INFORMATION TO USERS

THE INFLUENCE OF INDUCED POSITIVE EMOTION UPON

THE PLAY BEHAVIOR OF 5-YEAR-OLD CHILDREN

by

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The purpose of the experiment was to investigate the organizing and disorganizing effects of induced positive emotion upon the constructive play of 5-year-old children. It was hypothesized that low and medium levels of induced positive emotion would increase the children's attention to the play task, increase their smiling behavior, and decrease the noise made by the children. In addition, it was hypothesized that a high level of positive emotion induction would decrease the children's attention to the play task, increase still further their smiling behavior, and increase the noise made by them.

Thirty children from one of the centers of United Day Care, Inc. in Greensboro, North Carolina, were selected at random from among the 5-year-old population at the center. The subjects were randomly assigned to two groups of 15 children each.

Both groups were involved in identical constructive play activities (painting). However, the experimental group experienced emotion induction in the form of their teacher's pleasant promises just prior to play. The children's behavior was rated in a randomized, time-series fashion by two paid observers.

The data were analyzed by use of analysis of variance and correlational techniques. Emotion induction produced a

statistically significant difference between groups in
attending behavior at the .05 confidence level. But no
significant difference was obtained in attention measures
among the levels of emotion induction for the experimental
group nor between groups in terms of smiling behavior and
noise level. Thus, only partial support of the hypothesized
relation between positive emotion and play was exhibited.

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CHAPTER I

INTRODUCTION

Emotion plays a powerful role in the development of
children. Freudian theory emphasized the child's efforts
at dealing with his emotions as fundamental to development
(Freud, 1920). Since Freud, however, most theorists have
viewed the influence of emotion upon development as less
than central in importance. More recently two researchers
have sought to return emotion to a central place in develop-
ment. Emotion is the primary system of motivation for
behavior according to Izard and Tomkins (1965).

Such a theoretical position is contrary to the
dominant trend in the field. Most work on emotions has
either concerned itself with describing what stimulus
situations elicit what emotions or with outlining the
sequence of operations and structures involved in the
experiencing of emotion. Consequently, emotion has usually
been studied as the effect of other factors. While there
is no doubt that emotion is caused, it may also be profitable
to study emotion as a causal factor in its own right.

Simultaneous with the trend toward viewing emotion
from a causal standpoint has been recognition of the need

to study so-called positive emotions. Since ancient times philosophers have treated both positive and negative emotion with equal emphasis. However, the history of the social sciences in regard to emotion could be characterized as an almost total focus upon the negative emotions. For example, the concepts of aggression-anger and fear-anxiety have received considerable attention. Until the past decade there have been few references to joy, interest, or other positive emotions in research literature. In the past decade positive emotions have received increased attention (Developmental Psychology Today, 1971; Izard, 1971).

In the same way that emotion is a universal phenomenon, so also is play a universal phenomenon. Play also has an impact upon development. The present study was aimed at delineating a portion of the interface between emotion and play. Following the lead of Izard and Tomkins this experiment examined the changes which varying states of positive emotion caused in the play of children.

Review of Literature

This review first examines the concept of play historically and in terms of play's physical, educational, and psychological value. Next, the concept of emotion is viewed historically. Theories of emotion are outlined, and techniques used to measure emotion are described. The review concludes with a statement of the problem.

Since a discussion of emotion literature leads logically to a statement of the major problem and hypotheses of the present research, a discussion of the importance of play in the life of the young child will be considered first.

The Importance of Play

Play is universal; it is found in all types of animals and in all lands inhabited by man. Play is an age-old phenomenon. Ancient Egyptian and Babylonian excavations revealed children's toys not unlike those of today (Mitchell & Mason, 1948). Toys have been found in pyramids of Egyptian boy-kings (Kingston, 1968). Although the mode of expression may differ from place to place, the general types of play of preliterate cultures were the same as in civilized cultures: dancing, drama, singing, story-telling, arts and crafts, and games and contests. Much of this play pertained to hunting, warring, and other adult roles. Apparently children imitated their parents, and

custom led to the passing of play patterns from generation to generation (Mitchell & Mason, 1948).

The concept of play and the later concept of recreation were developed by the Greeks. But, for the most part, these concepts have remained vague throughout history. More accurately stated, there have been many divergent and vague views of play rather than a single vague theory. Some of the difficulty has issued from the fact that different writers have focused on different aspects of play. Some emphasized when play occurs (leisure); others were concerned with the causes or motives behind play; others with the voluntary aspects of play; with the types of play activities; with the meanings of play behavior; or with the functions of play (Kingston, 1968).

The other major difficulty leading to disparity among writers in the area of play has been the prevailing attitude in Western culture that play is frivolous. Hurlock (1964) described the way in which adults even today have tended to view play as fun and work as not fun. Play is what one wants to do, while work is what one has to do. Therefore, play has little value.

Definitions of play are abundant in the literature. One of the simpler definitions (Rainwater, 1922) indicates that "Play . . . is a mode of human behavior, either individual or collective, involving pleasurable activity of any kind

not undertaken for the sake of a reward beyond itself . . .
[p. 8]." More comprehensive is the definition offered by
Huizinga (1955):

> Play is a voluntary activity or occupation
> executed within certain fixed limits of time
> and space, according to rules freely accepted
> but absolutely binding, having its aim in
> itself and accompanied by a feeling of ten-
> sion, joy, and the consciousness that it is
> "different" from "ordinary life" [p. 28].

Huizinga's definition fails to specify the role of emotion
in play, but it does include emotion as a salient aspect
of play. He outlined nine elements of play, most of which
were embodied in his definition, and others have specified
basic elements of play which are similar to those of
Huizinga (Caillous, 1961).

The first thorough effort at analysis of play was
done by Karl Groos (1901). He organized his book according
to the various disciplines involved with play: physiology,
biology, psychology, aesthetics, sociology, and pedagogy.

The most complete compilation of theoretical explana-
tions of play was that edited by Sapora and Mitchell (1961).
Their book included ideas from additional viewpoints such
as psychoanalysis, genetics, the learning process, and
the biosocial approach. The author of each chapter wrote
as a proponent for viewing play from his particular
perspective.

A significant effort at bringing some order to the multitudinous concepts of play was made by Kingston (1968). Various models were considered before settling on a system of two major categories. Play theories were analyzed as either causal or purposive. For example, Piaget's developmental notions about play were classified as causal, i.e., certain forces compel children to play. Psychoanalytic theory was included under purposive theories, i.e., play as coping behavior.

Reference has been made to Hurlock's comments concerning the way in which adults have traditionally viewed play as useless and frivolous. Mitchell and Mason (1948) described the most common adult conception of play as aimless and childish. These writers attributed the prevalence of such attitudes to the fact that play is often an imitation of serious, real-life roles. Most adults are tempted to view play as escape from work or burdens of life. In the popular view, then, such freedom from responsibility should be allowed as much as possible prior to maturity and the coming of the harsh responsibilities of "real life." Hence, the play of small children has often been neglected and given little guidance.

According to Miller (1968), since Rousseau there has been a gradual shift toward recognizing play as worthwhile. Such recognition has been a natural consequence of the then new idea that children were not simply miniature

adults. Instead, Rousseau believed that children were growing, developing humans who should be allowed to participate in lively, free-ranging activities (Miller, 1968). Since that beginning many experts in child development, mental health, education, psychology, and recreation have written extensively about the value of play. Fraleigh (1955) concluded that education has changed during the first half of the twentieth century. The change has broadened the emphasis of education beyond academics to the social, emotional, and physical aspects of the child's life. Consequently, play has taken on new importance (Fraleigh, 1955).

Physical value. Studies by recreation and physical education specialists have demonstrated the effects of different types of play activity upon the physical well-being of the individual, what activities children choose to play, where children play, and with what play materials (Wilson & Ryland, 1949; Wade, 1968). Hurlock (1964) found vigorous play essential for muscle development, for building appetites, and for developing co-ordination. She felt that calisthenics could achieve these same ends if calisthenics sustained interest the way play does.

Educational value. The educational value of play has been a frequent topic in recent literature. For Margolin (1969) the antagonism between intellectualism and play is a false one. Both types of learning cannot

be separated in a productive early childhood education program. Frank (1963) asserted that through play the child "learns what no one can teach him [p. 4]." According to Frank the child not only learns space-time properties of the physical world and the neuromuscular and sensory discriminations related to it, but he also learns "to live in a symbolic cultural world [p. 4]." He learns the meanings of events, things, and people. He learns human relations and goal seeking. He experiments and rehearses in preparation for the grown-up world (Frank, 1963). Hurlock (1964) presented the very same notions in her chapter on play. Scarfe (1962) saw play as "a research activity . . . through which the child gathers information and manipulates both materials and people [p. 74]."

Piaget's (1962) experiments led him to a theory which interlaced the elements of cognitive development with the way in which a child plays at different stages in his life. For Piaget play is assimilation or the primacy of assimilation over accommodation. Behavior has a tendency of becoming play every time it is repeated for assimilation purposes. It may be, for instance, that non-nutritive sucking is the first play of the infant.

Elkind (1970) followed the same line of thinking by maintaining that much of a child's motor play is preparatory to later cognitive development. He felt that those who

deride preschool play ignore the fact that all play has a substantial cognitive element. His review indicated that no studies have shown that formal or academic approaches to preschool curriculum have any more efficiency than traditional approaches, i.e., involving play.

Erikson's (1963) definition of play as "the infantile ability to deal with experience by creating model situations and to master reality by experiment and planning [p. 195]" is consistent with the educators' findings. The work of Montessori (1965) is also relevant in this connection. Her invention of precise play techniques and equipment for definite learning tasks was considered a significant step in preschool education.

Psychological value. One approach to the matter of play and social-emotional development is characterized by the work of Fraleigh (1955). He studied the influence of play upon social and emotional adjustment. Fraleigh pursued the question from two directions. First, he surveyed all research from 1934-1955 pertinent to the question. He then utilized sociometric measures and ratings by teachers, coaches, and administrators to assess the relation between participation in physical education and recreation activities and social and emotional adjustment. Emotional adjustment was roughly equivalent to self-esteem, one's feelings about one's self. Social adjustment referred to one's

acceptance by the group.

Fraleigh found considerable agreement among his sources demonstrating that play carries a significant role in both social and emotional adjustment. He concluded that mere participation in play activities is not as valuable to the individual's emotional and social adjustment as are improvement, skill, and winning in play activities. While true for boys of all ages, this finding was only true for girls in their early school years.

While Fraleigh's data pertained to school-age children, another set of findings concerning nursery school children is in apparent contradiction. Marshall (1957) found that a child's ability to get along with his peers and his status in the nursery school group are related simply to the frequency with which he indulges in dramatic play. If the findings of Marshall and Fraleigh are integrated, then mere participation may be the crucial variable in preschool years with skill and achievement in play becoming more important in the elementary grades.

Other writers have seen additional advantages to involvement in play. According to Frank (1963, 1968) play helps the young child to learn to engage in purposeful, goal-seeking activities which he invests with his own meanings and values. The child translates his personal capacities and even unsuspected potentialities into rewarding

activities and relationships.

A slightly different emphasis was presented by Vygotsky (1967). He saw play as fulfilling children's needs. More specifically, he saw play behavior as arising from children's needs, interests, inclinations, and motives. In his writings Vygotsky came very near to attributing play to the same drives as in Freud's pleasure principle. For Vygotsky play is invented by the child in response to frustration. Thus, play becomes substitution or wish fulfillment. Further, he stated that play can be arrested by either intellectual or emotional immaturity.

Kubie (1949) made many similar assumptions as he urged parents and teachers to be trained in the skills necessary to interpret the communications of emotion exhibited in play. Accurate interpretation of play is crucial prior to speech development, but is also vital in understanding the child even after he resorts to speech. In the same vein Erikson (1940) described the function of play as "to make up for defeats, sufferings, and frustrations, especially those resulting from a technically and culturally limited use of language [p. 561]."

Still others (Hartley, Frank, & Goldenson, 1952) have indicated that language skills are often not the most highly developed expressive mode for the young child. Instead, the body, itself, through the musculature tends to be the most

prominent expressive organ. These investigators' extensive observations were aimed at determining how play enabled children to translate impulses, feelings, and fantasies into action. It was concluded that play has a special function in shaping character structure and in molding styles of relating to others.

The need for encouraging and understanding emotional expression through play was clarified by Kubie (1949). As he described it, play is important to the kinds of adjustments all normal children make to the developmental problems they inevitably face. Play aids in freeing the child while still a child from the conflicts, confused fantasies, misconceptions, fears, and guilts which arise in childhood. Once freed, the individual avoids the continuance of problems into later years.

The uses a young child makes of play in dealing with his emotions have been extensively reported in the psychoanalytic literature. Reider (1967) underscored the importance of analytic theory to the understanding of play. He described the preanalytic view of play as primarily that of an instinctive biological device merely for the purpose of releasing excess energy. Reider stated that play in the psychoanalytic view, however, carries a larger function. Play is an expression of conflict situations. Play expresses the conflict and may be an attempt at problem solving.

According to Freud (1920) play leads to insights in the
child's psychosexual development. Play acts as an aid in
the discovery of solutions to conflicts in development.

The bibliographies of such diverse books as Motiva-
tions in Play, Games and Sports (Slovenko & Knight, 1967)
and Social Group Work Practice (Wilson & Ryland, 1949)
were replete with references to psychoanalytic writers. In
the latter a list of play meanings included the following:
"(a) gaining mastery and control, (b) finding opportunities
for wish-fulfillment, (c) escaping through fantasy, (d) secur-
ing a leave of absence from reality and superego . . .
[p. 202]." In the former, an entire chapter (Capell, 1967)
was devoted to the notion that intense involvement in games
is essentially a desire for mastery over feelings of help-
lessness. Winning, competing, and risking in a game were
attributed to a feared aspect of life which the game symbol-
lically represents. Winning or overcoming in the game, then,
represents control or mastery of a fear. The common source
of these ideas can readily be seen in their psychoanalytic
underpinnings.

Nowhere has the psychoanalytic influence been more
apparent than in the literature on the therapeutic aspects
of play. Such an approach was demonstrated in the classroom
by Gillies (1948). Through the use of dramatizations,

quieter behavior was produced in over-aggressive children,
and inhibited children were brought out. Gillies referred
to this process as "emotional re-education."

Both Kubie (1949) and Erikson (1940) referred to the
diagnostic and therapeutic uses of play in the field of
mental health. Perhaps the most outstanding leaders in such
applications of play have been Anna Freud, Melanie Klein,
Haim Ginott, Margaret Mahler, S. R. Slavson, and Virginia
Axline. Slavson (1948) and Ginott (1968) emphasized play
groups as therapeutic for children's emotional problems
while the others focused their attentions on play therapy
with individuals. Slavson stressed the way in which play
serves the child as a technique for finding outlets for
impulses which are socially unacceptable. Axline (1947)
discussed play therapy most clearly. Her contention was that
play is the child's most natural medium of self-expression.
Play therapy, then, becomes for the child a way to "play
out" his feelings and problems in much the same way that
adults in therapy may "talk out" their difficulties.

As a result of his survey of the literature, Fraleigh
(1955) concluded that play therapy can help maladjusted
children reach better social and emotional adjustment. He
stated that the presence of an accepting, warm adult increases
the helpful effect, as does having appropriate materials and

opportunities. Like Slavson (1948) he stressed the impor-
tance of play as leading to expression of undesirable
feelings. He summarized his findings in terms of three
primary play functions in therapy. Play and recreation:
(a) offer opportunities for expression of and experiencing
of repressed feelings and emotions, (b) provide successful
experiences in reality rather than fantasy, and (c) provide
needed socializing experiences.

In summary, there has been increasing recognition of
the importance of children's play since the time of Rousseau.
Experts from many fields have agreed on the importance of
play even though they have been unable to agree precisely
on a definition of play. Authorities in several fields
exhibit a strong belief in the value of play to the physical,
cognitive, social, and emotional development of the child.
Apparently, play acts as an expressive channel for emotion.
Many of these writers implied that if play opportunity is
interferred with, something happens to the emotional life
of the child. On the other hand, if interference occurs in
the emotional life of the child, some change will be seen
in the play behavior of the child. Sufficient play oppor-
tunity must enhance the child's proper emotional development
(Marshall, 1957; Fraleigh, 1955).

Before leaving the discussion of play entirely, more
should be said regarding specific types of play. Hurlock's

(1964) analysis of play included nine types, as follows:
free play, dramatic play, day dreaming, constructive play,
music, collecting, games and sports, reading, and movies,
television, and radio. A somewhat structured type of play,
such as constructive play, has many research advantages. In
addition, play should be appropriate to the age of the
children. Several child development authorities agree on the
general appeal of painting activities to 5-year-old children
(Canaday, 1972). According to Hurlock (1964) "By . . . kinder-
garten children's interests have shifted from block building
to painting . . . [p. 457]." Also, Liddle (1963) stated
that the pre-primary child (age 3 through 5 years) enjoys
and needs materials which are messy and whose plasticity can
be experimented with. She lists dough, mud, water, and
paints as appropriate.

Finally, Ausubel (1970) and others (Wilson & Ryland,
1949; Hurlock, 1964) described the manner in which play
develops through stages, especially as regards the social
relationships in play. The earliest style of play is called
"solitary play," involving no relationship skills with others.
Next to emerge is the style referred to as "parallel play."
Here children play similarly and are clearly aware of each
other, but without much overt interaction. "Co-operative
play" is the most sophisticated type of play and implies much
interpersonal interaction. By the fifth year of the child's

life parallel play has normally developed and beginnings of co-operative play are usually evident.

Theories of Emotion

According to Ausubel (1970) "Emotion . . . may be defined as a heightened state of subjective experience accompanied by skeletal-motor and autonomic-humoral responses and by a selectively generalized stage of lowered response thresholds [p. 44]."

While reviewing the literature on emotion, an attempt will be made to underscore the way in which the subject has been divided historically into two main categories--positive emotion and negative emotion.

Research along human parameters is a relatively recent phenomenon historically. The preponderance of emotion research has focused upon negative emotions. Among the most out-standing have been the studies of Miller (1948) and Mowrer (1940) who studied avoidance behavior while inferring fear or anxiety as an intervening variable. Aggressive behavior was studied extensively with anger or frustration inferred as an intervening variable (Dollard, Doob, Miller, & Sears, 1939; Dollard & Miller, 1950).

The present review of literature attempts to place the positive emotions into perspective. In addition, a recent trend toward viewing emotion as having both organiz-ing and disorganizing potential is documented.

Ruckmick (1936) offered an excellent historical view of theory on emotion. He began with the early Greek thinkers. Pythagoras (530 B.C.) noted that some sounds were pleasing and some displeasing to the emotions. Empedocles (455 B.C.) talked of two emotions, love and hate, as causing motion in all material elements in nature. Such a notion implies an awareness of these emotions in man and includes a positive and negative category. By 505 B.C. a long tradition had begun, that of downgrading emotion in relation to reason. Heraclitus described passion as hard to contend with, and so controlling emotion became a major task of life.

The theory of four bodily humors was attributed to Hippocrates (460-377 B.C.). The humors included yellow bile, blood, black bile, and phlegm. An individual's temperament was thought to be due to an excess of one of the humors. Reverberating humors produced fear, joy, sorrow, and so forth. Again, these emotions were felt to be antithetical to the mind and reason. Both positive and negative emotions were included.

The glorification of reason over emotion has persisted through Socrates, Plato, and Aristotle to the present day. Aristotle was most thorough and precise regarding emotions. He believed that pleasure arose as bodily functions were facilitated, while pain was the result of their being impeded. These pleasurable and painful feelings

aroused desire and aversion, respectively, which activated
appropriate bodily movement. In Aristotle's view, then, a
division of emotion into positive and negative was made
distinct along with efforts at delineating causes for these
distinctions.

A later highly significant step was taken by Descartes
(1596-1650). He established six primary passions: wonder,
love, hate, desire, joy, and sadness. From different mix-
tures of these primary passions all other emotions were
derived. This division of emotions into primary and second-
ary is consistent with current theory. Also very sophisti-
cated in the light of current theory is Descartes' distinction
between sensation--for example, pain--and emotion. Descartes
also described the phenomenon of backing away from the
unpleasant and of prolonging the pleasant. This amounts
to an early statement of the law of effect.

Motion toward pleasure and away from pain was spelled
out even more clearly by Thomas Hobbes (1588-1679), pre-
ferring the terms appetite and aversion. The same positive
and negative division was continued by Locke (pleasure is
the opposite of pain) with satisfaction, delight, pleasure,
and happiness on the one hand and uneasiness, trouble,
torment, anguish, and misery on the other.

It is essential to mention the work of Charles Darwin
(1731-1802). Darwin fused for all time the continuity of

expression from animals to men. He emphasized the role of facial expression and developed a theory of its evolution and increased importance to man. He saw the functional nature of expression, especially in terms of social communication. He and Spencer held that some expressions take the form of contraction of certain muscles due innately to the constitution of the nervous system and to habitual use of certain neural pathways. The more recent writings of Conrad Lorenz (1966) reinforced the matter of innateness of the structural and patterning aspects of emotions.

Modern theory began with William James. James (1890) contributed much precision to the concept of emotions. He described the process of emotion as follows: an impulse from one or more sense organs reaches the cortex (perception); reflexive impulses produce changes in the viscera and musculature; these changes are sensed in turn in the cortex, and this sensation is felt as the emotion. Each emotion has a distinct bodily expression.

Cannon (1927) added clarity by disconfirming a part of the James-Lange theory of emotion. He showed that: (a) emotions remain the same when the viscara are disconnected from the central nervous system; (b) the viscera are too slow and insensitive to account for the various shadings of feeling; and (c) identical visceral changes occur in different emotional states and often occur when

no emotion is felt. It should be noted that his work did
not eliminate muscular reactions, particularly facial
muscles, as providing feedback of emotions to the indivi-
dual. Cannon introduced the concept of the thalamus as
the part of the brain which, after being excited by recep-
tor impulses, signals a specific emotion to the cortex and
specific action to the viscera and musculature.

Others have followed this line of thinking by develop-
ing their own models of the complex circuitry presumed to
operate in emotional states. Papez (1939) and McLean (1949)
introduced the idea of the limbic system as the mediating
circuit for emotion. Brady (1967) included the endocrine
system. Changes in endocrine functioning are correlated
with emotion, but no causal relationship has been demon-
strated.

In the view of Schachter and Singer (1962) emotion
is physiological arousal plus cognition appropriate to the
arousal. For them the factors which differentiate between
discrete emotions lie outside the person, entirely within
the environment.

One of the most extreme explanations of emotion was
offered by Duffy (1962). She saw emotion as the direct
function of the brain stem reticular formation. In her
system emotion could be precisely measured by the electro-
encephalograph. Her work actually de-emphasized the area

of emotion, since, for Duffy, the word emotion and the concept of several discrete emotions was meaningless. She was more in favor of the unidimensional concept of activation. Each state ordinarily referred to as a different emotion was believed by Duffy to be simply a different level of intensity of arousal of the activating system. The continuum extends from an extreme of sleep on one end to an extreme of tension on the other.

Plutchik (1962), in the style of McDougall (1923) who preceded him, extended the concept of relating specific emotions to basic adaptive processes. McDougall preferred the term instinct. Both writers developed lists of primary and secondary emotions. Especially useful is the manner in which Plutchik conceived of a multidimensional model including the mixing of primary emotions to form secondary emotions. His ingenious model also included the juxtaposition of similar emotions, the opposition of polar opposites, and several levels of intensity within a single type of primary emotion.

Woodworth and Schlosberg (1954) contributed significantly to the classification of terms for emotions into fewer and more meaningful categories. They reduced lists as long as 110 terms to 10 terms defining six categories of primary emotion. The categories are as follows: (a) love, mirth, happiness, (b) surprise, (c) fear, suffering, (d) anger,

determination, (e) disgust, and (f) contempt. These categories
were used by research subjects in making judgments of facial
expression. Schlosberg further refined their system by
demonstrating that the subjects' judgments could be placed
on a circular scale consisting of three adjacent dimensions:
pleasantness-unpleasantness, sleep-tension, and attention-
rejection. The similarity between the concepts of Schlosberg
and Duffy is not accidental. Schlosberg moved steadily
toward an activation theory which minimizes the importance of
discrete emotions.

The theorists considered to this point have, for the
most part, been concerned with defining the apparatus and
the process of awareness and expression of emotion. Several
theories go beyond these aspects of emotion to consider the
impetus and direction for action which emotion involves.
For example, Pribram (1967) insisted that emotion is neither
a viscerally based nor a drive-based phenomenon. Emotion
has a regulatory function in regard to cognition and action.

Izard's (1971) description of the emotion process
commenced with neural activity which follows innate struc-
tures (Darwin's notion). This activity produced striate
muscle patterning specific to each emotion (primarily
facial pattern, secondarily postural and locomotor). Feed-
back, though not inevitable, ordinarily flows from the neural
and facial pattern back to awareness or consciousness,

independent of cognition. If the facial pattern or the feed-
back is distorted or inhibited, the subjective experience will
be interfered with since the remaining cues to the indivi-
dual from the viscera and posture are less rapid and precise.
Cognitive processes gradually play a larger role in the emo-
tions of the young child in the form of memory and fantasy.
Simultaneously, socializing pressures serve to inhibit facial
expression. In this theory even the memory of facial expres-
sion, now suppressed, can play a significant role in emotional
feedback. Izard also included the concept of fundamental
emotions and their combinations which can produce a state of
mixed emotions. This aspect of his theory, plus his emphasis
on positive emotion as motivator, will be discussed below.

A most elaborate explanation of emotion was offered
by Arnold (1960). She called her theory a neuropsychological
analysis of the appraisal-emotion-action sequence. The
sequence involves the following steps: (a) appraisal of sen-
sory impression (thalamus, midline), (b) experience of liking
or disliking (limbic system), (c) appraisal of object as
harmful or beneficial (limbic region), (d) felt emotion and
impulse to action (hippocampal system), (e) appraisal for
specific action and its consequences (hippocampal system),
(f) choice of action (hippocampal system), (g) visceral-
glandular activity (hippocampal system), (h) emotional

expression (cerebellum), (i) amplification and organization of impulses for chosen action (cerebellum), (j) urge to action and appraisal of suitability (thalamus and motor area), and (k) directed action (motor cortex pyramidal pathways). Briefly stated, perception leads to emotion which leads to action.

Other writers emphasized the responses to which emotion leads. Averill, Opton, and Lazarus (1969) assumed emotion to be a complex response system with three sub-systems. One sub-system relates to stimulus properties, another to appraisal, and the third to response categories. The response categories include cognitive reactions (repression, denial, projection), expressive reactions (facial, etc., non-goal-directed behavior), and instrumental reactions (goal-directed behavior).

Leeper (1970) viewed emotion as an aspect of the system for processing information. He proposed replacing the simpler concept of perception with a concept of emotion which includes informational, cognitive, and motivational aspects in the same system. Leeper wrote of emotion as an organizer of personality rather than a disorganizer as so many writers have. Attributing such importance to emotion in the total organism and attributing to emotion such a positive, guiding role over behavior are relatively new concepts.

The theoretical position of Tomkins (1962, 1963, 1965)

is most complex. Tomkins (1962) stated that emotion is largely a facial response. Izard has built much of his theory around this concept. The majority of Izard's research reported in The Face of Emotion supported a view of the face as the primary site of emotional activity. Tomkins advocated a very central role for emotion in the total personality. He declared that emotion is the primary motivation system with drives playing a secondary role. Emotions are sufficient motivators of behavior in the absense of drives, while drives must be amplified by emotion in order to direct and sustain behavior.

One example used by Tomkins was sexual activity. The emotion, excitement, must be present to sustain sexual activity. If sexual drive were accompanied by guilt or fear, enjoyment of sex, even potency itself, would be lost. In addition, he pointed out the way in which emotions can motivate behavior outside the biologically cyclical constraints by which drives are bound.

Leeper, Arnold, and Izard expressed highly similar views. Izard (1971) repeatedly employed the same phrase as Tomkins in describing emotion as the primary motivation system. In 1948 Leeper (1948, 1970) argued for a shift in perspective from viewing emotion as a disorganizer to regarding emotion as a motivator. The way in which appraisal and emotion lead to action is the heart of Arnold's (1960, 1970) theory. Her

position is less extreme, asserting that emotion can organize at times and disorganize at other times.

Leeper (1970) admitted that such is the case, but stated that emotions are a much more basic part of life than has been recognized. He argued that emotions are not the rare, intense events they have been portrayed as being. Instead, they "are more or less perpetually active motives and do most of their work at moderate or weak intensities . . . [p. 152]." Emotions work in ways analogous to the manner in which thirst ordinarily produces drinking behavior without becoming very disruptive or obtrusive in the life of the individual, that is, while operating at a very low level of intensity.

Tomkins (1962) outlined the way variations in the density of neural firing accounts for the various discrete primary emotions. These primary emotions were divided into positive and negative categories. Two emotions were considered positive: interest-excitement, with eyebrows down, stare fixed or tracking an object; and enjoyment-joy, indicated by the smiling response. The negative emotions were listed as distress-anguish, fear-terror, shame-humiliation, contempt-disgust, and anger-rage. He stated repeatedly that the study of the positive emotions has been neglected far too long. Their capacity for motivating behavior deserves the same kind of investigation as the negative emotions. Tomkins devoted the first volume of his two-volume work to the positive

emotions.

Arnold (1960) saw positive emotions as the tendency toward anything appraised as positive. Leeper (1970) insisted that it is virtually imperative for survival that mankind learn to replace much of the experiencing of negative emotion with the experiencing of positive emotion. Izard and Tomkins (1965) maintained "that positive affect generally enhances harmonious functioning of the personality subsystem . . . [p. 19]."

Jersild (1954) viewed positive emotions as "conditions in which organisms may be described as eager, zestful, jubilant and moving toward [p. 834]." He spoke of a spreading of the effects of emotion from one situation to other situations not originally involved. For Hurlock (1964) positive emotion gives satisfaction to the person who expresses it, and he will make no attempt to remove the situation giving rise to it. Ausubel (1970) saw positive emotion as demonstrated by the child's attempt to prolong the experience.

Measurement

Before proceeding further it is important to describe the various techniques which researchers have utilized for measuring emotion and play behavior. Research concerning emotion as primary motivator has been limited. As Leeper (1970) stated, most research on emotion has been concerned with facial and postural expression or with the physiological

states and structures associated with specific emotions.

There has been a long line of distinguished researchers who have done physiological studies. Cannon (1927) and Averill, Opton, and Lazarus (1969) have followed in this tradition.

Darwin began another long tradition which has continued down through Ruckmick (1921), Frois-Whittmann (1930), Woodworth (1954), Tomkins and McCarter (1964), and Izard (1971). These men utilized sets of pictures of the human face depicting various primary emotions. Their research determined that individuals can identify specific emotions from the stimulus pictures at a frequency better than chance. Their work also established cross-cultural similarities in the recognition and labeling of emotion and that women are more skilled at identifying emotions in others than are men. This type of approach to emotions has been the most common in recent decades.

Another approach which has been increasingly utilized is that of inducing[1] (the terms stimulate and elicit are also used in this context) an emotion in a subject (S) and then

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[1]Usage of the terms induce and induction in this paper are consistent with Webster's New World Dictionary (College Edition) New York: World Publ. Co., 1968. The term induce means to bring on, bring about; to cause; to effect. The term induction is used to indicate an inducing or bringing about.

attempting to measure what specific emotion has been induced. Again, this has most often involved negative emotions. Landis (1924) elicited emotions through music, paintings, pictures of disease and pornography, live frogs to be felt, and electric shock. Specific emotions in subjects (Ss) were judged by subjective report and by raters who viewed pictures of Ss. Izard (1965) and Tomkins (1962) also used electric shock and then measured the emotional response engendered by the sensation of pain.

Nowlis (1965) developed and utilized a mood-adjective check-list for measuring emotion. Direct observation of changes in facial expression during labor indicated that the brow, eyelids, and forehead were most valuable as measures of discomfort (Leventhal & Sharp, 1965). Direct observation was found to be preferable to filming of Ss.

In several studies with adult Ss the independent variable consisted of induced emotional states referred to as negative and positive emotions. Dependent-variable measurements demonstrated the effect of each emotional state upon different types of performances. Exline (1965) reported several studies in which he induced emotion in Ss by the use of embarrassing questions or by the words and manner of the experimenter (E) toward the Ss. He noted changes in mutual glancing and in the amount of information Ss freely gave as a result of induced emotion.

In a number of studies Izard (1965) induced positive and negative emotions in different groups of Ss through the experimenter's (E's) handling of the Ss. He treated one group warmly and co-operatively and praised their efforts. With the other group E was cold and unco-operative and criticized their abilities. Although he did not always measure emotion directly, in some studies he had Ss complete a self-rating scale on anxiety and aggression. The studies indicated that induced emotion influenced intellectual performance, perception of others, and willingness to change one's opinion.

Turning to child studies, Bridges (1932) used observational techniques to determine specific ages at which the various discrete emotions first became evident in infants. Sherman (1927) distressed newborns in a number of ways and found that observers were unable to detect differences in the babies' emotional responses.

Spitz (1964), Goldfarb (1955), and Bowlby (1969) documented the destructive effects on infants of lack of emotional involvement with a stimulating mother figure. The kind of emotional development which is enhanced by mutual eye contact and by the formation of feelings of attachment between the mother and child leads to other types of healthy development in the total personality.

Wolff (1963) demonstrated that the human face elicits the smiling response in infants. Walters and Parke (1965)

in a review of research on social responsiveness and inter-
personal attachments in early childhood concluded that stimu-
lation such as vision, vocalization, and facial expression
directed toward the child plays a more significant role than
does meeting the child's physical needs.

Others (Dollard et al., 1939) frustrated children in
order to observe the types of control over aggressive behavior
the children would employ.

Helping responses made by young children to needy
puppets were interpreted by Lenrow (1965) as sympathy. Bronson
(1966, 1967) found considerable stability from childhood into
adulthood of two emotion-related dimensions, emotional expres-
siveness and reactivity-control. Walters, Pearce, and Dahms
(1957) developed a scale for rating aggressive and affectionate
behavior in children. Observers checked off the occurrences
of behavior by category during set intervals of time. Hecker
(1968) asked Ss to complete tasks beyond their abilities as a
means of inducing anxiety.

Finally, Izard (1971) and Gilbert (1969) reported
studies which showed the progressive ability with age of
children from several countries to discriminate and label
emotion as depicted in pictures of human faces. These skills
were not related to intelligence or socioeconomic level.

Play has been investigated from both the recreational
standpoint and from the therapeutic standpoint. Several

studies have already been referred to. Fraleigh (1955) used observational data from teachers, coaches, and administrators and sociogram techniques in establishing a firm connection between play and emotional development. Gillies (1948) used dramatic play to quiet aggressive children and bring out inhibited children in the classroom.

Lovaas, Freitag, Gold, and Kassorla (1965) observed free-play situations in order to document changes in play which might reflect the effects of therapy. The researchers utilized a 20-pen recorder and a panel with 12 buttons which activated the pens to record occurrences of behavior according to nine categories.

Boer (1968) devised a method of recording eight categories of children's behavior through the use of stenographic equipment. His observers measured the free-play of autistic children. Brown and Elliott (1965) used the measurement technique of Walters, Pearce, and Dahms (1957) to observe aggressive behavior in nursery school children.

Webb (1971) found that the classroom behavior of nursery school children varied as a result of variations in wall color. She measured the noise produced by the children. In addition, she utilized the measures of classroom behavior developed by Becker, Madsen, Arnold, and Thomas (1967) and O'Leary and Becker (1967). Increased noise level and increased disruptive play were produced by red surroundings.

Becker's measurement technique was devised for use in classroom situations where programs of behavior modification were underway. Twelve categories of disruptive behavior, orienting responses, and relevant behavior were observed in a time-series fashion, each youngster individually and in turn. This measurement system has been widely used by Becker's colleagues and others (Ward & Baker, 1968; Hall, Panyan, Rabon, & Borden, 1968).

Definitions

1. _Induce_ means to bring on, bring about; to cause. To induce emotion is to bring on or cause an emotional state in another person.

2. _Induction_ is used to indicate an inducing or bringing about. Emotion induction in the present study will be accomplished through the teacher's promises of pleasant things to the children.

3. _Appropriate play behavior_ is defined as attention to the play task (painting).

4. _Interest_ is defined as a fixed gaze or stare.

5. _Joy_ refers to smiling or laughing behavior.

The Problem

The need for research concerning the motivational properties of positive emotion has been outlined. Positive emotion appears to sustain behavior at times. At other times positive emotion may disrupt behavior. Leeper (1948, 1970),

Arnold (1960, 1970), Izard (1965, 1971), and Tomkins (1962,

1963, 1965) have expressed through both their writings and

their research the belief that emotion motivates behavior.

Each of these researchers has stated that emotion can sustain

and give direction to behavior and that emotion can disrupt

behavior. Taken collectively their research tends to support

such a view, and yet the present state of knowledge can nei-

ther confirm nor reject such conjecture.

As discussed above there is considerable evidence link-

ing play and emotion. Klinger (1969) documented in his review

that the primary focus of research on play and emotion has

been to demonstrate the way in which repetitive play aids in

the mastery of overwhelming situations and serves as a means

of controlling anxiety and other negative emotions. Fraleigh's

(1959) review and research supported this finding. Fraleigh's

data and those of Marshall (1957) suggested that positive

emotions are involved in play and that the result may enhance

development.

Izard (1971) raised a more complex issue as follows:

> Play undoubtedly has an important role in inte-
> grating the components of emotion, in develop-
> ing motor, cognitive, and emotional competencies,
> and in integrating emotion, cognition, and
> action in appropriate and effective personal-
> ity functioning. However, in my view the emotions
> are more fundamental than play. Emotions come
> first. They are important components of the
> individual and his personality long before play

behavior emerges. The emotions activate and sustain play. Once instigated, play can in turn influence the emotions. Thus, interest may instigate play which leads to enjoyment and to increased thresholds and tolerances for negative or unwanted emotions.

Interest and enjoyment are the principal fundamental emotions motivating and sustaining constructive play. Interest subserves all constructive, nonaggressive play to some extent and is the chief motivation for exploratory play. Enjoyment is associated with most play but is more an accompaniment which helps to make it fun; interest is the more important in instigating and sustaining play [p. 346].

The present study attempted to explore a portion of the interface between play and emotion to demonstrate the possible sustaining and disruptive influence of positive emotions upon play behavior. The effects of positive emotions upon children's play behavior were measured. In order to judge this formulation the following hypotheses were tested:

1. Play behavior becomes more appropriate from Level I to Level II of positive emotion induction and becomes less appropriate following Level III of positive emotion induction (see pages 41-43).

2. Sound-level in decibels decreases progressively from Level I to Level II of positive emotion induction and increases following Level III of positive emotion induction.

3. Interest increases from Level I to Level II of positive emotion induction and decreases following Level III of positive emotion induction.

4. Joy increases progressively from Level I through Level II and Level III of positive emotion induction.

CHAPTER II

METHOD

Subjects

Subjects involved in the study consisted of 30 5-year-old children. The children regularly attended one of the United Day Care centers in Greensboro, North Carolina. Participants in the study were selected on a random basis from among the 37 children in the 5-year-old groups at the center. The $\underline{S}$s were randomly assigned (by coin toss) to two groups of 15 children each, balancing the groups for gender.

The average age of Group 1 children was 61.3 months ($\underline{SD}$ = 7.64), and Group 2 children averaged 62.0 months of age ($\underline{SD}$ = 8.81). A $\underline{t}$ of 0.24 (29 $\underline{df}$ at the .05 level) was obtained, indicating that there was no statistically significant difference between the mean age of the two Groups of children.

The children involved in the center's program came entirely from middle-class and working-class Negro families. Their parents' educational and economic levels ranged from average to below average. Placement of a child in the center was a personal decision made by each family.

<u>Apparatus</u>

Four dependent variable measures were made by two paid observers (graduate students). The first measure, sound level, was recorded in decibels (db). The sound meter was manufactured by Realistic and has been found accurate to $\pm$ 2 db within a range of 60 to 116 db. Sound readings were recorded on the Play Behavior Check-Sheet (see Appendix A).

The second dependent measure was a rating of appropriateness of play behavior. The technique was a modification of those developed by Becker (1967) and Lovaas (1965). The ratings were recorded on the Play Behavior Check-Sheet. The Check-Sheets were attached to a clipboard for easy handling. Identical stopwatches were used by the raters to regulate their observations.

The other dependent measures consisted of an index of interest and an index of expressed joy, which were also recorded on the Play Behavior Check-List.

The experiment took place in the day care center itself. The surroundings and equipment were appropriate to this age group and were well known to the children. Play activities took place around tables which the children used daily for other activities.

Play materials consisted of sponges, table straws, mild soap suds, paper, paints, and brushes. There were protective smocks for the children. A number from 1 - 15 was

affixed to the front, back, and both shoulders of each smock

for easy identification at a distance of at least 15 feet.

Design

The strategy for the present study involved a combina-

tion of the time-series design and the posttest-only control

group design as described by Campbell and Stanley (1963). A

control group (Group 1) and an experimental group (Group 2)

experienced identical play activities on nine occasions. The

dependent measures were taken on each occasion of play for

both Groups. Three equivalent play activities were employed

to reduce boredom in the Ss. Each of the play activities was

repeated three times. The sequence of play activities was

counterbalanced in the experiment (see Table 1). Baseline

play activities were arranged to provide maximum time between

repetitions of a specific play activity. Since both Groups

could not be measured at the same time, one Group immediately

followed the other in the same room. The order of presentation

was counterbalanced.

The independent variable consisted of emotion-inducing

experiences which were presented to Group 2 Ss just prior to

each of the nine occasions of play. Three levels of emotion-

inducing experiences were employed. The sequence of presenta-

tions (see Table 1) was designed so that each type of emotion-

inducing experience occurred once with each play activity.

No play activity or emotional experience followed itself in

TABLE 1

EXPERIMENTAL DESIGN

	Observation	Group 1	Group 2
Baseline	1	P_A	P_A
	2	P_B	P_B
	3	P_C	P_C
Experiment	1	P_A	P_A X_I
	2	P_B	P_B X_{II}
	3	P_C	P_C X_{III}
	4	P_B	P_B X_I
	5	P_C	P_C X_{II}
	6	P_A	P_A X_{III}
	7	P_C	P_C X_I
	8	P_A	P_A X_{II}
	9	P_B	P_B X_{III}

P refers to play activity
X refers to experimental treatment

the sequence of nine trials. The sequence of inductions was held constant in blocks of the three levels to allow for analysis of any cumulative effects.

Since three of the dependent measures were made on individual $\underline{S}$s, the order of observation of $\underline{S}$s was randomized for each trial.

Although random assignment of $\underline{S}$s to groups leads to an assumption of equivalence between the groups, baseline data for both groups allowed a test of this assumption.

Procedure

Induction of positive emotions in the $\underline{S}$s constituted the active independent variable in the present experiment. Results of administering the Enjoyment Scale (see Appendix B) were utilized in determining specific emotion inducers. Experts in Child Development were consulted (Britton, 1972; Canaday, 1972) in order to collect a list of teacher activities which were likely to induce positive emotions. The list was formed into a 9-point Likert-type scale which was then administered to the four teachers at the day care center. Only when there was substantial agreement among the teachers about an activity was it accepted as an inducer (see Table 2).

Three levels of emotion induction were used. A different inducer was presented on each trial in order to avoid the deterioration of treatment effect accompanying repeated use

TABLE 2

TEACHERS' SCORES ON THE ENJOYMENT SCALE

Scale Item	Scores by Teacher				Totals
1*	1	2	3	9	15
2	9	2	5	8	24
3***	9	5	9	9	32
4***	9	5	9	9	32
5	3	0	5	5	--
6	9	9	7	9	34
7*	3	2	3	2	10
8	9	9	5	9	32
9**	3	5	2	5	15
10	1	9	2	6	18
11	9	5	6	9	29
12*	1	2	2	5	10
13	1	2	8	0	--
14	1	2	2	6	11
15**	6	5	8	8	27
16**	5	5	2	5	17
17	5	9	5	9	28
18	9	2	7	5	23
19	9	9	7	9	34
20	1	2	8	6	17
21***	9	9	9	9	36
22	8	5	6	9	28

* refers to Level I emotion induction
** refers to Level II emotion induction
*** refers to Level III emotion induction

of an inducer. Inductions were accomplished through the pleasant statements of the teacher to the group of Ss.

Level I (low) inductions consisted of three activities as follows: (a) teacher promised each child two cookies later in the day, (b) teacher promised each child ice cream later in the day, and (c) teacher promised each child a balloon later in the day.

Level II (medium)· inductions consisted of three activities as follows: (a) teacher promised each child a popcicle later in the day, (b) teacher promised each child a surprise in a sack to take home, and (c) teacher promised the group watermelon later in the day.

Level III (high) inductions consisted of three activities.as follows: (a) teacher promised the group a trip to the park later in the day, (b) teacher promised the group a trip to a fire station later in the day, and (c) teacher promised the group a shower bath under the lawn sprinkler later in the day.

The sequence of activities each day for Group 2 was as follows: (a) smocks were placed on the Ss, (b) teacher explained play activity for the day, (c) teacher made emotion-inducing statement, and (d) play began.

Play activity lasted approximately 20 minutes per session. When not making inducing statements, the teacher

reverted to a neutral style of relating to Ss. This style involved refraining, as far as possible, from emotion-inducing behavior during the entire play period. The teacher directed play, assisted, or offered information to the children about the play activity. If a S left the group, the teacher was instructed to say to him one time, "We'd like you to paint now." If the S failed to return, nothing more was done to restrain him. If a S became disruptive, the teacher made an appropriate comment to redirect him, for example, "Johnny, paints belong on the paper (not on Alice)."

Group 1 received no emotion-inducing comments or expressions from the teacher. The teacher utilized the neutral style throughout all trials with Group 1.

Dependent variable measures were taken during each of the nine occasions of play for each group. The play activities consisted of three equivalent painting situations as follows: straw painting (A), soap suds painting (B), and sponge painting (C). These activities were judged as equal in terms of appeal to 5-year-olds by experts in the field (Britton, 1972; Canaday, 1972).

Dependent measures were comprised of two indices of play behavior and two indices of positive emotion (see Appendix A). In order to make these observations, two raters entered the play area immediately following the emotion

induction. The raters faced a crude semi-circle of Ss at a distance of 6-8 feet from the group. Naturally, the Ss did not remain in a neat grouping during the entire play session. But the furniture and play materials were arranged in a semi-circular manner at the start of play as an aid to observation.

Play behavior was rated in terms of appropriateness. Ratings were recorded in the spaces provided on the Play Behavior Check-Sheet. Each rating fell into one of eight categories as defined in Appendix A. A rating period for a single S consisted of a 4-second observation period followed by a 6-second period for recording and locating the next S. Each of the 15 Ss was rated in turn. Turns were predetermined in a random order. Numbers from 1-15 were drawn from a box.

After all Ss had been rated one time, the raters observed the sound-level meter and recorded the reading (see Appendix A). When the sound-level rating was completed, the raters repeated the rating procedure for all 15 Ss a second time. Then, another sound-level rating was made, and so on. This sequence was repeated a total of eight times during each play occasion.

Two measures of positive emotion were made along with the play measures. Interest and joy as defined by Tomkins (1962) were rated. Interest is defined as a fixed gaze or stare. The play behavior ratings included a counting of

occasions when the S was gazing at the play materials, another's play, his teacher, and elsewhere.

Joy is defined as the smiling or laughing behavior. Each time the raters made a judgment regarding play behavior, they also made a judgment as to whether the S was smiling or not smiling. These judgments were recorded on the Check-List.

Training sessions for raters and the teacher took place during the week prior to the experiment. This allowed the Ss to become habituated to the presence of the raters and their equipment. For Group 2 the teacher was instructed in the emotion induction precedure and practice sessions in the precedure were arranged.

Inter-rater reliability surpassed the .85 level on three consequtive days of practice prior to the experiment. Reliability was determined by the most rigorous test possible, that of using percentage of identical inter-rater agreements only.

CHAPTER III

RESULTS

The first statistical task was to determine whether or not the experimental and control groups were equivalent along relevant parameters prior to the experiment. Accordingly, $\underline{t}$ tests were performed on baseline mean differences. Baseline data for play activity A were excluded from the baseline average because of a shift in rating technique. In each case the $\underline{t}$ was not significant at the .05 level (see Table 3). The null hypothesis could not be rejected. Group 1 and Group 2 were considered to be equivalent in terms of positive emotion and play behavior prior to the experiment.

The next step was to analyze the experimental data. Play behavior had been rated in terms of eight categories along a continuum of appropriateness. The extremely low frequency of occurrence of any one of the intermediate levels of play appropriateness (E, H, O, I) suggested the need to compress these intermediate levels into a single category for analysis purposes. This single intermediate category will be referred to as Other (O). The Aggression (A) category also occurred so seldom that it was combined with the adjacent Leaving (L) category to form a single category called Leaving (L). Thus, the analysis of play behavior was based on a new

TABLE 3

GROUP BASELINE MEAN DIFFERENCE TESTS ($\underline{t}$)
FOR ALL DEPENDENT MEASURES

Dependent Measure	t	M_1	M_2	SD_1	SD_2	df
Play Behavior Scores	0.07	18.83	18.66	6.78	4.17	23
Both	0.15	8.33	8.16	3.57	1.73	23
Other	0.36	2.16	2.33	1.21	1.17	23
Leaving	0.10	5.41	5.29	3.25	2.49	23
Not Smiling	2.05	15.12	13.95	1.20	1.65	23
Sound	1.00	73.70	75.10	3.90	2.70	15

continuum involving three categories: Both (B), Other (O), and Leaving (L).

Data missing due to absent Ss were estimated by averaging data from other occasions involving the same inducer level and play activity. When data from at least one occasion of the appropriate play activity and at least one occasion of the appropriate inducer level were not available for averaging, the missing data were not extrapolated. In such cases all of that S's data were eliminated from analysis. Consequently, only 12 Ss' data were analyzed from each group.

Analysis of experimental data was accomplished primarily through use of the Lindquist Type VI analysis of variance design (Lindquist, 1953). This analysis allowed comparisons between groups, among three play activities, and among three levels of emotion inducers. Also obtained were interaction effects between groups and play activities, between groups and inducer levels, between play activities and inducer levels, and for groups by play activities by inducer levels.

Play behavior was analyzed as a whole and category by category. The play-as-a-whole analysis involved compressing the play behavior continuum into a single score as follows: Play Behavior Score equals the S's Both score multiplied by two, plus his Other score multiplied by one, plus his Leaving score multiplied by zero. The Group 1 Play Behavior mean was

17.8, while the Group 2 mean was 17.6 (see Table 4). The critical value at the .05 level of significance was 4.30. Therefore, the F ratio of 0.02 indicated no difference between Group 1 and Group 2 in overall play behavior (see Table 4). The primary interaction hypothesized was that between groups and levels of emotion induction. For Group 1 the means for Levels I, II, and III were 17.9, 18.4, and 17.0. For Group 2 the means for Levels I, II, and III were 17.9, 17.4, and 17.3. The critical value at the .05 level was 3.23, but the F ratio was only 0.26 (see Table 4). No significant difference was found among the levels of induction. Actually, none of the F ratios shown in Table 4 were significant. In regard to Play Behavior Scores, then, emotion induction produced no difference between the groups or among inducer levels.

As mentioned above, analysis of variance was also computed on play behavior, category by category. Analysis of the play category, Both, revealed no difference between groups in Both responses since the F ratio of 0.53 (see Table 5) fell short of the .05 level critical value (4.30). Neither was there a significant difference among the levels of emotion induction taken by group. Table 5 lists the F ratio as 0.73, far less than the 3.23 critical value required at the .05 level. All other F values were not significant under the Both category. There was no difference between groups or among

TABLE 4

ANALYSIS OF VARIANCE AND RELATED
MEANS FOR PLAY BEHAVIOR SCORES

Source	SS	df	MS	F
Total	11126.326			
Groups	3.226	1/22	3.226	0.02
Between Error	4300.588	22	195.481	
Between Subjects	4303.814			
Within Subjects	6822.512			
Play Types	250.254	2/44	125.127	1.91
Inducers	26.001	2/44	13.000	0.40
G X P	52.735	2/44	26.367	0.40
G X I	16.408	2/44	8.202	0.26
P X I	158.641	4/88	39.660	1.75
G X P X I	35.164	4/88	8.791	0.39
Error 1	2875.036	44	65.341	
Error 2	1413.676	44	32.129	
Error 3	1994.597	88	22.665	
Error Within	6283.309			

	Overall	Play A	Play B	Play C	Inducer I	Inducer II	Inducer III
Group 1	17.8	17.3	17.2	18.9	17.9	18.4	17.0
Group 2	17.6	18.0	15.6	19.1	17.9	17.4	17.3
Across Groups		16.9	16.4	19.0	17.9	17.9	17.2

TABLE 5

ANALYSIS OF VARIANCE AND RELATED
MEANS FOR <u>BOTH</u> BEHAVIOR

Source	SS	df	MS	F
Total	2894.915			
Groups	20.969	1/22	20.969	0.53
Between Error	873.855	22	39.720	
Between Subjects	894.821			
Within Subjects	2000.094			
Play Types	98.728	2/44	49.364	2.79
Inducers	1.373	2/44	0.686	0.07
G X P	3.382	2/44	1.691	0.10
G X I	14.791	2/44	7.395	0.73
P X I	23.384	4/88	5.846	0.84
G X P X I	17.543	4/88	4.385	0.63
Error 1	778.964	44	17.703	
Error 2	447.436	44	10.169	
Error 3	614.493	88	6.982	
Error Within	1840.893			

	Overall	Play			Inducer		
		A	B	C	I	II	III
Group 1	7.7	7.8	6.9	8.3	7.5	8.0	7.5
Group 2	7.0	7.4	5.9	7.8	7.0	6.7	7.4
Across Groups	7.6	6.4	8.0	7.2	7.4	7.4	

inducer levels in terms of Both behavior.

Analysis of the intermediate play category, Other,
revealed significant differences between Group 1 and Group 2
overall and among the levels of emotion induction taken across
groups. Responses of the Other type were more frequent in
Group 2 ($\underline{M}$ = 3.5) than in Group 1 ($\underline{M}$ = 2.4). The $\underline{F}$ ratio of
5.19 in Table 6 surpassed the critical value at the .05 level
(4.30).

The difference between groups in terms of Other be-
havior was the first major finding of the study. It is im-
portant, therefore, to show that difference clearly. It will be
recalled that a non-significant $\underline{t}$ of 0.36 was obtained on the
difference between Group 1 and Group 2 baseline means for Other
behavior (see Table 3). The groups were equal in Other be-
havior on baseline averages. When the five $\underline{S}$s from each group
who scored highest in Other behavior on baseline data were com-
pared, the scores were very similar. When the five $\underline{S}$s from
each group who scored the lowest were compared, the groups
still looked alike. Even at these extreme ends of both groups'
distributions there was considerable overlap. At the high end
nine out of ten scores overlapped, and at the low end eight
of ten scores overlapped (see Table 7). But when the same
comparisons were made between the highest $\underline{S}$s in each group
and lowest $\underline{S}$s in each group on nine-day experimental totals,
only three out of ten $\underline{S}$'s scores overlapped at both the high

TABLE 6

ANALYSIS OF VARIANCE AND RELATED
MEANS FOR OTHER BEHAVIOR

Source	SS	df	MS	F
Total	1257.054	215		
Groups	64.463	1/22	64.463	5.19*
Between Error	273.162	22	12.416	
Between Subjects	337.625	23		
Within Subjects	919.429	192		
Play Types	31.366	2/44	15.683	2.89
Inducers	42.270	2/44	21.135	4.20*
G X P	8.388	2/44	4.194	0.77
G X I	15.285	2/44	7.642	1.52
P X I	12.114	4/88	3.028	0.81
G X P X I	20.766	4/88	5.191	1.39
Error 1	238.882	44	5.427	
Error 2	221.216	44	5.027	
Error 3	329.203	88	3.740	
Error Within	789.240	176		

| | Overall | Play | | | Inducer | | |
		A	B	C	I	II	III
Group 1	2.4	1.8	3.2	2.2	2.9	2.2	2.1
Group 2	3.5	3.2	3.7	3.5	3.9	4.0	2.6
Across Groups		2.5	3.4	2.9	3.4	3.1	2.4

*p $<$ .05

TABLE 7

EXTREME SCORE OVERLAP BETWEEN GROUPS ON BASELINE AVERAGES
AND EXPERIMENTAL TOTALS FOR OTHER BEHAVIOR

| | Baseline | | | | Experiment | | | |
| | Five Highest | | Five Lowest | | Five Highest | | Five Lowest | |
	S	Score	S	Score	S	Score	S	Score
Group 1	4	4.0*	8	.5	3	38.0*	8	6.1
	15	4.0*	11	.5	15	36.9*	6	11.0
	9	3.0*	2	1.5*	12	31.2	14	12.0
	13	3.0*	3	1.5*	2	29.7	11	12.8*
	14	3.0*	6	1.5*	10	24.0	13	15.2*
Group 2	5	5.0	6	1.0*	12	49.0	15	12.1*
	11	4.0*	7	1.0*	8	42.0	6	19.0
	13	3.0*	4	1.5*	9	39.5	11	25.0
	9	2.5*	12	2.0*	2	39.2	4	26.0
	2	2.0*	14	2.0*	5	34.5*	13	27.2

* Score overlaps with other group

end and at the low end (see Table 7). Thus, the distributions took on a more bimodal appearance, lending further support to the finding that Group 2 Other productions increased substantially over Group 1 during the nine experimental days.

In regard to emotion induction across groups, Level 1 mean was 3.4, Level II mean was 3.1, and Level III mean was 2.4 (see Table 6). The 4.20 F value exceeded the critical value (3.23 at the .05 confidence level). Apparently, Ss of both groups produced fewer Other responses on occasions of Level III inducers. Closer inspection of the data, however, revealed that Group 1 means for inducer levels were fairly consistent (2.9, 2.2, and 2.1), but Group 2 means were not (3.9, 4.0, and 2.6).

The significant F ratio suggested that both groups were lower in Other productions for Level III. Examination of means by group, however, indicated that Group 2 fluctuated from very high Other scores under Levels I and II to a low score under Level III. Thus, Group 2's fluctuation in response to emotion inducers must have accounted for the statistical difference. Level I and II inducers produced much higher Other productions than did Level III. Under Level III inducers no difference in Other productions was apparent.

Table 6 contains additional Other category F ratios, none of which were significant.

The results of the analysis of variance done on the Leaving category are found in Table 8. All F ratios were insignificant. The interaction between play activities and emotion inductions approached significance with an F ratio of 2.34. The critical value was 2.48 at the .05 level. This near-significant finding resulted from the low mean (4.0) for Leaving behavior where Level I emotion induction coincided with play activity C (sponge painting). However, the data indicated no difference between the groups or among levels of emotion induction in Leaving behavior.

In considering emotion results an analysis of variance was computed on Not Smiling data only since Smiling scores were simply the mirror image of Not Smiling scores. Table 9 contains the analysis results. None of the F ratios were significant. There was no difference in Smiling or Not Smiling between the groups or among the levels of emotion induction during the experiment.

No meaningful analysis of interest was possible because of the extremely low frequency of ratings in the intermediate play categories. For example, the Eyes (E) category was rated only twice during the entire experiment. Therefore, no statistically meaningful distinctions of interest were possible beyond those gross distinctions of Both, Other, and Leaving.

The sound-level analysis of variance results are

TABLE **8**

ANALYSIS OF VARIANCE AND RELATED
MEANS FOR LEAVING BEHAVIOR

Source	SS	df	MS	F
Total	3236.813			
Groups	9.458	1/22	9.458	0.14
Between Error	1427.190	22	64.872	
Between Subjects	1436.648			
Within Subjects	1800.165			
Play Types	36.141	2/44	18.070	1.04
Inducers	22.442	2/44	11.221	1.31
G X P	24.595	2/44	12.297	0.71
G X I	0.335	2/44	0.167	0.02
P X I	54.046	4/88	13.511	2.34
G X P X I	14.906	4/88	3.726	0.64
Error 1	763.488	44	17.352	
Error 2	376.320	44	8.552	
Error 3	507.892	88	5.771	
Error Within	1647.700			

	Overall	Play			Inducer		
		A	B	C	I	II	III
Group 1	5.8	6.3	5.8	5.5	5.5	5.8	6.2
Group 2	5.4	5.3	6.3	4.7	5.1	5.3	5.9
Across Groups		5.8	6.0	5.1	5.3	5.5	6.1

TABLE 9

ANALYSIS OF VARIANCE AND RELATED
MEANS FOR <u>NOT</u> SMILING BEHAVIOR

Source	SS	df	MS	F
Total	1061.380			
Groups	33.448	1/22	33.448	2.43
Between Error	303.123	22	13.778	
Between Subjects	336.571			
Within Subjects	724.809			
Play Types	25.501	2/44	12.673	2.27
Inducers	0.547	2/44	0.273	0.06
G X P	6.758	2/44	3.379	0.60
G X I	8.411	2/44	4.205	0.94
P X I	10.829	4/88	2.707	1.05
G X P X I	4.853	4/88	1.213	0.47
Error 1	245.370	44	5.576	
Error 2	196.271	44	4.460	
Error 3	226.269	88	2.571	
Error Within	667.910			

| | Overall | Play | | | Inducer | | |
		A	B	C	I	II	III
Group 1	14.1	14.6	13.9	13.8	13.8	14.3	14.2
Group 2	13.3	13.7	12.7	13.8	13.5	13.1	13.3
Across Groups		14.1	13.3	13.7	13.6	13.7	13.8

contained in Table 10. Two significant F ratios pertained to play activity C (sponge painting). When play activities were analyzed across groups, an F of 3.43 was obtained. This F was significant at the .05 level where the critical value was 3.23. The significant difference among play activities across groups apparently resulted from a low mean for Group 2. Play activity C for Group 2 had a mean sound-level of 72.0 db as compared to the other means which ranged from 74.4 db to 75.7 db. In fact, the F ratio for play activities by group was 10.06, significant at the .001 level (critical value = 8.25). Group 2 made less noise than Group 1 when the groups were involved in sponge painting.

The interaction of play activities with inducer levels resulted in a significant F of 4.34 since the critical value at the .01 level was 3.56. The greatest mean differences occurred for both groups during Level II emotion induction. When Level II was paired with play A and play C the means were the lowest (both 72.2 db). When Level II was paired with play B the mean was the highest (77.0 db).

The source of these differences was sought within Group 2 since Level II inducers were the common factor. The extremely high mean and one of the low means could be accounted for by Group 2 scores. But the other low mean was uninterpretable since the Group 2 mean was not remarkably low (73.4 db),

TABLE 10

ANALYSIS OF VARIANCE AND RELATED
MEANS FOR SOUND

Source	SS	df	MS	F
Total	2590.438	143		
Groups	8.027	1/22	8.027	0.42
Between Error	266.549	14	19.039	
Between Subjects	274.576	15		
Within Subjects	2315.862	128		
Play Types	56.384	2/44	28.192	3.43*
Inducers	49.155	2/44	24.577	2.05
G X P	165.274	2/44	82.637	10.06+
G X I	56.920	2/44	28.460	2.37
P X I	317.239	4/88	79.309	4.34**
G X P X I	80.875	4/88	20.218	1.10
Error 1	229.954	28	8.212	
Error 2	335.703	28	11.989	
Error 3	1024.358	56	18.292	
Error Within	1590.015	112		

| | Overall | Play | | | Inducer | | |
		A	B	C	I	II	III
Group 1	74.9	74.4	74.7	75.5	76.0	73.8	74.8
Group 2	74.4	75.5	75.7	72.0	73.8	73.9	75.6
Across Groups		75.0	75.2	73.8	74.9	73.8	75.2

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

and the Group 1 mean was even lower (71.1 db). The high mean across groups occurred because Group 2 produced a very high level of sound (78.1 db) during soap bubble painting (B). The low mean across groups occurred as a result of Group 2's very low level of sound (70.1) during sponge painting (C). Level II inducers appeared to have produced marked Group 2 sound variability in conjunction with different types of play.

Because the major significant difference between groups occurred in only one dependent measure, Other, more subtle evidence of the influence of emotion induction was sought. Pearson Product-Moment Correlations were performed on each group's data to determine the degree of consistency between the Ss' baseline averages and their averages across the nine experimental days (see Table 11). Three Group 1 correlations (.62, .55, and .50) on play and emotion measures were substantial and significant at the .05 level, while one (.70) was very high and significant at the .01 level (10 df and one-tailed tests). None of Group 2 play behavior correlations were significant. The Group 2 Not Smiling correlation (.69) was significant.

Group 1 Ss proved to be highly consistent in their performance throughout the entire experiment. Group 2 Ss, however, exhibited little consistency between baseline measures and the nine experimental occasions. Low, insignificant

TABLE 11

CORRELATION OF BASELINE AVERAGE WITH AVERAGE
ACROSS NINE EXPERIMENTAL OCCASIONS

	Play Behavior Score	Both	Other	Leaving	Not Smiling
Group 1	.62*	.55*	28	70**	50*
Group 2	.22	.18	.08	.21	.69**

*p $<$ .05

**p $<$ .01

correlations where one would have expected behavior to be consistent indicated that a substantial number of Group 2 Ss must have altered their play behavior during the nine trials.

CHAPTER IV

DISCUSSION AND CONCLUSIONS

It had been predicted that low and medium levels of positive emotion induction would increase play appropriateness. At high levels the induced emotion was to have disrupted play. The same curvilinear influence should have produced decreasing noise with appropriate play and increasing noise with disrupted play.

In a global sense the obtained results offered only minimal support of the hypotheses. However, the teacher's pleasant promises to Group 2 did alter the children's play behavior. The promises significantly increased Other behavior. Play appropriateness was essentially a matter of attending to a task. For some children an increase in Other behavior represented an increase in attending, while for some children it meant a decrease in attending. In either case, the children moved from an all-out type of behavior (Both or Leaving) toward less total involvement.

Recall that Group 1 children were persistent in their play styles from baseline through the entire experiment. But Group 2 children were not. If each Group 2 child were characterized as an "attender" or "leaver" according to his

predominant baseline style, the inducers can be seen as having

interrupted that original style.

An examination of the atmosphere of the center may help

to clarify this style change in Group 2 children. Teachers

in the center are fairly strict. They are forceful and stern.

They place considerable emphasis on teaching children control.

In relation to teacher behavior (teacher expectations) the

attenders were doing what the teacher wanted. The leavers

were behaving in ways disapproved by the teacher. Ordinarily,

the children would expect the leavers, the misbehavers, to

receive pressure to perform or punishment if they failed to

do so. Instead, the teacher began each session with a pleas-

ant promise which was fulfilled, no matter how they behaved.

Group 2 children may well have interpreted the teacher's be-

havior as more permissive than was customary. As a consequence,

the youngsters may simply have relaxed. They may have relaxed

in terms of pressure to perform, on the one hand, and in terms

of pressure to resist authority, on the other. The children

may have felt more at ease to do as they pleased. Thus, there

was an increase in intermediate attending behavior.

If the Level I and Level II inducers relaxed the

children, Level III produced a drop in Other productions by

Group 2. Group 2 Ss apparently reverted to their original

all-out styles of play when the promise by the teacher was

exceptionally pleasant. Confrontation with a qualitatively

superior inducer appears to have reinstituted the "pleasers'"
(attenders) sense of pressure to earn or secure their promised
pleasure. Such a group norm could easily have been transmitted
even to the leavers.

Such an interpretation remains incomplete without a
discussion of emotion. To demonstrate objectively a change
in emotion is preferable to inferring such a change. No such
change was demonstrated, however. It does seem faithful to
the data to speak of a shift in the mood within the group.
What, then, was the mechanism in the children which led to
change in play behavior? Was the behavioral change based
primarily upon perceptual and cognitive capacities, or did an
altered emotional state play a role? How does one operation-
alize "mood within the group" as distinct from individual
S's emotional states?

The theorists and the present data offer some possible
answers. When Izard (1971) and Tomkins (1965) wrote of emo-
tion as the primary motivation system, they indicated that
all behavior is at least partly a result of emotion. The
theoretical statements by Leeper and Arnold appear to leave
even less room for other motivators. For example, Arnold's
(1960) basic formulation assumed that perception leads to emo-
tion which leads to action. Leeper (1970) viewed emotion as
an integral part of the individual's system for information
processing. In theory one would be on safe ground in

assuming that some altered emotional state led to the play behavior change. Since no clear change in emotion within the group's members was demonstrated, there is value in suspending judgment until firmer proof exists.

The induction technique in the present study was aimed at producing both joy and interest. Joy was more apt to be produced directly and interest secondarily. There is no doubt that joy as measured was present during the experiment. But there was no evidence that the inducers produced joy as measured. Neither was there change in the joy scores to correspond with the change in play behavior. Obviously, play behavior change was not dependent upon increased joy as measured.

Prolonging or repeating positive emotion inducers holds potential for intensifying or prolonging positive emotional states. At the same time, however, such inducers become subject to interpretation as reinforcers in Skinner's (1969) operant conditioning paradigm.

As for the positive emotion, interest, an increase in Other behavior reflects more than simply a decrease in Both and Leaving behavior. These changes, taken together, can be said to represent a broad shift in terms of interest. Although there is some validity in such a statement, not much can be made of this broad shift due to the fact that the terms are indistinguishable from play behavior measures.

Perhaps the best method of attempting to induce interest directly is to have an admired person, puppet, or character profess or exhibit enthusiasm for the intended task. Such an induction technique, however, would be difficult to defend as distinct from Bandura's (1963) social learning concept involving modeling and imitation. Pursuit of this line of research would be valuable if the conceptual muddiness could be avoided.

Demonstrated change in emotion remains the single most useful technique for overcoming conceptual snarls. Without demonstrated change in emotion, interpretation must remain tentative and speculative. One cannot say with certainty that positive emotion did not or cannot influence play behavior. Positive emotion may actually have caused the changes in the present study. The positive emotions may involve or be expressed by behavior beyond joy and interest as Tomkins defined them. Perhaps an analysis of interpersonal interactions in the play situation would measure positive emotion more thoroughly. For example, verbal statements between children, mutual glancing, touching, approaching behavior, proximity, pupillary dilation, etc. might yield more adequate information. The present study included interpersonal interaction only in terms of the original Other and Aggression categories of play behavior.

Interpersonal interaction analysis might serve to define operationally what is meant by the mood of the group. Membership in the groups of the present study was clearly defined for the children by the same play in the same room at the same time, by sharing the same teacher, by wearing numbered smocks, etc. More complete analysis of interpersonal interaction might clarify to what extent and in what manner positive emotion induction altered group membership for these children. In other words, the more relaxed mood of Group 2 may well be a subtle, and yet shared, shift in awareness of what it means to be a member of the group. In the same way that group members together experienced the teacher's promising behavior, they also experienced, during subsequent play periods, expressions of each others' interpretations and emotional reactions to the teacher's new behavior. Through the sharing of cues as to the meaning of these promises, the mood of the group was altered. In short, the group was redefined as a relaxed group.

Such an interpretation is consistent with the concept of emotion as primary motivator and with the appraisal-emotion-action sequence. What has been added is the social dimension. Mutual cueing and the mutuality of emotional expression in a group may explain additional aspects of emotion and play in children's groups.

In summary, the present study demonstrated that attempts to induce positive emotion through a teacher's pleasant promises did alter play behavior in 5-year-old children. No acceptable evidence of a corresponding change in the youngsters' positive emotions as defined was shown, however. The play behavior change was tentatively interpreted as a shift in the mood of the group. Operationally, the mood of the group was defined as a mutual redefinition of the group by its members through mutual cueing behaviors.

Several issues came to light during the present study which may offer direction for future emotion investigation. The teacher's mood may well be as influential on children's behavior as any other single variable. Although having the same teacher deal with both groups controls for such effects, incorporating an affect measure for the teacher on a daily basis could serve to tighten emotion studies, in general, and perhaps account for some between-trial variability.

Also worthy of attention is the approach of Bronson (1966, 1967). Measurement of emotional reactivity and emotional expressiveness might give an indication of which children react more strongly to inducers and which children actively express emotion. Such pretested tendencies could add clarity to experimental results. For example, groups in the present

study were balanced for age and sex but not for emotional re-
activity or emotional responsiveness.

The time-series approach to groups provides adequate
measurement of the more enduring emotional changes, but is
less sensitive to short-term individual effects. More
fleeting changes, though presumably less influential upon
behavior, may be studied more readily through measurement of
individual subjects on a continuing basis immediately following
inducement.

Finally, when one places side by side the seemingly
low occurrence (non-significant) of Leaving behavior during
play C and the significantly low level of sound produced during
play C, the possibility arises that sponge painting (C) may
have been a bit more appealing to the children than play A
and play B. The issue must remain unresolved, however, because
all other indices in the study showed no significant difference
among effects of play activities. Painting play had sufficient
appeal for 5-year-old children. In spite of this asset,
painting play was expensive and involved considerable prepa-
ration and cleanup.

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APPENDIX A

INSTRUCTIONS FOR PLAY BEHAVIOR CHECK-SHEET

Observation of Ss begins on a signal from E. The rater activates his stopwatch (first setting it at zero position) and immediately begins observing the S whose number appears at the top of the list on the left side of the Check-Sheet. The rater will observe the S for 4 seconds and then record and locate next S in 6 seconds, totaling 10 seconds per S. Then the rater observes the next S, and so on down the list.

A coded rating will be placed in each of two adjacent spaces on the Check-List during each recording time. The first rating will be the code for the behavior (on the appropriateness scale below) which persisted longest during that 4-second observation period. The second rating will be either an "S," indicating that the S smiled at least once during that observation period, or an "N," indicating that the S did not smile during that observation period. If S's face is not visible during 4-second period, rater will mark space with a dash.

After all Ss have been rated one time, the rater will observe the sound-level meter for a period of 4 seconds. The rater will then record the sound-level reading. The recording will consist of the highest reading (in decibels) during the

observation period. Six seconds are allowed for the recording

and locating the next S.

If the sound meter's needle continually pegs the upper

limit of the dial, the meter should be adjusted to the next

higher setting, that is, raised by 10 db. If the needle

seldom rises above the lower limit of the dial, the meter

should be adjusted to the next lower setting, that is, lowered

by 10 db.

All readings with the sound-level meter should be done

at the slow (average) setting. The sound-level meter will

always remain 6 - 8 feet from the Ss.

When the rater has completed the sound-level rating,

he will again observe the first S on the list and continue

through the list of Ss. He will then make another sound-

level rating, and so on until he has made a total of eight

ratings of each S and eight sound-level ratings. This will
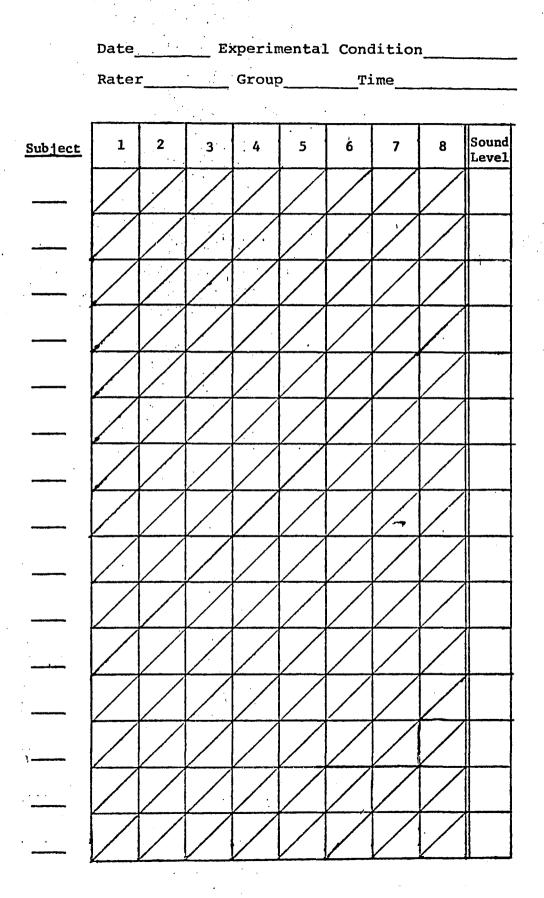
constitute the data collection for one group.

Coding for Play Behavior Appropriateness Observations

Code	Behavior
B (both)	gaze focused on own play material and hands touching own play material.
E (eyes)	gaze focused on own material, but hands not touching it.
H (hands)	hands touching own material, but gaze focused away from own or other's materials.

O (other)   gaze focused on other child's play (while
                     not touching own materials), includes aiding
                     another.

I (ignoring)   looking at wall, ceiling, out window, at
                     activities outside group (while not touching
                     own material).

For B, H, O, or I to be scored S must be in his place(with-
in arm's length of his materials). S can relocate his place,
but mark L while he is in transit.

A (aggression)   disruptive aggression toward another child
                     or that child's materials. Should be coded
                     even if the S is using his own materials
                     in the aggressive behavior. Includes any
                     act toward another S which causes him to
                     wince, retaliate, or complain.

L (leaving)   leaving group, playing different activity
                     altogether (i.e. not touching or gazing
                     at own material).

_____

T (teacher)   gaze focused on teacher. To be coded only
                     when no other category occurs. T includes
                     taking materials to teacher. But no guessing
                     about intended destination of S. He must
                     arrive at teacher within observation time.
                     (Since this category requires considerable
                     interpretation in order to judge appropri-
                     ateness or inappropriateness in a specific
                     instance, T cannot be placed on the continuum.)

Date_____ Experimental Condition_____

Rater_____ Group_____Time_____

Subject	1	2	3	4	5	6	7	8	Sound Level
___									
___									
___									
___									
___									
___									
___									
___									
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APPENDIX B

ENJOYMENT SCALE

This rating scale was created in order to learn which teacher activities will bring the most and the least enjoyment to a group of five-year olds. Please place a check next to each teacher activity according to where you as a teacher feel it belongs on a scale from 1 - 9.

A score near "1" means that you feel that the teacher activity would bring to the children a little enjoyment or happiness for a moment.

A score near "5" means that you feel the activity would bring a medium amount of enjoyment or happiness for a few minutes.

A score near "9" means that you feel that the activity would bring a great amount of enjoyment of happiness for many minutes.

Teacher Activity	LITTLE		MEDIUM			GREAT			
	1	2	3	4	5	6	7	8	9
1. teacher promises ice cream later in day									
2. teacher praises for gathering quickly and quietly									
3. teacher promises visit to fire station later									
4. teacher promises group can go under sprinkler later									
5. teacher praises for sharing toys so nicely									
6. teacher reads or tells a short children's story									
7. teacher promises a balloon for each child later									
8. teacher plays a fun children's record									
9. teacher promises each a popsicle later									
10. teacher promises to read a story later in day									
11. teacher praises for eating all food on plates									
12. teacher promises each child two cookies later									
13. teacher promises trip for ice cream later									
14. teacher promises each piece of fruit later in day									
15. teacher promises each a sack surprise to take home									
16. teacher promises watermelon later in day									
17. teacher promises a children's film later in day									
18. teacher praises group for resting nicely earlier									
19. teacher has the group sing a song they like									
20. teacher promises a trip to buy doughnuts later									
21. teacher promises a trip to the park later									
22. teacher promises to play a children's record later									

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