DOCUMENT RESUME

ED 104 520 PS 007 725

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TITLE The Design and Validation of an Instrument for Identifying and Measuring the Coping Behaviors of Three-Year-Olds in Pre-School Settings.
PUB DATE 74
NOTE 111p.; Ph.D. Dissertation, University of Pittsburgh

EDRS PRICE MF-$0.76 HC-$5.70 PLUS POSTAGE
DESCRIPTORS Affective Behavior; Behavior Patterns; Classroom Observation Techniques; Educational Environment; Feedback; Interpersonal Competence; Literature Reviews; *Measurement Instruments; *Preschool Children; Reliability; *Research Design; *Social Adjustment; *Social Behavior; Validity
IDENTIFIERS *Coping Behaviors

ABSTRACT

Coping is defined as the process by which the child attempts to control, synthesize, and make his world manageable. Coping behaviors found in the literature and observed in five preschool classrooms were behaviorally defined to facilitate their identification and observation by trained adults. An instrument designed for use in observation of these coping behaviors was validated. The instrument was used in the observation of 10 children in a preschool setting. The observers were paired, but worked independently within carefully defined time frames. The 27 behaviors observed were grouped into five larger strategies: Orientation, Structuring, Reality Testing, Resources, and Avoidance. Both strategies and behaviors were observed and analyzed. Recommendations for refining and extending the design and methodology of the study are included. Appendixes make up approximately one-third of the document. (Author/CS)

THE DESIGN AND VALIDATION OF AN INSTRUMENT FOR IDENTIFYING AND MEASURING THE COPING BEHAVIORS OF THREE-YEAR-OLDS IN PRE-SCHOOL SETTINGS

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1974

ACKNOWLEDGEMENTS

For me, completing a doctoral program was an experience in both ideas and people. Some of the ideas are incorporated in this dissertation. I hope to touch at least some of the people in my thanks to:

-the preschool children who were so natural and gracious during my presence in their classrooms.

-Doctors Warren Shepler, Sara Arnaud, Tony Eichelberger, John Stanier, and Kay Atman, my committee members, whose unders. nding, input and feedback was both honest and critical: especially Warren Shepler who critiqued all the mini-steps in the process and Sara Arnaud who directed the Education Professions Development Act Early Childhood Program of which I was a two year participant.

-the persons who cooperated with me either as observers, as teachers in the preschools, or as resources in Early Childhood Education or Child Development.

and

- those persons whose presence in my life as friends gave me that "joie d'vivre" which I needed to see the venture to the end.

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1.0 RATIONALE AND STATEMENT OF THE PROBLEM

1.1 Rationale

Theorists and researchers alike have been systematically exploring and explaining the human person. The study of Freud in the late 1800's and early 1900's first focused interest on the first five years as important in the development of the person. Educators in the 1800's such as Froebel and Montessori were also interested in what was happening in these years.

Systematic studies of the development of children in the first five years of life, however, are recent. After World War I the interest was focused on the physical development of the child. Increasingly since 1930 systematic research has turned to various aspects of development in the first five years. Perhaps most influential have been the studies of Piaget on the cognitive development of the child.

But the two-to-five-year-old is still frequently underestimated by those who work with him. His ability to face difficulty, to try new things, to explore, to handle his world and make the multitude of stimuli manageable is often not recognized. This age group is conspicuous because of energy, but too few who work with them are equally as amazed at their resilience, the enormity of number of experiences they have to encounter and the great integrative forces this demands from them. "...the ways in which human beings handle new demands, everyday problems and difficulties, need to be studied in their own right." (Murphy et al, 1962, p. 4)

While persons working with the three-year-olds are aware that many children handle situations arising in the classroom in a "typical

for-them" manner, few have looked at this behavior, tried to identify, isolate, and examine it. This may be partly explained because of the relative recentness of direct focusing on this behavior, which we will here identify as coping, as a definable, identifiable, unique phenomenon of the pre-school child[1].

The research thus far has defined coping, given the general scope and significance of coping, identified coping behavior in non-school or testing situations, and structured situations for the classroom population which were tested outside the classroom. It has given evidence that alternative coping behaviors can be learned, depending upon the individual child and his range of experience, culture, range of perception, biology and the situation in which he is found. However, a method that can be used by adults working with pre-school children, after reasonable training/instruction, to look systematically at these coping behaviors as part of the data needed for the over-all planning for the three-year-old and his experience in the classroom has not yet been designed.

1.2 Statement of the Problem

The process of facilitating the study of a given child and his way of handling his world include both the identification of the coping behaviors and the observation of these behaviors in the setting where the teacher is working with the child--in the classroom.

The problem, therefore, of this study is to design and validate an instrument for identifying and

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[1]The earliest research of Lois B. Murphy was in the 1930's, but the Menninger Coping Project was the first of her reportings of a systematic study of coping.

measuring the coping behaviors of three-year-olds in pre-school settings.

1.21 Hypotheses

In this study, the following are hypothesized:

1. Specific coping behaviors used by three-year-olds in pre-school settings are identifiable and observable.
2. An instrument can be developed for use by trained adults with three-year-olds in pre-school settings to identify, observe, and classify these behaviors.
3. Characteristic sequences of strategies of coping can be found from an analysis of the group and individual data as measured by the instrument and observed in the pre-school setting.

Hypotheses 1 and 2 are basic to the study. Hypothesis 3 is an exploratory or extending hypothesis intended to provide some data on the useability of the instrument.

1.22 Assumptions

There are two main assumptions upon which this study is based. These are:

1. Coping style and strategies are critical in the study of the physical, motoric, language, cognitive, and psychosocial development of the child, in that coping behaviors influence how, when and how well skills in these areas are explored or used.
2. Coping behaviors do not determine that a child has a skill.

1.23 Limitations

The limitations of this study are:

1. The study is naturalistic, in a field situation, with most variables uncontrolled.
2. The population is selected on the basis of age and availability within the naturalistic setting, rather than selected on a basis of sex, intelligence, birth-ranking, or economic status, and may not, therefore, be representative of all three-year-olds.

1.24 Delimitations

The delimitations of this study are:

1. The children are between the ages of three years, one month and three years, nine months.
2. The setting of the study is a pre-school or day care classroom.
3. The theory for the design of the research is based on the theory and research of Lois Murphy and her collaborators.
4. The design of the study is developmental.

1.25 Definitions

For clarity of reading, it is necessary to define the key words used in this study.

1. Coping--is that process by which the child tries to make his world manageable. This includes those strategies and behaviors used by the child which help him control, organize, synthesize, and eventually master the challenge or stress in the new and unfamiliar situations encountered in the pre-school setting (see review of the literature for an expansion of this).

2. Coping strategies--are the individual patterns of the child and the timing of his resources for dealing with specific problems, needs, or challenges.
3. Pre-school--is that setting having some curriculum design, not meant exclusively as a baby-sitting experience, and including at least one trained adult and one assistant.
4. Three-year-olds--are those children who are at least three years, one month at the beginning of the study and who are not yet three years, ten months at the conclusion of the study.
5. New or unfamiliar--are those situations in the classroom which the child has not yet experienced or, having experienced, has not yet mastered.

2.0 Review of Literature

2.1 Bases of Early Childhood Research

Practically anyone who has children develops some home-spun ideas on how children develop, when they should be able to do specific tasks, and what their behaviors seem to mean and/or indicate.

While theorists in early childhood development are eminently more scientific and sophisticated in this process, the theories still express in some way how the child develops, what tasks are appropriate and/or seem to occur at what times and some observations of behaviors or theorizing about them, as well as some ways of describing and/or decoding them.[2] The paths researchers take may seem unrelated, because of emphasis and focus, but ultimately they touch, because they touch the same subject: the child.

2.11 Theorists

Baldwin (1968) identifies the chief theorists in the study of the child as: Kurt Lewin, Jean Piaget, Sigmund Freud, Heinz Werner, Theodore Parsons, and the stimulus-response theorists (pp. xi, xii). Gesell (and Amatruda, 1941), while perhaps not having developed what can technically be called a theory, contributes such an important base for understanding children, that he might be included in the group. Maier (1965) identifies the fathers of child development theory as Piaget, Freud and the behaviorists. Mussen (1970) includes all of Baldwin's group except Parsons.

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[2]It is interesting to note that some of the men considered fathers in studying child development began by a very careful study of their children or a child they knew: Piaget, Darwin, Freud.

In general, these theorists focus on childlike behavior, symbolic functioning, developmental process and antecedent consequent relations.

Piaget (1952) emphasizes the activity of the small child, even the infant, engaged in reacting to and interacting with his environment. The child's acquisition of new behavior, his level of functioning and his maturation occur as he moves from assimilation to accommodation and the consequent adaptation. The mental processes, however, are the primary focus of Piaget's basic work.

The S-R group cannot be identified as a school, nor does it claim one theory. Rather, it represents a commitment or orientation toward a theoretical stance on the acquisition of new behaviors. How the behaviors are acquired and the level of functioning and response to the environment are included in this orientation. The mechanics of the small child dealing with his world are carefully manipulated and described.

The concern of Lewin (1935) with "life space", "psychological environment", and "field" moved him toward his theoretical position. In spite of a proliferation of formulas, lack of empirical definitions, and the sometimes rarified writing, one can see the developmental movement of a person either addressed or at least identified.

Freud, as exemplified in his Outline of Psychoanalysis (1935), developed a general theory attempting to encompass all human behavior, its genesis, its development, and its pathological deviations. In the study of the development of the young child, however, his work was based almost exclusively on data from adult patients. His work did not look at the three- or four-year-old when he was three or four. Later, in the psychoanalytic school, Freud's "mechanisms of defense" were frequently referred to as a way of responding to new or threatening elements in one's environment.

Parsons (1955), while drawing heavily from Freudian theory, focuses on how a small child grows as part of a home and a culture. He sees the social organization as ultimately mediated by each individual. The child and his development are just a part of his whole social scheme.

Werner (1948) has developed a theory of maturational and developmental processes probably more complete than any psychologist. Within the theoretical framework of Gestalt psychology he concentrated on the global problems of development and on how various aspects of psychophysiological functioning interrelate. His research focused more on confirming a systematic theoretical approach to psychological problems than on knowledge about actual development of children. He developed a strategy rather than a body of knowledge.

Reviewing the theorists in the light of the whole of Early Childhood research helps establish a broad base of human behaviors and child development. It helps put the study of the three-year-old into a larger frame of reference.

2.12 Researchers, Programmers, and Practitioners

From the above core moves that body of researchers, investigators, and thinkers who either reflect and replicate this core, or who are using it as a base from which to design their studies. Some of these men synthesize from various theories to arrive at their own insights.

This second group of "studiers of children" is large and somewhat clustered. Studies by Elkind (1970), Almy (1966), Flavell (1963), and Furth (1969), for instance, are building on, replicating and exploring parts of the monumental work done in cognition by Piaget. Studies in the area of psycho-social and/or affective development of the small child include more basic ones done by Erikson (1963) and Anna Freud (1965) and the careful studies by Mahler (1968), Escalona and Heider (1959), Bowlby

(1953), Klein (1963), Biber (1942), Isaacs (1967), and Murphy et al. (1962). In this same area are the longitudinal studies by White (1971) at Harvard, the intercultural studies by Peck (chief investigator, see footnote, page 14) and earlier, the Oakland Growth Study (Shirley, 1931).

Sutton-Smith (1971) and Smilansky (1968) have contributed to the area of play: what it means and how the pre-school child uses it as his way of exploring and learning about his world, the immediate environment, and the people included in it. Cultural factors also influence the developmental movement of the child. Mumford (1944), Toffler (1970), Montagu (1968), and Illich (1970) stress this. They focus on the theme that perhaps the most important thing that should happen today is the creation of situations to allow people to grow up into a culture and way of acting that has had much experience in dealing with alternatives, in looking at the future, in adapting, in seeing meaning within oneself, in living in a world with less set rules. While none of these men address the pre-school child specifically, their message has meaning for anyone who is working with children living in the world they are describing.

The careful and detailed studies of the physical, motoric, and affective behavior and development of the child done by Gesell and Amatruda (1941) are catalysts for increasingly refined studies by such people as Illingworth (1959), Bayley (1959) and Shirley (1931). Finally, Vygotsky (1962), Cazden (1972) and Lenneberg (1967), among others, are going past the typical study of language to the structure of the languages as a key to the thinking processes of the person. Since language development is one of the major tasks of the pre-school child, this is an important area.

The farther out one moves, as ripples from a stone cast into the lake, the more and more numerous and variegated the "studiers of children" become. The third general group would include those people who develop models of learning or work with children in specific settings such as the learning situation, whether in the school, home or total environment. Among these would be both the analytical and the practical. It would include those who design specific programs around a theorist, as do Bereiter and Engelmann (1966) or Weikert (1967); those who are more eclectic such as Ira Gordon (1971) and Nimnicht (1970); and finally, those who study what "should" be happening or analyze what is, as do Parker (1972) and Hess (1972).

The fourth general group is that large body of persons who seem to engage in "how to..." writing, based either on the works of one of the three above groups or a smorgasbord of several. This group would include Hymes (1963), Spock (1946), and Ginott (1965).

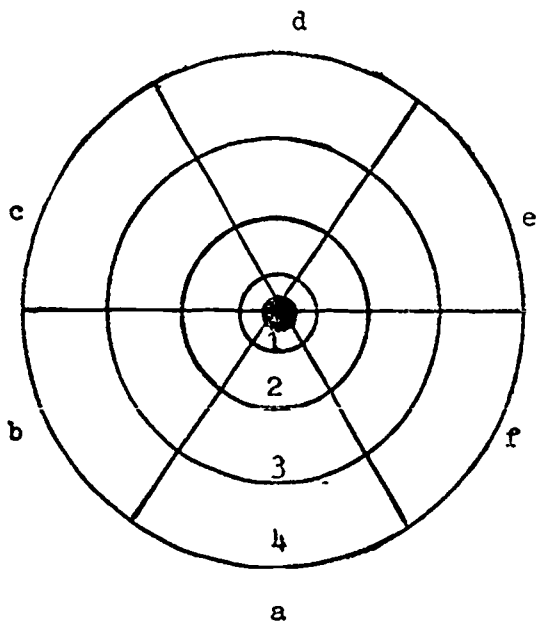
2.13 Summary

The theorists have identified and profoundly studied either the spectrum of the child's functioning or strategies that influence research on the child. The spectrum includes responding to the environment, acquiring new behavior, affect, motivation, level of functioning and maturation (Baldwin, 1968). They have not, nor was it their role, addressed some of the synthesizing processes the child uses when actually handling his world. Perhaps this is the task of the researchers, once the theorists have established bases: to use the basic framework in order to design or study one specific process or orientation. There is, in fact, evidence of this in the work of both the second and the third group discussed above. Some study stays within a narrow band and looks, for

instance, at what is possible in maturational studies or in motivation or in environmental engineering. Some such studying is quite unimaginative and even slightly distortive of the original theorist's thought. And some work picks up on a theme cutting through much of the research and follows it. One such theme, coping, is the focus of this present research.

TABLE 1

Summary of Early Childhood Research



core=child

1=major theorists in child development
2=major researchers
3=programmers and researchers of programs
4="popular writers"

a=responding to the environment
b=acquisition of new behaviors
c=affect
d=motivation
e=level of functioning
f=maturation

This table is used to represent the major developmental events as well as the spectrum of "studiers of children". Some researchers cluster within a strip, others run the range of the entire band within their field. Thus, for instance, one might be 4,e or 2, a through f, or 4, c,d,e. (a-f taken from Baldwin, 1968)

2.2 Bases of Coping in Early Childhood Research

Coping is a term found sparsely in the literature and then rarely is it used in reference to the preschool child.[3] While no systematic discussion of the preschooler's coping is found until the work of Dr. Lois Murphy and her associates in the Coping Project at Menninger Clinic (now Foundation), some bases for the definition of the term and some behaviors included in this concept can be found by searching the literature.

Basic to coping is the child's need to make himself at home in the world, to find ways of coming to terms with it and to relate to the environment. It is this theme which is pursued here.

2.21 Importance of Coping

A review of the literature on coping gives only a slight indication of the importance of coping in early childhood development. There seems to be more a problem, however, of teasing out the concept than of it not being present in the behavioral events of early childhood. The unique contribution of Lois Murphy was precisely this: isolating the concept of coping in the vast world of the child and establishing its importance as a distinct, identifiable entity.

While theorists tend to fragment the child for the purpose of study (Baldwin, 1967, p. 583), Murphy sees coping and the study of it necessarily having an integrative function:

> The effort to cope always involves an integration of what we, from our outside point of view, differentiate out into motor, affective, and cognitive aspects and contributes simultaneously to development as a whole which is not experienced in a piecemeal way by the child. (Murphy, 1962, p. 363)

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[3] See Table 3, on page 21, for the main references to the coping of preschool children.

The above fact makes the study of coping at once more difficult and more meaningful. It is more difficult because it weaves through the entire development of the young child, it synthesizes where the child is so that he can move toward where he is not and it indicates the patterning and timing of the child and his use of any or all resources.

> More important at this stage than theoretical clarification is the way of thinking invited by the term 'coping'..a way of thinking which pays attention to the child's manner of dealing with pressures and threats, potential or actual. This way of thinking involves awareness of the individuality, spontaneity, even creativity characterizing the new patterning of responses we see, as well as the gallant persistence and repetitive efforts which are often necessary in the struggle toward mastery. (Murphy, 1962, p. 7)

For these very reasons, however, the study of coping is also more meaningful. It would seem that adequacy in meeting life's challenges in adulthood should be enhanced by a deliberate study of at least one of the elements of this adequacy in early childhood.

> The cognitive and motor--or basic ego--resources of the child contribute a major share toward determination of the potential skill, competence, problem-solving, conceptualizing and mastery potentialities of the child. However, the question as to whether these will be adequately or inadequately developed, will be used to make maximal use of the opportunities to which the child is exposed or will lie fallow, perhaps never achieving the development which seemed to be promised in the early years of the child's life, will be a matter of the depth, strength, persistence and vividness of the child's drives and affects and the ways in which he uses them. (Murphy, 1962, p. 251)

2.22 Toward a Definition of Coping and Coping Behaviors

Looking for a definition of coping is somewhat like trying to name a baby. One knows the baby is there, that it exists in all its uniqueness and yet, what to call it so as to capture this uniqueness?

Carmichael's Manual of Child Psychology (Mussen, 1970) has no definition of coping. A Comprehensive Dictionary of Physchological and Psychoanalytic Terms (English, 1958) while having some definition entries

running fifteen or more pages, includes one short sentence on coping:"... coping behavior (A. Maslow): action that enables one to adjust to the environmental circumstances, to get something done." (p. 122) The Child Development and Material Survey, Part I (1968 - hereafter referred to as the ENKI Survey) has no definition.

Burton White and his associates in the Harvard University Preschool Project are more interested in the whole scope of behavior involved in the child's social reaction, his overall competency level. The specific reference to coping in this study (Ogilvie, 1969) does not define it, but does identify one important aspect: "...children who cope well in social interactions draw selectively from a wide range of behavior possibilities." (p. 4)

Manaster[4] in a paper entitled "Coping Style, Sense of Competence and Achievement" defines coping as the way children deal with their problems (p. 1) or problem situations (p. 2) or the reasonable efforts children make to solve the problems (p. 3).

Gardner (1968) and Kroeber (1963) both work from a psychoanalytic base. Gardner's concern is the structure formation of the person. Within his study he sees coping as an element of this structure formation and defines it on two levels:

coping 1 (activeness of problem solving)
activeness of use of environmental demands, obstacles. and opportunities in problem-solving

coping 11 (internal equilibrium)
internal balance; resources for maintaining integration under stress. (p. 313)

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[4]Manaster worked with Robert F. Peck et al on a study entitled "Coping Styles and Achievement: A Cross-Sectional Study of School Children". This was a multi-national, extensive (1965-1972) study of two age groups of children, ten and fourteen.

Kroeber is looking at the ways of problem solving:

> The focus here is on the operation of the ego and on the extension of the concept of defense mechanisms to include behaviors that are particularly relevant to an active, effective person dealing with demands, often conflicting, of a biological, psychological or social nature. To this sort of ego behavior is attached the word 'coping'. (p. 179)

Lazarus (1966) uses the term coping as referring to "...strategies for dealing with threat." (p. 51) and sees coping as an element in his psychological-stress theory. He comments on Murphy's treatment of coping as being a much broader concept of the word than his, as she sees it including efforts to mastery of any new situation or problem, whereas he concentrates his research on "...threatening situations rather than those in which coping is synonymous with problem solving." (pp. 151-152) His study identifies forms of coping, factors influencing coping and coping situations. Among the behaviors Lazarus identifies as coping are avoidance, defense, attack and anger. Lazarus uses Murphy as his main source when discussing young children's coping.

Two recent observation instruments have used the work of Lois Murphy and the Coping Project as a base. Rothenberg (1971) used the variables identified by Moriarty for her design of situations in which to observe the variables in children from ages three to seven. Spaulding (1967) designed a Coping Analysis Schedule for Educational Settings (CASES) that draws directly from Murphy.

Since this group of researchers seem to form one body, it seems appropriate here to summarize and isolate the elements thus far identified as essential to a workable definition of coping - coping behavior:

-ability to draw from a wide range of behavior possibilities

-way children deal with problem or problem situations

-reasonable efforts children make to solve problems

-activeness of use of resources in problem solving

-dealing with demands, often conflicting

-action enabling one to adjust to environmental circumstances

-strategy for dealing with stress/threat

Lois Murphy and her associates form the second body in the study of coping in young children. Escalona (1959, 1968) and Moriarty (1961) were directly connected with the Coping Project while it was in its various phases. However, in Prediction and Outcome (1959), the predictive scale used by Escalona includes only one item specific to coping: "area twenty-seven: dominant defenses, coping devices." (p. 267) Then the definition of this term is given as "Title is self-explanatory." (p. 267) Moriarty (1961) reported on the structured testing situation included in the Coping Project. In her definition of coping she included two aspects: problem-solving and that more subtle maintenance of integration. She examined eleven main variables in coping, as evidenced by sixty behaviors in a testing situation. One of her assumptions was that structured tests"...could be regarded not only as normative measures of intellectual ability but also projective instruments insofar as typical and personal ways of handling any situation tend to be consistent from situation to situation.' (p. 96) Because of the nature of Moriarty's study (in conjunction with the larger Coping Project at Menninger Clinic), much parallelism with Murphy will necessarily be evident (see Table 3).

Lois Murphy and her work explored in depth the spectrum of what is meant by coping. Her more seminal book Personality in Young Children (1956) seems to come to maturity in The Widening World of Childhood (1962). While later articles (1968, 1969) do not specifically attend to coping, when she refers to the concept she is basically within the frame-

work she developed in The Widening World of Childhood. In fact, her work seems to have two periods: prior to the Coping Project and since. One can see elements of coping in her earlier work (1937a, 1937b, 1944, 1956), but this may be incidental to the development of her whole thinking and not necessarily a conscious step. However, by 1962, Murphy approaches the study of coping in young children systematically and from so many angles that one has a spectrum from which to draw behaviors, definitions, styles, and theory.

According to Murphy, the first element important in the development of a definition of coping and its behaviors is the concept of the mastery of the new and unfamiliar. Murphy sees a sequence and rhythm to the mastery: "...anxiety about the new strange stimulus-situation or demand gives way to interest as familiarization begins." (p. 192) "The drive toward mastery underlies coping efforts, and is expressed in them..." (p. 6) "Coping involves encountering something new or not yet mastered: a novel situation, an obstacle or a conflict." (p. 276)

The second element toward a definition of coping based on Murphy is the idea of challenge and difficulties: "The situation confronting the children we saw included one or more of several potentialities: they could be 1) gratifying, 2) challenging, 3) threatening, or 4) frustrating." (p. 276) "Coping points to the process--the steps or sequences through which the child comes to terms with a challenge or makes use of an opportunity." (p. 6) The difficulty with this element of Murphy's concept of coping is that one must then decide what data to use on which to base decisions as to the task or situation being gratifying, challenging, threatening, or frustrating.

The third element of coping is its synthesizing quality.

> When we say that coping is a synthesizing or integrative concept, and that it deals with not only techniques but with strategy, we are emphasizing the role of a function, the way in which the child uses a tendency..." (p. 274)

"The effort to cope always involves an integration of what we, from our outside point of view, differentiate into motor, affective, and cognitive aspects..." (p. 363)

A possible fourth and final element is the distinction of coping strategy from coping style. Murphy sees coping strategies as:

> ...the child's individual patternings and timings of his resources for dealing with specific problems or needs or challenges. Both methods of managing the environment, and devices and mechanisms for managing tension aroused by the stimulus, or likely to result from a given response to it, are often involved. (p. 274)

Coping style, on the other hand, is "...the over-all orientation of a given child with the tendency to elaborate and consolidate certain kinds of coping strategies rather than others." (p. 281)

Hence, Murphy and her associates include the following as elements of coping and therefore important in any identifying of coping behaviors:

-maintenance of integrity

-problem solving

-mastery of the new and unfamiliar

-possibilities within the situation

-synthesis ability

-patterning.

For purposes of this study, the following definition of coping has been developed from all of the above research and will be used here:

> Coping is a process by which the child tries to make his world manageable. This includes those strategies and behaviors used by the child which help him control, organize, synthesize, and eventually master the stress or challenge in

the new and unfamiliar situations encountered in the pre-school setting.

This definition is illustrated in Table 2.

Because of the psychoanalytic framework of many of the researchers addressing coping in some way (Lazarus, Kroeber, Moriarty, Burton, Murphy), the task of defining the specific coping behaviors is complex. These main sources on coping and the behaviors they identify as coping are outlined in Table 3.

One can see some clustering of behaviors into five general groupings. The first grouping of behaviors are those often observed when a preschool child enters a new situation. This is the 'checking out' approach. It is usually very visual and is used to localize those aspects of the situation which the child might know or be familiar with. These behaviors Murphy (et al, 1962) calls orientation (pp. 204-205). They include observing and visual inquiry.

A second grouping of behaviors allows the child to deal with his environment on his own terms. These are classified as structuring behaviors and they include the ways the child uses a new situation so that it is satisfying for him. Changing a situation, imitating, crying, asserting his autonomy, initiating, shifting behavior, creating the known in fantasy, waiting to be told what to do or waiting to be helped all evidence attempts to keep a new situation manageable by structuring it.

Reality testing is identified as a third group of behaviors. "Reality testing is both cognitive and manipulative, and also proceeds by creative restructuring in order to test potentialities, along with asking questions." (Murphy et al, 1962, p. 274) For the purpose of this instrument only observable manipulative behaviors were included. These are: setting one's limits, delaying to reassess, asking questions,

TABLE 2

Base of Coping

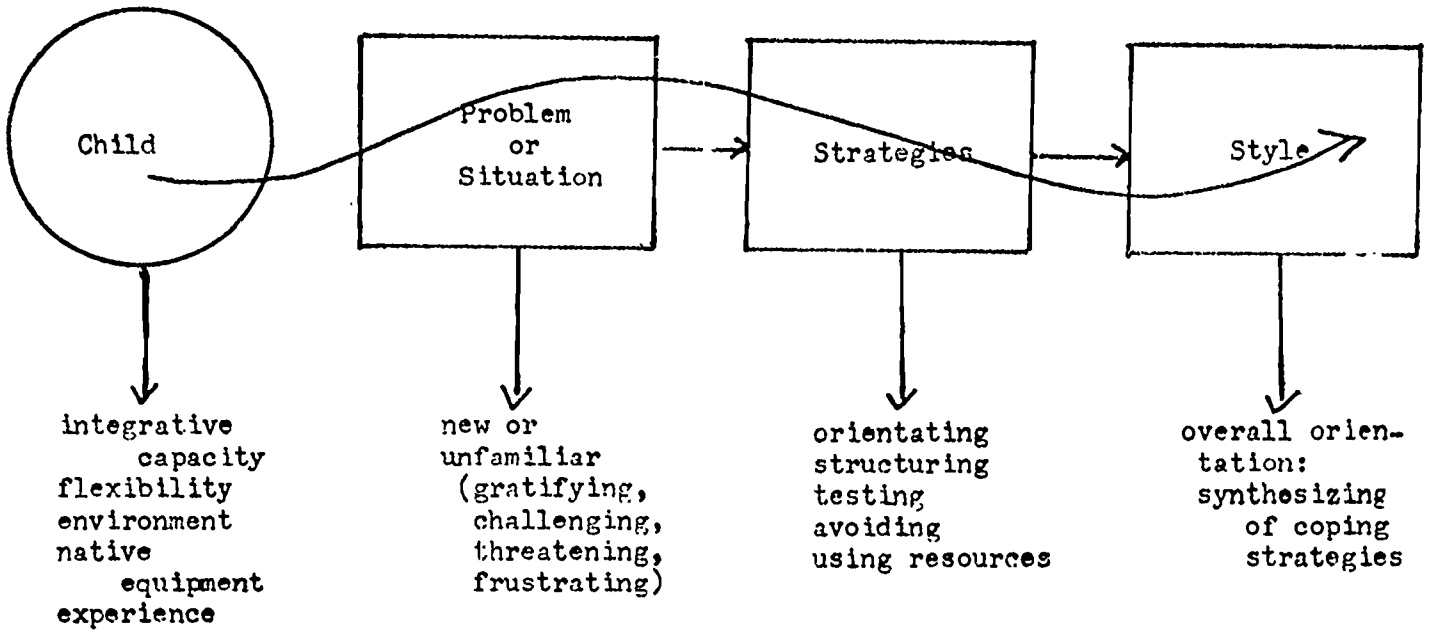

TABLE 3

Sources of Coping Behaviors in the Literature on Pre-School Children

COPING BEHAVIORS	SOURCES							
	Sp	Kr	Ro	La	Ma	Og	Mo	LBM
aggressive behavior	X	X	X	X				X
negative, attention getting	X		X				X	X
manipulating others	X		X				X	
resisting	X	X	X				X	X
self-directed activity	X	X	X				X	X
paying attention	X							
sharing and helping	X							X
social interaction	X							
seeking support	X		X		X	X	X	X
following directions	X		X	X		X	X	X
observing	X		X	X			X	X
responding to internal stimuli	X							X
withdrawal or avoidance	X			X			X	X
oriented to the reality requirements of present		X					X	X
involves secondary process thinking		X						X
ordered impulse satisfaction		X						
asking for reassurance			X				X	X
setting limits			X	X	X	X	X	X
changing the situation			X	X			X	X
impulsive			X				X	

TABLE 3 (continued)

Sources of Coping Behaviors in the Literature on Pre-School Children

COPING BEHAVIORS	SOURCES							
	Sp	Kr	Ro	La	Ma	Og	Mo	LBM
making the situation familiar			X				X	X
effort to solve problems					X	X	X	X
efficacy of method used		X			X	X	X	X
affect related to solving		X	X		X		X	X
visual inquiry						X		X
initial approach			X					X
imitates								X
cries							X	X
delays to reassess							X	X
asks for help							X	X
removes difficulty							X	X
refuses							X	X
protests							X	X
critical							X	X

Sp=Spaulding

Kr=Kroeber

Ro=Rothenberg

La=Lazarus

Ma=Manaster

Og=Ogilvie

Mo=Moriarty

LBM=Murphy

approaching self-reliantly, preventing trouble by taking some action and testing what one can do.

A fourth way of handling one's world is to solicit the human resources available. For the child, these are more often adults in his world. Such behaviors include asking for help, seeking visual, verbal or bodily contact, or resisting domination by others.

The fifth group of behaviors are those that indicate the task of situation is not manageable by that child at that time and the general coping strategy is to move away from it in some way. This avoidance is evidenced in such behavior as refusal, removing oneself, removing the task in some way, leaving the task in anger or regressing.

These five general clusterings and some indications of definitions of behaviors within them was about the extent to which the literature could be pushed. The task of behaviorally defining both the strategies and the behaviors, therefore, became one of the important tasks of this study.

2.23 Present Status of Research on Coping of Preschool Children

In an annotated bibliography edited by Coelho (1970) only three of the four hundred, twenty-five entries referred directly to the coping of children in preschool settings. The ENKI Survey (1968) attempted, through a review of over three thousand articles and books, to identify a developmental sequence for children. The data on socialization and personality, where one might try to find something on coping, yielded nothing. Nowhere in the Survey is coping defined as a specific behavior.

The other sources discussed in Section 2.22 varied from mentioning coping, to incorporating it as one major behavior in a larger frame called competency, to identifying it as a positive ego mechanism as opposed to

defensiveness, to defining it exclusively in relation to stress or a way to deal with threat, to studying it in its own right, as a distinct entity.

The paucity of research on the coping behaviors and strategies of the preschool child may be attributed to any of four reasons:

1. It is important in human development.
2. It is not a unique, identifiable behavior.
3. It is not relevant to the study of the pre-school child.
4. It is a behavior, which, because of its basicness to the person's way of functioning in this world, has only recently been specifically localized and defined, and hence now can be studied increasingly on its own right.

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3.0 METHOD

3.1 Preliminary Studies

Two studies gave the initial direction to both the identification of coping behaviors in preschool children and the design of an instrument to observe and measure these behaviors. These studies had been prompted by the investigator's previous experiences in Head Start and Follow Through and involvement in a Child Development program of studies at the University of Pittsburgh. Although these studies were undertaken with no conscious long range goals in mind, they, in fact, began that process which led to the present study on coping.

The first study (January-April, 1972) was based on the assumption that there are some affective or emotional behaviors common to preschool children and present in a variety of learning settings, even though perhaps not evidenced in each. A further assumption was that typical, non-professional descriptions of preschool children were global and impressionistic rather than specific to how a given child deals with the people, things and situations around him/her in the classroom. This study attempted to localize some of these behaviors in five distinct learning settings. It resulted in a profile of behaviors involving interactions, communication, organization, play, inquiry and an area not yet defined by somehow involved in each of the others and directed towards helping the child make his/her world more manageable.

The second study (April-June, 1972) was based upon the general profile derived from the first study and refined through an extensive review of the literature on behaviors generally identified as social-

adaptive or competent and more specifically identified as coping. The purposes of the second study were to:

1. test the observability of the tentatively identified behaviors
2. examine other behaviors for possible inclusion
3. evaluate the instrument designed for these observations in light of the appropriateness of the included behaviors
4. clarify definitions of behaviors to be observed
5. assess and identify problems associated with the use-ability of the instrument.

Data in this second study were obtained through the use of an observation instrument, logs kept while in the classrooms, and feedback from the teachers.

Results of this study were:

1. evidence of the observability of the behaviors
2. discovery of the previously unidentified coping behaviors of testing, preventing trouble by action and exploring resources
3. eventual reordering of behaviors initially identified as 'emotional organization' and 'inquiry'
4. more refined definitions of terms and clearer examples of each behavior
5. facilitation of the useability of the instrument by organizing for time of observing, format, and characteristics of a classroom to be used for further study.

Data from these two preliminary studies initiated the eventual structuring of the design for this study.

3.2 Population

Ten three-year-old boys and girls in one preschool served as the

subjects of this study. There was no randomization of the sampling. The only criterion was that the children be between the ages of three years, one month and three years, ten months (see Appendix A).

The subjects of the videotaped sequences used in the training were any set of children in the same classroom engaged in a situation identified as new or unfamiliar. The children for both the videotaping and the actual observations were located in the room for three-year-olds at a day care center in Pittsburgh, Pennsylvania.

Four trained observers were used in the data collection process. These observers were graduate students taking courses in the department of Child Development at the University of Pittsburgh.

3.3 Identification of New Situations or Experiences

Situations identified as new or unfamiliar were intended as the focus for this study. Therefore, before the study was initiated, the investigator sought data on the range of experiences commonly considered new or unfamiliar by those working with three-year-olds. The purpose was to establish some confidence that situations suggested to the cooperating teacher for inclusion in the experiences during the study were, in general, considered new. Responses to letters sent (Appendix B) to thirty-six preschools were compiled (Appendix C) and the experiences most often referred to as new or unfamiliar to many of the children in the classroom setting were those incorporated into the teacher's planning for the days of classroom observation.

3.4 Design and Procedures

Three questions raised by the hypotheses were attended in this

study:

1. Can specific coping behaviors of three-year-olds in preschool settings be identified?
2. Can an instrument be developed which can be used to observe these behaviors?
3. Can patterns of coping be identified in the data:
   -unique to one child?
   -clustering for groups of children?

These three questions gave form to the general structure of the design. Each question sought descriptive and analytic rather than predictive data. The questions and the procedures necessary to investigate them seemed to best lend themselves to that method of research identified as a developmental study.

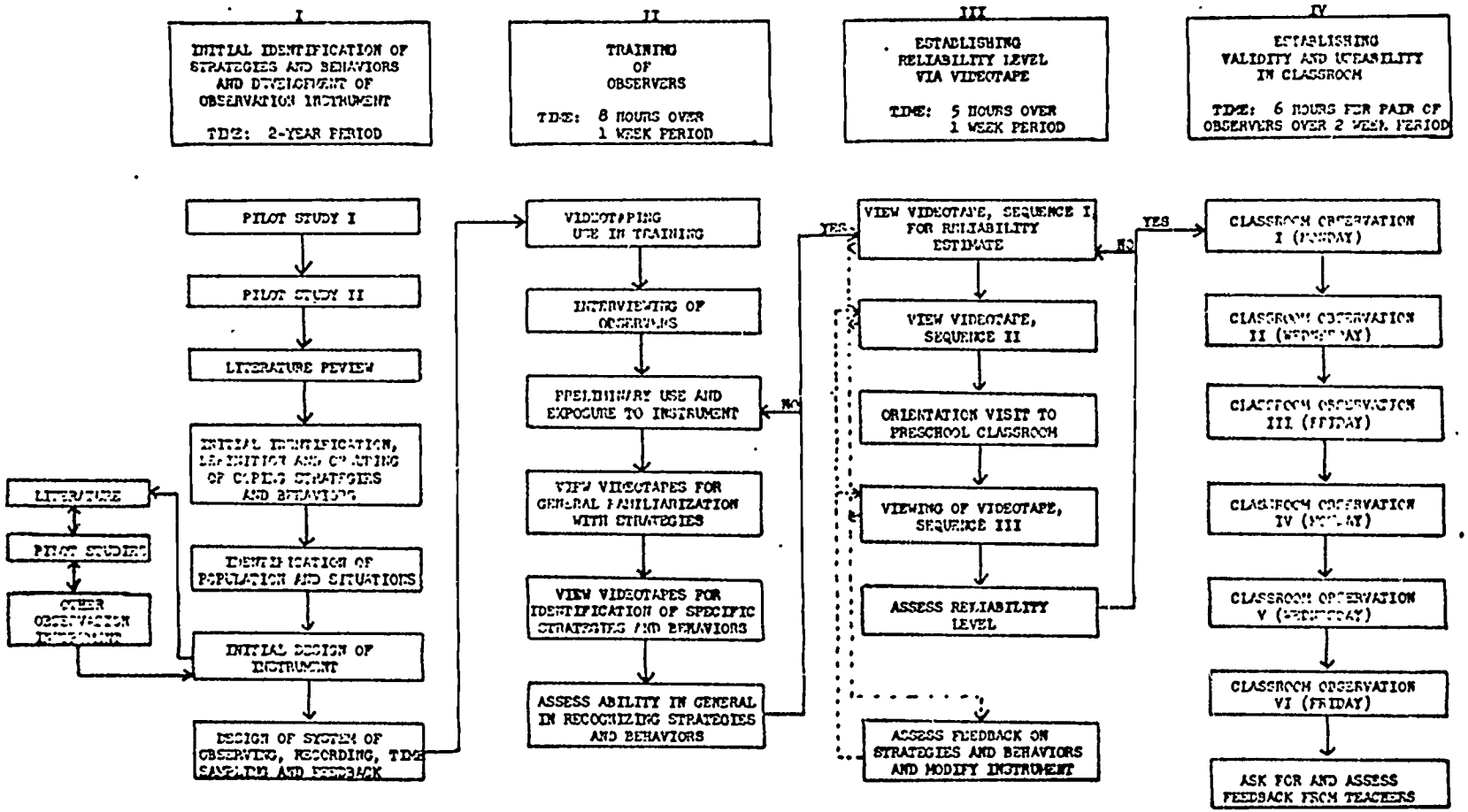
The design is perhaps best understood by studying Table 4 on the following page. Here one can see the purpose, time, and activities of each of the four phases in the design. Phase one was a period of observing, studying, identifying, returning again to the literature, then designing. Phase two set the stage for the use of the instrument by identifying and training observers. In phase three the videotapes filmed earlier but not yet viewed were used. The purpose was, at this point, to use these tapes as a controlled way of viewing coping behaviors in order to establish an accepted interrater reliability level on the instrument before using it in the actual classroom. After each viewing feedback was assessed in order to modify or clarify the instrument. In phase four the instrument thus trained for and tried in a controlled situation was used in the preschool classroom.

3.41 Identification of Behaviors

The behaviors chosen for observation in this study were behaviors

TABLE 4

Phases of Development



identified as coping. This identification included localizing the behaviors, defining them in behavioral terms and grouping them. The definition of coping used in this study (see page 18) was used as framework for identification.

The coping behaviors were derived from four main sources. Some were drawn from previous observations of preschool children. During these observations a running log was kept in order to begin building a repetoire of coping behaviors. Some behaviors were drawn from the literature based on psychiatric interviews, pediatric examinations, testing situations, play sessions, projects, interviews with mothers, case study profiles, and theory on child development. Some behaviors had been identified in instruments used in previous research (see Table 3 on page 21). A few behaviors were clarified as a result of the feedback from observers in training.

The systematic identification of behaviors included the construction of a working definition for each. Previous research, observation logs, the literature and, later, observer feedback were used in this task. The defining of any given behavior was two-fold: one part described any verbal or non-verbal indicators of the behavior; the other part stated the behavior in behavioral terms, including some action that might evidence it. Each behavior was so defined.

The grouping of these behaviors into five strategies was suggested in part by the recurrence of themes in the literature and in part from experienced reality. Themes of Orientation, Avoidance and some Structuring were found in some manner in the majority of writings dealing with coping. The themes of Reality Testing, Structuring and Use of Resources were more unique to the literature reporting on the Coping Project (see Murphy et al, 1962). Murphy (1962) also deals very directly

with Orientation (especially pp. 96, 106, 110, 195). The preliminary studies and observations also evidenced a tendency to group certain behaviors as being descriptive of a larger theme, while not really defining those themes at that time. When evidenced both in the literature and in the field, the groupings seemed both logical and realistic.

The coping behaviors, their definitions and the groupings into strategies are here presented as they were used in this study.

STRATEGY ONE: ORIENTATION

1. definition

> Orientation is the initial exploration of the situation and includes those behaviors which help the child collect data, appraise the situation, and form some cognitive map of the unfamiliar.

2. behaviors

a. observe

-behavior is usually non-verbal

-behavior consists of watching one child or one group. The child can do this by studying someone at a task; can also be at a task, then look up intently. Occurs usually at the end of a task, when entering the room or returning, when teacher puts out something new, or when attention is caught (as by noise)

b. survey

-behavior usually non-verbal

-behavior consists of generalized wandering, as if randomly looking for something, usually bodily moving from group to group or task to task, staying at a task or place very shortly; it can also be just looking at all the activity and groups randomly

c. seek known in unfamiliar

-behavior verbalized by such expressions as: "We have one like this at home", or "I made a ____ at my house" or "Mommy and me..."

-behavior consists of those expressions the child uses which show some element of the unfamiliar ties in with something

he is familiar with; this needs to be verbalized

d. bring the known to unfamiliar

-behavior can be verbalized or not; if verbalized, uses expressions like: "This is my Mommy's"

-behavior consists of the child, when entering an unfamiliar situation, carrying along a doll, hat, blanket, or some other item from home; the behavior frequently is object-oriented

STRATEGY TWO: STRUCTURING

1. definition

Structuring is the ordering of a situation and includes those behaviors which help the child in some way to stay in command of that situation so that it does not move beyond his coping capacity. More typically, these behaviors indicate some break in an ongoing task rather than an extension of its possibilities.

2. behaviors

a. change situation

-behavior can be verbalized by expressions like: "Let's do it this way...", or "My Mommy said I had to..."; it can also be non-verbal

-behavior consists of a task that has already begun, then the child changes the original way, rule, or sequence

b. imitate

-behavior usually non verbal

-behavior consists of watching, then incorporating (doing as the other is doing) rather than experimenting. Here, for instance, when one child runs to a new person in the room and makes a face, the child watches, then also runs up to the new person and makes a face

c. cry

-behavior not verbal, but loud

-behaviors consists of crying or screaming with the effect of getting help, getting rid of or controlling either a situation or a person. Its effect is to bring intervention so the child need not use another way

d. assert autonomy or independence

-behavior can be verbalized by "I can do it, I can do it."; can also be non-verbal

-behavior consists of resisting adult's or peers' attempts to structure the unfamiliar task for the child; asserting the independence, not just giving evidence of having it

e. initiate

-behavior can be verbalized by expressions like: "Let's do it this way" or "I know how to do it"; can also be non-verbal

-behavior consists of the child beginning the new task, and/or making up or demonstrating the rules or ways of doing the task

f. shift behavior

-behavior often non-verbal

-behavior consists of a child having begun an unfamiliar task, then incorporating an intrusion (from adult or peer). It can occur in response to a behavioral or verbal reaction of an adult or peer. An example is: a child has begun a task, adult says "Do it this way" and the child complies

g. create the known in fantasy

-behavior can be verbalized by "And then my Mommy..." or "If..., then..."

-behavior consists of re-creating some quality of the mother or home in play or verbalization for comfort or familiarity; often person-oriented

h. wait to be told what to do

-behavior usually non-verbal

-behavior consists of the child looking at some task or tasks, but not attempting any unless the adult intervenes and begins the process of structuring for him

i. wait to be helped

-behavior can be verbalized by expressions like "I don't know how", "But I can't"; can also be non-verbal

-behavior consists of getting the object or task, or of having it in front of him, but waiting passively, with the idea of "you do it for me"

STRATEGY THREE: REALITY TESTING

1. definition

Reality testing is the child's efforts to answer questions about the situation and includes those behaviors that allow the child to explore the potentialities of the situation, to assess what he is able to do.

2. behaviors

a. set one's limits

-behavior often verbalized by "I think I can...", "I'm too small...", "I'll do ... and you do ...", "I'm going to play with ..."

-behavior consists of looking, touching, defining, deciding upon what part the child will attempt in a task, independent of any adult

b. delay to reassess

-behavior usually non-verbal

-behavior consists of a pulling back and studying, stopping in a task or holding back for a moment to size up the situation

c. ask questions

-behavior verbalized by: "Could it...?", "How come...?", "Why...?"

-behavior consists of questioning about the environment or unfamiliar object or activity in order to find out why something that just occurred in the doing of the unfamiliar task happened

d. perform task self-reliantly

-behavior may be verbalized by "I know how, here, I'll show you."

-behavior consists of performing the task with an air of knowing how to organize without involvement with another

e. prevent trouble by actions

-behavior may be verbalized "Will it hurt me?", need not be verbalized

-behavior consists of adapting oneself to the wishes or activities of others, giving in to another, seeking intervention of an adult, giving another child something to get rid of him to be able to get what he wants

f. test what one can do

-behavior often non-verbal

-behavior consists of trying oneself out, either with equipment or in an activity, child performs slowly, as if experimenting or investigating

STRATEGY FOUR: RESOURCES (Use of Human)

1. definition

Use of human resources is the child's efforts to gain support in an unfamiliar situation and includes those behaviors that obtain for him the comfort or assurance of another.

2. behaviors

a. ask for help

-behavior can be verbalized by "Will you do ___ for me?"

-behavior consists of questions or statements to use someone for part of the task, and to be able to continue in the task, not for a reality check; a facilitation of the task, not a why

b. seek visual contact

-behavior can be verbalized by "Right?", "Is this good?", "Watch me"; or can be non-verbal

-behavior consists of soliciting the adult or peer to confirm in some way what he is oing or to avoid such attention.

c. seek bodily contact

-behavior usually non-verbal

-behavior consists of trying to touch or be held by the adult while attempting the new or unfamiliar task, sitting near or holding the hand of someone the child knows

STRATEGY FIVE: AVOIDANCE

1. definition

Avoidance is the child's efforts to control the unmanageable in a situation and includes those behaviors which in some way or another either stop the task or his involvement in the task which has become too stressful.

2. behaviors

a. refuse

-behavior can be verbalized by "I don't want to..."

-behavior consists of indicating a negative, either verbally or non-verbally, but without evidenced anger

b. remove self

-behavior usually non-verbal

-behavior consists of leaving the situation or person

c. remove the task

-behavior usually non-verbal

-behavior consists of throwing the task away, putting it in pocket or somewhere (as a shelf), destroying it, but without evidenced anger

d. move out in anger

-behavior usually non-verbal or yelling

-behavior consists of striking, throwing, stamping, screaming, destroying with evidenced anger

e. regress

-behavior can be verbalized by "Help me, help me" but said plaintively and to no one in particular

-behavior consists of weeping, putting fingers in mouth, clinging to adult, wetting, rocking, doing what a younger child would do

3.42 Development of the Instrument

An instrument was designed to enable a systematic approach to the observation of the spectrum of an individual child's coping behaviors. The instrument design included the bases for its choice, the format, the data collection and the analysis necessary for validation.

Models of observation instruments had been studied (Simon, 1967, Volumes 1-15). In general, instruments designed for preschool children were sparse. When they did exist, most focused on teacher-child inter-

action or on behaviors in a testing situation, rather than on the individual child in a natural environment. These instruments seemed adequate for their defined functions, but not as a possible choice for use in this study.

Most helpful in the design of the instrument was the multiple experimenting done during the preliminary studies. Incorporation and exclusion of behaviors to be observed was refined as the investigator tried and evaluated areas of behaviors and focus of observation in the various classrooms. The decision was made to design an instrument in such a way that the main focus was on one child and the manner in which he coped in his classroom environment. The resultant classification system allowed the observers to identify quickly the strategies being used by each child and then make the finer discriminations of behaviors within that strategy.

Since in this investigation the design of an observation instrument needed to attend only the individual child's behavior, it required adaptation and modification of existing instrument formats. The format for the instrument presented in Table 5 and used in this study was the result of repeated simplifications of an original three page form (see Appendix D for one form). The procedure for the adaptation and development consisted of an analysis of the format after each use in the field. Questions asked in each analysis were: Was each section used? What information was it yielding? Was this information consistent with the general purpose of the study? By this process the instrument was compacted for easier use.

Central in the instrument design was whether the instrument could be used reliably in a preschool classroom. Emphasis was placed on the observer's accuracy in identifying the coping behaviors within the

TABLE 5

Observation Instrument

CHILD: _____
DATE: _____
OBSERVER: _____

TASKS:

STRATEGY	BEHAVIOR	1	2	3	4
ORIEN-TATION	observe				
	survey				
	seek known in unfamiliar				
	bring known to unfamiliar				
STRUC-TURING	change situation				
	imitate				
	cry				
	assert autonomy				
	initiate				
	shift behavior				
	create known in fantasy				
	wait to be told what to do				
	wait to be helped				
REALITY TESTING	set one's limits				
	delay to reassess				
	ask questions				
	perform task self-reliantly				
	prevent trouble by actions				
	test what one can do				
RESOUR-CES	ask for help				
	seek visual contact				
	seek bodily contact				
AVOID-ANCE	refuse				
	remove self				
	remove task				
	move out in anger				
	regress				

classification system used. The system of observing, time keeping and recording was designed to evidence whether, each time S_x attended, that particular behavior was, in fact, observable and identifiable by trained adults.

Initial data collection occurred during the training of the observers. It was designed to establish a base from which to make decisions for beginning classroom observations.

Formal data collection consisted of a series of six classroom observations. These took place within a two week period. Each observation included four ten-minute sequences separated by several minutes of preparation for each. Each observation followed the same procedure. During the hour the investigator and two observers were in the classroom, each observed three children. One child was jointly observed, as part of the data collection for the validation of the instrument. Each chose two other children to observe as part of the data collection on the useability of the instrument in the classroom. No one child was observed by the same person for all six days. Once the children were assigned and a starting time was agreed upon by the three, the observers then operated independently.

At 'second one' of the first observed segment, all three observers attended to the behavior of S_1 and placed a '1' beside the appropriate coping behavior on the observation sheet for that child. After making that decision, each observer then recorded for the other two children whom she was observing. At 'second one' of the second segment, this same procedure was again used, marking the behavior with a '2', and so on through segment ten and the completion of one of the four observations made on the children that day.

When the observers had had time enough to prepare for the second observation and again locate the children, they agreed upon when 'second one' was to begin, and then proceeded to the second, then third, then fourth observations.

The time schedule originally planned for the observations (see Appendix E) was modified because of the fluidness of the classroom, the physical arrangement of the room, and the possible presence of too many adults in the classroom at one time. The schedule used in this study is shown in Table 6 .

TABLE 6

Schedule Used in Classroom Observation

		DAYS					
		M	W	F	M	W	F
OBSERVERS	A	1 3 5	8 4 1	5 10 8	3 9 2	10 9 5	7 4 6
	B	1 4 6	8 5 7	5 4 3	3 1 6	10 7 8	7 5 2
	C	7 2 8	2 3 5	9 6 1	4 7 10	6 1 3	9 8 9
	D	7 9 10	2 9 10	9 7 2	4 6 8	6 4 2	9 1 3

For clarification, a detailed illustration of one observation segment is shown in Table 7 .

TABLE 7

One Observation Segment

	MINUTES				
	1 2 3			9 10	
OBSERVERS A	1—2—3—	1—2—3—	1—2—3—	1—2—3—	1—2—3—
OBSERVERS B	1—6—7—	1—6—7—	1—6—7—	1—6—7—	1—6—7—

Four observers had been trained for the task of data collecting. (See Appendix F for the method of selection and training of observers.) During the data collecting, the observers sat inconspicuously in the room, recording, and occasionally moving to keep the child(ren) in sight. After the first hour, the first two observers left and the third and fourth entered for the second hour of observation. Between the two groups, all ten subjects were observed six times.

The analysis of the data collected was done by use of percentages:

NUMBER OF AGREEMENTS / (NUMBER OF AGREEMENTS + NUMBER OF DIFFERENCES)

Of main consideration in the choice of this method was the purpose of the investigator and the specificity of the data. The investigator proposed the use of the data as evidence of the reliability of viewing specific coping behaviors. It was also to allow the analysis of the data within some system allowing for what was, in fact, happening for any one child in each ten minute sequence. The specificity of the observed behaviors within each strategy enabled a sharp focus on each behavior and the determination of a relatively high level of agreement on the part of the observers when recording at the same time and in the same sequence.

Consequently, seventy per cent agreement was sought in the individual behaviors; seventy-five per cent agreement was sought in the data on observation of strategies. Of the one-hundred-twenty minute-segments of behaviors observed, forty-eight of these were randomly chosen and used to calculate the percentages of interrater agreement.

Lastly, feedback on the method of using the instrument in the classroom was sought. A short questionnaire and interview (Appendix G) was used with the teacher and assistants at the end of the observation period for these data.

3.43 Patterns of Behaviors

Sequences or patterns of behaviors and/or strategies were hypothesized as some measure of the useability of the instrument in the classroom. They were not intended to be essential to the validation but to indicate some extension of the instrument. Included in the design for this part of the study were sequences and percentages of behaviors, percentages of time spent in each strategy, sustaining of strategies, and sustaining of specific behaviors.

The sequences of behaviors were derived from data on the observation recordings for each child. Totals for each behavior were calculated and the percentage of the total time a child used each behavior and each strategy was recorded to present a profile of that child's use of particular strategies and to allow for analysis of use of strategies between children. The sustaining of strategies and behaviors was calculated by further analyzing these data in light of the amount of time the child was observed using a specific behavior.

Feedback from teacher and assistants was based in part on these data. Each person was given the collected profiles of each child and asked to respond to them in light of experience with the children in the classroom.

3.5 Summary

The investigative design developed for this study attempted to attend the three questions of behavior identification, instrument development, and coping patterns and their related hypotheses. Chapter four presents and analyzes the data obtained through this design. Each of the above questions is addressed through the data relevant to it.

4.0 PRESENTATION AND ANALYSIS OF DATA

4.1 Identification of Behaviors

Data in this section attended the first hypothesis and the question derived from it: Specific coping behaviors used by three-year-olds in preschool settings are identifiable and observable. The three kinds of data here presented and analyzed include data on the investigator's initial localizing, defining and grouping of coping behaviors.

Data pertaining to the localizing of coping behaviors were obtained in the classroom observations. These data were a compilation of all the coping behaviors used by each of the children during the observations (see Table 8). They evidenced the spectrum of behaviors identified by the observers. The bias found in the literature in favor of Avoidance and Orientation behaviors was not evident. The behaviors included in Reality Testing and Structuring, considered the most difficult both in the literature and by the observers were, none the less, consistently identified. Feedback from the teacher (Appendix H) confirmed that the behaviors identified for individual children did, in fact, complement teacher observation and observed reality of the child.

Data on the defining of coping behaviors were obtained from the training feedback and the classroom observations. Feedback concerned both clarifications of definitions and difficulties with definitions. It was suggested that 'approach self reliantly', 'test what one can do', and 'set one's limits' consistently caused difficulty. It was observed that behaviors which took the longest time to discriminate among were: 'seek known in unfamiliar', 'delay to reassess', 'refuse' (as opposed to

TABLE 8

Overall Data on Coping

STRATEGY	BEHAVIOR	S_1	S_2	S_3	S_4	S_5	S_6	S_7	S_8	S_9	S_{10}
ORIEN-TATION	observe	64	40	29	45	53	37	67	59	69	71
	survey	20	6	14	11	17	17	14	10	14	23
	seek known in unfamiliar	0	0	0	5	1	2	0	7	1	1
	bring known to unfamiliar	1	0	0	0	0	0	0	1	0	0
STRUC-TURING	change situation	4	1	2	3	1	9	3	1	1	0
	imitate	9	2	11	7	4	1	7	0	5	3
	cry	0	4	2	2	0	2	1	0	1	1
	assert autonomy	11	6	12	9	6	8	1	0	8	4
	initiate	7	9	9	11	7	9	9	6	6	6
	shift behavior	1	1	4	1	5	0	2	0	0	4
	create known in fantasy	2	30	8	17	2	14	4	3	16	11
	wait to be told what to do	5	3	1	1	5	1	3	2	3	0
	wait to be helped	6	8	5	6	5	3	9	5	5	4
REALITY TESTING	set one's limits	0	0	1	1	0	0	0	3	0	0
	delay to reassess	0	1	0	0	1	1	1	1	0	0
	ask questions	1	0	1	2	0	5	0	0	1	0
	perform task self-reliantly	73	96	87	89	82	92	94	98	59	80
	prevent trouble by actions	3	1	3	1	2	2	4	1	0	0
	test what one can do	20	8	27	14	31	14	16	26	7	15
RESOURCES	ask for help	1	2	0	0	2	4	1	1	1	5
	seek visual contact	3	9	3	3	8	5	3	10	9	0
	seek bodily contact	5	2	3	1	4	1	3	0	23	3
AVOIDANCE	refuse	0	0	0	0	0	1	0	0	0	0
	remove self	2	1	7	2	2	0	0	0	2	2
	remove task	0	0	1	0	0	0	0	5	0	0
	move out in anger	0	1	1	0	0	2	0	0	0	1
	regress	0	0	1	0	0	0	0	0	1	1

'assert autonomy'), and 'regress' (as opposed to 'seek bodily contact').

Classroom data showed some confusion over the definitions of 'perform self reliantly' and 'test what one can do'. However, once an observer decided that the observed behavior was one or the other, she was consistent in recording it in that manner (see Appendix I, column 1 for an illustration of this). 'Create the known in fantasy' was dependent upon the task the child was engaged in, rather than a strict definition. For example, if the observer saw the coping task of the child as 'playing mother', then the coping behavior would be seen as performing self reliantly within that task. But if the task were seen as 'playing in the homemaking center', then the behavior might be 'create the known in fantasy' (see Appendix I for an illustration).

Feedback on the general groupings of the coping behaviors (Appendix J) supported the logic of such groupings and their general role in focusing the observers' range of choices.

4.2 Development of Instrument

The presentation and analysis of data in this section attended the second hypothesis: An instrument can be developed for use by trained adults with three-year-olds in preschool settings to identify, observe, and classify these behaviors. Data included were interrater agreement while using the instrument during training, interrater agreement while using the instrument in the classroom observations, and feedback on the system used in the design of the instrument.

The importance of training the observers for effective use of the instrument was evidenced in the data. Percentages of agreement between observers and investigator during the fifteen observation sequences are presented in Table 9 (see next page). Average percentage of agreement on

TABLE 9

Interrater Agreement Evidenced During Training

a. Coping Strategies

observations	segments in each observation											
	1	2	3	4	5	6	7	8	9	10	total	Avg.
1	33	33	66	100	100	100	0	33	100	100	66.5	
2	100	66	66	66	0	100	0	0	100		62	73.6
3	100	100	100	66	100	100	100	100	100	60	92.2	
4	100	100	100	100		100	25	100	50	50	90.4	
5	75	75	100	100	75	50	75				78.6	
6	50	50	50	100	100	75	100	75	25	100	72.5	79.8
7	100	50	50	50	100	100	25	75	75	50	67.5	
8	100	100	100	50	75	100	50	75	100	100	85.0	
9	50	75	50	100	75	100	100	100	100	100	85.0	
10	100	100	100	100	100	100	100	75	100	100	97.5	
11	25	100	100	100	0	100	75	100	100	75	77.5	
12	100	100	100	75	100	100	100	100	100		97.2	83.7
13	75	75	75	75	100	75	75	75	75	50	75.0	
14	50	100	50	100	100	100	100	75	50	100	82.5	
15	50	75	50	75	100	75	100	75	50	75	72.4	

b. Coping Behaviors

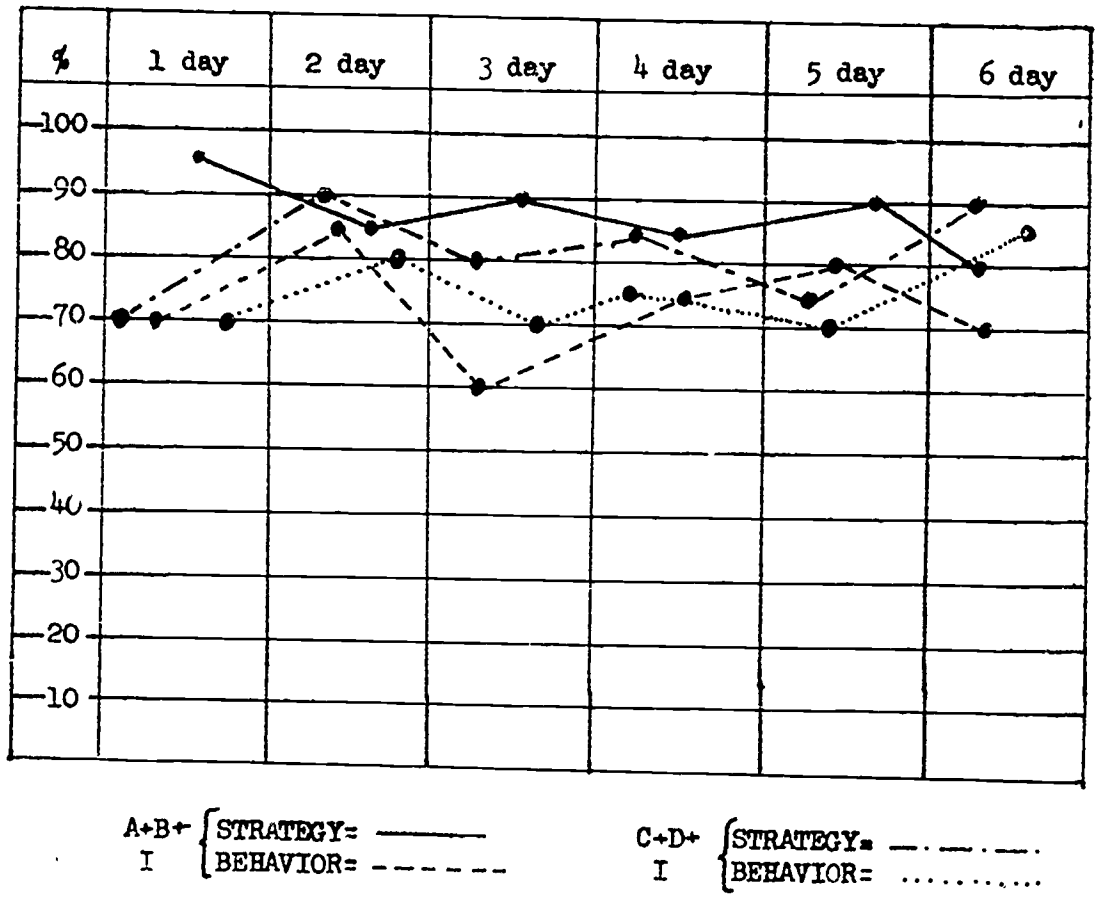
observations	segments in each observation											
	1	2	3	4	5	6	7	8	9	10	total	Avg.
1	33	33	0	66	100	100	0	0	100	100	53.2	
2	66	33	66	0	0	100	0	0	100		41.7	52.7
3	66	100	66	33	100	100	33	33	66	33	62.4	
4	100	100	100	100		75	25	100	50	50	77.8	
5	50	50	75	100	50	0	50				53.5	
6	50	50	75	50	50	50	50	25	25	25	45.0	60.2
7	75	50	50	50	100	75	25	0	50	50	52.5	
8	50	75	75	50	75	75	50	50	50	75	62.5	
9	50	75	50	100	25	100	100	75	50	75	70.0	
10	100	100	75	50	100	75	50	50	50	50	70.0	
11	25	100	100	75	0	50	75	50	100	50	62.5	
12	75	75	75	50	75	50	75	75	75		69.4	67.4
13	75	75	75	75	100	50	75	50	75	50	70.0	
14	50	75	50	75	75	50	100	75	50	75	67.5	
15	50	50	50	75	75	75	75	75	50	75	65.0	

the strategies moved from 73.6 in the first session to 79.8 in the second session and 83.7 in the third session of the training. Average percentage of agreement on coping behaviors moved from 54.7 in the first session to 60.2 in the second session and 67.4 in the final session. The training data gave evidence of the training effectiveness by consistently increasing interrater agreement from session to session, even though this increase might not be evidenced from individual sequence to sequence.

Data on the interrater agreement is presented in Table 10. (See Appendix I for the raw data from which these were derived.)

TABLE 10

Average Interrater Agreement
during Classroom Observations



The instrument gave evidence of consistency among observers while simultaneously recording behaviors in a naturalistic setting. Average percentages of agreement among observers A, B and I(nvestigator) were 87.5% for the strategies and 74.1% for the behaviors. Average percentages of agreement among observers C, D and I(nvestigator) were 81.6% for the strategies and 75.0% for the behaviors. The behaviors had been observed in small segments. For agreement both the behavior and its actual occurrence had to coincide. This enabled the investigator to analyze the usefulness of the instrument in reflecting the reality of the child in the classroom.

The focus of the interrater reliability was one child rather than any inter-child agreement or agreement with a norm of behavior. The data for the individual children evidenced, with a degree of reliability, behaviors actually used by each child.

Variations were found in the interrater reliability from day to day. This emphasized the value of multi-observations in order to obtain an average when collecting data involving uncontrolled for variables.

Atypical variables were reflected in the data for the observation of observers A and B on day three (see both Table 10 and Appendix I). The children were very scattered in the room; some of them were beginning to move outside; the morning was beginning to take another focus. It was also the first very cold day of autumn and the children entered the room with more movement, higher pitched voices, and more running from task to task. These factors made it extremely difficult to locate the children.

Feedback data from the observers (Appendix J) expressed no concern or difficulty with the general design or format of the instrument. The arranging by groupings of behaviors expedited the recording procedure and the actual recording by sequential (1,2,3...) numerals facilitated analysis of the movement of each child, both by the investigator and,

later, by the teacher and her assistants.

4.3 Patterns of Behaviors

This section attended the third hypothesis: Characteristic sequences of strategies of coping can be found from an analysis of the group and individual data as measured by the instrument and observed in the preschool settings. The purpose of this presentation and analysis is to give some evidence of what might be possible in using the instrument in a classroom. Though hypothesis 3 was intended as an exploratory hypothesis, some treatment of relevant data seemed appropriate. Hence, a sample profile of one child is presented in Table 11 (see Appendix L for the remaining 9) as well as data on sequences of strategies used, clustering of behaviors and sustaining of behaviors within a task.

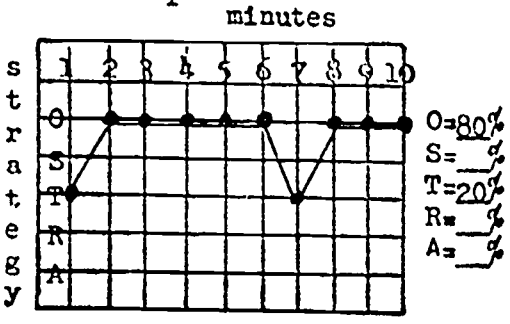
There seems to be no evidence in this sampling that any one child typically used one behavior before or after another. Child 2 (Appendix L) was recorded as beginning five of the six observations with Reality Testing. The rest of the children used a variety of approaching strategies. In two of the three times Child 3 used Avoidance strategies, this use seemed to be a break in a task in which he was using Reality Testing. Child 7 most graphically illustrated behaviors moving back and forth from testing to orienting (see Appendix L, 7$_4$). In all three sequences in which Child 9 used Resources, she alternated this strategy with Orientation (specifically, observing).

The percentages of time spent by each subject in each strategy are shown in Table 12 on page 51.

TABLE 11

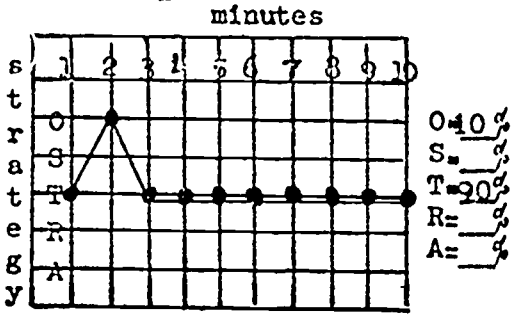
Analysis of Child 10's Coping
Over Six Observation Periods

CHILD 10_1



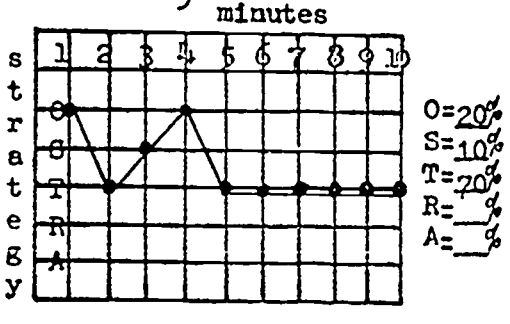
O=80%
S=___%
T=20%
R=___%
A=___%

CHILD 10_2



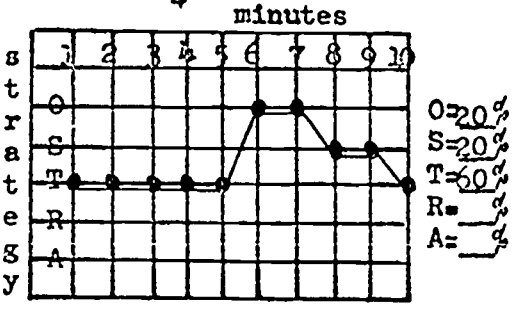
O=40%
S=___%
T=20%
R=___%
A=___%

CHILD 10_3



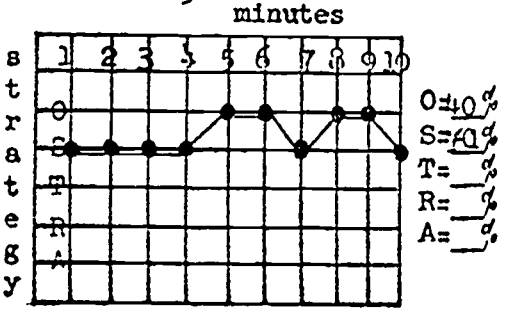
O=20%
S=10%
T=70%
R=___%
A=___%

CHILD 10_4



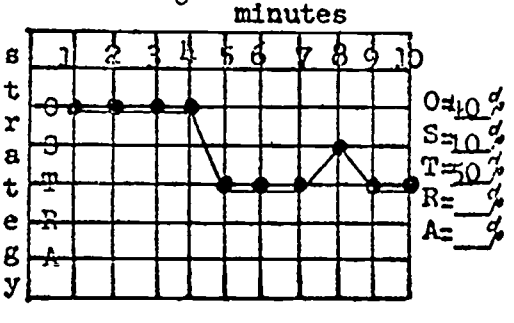
O=20%
S=20%
T=60%
R=___%
A=___%

CHILD 10_5



O=40%
S=60%
T=___%
R=___%
A=___%

CHILD 10_6



O=40%
S=10%
T=50%
R=___%
A=___%

TABLE 12

Percentage of Time Spent by Each Subject in Each Strategy

Subjects	Orientation	Structuring	Testing	Resources	Avoidance
1	31.7	28.3	33.3	10.0	1.7
2	21.7	16.7	56.7	5.0	1.0
3	18.3	30.0	46.7	1.25	5.0
4	21.7	30.0	43.3	1.7	1.7
5	18.3	21.6	53.3	3.3	1.7
6	13.3	28.3	46.7	6.7	5.0
7	26.7	25.0	45.0	1.7	1.7
8	26.7	11.7	46.7	13.3	1.7
9	46.7	21.7	11.7	16.7	3.3
10	35.0	15.0	50.0	0.2	0.1

From this, some consistencies did emerge. Eight of the ten subjects used the strategy of Reality Testing one-third or more of the time. Seven of the ten followed Reality Testing with the strategy of Orientation, which was used from twenty-one to thirty-five per cent of the time. One child (Child 9) used Orientation forty-six per cent of the time. While this strategy was found in the literature to be typical of young threes (Child 9 was 3.2 years of age at the time of data collection), it was not evidenced in data of two children younger than Child 9. (Child 1 and Child 5 were both 3.1 years of age.)

The above referred to the percentage of time each child spent in one strategy in the course of the observations. A second pattern focused on the sustaining of strategies during these same periods. Observation periods in which the behaviors of the child moved between only <u>two</u> strategies for eighty or more per cent of the time are designated in Table 13 by the use of an 'X'. Only two children did not evidence this sustaining of strategies more than half of the observed time.

TABLE 13

Sustaining of Any Two Strategies
for 80% or More of Observation Sequence

	OBSERVATIONS					
SUBJECTS	1	2	3	4	5	6
1	X		X	X		
2	X		X	X	X	X
3	X		X	X	X	X
4	X			X	X	X
5	X	X		X	X	X
6	X	X	X	X		X
7	X	X	X	X		X
8	X	X	X	X	X	X
9		X	X			X
10	X	X	X	X	X	X

Sustaining of strategies were also analyzed internally. Data presented in Table 14 indicate the length of any one behavior within a strategy.

TABLE 14

Length of Consecutive Marking for
One Behavior

St.	S_1	S_2	S_3	S_4	S_5	S_6	S_7	S_8	S_9	S_{10}
O	3-4-4	3	4	3-3	3-3	3		3	3-6-3-3	5-3-4
S	3		3	4-6	5	9			3	4
T	5-3	4-5-3-3-6-3	3-3-6-3	3-9	3-5-4-3-5	6-5-6		4-4-5-3-4-3		3-6-5-3
R									5	
A										

Behaviors most often sustained over three or more segments of time were: observing, testing what one can do, performing self reliantly, and creating

the known in fantasy.

When the profiles of the ten children were given to the teacher and assistants for feedback, they consistently paralleled and complemented the data thus presented.

4.4 Summary

The data presented and analyzed in this chapter are here summarized:

H_1: Specific coping behaviors were identified. The definitions of behaviors included in Reality Testing and Structuring required clarifications for finer discriminations.

H_2: Coping behaviors were observed through the use of the instrument developed for that purpose. The importance of training for use of the instrument was evidenced as well as the value of observing small segments of behavior when using a percentage analysis of the data.

H_3: The data showed some patterns of coping rather than sequences, as hypothesized, were identifiable. These patterns included percentages of certain behaviors used, the sustaining of particular strategies, and the relative use of strategies by both individuals and groups of children.

5.0 INTERPRETATION OF DATA

The two previous chapters presented the method of the study and presented and analyzed the data collected as a result of this methodology. This chapter discusses the findings relating to the identification of the behaviors of coping, the development of the instrument and the patterns of coping.

5.1 Identification and Observation of Behaviors

The defining and grouping of coping behaviors greatly facilitated the general task of identification. However, the data indicated some areas within this identification that needed explanation. Among these were the difficulty of identifying several behaviors and the use or non-use of several strategies.

Behaviors included in the strategies of Structuring and Reality Testing were consistently the most difficult to identify. Several explanations are possible for this difficulty. The definitions of these behaviors were the most complex to formulate because of the paucity of discussion on them in the literature. With the exception of Murphy (1962), no other research dealt with area of coping behaviors with any specificity. White's study (1971) incorporated coping behaviors into the larger framework of competency, and such inclusion into another behavior is typical of the literature.

Even within the studies of Murphy and her associates in the Coping Project, coping behaviors were identified by highly trained pediatricians, psychologists, and researchers within a psychoanalytic frame-

work. When one tries to translate them into specific behavioral terms, one runs the risk of not yet discovering the precise word that isolates and distinguishes that behavior. None of the sources of coping cited in Table 3 (p. 21) gave definitions for all the behaviors used in this study. Generally, less than half of them even cited behaviors included in the strategies of Reality Testing and Structuring.

The two behaviors of 'perform self reliantly' and 'test what one can do' were perhaps the two used most often either interchangeably or by one observer and not by the other. This would seem to mean that the line between the two was not clear. It seems that the distinction is the manner in which the child performs. If the child does the task as if he knew it, even though the adult has evidence that he has never before performed this task within the classroom setting, then he is 'performing self reliantly'. Some children do this consistently: their style of coping includes moving into a situation as if they knew what to do, not necessarily rushing headlong into it, but not doing the exploring that is more inherent in the behavior of 'testing what one can do'. This exploring, handling the situation more slowly and thoughtfully, is characteristic of the behavior of testing.

The data gave evidence of very limited use by most children of the behaviors included in the strategies of Resources and Avoidance. S_9, for example, used Resources thirty-three out of two hundred forty segments observed. This was the highest use of that strategy by any child and still, this accounted for only thirteen per cent of her total observed time. The total use by all ten subjects of the strategy of Avoidance was less than two per cent (.0125).

Part of the seeming independence of these three-year olds may be attributed to the process of both bringing the children into the class-

room and allowing them to function freely within the classroom setting. Initial entry was slow, spread over at least several days. Important adults were not allowed simply to disappear. Once the children were in the room, they were shown where materials were kept and they were allowed to use them. Emphasis on respect for each child often prevented situations where the adult might have been solicited to help the child. The direction and redirection of the children also seemed effective in forestalling crying or avoidance behaviors. The data on the coping behaviors, looked at within the context of the classroom where the study was done, gave evidence of an environment where behaviors of coping other than those included in avoidance work for the child, and these behaviors were integrative, synthesizing and testing, rather than avoiding.[5]

'Refuse', 'regress', 'delay to reassess' and 'seek the known in the unfamiliar' were behaviors that took the longest to discriminate, according to the observer. Part of the reason for the difficulty in the behavior 'refuse' was in the manner or degree. It was confused with 'assert autonomy' when the manner of refusing was looked at positively (Structuring) rather than negatively (Avoidance). This was also true of the confusion between 'regress' and 'seek bodily contact'. The general positive orientation of the observers and the placement of the strategy of Avoidance last on the scale (instead of first, as in Spaulding) may have influenced the choices among behaviors. Observers also reported that 'delay to reassess' and 'seek known in unfamiliar' demanded the greatest subtlety of discrimination and so they avoided identifying them. Either the distinctions were not adequately trained for or the definitions of the behaviors were not clear.

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[5]It should be emphasized that Murphy (1962) does not see avoidance in a negative light, as Lazarus and Spaulding seem to. For her it is a strategy a child uses when threatened or forced with 'too much'. (p. 318)

5.2 Development of the Instrument

The development of the instrument built upon the behaviors identified as coping and addressed itself to the manner and degree of reliability which these behaviors could be observed. Some discussion of the data presented on the development of the instrument clarifies two parts of the data: percentage of agreement and variations in this percentage.

Since percentage of agreement and therefore reliability was determined by analyzing the rater's consistency in reporting each 'same' situation in the 'same' way, it was essential that both the training of the observers and the observations reflect this ability.

The videotapes used for training evidenced a great amount of focusing on Orientation behaviors. This may have hindered observers while collecting data because of the lack of equal practice in using the instrument while observing longer Structuring and Reality Testing sequences. Thorndike (1969) identified training as one of the five elements necessary to obtain reliable observations[6], but the training also has to focus on balancing training with the behaviors actually to be observed, as indicated on the instrument.

Observations in the classroom gathered data used to establish the percentage of agreement among observers. The highest percentages of agreement were evidenced in the strategies of Avoidance, Orientation, and Resources. This was consistent with the focus found in the literature. However, the profiles of the subjects showed the largest percentages of behaviors from which the reliability was calculated were those

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[6]The other four include: selecting the aspect of the behavior to be observed, quantifying the observations, defining behaviors that fall within a category, and developing procedures to facilitate recording (pp. 472-473).

included in the strategies of Reality Testing, Structuring, and Orientation. This latter fact was consistent with the research of Lois Murphy and with behaviors observed in the field. Hence, the percentages of agreement between investigator and observers were calculated on data from observations of behaviors considered difficult to identify both in the literature on coping and by the observers themselves.

Variations in percentages of agreement are interpretable in the light of both the setting in which the study was done and the framework of a developmental study. Both allowed for mirroring what was happening at that point in time, rather than controlling so that specific events should happen. Hence, atypical variables were sometimes reflected in the percentages of agreement. For example, Child 8's father stayed in the classroom during observation 5 and constantly called her from her task to himself. The kind of coping the child used was not directly described on the coping scale and so there was a variety of decisions made. In the other observations, the father was not there and that atypical variable was removed.

In general, the instrument seemed to reflect events as they actually happened in the classroom, rather than those considered more 'typical' or more easily observable.

5.3 Patterns of Behaviors

One intent of the instrument developed in this study was its eventual use in focusing adult's attention on each child's way of coping, rather than to establish any norm for the coping of three-year-olds. While sequences of behaviors were hypothesized, the data indicated some patterns of coping which might be helpful for use in planning for the child.

These patterns were found both with one child and across a group of children. One might infer the child's ability to draw selectively from a wide range of possibilities and his flexibility in doing so.

S_{10} is here used as an illustration of patterns of coping behaviors for one child. S_{10} (see Table11) emerges as a three-year-old who spends a great deal of time and a great amount of his coping energy in using Reality Testing and Orientation strategies. Further, he evidences much sustaining of these two dominant strategies (Table13) and much focus within a task. In his Reality Testing he focuses mainly on one behavior---perform self reliantly---whether the task is a 'first time' one or one used before but not yet mastered, from the teacher's perception. His first exposure, for example, to play dough and the use of cylinders resulted in the most sustained behaviors of the entire observation period.

Data on his use of Orientation may clarify his way of Reality Testing. He spent an almost equal amount of time closely observing others in a task. Hence, his mode of coping at the present time may be to study a situation very carefully, then enter into it. One working with him and seeing only how he always seems to handle every task self reliantly may miss the first important part of the coping: his careful studying of the task.

His ability to sustain a behavior was evidenced in all six observations. In four of the six he was engaged in one behavior half or more of the time.

The picture presented by all this is not so much some one needing very little help, but rather a child who first studies, then enters into a situation. Once in it, he does not explore by use of many behaviors, but settles into the one that helps him manage his world at that time. So his sustaining behaviors might be planned for in longer tasks.

This may, in part, illustrate the importance the investigator has placed on looking at each child systematically, not merely noticing him/her when attention is demanded in some way.

Patterns evidenced among the ten subjects, especially the use of Reality Testing, were possibly unique to this group of children and/or this setting. The investigator became convinced already in the two preliminary studies that, while children have in their repertoire most of the range of coping behaviors, the ones most evidenced in a particular setting are dependent upon one or two things: either they are behaviors that 'work' for the children in independent tasks or they are the ones allowed by the adults. The investigator initially observed more structuring in a Montessori-type school, more Reality Testing in a free school, more Avoidance in a highly structured or group oriented preschool. Hence, the patterns in these data cannot be taken as necessarily characteristic of the children of this age. At most, they suggested the possibility of looking at coping behaviors of the child, however his/her world may be structured.

5.4 Summary

This chapter discussed the data on the analysis of behaviors included in the system, the percentage of agreement and the patterns of coping from Chapter 4 to include possible alternatives and/or additional information on each. It discussed the ability of the instrument to measure coping behaviors even though some of these behaviors were difficult to identify. Finally, it discussed both individual and group flexibility in using behaviors in ways that moved them toward the goal of coping: eventual mastery.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

This study attempted to take one small step in the understanding of the behavior of three-year-olds. The area identified for study was coping: that process by which the child in some way attempts to control, synthesize and gradually master parts of his world.

Four developmental phases were used in order to identify behaviors of coping, and to validate an instrument for observing these behaviors.

The study attempted to extend the concept of coping behaviors found in the literature. Most of the work done until this time in the field of the coping of three-year-olds had been done within the psychoanalytic frame of reference. This study compiled coping behaviors found in the literature and observed in preschool classrooms, and behaviorally defined them to facilitate their identification and observation by trained adults. An ultimate goal was to have teachers use this information in planning educational experiences for the children. Since the most extensive work on coping behaviors of preschool children done to date is that of Lois B. Murphy, her work was used as the theoretical base for this study.

The instrument was used in the observation of ten children in a preschool setting. The observers were paired, but worked independently within carefully defined time frames. The behaviors to be observed had been grouped into five larger strategies of Orientation, Structuring, Reality Testing, Resources, and Avoidance. Both these and the individual behaviors were observed and analyzed.

The reliability of the data thus collected was calculated by the use of percentages:

NUMBER OF AGREEMENTS/(NUMBER OF AGREEMENTS + NUMBER OF DIFFERENCES)

The method used to determine agreement was the simultaneous recording by three persons of the same strategy and/or behavior. The number of behaviors observed was twenty-seven; these were subsumed under the five strategies as discussed on pages 31 to 36.

The study was limited by the age and location of the children and the trained skills of the observers.

The objectives of the study were identified by the hypotheses:

H_1: Specific coping behaviors used by three-year-olds in preschool settings are identifiable and observable.

An extensive review of the literature and two preliminary observation studies in fifteen preschools presented evidence that coping behaviors did exist and that they were observable. Data collected and analyzed in this study helped both to define these behaviors in operational terms and to establish their observability.

H_2: An instrument can be developed for use by trained adults with three-year-olds in preschool settings to identify, observe, and classify these behaviors.

In six observations of the ten children by paired observers recording simultaneously, 84.6% reliability was averaged in the observation of strategies of coping and 74.5% was averaged in the observation of the specific behaviors.

H_3: Characteristic sequences of strategies of coping can be found from an analysis of the group and individual data as measured by the instrument and observed in the preschool classroom.

The only sequence of strategies evidenced was movement between the two strategies of Reality Testing and Orientation. Rather than sequences, some patterns for individual children were evidenced in the sustaining of specific behaviors and strategies. Strategies of Avoidance and Resources were minimally used in any observed time. All the data reflected the immediate, real world of the children in the study and were intended for eventual diagnostic rather than norming use.

The integrative function of coping was central to data presented and analyzed in this study. Whatever the child's behaviors and strategies, they were his attempts to face school life as a 'whole'. They represented a drive toward mastery (Murphy, 1962) and the process each child used in this drive. Some situations represented threats or challenges or problems for the child. Here the investigator was not interested in identifying the child's perception of the task or environment, but only the resources and behaviors he used to cope with it.

6.2 Interpretations

In a developmental study events often happen other than those planned for and data emerge that fit into no frame but add to the general

focus of the investigation. It seems appropriate that the final chapter allow the investigator to comment on such events which occurred in the defining of behaviors of coping, the developing of the instrument and the identification of any coping patterns.

6.21 Behaviors

The four observers who used the instrument repeatedly commented on the fact that working with these coping behaviors helped them immensely in looking at their own children, at friends' children, and in reflecting upon the behaviors of those children with whom they had been working in the pediatric wards. They said that being aware of these behaviors did not put them in the bind of making judgemental remarks, but helped them to focus specifically on what the child was doing.

6.22 Instrument

Persons working with children in the classroom do deal with the behaviors and strategies here identified as coping. Perhaps calling them by name and setting them within some observational frame will increase awareness of this fact. For instance, if a child always structures a situation by crying, most adults will try to move him in some way to other ways of structuring or coping with that situation. It may not be done with awareness of what is happening, but simply out of annoyance, anger or frustration at the behavior of the child. In some classrooms, a child who always waits to be helped in a new situation will be directed to a task, anyway, or else simply allowed to sit, because of the more demanding coping behaviors of some children in the classroom.

The study identified coping as a classroom dynamic. Some deliberate, conscious looking at how the adult, in fact, sees these behaviors and where he/she moves from there seems much more realistic for the child's

growth and coping than the 'hidden agenda' type of approach to the behaviors of the child, especially if this agenda is hidden from both the child and the adult working with him.

6.23 Patterns

While no specific sequences or even what could be called characteristic patterns for a given child emerged, the data evidenced some children used visual scanning and seeking control in that mode before moving into a task; some children seemed to rush into any situation as if they already had it mastered. All these ways of coping would seem to indicate children are using behaviors they are somehow finding successful when coping with that environment.

One might suggest that an open environment in a classroom or situation would allow for more reality testing, whereas a strict or very structured environment might evidence very little independent structuring and much waiting and passive avoidance patterning. Some of this was in fact observed in the preliminary studies. Models of teaching used in the classrooms might evoke different patterns of coping.

Patterns do not emerge from any 'one shot' observations. Only the data from several observations of the child give enough information to make any realistic statements. This is particularly true for the three-year-old. He can be characterized in general at this age, but that characterization may not necessarily be true for any one day, especially if the child is near the middle of the threes.

One might also suggest and support it with extensive literature in Early Childhood that the age of the cild and/or time of the year in which observations are done influences these more "typical" behaviors. A very young three may more typically do much orienting, whereas an older three may engage in more structuring.

The usefulness of identifying some patterns of coping lies in its diagnostic possibilities. One working with three-year-olds can get a 'here-and-now' picture of the child or group of children and use those data as bases for planning both experiences and procedures in the classroom.

6.3 Recommendations for Further Study

The next logical step in the study of the coping behaviors of three-year-olds is to extend it. With this in mind, the following recommendations are made:

1. The useability of the instrument in identifying coping behaviors in a classroom using a wide range of models of teaching needs to be tested.
2. The consistency of coping patterns when larger numbers of children are dealt with needs to be researched.
3. The relationships between coping behaviors and the designing of specific learning tasks, a curriculum or an environment of learning in the classroom need to be investigated.
4. The useability of the instrument in non-school environments needs to be examined. It may be possible that some composite picture could be made over a long enough time and varied enough experiences. These non-school environments could include the playgrounds, the street, the bus, the shopping malls.
5. The relationship (possible or real) between the physical environment (the classroom size, location,

etc.) and/or instructional materials, and the coping behaviors of three-year-olds needs to be examined.

6. Teachers could be trained in the use of the instrument, in order to test further the training procedure used in this study. This could also test the instrument's effectiveness when used by teachers exemplifying varying teaching approaches.
7. Some experimentation needs to be done concerning the value or effectiveness of using the instrument and the training process in the training programs of beginning preschool teachers and if it has any impact on their later teaching behaviors.
8. The possibility of this instrument being used by supervisors in supervising sequences with preschool teachers needs to be explored.

> Through his coping experiences the child discovers and measures himself, and develops his own perception of who and what he is and in time may become. We can say that the child creates his identity through his efforts in coming to terms with the environment in his own personal way.
>
> Murphy, 1962, p. 374

APPENDICES

Appendix A

IDENTIFICATION OF SUBJECTS IN STUDY

Subject	Birth	Sex
1	9 / 28 / 70	M
2	3 / 31 / 70	F
3	2 / 21 / 70	M
4	4 / 16 / 70	F
5	9 / 20 / 70	M
6	2 / 5 / 70	M
7	1 / 23 / 70	F
8	7 / 29 / 70	F
9	8 / 20 / 70	F
10	5 / 10 / 70	M

Appendix B

To: teachers of the three-year-olds
From: Jean Silvernail
Re: Study of three-year-olds

I am a doctoral student at the University of Pittsburgh. Last spring I contacted many of you concerning my research on the coping behaviors of three-year-olds in pre-school settings. I then set up a schedule for ten of the contacted schools and observed there.

Now I have a second request. In order for my data-collecting observations to be geared to the real world of the pre-school child, I would appreciate if you would respond to the following items and return the responses in the enclosed envelope:

1. What experiences would you consider new to a group of three-year-olds with whom you have worked/are working? Please list five, see below.

2. In general, how would you describe the population with whom you are working?
   example:
   a. mostly low income, from a housing project, many on ADC, mixed ethnically

   b. children of workers, staff and students at the university, mostly white, a few Chinese or Japanese

Thank you for any return on this request. If you would like a compiled list of these experiences for your own information, just let me know and I will send one before December, 1973.

Thank you.

---

1. five experi ces

2. population description

Appendix C

COMPILED LIST
OF
BEHAVIORS CONSIDERED AS NEW OR UNFAMILIAR
TO
THREE-YEAR-OLDS

Compiled from the sixteen returned responses to letter dated August 26.

Returned responses represent 48% of the possible return.

5--being in a group, rather than having the caring person for self
5--finger painting
4--musical games
3--being without mother
3--sharing
3--easel painting
3--use of clay
2--using hand puppets
2--using scissors
1--water play
1--bubble blowing
1--use of knife, fork, napkins
1--feeding animals
1--use of math dominoes
1--making butter
1--bus riding
1--tearing paper
1--frosting cookies
1--blind-fold games
1--working with left and right
1--kick ball
1--awareness of body parts
1--working with wood
1--pop-corn pictures

Appendix D

EXAMPLE OF ONE PRELIMINARY OBSERVATION INSTRUMENT

NAME _____

	1	2	3
TIME			
TASK			
SITUATION			

STRATEGY	1	2	3	BEHAVIOR	1	2	3	INTERACTION	1	2	3	SEQUENCE	1	2	3
ORIENTATION				warm up observe survey seek known in unknown moves in at own pace moves in with own style				peers ignores seeks attention seeks help models leads				1			
												2			
												3			
								adults ignores seeks attention seeks help				4			
												5			
STRUCTURING				change it keep task at one's own terms manages stimulus shifts behavior asks for more time initiates waits to be told what to do waits to be told how to do it				peers ignores seeks attention seeks help models leads				1			
												2			
								adults ignores seeks attention seeks help				3			
												4			
												5			

Appendix D (Continued)

STRATEGY	1	2	3	BEHAVIOR	1	2	3	INTERACTION	1	2	3	SEQUENCE	1	2	3
REALITY TESTING				setting one's limits				peers							
				discarding one action for another				ignores				1			
				delay to reassess				seeks attention							
				tests what can do				seeks help				2			
				self reliant				models							
				preventing trouble by actions				leads				3			
								adults							
								ignores				4			
								seeks attention							
								seeks help				5			
RESOURCES (use of)				asks questions				peers							
				seeks bodily contact/ assurance				ignores				1			
				seeks verbal assurance				seeks attention							
				seeks help				seeks help				2			
				self-reliant				models							
				needs support				leads				3			
				needs to be told what to do				adults							
								ignores				4			
								seeks attention							
								seeks help				5			
AVOIDANCE				helpless				peers							
				refusal				ignores				1			
				protest				seeks attention							
				removes self				seeks help				2			
				removes task				models							
				moves out at own pace				leads				3			
				moves out in anger				adults							
								ignores				4			
								seeks attention							
								seeks help				5			

Appendix E

ORIGINAL SCHEDULE FOR OBSERVATIONS

MONDAY (1)			WEDNESDAY (2)			FRIDAY (3)		
O	Ss	Time	O	Ss	Time	O	Ss	Time
A	1 2 3 4	warmup = 5	A	5 4 1 2		A	1 2 3 4	
B	5 6 3 4	observe = 5	B	3 4 5 6		B	5 6 3 4	
C	5 6 7 8	stop = 5	C	7 8 5 6	SAME	C	5 6 7 8	SAME
D	9 10 7 8	(do 4 times)	D	7 8 9 10		D	9 10 7 8	
MONDAY (4)			WEDNESDAY (5)			FRIDAY (6)		
O	Ss	Time	O	Ss	Time	O	Ss	Time
A	5 6 7 8		A	7 8 5 6		A	5 6 7 8	
B	9 10 7 8		B	7 8 9 10		B	9 10 7 8	
C	1 2 3 4	SAME	C	3 4 1 2	SAME	C	1 2 3 4	SAME
D	5 6 3 4		D	3 4 5 6		D	5 6 3 4	

Appendix F

SELECTION AND TRAINING OF OBSERVERS

At the beginning of the University of Pittsburgh fall term (September, 1973) classes in the Child Development department were contacted and volunteers were solicited for the role of observer. Seven possible volunteers were available, but this number diminished to four as a result of the interviews and explanation of the involvement sought. These included:

-interest of the interviewees

-availability for training and in-classroom observations

-maturity

-personal meaning of the experience for each

-global impressions of the interviewees concerning the instrument

-advisement of faculty member of Child Development.

The four observers each brought unique experiences and/or abilities to the research:

-one was also a teacher of nursing

-one had a strong and rich background in psychiatric nursing

-one had been a clinical instructor in pediatric nursing

-one had been a librarian and volunteer worker in preschools.

Their entering behaviors were not preconditioned to the behaviors of well, preschool children. One advantage of this was that the investigator could more readily assign increasing reliability in the use of the

instrument to the training process used and infer useability by relatively unsophisticated observers.

The training had three stages. The first stage familiarized the trainee with the observation instrument; the second stage trained for an acceptable interrater reliability before going into the classroom; the third emphasized the use of feedback from the trainees.

The first stage consisted of three sessions, each a minimum of one hour. Session one focused on a basic practice and familiarization in terminology and observation skills. This discussion of each task and behaviors had as its goal the clarification of the observations ahead, as well as introduction to and clarification of some terminology and behaviors. During this session, a list of twelve tasks, an observation instrument, and a list of expanded explanations of each strategy and behavior was given to each trainee. These twelve tasks each had two or three behaviors described for them, as if a freeze had been put on a running tape. The trainees and investigator slowly 'walked through' the list, using the instruments and descriptions. An example of these tasks is:

Child with barrel (task)
a) "Teacher, I can't move it!" (behavior 1)
b) Sat on barrel, waiting for teacher (behavior 2)
c) "My daddy could help me roll this old barrel!" (behavior 3)

The second session of stage one was structured to refine recognition and observation of the strategies identified on the instrument and to begin to look at how specific behaviors fit, without deliberately focusing on them. This session helped in slowly developing skills in the use of the instrument and the terminology. The session was built around the slow and thoughtful viewing of the videotaping done earlier on coping behaviors of three year olds. (About 180 minutes of videotaping was done by the investigator in July, 1973; of this approximately 120 minutes was

used in the training.) Ten or so minutes of the videotape was shown, with frequent stops and/or comments by the investigator. About the same amount of time was used in which the investigator asked questions such as, "What strategy (behavior) do you think is being used here?" or "Did you notice what this child just did?" Finally, the investigator showed a series of three, half-minute segments during which the trainees recorded what strategies they thought they observed. After each of the three half-minute segments there was a discussion during which the recordings of the trainees were discussed, and, if necessary, the videotape was rerun to clarify or recall a behavior.

Session three of stage one focused on the specific behaviors of the instrument and refinement in the use of it. This session gave practice in the behavior identification, was a reality check for the investigator, and was somewhat of a 'readiness' check for the trainees. This session began with a discussion of terminology and reactions to what had been done so far in the training. The remaining time was spent in practice with the instrument, specifically for the identification of the behaviors. Again, a series of three, half-minute observations were used. This third session ended with two full five-minute observations of the videotaped child.

The second stage trained for an acceptable interrater reliability before going into the classroom. Specifically, three of the four sessions in stage two had as their task to arrive at and maintain a level of interrater reliability. One of the sessions was an on-site orientation; the other three sessions consisted of the use of the videotapes on the three-year-olds.

In the second stage a series of fifteen observations was used. This number was arbitrarily arrived at. The intent was that, at the end

of the fifteen observations, assessment of reliability would be made. At that point the decision would be made whether to extend training or to begin the in-classroom observations. As is shown in the analysis of the data, more were not needed.

The fifteen observations were grouped in a three-six-six pattern with the last six occurring after the on-site visit to the preschool. It had been planned to have these observations in a five-five-five pattern, but the investigator found that, at the beginning of the first session some discussion was still needed. Each observation consisted of ten recordings done on the viewed child in half-minute segments.

The third session of the second stage was the on-site visit/observation to the preschool where the study was done. It was a multiple orientation. It gave the children a chance to see and meet the observers; it allowed the observers to meet the children and to get some sense of the classroom; and it permitted the teachers to five practical input as to better places to sit in the classroom, time, and kinds of involvement with the children.

The third stage emphasized the identification and incorporation of the feedback of the trainees. This feedback was consistently used as a catalyst for the sharpening of definitions and the meanings of coping behaviors. It ran concurrent with stages one and two, rather than before or after.

Two kinds of feedback were sought. Informal feedback occurred thoughout the training sessions in both stage one and stage two whenever there was discussion about what was happening, problems with the process and format of the instrument and so so. This was recorded by the investigator in a log kept on the training sessions. The formal feedback was obtained by means of a feedback information form (Appendix K). Because of the nature of the information sought, the form was open ended.

Appendix G

TEACHER FEEDBACK SHEET

1. Please comment on the similarity or difference of your perceptions of the following children in the areas of:

Child	Orientation	Structuring	Testing	Resources	Avoidance
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

2. Do you feel the observers' presence in the room influenced the children's behaviors?

   How?

   Who?

3. What do you feel similar observers might do differently?

4. Please expand on any other feedback you have about this experience.

Appendix H

TEACHER FEEDBACK SHEET

1. Please comment on the similarity or difference of your perceptions of the following children in the areas of:

Child	Orientation	Structuring	Testing	Resources	Avoidance
1	I agree	I agree	I agree	asks for att. verbally	I agree
2	I agree	I agree	I agree	I agree	I agree
3	I agree	I agree	I agree	I agree	I agree
4	I agree	I agree	I agree	I agree	I agree
5	I agree	I agree	I agree	I agree	I agree
6	I agree	I agree	I agree	I agree	I agree
7	I agree	I agree	I agree	I agree	definitely avoids
8	I agree	I agree	I agree	I agree	I agree
9	I agree	I agree	I agree	I agree	I agree
10	I agree	I agree	I agree	I agree	I agree

2. Do you feel the observers' presence in the room influenced the children's behaviors?

   No. They (the children) were excellent. I was interested in
   How? how they could come in and out and not one child would rush up and disrupt.
   Who?

3. What do you feel similar observers might do differently?

   Continue as they have already done.

4. Please expand on any other feedback you have about this experience.

   I was surprised by the number of children observing and then self-

reliantly going about the testing of the situation. Few sought help and yet they must have felt confident to do the situation by themselves. In the behaviors orientation I noticed that rarely did the observers observe a child 'seeking known in unfamiliar' and 'bringing known to unfamiliar'. Could this be a difficult criteria for an observer not familiar with the child: how could they know the child's entering behaviors?

Regarding 'investigation', doesn't 'survey' cover this area? I see this as part of the behavior a three-year-old employs when approaching and applying oneself to a new situation.

Found the analysis very interesting!

Appendix I

OBSERVATIONS OF RATERS COMPILED
FOR CALCULATION OF INTERRATER AGREEMENT

OBS	A	B	I	% S	% B	C	D	I	% S	% B
1	RT_f	RT_d	RT_d	100	50	RT_d	RT_d	RT_d	100	100
	RT_f	RT_d	RT_d	100	50	RT_d	RT_d	RT_d	100	100
	RT_f	RT_d	RT_d	100	50	RT_d	A_b	RT_d	50	50
	RT_f	RT_f	RT_f	100	100	RT_d	RT_d	S_e	0	0
	O_b	O_b	O_b	100	100	S_f	S_f	S_f	100	100
	O_a	O_a	O_a	100	100	O_a	O_a	O_a	100	100
	RT_d	RT_d	RT_f	100	0	RT_d	RT_d	RT_d	100	100
	A_b	O_b	O_b	50	50	O_a	RT_d	RT_d	50	50
	O_a	O_a	O_a	100	100	O_b	RT_d	RT_d	50	50
	RT_f	RT_f	RT_f	100	100	O_a	RT_d	O_a	50	50
2	RT_d	RT_d	RT_d	100	100	RT_f	RT_d	RT_d	100	50
	O_a	RT_d	RT_d	50	50	O_b	S_d	O_b	50	50
	O_a	O_a	O_a	100	100	O_a	O_a	O_a	100	100
	O_a	O_a	O_a	100	100	RT_d	RT_d	RT_d	100	100
	S_b	RT_d	S_b	50	50	RT_d	RT_d	RT_d	100	100
	O_a	O_a	O_a	100	100	O_a	O_a	O_a	100	100
	O_a	RT_d	O_a	50	50	O_a	RT_d	O_a	50	50
	RT_d	RT_d	RT_d	100	100	O_a	O_a	O_a	100	100
	O_a	O_a	O_a	100	100	O_a	O_a	O_a	100	100
	O_a	O_a	O_a	100	100	O_a	O_a	O_a	100	100
3	RT_d	RT_d	RT_d	100	100	RT_d	RT_d	RT_d	100	100
	S_a	S_a	S_a	100	100	RT_f	RT_d	RT_d	100	50
	S_d	S_a	S_g	100	0	RT_d	RT_d	RT_d	100	100
	S_e	S_e	S_g	100	0	RT_f	RT_d	RT_f	100	50
	S_d	S_a	S_a	100	50	RT_f	RT_d	RT_d	100	50
	O_a	O_a	O_a	100	100	RT_f	RT_d	RT_d	100	50
	S_b	S_e	S_b	100	50	RT_d	RT_d	RT_d	100	100
	S_i	S_i	S_i	100	100	RT_d	RT_d	RT_d	100	100
	O_a	O_a	S_i	0	0	RT_d	RT_d	RT_d	100	100
	O_a	O_a	O_a	100	100	RT_d	RT_d	RT_d	100	100

Appendix I (Continued)

OBS.	A	B	I	% S	% B	C	D	I	% S	% B
4	O_a	O_a	O_a	100	100	S_g	S_g	S_g	100	100
	RT_d	RT_d	RT_d	100	100	O_a	O_a	O_a	100	100
	RT_d	RT_d	RT_d	100	100	O_a	O_a	O_a	100	100
	RT_d	RT_d	RT_d	100	100	O_a	O_a	O_a	100	100
	RT_d	RT_c	RT_d	100	50	RT_f	RT_f	O_a	0	0
	RT_d	RT_d	RT_d	100	100	O_a	O_a	O_a	100	100
	RT_d	RT_d	RT_d	100	100	O_a	O_a	O_a	100	100
	RT_d	RT_d	RT_d	100	100	S_g	S_g	S_g	100	100
	RT_d	S_f	RT_d	50	50	O_a	S_g	O_a	50	50
	RT_f	RT_f	S_c	0	0	O_a	O_a	O_a	100	100
5	O_b	O_a	O_a	100	50	RT_d	S_d	RT_d	50	50
	O_a	O_a	O_a	100	100	RT_d	S_d	RT_d	50	50
	O_a	O_a	O_a	100	100	S_a	S_a	S_a	100	100
	A_b	O_a	O_b	50	0	RT_d	RT_d	RT_d	100	100
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	RT_d	RT_d	RT_d	100	100	O_a	O_a	O_a	100	100
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	RT_d	RT_d	RT_d	100	100	S_b	RT_e	S_f	50	0
6	O_b	O_b	O_b	100	100	O_a	O_a	O_a	100	50
	O_b	O_a	O_b	100	50	O_a	O_a	O_a	100	100
	RT_f	O_a	RT_f	50	50	O_c	RT_a	O_c	50	50
	RT_d	S_g	RT_d	50	50	S_i	O_a	O_a	50	50
	S_g	S_g	S_g	100	100	O_b	O_b	O_b	100	100
	S_g	S_g	S_g	100	100	RT_c	RT_c	RT_c	100	100
	O_a	RT_d	RT_f	50	0	S_e	S_e	S_e	100	100
	RT_d	RT_d	RT_d	100	100	RT_d	RT_d	RT_d	100	100
	RT_d	RT_d	RT_d	100	100	RT_d	RT_d	RT_d	100	100
	O_a	O_a	O_a	100	100	RT_d	RT_d	RT_d	100	100

Appendix J

OBSERVER FEEDBACK ON INSTRUMENT

1. Is the coding (1,2,3) confusing? Explain
   9/24 ----
   9/26 ----
   10/1 ----
2. Is every half minute too often? Explain
   9/24 ----
   9/26 ----
   10/1 ----
3. Orientation--suggestions:
   9/24 "does 'survey' really mean a feeling of looking for something?
   9/26 'observe' and 'shift behavior' may be confusing
   'seek known in unfamiliar' may be verbal, while 'bring known to unfamiliar' may be nonverbal
   10/1 'investigate' should be somewhere
4. Structuring--suggestions:
   9/24 'create known in fantasy' can be confused with 'seek known in unfamiliar'
   what is the difference between 'shift behavior' and 'initiate'?
   'create known in fantasy' is vague, should say that the behavior doe not have to be verbalized
   9/26 'cry' and 'move out in anger' may be hard to differentiate
   meet should specify that they can be verbal or nonverbal
   'shift behavior' should emphasize that it is after the behavior has already begun
   'wait...' is a word that may have to be defined better
   10/1 'investigate' should be somewhere
5. Reality Testing''suggestions
   9/24 can't distinguish between 'perform self reliantly' here and 'initiate'
   key to 'perform..' seems to be the idea of organize
   9/26 'set one's limits' and 'test to see what one can do' similar
   change 'approach task self reliantly' to 'perform'
   10/1 what is difference between 'perform self reliantly' and 'test what one can do'?
6. Resources--suggestions
   9/24 'seek visual/verbal reassurance..' seems to narrow, could be something like 'seek visual contact'
   9/26 'ask for help' could be confused with 'wait to be told what to do'
   10/1 ----
7. Avoidance--suggestions
   9/24 ----
   9/26 ----
   10/1 ----

8. Format
   9/24 wider columns, grouping convenient way to locate
   9/26 ----
   10/1 ----
9. Other
   9/24 ----
   9/26 ----
   10/1 ----

Appendix K

FEEDBACK

Observer _____
Date _____

1. Is the coding of 1.2, 3... for the sequence of behaviors confusing? Explain.

2. Is every half minute too often? Explain.

3. For the strategy Orientation and the four included behaviors you would suggest the following:

4. For the strategy Structuring and the nine included behaviors you would suggest the following:

5. For the strategy Reality Testing and the six included behaviors you would suggest the following:

6. For the strategy Use of Person Resources and the three included behaviors you would suggest the following:

2. feedback

7. For the strategy Avoidance and the five included behaviors you would suggest the following:

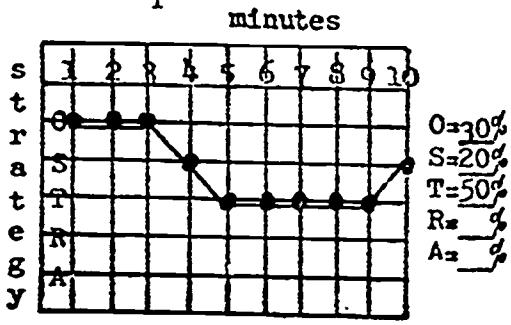
8. You would suggest that the format:

9. Any other suggestions or comments:

Appendix L

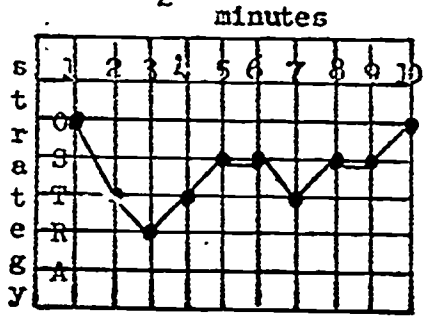
ANALYSIS-ONE CHILD'S COPING

CHILD 1_1



O=30%
S=20%
T=50%
R=__%
A=__%

CHILD 1_2



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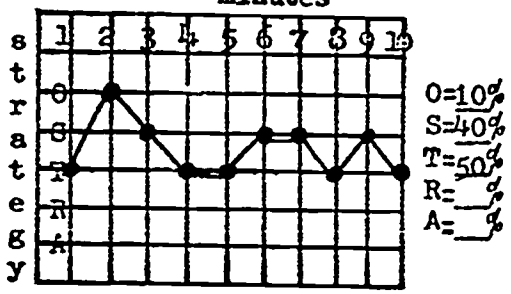
R=10%
A=__%

CHILD 1_3



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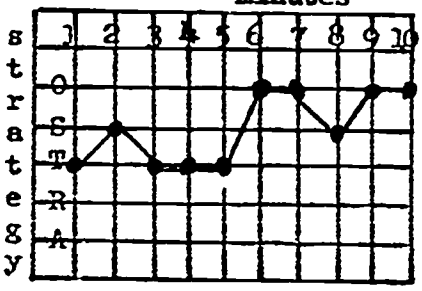
T=50%
R=__%
A=__%

CHILD 1_4



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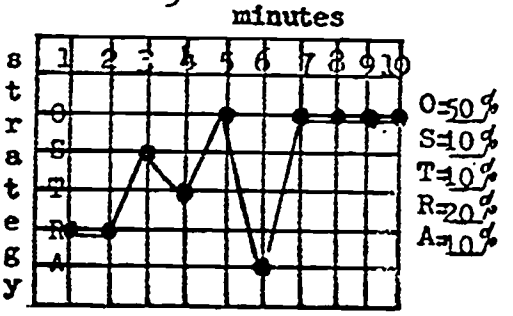
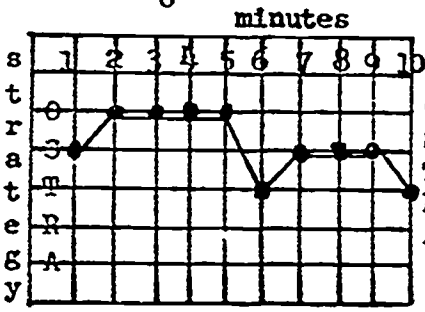
S=20%
T=40%
R=__%
A=__%

CHILD 1_5



O=50%
S=10%
T=10%
R=20%
A=10%

CHILD 1_6

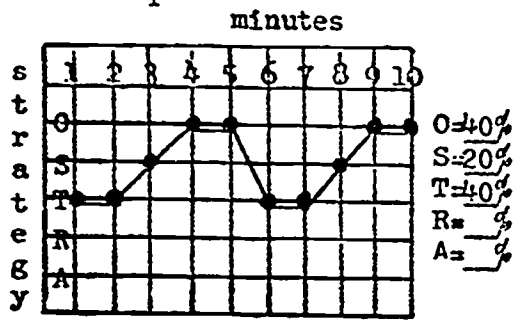


O=40%
S=40%
T=20%
R=__%
A=__%

Appendix L (continued)

ANALYSIS-ONE CHILD'S COPING

CHILD 2_1



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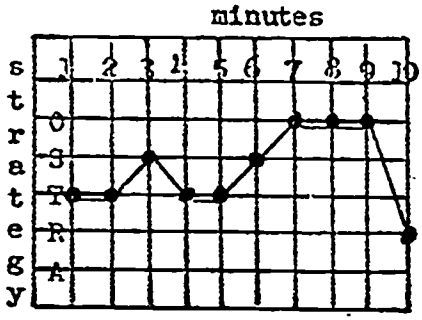

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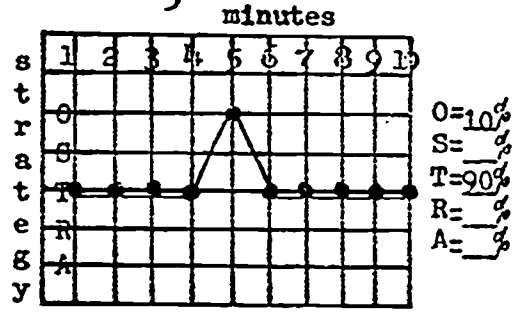

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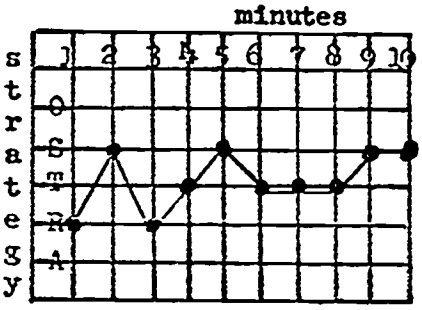

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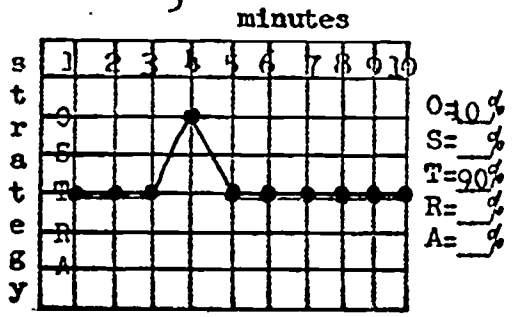

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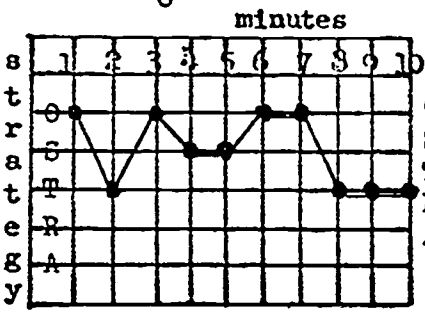

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ANALYSIS-ONE CHILD'S COPING

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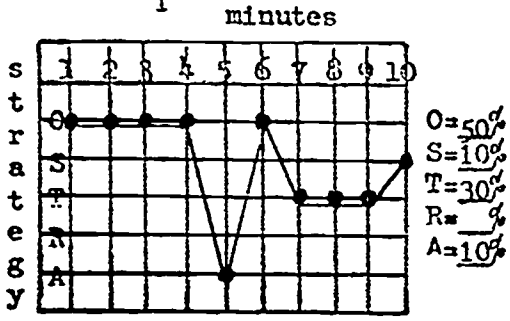

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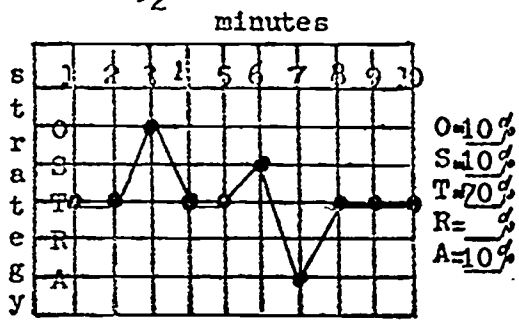

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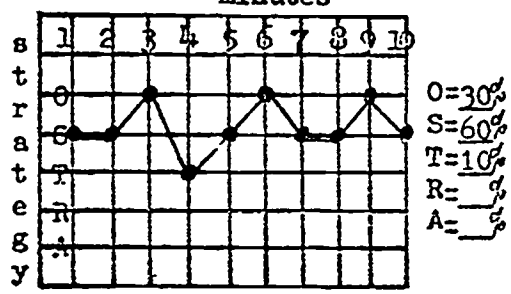

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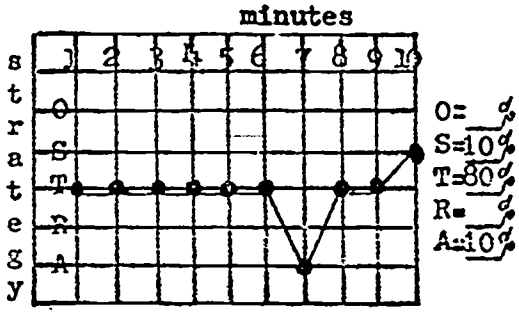

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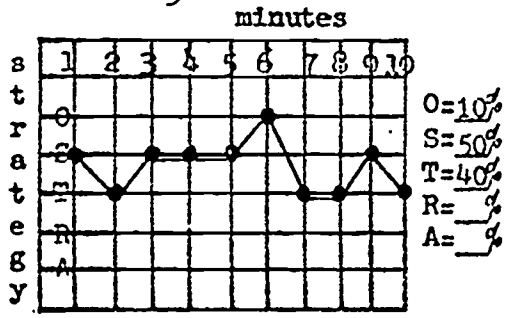

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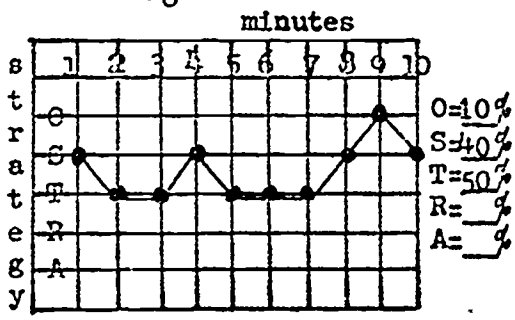

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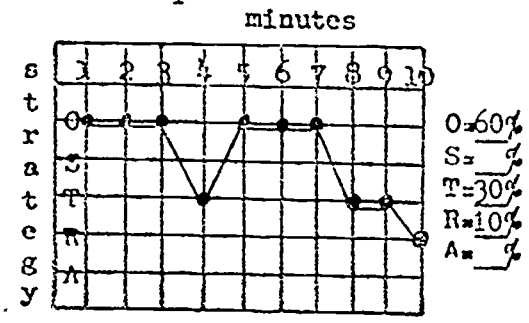

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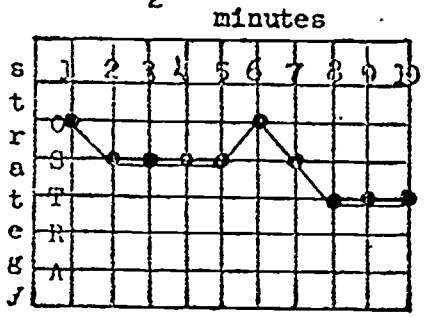

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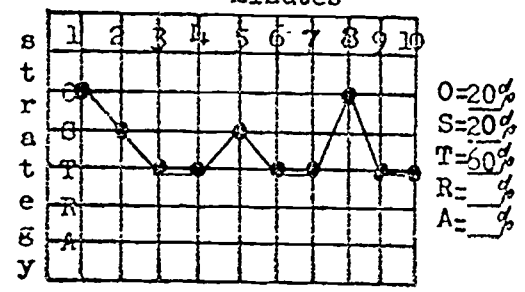

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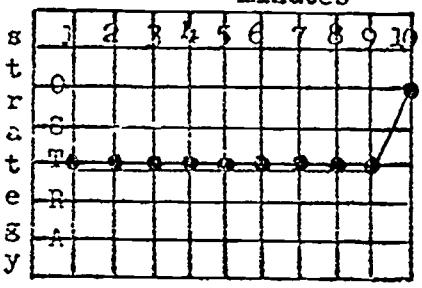

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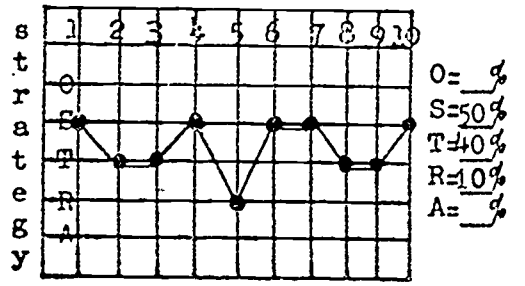

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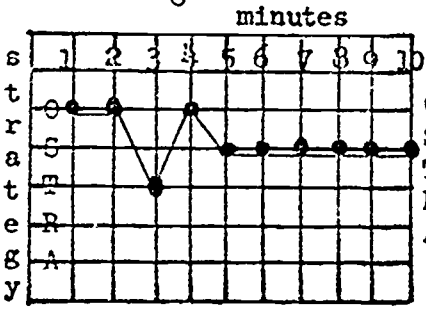

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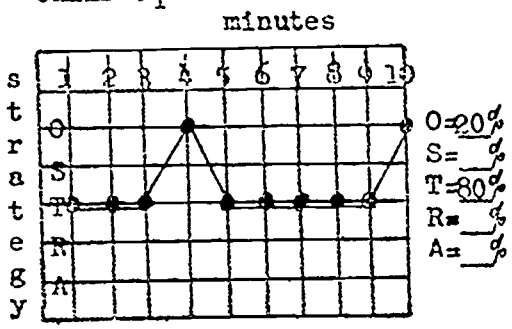

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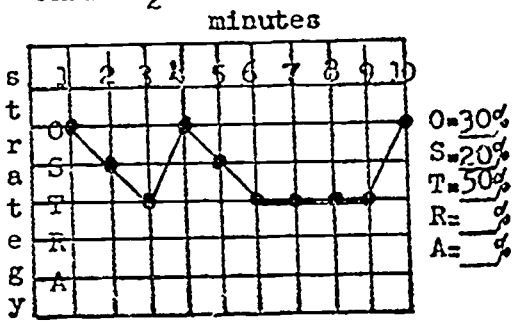

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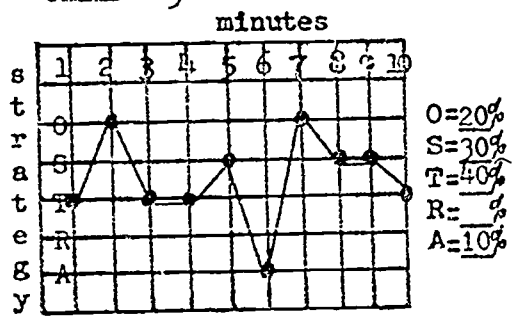

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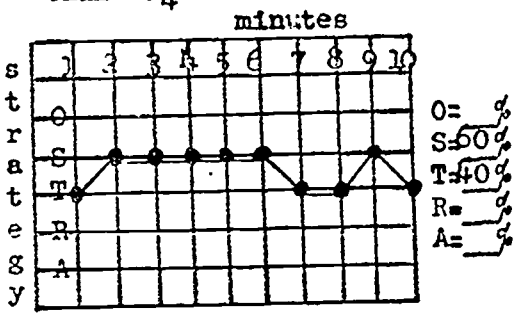

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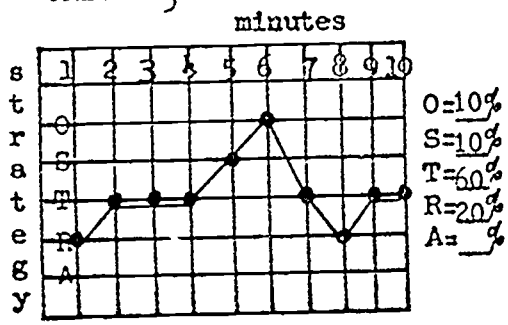

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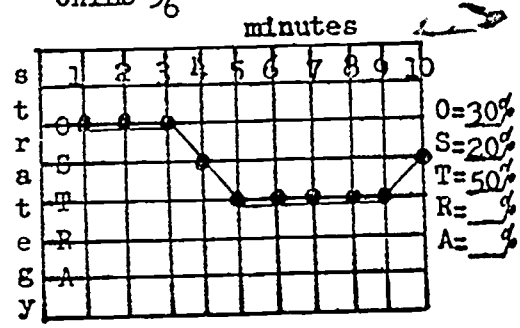

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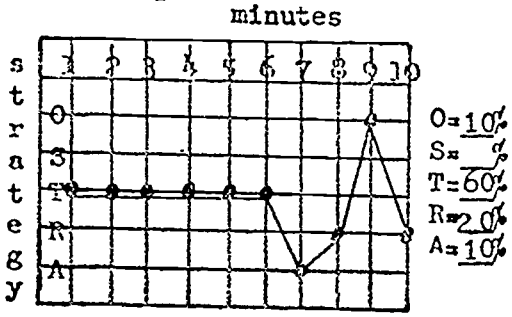

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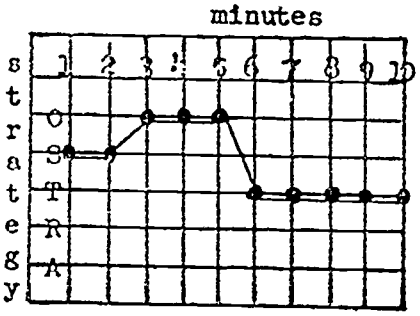

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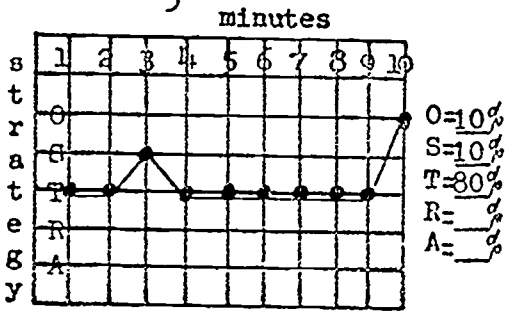

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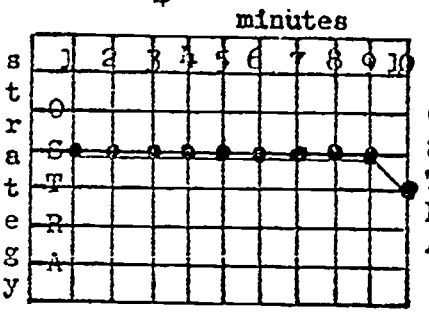

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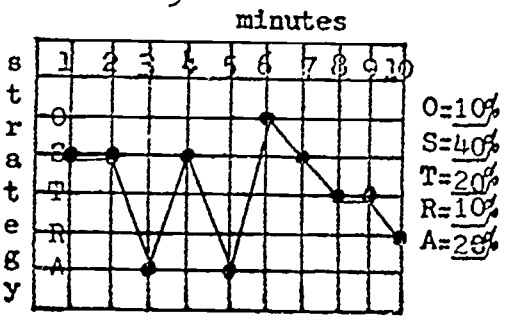

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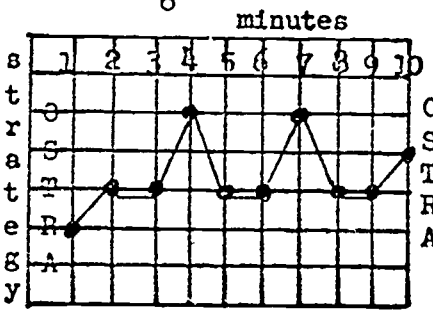

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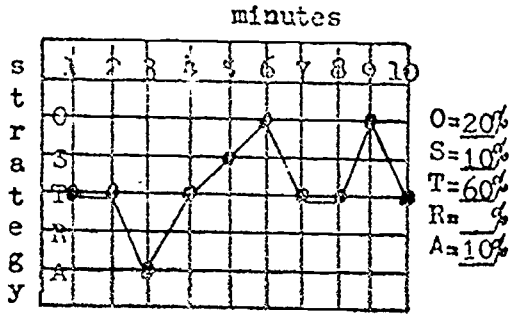

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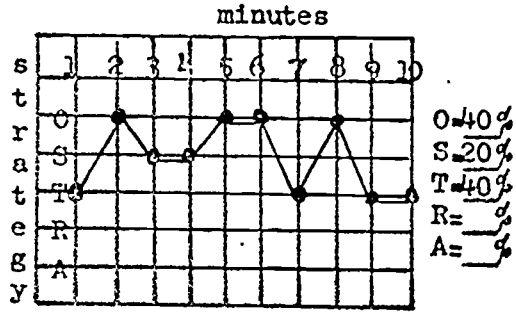

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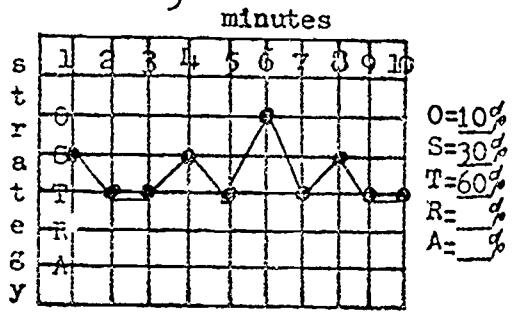

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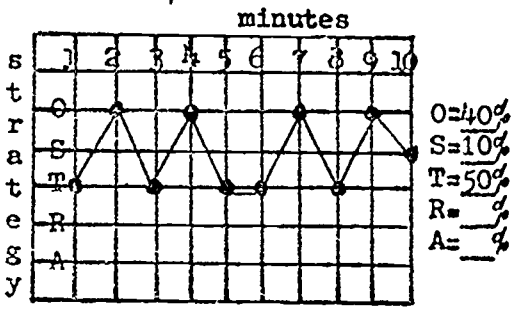

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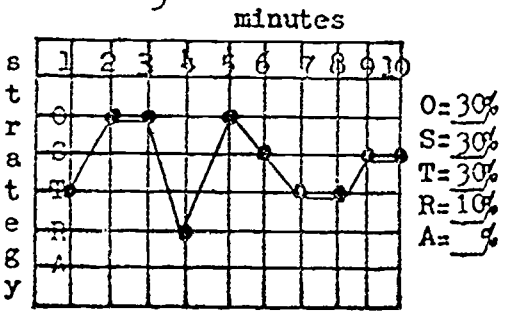

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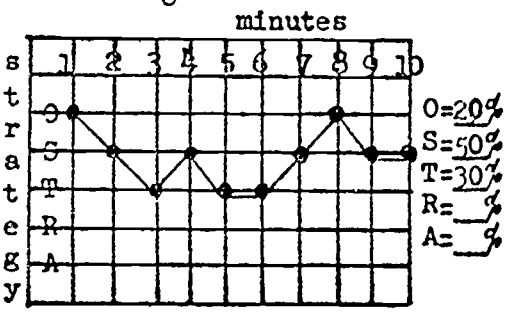

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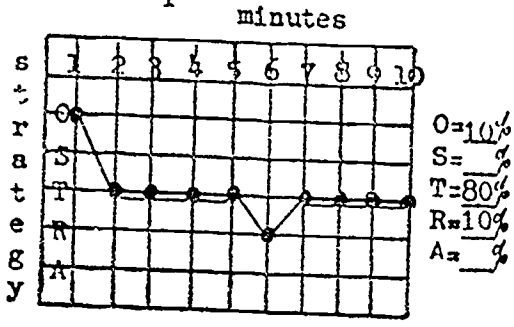

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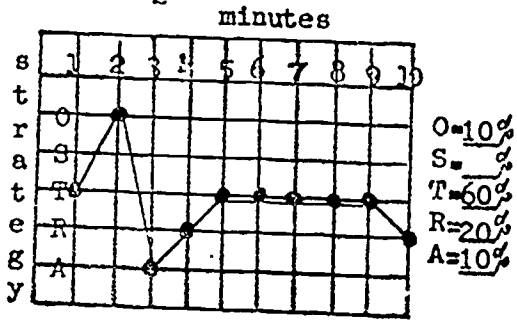

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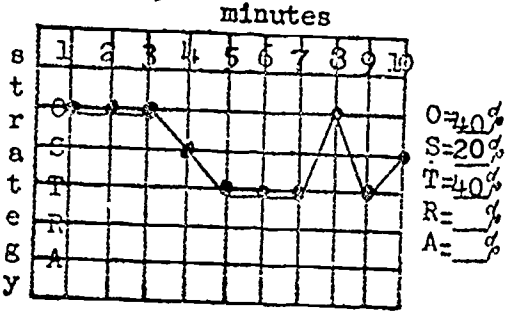

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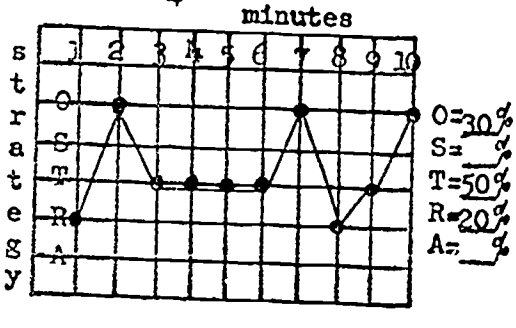

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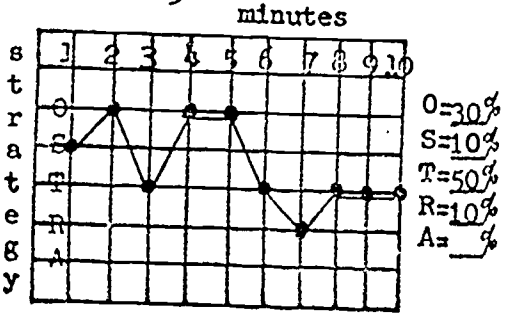

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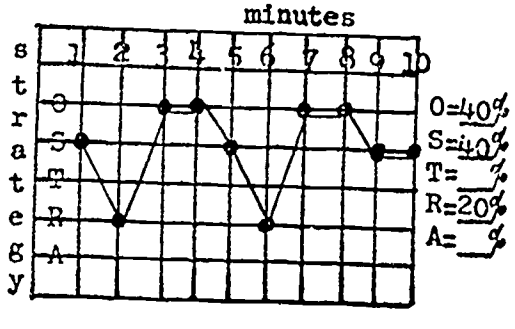

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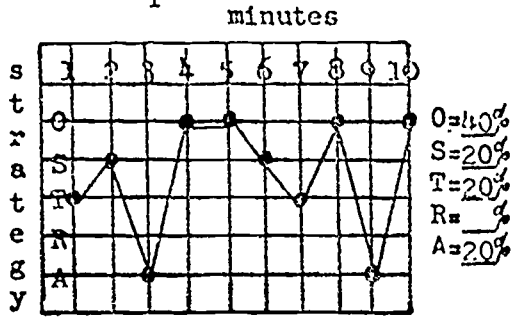

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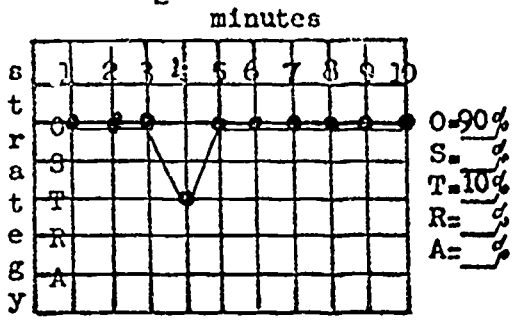

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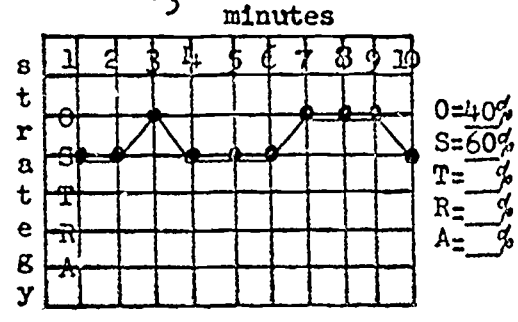

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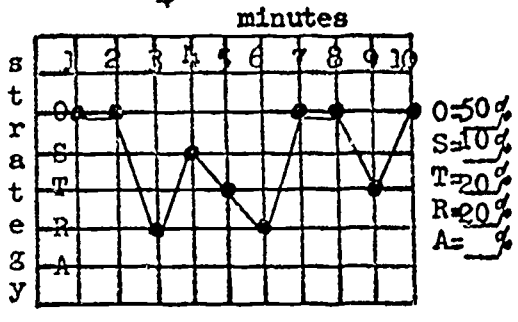

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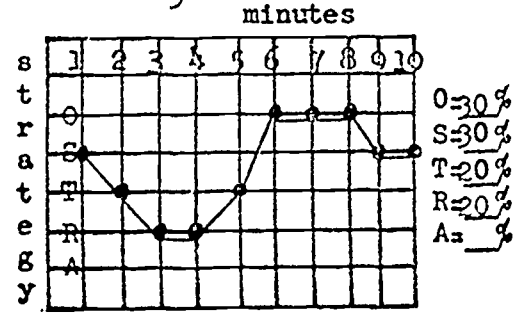

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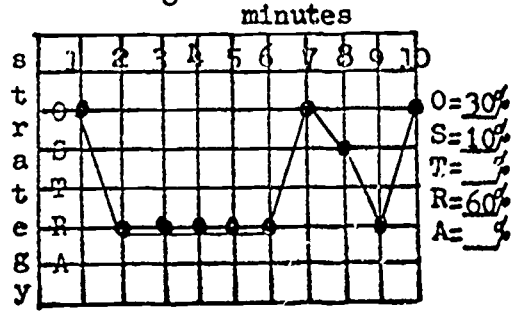

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BIBLIOGRAPHY

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