STILES- LYNORA PARKS; Clothing and Social Interaction of Four-year Old Children. (1967) Directed by: Miss Eunice M. Deemer. pp. 73.

This study was designed to determine whether clothing is perceived by four-year old children to the extent of affecting social interaction with other children. Although the literature theorizes concerning children's interactions with others and their feelings about clothing, very little evidence is given to support these hypotheses.

Pretesting was done at the Nursery School of the University of North Carolina at Greensboro. For the study, the subjects were six boys and six girls selected from three preschools in Chapel Hill and Greensboro, North Carolina. Two girls and two boys from each of the preschools were subjects.

Each child selected to be a subject was observed for thirty minutes in his regular play clothing which he had worn to the preschool, Situation I; and for thirty minutes in experimental clothing provided especially for this study, Situation II. The experimental clothing was torn, faded, spotted, or had other visible signs of wear. The change from regular play clothing to experimental clothing was created by a wet accident. Every attempt was made to keep the accident and the change of clothing a natural sequence

in the preschool routine. During this entire hour of observation, the children were in free play. Social interaction was defined as the number of comments to or by a subject multiplied by the length in minutes of each comment.

The data were tabulated and were analyzed statistically by t test, chi square and analysis of variance. The results indicated the following:

1. There was significantly less communicative interaction when subjects were wearing experimental clothing than when subjects were wearing their own play clothing.

2. Boys did not differ significantly from the girls in the amount of decrease in social interaction when their clothing was changed from play to experimental clothing.

3. The number of remarks made to and by subjects about clothing, derogatory plus factual, was significantly greater when the subjects wore experimental clothing than when the subjects wore their own play clothing.

4. The amount of social interaction for the first ten minutes of the experimental clothing situation was not significantly different than the amount of social interaction for the final ten minutes of this situation.

It is concluded that clothing was perceived by these four-year old children, and that the perception by these four-year olds that their clothing was different from other members of their preschool group resulted in a decrease in social interaction.

CLOTHING AND SOCIAL INTERACTION OF

FOUR-YEAR OLD CHILDREN

by

Lynora Parks Stiles

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I. INTRODUCTION

Purpose of the Study

The purpose of this study was to determine whether clothing of four-year old children is an important factor in their social relations with other children.

If one is interested in aiding the socialization of the preschool child through group adjustment, then it would seem desirable to have evidence that would determine whether clothing norms are important to preschool children; whether nonconformity to these norms causes disapproval from the group; and whether this disapproval might be so strong as to cause rejection of the child, by others or by himself, from the psychological group.

Importance of the Study

Some psychologists and clothing and textile specialists have expressed interest in the clothing of the preschool child. However, only limited research data are available to quantify hypotheses made about clothing. Writers concerned with the importance of clothing to children are not always in full agreement as to which aspects of the child's clothing are most important to him. Some disagreement exists among psychologists and between psychologists and clothing and textile specialists as to the age at which

certain aspects of clothing become important to children. According to Hartley and Hartley (1952) clothing is visible to all those with whom a child is in contact, although perception may vary with individuals. Thus, clothing could be important in the acceptance of the child by his peer group, particularly those children with whom he is in daily contact.

Both psychologists and clothing and textile specialists have written about the relationships of the preschool child in a group and about how these relationships might be influenced by clothing. Hypotheses concerning the importance of the group to the child and the stages in life at which the group becomes important to him have been suggested.

If a child is to be helped to adjust to his environment, clothing may be a means to this end. Young (1938) said, "A child, normal physically and mentally, may fall short of the standards supposed to be reached. One of the flaws in an unsatisfactory environment is sometimes incorrect clothing" (Young, 1938, p. 58).

Many authors have written about the influence of the group and of the importance of conformity among adolescents. Hartley and Hartley (1952) said that from "cradle to grave" (Hartley & Hartley, 1952, p. 372) the groups of which man is a member have an important effect upon him. Gezell (1940) believed that a child becomes aware of his group relation-

ship about the age of four. Latzke and Quinlan (1940) said "If ever there was a need for consideration of the desire for group approval in apparel, it is in childhood" (Latzke & Quinlan, 1940, p. 372).

The importance of clothing to children was considered by Ryan (1966). She wrote, "What are simply amusing incidents or trivial occurrences to the adult are extremely important to the child . . ." (Ryan, 1966, p. 192). However, she stated that becomingness of clothing and conformity to the group are unimportant to the preschool child.

In one of her writings concerning the psychology of children, Hurlock (1965a) stated that children are not style conscious and are not troubled by wearing out-of-date clothing, but that the clothing of preschool children should be similar in style to their friends' clothing.

Hypotheses Tested

Specifically, this study was designed to test the following hypotheses:

1. There will be a change in social interaction among four-year olds when selected children change from play clothing to experimental clothing.

2. There will be a difference in the amount of social interaction during the first ten minutes of Situation II and the amount of social interaction during the final ten minutes of this situation.

3. Boys as a group differ from girls as a group in the degree to which their social interaction varies when wearing play clothing and when wearing experimental clothing.

4. There is a difference in the number of complimentary, derogatory, and factual remarks made about clothing when the subject is wearing play clothing and when he is wearing experimental clothing.

Definition of Terms

Subject--the child selected to wear the experimental clothing during Situation II.

Play clothing--the clothing which the subject wore to the nursery school on the particular day he was observed.

Experimental clothing--clothing which showed visible signs of wear such as fading, tears, ripped seams, partially ripped hems, wrinkles, missing buttons, etc. and which was smaller than the child's regular play clothing.

Situation I--free play nursery school situation where all children wore play clothing.

Situation II--free play nursery school situation where the subject wore experimental clothing.

Social interaction--the number of verbal contacts made by a subject to another child, by other children to the subject, and the length of these contacts. The number of contacts was multiplied by the length of contact for use in

the statistical calculations.

Direction of remarks about clothing--whether the remarks are complimentary, derogatory, or factual.

II. REVIEW OF RELATED LITERATURE

No studies were found in the literature which were concerned with the importance of children's clothing in peer group interaction. Therefore, four areas which seemed pertinent to this study were selected for review. The review of the literature includes: social comparison and reference group theory, communication, social relations of preschool children, and children's clothing.

Social Comparison and Reference Group Theory

Both social comparison theory and reference group theory discussed individual needs for group acceptance and group control of its members.

Hartley and Hartley (1952) wrote that, "Conformity to group norms characterizes behavior of all individuals who wish to be considered group members" (Hartley & Hartley, 1952, p. 413). And Steinzor (1949) said that, "Social life for most people takes place in intimate groups" (Steinzor, 1949, p. 103). Because man is influenced by his biological nature and personality from the inside and his roles in groups and environment from the outside, Hare (1962) viewed interaction behavior, "As a compromise between the needs of the individual and the demands of the situation" (Hare, 1962, p. 21).

An experiment involving the consequences of deviation from group standards of opinion was conducted by Schachter (1951). In this study, it was assumed that the power of the group over the individual would be exerted through communication as four separate groups of college freshman discussed juvenile delinquency. It was believed that relevance of the issue causing disagreement and cohesiveness of the group would increase as the strength of the group norms increased. The experimental conditions manipulated were: (1) high cohesive group with relevant issue; (2) low cohesive group with relevant issue; (3) high cohesive group with irrelevant issue; and (4) low cohesive group with irrelevant issue.

Schacter found in all cases that communication to the deviate increased as the group attempted to have him change his opinion to the modal group opinion. In descending order of the amount of communication to the deviate, the conditions were: (1) high cohesive group, relevant issue; (2) low cohesive group, relevant issue; (3) high cohesive group irrelevant issue; and (4) low cohesive group, irrelevant issue. In the high cohesive group, relevant issue conditions, where the strongest group standard existed, communication between the group and the deviate increased for thirty to forty minutes and then decreased sharply, which gave evidence of the rejection of the deviate from the group.

The length of the communication was greater in both relevant issue groups than in either of the irrelevant issue groups. No attempt was made to determine the relative importance of the cohesiveness of the group versus the relevance of the issue.

The Schachter (1951) study was replicated by Emerson (1954) with high school males rather than college students as group participants. He found that "one source of cohesiveness is the interest which members have in the issue and in the purposes advanced by the group" (Emerson, 1954, p. 688). These high school boys had less structured opinions concerning the issue of juvenile delinquency; therefore, they changed their own opinions toward the modal group opinion to achieve opinion uniformity within the group. The pressure toward group opinion uniformity in this case did not lead to rejection of the deviates from the groups.

Festinger and Thibaut (1951) conducted research concerning interpersonal communication in small groups. They reported "Redefinition of the boundaries of the psychological group can . . . also be a response which the group makes to pressure toward uniformity. . . . If it is possible for a group to subdivide or exclude members, then, as discrepancies become clear, there will be tendencies to cease communicating to the extremes" (Festinger & Thibaut, 1951, p. 92). This hypothesis was supported for groups where the pressure toward

uniformity is weaker, but not for groups where the pressure
for uniformity was very high.

A field study of social groups within a student
housing community at Massachusetts Institute of Technology
was conducted by Festinger, Schachter, and Back (1950).
They found that the greater the uniformity of the opinions
of the group, the greater the cohesiveness. Also, there
was evidence that nonconformers tended to be rejected.

Minority or majority opinion of a deviate within a
group and homogeneous or heterogeneous composition of this
group were manipulated by Gerard (1952) in a study involving
university students. The four conditions of the experiment
were: (1) heterogeneous group composition- majority opinion,
(2) heterogeneous group composition- minority opinion, (3)
homogeneous group composition- majority opinion, and (4)
homogeneous group composition- minority opinion. Persons
with minority opinions showed evidence of needing more sup-
port than did persons with majority opinions, both from
others in their subgroups and from the total group. The
homogeneous groups created greater pressure toward group
opinion uniformity than did the heterogeneous groups.

Two conclusions of a laboratory experiment dealing
with conformity reported by Hare (1962) were:

> (1) . . . the extent of group influence on an
> individual's judgment is found to be a func-
> tion of the object to be judged, and the sit-
> uation in which he finds himself.

> (2)   If the individual finds his behavior
> deviates from the group norms, he has four
> choices: to conform, to change the norms,
> to remain a deviate, or to leave the group
> (Hare, 1962, p. 23).

Hare (1962) cited one of the conclusions of Tudden-
ham who performed a study in 1958. That conclusion was
that "women yield more to a bogus group norm than do men"
(Hare, 1962, p. 34).

A study concerning tolerance of non-conformity to
an established clothing norm was conducted by Brush in 1964.
Although this study dealt with the respondent's perception
of deviant clothing, much attention was focused on conform-
ing and nonconforming behavior. In relating a group's toler-
ance for deviant behavior by one of its members to the wear-
ing of deviant clothing by a member, Brush (1964) said:

> If the conformers in the . . . group had an
> explanation for the deviant's non-conforming be-
> havior, the deviant might appear to be more ac-
> ceptable to the conformers than if they (i.e.
> conformers) were simply left to surmise whether
> the deviants' non-conforming behavior was due to
> lack of cooperativeness, lack of knowledge, etc.
> The importance of the situation, the extent to
> which the conformers thought that the deviants
> non-conforming behavior would reflect upon an
> outsider's opinion of the group, the importance
> of the deviant individual to the group, and the
> importance placed by the conformers upon con-
> formity to the specific clothing norm might each
> have an effect upon the conformer's tolerance of
> the deviant's nonconformity" (Brush, 1964, p. 20).

Communication

Communication, both verbal and nonverbal, has long

been theorized as an important aspect in interactional sit-
uations. Social psychologists have conducted studies con-
cerning the importance of communication in an individual
subject's response to standards and values of his reference
group. Theories have been proposed concerning the role of
communication in the socialization of children.

Hartley and Hartley (1952) wrote, "The importance
of communication in the study of social processes would be
difficult to overemphasize. Because communication is the
means by which one person influences another, and is in
turn influenced by him, it is the actual carrier of social
processes. It makes interaction possible" (Hartley &
Hartley, 1952, p. 16). They discussed further the function
of communication to an individual, "(1) it patterns the
world about him, (2) it defines his own position in rela-
tion to other people, and (3) it helps him to adapt suc-
cessfully to his environment" (Hartley & Hartley, 1952, p.
19). Communication was recognized as a critical influen-
tial factor in the development of a sense of self and in
the development of an awareness of the standards and
values of his group. These authors also considered com-
munication to be an influential force in the cohesiveness
of the group.

Communicative interaction was viewed as an "import-
ant indicator of the underlying relationship between indi-

viduals" by Moutakas, Sigel, and Shalock (1956, p. 109).
They felt that observation is the "most appropriate tech-
nique" for descriptive studies of interaction.

In their child development text, Martin and Stend-
ler (1959) discussed various processes and phases of social-
ization of the preschool child. They gave language as "one
of the most important tasks to be accomplished in the
socialization process" (Martin & Stendler, 1959, p. 517).

Bott (1928) studied play activities in a nursery
school using symbols to classify and enumerate types of
action. She found that talking was the "most prevalent
form of social contact both among children and in their
relations to adults" (Bott, 1928, p. 58).

Two groups of nursery school children at the Insti-
tute of Child Welfare at the University of California with
mean ages of 43 and 40.9 months (range 23 to 58 months) were
observed by Robinson and Conrad (1933). They found a corre-
lation of .67 between talkativeness and social contact.

Observation was indicated by Gesell as an approp-
riate technique for studying four-year old children because
of their almost complete freedom to express verbally their
feelings; he described four-year olds as being "transparent
to observation because of their propensity to speak out"
(Gesell, 1940, p. 46). He further described the four-year
old child as possessing powers of generalization and ab-

straction not possessed by younger children.

The social development of girls was compared to the social development of boys by Jersild (1954). He reported that girls develop more rapidly in language abilities than do boys. He said also that girls show more interest in people and social relationships than do boys.

Newcomb (1953) theorizes about communication in a journal article "An Approach to the Study of Communicative Acts." He said that when there is a continuous association and two people communicate about a topic, they become dependent upon each other. One can provide additional information to others about how he perceives the topic as well as providing a basis for social reality. He emphasized that neither relationships nor communication exist in "social and environmental vacuums" (Newcomb, 1953, p. 398).

Although investigators do not always agree on the stage of vocabulary development at the various age levels, Martin and Stendler (1959) concluded "that a child's vocabulary grows slowly at first and then undergoes a rapid increase after his third birthday" (Martin & Stendler, 1959, p. 510). They reported also that a finding of many studies has been that of a high correlation between socioeconomic level and rapidity of language development. Upper socioeconomic level children have been found to have not only larger vocabularies, but also to be able to construct longer

and more "mature" sentences than lower socioeconomic level children of the same age.

Social Relations of Preschool Children

Three to four seems to be an age at which children turn from the solitariness of early childhood to a more social life as a preschooler. Jersild (1954) said, "After the age of three an increase in cooperative play occurs and group activities stretch over longer periods of time" (Jersild, 1954, p. 192). Research was conducted by Beaver (1932) to substantiate that from two to four years of age the number of social contacts among children increased.

Parten (1932-33) reported research conducted by Challman who studied the relationship of several factors including age and friendship. Subjects were children two to four and one-half years old at the Nursery School of the Institute of Child Welfare at the University of Minnesota. She found older children or those over three years of age engaged in more cooperative activity than children under three years.

> Solitary play was most common at two and one-half years, but there was a decided decline in the importance of solitary play at three and again at four years. . . . As children became older, they invariably conversed with one another about their activities and became interested in their associates (Parten, 1932-33, p. 264).

The four-year old is described by Gesell (1940) as more "sophisticated" than the "transitional," "quaint and

naive" (Gesell, 1940, p. 46) three-year old. A child at four "makes a greater number of social approaches and spends more time in social contacts in the play group." He is interested in alibis. "Such interest is social. It denotes an awareness of the attitudes and opinions of others" (Gesell, 1940, p. 52). Experimental evidence that "the four-year old shows the beginning of group influence by being conscious of other's opinions" is discussed by Hurlock (1956a, p. 261).

Investigations by Merei (1944) verify that a strong group tradition developed in nursery school children who were given the opportunity to form a cohesive group. This group tradition of behavior had more effect on the routine of the children in a group than did a new child with strong leadership traits who entered the cohesive group.

Lippitt, Polansky, and Rosen (1952) conducted a field study concerning social influence in groups of children. Results indicated that "probably the acquiring and maintaining of some degree of social power has a positive valence for every member of the group" (Lippitt, Polansky, & Rosen, 1952, p. 61).

According to Hurlock (1956a), friends become very important to a child at approximately three and one-half years of age. She said that "the child who finds himself unacceptable to the group will go to any length to win the

attention and approval of the group" (Hurlock, 1956a, p. 260).

Later Hurlock (1964) wrote,

> While the young child wants attention at any price, the older child discovers that attention is not always favorable. Being noticed and being admired are ego-satisfying; being noticed and being scorned or ridiculed are ego-deflating. Consequently the older child becomes interested in what is 'right' and 'appropriate.' He wants to win the approval of others just as he wants their attention (Hurlock, 1964, p. 636).

Thus Hurlock (1964) believed that because of this desire for group approval a child learns to be more selective in his clothing.

Clothing

From an early date to the present, clothing has been associated with the behavior of children. As early as 1920, Cundiff wrote that "Shyness, which plays such a large part in a child's behavior, often has very close connection with personal appearance and clothing" (Cundiff, 1920, p. 38).

In their clothing reference, Kenyon and Hopkins (1937) included a brief section on children's clothing. They discussed primarily the proper fit of a child's clothing. However, they also mentioned that "children should never be conscious of their clothing" (Kenyon & Hopkins, 1937, p. 257).

Young (1938) speculated that a child would feel at ease if his clothing agreed with his ideas about himself or

what he would like to be, and if his clothing were approved
by his peer group. "If clothing is inconsistent with his
ideas of himself or the role he wishes to fill, the asser-
tive child reacts against it, and the weak one succumbs.
. . . Children oddly and unattractively dressed are self
conscious and often . . . develop a retiring personality"
(Young, 1938, p. 67). Peer approval in clothing also is
viewed important by Johnson (1945). She said that giving
a child a voice in the selection of his clothing is "an in-
direct means of securing the approval of his playmates as
he knows better than any adult what his friends admire"
(Johnson, 1945, p. 7).

Hurlock wrote (1956b) that at the age of three,
clothing becomes a source of pleasure, pride, and security.
She stated that "children are not style-conscious, nor does
it trouble them . . . if their clothes are out of date"
(Hurlock, 1956b, p. 311). She said that what does disturb
a child is "having other children ridicule him because his
clothes are different from theirs. If they do not make fun
of him, he is equally sensitive about being asked why he
'has to wear' . . . clothes . . . different from theirs"
(Hurlock, 1956b, p. 317).

In a college textbook on clothing selection Chambers
and Moulton wrote, "The role of children's clothing in the
child's life assumes added importance because of its rela-
tion to his growth and development. Clothing can affect his

emotional adjustment" (Chambers and Moulton, 1961, p. 443).
The child begins to learn to conform to society in infancy
and clothing is important in this adjustment. They stated
that children become aware of clothing at different ages,
but even a small child may know what he likes in clothing
as well as how he wants to look, which indicates a desire
to be considered "well dressed" by his friends.

Appearance and clothing were considered important in
social interaction by Stone (1962). He equated appearance,
which includes clothing with verbal symbols in most inter-
actional processes. He postulated and supported with em-
pirical data the following hypotheses:

(1) Every social transaction must be broken
down into at least two analytic components or
processes--appearance and discourse; (2) appear-
ance is at least as important for the establish-
ment and maintenance of the self as is discourse;
(3) the study of appearance provides a powerful
lever for the formulation of a conception of the
self . . . ; and (4) appearance is of major im-
portance in every stage of early development of
the self (Stone, 1962, p. 87).

He pointed out that "value words" are most often used to
describe clothing, thus illustrating its value to the indi-
vidual. Clothing also helps to set a person's "moods."

More recently Hurlock (1964) has written of children
and their clothing:

The child learns the cultural values associated
with clothing as he learns other cultural values--
through identification with parents and other mem-
bers of the social group and through imitation of
the expressed values. If his parents and members

of the peer group regard clothing as an important status symbol, so will he; if they consider clothing important because of its aesthetic or utilitarian value, he will also. Furthermore, when he learns that physical attractiveness is an asset to social acceptance, he discovers that clothing is an even greater asset (Hurlock, 1964, p. 634).

He may want to choose different colors, but aside from that, the more closely his clothing resembles that of his friends, the better he likes it (Hurlock, 1964, p. 637).

When it is important for him to win social acceptance, his interest in clothes will be in proportion to the role they play in winning this acceptance. When, on the other hand, it is important for him to be like his agemates (sic), his interest in clothes will be in proportion to their ability to make him look like them (Hurlock, 1964, p. 638).

Ryan (1966) quotes Hurlock as having written in 1943:

The reason the child's clothing has such a profound effect on his behavior is that he identifies himself with his clothes and looks upon them as a part of himself. This tendency is even more pronounced than in adults because the child lacks the consciousness of self as an individual that the adult possesses (Ryan, 1966, p. 211).

In her book relating human behavior and clothing, Ryan (1966) said that, "The world of the preschooler is widening and he is beginning to be aware of others" (Ryan, 1966, p. 210). He realizes very soon that he can attract the attention of others by clothing. Ryan (1966), Chambers, and Moulton (1961) concurred that comfortable clothing is an important factor to a preschool child. However, Ryan stated that "becomingness," "appropriateness," and "conformity" of clothing do not interest the preschool child. She said that

the preschooler is usually not interested in whether his clothing conforms to the type that other children are wearing, because at this preschool age he does not belong or wish to belong to a peer group.

Summary of the Literature

Various experiments have supported the hypothesis that within a cohesive group an individual who deviates concerning some relevant issue will create forces which act on the deviate and others in the group. To reduce these forces and restore uniformity, the deviate will either change himself or leave the group and/or others in the group will change themselves or reject the deviate. Another hypothesis which has received support is that opinion uniformity within a group leads to a more cohesive group. Thus, if children in a nursery school group share similar opinions concerning the type of clothing they wear, they could be considered to be a cohesive group. If this is so, then one might also expect that a child wearing deviate clothing would either be rejected by the group or would withdraw from the group.

Communication has developed sufficiently in children by the age of four to fulfill an important purpose in socialization—that of conveying group norms to all group members. Studies have shown that by the age of four years group play and group awareness are significantly greater than at an

earlier age. Studies also have correlated verbal communication with many other forms of social interaction. Thus, it appears that verbal communication can be used as an effective measure of general social interaction.

Other studies have shown females to be more influenced by group norms than males and preschool girls to be further advanced in language development than boys of the same age. This seems to suggest that girls might be more verbal than boys, and girls might also be more sensitive to the clothing change.

There seems to be some disagreement whether wearing clothing similar to peers and having peer's approval of clothing are important to preschool children. This researcher could find no empirical evidence that wearing clothing similar to their peers was important to four-year old children nor that approval of one's clothing by the peer group is important to four-year old children.

III. METHODS AND PROCEDURES

This chapter contains a description of the measurement of social interaction and an explanation of the experimental plan used for this study. In general the following aspects were considered in the order given: (1) methods of measurement of interaction; (2) arrangements for the study; (3) the pretesting; (4) the plan of the experiment; (5) selection of the subjects; (6) experimental clothing; and (7) statistical treatment of the data.

Methods of Measurement of Interaction

The difficulties and the large number of factors that could be considered essential components of social interaction were recognised. After a search of the literature revealed that verbal communication has been most often and successfully used for the measurement of interaction, this method was deemed most appropriate and was selected for use.

Several problems arose in measuring verbal communication. It was necessary for this researcher to be in the room with the children since not all preschools were equipped with observation rooms having one-way mirrors and microphone systems. The use of a tape recorder, which is considered by many authorities a most ideal means for recording

verbal communication was not possible because (1) a tape
recorded conversation would prohibit the determination of
whether children were speaking to the subject or to other
children in the group, and (2) a tape recorder, unless it
had microphones to pick up conversation throughout the en-
tire room, would restrict the movement of the children in
the room.

A record of interaction between the subject and
other children in the preschool was done for all subjects
of the study and recorded by five second intervals on a
grid sheet prepared specifically for this study. (See Ap-
pendix A) Colored code sheets identified the sex of the
children, blue for males and yellow for females. A clock
with a sweep second hand was used for timing.

The symbols used in coding each five second period
were the following:

> $\longrightarrow$ = Subject speaking to another child

> $\longleftarrow$ = Another child speaking to the subject

> $\times$ = No interaction with subject

> $\overset{\mathbf{\cdot}}{\longleftarrow}$ = Two children speaking simultaneously to the
> subject

> $\longleftrightarrow$ = Subject and another child speaking simultan-
> eously.

If the communication pertained to clothing, a five-
second interval would contain also one of the following ad-

ditional symbols:

+ = Complimentary

- = Derogatory

0 = Factual

Thus, one five-second interval might contain $\overset{+}{\longrightarrow}$, or $\overset{0}{\longleftarrow}$, or $\overset{-}{\longleftarrow}$.

If the communication was much shorter than five seconds, such as a single "yes," only half of the five-second block was coded with the appropriate symbol. For example: X⟶ or ⟵X. Short pauses in interaction were not considered in coding; however, the above coding of half-blocks accounted for pauses approximately half the planned time interval.

Subjects were used as their own controls (i.e. using a single subject in two conditions on the same day) so that individual patterns in communication would not affect the data. The researcher also made notes concerning the general pattern of behavior of the subject and the subject's interaction with the other children.

Arrangements for the Study

Four preschools, in Greensboro and Chapel Hill, North Carolina, cooperated in the study. The pretesting was conducted at the University of North Carolina at Greensboro. Schools where experimental data were collected were: First Presbyterian Church, Greensboro; Victory Village, Chapel Hill; and Community Church, Chapel Hill. Cooperation was

obtained in a conference with the director of each school. During this conference an explanation was given of the purposes and objectives of the study and the experimental plan. The directors then discussed the plan with their respective teachers of four-year old groups. After their cooperation was obtained, a sheet of instructions, the plan of the experiment and the purposes and objectives of the study were explained to each teacher. The researcher and the teacher decided jointly how the experimental plan would best fit into the morning activity of the respective preschool so that the experiment would seem a natural part of the morning routine.

The Pretesting

Pretesting the experiment had several purposes: (1) to determine whether children could be persuaded by a nursery school staff member to put on this worn clothing and re-enter the group wearing it; (2) to determine whether the coding form could be used successfully to record interaction of a subject and others in the group; and (3) to determine the reliability of this researcher as the observer.

The pretest was conducted at the University of North Carolina at Greensboro Nursery School. The experimental plan was followed explicitly with one exception, the wet accident was omitted. The child was asked to wear the experimental clothing for a short time because the teacher wanted him to

do so. Nine of the ten children used as "subjects" complied with the request. Thus, it was determined that a child would wear this clothing and would re-enter the playroom wearing it.

A correlation of .77 was obtained between the communicative interaction scores of the researcher and a staff member of the Nursery School of the University of North Carolina at Greensboro.

The pretest revealed that children often take the roles of animals in their play. It was decided that communication in the form of an animal, such as a cat's "meow" either by or to the subject, was coded as interaction.

The Plan of the Experiment

Each preschool participating in the experiment made some provision for an accident with a liquid so that the subject would need to change his clothing. Some preschools had each child bring an extra set of clothing from home to keep in the child's locker so he would have a change if an accident occurred. Others kept extra clothing which was the property of the preschool and was used for a change in event of an accident. These provisions provided a natural setting for an experiment which involved a change in a child's clothing; however, the experimental clothing was used rather than the clothing kept at the nursery school.

The experiment was conducted between 8:30 and 10:30

a.m. on twelve days from January 31, 1967, to February 18, 1967. The order of the three preschools was rotated so that the experiments conducted at a single school would be four days apart.

The experiment consisted of two phases--Situation I and Situation II. The situations were counterbalanced, so that for two days at each preschool Situation I preceded Situation II and two days at each preschool Situation II preceded Situation I. Sex was considered in counterbalancing the situations. Thus, at each preschool two girls and two boys participated in the experiment; for one girl and one boy, Situation I preceded Situation II and for the other girl and boy Situation II preceded Situation I.

Situation I consisted of observing and recording the interaction of the subject with other four-year old group children for thirty minutes. This observation took place during regular free play time. Although the exact time varied, in each case, observation began as soon as the subjects and a majority of the other children arrived at the school. During Situation I all subjects wore their regular play clothing which they had worn to the preschool and the children were in free play. The parents were not informed of the days on which the experiment would be conducted, nor whether their child had been selected as an experimental subject. Situation I observation was important because it

gave a base rate of the subject's interaction with others, his speed of communication, and his pattern of speech.

For Situation II a preschool staff member arranged for an "accident" so that the subject's play clothing became wet. The type of accident was determined by the preschool, depending upon their usual activities and upon the interests of the child who had been randomly selected for observation on that day. Although the accidents varied, the preschool staff member always explained that it was not really the child's fault. The staff member usually told the child he must change clothing because he "might catch a cold." At this time, the staff member took the child from the play room and changed his regular play clothing to experimental clothing. If a child had extra clothing at the school, the staff member explained that she could not find the clothing. The subject was then told by the staff member that until his clothing dried he could use the (experimental) clothing supposedly kept by the preschool for such occasions. The accident was treated lightly by the staff members as "just one of those things which happen often."

When the subject re-entered the room wearing experimental clothing, observation and recording of interaction for Situation II began and continued for thirty minutes. After thirty minutes, a preschool staff member told the subject that his play clothing was dry and he was helped to

change into the play clothing he had worn to the school. (If the subject's play clothing had not dried, it was ironed dry so that it would be ready for him to put on.)

Observations for Situation II always took place inside the playroom, because the plan was to have the experimental clothing visible to the other children. However, observation for Situation I was not restricted to indoor play but sometimes included outdoor free-play activities.

Subjects were taken from the playroom to change from play to experimental clothing. The place to which they were taken was that normally used for such purposes at each school.

Selection of the Subjects

Children in four-year old preschool groups were used for the study to maintain a natural, non-experimental atmosphere. From these groups containing from sixteen to twenty children, twelve subjects were selected randomly. Four children, two boys and two girls, were randomly selected in each of the three preschool four-year groups by the use of a table of random numbers. Each preschool group of males and females was assigned code numbers beginning with 00, according to an alphabetical listing of surnames. In each school, it was necessary to delete the names of one or two children. Reasons for the deletions were: (1) parental permission not granted, (2) the teachers asked that extremely shy and backward children not be included, and (3) the

teachers asked that children who had made rather slow progress with certain problems not be included. Alternates also were randomly selected in the event that a child was absent on the day he was to be the subject.

Letters explaining the experiment were sent to the parents of each of the children enrolled in each of the preschool four-year old groups. (See Appendix B) The letter presented an explanation of the experiment, asked for permission for the child to be a subject if selected, and asked that no discussion of the study be made within hearing distance of the child.

Experimental Clothing

Garments used as experimental clothing were collected from used clothing stores and from donators in Chapel Hill, North Carolina. An advertisement was placed in the Chapel Hill Weekly requesting clothing in the specific sizes needed.

The experimental clothing was selected to be different from the regular play clothing of the children involved in the study. An effort was made to select garments that were ill-fitting, faded, spotted, torn, ripped, wrinkled, or had missing buttons, partially ripped hems, and other visible signs of wear.

Statistical Treatment of the Data

The data were tabulated, analyzed statistically by the methods described below, and the statistical level of significance was set at the .05 level. Differences in Situation I and Situation II for (1) the number of verbal contacts made by the subject; (2) the number of verbal contacts made to the subject; (3) the average length of contact; (4) the total communicative interaction (total number of contacts made to and by the subjects times the length of the contacts); and total interaction data for the first ten minutes and the final ten minutes of Situation II were all analyzed by t tests. The direction of contacts (whether complimentary, derogatory, or factual) in Situation I and Situation II were analyzed by chi square. Analysis of variance was used to determine whether a difference existed between sexes in Situation I and Situation II.

IV. FINDINGS AND DISCUSSION

The findings will be presented under the following topics: (1) the sample; (2) communicative interaction for the total group; (3) a comparison of the communicative interaction for the first ten minutes and the final ten minutes of Situation II; (4) a comparison of the communicative interaction of boys and girls; and (5) remarks made concerning clothing. The discussion includes the general behavior of the child and comments made by the teachers. The discussion and presentation of the findings in this study are limited to the sample used, the statistical analyses performed, and the author's understanding and interpretation of the literature and data.

Findings

The Sample

Twelve children, two boys and two girls from each of three preschools, were subjects for this study. All were enrolled in four-year old groups. During a single morning, a subject was observed in two situations, each thirty minutes in length: (1) Situation I, he was observed in his regular play clothing which he had worn to the preschool; and (2) Situation II, he was observed also in ex-

perimental clothing (ill-fitting, worn clothing which was put on the subject because he was involved in a wet accident). The subject's verbal interaction with others in the group was coded by five-second intervals on a grid sheet prepared specifically for this study (See Appendix A). The children were not told that the experiment was being conducted.

Communicative Interaction for the Total Group

The t test was used to determine whether the communicative interaction of the total group (males and females combined) differed significantly from Situation I to Situation II for the following areas: (1) the number of times a subject spoke; (2) the length of speaking time in minutes for the subject during the thirty minute observation period; (3) the number of times another child in the group spoke to a subject; (4) the length of speaking time in minutes for all children addressing the subject; and (5) the total communicative interaction, which is the total number of contacts by a subject multiplied by length of time, plus the number of contacts to a subject multiplied by length of time (See Table 1, page 34, and Appendixes C and D).

Comments by subject. The number of times subjects spoke ranged from 8 to 87 in Situation I and from 1 to 56 in Situation II. The mean for Situation I was 57.75 and for Situation II was 30.08. Computation of a t test gave a

TABLE 1

COMMUNICATIVE INTERACTION OF TOTAL GROUP

	Mean Number of Comments by Subject	Extremes of Range of Number of Comments by Subject
Situation I	57.75	8-87
Situation II	30.08	1-56
t = 4.90*		

	Mean Length of Comments by Subject	Extremes of Range of Length of Comments by Subject
Situation I	6.87	.75-10.82
Situation II	2.72	.16- 4.87
t = 5.82*		

	Mean Number of Comments to Subject	Extremes of Range of Number of Comments to Subject
Situation I	56.67	37-73
Situation II	27.17	6-46
t = 3.09**		

	Mean Length of Comments to Subject	Extremes of Range of Length of Comments to Subject
Situation I	6.24	3.87-8.62
Situation II	2.43	.58-5.37
t = 12.19*		

	Mean Total Communicative Interaction	Extremes of Range of Total Communicative Interaction
Situation I	823.02	167.69-1505.01
Situation II	181.41	3.64- 415.72
t = 6.67*		

*Eleven d.f., two-tailed, greater than .001 level of significance.
**Eleven d.f., two-tailed, greater than .05 level of significance.

$\underline{t}$ value of 4.90. With 11 degrees of freedom, this value is greater than the .001 level of significance.

The mean length of the comments made by subjects in Situation I was 6.78 minutes and in Situation II was 2.72 minutes. Ranges for the length of comments by subjects were .75 to 10.82 minutes in Situation I and .16 to 4.87 minutes in Situation II. The $\underline{t}$ value for length of comments by subjects was 5.82. This value is greater than the .001 level of significance with 11 degrees of freedom.

Comments to subject. The number of comments to subjects also were tabulated. They ranged in number from 37 to 73 in Situation I and from 6 to 46 in Situation II. Means were: (1) Situation I, 56.67; and (2) Situation II, 27.17 comments. When analyzed by a $\underline{t}$ test, a $\underline{t}$ value of 3.09 (11 degrees of freedom) was obtained. This value exceeded the .05 level of significance.

Length of comments to subjects was tabulated by minutes. The mean was 6.24 for Situation I and was 2.43 for Situation II. The length varied from 4.33 to 8.62 minutes in Situation I and from .58 to 5.37 minutes in Situation II. With 11 degrees of freedom, the obtained $\underline{t}$ value of 12.19 is significant at the .001 level.

Total communicative interaction. The total communicative interaction was computed also by a $\underline{t}$ test. The mean total communicative interaction for Situation I was

832.02 and for Situation II, 181.41. Ranges were 167.69 to 1505.01 for Situation I and 3.64 to 415.72 for Situation II. The t value of 6.67 was obtained and is significant at the .001 level, with 11 degrees of freedom.

A Comparison of the Communicative Interaction for the First and Final Ten Minutes of Situation II

There was no significant difference between the total interaction for each subject during the first ten minutes of Situation II and during the final ten minutes of this Situation. The range of total interaction for the first ten minutes was .08 to 78.02 and for the final ten minutes, .66 to 164.87 (See Table 2 and Appendix E). Although mean interaction for the first ten minutes of Situation II was 18.03 and for the final ten minutes, 46.01, a large standard error (203.41) prevented obtaining significance of the difference between these means.

TABLE 2

INTERACTION OF FIRST AND FINAL TEN MINUTES--SITUATION II

	Interaction in First Ten Minutes	Interaction in Final Ten Minutes
Mean	18.03	46.01
Extremes of Range	.08-78.02	.66-164.87

t = 1.65, 11 d.f., not significant

A Comparison of the Communicative Interaction of Boys and Girls

The communicative interaction of boys was compared to that of girls by an analysis of variance. Data in this section are presented by sex groupings, and then the analysis of variance is discussed.

Communicative interaction of girls. The communicative interaction of girls was tabulated for both situations to show: (1) the total number of comments made by female subjects; (2) the total length in minutes of each female subject's comments; (3) the total number of comments made to female subjects; (4) the total length in minutes of comments made to female subjects; and (5) total communicative interaction of female subjects. Table 3, page 38, and Appendixes F and G summarize these data.

Comments by female subjects. The range for the number of comments made by female subjects was 8 to 73 during Situation I and 1 to 53 during Situation II. Means were: Situation I, 52.83 and Situation II, 24.83.

For total length in minutes of comments made by female subjects, the range for Situation I was .75 to 8.16 minutes, with a mean of 5.66 minutes. For Situation II, the range was .16 to 4.33 minutes with a mean of 2.21 minutes.

Comments to female subjects. The mean number of comments made to female subjects was 50.33 for Situation I

TABLE 3

COMMUNICATIVE INTERACTION OF FEMALES

	Mean Number of Comments by Subject	Extremes of Range of Number of Comments by Subject
Situation I	52.83	8-73
Situation II	24.83	1-53

	Mean Length of Comments by Subject	Extremes of Range of Length of Comments by Subject
Situation I	5.66	.75-8.16
Situation II	2.21	.16-4.33

	Mean Number of Comments to Subject	Extremes of Range of Number of Comments to Subject
Situation I	50.33	37-73
Situation II	20.00	6-36

	Mean Length of Comments to Subject	Extremes of Range of Length of Comments to Subject
Situation I	5.15	3.87-7.00
Situation II	1.76	.58-2.77

	Mean Total Communicative Interaction	Extremes of Range of Total Communicative Interaction
Situation I	634.31	167.69-1007.04
Situation II	120.41	3.64- 295.43

and 20.00 for Situation II. Numbers of comments made to subjects ranged from 37 to 73 in Situation I and from 6 to 36 in Situation II.

For the total length in minutes of comments made to females, the means were 5.15 minutes for Situation I and 1.76 minutes for Situation II.

Total interaction of female subjects. Total interaction means were 634.31 for Situation I and 120.41 for Situation II. Total interaction scores for female subjects ranged in Situation I from 167.69 to 1007.04 and in Situation II from 3.64 to 295.43.

Communicative interaction of boys. The communicative interaction for boys was tabulated in the same manner as for the girls of the study. For each situation the following tabulations were made; (1) the total number of comments made by male subjects; (2) the total length in minutes of each male subject's comments; (3) the total number of comments made to male subjects; (4) the total length in minutes of comments made to male subjects; and (5) the total communicative interaction of male subjects. The preceeding tabulations are summarized in Table 4, page 40, and Appendixes H and I.

Comments by male subjects. The mean number of comments made by male subjects in Situation I and Situation II were 62.67 and 35.33, respectively. Comments made by male

TABLE 4

COMMUNICATIVE INTERACTION OF MALES

	Mean Number of Comments by Subject	Extremes of Range of Number of Comments by Subject
Situation I	62.67	36-87
Situation II	35.33	16-56

	Mean Length of Comments by Subject	Extremes of Range of Length of Comments by Subject
Situation I	7.90	4.25-10.62
Situation II	3.23	1.87- 4.87

	Mean Number of Comments to Subject	Extremes of Range of Number of Comments to Subject
Situation I	63.00	50-70
Situation II	34.33	21-46

	Mean Length of Comments to Subject	Extremes of Range of Length of Comments to Subject
Situation I	7.34	6.00-8.62
Situation II	3.09	2.37-5.37

	Mean Total Communicative Interaction	Extremes of Range of Total Communicative Interaction
Situation I	1011.72	479.88-1505.01
Situation II	242.40	80.52- 415.72

subjects ranged from 36 to 87 in Situation I and from 16 to 56 in Situation II.

Means for total minutes of speaking time for males were 7.90 minutes for Situation I and 3.23 minutes for Situation II. The ranges were 4.25 to 10.62 minutes in Situation I and 1.87 to 4.87 minutes in Situation II.

Comments to male subjects. The range of comments made to male subjects was 50 to 70 in Situation I, and 21 to 46 in Situation II. Mean numbers of comments to males were 63.00 for Situation I and 34.33 for Situation II.

The mean length of comments made to male subjects for Situation I was 7.34 minutes and for Situation II was 3.09 minutes. The length of comments in Situation I ranged from 6.00 to 8.62 minutes and in Situation II from 2.37 to 5.37 minutes.

Total interaction of males. Ranges of total interaction of males were 479.88 to 1505.01 for Situation I, with a mean of 1011.72, and 80.52 to 415.72 for Situation II, with a mean of 242.40.

Analysis of variance for sex effect. An analysis of variance, designed especially for these data, was performed to test for a sex effect in the total communicative interaction. The following table gives these data:

TABLE 5

ANALYSIS OF VARIANCE FOR SEX EFFECT

Source	Degrees of Freedom	Sum of Squares	Mean Square	F
Mean*	1	5,999,040		
Sex x Situation	1	2,095,174		
Interpersonal Variation Within Sexes	10	1,042,761		
Sex Differences	1	93,346	93,346	1.8642
Situation (treatment) Differences	1	764,711	764,711	15.2724
Error (Unpredicted variation)	10	500,712	50,071	
Total	24	10,495,744		

*Mean is included in this special analysis of variance, although it is usually omitted. This gives a total of 24 degrees of freedom, rather than the usual 23.

This design tested both the differences between Situation I and Situation II for the total group, which was greater than the .01 level of significance, and the sex effect, which was not significant.

Remarks Made Concerning Clothing

Remarks made by subjects which concerned clothing were noted and tabulated as: (1) complimentary, (2) derogatory, or (3) factual. No complimentary remarks concerning clothing were made by or to the subjects in either Situation I or Situation II; therefore, the complimentary remarks

category was eliminated. The purpose of tabulating remarks made about clothing in Situation I was to determine a base level of the number of remarks concerning clothing. All clothing remarks made to and by the subjects in Situation I occurred when Situation I followed Situation II and concerned the change from experimental clothing back to play clothing. Examples of these remarks were, "Look, I have my clothes back on" or "My clothes got dry and I have them on." For this reason, remarks actually made about clothing in Situation I were not included in the tabulation, and the clothing remark categories in Situation I received a zero rating.

Table 6, page 44, (see also Appendix J) shows the number, the direction, and the length of time of remarks made concerning clothing in Situation II. The mean number of factual remarks made by and to subjects about clothing was .60, with a range of 0 to 3. The length of factual remarks ranged from 0 to .25 minutes, with a mean of .05 minutes. The mean number of derogatory remarks made by and to subjects was 1 with a range of 0 to 6. The mean length of derogatory remarks made concerning clothing to and by subjects was .10 minutes and the length ranged from 0 to .65 minutes.

A chi square analysis was performed to determine whether the number of factual and derogatory remarks in-

TABLE 6

DIRECTION OF REMARKS CONCERNING CLOTHING--SITUATION II

	Number of Factual Comments	Length of Factual Comments
Mean	.60	.054
Extremes of Range	0-3	0-.25

	Number of Derogatory Comments	Length of Derogatory Comments
Mean	1	.10
Extremes of Range	0-6	0-.65

	Total Factual Interaction[1]
Mean	.096
Extremes of Range	0-.75

	Total Derogatory Interaction[2]
Mean	.346
Extremes of Range	0-3.43

[1]Total factual interaction = number of factual remarks made by subject x length + number of factual remarks made to subject x length.

[2]Total derogatory interaction = number of derogatory remarks made by subject x length + number of derogatory remarks made to subject x length.

creased significantly from Situation I to Situation II.

The observed value of zero for the number of factual remarks for Situation I and the observed value of 8 for factual remarks in Situation II yielded an expected value of 4. To perform the chi square analysis, the expected value must be at least 5. For this reason, the factual and complimentary remark categories were combined to include total remarks made about clothing in Situation II. Thus, the total number of remarks concerning clothing in Situation I was 0, and the total number of clothing remarks in Situation II was 20. These values of 0 and 20 were used in the chi square analysis. This analysis yielded a chi square value of 20 with 1 degree of freedom. This value is significant at the .01 level.

Total interaction (number of remarks times length of each) means were .096 for factual remarks and .346 for derogatory remarks in Situation II.

Comments of children concerning the experimental clothing occurred mainly when a subject was asked if the experimental clothing that he was wearing was his own clothing. At this point, the subject usually explained that his clothing had become wet and he was wearing this clothing until his dried. In two instances, the child who asked the subject if the experimental clothing was the subject's said with relief, "I'm glad that is not your dress

(or shirt), because it is torn (or it has spots on it)."
One child announced when he returned to the playroom that
these were not his clothes and he was wearing these "rotten"
clothes because his were wet.

Discussion

In the case of every subject, the change from their
own play clothing to the experimental clothing, caused a
decrease in their social interaction with others in their
preschool group. Many of the subjects seemed shy and
rather embarrassed when they returned to the play room
wearing the experimental clothing. Two children sucked
their thumbs while wearing experimental clothing and they
did not do this during Situation I. Many of the subjects
spent time looking at the experimental clothing, particu-
larly when there was a torn place in the front of the gar-
ment or when there was a piece of trim partially torn off
the front of a girl's dress. When mirrors were available,
the subjects, dressed in experimental clothing, usually
looked at themselves in these mirrors. Some children went
back to the group and the activity in which they had been
participating when the accident occurred, but were observed
to be less enthusiastic than prior to the clothing change.
Several spent much time alone in looking at a book or in-
volved themselves in some activity that did not concern the
other group members. Several children ignored others who

came to talk to them.

When the experimental clothing was noticed and/or criticized by other group members, the child's explanation that this was not the subject's clothing seemed to satisfy any curosity about the experimental clothing. Rejection of the subject by other group members was not apparent. Rather, it seemed that the subjects chose to isolate themselves. However, it is possible that because many subjects seemed to withdraw from the group, that others were not near enough to them to notice the experimental clothing or have the opportunity to reject the subject.

Several of the subjects spoke to the teachers about the clothing. They asked if their own play clothing was dry yet or why this experimental clothing item was torn.

One child (subject 11) cried when the pants with spots were put on him. Because of this, the experimental pants were removed and his own slightly damp play pants were put back on him. He did wear the shirt provided for Situation II and, therefore, was included in the tabulations.

Teachers made several observations and reported these to the researcher, so that they might be included in the discussion of the subject's reactions to the experimental clothing. One teacher observed that one child was much more meek in the experimental clothing than he ordinarily was in his own play clothing, and that he became more active

when he put his own clothing back on. Teachers reported that several children displayed an obvious relief when they were told that their own clothing was dry and was ready to wear again. Various signs of nervousness were noted by two of the teachers. Two of these signs were that a subject held the teacher's hand tightly when returning to the play-room wearing experimental clothing and another subject talked incessantly about "anything and everything" with the exception of the experimental clothing when he was taken to change back into his own clothing. One teacher stated that one child, who had been a subject on the previous day, commented about the clothing he had worn when his became wet and said that the clothing "didn't feel right."

Although the communicative interaction during the first ten minutes of Situation II was not significantly less than the communicative interaction of the final ten minutes, some subjects did seem somewhat more withdrawn from the group at the beginning of the experimental clothing situation than toward the end of this situation.

The literature indicated that girls were more aware socially and further developed in language ability than boys of the same age. These data indicate that communicative interaction rates of boys exceed those of girls; however, there was not a significantly greater decrease in communication from Situation I to Situation II for either boys or girls.

V. CONCLUSIONS

The following conclusions may be drawn in relation
to the hypotheses stated:

Hypothesis 1. There will be a change in social in-
teraction among four-year olds when selected children change
from play clothing to experimental clothing.

Communicative interaction scores were analyzed by
t tests. It was found that communicative interaction scores
of (1) the number of verbal comments made by the subject
and the total length of these comments; (2) the total length
of comments made to subjects; and (3) the total communica-
tive interaction between subjects and others in the group
decreased significantly from Situation I to Situation II at
the .001 level. The number of verbal comments made to sub-
jects in Situation II was significantly lower than those
made to subjects in Situation I at the .05 level.

Therefore, this hypothesis was confirmed and it is
concluded that experimental clothing did decrease social
interaction of four-year old children studied. The conclu-
sion was made that the wearing of experimental clothing
causes these children to make and receive fewer verbal con-
tacts with other group members.

Hypothesis 2. There will be a difference in the
amount of social interaction during the first ten minutes
of Situation II and the amount of social interaction dur-

ing the final ten minutes of this situation.

A t test analysis of the social interaction during
the first and final ten minutes of Situation II did not in-
dicate a significant difference.

Hence, this hypothesis was not confirmed, and the
conclusion drawn is that social interaction of the four-
year old children studied did not change significantly
after they had worn the experimental clothing for twenty
minutes.

Hypothesis 3. Boys as a group differ from girls as
a group in the degree to which their social interaction
varies when wearing play clothing and when wearing experi-
mental clothing.

There was no significant difference between boys
and girls in the change in social interaction when subjects
changed from play to experimental clothing.

This hypothesis was not confirmed, and it is con-
cluded that the boys and girls in the preschools studied
were equally affected by the change from play to experimen-
tal clothing.

Hypothesis 4. There is a difference in the number
of complimentary, derogatory, and factual remarks made about
clothing in Situation I and Situation II.

There were no complimentary remarks made either by
or to subjects in Situation I or Situation II; therefore,
this was eliminated from any further consideration.

There were no remarks, of any direction, made to or

by subjects concerning clothing in Situation I. Because of these zero values in the chi square, the expected values were too small to perform a chi square analysis separately for factual and derogatory remarks in Situation I and Situation II. A chi square analysis of the total remarks about clothing, factual plus derogatory remarks, differed significantly from Situation I to Situation II at the .01 level.

As stated, Hypotheses 4 could not be tested and hence was modified. The modified hypothesis that there would be a difference in the total number of remarks made about clothing in Situation I and Situation II was confirmed with this sample.

VI. SUMMARY AND RECOMMENDATIONS

Summary

Objective of the Study

This study was designed to determine whether clothing
of four-year olds is important enough to affect social rela-
tions with other children. Although the literature theo-
rizes concerning children's interactions with others and
their feelings concerning clothing, very little evidence is
given to support these hypotheses.

The Sample

The procedures for the change of clothing, for ob-
servation, and recording of the data were pretested at the
Nursery School of the University of North Carolina at
Greensboro. The pretesting indicated that four-year old
children would wear the experimental clothing and that the
method of coding interaction was appropriate as an objective
measure of social interaction. During this pretesting the
researcher became more proficient in observing four-year
old children and in recording the data on the code form pre-
pared for the study.

Twelve subjects were selected from three preschools
in Chapel Hill and Greensboro, North Carolina. Four sub-

jects were randomly selected from the roll of the four-year group at each preschool; however, in each case one or two names were eliminated from the list before the random selections were made. The deletions were determined by parents and teachers of the preschool children in participating groups. Two girls and two boys from each of the three preschools were subjects.

Measurement Taken

Each child selected to be a subject was observed for thirty minutes in his regular play clothing which he had worn to the preschool, Situation I; and for thirty minutes in experimental clothing provided especially for this study, Situation II. The experimental clothing was torn, faded, spotted, or had other visible signs of wear. A need for the change from regular play clothing to experimental clothing was created by a wet accident. Every attempt was made to keep the accident and the change of clothing a natural occurrence in the preschool routine.

During this entire hour of observation, the children were in free play. For both thirty minute periods the following measures were taken on a grid sheet prepared specifically for this study: (1) the number of times a subject spoke to another child; (2) the length of the comments by the subject marked on the grid sheet by five-second intervals, but

calculated by minutes; (3) the number of times another child
spoke to the subject; and (4) the length of the comments to
the subject, also marked on the grid sheet by five-second
intervals, but calculated by minutes. Total communicative
interaction was determined by multiplying the number of com-
ments by the total length in minutes. If a comment concerned
clothing, it was coded as being either complimentary, derog-
atory, or factual.

Statistical Analysis

Several t tests were used to determine significant
differences in communicative interaction between the play
clothing situation and the experimental clothing situation,
and the first and final ten minutes of the experimental
clothing situation.

Chi square analysis was used to determine whether
the number of factual, derogatory, and complimentary remarks
differed significantly from Situation I to Situation II.

Analysis of variance was used to determine whether
boys as a group differed from girls as a group in the change
in social interaction which occurred when a subject was
changed from play clothing, Situation I, to experimental
clothing, Situation II.

Interpretation of Statistical Analysis

The following interpretation is limited to the sam-

ple selected for this study, the statistical analyses per-
formed, and the researcher's understanding of the analyses
of the data.

In the case of every subject, there was less social
interaction when wearing experimental clothing than when
wearing play clothing. For the following measures of social
interaction, Situation II was significantly less than Situa-
tion I: (1) the number of comments made by the subject;
(2) the length in minutes of comments made by the subject;
(3) the number of comments made to subjects; (4) the length
in minutes of comments made to subjects; and (5) total social
interaction, the number of comments made by subjects multi-
plied by the length plus the number of comments made to
subjects multiplied by the length.

A significant difference in total social interaction
for the first ten minutes and the final ten minutes that the
subject wore the experimental clothing, Situation II, was
not found.

No remarks were made concerning clothing to or by
the subject in the regular play clothing situation, nor were
any complimentary remarks made concerning clothing to or by
the subject in the experimental clothing situation. There
were significantly more remarks made about clothing, derog-
atory remarks plus factual remarks, in Situation II than in
Situation I.

The change of social interaction from Situation I to Situation II for boys was not significantly different from the change in social interaction for girls.

The results seem to indicate that four-year old children are aware of their clothing and the clothing of other children. Clothing appears to be important enough to this age child that a change from clothing similar to his peers to clothing much more worn and tattered than theirs leads to a marked decrease in social interaction with other children. Boys and girls appear to be equally affected by being dressed in clothing different from their peers.

Recommendations

Recommendations for Use of the Present Study

It is hoped that some of the results of this study will be useful to the following people in understanding the influence of clothing on social interaction of four-year old children: (1) teachers and students of preschool children; (2) parents of preschool children; and (3) teachers and students in the area of clothing and textiles.

1. The results indicating how the children felt about this type of experimental clothing might be useful to teachers and students in understanding the reaction of children whose clothing is different from that of his group.

2. It is hoped that some of the results might in-

dicate to parents of preschool children that four-year old children are aware of their clothing and that clothing is important to this age group.

3. It is hoped that teachers and students of clothing and textiles will be helped to understand the personal and interpersonal reactions of a preschool child if his clothing is unlike that of his group.

4. For those interested in the effect of clothing on individuals, this study seems to provide evidence that four-year old children are both aware and interested in clothing.

Recommendations for Further Study

1. Since the number of children selected for this study was small, it is recommended that the study be replicated using a larger number of children.

2. It is recommended that various ages of preschool children be studied to determine, if possible, the age at which clothing becomes important enough to preschool children to affect their social interaction.

3. A study could be conducted with a number of different types of experimental clothing. For instance, experimental clothing might be a costume; an extremely "dressy" dress for girls or a suit and tie for boys; or an extremely new and very different fashion for either boys or girls.

4. It is further recommended that a similar study be conducted with children from two different socioeconomic levels to determine whether the subjects of the two socioeconomic levels would respond differently using the same types of experimental clothing.

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APPENDIX

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APPENDIX A

Subject number _____ Date _____ Situation _____ Time _____

Minutes of observation

COMMENTS :

APPENDIX B

Form Letter to Parents of Children
Enrolled in Preschools

University of North Caro-
lina at Greensboro
School of Home Economics
January 24, 1967

Dear Mr. and Mrs. _____,

In an effort to determine the affects of clothing on
social interaction of four-year old children, a study is
being conducted at _____.

We are asking your permission for _____
to participate in this study. Each child selected will be
asked to wear experimental clothing for thirty minutes on
a particular day during January and February. This clothing
will in no way be harmful to your child, nor will he be
forced to participate.

We prefer the study remain anonymous to the children.
For this reason, if your child discusses with you the fact
that he(she) was asked to wear relatively worn clothing,
please treat this casually and please do not disclose the
nature of the study to him(her).

We will sincerely appreciate your cooperation in
conducting this study. If you would like, we will be happy
to inform you of the results. Thank you very much.

Sincerely,

Lynora P. Stiles
Graduate Student, UNC-G

_____
Director of Preschool

APPENDIX C

COMMUNICATIVE INTERACTION--SITUATION I

Subject Number	No. of Comments by Subject	Length of Comments by Subject	No. of Comments to Subject	Length of Comments to Subject	Total Communicative Interaction
00	50	4.95	41	3.87	406.17
01	43	5.00	44	4.33	405.52
02	36	4.83	50	6.12	479.88
03	80	7.04	73	6.08	1007.04
04	66	9.27	64	8.62	1163.50
05	8	.75	37	4.37	167.69
06	63	8.04	49	5.25	763.77
07	73	8.16	58	7.00	1001.68
08	87	10.83	70	8.04	1505.01
09	42	4.25	64	7.12	634.18
10	58	7.58	68	8.12	991.80
11	87	10.62	62	6.00	1295.94
Sum	693	81.32	680	74.92	9876.18
Mean	57.75	6.78	56.67	6.24	823.02
Extremes of Range	8--87	.75--10.83	37--73	3.87--8.62	167.69--1505.01

APPENDIX D

COMMUNICATIVE INTERACTION--SITUATION II

Subject Number	No. of Comments by Subject	Length of Comments by Subject	No. of Comments to Subject	Length of Comments to Subject	Total Communicative Interaction
00	19	1.79	18	1.50	61.01
01	41	4.33	26	2.77	249.55
02	16	1.87	21	2.41	80.53
03	22	1.91	18	1.95	77.12
04	41	3.75	46	5.37	400.77
05	1	.16	6	.58	3.64
06	13	1.16	16	1.29	35.72
07	53	3.91	36	2.45	295.43
08	56	4.87	44	3.25	415.72
09	24	2.54	27	2.37	124.95
10	49	4.00	39	2.62	298.18
11	26	2.33	29	2.54	134.24
Sum	361	32.62	326	29.10	2176.86
Mean	30.08	2.72	27.17	2.43	181.41
Extremes of Range	1--56	.16--4.87	6--46	.58--5.37	3.64--415.72

APPENDIX E

INTERACTION OF FIRST AND FINAL TEN MINUTES--SITUATION II

Subject Number	Interaction in First Ten Minutes	Interaction in Final Ten Minutes
00	28.77	3.34
01	4.75	118.34
02	2.50	21.14
03	4.96	22.21
04	2.70	164.87
05	.08	.66
06	10.45	6.65
07	27.15	26.24
08	38.75	14.15
09	5.38	64.44
10	78.02	52.04
11	12.82	58.08
Sum	216.33	552.16
Mean	18.03	46.01
Extremes of Range	.08--78.02	.66--164.87

APPENDIX F

COMMUNICATIVE INTERACTION OF FEMALES--SITUATION I

Subject Number	No. of Comments by Subject	Length of Comments by Subject	No. of Comments to Subject	Length of Comments to Subject	Total Communicative Interaction
00	50	4.95	41	3.87	406.17
01	43	5.00	44	4.33	405.52
03	80	7.04	73	6.08	1007.04
05	8	.75	37	4.37	167.69
06	63	8.04	49	5.25	763.77
07	73	8.16	58	7.00	1001.68
Sum	317	33.94	302	30.90	3751.87
Mean	52.83	5.66	50.33	5.15	634.31
Extremes of Range	8--73	.75--8.16	37--73	3.87--7.00	167.69--1007.04

APPENDIX G

COMMUNICATIVE INTERACTION OF FEMALES--SITUATION II

Subject Number	No. of Comments by Subject	Length of Comments by Subject	No. of Comments to Subject	Length of Comments to Subject	Total Communicative Interaction
00	19	1.79	18	1.50	60.01
01	41	4.33	26	2.77	249.55
03	22	1.91	18	1.95	77.12
05	1	.16	6	.58	3.64
06	13	1.16	16	1.29	35.72
07	53	3.91	36	2.45	295.43
Sum	149	13.26	120	10.54	722.47
Mean	24.83	2.21	20.00	1.76	120.41
Extremes of Range	1--53	.16--4.33	6--36	.58--2.77	3.64--295.43

APPENDIX H

COMMUNICATIVE INTERACTION OF MALES--SITUATION I

Subject Number	No. of Comments by Subject	Length of Comments by Subject	No. of Comments to Subject	Length of Comments to Subject	Total Communicative Interaction
02	36	4.83	50	6.12	479.88
04	66	9.27	64	8.62	1163.50
08	87	10.83	70	8.04	1505.01
09	42	4.25	64	7.12	634.18
10	58	7.58	68	8.12	991.80
11	87	10.62	62	6.00	1295.94
Sum	387	47.38	378	44.02	6070.31
Mean	62.87	7.90	63.00	7.34	1011.72
Extremes of Range	36--87	4.25--10.83	50--70	6.00--8.62	479.88--1505.01

APPENDIX I

COMMUNICATIVE INTERACTION OF MALES--SITUATION II

Subject Number	No. of Comments by Subject	Length of Comments by Subject	No. of Comments to Subject	Length of Comments to Subject	Total Communicative Interaction
02	16	1.87	21	2.41	80.52
04	41	3.75	46	5.37	400.77
08	56	4.87	44	3.25	415.72
09	24	2.54	27	2.37	124.95
10	49	4.00	39	2.62	298.18
11	26	2.33	29	2.54	134.24
Sum	212	19.36	206	18.56	1454.39
Mean	35.33	3.23	34.33	3.09	242.40
Extremes of Range	16--56	1.87--4.87	21--46	2.37--5.37	124.95--415.72

DIRECTION OF REMARKS CONCERNING CLOTHING--SITUATION II

Subject Number	Number of Factual Comments	Length of Factual Comments	Number of Derogatory Comments	Length of Derogatory Comments	Total Factual Interaction[1]	Total Derogatory Interaction[2]
00	0	0	0	0	0	0
01	2	.16	2	.24	.16	.24
02	0	0	0	0	0	0
03	3	.25	6	.75	.75	3.43
04	2	.16	0	0	.16	0
05	0	0	0	0	0	0
06	0	0	0	0	0	0
07	0	0	0	0	0	0
08	0	0	3	.24	0	.40
09	1	.08	1	.08	.08	.08
10	0	0	0	0	0	0
11	0	0	0	0	0	0
Sum	8	.65	12	1.21	1.15	4.15
Mean	.60	.054	1	.10	.096	.346
Extremes of Range	0--3	0--.25	0--6	0--.75	0--.75	0--3.43

[1]Total factual interaction=number of factual remarks made by subject x length + number of factual remarks made to subject x length.

[2]Total derogatory interaction=number of derogatory remarks made by subject x length + number of derogatory remarks made to subject x length.