery school for at least one year. Two of the six were research instructors in the area of Child Development and Family Relations. Two of the six were PhD candidates in Child Development and had experience as research or teaching fellows.

Procedures. Arrangements were made with the instructors of the classes for use of one-hundred minutes of class time (two periods).

During Session One, a fifty minute class period, the researcher briefly told of the Longitudinal Studies program and explained that she was interested in a methodological question: what type of coder agreement can be obtained with a set of data, a set of classifications, and a group of coders? A copy of "Instructions, Definitions, Examples, and Sample Items" was given to each subject. (See Appendix B) These were read orally. Questions which were asked resulted in inclusion of the underlined parts of numbers six, seven, and nine on the instruction sheet. Questions involving theory and/or disagreements with categories, definitions, or examples were not discussed; the researcher circumvented these by replying honestly to the questioner that perfection was not assumed but items and categories were already prepared and revision would follow the coding. It was emphasized that for this reason the individual coder's best opinion of the classification from

existing choices was desired. It was believed that this enabled the coders to have little anxiety and to react spontaneously; they understood that they were not being measured against any standard. They were permitted to take the instructions home for review if they desired.

Session Two, fifty minutes, was used for the coding of the sample of interactions drawn from the Longitudinal Studies. In Appendix B is a copy of the data to be coded. Subjects were instructed to leave when finished with the coding. The researcher remained in the room and collected the coded data.

There were some variations in the administration of the materials. Group I, undergraduates, were in two sections, a morning and an afternoon class. Group II, the graduate students, were in three sections, either of the above undergraduate sections of social psychology, or the evening class in Current Trends. In the evening class, instructions were passed out one week prior to the coding. The graduates were asked to "look over" the material and informed that explanations would be made on the following week. Session One and Session Two followed each other on the same night. A ten minute break came between the two sessions. Group III, the experts, were asked to attend any Session One and any Session Two which was convenient.

The shortest length of time used to complete coding was twenty minutes (an undergraduate); the longest was fifty minutes (one graduate student and one expert).

There was a general feeling of good rapport between researcher and coders as perceived by the researcher. No resentment was evidenced as this being "extra work". No great anxiety was perceived by the researcher as attached to coding the material, perhaps in part because it was not related to a class grade though it did serve to provide a type of research experience. There was acquiescence from all, enthusiasm from a few, for making a contribution to research.

The data were analyzed by a simple arithmetical per cent agreement; number of responses in a particular category divided by total number of responses. The data for each group were analyzed by item and by category. The reference point for group and coder comparisons was the modal response for the items. The per cent agreements were designated as falling in the 75-100 per cent coder agreement class, the 50-75 per cent coder agreement class, the 25-50 per cent coder agreement class, and the 0-25 per cent coder agreement class.

The pre-study indicated limitations in the original proposed methodology. The major research, therefore, consisted of a study of the power dimension dominance-submission. Forced choice was used, in that all items were labeled by one of the categories and no category was provided for indecisive classification. The three groups of coders first were asked to indicate a classification from a dichotomy; then they were requested to differentiate from a serial choice a fine description subsumed under the major classification. Three groups of coders:

forty-nine undergraduates; twenty-five graduate students; and six experts coded the same thirty interactions taken from diary records of pre-schoolers, using an a priori system of categories. Data were analyzed by arithmetical per cents to indicate the per cent coder agreement by item. The modal response of each item was used as the point of reference in comparing the groups.

CHAPTER IV

THE ANALYSIS OF THE DATA

Coding of the thirty interactions was done by eighty coders, including forty-nine undergraduates; twenty-five graduates; and six experts. These interactions contained sixty-six individual acts. The coders used a category classifying system in which they first indicated a dichotomous choice, an act was coded for placement in either the category dominance or the category submission. Following this, coders indicated a serial choice, which one of ten descriptive verbs under dominance; or which one of eight descriptive verbs under submission, most nearly described the action.

The data were analyzed by arithmetical per cent agreements, number similar responses divided by total number of responses, to indicate answers to four questions posed by the problem. The discussion of the analysis follows the order of these questions:

1. With clear, simple category definitions can coders achieve an agreement of 75 per cent on a dichotomization of dominance-submission without extensive training?

2. Can fine distinctions classified by subcategories be made with an agreement of 75 per cent?

3. What differences, if any, are associated with the three groups of coders in relation to the first two questions?

4. What specifically is the relationship of the modal response of the smallest group of coders to the modal response of the total group?

I. DICHOTOMOUS CLASSIFICATION

"With clear, simple category definitions, can coders achieve an agreement of 75 per cent on a dichotomization of dominance-submission without extensive training?"

A composite coder agreement of 84.9 per cent for the eighty coders was achieved. This was computed by dividing the sum of per cent agreements for sixty-six items where mode was reference point, by the number of coders, eighty.

Table II, which presents totals from an item analysis of raw data in Appendix A, indicates the classes into which the items fell when each item was analyzed by its placement in either the dominance category or the submission category. Agreement among eighty coders, ranging from 75 per cent to 100 per cent, resulted in 75.7 per cent of the items or slightly more than three-fourths, (fifty) of the sixty-six items, when the dichotomous choice was analyzed. Of the remaining sixteen items on which an agreement of 75 per cent was not achieved, four items, 8b, 9b, 24b, and 26a, were in the 50 to 75 per cent agreement class. Three items, 2b, 16a, 19b, were near bi-modality. (See Appendix A.)

II. SERIAL CLASSIFICATION

"Can fine distinctions classified by sub-categories be

TABLE II

FREQUENCY DISTRIBUTION OF ITEMS IN EACH AGREEMENT CLASS WHEN ITEMS WERE CLASSIFIED AS TO DICHOTOMOUS CHOICE, COMPOSITE GROUP*

Agreement Class	No. of items in the class	% of total items in this class
W = 75 - 100 %	50	75.7 %
X = 50 - 75 %	16	24.3 %
Y = 25 - 50 %	0	0
Z = 0 - 25 %	0	0

Total number of items = 66
*Modal response was reference point

made with an agreement of 75 per cent?"

A composite coder agreement of 59.1 per cent for the eighty coders resulted. This was computed by dividing the sum of the per cent agreements for the sixty-six items, where the mode was reference point, by the number of coders, eighty.

Table III, which presents totals from Appendix A, indicates the class into which the items fell when each item was analyzed by its classification into one of the ten sub-categories subsumed under dominance, or one of the eight sub-categories subsumed under submission.

Coder agreement ranging from 75 per cent to 100 per cent resulted for nineteen items, 28.8 per cent of the sixty-six items. Seventeen items or 25.8 per cent fell into the 50 to 75 per cent coder agreement class. The largest number of items, thirty, fell into the 25 to 50 per cent coder agreement class. This latter group contained 45.4 per cent of all the items.

In comparing the class frequencies presented in Tables II and III, 75.7 per cent of the items were classified at the acceptable 75 per cent coder agreement level or above when a simple dichotomous choice was made; using fine distinctions this was greatly reduced; only 28.8 per cent of the same items were classified with a coder agreement of 75 per cent or above when a serial choice was presented.

III. GROUP COMPARISONS

"What differences, if any, are associated with the three

TABLE III

FREQUENCY DISTRIBUTION OF ITEMS IN EACH AGREEMENT CLASS WHEN ITEMS WERE CLASSIFIED AS TO SERIAL CHOICE, COMPOSITE GROUP*

Agreement class	No. of items in the class	% of total items in this class
W = 75 - 100 %	19	28.8 %
X = 50 - 75 %	17	25.8 %
Y = 25 - 50 %	30	45.4 %
Z = 0 - 25 %	0	0

Total number of items = 66
*Modal response was reference point

groups of coders in relation to the first two questions?"

When the data for the three groups were compared on the dichotomous choice, Table IV, they were characterized by small differences in either raw scores or the converted percentage scores, though the difference in number of coders and relative experience was large. Each group tended to near equal division of total items, putting approximately one-half of the items into the dominance category and approximately one-half of the items into the submission category. Table IV, indicates these occurrences. The greatest deviation occurred in Group III, the six experts, where only thirty items, 45.5 per cent of the total of sixty-six items, were put into the submission category; this group had a bi-modal response for five items, distributing their choices, three for dominance, three for submission, on five items.

Reference to Table V indicates that Group I designated 78.8 per cent of the items, and Group II, designated 75.7 per cent of the items, in both cases slightly more than three-quarters of the items, in the class where coder agreement ranged from 75 to 100 per cent. Group III, placed 72.6 per cent, or forty-eight items, in this coder agreement class.

The number of items by category, modal response as reference, is presented in Table VI, for each of the three groups. They were quite similar; Group I placed seven items in D1, Groups II and III placed three and two items respectively in this category. This was the only instance in which the number

TABLE IV

FREQUENCY DISTRIBUTION OF ITEMS
CLASSIFIED AS DOMINANCE
OR SUBMISSION
BY GROUPS*

GROUP	NO. OF TOTAL ITEMS			% OF TOTAL ITEMS		
	Dom.	Sub.	Bi-modal	Dom.	Sub.	Bi-modal
I	31	34	1	47	51.5	1.5
II	33	33	-	50	50	---
III	31	30	5	47	45.5	7.5

Total number items = 66
*Modal response was reference point

TABLE V

FREQUENCY DISTRIBUTION OF ITEMS IN AGREEMENT CLASS
WHEN ITEMS WERE CLASSIFIED AS TO
DICHOTOMOUS CHOICE BY GROUP

CLASS OF CODER AGREEMENT	GROUP I		GROUP II		GROUP III	
	No. of items	% of items	No. of items	% of items	No. of items	% of items
W	52	78.8	50	75.7	48	72.6
X	13	19.7	16	24.3	18	27.3
Y	1	1.5	--	----	--	----
Z	--	----	--	----	--	----

Total number of items = 66
W = 75-100% coder agreement class
X = 50-75 % coder agreement class
Y = 25-50 % coder agreement class
Z = 0-25 % coder agreement class

TABLE VI

FREQUENCY DISTRIBUTION OF ITEMS CLASSIFIED
BY SUB-CATEGORIES, BY GROUP*

Group	Categories-Dominance										Categories-Submissive								Bi-modal
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
I	7	8	1	1	2	1	3	0	4	0	8	2	4	1	2	3	15	4	0
II	3	7	3	1	2	1	3	2	6	2	7	2	4	1	0	3	13	2	4
III	2	8	2	1	2	2	4	0	3	2	6	3	5	1	0	1	13	2	9
Average	4	8	2	1	2	1	3	1	3	1	7	2	4	1	1	2	14	3	4

Total number of items = 66
*Modal response was reference point

of items per category varied to any noticeable degree. The information in Table VI is plotted in the form of profiles in Figure I. The similarity of the group profiles when compared for number of items placed into sub-categories was striking.

Table VII presents the resulting coder agreement classes into which the items were designated by the groups. Noticeable differences were revealed. Group I placed approximately one-third (twenty-one items or 31.8 per cent) of the items in the 75 to 100 per cent agreement class, and approximately one-third (twenty-three items or 34.8 per cent) in the 50 to 75 per cent coder agreement class. The remaining one-third, (twenty-two items or 33.3 per cent) were placed in the 25 to 50 per cent coder agreement class.

Group II, differed from this by designating fewer items (seventeen or 25.8 per cent) in the 50 to 75 per cent coder agreement class and more items (twenty-seven or 40.9 per cent) in the 25 to 50 per cent coder agreement class. This group also had three items on which there was very little agreement; the three items were placed in the 0 to 25 per cent coder agreement class. Nineteen items (28.8 per cent) were placed in the class of 75 to 100 per cent agreement.

Group III's most striking result was the placement of thirty-eight items (57.6 per cent) in the coder agreement class of 50 to 75 per cent. There were only eleven items (16.7 per cent) in the 25 to 50 per cent coder agreement class, seventeen items (25.8 per cent) were placed in the coder agreement

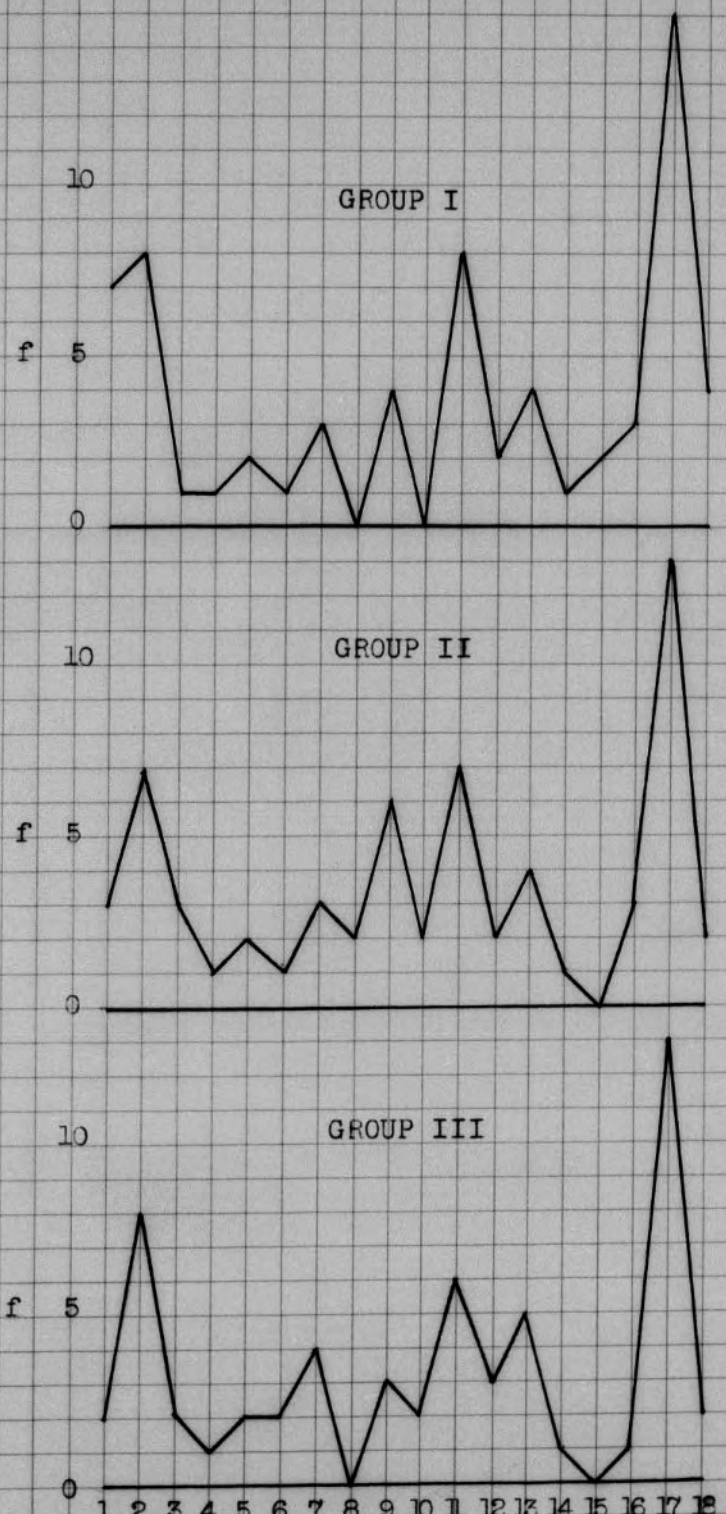

FIGURE I

GROUP COMPARISON OF NUMBER OF ITEMS PLACED IN EACH SUB-CATEGORY

TABLE VII

FREQUENCY DISTRIBUTION OF ITEMS IN EACH AGREEMENT CLASS WHEN ITEMS WERE CLASSIFIED AS TO SERIAL CHOICE, BY GROUP*

CLASS OF CODER AGREEMENT	GROUP I		GROUP II		GROUP III	
	No. of items	% of items	No. of items	% of items	No. of items	% of items
W	21	31.8	19	28.8	17	25.8
X	23	34.8	17	25.8	38	57.6
Y	22	33.3	27	40.9	11	16.7
Z	0	0	3	4.5	0	0

*Modal response was reference point

W = 75-100% coder agreement class
X = 50-75 % coder agreement class
Y = 25-50 % coder agreement class
Z = 0-25 % coder agreement class

class of 75 to 100 per cent.

The per cent coder agreement for each group and for the composite group of eighty are presented in Table VIII.

They were of interest because of their similarity. On the dichotomous choice Groups I, II, and III had per cent agreements of 86.0 per cent, 83.3 per cent and 86.6 per cent respectively. The coder agreement for the serial choice was not as high; the group differences were slightly more pronounced. Group I had an agreement of 62.7 per cent for forty-nine undergraduate coders on sixty-six items. Group II, had an agreement of 58.1 per cent for the twenty-five graduate students who coded the sixty-six items. Group III, composed of six expert coders, had an agreement of 64.9 per cent; this was the highest per cent agreement of the three groups.

TABLE VIII

PERCENT CODER AGREEMENTS FOR GROUPS, COMPOSITE GROUP*

	GROUP I N=49	GROUP II N=25	GROUP III N=6	COMPOSITE N=80
Dichotomous Choice	86.0%	83.3%	86.6%	84.9%
Serial Choice	62.7%	58.1%	64.9%	59.1%

*All percentages are for coder agreement on sixty-six items

IV. MODAL RESPONSES

"What specifically is the relationship of the modal response of the smallest group of coders to the modal response of the total group?"

The modal response chosen by each of the three groups was the same response for forty-two items. The modal response for twenty-one items was the same for two groups of coders. There were only two items, 7b and 20c, on which there were three differing modal responses. (Appendix A.)

When the modal response by item of Group III, the smallest group of coders, was compared with the composite modal response of eighty coders, nine items differed: 2c, 3b, 7a, 13b, 14b, 19b, 20c, 29a, and 30b. The modal response when comparing the smallest group to the composite group was the same in 86.4 per cent of the items. There were seven items on which a bi-modal response was given, one of these modal responses was the same as the modal response of the other group.

It has already been noted that approximately the same number and per cent of items were placed in the same categories on the dichotomous choice and on the serial choice. (See Tables V and VII)

The results of the analysis of the data indicated that using this system of categories, coders were able to achieve a composite per cent agreement of 59.1 per cent on the serial decision.

Scrutiny of the data reported by groups indicated that there were no differences which were of an important nature as revealed by the per cent coder agreements.

The major result was the similarity of the data. The per cent agreements among the coders ranged from 83.3 per cent to 86.6 per cent on the dichotomy; they ranged from 58.1 per cent to 64.9 per cent on the serial choice. The modal choice on an item analysis was the same for all three groups on forty-two items. The results of the data indicated no appreciable differences in coder agreement associated with the three groups which varied in number and experience; coder agreement was slightly higher, 2.2 per cent for Group III, the experts.

CHAPTER V

SUMMARY AND CONCLUSIONS

I. THE SUMMARY

This research on the coders of interaction from content analysis was conducted in order to study the relation of the number and experience of three groups of coders to the per cent agreements obtained by them. The three groups coded diary records of preschoolers on the dominance-submission aspect of personality. The value of the research lies in its relevance (1) to methods of research in child development, particularly the analysis of content materials; (2) to the development of category systems for identifying the dominance-submission aspect of the interacting personality; and (3) to the feasibility of using the proposed system in this research for a study of interaction as revealed in the diary records of the Longitudinal Studies of Personality of the Woman's College of the University of North Carolina.

The concept of dominance-submission as proposed by the researcher includes the following aspects:

1. It is dimension operating at the interactive level of personality.
2. It may manifest itself in socially desirable or

socially undesirable acts of communication.

3. It is a dimension of power or influence which may be exercised with self or other in mind.

4. It is conceptualized as a continuum.

The review of the literature indicated that much theorizing and considerable research had been completed on the development of systems for categorizing material. There were two basic approaches indicated: (1) development of a system relevant to theory, particularly personality theory; (2) development of a category system from the specific nature of the material available. The literature appeared to lend major support to the adoption of the first practice.

The dominance-submission aspect of personality had been frequently studied with different interpretations of the concept. The personality framework adopted for this study, indicated a scheme for defining this aspect of personality by identifying it as operating at the public, conscious, or private level of personality. When analyzing overt observations the interactive level of personality would be that aspect under scrutiny. The verb or verbal form emerged as a desirable method for describing interaction, primarily because interaction denotes action or motion.

Studies of the coder had been conducted with less frequency than studies of other instruments of research. They consisted in large part of studies of the coder as related to the application of a specified technique. Among the techniques were varying types of instructions, units of classification,

and types of material.

Coder agreement was normally achieved through some type of collaboration on the part of the coders during some phase of the analysis. No standard level of agreement existed, but 75 per cent was apparently generally accepted as a minimum. Truly efficient methods for computing the coder agreements have not yet been achieved.

The need existed for a study in which number and experience of groups of coders varied and all collaboration in development of the system was eliminated; this study was an attempt to investigate coder agreement under those restrictions.

A pre-study using six coders indicated as very important for the success of the study the separation of the unitizing and coding procedure, the need for simple definition of categories, and the difficulty of coding more than one dimension of personality simultaneously.

Materials for the study were a stratified random sample of ten diary records; one record for each of five, three-year old children and one record for each of five, four-year old children. This was a total of ten records. The first three complete interactions were taken from each record, making a total of thirty interactions comprised of sixty-six acts.

An a priori category system was developed. An extensive list of verbs was compiled from perusal of the theoretical and research literature on dominance-submission. These verbs were sifted so that redundant meanings were eliminated. The final

category system contained the following ten sub-categories subsumed under dominance: advises, directs, helps, attacks, threatens, disapproves, resists, ridicules, boasts, ignores. Eight categories were subsumed under submission: requests, imitates, assists, withdraws, evades, concedes, agrees, and approached.

The instructions provided that the coder make a dichotomous decision first, i.e., indicate an act as dominant or submissive. Then for finer discrimination of the power involved in the act he was asked to indicate one of the serial choice of either ten dominant or eight submissive sub-categories.

Three groups of coders were chosen to participate in the study. Group I consisted of forty-nine junior and senior undergraduates who were principally sociology or psychology majors. Group II consisted of twenty-five graduate students who were pursuing degrees in the social sciences. Group III consisted of six graduate or post-graduate students who had extensive training with children as preschool teachers or as coders of research data.

The series of thirty interactions was administered in two fifty minute sessions. Session one consisted of assuring that the coders read the definitions and understood the instructions. Session two was the coding session.

The data were analyzed by a simple arithmetical per cent: number of responses of particular category divided by total number of responses. The data for each group were analyzed

separately by item; data for the composite group of eighty coders were also analyzed. The reference point for group comparisons was the modal response, i.e., the category chosen by the most coders in any one group. Data were also presented by four classes of coder agreement.

The data indicated that with clear, simple categories the composite coder agreement on the dichotomous choice was 84.9 per cent. Of the sixty-six items, three-fourths were in the 75 to 100 per cent coder agreement class.

An overall composite group agreement of 75 per cent was not achieved on the serial choice where coders indicated one of ten sub-categories subsumed under dominance or one of eight sub-categories subsumed under submission. Composite group coder agreement on the sub-categories was 59.1 per cent. Of the sixty-six items, 28.8 per cent were in the 75 to 100 per cent coder agreement class on the serial choice of sub-categories.

When the data for the three groups were inspected they were quite similar. On the dichotomous choice the per cent coder agreements were 86.0 per cent, 83.3 per cent, and 86.6 per cent for the three groups. On the serial choice the agreements were 62.8 per cent, 58.1 per cent, and 64.9 per cent.

The modal responses by category placement were likewise quite similar, approximately the same number of items being placed in each category. The only exception was the placement of seven items by Group I in D1 while Group II and III placed only three and two items respectively in D1.

The same modal response was given by all three groups on forty-two of the items.

II. THE LIMITATIONS

In discussing the conclusions and implications of this research it is desirable to state clearly the possible limitations of this study under which they should be interpreted.

1. The validity of the categories rested with judgment of researcher in reviewing the literature and developing an a priori system of classification from this review.

2. The validity of the content rested (a) with the original observers who took the diary records, and (b) with the division of records into interacts; this responsibility was assumed by the researcher.

3. The agreement of coders rested with the empirical evidence presented which was analyzed by per cent agreement.

4. Any inference drawn from this study must be subjected to study in its own right for sampling procedures were not used in the selection of subjects for coders.

5. The dichotomous decision making process was combined with the serial process in this research; the evidence presented does not differentiate between these processes.

III. THE CONCLUSIONS

The analyzation of these data indicate:

1. That a per cent agreement greater than 75 per cent can be achieved by any one of three groups of coders when a dichotomous decision between dominance and submission is desired; 84.9 per cent was achieved in this study.
2. If 75 per cent is the minimum per cent agreement which is deemed acceptable no implications could be drawn from an analysis using the subcategory classification; it would not meet the acceptable criterian; 59.1 per cent was the composite agreement achieved in the study on subcategories. These results provide a basis for making a decision regarding the use of this system in its present form for a study of interaction as revealed in the diary records of the Longitudinal Studies.
3. The most striking conclusion to be drawn from this study is that the number of persons in a group of coders and the amount of experience as defined in this study was associated in the same way with coder agreement; only slight differences favoring the expert group were noted.
4. The modal response of six coders exhibited a profile similar to the other groups. The modal response of the group of six and the composite group of eighty was the same for 86.3 per cent of the items.

IV. RECOMMENDATIONS

Several suggestions for further research arise from this study. The factors contributing to the difficulty of achieving a satisfactory level of per cent agreement on the serial decision is a most provacative subject for further research. Studies of cognition indicate that seven objects are probably the limit with which man can deal efficiently at the same time; this implies that too many sub-categories were available for effective cognition.

That variability of meaning is attributed to the same behavior by different individuals is a well established fact. A study designed so that this variability could be more effectively evaluated than is possible by per cent agreement would be very valuable.

One subject for further researches lies in that of the small group of coders. If power operates in face to face interaction, the most influential individual in a group of collaborating coders would achieve adoption of this point of view. This could perhaps be studied by the use of an experimental design.

Personality factors of coders have received little attention. A personality scale might provide a better basis for selection of coders than the experience factor now generally associated with the selection of coders.

The motivation of the coder for the task performance

has not been assessed.

These suggestions provide ideas for possible continued research. The coder is indeed a human instrument. It is hoped that the present study has contributed to a growing fund of knowledge in the area of methodology.

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A P P E N D I X E S

APPENDIX A.

TABLE IX

TOTALED RAW DATA GROUP I

ITEM NO.	CATEGORIES-DOMINANCE										TOTAL DOM	CATEGORIES-SUBMISSION								TOTAL SUB	DICHOTOMY		SERIAL		
	1	2	3	4	5	6	7	8	9	10		11	12	13	14	15	16	17	18		S or D	Class	Mode	Raw Score	Class
1a	3	2							41		46	2							1	3	D	W	D9	41	W
1b			2								2			8				39		47	S	W	S17	39	W
2a	4	12			22	11					49									0	D	W	D5	22	Y
2b	12	5					8				25	24								24	D	X	S11	24	Y
2c	19	4			4	8	11				46			1		1	1			3	D	W	D1	19	Y
3a	2	6		9	21	9	2				49									0	D	W	D5	21	Y
3b										2	2				4	1	25	17		47	S	W	S16	25	X
4a	3	4	35								42		1	4					2	7	D	W	D3	35	X
4b			6								6	9	1	8				24	1	43	S	W	S17	24	Y
5a	2	24	1			2	2	15		1	47		1					1		2	D	W	D2	24	Y
5b											0		47					2		49	S	W	S12	47	W
6a	3	1									4	43			1				1	45	S	W	S11	43	W
6b	24	18					1			1	44		1	2		1		1		5	D	W	D1	24	Y
6c											0				3		2	42	2	49	S	W	S17	42	W
7a	26	14			1						41	7	1							8	D	W	D1	26	X
7b						2	7			4	13	2	1	2		5		26		36	S	X	S17	26	X
8a	2	1	10						16		29			1				1	18	20	D	X	S18	18	Y
8b			13								13			4			3	29		36	S	X	S17	29	X
9a	1										1	37	1				1	1	8	48	S	W	S11	37	W
9b	2		9								11			33				5		38	S	W	S13	33	X
10a	1	26				3		12	1		43		1						5	6	D	W	D2	26	X
10b							1			1	2		47							47	S	W	S12	47	W
11a	9	22									31	18								18	D	X	D2	22	Y
11b											0			34				15		49	S	W	S13	34	X

TABLE IX (continued)

12a	3	46												49										0	D	W	D2	46	W
12b								1						1	1	2	10	3	3	1	25	3	48	S	W	S17	25	X
13a	22	5	6											33							3	13	16	D	X	D1	22	Y
13b	1					5	3	1	10					20					1	15	13		29	S	X	S16	15	Y
13c									1		1			2		1		1	2	5	38		47	S	W	S17	38	W
14a	5	3							30					38	7							4	11	D	W	D9	30	X
14b	1	1	2											4			14				31		45	S	W	S17	31	X
15a	4	2			1	36		4	1					48								1	1	D	W	D6	36	X
15b						1	41		5		1			48				1					1	D	W	D7	41	W
16a	2	14	1		3	3								23		1		1				24	26	S	X	S18	24	Y
16b											1			1				28	9	5	5	1	48	S	W	S14	28	X
17a	26	14			5	2	1		1					49									0	D	W	D1	26	X
17b							41		1		6			48				1					1	D	W	D7	41	W
18a				48			1							49									0	D	W	D4	48	W
18b						1	5							6	22			7	2	12			43	S	W	S11	22	Y
19a	19	17			4	6	2		1					49									0	D	W	D1	19	Y
19b	3	1					17		2		5			28	3			1	9	1	7		21	D	X	D7	17	Y
19c														0	1	1	1			35	11		49	S	W	S16	35	X
20a	2	9	15						1					27			1					21	22	D	X	S18	21	Y
20b	12	11	2			2								27	17		2				2	1	22	D	X	S11	17	Y
20c	1	6	4	2	5									18		2	17				11	1	31	S	X	S13	17	Y
21a	2	4												6	43								43	S	W	S11	43	W
21b														0		1	13		2	7	26		49	S	W	S17	26	X
22a	10	28						1			1			40	5				1			3	9	D	W	D2	28	X
22b														0		1	1		1	4	42		49	S	W	S17	42	W
23a	30	16						1						47	2								2	D	W	D1	30	X
23b														0			1			2	46		49	S	W	S17	46	W
*24a	16	17							12					45	1							2	3	D	W	D2	17	Y
24b											12			12	1	1		3	17	1	14		37	S	W	S15	17	Y
25a		49												49									0	D	W	D2	49	W
25b														0		9	2			1	37		49	S	W	S17	37	W

TABLE IX (continued)

26a	7	1			29		37	5					1	6	12	D	W	D9	29	X
26b		1				20	21	1		3	21		2	1	28	S	X	S15	21	Y
*27a	3	3					6	42							42	S	W	S11	42	W
*27b			1			1	2		32				12	2	46	S	W	S13	32	X
*28a	4	27	7		1		39		2					7	9	D	W	D2	27	X
*28b							0	1	1				44	2	48	S	W	S17	44	W
*29a	4	17			3		24			3				21	24	-	Y	S18	21	Y
*29b	1						1	46						1	47	S	W	S11	46	W
*29c		2			1		3		1				44		45	S	W	S17	44	W
*30a	6	4	1		26		37	6						5	11	D	W	D9	26	X
*30b							0		13		3		31	1	48	S	W	S17	31	X

*Failure of a subject to respond on this item

Number of coders = 6

S = Submission
D = Dominance

W = 75-100 per cent coder agreement class
X = 50-75 per cent coder agreement class
Y = 25-50 per cent coder agreement class
Z = 0-25 per cent coder agreement class

APPENDIX A

TABLE X

TOTALED RAW DATA, GROUP II

ITEM NO.	CATEGORIES-DOMINANCE										TOTAL DOM	CATEGORIES-SUBMISSION								TOTAL SUB	DICHOTOMY		SERIAL		
	1	2	3	4	5	6	7	8	9	10		11	12	13	14	15	16	17	18		S or D	Class	Mode	Raw Score	Class
1a									18		18	5							2	7	D	W	D9	18	X
1b									1		1			3				21		24	S	W	S17	21	W
2a	1	5			12	7					25									0	D	W	D5	12	Y
2b	4	5					4				13	11					1			12	D	X	S11	11	Y
2c	7	1	1			7	6				22	1					2			3	D	W	**	7	Y
3a	2			6	8	7	2				25									0	D	W	D5	8	Y
3b										1	1	1			4	2	7	10		24	S	W	S17	10	Y
4a		5	17								22		1					1	1	3	D	W	D3	17	X
4b			2								2	7		1				13	2	23	S	W	S17	13	X
5a		9				2		12	1		24								1	1	D	W	D8	12	Y
5b								1			1		23					1		24	S	W	S12	23	W
6a	1	1	1								3	22								22	S	W	S11	22	W
6b	7	12			1						20					5				5	D	W	D2	12	Y
6c											0		1		4			19	1	25	S	W	S17	19	W
7a	9	9									18	7								7	D	W	**	9	Y
7b	1						7			2	10			1		3	3	7	1	15	S	X	**	7	Y
8a		1	7						8		16			1			1		7	9	D	X	D9	8	Y
8b			8								8	1		2				14		17	S	X	S17	14	X
9a	1	2									3	17							5	22	S	W	S11	17	X
9b	1		7								8			15				2		17	S	X	S13	15	X

TABLE X (continued)

10a		8		1				15				24								1	1	D	W	D8	15	X
10b								1				1		23					1		24	S	W	S12	23	W
11a	5	12										17	8								8	D	X	D2	12	Y
11b												0		1	14			1	9		25	S	W	S13	14	X
12a	3	17				1						21		1		1			2		4	D	W	D2	17	X
12b		1	1				1				1	4		2	2	3		1	9	4	21	S	W	S17	9	Y
13a	12	4	5						2			23								2	2	D	W	D1	12	Y
13b	2					3	2		4			11			1		2	5	3	3	14	S	X	S16	5	Z
13c												0		1					24		25	S	W	S17	24	W
14a	3								15			18	7								7	D	W	D9	15	X
14b	1											1		1	2				21		24	S	W	S17	21	W
15a		1				21		3				25									0	D	W	D6	21	W
15b							16		6			22				1	1		1		3	D	W	D7	16	X
16a		7	2		2	4						15		1						8	9	S	X	S18	8	Y
16b												0				20		2	3		25	D	W	S14	20	W
17a	9	12			2	2						25									0	D	W	D2	12	Y
17b						2	23					25									0	D	W	D7	23	W
18a				25								25									0	D	W	D4	25	W
18b			2			1	8					11	5			3		6			14	S	X	D7	8	Y
19a	8	13			2	2						25									0	D	W	D2	13	X
19b	2	2					5				1	10	2		1	4	5	1	1	1	15	S	X	**	5	Z
19c		2					2					4						13	7	1	21	S	W	S16	13	X
20a	1	8	11									20			2					3	5	D	W	D3	11	Y
20b	8	2	3	1		2						16	2	1	2		1		3		9	D	X	D1	8	Y
20c		2	4	1	3		1		2			13		2	4			6			12	D	X	S16	6	Z
21a												0	7	18							25	S	W	S11	18	X
21b			2									2			4		1	1	4	13	23	S	W	S18	13	X
22a	3	12	2						1			18	4							3	7	D	W	S11	12	Y
22b												0		1	1			2	21		25	S	W	S17	21	W
23a	13	8										21	3							1	4	D	W	D1	13	X
23b											1	1		2					22		24	S	W	S17	22	W

TABLE X (continued)

24a	6	6	1				7		20	2	1				1	1	5	D	W	D9	7	Y
24b								8	8		2	1	2	6	6		17	S	X	D10	8	Y
25a	1	21							22				1		1	1	3	D	W	D2	21	W
25b	1								1		6				16	2	24	S	W	S17	16	X
26a	2	4					10		16		5					4	9	D	X	D9	10	Y
26b						1		10	11			2	1	9	2		14	S	X	D10	10	Y
27a		4							4	21							21	S	W	S11	21	W
27b	1		1						2		1	21			1		23	S	W	S13	21	W
28a	2	8	11						21			2		1		1	4	D	W	D3	11	Y
28b									0	1					1 22	1	25	S	W	S17	22	W
29a	1	11	4				1		17		3	1				4	8	D	X	D2	11	Y
29b									0	25							25	S	W	S11	25	W
29c		1	1						2						23		23	S	W	S17	23	W
30a	3	5	1				11		20	3	2						5	D	W	D9	11	Y
30b								2	2		1	12			10		23	S	W	S13	12	Y

**Bi-modal item

Number of coders = 25

S = Submission
D = Dominance

W = 75-100 per cent coder agreement class
X = 50-75 per cent coder agreement class
Y = 25-50 per cent coder agreement class
Z = 0-25 per cent coder agreement class

APPENDIX A.

TABLE XI

TOTALED RAW DATA, GROUP III

ITEM NO.	CATEGORIES-DOMINANCE										TOTAL DOM	CATEGORIES-SUBMISSION								TOTAL SUB	DICHOTOMY		SERIAL		
	1	2	3	4	5	6	7	8	9	10		11	12	13	14	15	16	17	18		S or D	Class	Mode	Raw Score	Class
1a	1								3		4	1							1	2	D	X	D9	3	X
1b	1										1			1				4		5	S	W	S17	4	X
2a		1			4	1					6									0	D	W	D5	4	X
2b	2	2									4	2								2	D	X	**	2	Y
2c	1				2	3					6									0	D	W	D6	3	X
3a	1			2	3						6									0	D	W	D5	3	X
3b											0					1	1	4		6	S	W	S17	4	X
4a	1		4								5								1	1	D	W	D3	4	X
4b			1								1	1						3	1	5	S	W	S17	3	X
5a	1	3						2			6									0	D	W	D2	3	X
5b											0		6							6	S	W	S12	6	W
6a											0	6								6	S	W	S11	6	W
6b	3	3									6									0	D	W	**	3	X
6c											0							6		6	S	W	S17	6	W
7a	2	4									6									0	D	W	D2	4	X
7b							2			1	3					1	1	1		3	-	X	D7	2	Y
8a	1		2						3		6									0	D	W	D9	3	X
8b			2								2							4		4	S	X	S17	4	X
9a											0	5							1	6	S	W	S11	5	W
9b			2								2			4						4	S	X	S13	4	X
10a	1	3						2			6									0	D	W	D2	3	X
10b											0		6							6	S	W	S12	6	W
11a		4									4	2								2	D	X	D2	4	X

TABLE XI (continued)

11b											0			4				2		6	S	W	S13	4	X
12a		6									6									0	D	W	D2	6	W
12b											0		1	1				3	1	6	S	W	S17	3	X
13a	3	1									4								2	2	D	X	D1	3	X
13b							3				3			1				2		3	-	X	D7	3	X
13c											0							6		6	S	W	S17	6	W
14a	1	1							3		5								1	1	D	W	D9	3	X
14b	1										1			4				1		5	S	W	S13	4	X
15a						6					6									0	D	W	D6	6	W
15b							5		1		6									0	D	W	D7	5	W
16a		1	1		1						3								3	3	-	X	S18	3	X
16b											0				4	1			1	6	S	W	S14	4	X
17a	2	2				1	1				6									0	D	W	**	2	Y
17b							4			2	6									0	D	W	D7	4	X
18a				6							6									0	D	W	D4	6	W
18b							1				1	3			1		1			5	S	W	S11	3	X
19a	2	4									6									0	D	W	D2	4	X
19b							1			1	2					2		2		4	S	X	**	2	Y
19c											0						5	1		6	S	W	S16	5	W
20a		2	3								5								1	1	D	W	D3	3	X
20b	2	2	1								5			1						1	D	W	**	2	Y
20c			1		1						2		2	1				1		4	S	X	S12	2	Y
21a		1									1	4							1	5	S	W	S11	4	X
21b											0			1				5		6	S	W	S17	5	X
22a	1	2									3	1						1	1	3	-	X	D2	2	Y
22b											0							6		6	S	W	S17	6	W
23a	4	2									6									0	D	W	D1	4	X
23b											0							6		6	S	W	S17	6	W
24a	2	1							2		5								1	1	D	W	**	2	Y
24b										4	4					1		1		2	D	X	D10	4	X

TABLE XI (continued)

25a		6							6							0	D	W	D2	6	X
25b			1						1		2				3	5	S	W	S17	3	X
26a		2				2			4	1					1	2	D	X	**	2	Y
26b							4		4				2			2	D	X	D10	4	X
27a									0	6						6	S	W	S11	6	W
27b	1								1		4				1	5	S	W	S13	4	X
28a		2	2						4						2	2	D	X	**	2	Y
28b									0						6	6	S	W	S17	6	W
29a	1	2							3						3	3	-	X	S18	3	X
29b									0	6						6	S	W	S11	6	W
29c									0					1	5	6	S	W	S17	5	W
30a		2				2			4	1					1	2	D	X	**	2	Y
30b									0		3				2	1	6	S	W	S13	3	X

**Bi-modal Items

Number of Coders = 6

S = Submission
D = Dominance

W = 75-100 per cent coder agreement class
X = 50-75 per cent coder agreement class
Y = 25-50 per cent coder agreement class
Z = 0-25 per cent coder agreement class

APPENDIX A.

TABLE XII

RAW DATA, COMPOSITE GROUP

ITEM NO.	CATEGORIES-DOMINANCE										CATEGORIES-SUBMISSION								DICHOTOMY				SERIAL		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Dom.	Sub.	Mode	Class	Mode	Raw Score	Class
1a	4	2							62		8							4	68	12	D	W	D9	62	W
1b	1		2						1				12				64		4	76	S	W	S17	64	W
2a	5	18			38	19													80	0	D	W	D5	38	Y
2b	18	12					12				37					1			42	38	D	X	S11	37	Y
2c	27	5	1		6	18	17				1		1		1	3			74	6	D	W	D1	27	Y
3a	5	6		17	32	16	4												80	0	D	W	D5	32	Y
3b										3	1			8	4	33	31		3	77	S	W	S16	33	Y
4a	4	9	56									2	4			1		4	69	11	D	W	D3	56	X
4b			9								17	1	9				41	3	9	71	S	W	S17	41	X
5a	3	36	1			4	2	29	1	1		1					1	1	77	3	D	W	D2	36	Y
5b								1				76					3		1	79	S	W	S12	76	W
6a	4	2	1								71			1				1	7	73	S	W	S11	71	W
6b	34	33			1		1			1		1	2		6		1		70	10	D	W	D1	34	Y
6c												1		7		2	67	3	0	80	S	W	S17	67	W
7a	37	27			1						14	1							65	15	D	W	D1	37	Y
7b	1					2	16			7	2	1	3		9	4	34	1	26	54	S	X	S17	34	Y
8a	3	2	19						27					2		1	1	25	51	29	D	X	D9	27	Y
8b			23								1		6			3	47		23	57	S	X	S17	47	X
9a	1	3									59	1				1	1	14	4	76	S	W	S11	59	X
9b	3		18										52				7		21	59	S	X	S13	52	X
10a	2	37		1		3		29	1			1						6	73	7	D	W	D2	37	Y
10b							1	1		1		76					1		3	77	S	W	D12	76	W
11a	14	38									28								52	28	D	X	D2	38	Y
11b												1	52			1	26		0	80	S	W	S13	52	X

TABLE XII (continued)

12a	6	69				1						1		1			2		76	4	D	W	D2	69	W
12b		1	1				2			1	1	5	13	6	3	2	37	8	5	75	S	W	S17	37	Y
13a	37	10	11						2								3	17	60	20	D	W	D1	37	Y
13b	3					8	8	1	14				2		3	20	18	3	34	46	S	X	S16	20	Y
13c									1	1		2		1	2	5	68		2	78	S	W	S17	68	W
14a	9	4							48		14							5	61	19	D	W	D9	48	X
14b	3	1	2									1	20				53		6	74	S	W	S17	53	X
15a	4	3			1	63		7	1									1	79	1	D	W	D6	63	W
15b						1	62		12	1				2	1		1		76	4	D	W	D7	62	W
*16a	2	22	4	6	7							2		1				35	41	38	D	X	S18	35	Y
16b										1				52	10	7	8	2	1	79	S	W	S14	52	X
17a	37	28			7	5	2		1										80	0	D	W	D1	37	Y
17b						2	68		1	8				1					79	1	D	W	D7	68	W
18a			79				1												80	0	D	W	D4	79	W
18b			2			2	14				30			11	2	19			18	62	S	W	S11	30	Y
19a	29	34			6	8	2		1										80	0	D	W	D2	34	Y
19b	5	3					23		2	7	5		1	5	16	2	10	1	40	40	[illegible]	X	D7	23	Y
19c		2					2				1	1	1			53	19	1	4	76	S	W	S16	53	X
20a	3	19	29						1				3					25	52	28	D	X	D3	29	Y
20b	23	15	5	1	4						19	1	5		1		5	1	48	32	D	X	D1	23	Y
20c	1	8	9	3	9		1		2			6	22				18	1	33	47	S	X	S13	22	Y
21a	2	5									54	18						1	7	73	S	W	S11	54	X
21b			2									11	18		3	8	35	13	2	78	S	W	S17	35	Y
22a	14	42	2				1		1	1	10				1		1	7	61	19	D	W	D2	42	X
22b												2	2		1	6	69		0	80	S	W	S17	69	W
23a	47	26					1				5							1	74	6	D	W	D1	47	X
23b										1		2	1			2	74		1	79	S	W	S17	74	W
*24a	24	24	1						21		3	1					1	4	70	9	D	W	1,2	24	Y
24b										24	1	3	1	5	24	1	21		24	56	S	X	**	24	Y
25a	1	76												1			1	1	77	3	D	W	D2	76	W
25b	1		1									17	2			1	56	2	2	78	S	W	S17	56	X
26a	9	7							41		11						1	11	57	23	D	X	D9	41	X
26b		1					1			34	1		2	4	32		4	1	36	44	S	X	D10	34	Y

TABLE XII (continued)

*27a	3	7						69												
*27b	2		2				1		1	57				14	2		10	69	S	W	S11	69	W
*28a	6	37	20			1				4		1			10		5	74	S	W	S13	57	X
*28b								2		1			1	72	3		64	15	D	W	D2	37	Y
*29a	6	30	4			4			6	1					28		0	79	S	W	S17	72	W
*29b	1							77							1		44	35	D	X	D2	30	Y
*29c		3	1			1				1			1	72			1	78	S	W	S11	77	W
*30a	9	11	2			39		10	2						6		5	74	S	W	S17	72	W
*30b							2		1	28		3		43	2		61	18	D	W	D9	39	Y
																	2	77	S	W	S17	43	X

*Failure of a subject to respond

**Bi-modal item

Number of coders = 80

W = 75-100 per cent coder agreement class
X = 50-75 per cent coder agreement class
Y = 25-50 per cent coder agreement class
Z = 0-25 per cent coder agreement class

APPENDIX A.

TABLE XIII

GROUP AND COMPOSITE GROUP PER CENT AGREEMENTS
BY ITEM; MODAL RESPONSES

ITEM NO.	GROUP I N=49				GROUP II N=25				GROUP III N=6				COMPOSITE				MODAL RESPONSES		
	Dich.		Serial		Dich.		Serial		Dich.		Serial		Dich.		Serial		I	II	III
	Raw	%	Raw	%	Raw	%	Raw	%	Raw	%	Raw	%	Raw	%	Raw	%			
1a	46	.94	41	.84	18	.72	18	.72	4	.67	3	.50	62	.78	62	.78	D9	D9	D9
1b	47	.96	39	.80	24	.96	21	.84	5	.83	4	.67	76	.95	64	.80	S17	S17	S17
2a	49	1.00	22	.45	25	1.00	12	.48	6	1.00	4	.67	80	1.00	38	.48	D5	D5	D5
2b	25	.51	24	.49	13	.52	11	.44	4	.67	2	.33	42	.53	37	.46	S11	S11	**1,2,11
2c	46	.94	19	.39	22	.88	7	.28	6	1.00	3	.50	74	.93	27	.34	D1	**1+6	D6
3a	49	1.00	21	.43	25	1.00	8	.32	6	1.00	3	.50	80	1.00	32	.40	D5	D5	D5
3b	47	.96	25	.51	24	.96	10	.40	6	1.00	4	.67	77	.96	33	.41	S16	S17	S17
4a	42	.86	35	.71	22	.88	17	.68	5	.83	4	.67	69	.86	56	.70	D3	D3	D3
4b	43	.88	24	.49	23	.92	13	.52	5	.83	3	.50	71	.89	41	.33	S17	S17	S17
5a	47	.96	24	.49	24	.96	12	.48	6	1.00	3	.50	77	.96	36	.45	D2	D8	D2
5b	49	1.00	47	.96	24	.96	23	.92	6	1.00	6	1.00	79	.99	76	.95	S12	S12	S12
6a	45	.92	43	.88	22	.88	22	.88	6	1.00	6	1.00	73	.91	71	.89	S11	S11	S11
6b	44	.90	24	.49	20	.80	12	.48	6	1.00	3	.50	70	.88	34	.42	D1	D2	**1,2
6c	49	1.00	42	.86	25	1.00	19	.76	6	1.00	6	1.00	80	1.00	67	.84	S17	S17	S17
7a	41	.84	26	.53	18	.72	9	.36	6	1.00	4	.67	65	.81	37	.46	D1	**1+2	D2
7b	36	.73	26	.53	10	.40	7	.28	3	.50	2	.33	54	.68	34	.42	S17	**15+16	D7
8a	29	.59	18	.37	16	.64	8	.32	6	1.00	3	.50	51	.64	21	.26	S18	D9	D9
8b	36	.73	29	.59	17	.68	14	.56	4	.67	4	.67	57	.71	47	.59	S17	S17	S17
9a	48	.98	37	.76	22	.98	17	.68	6	1.00	5	.83	76	.95	59	.74	S11	S11	S11
9b	38	.78	33	.67	17	.68	15	.60	4	.67	4	.67	59	.74	52	.65	S13	S13	S13
10a	43	.88	26	.53	24	.96	15	.60	6	1.00	3	.50	73	.91	37	.46	D2	D8	D2
10b	47	.96	47	.96	24	.96	23	.92	6	1.00	6	1.00	77	.96	76	.95	S12	S12	S12
11a	31	.63	22	.45	17	.68	12	.48	4	.67	4	.67	52	.65	38	.48	D2	D2	D2
11b	49	1.00	34	.69	25	1.00	14	.56	6	1.00	4	.67	80	1.00	52	.65	S13	S13	S13

TABLE XIII (continued)

12a	49	1.00	46	.94	21	.84	17	.68	6	1.00	6	1.00	76	.95	69	.86	D2	D2	D2
12b	48	.98	25	.51	21	.84	9	.36	6	1.00	3	.50	75	.94	37	.46	S17	S17	D17
13a	33	.67	22	.45	23	.92	12	.48	4	.67	3	.50	60	.75	37	.46	D1	D1	D1
13b	29	.60	15	.31	14	.56	5	.20	3	.50	3	.50	46	.58	20	.25	S16	S16	D7
13c	47	.96	38	.76	25	1.00	24	.96	6	1.00	6	1.00	78	.98	68	.85	S17	S17	S17
14a	38	.78	30	.61	18	.72	15	.60	5	.83	3	.50	61	.76	48	.60	D9	D9	D9
14b	45	.80	31	.63	24	.96	21	.84	5	.83	4	.67	74	.93	53	.62	S17	S17	S13
15a	48	.98	36	.73	25	1.00	21	.84	6	1.00	6	1.00	79	.99	63	.79	D6	D6	D6
15b	48	.98	41	.84	22	.88	16	.64	6	1.00	5	.83	76	.95	62	.78	D7	D7	D7
16a	26	.53	24	.49	15	.60	8	.32	3	.50	3	.50	41	.51	35	.44	S18	S18	S18
16b	48	.98	28	.57	25	1.00	20	.80	6	1.00	4	.67	79	.99	52	.65	S14	S14	S14
17a	49	1.00	26	.53	25	1.00	12	.48	6	1.00	2	.33	80	1.00	37	.46	D1	D2	**1,2
17b	48	.99	41	.84	25	1.00	23	.92	6	1.00	4	.67	79	.99	68	.85	D7	D7	D7
18a	49	1.00	48	.98	25	1.00	25	1.00	6	1.00	6	1.00	80	1.00	79	.99	D4	D4	D4
18b	43	.88	22	.45	14	.56	8	.32	5	.83	3	.50	62	.78	30	.38	S11	D7	S11
19a	49	1.00	19	.39	25	1.00	13	.52	6	1.00	4	.67	80	1.00	34	.42	D1	D2	D2
19b	28	.57	17	.35	10	.40	5	.20	4	.67	2	.33	40	.50	23	.29	D7	**7,15	**15,17
19c	49	1.00	35	.71	21	.84	13	.52	6	1.00	5	.83	76	.95	53	.66	S16	S16	S16
20a	27	.55	21	.43	20	.80	11	.44	5	.83	3	.50	52	.65	29	.36	S18	D3	D3
20b	27	.55	17	.35	16	.64	8	.32	5	.83	2	.33	48	.60	23	.29	S11	D1	**
20c	31	.63	17	.35	13	.52	6	.24	4	.67	2	.33	33	.41	22	.28	S13	S16	1,2
21a	43	.88	43	.88	25	1.00	18	.72	5	.83	4	.67	73	.91	54	.68	S11	S11	S12
21b	49	1.00	26	.53	23	.92	13	.52	6	1.00	5	.83	78	.98	35	.48	S17	S18	S11
22a	40	.82	28	.57	18	.72	12	.40	3	.50	2	.33	61	.76	42	.53	D2	S11	S17
22b	49	1.00	42	.86	25	1.00	21	.84	6	1.00	6	1.00	80	1.00	69	.86	S17	S17	D2
23a	47	.96	30	.61	21	.84	13	.52	6	1.00	4	.67	74	.93	47	.59	D1	D1	S17
23b	49	1.00	46	.94	24	.96	22	.88	6	1.00	6	1.00	79	.99	74	.93	S17	S17	D1
24a	45	.92	17	.35	20	.80	7	.28	5	.83	2	.33	70	.88	24	.30	D2	D9	S17
24b	37	.76	17	.35	17	.68	8	.32	4	.67	4	.67	56	.70	24	.30	S15	D10	**1,9
25a	49	1.00	49	1.00	22	.88	21	.84	6	1.00	6	1.00	77	.96	76	.95	D2	D2	D10
25b	49	1.00	37	.76	24	.96	16	.64	5	.83	3	.50	78	.98	56	.70	S17	S17	D2
26a	37	.76	29	.59	16	.64	10	.40	4	.67	2	.33	57	.77	41	.51	D9	D9	S17
26b	28	.57	21	.43	14	.56	10	.40	4	.67	4	.67	44	.55	34	.42	S15	D10	**2,9

TABLE XIII (continued)

27a	42	.86	42	.86	21	.84	21	.84	6	1.00	6	1.00	69	.86	69	.86	S11	S11	S11
27b	46	.94	32	.65	23	.92	21	.84	5	.83	4	.67	74	.93	57	.71	S13	S13	S13
28a	39	.80	27	.55	21	.84	11	.44	4	.67	2	.33	64	.80	37	.46	D2	D3	**
28b	48	.98	44	.90	25	1.00	22	.88	6	1.00	6	1.00	79	.99	72	.90	S17	S17	S17
29a	24	.49	21	.43	17	.68	11	.44	3	.50	3	.50	44	.60	30	.38	S18	D2	S18
29b	47	.96	46	.94	25	1.00	25	1.00	6	1.00	6	1.00	78	.98	77	.96	S11	S11	S11
29c	45	.92	44	.90	23	.92	23	.92	6	1.00	5	.83	74	.93	72	.90	S17	S17	S17
30a	37	.76	26	.53	20	.80	11	.44	4	.67	2	.33	61	.76	39	.49	D9	D9	**
30b	48	.98	31	.63	23	.92	12	.48	6	1.00	3	.50	77	.96	43	.54	S17	S13	S13

** Bi-modal items

APPENDIX B.

INSTRUCTIONS TO CODERS, PRE-STUDY

A thesis statement is attached which will clarify the design of entire project.

You are asked to code ten diary records of preschoolers which have been divided into interacts and numbered. There are seven possible ways in which a preschooler may take part in an interaction; one additional category is provided if you cannot code the information.

Please do not discuss these with anyone as we would like to have unbiased coding in so far as possible.

Steps:

1. Familiarize yourself with definitions.
2. Go over the sample with the definitions in front of you and see how it was coded.
3. Code the ten records using the form provided.
4. Make any comments you wish; both good and adverse criticisms will be appreciated as they will aid the researcher.
5. You can't know how much I really appreciate this.

DEFINITIONS:

Interaction: the words and actions of the actor (preschooler) and the reaction of another. It remains one interaction so long as: (1) coping mechanism is same in all aspects, and (2) initial stimulus remains the same.

There are seven possible categories in which the inter-

action of the preschooler may be placed. Any one interaction may be placed in only one category. (One additional category is provided if needed; see H.)

A. Succorance: helplessness; infantile dependence upon other for love, assistance, and protection.

B. Nurturance: supporting others including dolls by providing love, assistance, and protection.

C. Dominance: achieving assertive, autocratic ascendancy over others.

D. Deference: sycophantic submission to the opinion or preference of another; (sycophantic means flattering compliance) emphasis on the glorification of another who is perceived as superior. (Deference for the purposes of this study will also be used in the meaning of courteous yielding or submission).

E. Abasement: self-depreciation; mortifying, mutilating, or otherwise devaluing the self.

F. Aggression: hostility toward others, overt or covert in fact or in fantasy.

G. Autonomy: self-sustained; independent and unfettered.

H. Insufficient information for coding.

APPENDIX B.

SAMPLE OF ITEMS USED FOR CODING IN PRE-STUDY

Number 1 (07)

Indoor--free play 9:25-9:55

1. Michael stands in center of room. Holds block with stick. Stick hits Brad in the eye. Michael goes quickly back and sits down. Begins to build a tower of erector pieces. He has a look of contentment or satisfaction.
2. He is seated beside Molly. Teddy stands beside Michael's chair and helps to build. "No, Teddy." he says to Ted as he attempts to place a piece where Michael does not wish.
3. Michael stands up. Walks around room holding his creation. Goes to the truck corner. Steps over and seats himself on a truck. Rolls over to window seat. Gets off. Looks at records on the window seat. Picks up one. Holds it. Goes to record player. Tries to take off record which is on. Brad screams, "Don't do that!" Michael lays record down. Goes back to player and <u>kicks</u> Brad gently.
4. Walks the two or three steps back. Picks up record; goes back. "I'm going to play this," says Michael. "I'm not going to let you," says Brad.
5. Michael shifts from foot to foot. Leans against piano. Continues to hold his record. "I'm gonna play this." Michael kicks at Brad. Brad hops back, pushes.
6. Michael grimaces, pulls back. Michael places record on shelf. Gets back on truck. Rolls to center of room.

APPENDIX B MAJOR RESEARCH INSTRUCTIONS, DEFINITIONS, EXAMPLES, AND SAMPLE ITEMS TO BE CLASSIFIED

You are being asked to participate in a research project which seeks to develop a reliable and simple procedure for classifying the interactions of preschoolers as dominant or submissive. It is recognized that there are many degrees of each and that certain types of either dominance or submission are socially approved.

Your participation in this is greatly appreciated.

Please follow the directions very carefully.

INSTRUCTIONS:

1. Read the definitions following these instructions.

2. Read the examples. Each definition is illustrated at least once.

3. Use a pencil for all marking. Stop now and in the proper space on each page, in the right hand corner, circle the G, if you are a graduate student; the U, if you are an undergraduate student; the E, if you participated in the earlier coding done for this research.

4. The underlined name is the person whose action you are classifying.

5. In the left block (facing you) under each sample make a D or an S. D for dominance, S for submission. AFTER DOING THIS, refer to the definitions and write in the right block the number of the definition you feel most nearly describes the action. If you put a D, use only one definition from that group (numbers 1 - 10); if you put an S, use only one definition from that group (numbers 11 - 18). Refer now to an example to see if these instructions are clear.

6. Do all the acts on one row before going to the next row. (A row goes across your paper horizontally.) Complete set number 1 before going on to set number 2. This is very important. (Leave no blanks) Read all the acts on one row before coding that row.
7. Try to complete all items. Work as rapidly as you can; do not ponder each one for a long time. You may not use every definition. We want your opinion; use any definition as often as you need it.
8. When you are finished, please write by any block a word which you feel would more accurately describe the action. When you must make a difficult decision use the definitions, not the examples, as your guide.

DEAL 1963

NOTE: Underlined portions of 6, 7, and 8, were added to the instructions as a result of comments in Session One.

CATEGORIES AND THEIR DEFINITIONS

DOMINANCE

1. ADVISES
   recommends a course of action
   gives requested information
   suggests

2. DIRECTS
   regulates activities or course of them
   assigns roles
   leads activity

3. HELPS
   aids or provides protection of own volition without being requested to do so

4. ATTACKS
   uses actual physical force against another person; uses to get an object

5. THREATENS
   promises punishment, reprisal, or discomfort

6. DISAPPROVES
   passes unfavorable judgment upon

7. RESISTS
   exerts oneself to counteract

8. RIDICULES
   makes fun of
   teases

9. BOASTS
   gives oral expression to one's pride in self or a possession or a relationship

10. IGNORES
    willfully disregards

SUBMISSION

11. REQUESTS
    asks or petitions for information, assistance, permission

12. IMITATES
    follows or copies as a pattern, not in jest

13. ASSISTS
    provides support upon being requested to do so

14. WITHDRAWS
    retreats
    goes away from

15. EVADES
    avoids confrontation with
    attempts to change conversation

16. CONCEDES
    gives up or yields after resisting

17. AGREES
    concurs, is in harmony with, acquiesces

18. APPROACHES
    comes near, takes preliminary steps to

EXAMPLES OF THE DEFINITIONS

INITIAL ACT	RESPONSE	FURTHER RESPONSE(if any)
1. Melissa catches baby carriage, pulls over to Miss S. "Will you roll me in this?"	Miss S. explains why she cannot.	Melissa gets a chair, smiling, as she pushes it over to circle time.
S 11 →	D 1 →	S 17
2. Melissa starts out through lobby. Is directed through other door by observer.	"I don't want to go this way," Melissa protests but goes.	
D 2 →	S 16	
3. Susan kicks edge of Carol's cot repeatedly.	"I'm not gonna play with you," Carol says.	
D 4 →	D 5	
4. Tim jumps down from the jungle gym singing: "Oh my darling Clementine"..	Hal follows him down repeats, "Oh my darling Clementine."	
D 2 →	S 12	
5. Sammy hits Bobby on the arm with his palm.	Bobby continues to pick up blocks and add to the structure he is building.	
D 4 →	D 10	
6. John looks at Bobby and takes one of the instruments from the doctor bag.	Bobby says: "John's a bad boy." He repeats several times.	John stands there for a moment; says nothing. Lays the instrument on the floor and walks over to block corner.
D 2 →	D 6 →	S 14

7. Ruth nestles close to Mrs. W. who is reading a story. Without a word hands Mrs. W. a book and smiles at her.

Mrs. W.: "All right, Ruth, we'll read your book."

S	18	——>	D	3

8. Cliff spies the new fire truck on the floor; runs over, catches the truck with his left hand and begins to push Lynn with the right hand.

Lynn hangs on tenaciously. "It's mine. Mine!" she screeches.

Cliff lets go. "I need it," he says, but picks up a rubber figure of a fireman and begins to bounce it.

D	4	——>	D	7	——>	D	14

9. Mrs. S. says to Mark: "You bit Ann and it hurts. You need to tell her you are sorry."

Mark keeps eyes on floor and says: "My shoe's untied."

D	1	——>	S	15

10. "Teacher, you know what, we had the biggest Christmas tree of any body," says Jim, waving a small piece of pine bough.

"That's nice, Jim," says Miss P.

D	9	——>	S	17

11. Davey pushes the wagon to the steps. It hits the steps: "Push it, Philip; push it hard."

Philip grins, bends over and pushes on the back of the wagon.

D	2	——>	S	13

12. Carol comes over to the group of girls in the box and begins to climb in.

"You can't come in, you're a junior; you're a junior, you're a junior," chants Linda.

Carol bursts into tears and goes running across the yard to Mrs. R.

S	18

→

D	8

→

S	14

INTERACTIONS TO BE CLASSIFIED

INITIAL ACT	RESPONSE	FURTHER RESPONSE (if any)
1. Frances sits on the shelf beside the record player listening to records and marking on a piece of paper. She holds up the paper and calls out, "Mrs. M., see what I made!"	Mrs. M.: "Yes, I like that."	

2. Frances turns over on her stomach and continues to draw. She finishes the pictures and jumps down to go to the sink to play. At the sink she turns on the water full force and holds a dipper under the water making the water splash all over the place. Mrs. M.: "Frances, I can't let you play in the water if you continue to splash it all over the floor."	Frances: "You fix the water."	Mrs. M.: "I can't fix the water if you continue to change it."

3. Frances finishes the first book, she throws it across the table and throws the remaining books. Mrs. M.: "Frances, I can't let you have the privilege of looking at the books if you continue throwing them. You tore one book this morning and now you're throwing them. We enjoy our books very much and they're for everyone to enjoy. They tear easily, so we need to be especially careful with them." (Mrs. M. holds Frances by the arm.)	Frances listens very quietly to the story.	

INITIAL ACT	RESPONSE	FURTHER RESPONSE (if any)
4. Marianne goes to table where children are making jack-o-lantern. Miss H. puts apron on her.	She (Marianne) turns around to have it tied.	
5. Children are all shouting "Oh-oh" over and over in real low pitched voices. One child says: "Oh, silly pumpkin."	Marianne repeats: "Oh silly pumpkin," after the child.	
6. Marianne comes to recorder: "Teacher, will you take this off?" (apron) Asks recorder to come with her and get "that other thing."	Recorder sends her to student assistant.	Marianne goes.
7. Mrs. P. asks Bobbie to put out her pad. (Bobbie has put her pad in the place Linda's pad belongs.)	Bobbie says: "un-huh". She points to pad.	
8. Bobbie brings books to Linda. "I'm a nice friend now," says Bobbie.	She helps Linda to get get on her shoes. (Linda permits this.)	
9. Gets up--goes to student teacher to have her shoe tied. (Bobbie.)	Student teacher ties.	

INITIAL ACT	RESPONSE	FURTHER RESPONSE (if any)
10. Boys ride up. "Pooh, pooh, pooh," they say.	Melissa repeats.	
11. Melissa drops pencil. "Hey, Jack, get my pencil."	He (Jack) does.	
12. Melissa sits with knees drawn up surverying situation. At signal from piano by the teacher.	Melissa hops quickly down. Goes to circle, then runs to record player, then runs back with a book and sits quietly, legs crosses, Indian fashion.	
13. Marianne looks up at Susan and says: "You can play with my costume if you want to."	Susan looks at her and replies: "OK, but I really don't want to 'cause I had one like it one time."	Marianne: "OK"
14. Susan holds her picture up for teacher to see. "Lookie at my picture, Mrs. S."	"That's a lovely picture, Susan!" Mrs. S. exclaims.	
15. Susan takes her picture over to the bench where Marianne is "writing". Susan: "That's not the way to write."	Marianne: "It is so-- 'cause I know how."	

INITIAL ACT	RESPONSE	FURTHER RESPONSE (if any)
16. Herbie goes to bathroom. Stands in front of mirror making faces. Leaves. Comes back. Repeats performance. Mrs. M. comes in bathroom.	Herbie quickly places cup in can and returns to playroom.	
17. Herbie climbs back on shelf. Bobby is sitting on shelf and tells Herbie to get off.	Herbie refuses.	
18. Bobby kicks and slaps Herbie.	Herbie cries loudly and Mrs. W. comes to his rescue.	
19. Bobby is lying on floor pushing cars over elaborate block road he and Franky have built. Bobby drives on Teddy and Michael's road. Michael tells him to get off their airplane road.	Bobby: "I know what it is. I'm just taking a look at it."	They (Michael) let him drive around.
20. Bobby drives to doll corner and gets telephone; delivers it to Michael and Teddy. "I brought you a telephone," he says.	Teddy calls on phone: "Bobby, someone tore up our airport."	Bobby: "OK, I'm going after them. 10-4."

INITIAL ACT	RESPONSE	FURTHER RESPONSE (if any)
21. Johnny (from Senior group) asks Bobby for a red police car.	Bobby give it to him quietly.	
22. He joins girl at sink. Girl: "Didn't we play-- I'm playing with you, Charlie."	Charlie: "OK."	
23. Girl: "Let's go inside and play, Charlie."	Charlie: "OK."	
24. Girl: "We're buddies, Charlie."	No answer from Charlie. They go inside.	
25. Pulls off hat and goes into playroom. Teacher is reading a story.	Doris Anne listens to story with three other girls.	
26. Doris Anne says to observer: "Look what I made. I don't know what you do with this--just make something." (tinker toys.)	Observer says nothing. Writes down what Doris Anne said to her.	

INITIAL ACT	RESPONSE	FURTHER RESPONSE (if any)
27. Doris Anne goes into playroom calling: "Will you get me that teddy bear record?"	Someone opens drawer and gives her record.	
28. Sally goes to get a spoon and brings it back to dig in dirt. Miss H. finds a worm and shows it to Sally.	Sally smiles.	
29. Sally goes over and shows Teddy and Lisa the worm (on a spoon).	Lisa asks if she can keep the worm.	Sally says, "Yes."
30. Sally runs to sandbox to get a can to put worms in. Says, "Look, look, teacher!"	Teacher looks at can.	