PRESCHOOL CHILDREN'S RESPONSES TO DRESSING WITH WINTER JACKETS

by

Laurel-Jean Prendergast Shea

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ABSTRACT

The purpose of this study was to examine preschool children's emotional responses to dressing with winter jackets. Fifty subjects were observed. Their ages ranged from 49 months to 61 months in age with 33 of the subjects being female and 17 of the subjects male. The testing was performed in three schools located in the Winnipeg School Division #1 in Winnipeg, Manitoba.

The testing apparatus consisted of three test jackets. Jacket A and Jacket B were supplied by the researcher, and Jacket C was the subject's own jacket. Jacket A consisted of set-in sleeves, a separating zipper and a slightly fitted bodice. Jacket B consisted of raglan sleeves with a loose fitted bodice, and there were 5 button/buttonhole closures with buttons 2cm in diameter. Jacket A was considered difficult to manipulate in the dressing process; whereas, Jacket B was considered easy to manipulate while dressing.

Emotional responses were examined because they are the most readily available indicators of how a person is feeling without actual introspection (Lewis and Michalson, 1983). They are a form of communication (Buck, 1984) which can be displayed facially, vocally or bodily. The display of emotion can also lead to a reflection upon oneself. This inner relection could be dangerous if the child incorrectly evaluates his performance. By studying emotion one could

possibly receive some information on how the child is evaluating the situation and possibly himself.

The results indicated that sex influenced the time it took to complete Jacket B's sleeve type (i.e. females finished Jacket B's sleeve type, a raglan sleeve, sooner than males). Sex also influenced the stated response (i.e. happy, unhappy or not sure) by the subjects to dressing with Jacket C (i.e. males and females are more likely to respond they are happy about putting on Jacket C, their own jacket), the number of verbal helps needed for Jacket B's sleeve (i.e. males needed more verbal helps than females), and the number of verbal helps needed for Jackets A and C during the manipulation of the fasteners found on these jackets (i.e. females were more likely to require verbal helps than males for both jacket types).

Age was shown to influence the completion rate of Jacket A (i.e. older subjects were more likely to complete this jacket than younger subjects), the bodily responses to Jacket C during the manipulation of the fastener (i.e. older subjects react more positively than younger subjects) and the number of verbal helps needed for the manipulation of Jacket C's fastener (i.e. younger subjects required more verbal helps than older subjects).

Age and sex combined was found to influence the finish times for Jackets B and C. For Jacket B younger males have a faster finish time than younger females, but older females

have a faster finish time than older males. Jacket C revealed that younger males have a longer finish time than younger females, and older females have a longer finish time than older males.

The results from this study indicate only one significant result from the emotional responses to dressing with the winter jackets. It was found through the bodily responses that older subjects react more possitively to Jacket C (their own jacket) than younger subjects while fastening this jacket. The fact even one occurred seems to suggest dressing could influence children emotionally which in turn could effect their reflections upon themselves and their future development. More research is needed in this area to explore whether dressing does have psychological effects upon children in their development. If dressing does have psychological effects upon a child during development steps need to be taken to assist the child for easier development in this area. The development of dressing skills should be viewed as seriously as other developmental skills, as dressing could influence a child during the course of development.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

Dressing is a process every person in our society must learn to do because clothing is a part of our everyday existence. The act of dressing is not a natural or instinctual action; rather, it is acquired through social learning where imitation plays a large role for learning a socially acceptable behavior like dressing. It can begin as early as age 15 months whereby a child, "cooperates in dressing by extending arm or leg" (Gesell, 1940, p.248). Through this act of cooperation by a child the process of learning to dress begins.

Just like other developmental tasks such as walking, talking, and toilet training dressing is learned in stages. Taking a garment off is easier than putting it on because of the varying amounts of manipulation skills needed for certain garment parts. Dressing is influenced by "chronological age, mental age, interest, guidance, amount, and difficulty of clothing" (Key, White, Honzik, Heiney, and Erwin, 1936, p.71). To dress oneself involves varying amounts of motor control by the child (Wagoner & Armstrong, 1928), and independent dressing is dependent on the style, design and

fastening system of a garment. Maturation of certain physical (growth and motor) and mental developmental processes must occur before dressing oneself can begin. For a child, learning to dress while these developmental processes are maturing can be a frustrating experience, and when a task is frustrating for a child he may take his frustration, or inability to perform a task, as a reflection upon himself and his capabilities to perform certain tasks such as dressing. This reflection upon oneself could effect a child's future development (Akmakjian, 1975).

One usually begins dressing around the age of two, but, "the child who is fully capable of getting all of his clothes on by himself under the age of four is rare," (Pomeranz, 1973, p.96). It is not until the age of six when a child can confidently dress himself, and even at that age a child may still encounter problems dressing. Gesell's stages of dressing show the progression that a young child of 12 months makes in dressing through to the age of seven years (1949). Gesell's stages of dressing further indicate that dressing, like other developmental processes, follows a distinct pattern of occurrence. Taking clothes off occurs before the child can put them on, and certain fasteners and design features are mastered before others.

Physical (growth and motor) and mental development coincide with a child's ability to dress himself. A child must be ready physically and mentally to dress himself, or

dressing cannot occur. Gross and fine motor skills are needed for the actual physical manipulation of the clothing, and a developed cognitive process is needed to understand how the clothing has to be manipulated in order to successfully complete the task. To expect a child one year old to do what a three year old child can do in dressing is unreasonable, and it could be harmful. Gesell notes, "if too much is asked of the poorly coordinated child, it may disturb his entire adjustment to school" (1940, p.249). Thus, the clothing chosen for a child should parallel that child's physical and mental level of development.

Children are limited in their vocabulary and intellect. They do not understand things as adults do, and they cannot vocalize what they really mean because their vocabulary is limited. It is this limitation that may cause a child to formulate ideas about himself because he perceives a situation in a certain manner. If a child perceives a situation in the wrong way the consequences could be harmful. An example of this has been shown in the toilet-training process. Studies of children while in the toilet-training stage indicate if a child perceives his parents frustration as disapproval or anger the child could draw the false conclusion, "in some peculiar way he or she is inadequate, ineffective, incapable of accomplishment or success," (Akmakjian, 1975, p.179). This conclusion could also develop into a long term effect on the child where the child always

strives for perfection but never feels he is successful. Since dressing oneself and toilet-training are similar in that both require independence from the child , it would seem logical that dressing could cause the same negative effects upon the child if not encountered properly.

In a society that favors "above average physical, mental, emotional, or social development," (Knopf, 1979, p.55) in children, the pressures to do well are tremendous. Dressing is a developmental process that is no exception from these pressures. Self-help clothing for children was created to help children in the dressing process, but it has also caused more independence to be expected of the child (Gesell, 1940). Children are expected to dress sooner and faster than in the past (Ryan, 1966). These expectations are harmful to a child especially if the child is not ready. If the clothing is too complicated for the child physically and mentally it could cause the child grievance. This grievance could then cause the child to reflect upon himself negatively and hence, possibly influencing future developmental areas (Gesell, 1940).

Emotional responses are our most readily available indicators of how a person is feeling (Lewis and Michalson, 1983) while performing a task without actual introspection. They are a form of communication (Buck, 1984) which can be displayed facially, vocally or bodily by an individual. The development and understanding of emotion for an individual

comes through maturation, age and cognitive processes. Children learn socially acceptable emotions through display rules (Buck, 1984) in their learning process. Preschool children do understand certain emotions (Ekman, 1982), and they understand what they mean and when to display them. However, while the display of emotion can be visibly apparent, it also can be expressed within. It is this inner expression of emotion which could possibly be dangerous for future developmental areas. If a child perceives a situation incorrectly (i.e. his performance was a failure with negative implications towards the child) he could reflect upon himself negatively, perceiving himself as inadequate or incapable of success (Akmakjian, 1975). By viewing emotional responses in preschool children, who are not totally selective in their display of emotion yet, one can get a general idea of what the child is thinking about the situation and perhaps himself. Understanding how a developmental task is effecting children is important to the development of children. Dressing should be viewed as a developmental task which could have effects upon a child's overall development, and the lack of recent research in this area also indicates the necessity of further research.

The purpose of this study is to examine preschool children's emotional responses to dressing with winter jackets. Facial, vocal and bodily emotion will be observed in this study as indicators of how a child is feeling while

putting on a winter jacket. It will be determined which type of response (negative or positive) occurs most often while donning with three different winter jackets.

CHAPTER TWO

REVIEW OF THE LITERATURE

In order to investigate preschool children's emotional response to dressing with winter jackets, the literature reviewed consisted of four general areas: child development (physical and mental); dressing; clothing and children; and emotion. Within each of these general areas there is relevant information to understand the basis for this study; yet, the specific lack of information about the influence of dressing on children and their development indicates the necessity of further research in this area.

Physical and Mental Development of Children

Child development examines the child as a whole. Each form of development (physical, mental, social, physiological, emotional, psychological) interacts together to form the whole child. No one type of development is independent from another in the formation of a person. To understand how a child learns to dress one must understand physical (growth and motor) and mental development since dressing relies on these two functions the most. Each contributes to the

child's ability to manipulate different designs, styles and fastening systems found on clothing. A child not only needs to be able to physically manipulate clothing, but the child has to understand how the components go together to execute the action successfully.

Two principles which are important in understanding any form of development are:

1. Development occurs in a predictable manner.
2. The rate of development is unique to each individual (Bigner, 1983, p.20).

These principles help us understand why children perform at different levels; yet, every child goes through the same sequences of development. Further discussion of physical (growth and motor) and mental development will occur separately in order to explore how each form of development effects the child.

Physical Development

Physical (growth and motor) development is important to dressing because it is through physical manipulation of clothing that the act of dressing occurs. A child must first grow in actual size and develop strength to control the muscles which will allow him to develop gross and fine motor skills to manipulate clothing.

Growth, "ordinarily refers to physical changes, which are primarily quantitative because they involve addition

rather than transformation" (Lefrancois, 1983, p.4). Height and weight are only two examples of growth. Human bodies change a great deal from birth to adulthood, but early childhood probably sees the most dramatic changes. The first two years after birth one can see a child increasing in height and weight approximately four times that of birth (Lefrancois, 1983, p.183, 237). These dramatic changes in height and weight are also accompanied with changes in motor skills by a child.

Growth is important to a child's overall size and strength. A child needs strength to control those muscles which manipulate clothing features. He also needs size, especially in his hands, so that the clothing features are manageable. The child who does not follow normal growth development, or the child who is smaller and weaker, may experience problems when attempting physical activities such as dressing because he lacks the physical characteristics needed to dress himself. This could also influence his social development with others because he may be perceived by his classmates as slow or lacking intelligence. McCandless states, "every facet of social and personal development is affected by the body" (1967, p.376). Thus, growth is not only important in order to execute an action but also for overall acceptance and psychological well-being.

There are three general principles relating to physical growth and motor development. The first principle refers to

growth and motor development proceeding from the head towards the feet. This is refered to as the cephalocaudal principle. This means there is control of the head first, and then this control works its way down to the feet. The infant first prones his head before he can lift his torso. Muscles develop from the neck down to control movements (Lefrancois, 1983).

The second principle refers to growth and motor development proceeding in an inward-outward direction. "Development is said to be proximodistal in the sense that internal organs mature and function prior to the development of external limbs and that children aquire control over parts of the body close to the center before they can control extremities" (Lefrancois, 1983, p.186). This can be illustrated through an infant's motor movements in reaching. The movements are at first seen in a gross motion where the arm swings from shoulder with no precision in movement. As the child matures, his arms' motor movements become more precise, and the hand (fingers and thumb) becomes a useful part of his fine motor movements to grasp objects being reached for. Therefore, it follows that children are capable of gross motor movements before they can control the fine motor skills needed in the hand and finger movements.

The third principle follows the second in that growth and motor development is that of "progression from general to specific action patterns, and from general gross to

specific refined control" (McCandless, 1967, p.379). Development occurs in a general to specific manner. A child must learn the basics before he can perform the specialties.

The growth and motor development of hands and fingers are very important to dressing as they are the mechanisms which manipulate the designs, styles and fastening systems on clothing. "Fingers are not used as separate units at birth because they are controled by the cortical regions of the brain, which are poorly developed at birth" (Jones, Garrison and Morgan, 1985, p.97). However, through stimulation and maturation these regions do develop. In the early stages of development the hand is used as a medium to explore the world around the child. The movements are done with gross motor skill. "Rarely do infants less than three months old succeed in grasping an object when it touches their palms" (Jones, Garrison and Morgan, 1985, p.98). Grasping is usually done by reflex during young infancy. The reflex most common in the early stages of grasping is known as the palmer reflex. "This reflex in the hands usually results in a grasping action that excludes the thumb and may be strong enough to support the infant's weight for short periods of time" (Cratty, 1979, p.51). This reflex is not voluntary on the child's part and becomes weaker by the sixth month, disappearing entirely by the end of the first year. It is during this time that children begin a new form of development known as prehensile development. "The

development of prehension is most important to a child's early intellectual and motor development" (Jones, Garrison and Morgan, 1985, p.98).

Prehension involves coordinating reaching with the whole arm and judging the distance towards an object. There are four basic steps involved in prehension. First, the child must visually locate the object. The child must focus in on what he wants to manipulate. Thus, the object has to create an interest in the child for the child to want to manipulate it.

Second, the child reaches for the object. As the child matures the reaching behavior is much more purposeful and precise rather than the early swipes he takes at the object in order to grasp the object. The child learns to judge the distance the object is away from him and extends the arm and hand approximately to accomodate this perceived distance.

Third, the child grasps the object. The grasping becomes more refined and precise as the child matures and has more control over his motor skills. Through maturation a palmar grasp will eventually evolve into a pincher grasp. This grasp control of the thumb and fingers allows the child to firmly and purposefully manipulate an object. It is this grasp which allows us the fine motor skills to manipulate fasteners on clothing.

The fourth step involves the child releasing the object. In the early stages of development this releasing is done

somewhat voluntarily but in many cases the child just can no longer hold on to the object. However, as the child matures the releasing of the object is done with purpose and precision. The child makes a decision where he wants to put the object and releases it in that location. It becomes a voluntary action by the child.

Halverson's (1931) study on infants ranging from 16 to 52 weeks of age investigated the progression a child makes in prehension through growth and maturation. Halverson (1931) came to some conclusions about prehension in infants 16 to 52 weeks of age through observation of their behavior to a one inch cube:

1. There are four phases in the development of prehension (a) the visual location of the object, (b) the approach by the hand, (c) the grasp, and (d) the disposal of the object (p.270).

2. The 16-week infant has a short regard for the cube and is not likely to touch the cube (p.275). The infant generally makes sporadic, determined efforts with the arms and hands to reach for the cube, but is unsuccessful in his attempts to secure it (p.115).

3. Twenty-eight weeks is the critical age in infant prehension. Infants at this age have the longest single regard and the greatest total duration of regard for the cube. The hand is losing its paw-like behavior in favour of finger manipulation of the cube, and a vital change from palm

grip to active thumb opposition is occurring in the type of grasp (p.277).

4. At 32 weeks, the infants use the scooping approach to surround the cube (p.278).

5. At 52 weeks, infant secures the cube quickly (p.116).

6. Prehension in infants progresses in a manner which indicates the presence of developmental behavior patterns (p.279).

7. The development of reaching and grasping affords excellent examples of the progress of maturation from the coarse to the finer muscles (p.279).

Halverson's conclusions are important to our understanding of the manipulation of objects, like clothing, with our hands and fingers. It shows the progression (growth and motor) we must go through before we can successfully manipulate objects which require fine motor skills. It also shows that it is not only the hand and fingers that do the manipulating; rather, the whole arm is involved in the process. We must be able to lift our arm(s) or flex our arm(s) to the location of the object. Dressing not only involves fine motor skills to manipulate fasteners with the hands and fingers, but it also involves directing parts of the body through sections of the garment.

Prehension, or the ability to grasp, is important to understanding how a person develops fine motor skills with

their arms, hands and fingers, but motor development itself, as a whole, involves five basic principles:

(1) dependence upon neural and muscular maturation

(2) maturation readiness

(3) predictable patterns

(4) establishments of norms for motor development

(5) existence of individual differences in rates of development (Jones, Garrison and Morgan, 1985, p.147).

These principles are in alliance with the principles of growth being that strength, coordination, speed and precision in the use of the arms legs or all body muscles depends largely on the interaction of heredity and the environment. Heredity being the basics of which a child originates from, and the environment being people, events or situations which influence a child's development. Thus, the acquistion of motor skills is not independent of growth.

In learning any new motor skills there are some basic essentials listed by Jones, Garrison and Morgan (1985): "sufficient maturation levels; opportunity to learn and practice; models to pattern after and direction; adequate motivation; and skill differentation and proper timing" (p.151-152). All of these factors are necessary to the learning of a motor skill. Without even one of these essentials a child's performance could be hindered. A child needs to have developed enough to be ready for the skill through growth and maturation. Parents, or significant

others, need to provide an environment conducive of learning new skills. Good models help in the imitation of the skill, and adequate motivation to try the skill out by others encourages the child to keep trying the skill until it is learnt. A child should not be expected to do more than he is capable of or it might confuse him. One skill should be mastered before others are introduced, and the skill should coincide with the child's capabilities.

The preschool child learns many of his motor skills through play and exploration of his environment. There are three general categories of play: sensorimotor, imaginative and social. Play is also a developmental process. It involves a child progressing from functional play to more of a constructive play. This progression from functional play to constructive play can be seen through the amount of time spent on gross and fine motor activity. The younger child will spend more time on functional play whereas the older child will spend more time on constructive play. "Development from functional to constructive play marks a shift from manipulation to formation, from handling and experiencing to building" (Butler, Gotts and Quinsenberry, 1975, p.44).

Play helps develop gross and fine motor skills in the preschool child. Gross motor behavior refers to, "the child's control and use of the large muscles of his body, particularly the legs, arms, and neck, although the chest,

abdomen, and buttocks play an important part in the child's ability to control his extremities" (Butler, Goffs and Quinsenberry, 1975, p.42). Fine motor behavior involves the use of small muscles, or more specifically, "skills involving small body movements, especially with the hands and fingers" (Jones, Garrison and Morgan, 1985, p.523). By developing fine and gross motor skills a child can participate in activities and learn to be in charge of his body movements. "A child builds self-confidence from control of his muscles" (Read, 1971, p.194) which is important to a child's self-image. The child who has confidence in his motor skills will have confidence in himself and not be afraid to try something new which requires him to use his motor skills.

Mental Development

Motor skills are important to the process of manipulation of objects, but we also must have the knowledge of how a garment works in order to dress ourselves independently. This comes through intelligence, and intelligence is best described through cognitive development. Cognitive development is "those processes that lead to an awareness and understanding of the world; the way in which the world is known and represented; general understanding, knowledge, and problem solving behavior" (Bigner, 1983, p.480).

One of the leading psychologists most responsible for drawing our attention to this aspect of child development is Jean Piaget. Piaget explored this area in infancy, early childhood, middle childhood, adolescence, and adulthood. He developed four basic stages of cognitive development: (1) sensorimotor; (2) preoperational; (3) concrete operations; and (4) formal operations. These stages are listed in a specific order relating to age because cognitive development is like any other form of development in that it progresses in the individual as the individual matures.

Table 1 illustrates the different stages and their major characteristics.

Piaget's stages of cognitive development illustrate that although a child may be developing physically he must be ready mentally to successfully complete a task. In the sensorimotor stage the infant's intelligence, "involves immediate sensation (hence sensori) and action (hence motor)" (Lefrancois, 1983, p.240). The child does not reason how to perform a task, rather he performs the action for the end sensation.

However, once a child enters the preoperational stage of thought he is able to symbolize. "They begin to represent their actions mentally, and to anticipate consequence before the action actually occurs, and they begin to develop some notion of causes - of actions as means to ends" (Lefrancois, 1983, p.241). By representing an action in thought before it

Table 1

Piaget's Stages of Cognitive Development

Stage	Approximate Age	Selected Major Characteristics
Sensorimotor	0-2 years	Motoric intelligence. World of here and now. No language, no thought in early stages. No notion of object reality.
Preoperational	2-7 years	Egocentric thought.
Preconceptual	2-4 years	Reason dominated perception.
Intuitive	4-7 years	Intuitive rather than logical solutions. Inability to conserve.
Concrete Operations	7-11 or 12 years	Ability to conserve. Logic of classes and relations. Understanding of numbers. Thinking bound to concrete. Development of reversibility in thought.
Formal Operations	11 or 12- 14 or 15 years	Complete generality of thought. Propositional thinking. Ability to deal with the hypothetical. Development of strong idealism.

(Lefrancois, 1983, p.241)

occurs illustrates the preschool child being able to formulate concepts of events and things in his mind.

The preoperational stage is broken down into two sub-stages - preconceptual and intuitive. In these two sub-stages the child still mentally represents actions, but the way they are formulated is different. In the preconceptual stage a child imitates an adult's actions to form their own. Actions are imitated and thought out in their minds for the end result. In the intuitive stage, "the child's thought is based on immediate comprehension rather than logical, rational processes" (Lefrancois, 1983, p.242). The intuitive stage is still part of the preoperational stage because problems are not thought out logically; rather, they are based on intuition - immediate perception. Thus, imitation and play are two major learning sources for the preschool child. This is important to note as it is in the preoperational stage that children learn dressing. The preoperational child can imitate the process of clothing manipulation providing that his motor skills are at the level necessary for the garment he is manipulating. If he comes across a new piece of clothing or fastner never encountered before the preconceptual child will try to recollect in his memory if he has ever seen this task done before, whereas the intuitive child will use intuition to solve the problem.

Although Piaget's cognitive development ideas are quite well known it should be noted that his ideas are under

scrutiny, and many theorists are challenging his ideas about cognitive development.

> Until the mid-1970's, Piaget's ideas dominated the landscape the way Freudian thinking once ruled abnormal psychology. Since then, however, the picture has changed dramatically. Empirical and conceptual objections to the theory have become so numerous that it can no longer be regarded as a positive force in main stream cognitive-development research, though its influence remains profound in cognate fields such as education and sociology (Brainerd, 1983, p.vii).

Piaget's stages are found by some theorists to be restrictive to children's capabilities. They have been tested to question their validity. "It has been found that children who are classified as preoperational can learn concrete-operational concepts, and it has also been found that children's susceptibility to learning does not covary to any marked degree with their pretraining stage classifications" (Brainerd, 1983, p.viii). In Brainerd's (1983) book, Zimmerman (a social learning theorist) criticizes Piaget for ignoring the environment's influence on a child's cognitive development. "Social events were not viewed by Piaget as having a dynamic of their own; they were not seen as capable of altering physical reality for the child" (Brainerd, 1983, p.4). Social learning theorists, like Zimmerman, focus on a child's immediate behavior and on environmental forces that effect behavior (Lefrancois, 1983). Behavior changes are a result of reinforcement, punishment or imitation. It should be noted however, that although the other theories (i.e. psychoanalytic, behavioristic,

ethological, and humanistic) do have valid points about development and learning, Piaget's focus is intelligence. "Piaget has always emphasized that the most important aspects of his stage theory relate to the sequence of intellectual development and not to specific ages" (Lefracois, 1983, p.80). Thus, Piaget's stages are helpful to understanding why children understand certain things in different stages of their intellectual development. The ability to symbolize or think logically are steps in a child's intellectual development. Piaget's labelling stages with ages is only a general guide to what a normal child of that age group should be accomplishing. Development is dependent on the individual and their readiness.

Another important development related to cognitive development is memory. Memory is highly important to the process of learning because without it we would forget everything we have learnt. "More specifically, learning, development, and memory are extricably linked" (Lefrancois, 1983, p.117). Memory can be seen in infants as early as four months in age (Kail, 1984) whereby the child's face seems to recognise and distinguish significant others around him. For the preschool child the development of memory is necessary for learning social and educational expectations of him. The development of memories involves the development of strategies. "Activities are called strategies not because of anything inherent to the activity but because of the reasons

underlying the activity" (Kail, 1984, p.7). There is an end-goal for the behavior. A goal which is memory related is known as a mnemonic (something which aids in the memory process) strategy. The mnemonic strategy useful in the dressing process is rehearsal. The actual repetition of dressing skills aids future manipulation of clothing. Retrieval of information will be easier as the child develops and matures, and if the child rehearses the activity enough it will stay in the long-term memory for future use. Other factors such as the child's age, level of importance of the task and environmental conditions can play an active part in the memory process.

Development of Dressing Behavior

By examining the general physical (growth and motor) and mental developments by the preschool child the information found can be applied to the more specific activity of dressing. Children can only accomplish certain tasks throughout development, and dressing is no different in that aspect. Children accomplish different tasks at different ages, and the rate of accomplishment is dependent upon the individual, as most forms of development are.

Dressing oneself can begin as early as age 15 months whereby a child, "cooperates in dressing by extending arm or leg" (Gesell, 1940, p.248). Through this act of cooperation

the process of learning to dress begins. A child under the age of four will rarely be able to dress himself fully (Pomeranz, 1973), and it is a bit of an unrealistic expectation as the preschool child is just beginning to control his motor skills enough to be able to manipulate clothing styles, designs and fastening systems.

Dressing is a gross motor and fine motor objective in the preschool curriculum as illustrated by Butler, Gotts and Quinsenberry (1975):

Gross Motor Objectives For
Preschool-Aged Children

1. To engage in variety of activities which require balance and total body control.
2. To engage in a variety of activities which require rhythmic movement.
3. To dress oneself with the exception of tying and difficult fasteners.
4. To climb large climbing equipment such as slides,jungle gyms, fire poles, abstract climbers, etc.
5. To ride and guide wheel toys such as tricycles and wagons (p.48).

Fine Motor Objectives For
Preschool-Aged Children

1. To develop the hand control which is essential for writing, drawing, and handling eating utensils.
2. To develop the eye-hand coordination which is essential for using construction toys and moderately difficult puzzles and form boards.
3. To control scissors when roughly cutting (i.e., when cutting approximately) along the outline of a simple figure or design which the child has drawn.
4. To acquire the coordination needed for lacing, paper folding, buttoning, or loose tying (p.57).

Dressing is shown to be an important part of the preschool child's activities for dressing oneself in clothing everyday is a requirement of every person in our society.

Gesell is one of the few researchers in child development who has seriously considered and studied dressing as a developmental process. Gesell (1949) notes the various stages of dressing a child goes through during the course of development, and he developed a dressing sequence. He used age as his basis for children's dressing capabilities. It appears as follows:

1 year-Dressing Interest in taking off hat, shoes, pants. Cooperates in dressing: puts arm into armhole or extends leg for pants.

18 months-Dressing Removes mittens, hat, socks; unzips zipper. Cooperates in dressing: puts on shoes.

2 years-Dressing Removes shoes, stockings, pants. Likes to undress. Can put on some clothes though may put both legs in one pant leg and may get hat on backward. Cooperates in dressing.

2 1/2 years-Dressing Better at undressing than at dressing: can take off all clothes. Can put on socks and perhaps shirt, pants, and coat though not always accurately. Allows mother to lay clothes out, correctly orientated. May be completely independent or may demand total help. May run away as he is being dressed.

3 years-Dressing Undresses himself rapidly and well. Can put on pants, socks, shoes, sweater, and dress. Can unbutton front and side buttons. Cannot tell front from back or lace shoes, though may try.

4 years-Dressing Dresses and undresses with little assistance, especially if clothes are laid out. Can distinguish front from back,

lace shoes; may button front buttons.

5 years-Dressing Dresses self completely, lacing shoes, buttoning front buttons. Cannot button back buttons or tie shoe laces.

6 years-Dressing Can dress self except for tying shoe laces and buttoning very difficult buttons. If they do tie shoe laces, tie them too loosely.

7 years-Dressing Many can dress without any help if clothes are selected for them. Others dawdle, lack of interest, and need help. May dawdle till he gets ready to dress, then actually dresses quickly (p.266-268).

These stages indicate undressing oneself occurs before dressing, or the doffing of clothing occurs before the donning. Certain designs, styles and fastening systems are easier than others and can be mastered sooner before the more difficult ones. This follows with what has previously been mentioned about physical development. The simple tasks are accomplished before the difficult ones. The child needs to physically have the strength and coordination to manipulate clothing features, as Wagoner and Armstrong (1928) also illustrated that dressing oneself requires varying amounts of motor control. Motor control is acquired through growth and maturation of the required muscles. The child also needs to be able to understand mentally what he needs to do and how to do it.

Becker (1984) studied one area of dressing focusing on fasteners and preschool children's ability to manipulate certain types of fasteners. Her study indicated certain ages

at which children were able to manipulate certain fasteners successfully. Becker's findings, like Gesell's, reinforce what has already been found in developmental tasks. The easy task was accomplished before the more difficult one because the child needed to be physically and mentally mature to accomplish the difficult task. Becker (1984) also identified another variable which could influence a child's dressing capabilities - sex. Girls were shown to accomplish certain types of fasteners before boys. Becker's (1984) results indicated girls were able to manipulate 1 cm and 2 cm buttons before boys. Girls manipulated 1 cm buttons at 42 months, and boys manipulated 1 cm buttons at 48 months (p.50). Girls manipulated 2 cm buttons at 36 months, and boys manipulated 2 cm buttons at 42 months (p.50). Buttons were the only fastener to have any significant differences in the manipulating capabilities between the two sexes (Becker, 1984). Wagoner and Armstrong (1928) have also shown that girls were able to manipulate buttons faster than boys. Ryan (1966) stated the reason being, "girls, because they have better fine motor coordination than boys at this (preschool) age, learn to dress themselves earlier and do so more efficiently" (p.207).

Becker (1984) tested other fasteners and found both sexes were able to manipulate the hammer-on snaps, the conventional zipper and the large zipper by 24 months of age, but they could not manipulate a separating zipper until 48

months of age (p.50). This is not surprising as a separating zipper requires strength, coordination, accuracy, and very fine motor skills. The pincher grasp required for the manipulation of a separating zipper is very precise. Becker's data parallelled to most information relating to performance tests or skills in that the child's success will depend upon what level his developmental processes have matured and developed. If the child is not ready he will not be able to perform certain tasks.

Each child is unique in his ability to manipulate designs, styles and fastening systems on clothing. Just like other developmental processes, there is no set age or time when a child should be manipulating certain clothing features. Even though clothing for children may be simplified (i.e. self-help clothing), "dressing is so intimately bound up with motor coordination that we should attempt to measure just how much the child can do for himself and not expect him to do more" (Gesell, 1940, p.248). Children can only manipulate certain tasks during the course of development. To force a child to do more than he is capable of could be damaging to his future adjustment to school (Gesell, 1940); therefore, effecting his future development in general.

The increased demands of our society on children to do well could only heighten a child's frustration with not being able to perform a task properly or keep up with his peers.

With the increase in self-help clothing more demands are placed on the child to dress himself sooner and without assistance. This could be frustrating for the child who is not ready, and it could also be damaging as Gesell (1940) has already been quoted to say.

Key et al.'s (1936) narrative recordings from their study indicate that children do react to the task of dressing. Such responses as: "sleepy and indifferent; irritable; almost whimpered; whinned; cried and wanted to be dressed" (p.143-145) were observed. These reactions indicate dressing does effect a child; yet, dressing does not seem to be viewed as a significant developmental process for the child psychologically. Most of the literature found on dressing discusses motor abilities in dressing (Wagoner & Armstrong, 1928; Key et al., 1936), fastener manipulation (Becker, 1984) and the stages of dressing (Gesell, 1949). Gesell is one of the only child development researchers to indicate how dressing could have damaging effects on a child psychologically or socially in their future development. Dressing is not an instinctual or natural phenomenon. It is a learnt behavior which if not introduced and taught properly like other learnt behaviors (eg.walking, talking, toilet-training, etc.) could possibly effect the child negatively in future development areas (Gesell, 1940).

Children's Clothing

Prior to the eighteenth century children's clothing was not conducive to children's development or needs (Kaiser, 1985). Children were viewed as miniature adults (Kaiser, 1985; Frings, 1982) and were dressed as such. Many times the clothing was not functional and restricted movement. "The notion that children should be seen and not heard was carried over into lavish and impractical clothing styles" (Kaiser, 1985, p.437). It was not until a better understanding of child development and attitudes changed toward the young did clothing begin to suit the needs of children. The fussiness of clothing was dropped, and the functional aspect of clothing was introduced to meet children's needs during their development. Clothing was designed to permit complete freedom of movement and not constrict a child's development in any manner (Guppy, 1978).

Jaffe (1972) suggests theoretically the best inspiration for children's wear is the concept of functionalism (p.42). It is a modern approach which focuses on meeting the needs of a child's daily activities and development through design features, fabrics, styles and fastening systems. A designer has to be aware of the changing shape of a child as the child grows and the changing proportions of different parts of its body (Aldrich, 1985). Fabrics should be able to stand up to

the daily activities of the child as well as the repeated laundry necessary (Aldrich, 1985). There should be enough ease incorporated in designs to allow the body enough room to grow and move (Guppy, 1978). Clothes should be large and roomy whereby the child does not feel cramped or squeezed (Faegre, Anderson and Harris, 1958), but it should not be too large as this is potentially dangerous to the active child. Clothing which is too large could get caught on furniture or other obstacles a child may encounter while playing.

Clothing for children should be simple so that learning to dress does not become a difficult and frustrating event. It should aid the child, not hinder him. Such clothing has been labeled as self-help clothing. Self-help clothing is basically clothing which enables a person to dress independently with nil to minimal amount of assistance. "Clothes that are easy to put on and fasten have a strong appeal to young children trying to be independent" (Hurlock, 1978, p.242). Clothes which are complicated and frustrating can cause a child a great deal of stress physically and mentally. This stress could negatively influence a child and, therefore, possibly be damaging to a child's development in school (Gesell, 1940) and other areas.

Preschool Children and Clothing

A young infant is usually unaware of his clothing and does not understand the importance or the significance of clothing due to his lack of cognitive development or intelligence. Sometimes clothing might even be a nusiance to a young infant (Ryan, 1966). It seems only when the child realizes clothing can attract attention and approval to him does clothing become a point of interest for the child (Hurlock, 1978; Jaffe, 1972). This seems to occur within the preschool years of two to six years. Attracting attention to himself and wanting people to watch him would correspond to the egocentric behavior noted by Piaget in the stages of cognitive development. Clothing can be used as a means to aquire attention from adults.

> Clothes may make him look "like Daddy", his favorite hero, or a "big boy". He can demonstrate how big he is, by his ability to dress or undress himself. He even becomes so socially sophisicated that he notices the clothing of others (Ryan, 1966, p.204).

Jaffe (1972) comments on clothing being an extension of the concept of self. Clothing may identify the child as a boy or girl. It could reflect how a child is feeling or wants others to view him. The preschool child wants to be like his playmates to keep him from feeling different (Hurlock, 1978), but he does not need to conform to the type of clothing other children are wearing (Ryan, 1966). His reasons for wearing clothing are simply because he likes that

particular outfit and usually has a favorite outfit.

> The adolescent or the adult is interested in having a variety and large number of clothes, but the preschool child is completely indifferent on this score. He would be most happy if he could wear his favorite outfit everyday (Ryan, 1966, p.21).

The clothing a preschool child has to chose from contains many more options than those in infancy. The preschool child's growth in height and weight continues; while not as pronounced as in infancy, it is still occurring. Also, body proportions are changing. He is losing his baby fat (Ryan, 1966; Jaffe, 1972). His legs are becoming longer and stronger (Jaffe, 1972), and he is developing a waistline. This means he can wear regular pants as opposed to wearing overalls or straps over his shoulders (Ryan, 1966). The variety in clothing is increasing; thus, the preschool child is likely to encounter different designs, styles and fastening systems than he did in the past. It is during this time when Gesell's (1949) dressing stages are useful to indicate what type of clothing and fasteners are appropriate in relation to the child's age and manipulative skills.

> Appropriate clothing does not mean clothing that is in fashion or that it holds to the styles worn by others of the same age. It means clothes that meet the person's needs and interests (Hurlock, 1978, p.242).

Since the child is usually not the consumer buying the clothing, the consumer (parents, grandparents, uncles, aunts, etc.) needs to be aware of "appropriate" clothing for the

preschool child. Young children like clothes that are easy to put on and fasten because it allows for independence (Hurlock, 1978). Jaffe (1972) notes, "that the child who is encouraged and manages to successfully dress himself at an early age will also act independently in other situations" (p.16). It should be noted, though, that if too much independence is asked of the child when he is not ready the child's future adjustment to school and other developmental areas could be disturbed (Gesell, 1940). Thus, rushing a child to be independent in dressing is not good, but encouraging and providing "appropriate" clothing for a child will give the child the chance to be independent and acquire a sense of being able to do it on their own. This sense of accomplishment would then foster positive feelings about the task of dressing, and a child who is successful at dressing will not be scared or hesitant to try new forms of dressing skills. Children who are presented tasks with a progressive learning stragedy (i.e. learning easy skills then difficult skills), with proper training and a good success rate as they progress, are shown to be able to progress to more difficult tasks and not be discouraged with possible failures. They are more likely to attempt the task on their own until they can accomplish it (Keister and Upgraff, 1937).

Clothing Features for Children's Wear

Learning to dress can be a complicated process for a young child. The manipulation of clothing involves conquering the varying styles of garments, design features and fastening systems found within garments. Not understanding how to manipulate these different factors on clothing could be frustrating for a young child learning to dress. Children's clothing needs to be functional and meet the child's needs; yet, it should also promote independence in dressing by using self-help features incorporated into the garment. These self-help features can usually be included into different styles of garments either through the design and/or fastening system.

Since children do not really care about fashion, or the way something looks (Hurlock, 1978; Ryan, 1966), parents or the consumer, should focus on buying clothing which will meet the needs of the child and promote self-dressing. Self-help garments, or garments which require little or no assistance, have features within them which promote independence in dressing. Brown (1980), Jaffe (1972), Ryan (1966), Tate and Glisson (1961), and Boettke and Zook (1956) all list clothing features which are inductive to a self-help garment. They can be summarized as:

1. Long openings which are located for easy reach.
2. Front openings are easier to handle than side or back openings.

3. Simple styles are easier to manipulate than complicated ones.
4. Large armholes and sleeves of good size. Set-in sleeves are not a good sleeve type for children.
5. Neck openings should be large enough so garment can slip over head easily and/or does not constrict or irritate child's neck area.
6. Back of garment should be easily distinguishable from front.
7. One-piece garments are easier to handle than two-piece ones.
8. Large fasteners of type, number and location are easier for children to manipulate.

Children's clothing should be large and roomy to prevent the child from feeling cramped and squeezed (Faegre, Anderson and Harris, 1958), but it should not be too large or over-sized for the child because that could be dangerous for the active child. It could get caught on something while the child is playing; thus, possibly injuring the child.

Design features for self-help garments are fairly well covered in literature; however, fasteners are discussed too generally. Buttons are given a lot of attention, but the other forms of fasteners are not. Becker (1984) focuses on different types of fasteners and which types of fasteners are successfully manipulated by at least fifty percent of the preschool aged children she tested. Her findings indicate

certain fasteners are manipulated before others, and certain fasteners are manipulated differently by males and females. Hook and loop fasteners, the conventional zipper and the large zipper are manipulated at 24 months of age for both of the sexes. Hammer-on snaps are manipulated by 36 months of age for both of the sexes. Girls manipulated 2 cm buttons at 36 months of age, and both sexes manipulated 2 cm buttons by 42 months of age. Girls manipulated 1 cm buttons at 42 months of age, and both sexes manipulated 1 cm buttons by 48 months of age. The separating zipper is manipulated last at 48 months of age for both sexes (Becker, 1984, p.50). These findings are important to note because it is the fastener which opens and closes a garment, and if the fastener type is too difficult for the child he will not be able to dress himself completely without assistance.

Faegre, Anderson and Harris (1958) sum up this area by stating that "simplicity should be the keynote of children's clothing" (p.37). Although this statement is vague it does have merit in that clothing which is difficult, complicated or restrictive to movement will cause a child more grief than good. A self-help garment will allow the child to do more for himself which helps the child gain independence and self-confidence (Tate and Glisson, 1961).

Emotions and Children

The understanding of emotion is a complex process as emotion can be viewed in many ways with diverse theories and attitudes surrounding this area (DeRivera, 1977). No one theory can satisfactorally explain how emotion develops because many factors are involved. Age and cognitive level are two major variables in the development of emotions, but one cannot ignore the social, environmental, cultural, or biological factors interacting upon an individual during development. All of these factors listed play a part in a child's reaction to a situation, and how they interpret what is occurring around them (Lewis and Michalson, 1983).

Studying emotion is significant to the understanding of human behavior because the display of emotion by an individual seems to be a reaction which comes from within (DeRivera, 1977). Emotion is a subset of feelings (Lewis and Michalson, 1983), and feelings are sentiments or opinions, which are beliefs, judgements or perceptions of what is occurring around an individual. The display of emotion is a reaction to some external or internal variable interacting upon a person (Lewis and Michalson, 1983). Observing these reactions to a situation by an individual can possibly lead to some general conclusions about that person's character, personality and/or feelings about a situation. Emotions are a form of communication by humans (Buck, 1984) and could be a

means of interpreting a situation otherwise not stated directly by an individual.

Emotions consist of five major components: elicitors, receptors, states, expressions, and experiences (Lewis and Michalson, 1983). These five components help make a definition of what emotion is. To say emotion is, simply, a subset of feelings does not explain what they are, and what they consist of. Lewis and Michalson (1983) briefly define each component as follows:

1. Emotional elicitors are situations or stimulus events that trigger an organism's emotional receptors. These stimuli may either be internal or external, and the capacity of these elicitors to evoke responses may be either innate or learned.

2. Emotional receptors are relatively specific loci or pathways in the central nervous system that mediate changes in the physiological and/or cognitive state of the organism. The process through which these receptors attain their emotional function and the type of events that trigger their activity may be genetically encoded or acquired through experience.

3. Emotional states are the particular consellations of changes in somatic and/or nervous activity that accompany the activation of emotional receptors. 'Changes in' is the critical aspect of this definition. Emotional states are largely specific, transient, patterned alternations in ongoing levels of physiological activity.

4. Emotional expressions are the potentially observable surface features of change in face, body, voice, and activity level that accompany emotional states. The constituent elements and their patterning, as well as the regularity with which they are associated with particular emotional states, may be either learned or innate.

5. Emotional experiences are an individual's conscious or unconscious perception, interpretation, and evaluation of his or her emotional state and expression. This cognitive process is influenced by

> a range of prior social experiences in which the nature of the eliciting stimuli and appropriateness of particular expressions have, in part, been articulated and defined for the individual by others (Lewis and Michalson, 1983, p.31).

All of these components react together to constitute what is known as emotion. Internal or external elicitors are subjected to the receptor. The elicitor is received by the receptor and transmitted into an emotional state. Through the emotional state the receptor channels the elicitor into meaning for the receptor. Buck (1984) believes at this point there are "display rules" an individual follows within oneself before transmitting the information into an emotional experience. Display rules are, "cultural rules or expectations about the management of emotional displays" (Buck, 1984, p.19). These rules constitute what is a proper display of emotion, and what is an improper display of emotion. This socialization process is learnt throughout one's developmental process within any culture. Thus, display rules are subjective to the rules of a culture and are not true for every culture.

The end result of emotion comes in the form of either an emotional expression or an emotional experience (Lewis and Michalson, 1983). Emotional expressions are visually or auditorially apparent such as vocal, facial, posture or motor response. Whereas an emotional experience is internally experienced. Buck (1984) describes these end

results as an emotional experience being either goal-directed behavior or self-reports, and emotional expressions as being facial expressions, body movements, posture, etc., or physiological responses. Buck (1984) and Lewis and Michalson (1983) both have created models of emotion (see Figure 1 and Figure 2) which visually represent how each component interacts with one another to form emotion.

Cognitive development and age have previously been discussed in length and it was indicated, through Piaget's stages, how age is a general indicator to the level of cognitive development of a person. Understanding cognitive development in relation to emotional development is essential because a child can interpret a situation or event differently at different stages in cognitive development due to lack of experience and knowledge about a situation or event. An example of such can be illustrated through the reactions to a clown by an infant versus the preschool child. The infant may react to the clown by crying because he is fearful of the clown. The clown is a stranger to the infant which would cause fear in the infant displayed by crying. The preschool child may react in delight and smile because he has the experience and knowledge to understand what a clown is and what it represents. This example illustrates how age, experience and cognitive development play an important role in the development of emotions, but one cannot ignore social, environmental, cultural, and biological factors either.

These will also effect how a person will interpret and react to a situation or event. The manner in which a person is socialized, the environment or surroundings one is exposed to, the beliefs and traditions of his culture, and the inner biological occurences are factors one cannot ignore in any developmental process.

Preschool Children and Emotion

Once a child is at the preschool age, he has been exposed to a variety of circumstances. His reactions to these different situations have changed throughout his development from infancy to early childhood because his cognitive development has changed from a sensorimotor level to a preoperational level. The preoperational level child is able to represent ideas or situations in his mind and verbally through symbols. There is a thought process occurring before a reaction occurs. He is exploring his environment more and trying to make sense of it through play and modelling of significant others (Lefrancois, 1983). The acquistion of proper and improper emotional expressions is being learnt through display rules (Buck, 1984) within his culture. These display rules will help set standards for the child of what the norm is for different situations.

Around the age of two some children are capable of producing some facial expressions when requested to do so (Lewis and Michalson, 1983). As early as two some children

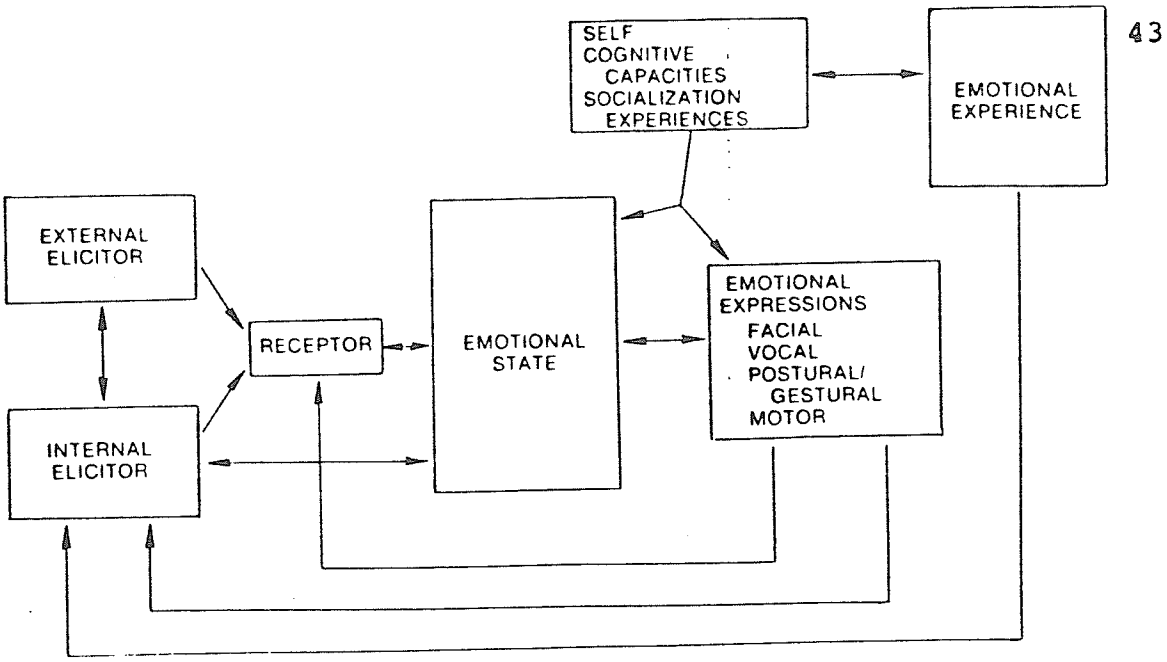

Figure 1. A structural model of emotion. (Lewis and Michalson, 1983, p.129)

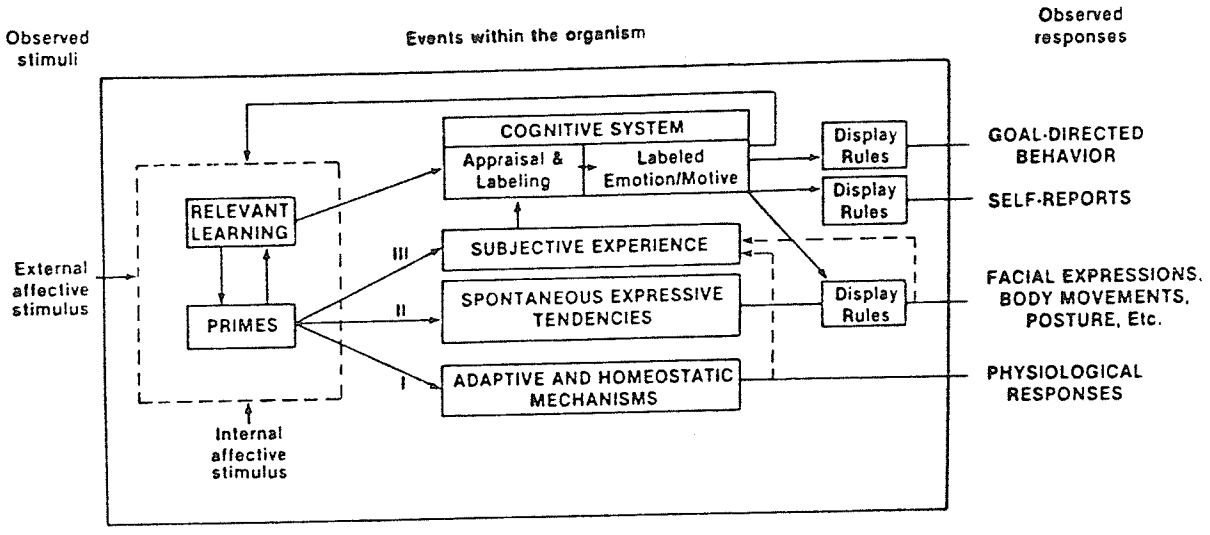

Figure 2. A general model of emotion. (Buck, 1984, p.64)

are able to assosiate a verbal request with a facial representation of some emotion. Through time, maturation, experience and development a child comes to learn what different emotions represent and how to display them. Ekman (1982) emphasizes that preschool children know what the most common facial expressions look like, what they mean, and what kinds of situations typically elicit them (p.153). Preschool children are aware of emotion and are in the beginnings of understanding the most common emotional responses; hence, they are beginning to understand how emotion is manipulated in its execution in certain social situations. They are no longer just allowing emotion to occur randomly rather a thought process is occurring during the display of it.

Borke's study (1971) further indicates children are capable of identifying the emotion which would accompany a situation. Borke studied children 3 through 8 years of age. She presented a series of short stories and then asked the children how the child in the story felt. To help the children choose the correct answer picture cards of "happy", "sad", "afraid", and "angry" were used. This helped the very young children who could not verbalize their answer because young children are limited in their vocabulary. "Children as young as 3 years of age showed an awareness of other people's feelings and could identify the specific situations that evoke different kinds of affective responses" (Borke, 1971,

p.263).

Since preschool children are able to evaluate some types of emotion they are now reflecting upon themselves how the stimuli (internal or external) affects them. This process can be a conscious or an unconscious occurrence (Lewis and Michalson, 1983), but it usually causes an emotional experience within. Emotion can be displayed through an emotional expression, but emotional experiences are internal events by nature (Lewis and Michalson, 1983, p.123). These internal events are experienced within, and therefore the child is making an evaluation about the stimuli. Every child's evaluation of a stimuli is different, but every child experiences some type of change within, which directly affects the child.

> In summary, emotional experiences require a set of stimulus changes that are located in the body and that are evaluated by the person. Both location and evaluation assume that a notion of self exists. Somatic changes are internal stimulus changes located only within one's own body, a location synonymous with "me." Evaluation of these changes assumes consciousness, or self-awareness, as well as cognitive ability. In addition, the evaluation process itself requires an agent of evaluation. It is most difficult to construct a sentence about the evaluation of internal stimuli that does not use self-referent. The phrase "I am experiencing some internal changes, X," means "I am feeling X." The source of the stimuli and the agent evaluating the stimuli are the same; this interface is the self (Lewis and Michalson, 1983, p.124).

Thus, the study of emotion is important to understanding how different stimuli affect children, and how children

reflect upon themselves (i.e. negatively or positively). Emotional expressions help indicate how a person is feeling, and how a stimulus is affecting them.

CHAPTER THREE

STATEMENT OF THE PROBLEM

The problem investigated in this study was to observe if dressing with winter jackets caused an emotional reponse from children aged 49 to 61 months. The reason this topic was investigated was to attempt to show that dressing is a significant developmental process which can effect a child emotionally, thus possibly influencing the child's inner feelings and/or thoughts towards himself. Dressing should be recognized as important as other independent developmental tasks with the same possible negative psychological outcomes for the child if not presented properly. Other independent developmental tasks such as toilet-training have documentation of possible negative outcomes. Akmakjian (1975) discusses how a child may feel, "inadequate, ineffective, incapable of accomplishment or success" (p.179), when unsuccessfully attempting to go to the toilet independently. Parents, teachers, clothing designers, and clothing manufacturers need to realize the limitations of children's dressing skills in relation to their age and development. They should not expect a child to do more than he is capable of, or it could be just as damaging as rushing

a child into an act of independence (eg. toilet-training) he is not ready for.

Key et al.'s (1936) study was the only research found which actually recorded responses from observing children while dressing. The findings indicated there were possibilities that an emotional response would occur, but it did not indicate specifically if the responses would occur more in a positive or negative manner due to dressing. Do difficult dressing tasks cause negative responses, and do simple dressing tasks cause positive responses? There were no apparent data or existing research which could answer these questions. Most of the existing literature found on dressing discussed either motor abilities in dressing (Wagoner & Armstrong, 1928; Key et al., 1936), factors influencing learning to dress oneself (Key et al., 1936), fastener manipulation (Becker, 1984), or stages of dressing (Gesell, 1949). Actual empirical data on whether dressing effects a child positively or negatively does not exist.

More research needs to be done regarding the psychological importance of dressing on children and their future development. By examining emotional responses to a dressing task, children's responses while dressing could possibly give a clue about how they are feeling about the task, and it could also give an indication of how they are feeling about themselves.

Purpose

The purpose of this study is to examine preschool (49 to 61 months in age) children's emotional responses to dressing with winter jackets, and to determine which type of response (i.e. negative or positive) occurs the most often while dressing with three different winter jackets. Age, sex and the jacket types are the independent variables to be recorded as possibly influencing a subject's emotional response to putting on a jacket, the time taken to put on a jacket, whether or not a subject will complete a jacket type, jacket preference, stated response to a jacket (i.e. happy, unhappy or not sure), and the number of verbal helps needed to encourage dressing.

Hypotheses

To accomplish the purpose of this study the following hypotheses were formulated:

1. For each jacket there is no significant relationship between the time taken to put on the jackets due to:

(A) sex.

(B) age.

2. There is no significant relationship between success (i.e. completion of task) and:

(A) sex

(B) age.

3. There is no significant relationship between the preferred jacket chosen and:

(A) sex

(B) age.

4. There is no significant difference between the level of satisfaction felt (i.e. Happy, Not Happy or Not Sure) donning the jacket types due to:

(A) sex

(B) age.

5. There is no significant relationship between the jacket type (i.e. Jacket A, B or C) and the degree of emotional response (i.e. negative or positive) due to:

(A) sex

(B) age.

6. There is no significant relationship between jacket type (i.e. Jacket A, B or C) and whether or not a subject needs a verbal help due to:

(A) sex

(B) age.

CHAPTER FOUR

METHODOLOGY

The independent variables in this study were: the degree of dressing difficulty of the winter jacket determined by fastener type, jacket design, age and sex. The dependent variables are time to dress, jacket preference, stated response to the jacket types (i.e. happy, unhappy or not sure), completion rate per jacket type, emotional response given, and the number of verbal helps needed per jacket type. These variables coincide with the overall purpose of this study and were used as the criterions for the methodology of this study.

Sample

The selected subjects for this study were children attending nursery school in schools located within the Winnipeg School Division No.1 in Winnipeg, Manitoba. A request form for a school research sample within the Winnipeg School Division No. 1 was completed. This form was approved by the Winnipeg School Divison No. 1's research department; subsequently a letter was sent to those schools with nursery school classrooms located within them. The participation of schools in this study depended upon a response from the

schools indicating whether or not they wished to participate in the study.

Winnipeg School Division No.1 was chosen as the division in which to conduct this study because it is the largest division in the city with approximately 117 schools. A geographical distribution of the different school divisions is given to display visually how these school divisions are segregated throughout Winnipeg, Manitoba (see Appendix A).

A parental consent form was sent home with every child to be tested. A week was allowed for the return of these forms to allow for maximum return of the forms. Each child had the right to refuse to participate in testing even if the parental consent form was returned. Appendix D displays the the parental consent letter sent home with each child.

It was expected the age of the sample would consist of children aged 48 months to 60 months old. This age distribution was desirable because it is during this time a child is learning, but has not mastered, co-ordination and control of his fine and gross motor movements (Butler, Gotts, Quinsenberry, 1975; Read, 1971).

Once a school agreed to participate in the study subjects were allowed to participate through signed parental consent forms. It was hoped the subject sample size would consist of at least 50 subjects.

Research Design

To examine preschool children's emotional responses to dressing with winter jackets an observer-as-participant form of observation was used. The subjects knew they were being observed while performing the task requested of them, and the researcher interacted with the subjects while testing occurred.

Three observers recorded information on two sets of data sheets. Three different test jackets were observed for each subject tested, with two of the jackets being supplied by the researcher, and the third being each subject's own jacket. The information recorded was: sex (male or female); the subject's personal jacket's characteristics; time taken to put the jacket types on (i.e. sleevetime and finishtime); the emotional responses (i.e. facial , vocal or bodily) occurring while putting on the jacket types and the intensity at which they occurred; the number of verbal helps given while putting on the jacket types; the child's response given to putting on the jacket types; and which jacket the subject

The age of the subjects was obtained by asking the subject and through teachers' records (i.e. attendance schedule). It was necessary to consult the teachers' records as many of the children were not sure of their age. Permission was given by the principals of the schools and the teachers to acquire this information as long as the children remained anoymous, which they did.

Introspection was used to find out how the subject felt while putting on the jackets (i.e. happy, unhappy or not sure), and it was used to find out which jacket was preferred most after putting on all three of the possibilities.

Instruments

Testing Jackets

In order to test the preschool children's emotional responses to dressing, winter jackets were implemented as the form of clothing in this study. This form of clothing was chosen because of the season of year, ethical considerations towards the children, and the fact Winnipeg winters last approximately six months of a year, making winter apparel a substancial part of Winnipegers' lives. The ethical considerations towards the children were that the children had the right to keep their own clothing on and not have to remove any of their clothing for the sake of testing.

A total of three winter jackets were tested. Two of the jackets were supplied by the researcher (Jacket A and Jacket B) while one of the jackets was each subject's own (Jacket C). The subject's jacket served as a basis for the researcher regarding the subject's potential dressing capabilities. By collecting all the general features in the subjects' jackets, the data characterized the general features found within preschool children's winter jackets which consumers are presently purchasing (see Appendix B).

The two winter jackets supplied by the researcher contained different design features. The criterion used to make the two jackets different was based upon literature regarding design features which hinder or encourage self-dressing. The literature was also used as a basis when classifying the jackets as either difficult to accomplish on one's own or easy to accomplish on one's own. Boettke and Zook (1956), Craig (1973), Brown (1980), Ryan (1966), Braise and Ryan (1951), and Jaffe (1972) all comment on design features in children's clothing which induces self-dressing. Raglan sleeves, loose-fitting clothing and front center closures are all desirable design features in children's upper body clothing. Set-in sleeves, tight-fitting clothing and off-center closures are features that would be considered difficult.

The type of fastener used on the jackets was another consideration. Becker's (1984) study indicated that certain fasteners are mastered before others, and that there are certain ages where children master a type of fastener. For example, hammer-on snaps are mastered at age 24 months whereas a separating zipper is not mastered until the age of 48 months.

Becker's results aided in the decision of which fasteners to use on the testing jackets. Since the subjects were in nursery school it was assumed they would be approximately 48 months in age, if not older, and they

should be able to master 2 cm buttons . However, they may still find separating zippers a challenge.

The number of buttons for Jacket B was determined by using Becker's testing vests as a basis. Becker's vests were waist length and contained four buttons/buttonholes in total. Since this study's apparatus was winter jackets the length was hip length and therefore contained five buttons/buttonholes. The number of buttons/buttonholes was not discussed or stressed as a factor in Becker's study; thus it was felt five buttons/buttonholes was a reasonable number for the children to attempt in this study.

A pretest was done with Jacket B to decide the number of buttons to be placed on the jacket. Jackets with 6-2 cm button/buttonholes were attempted by seven children within the Playcare Centre in University College located at University of Manitoba. Two of the children were able to accomplish 4 out of the 6 buttons. One child accomplished 5 out of 6 buttons, and four of the children were able to accomplish 6 out of 6 buttons. As the average number of buttons accomplished was five, the number of buttons/buttonholes to be placed on the testing jackets was five.

Jacket A and Jacket B were constructed from the same fabrics. The fabric used for the outer shell of the jackets was a heavy (pantweight), plain weave, 50 percent cotton/ 50 percent polyester fabric. The lining was a light weight,

plain weave, broadcloth with 65 percent cotton/ 35 percent polyester fiber content. The insulation fabric was a non-woven batting approximately .5 cm in thickness, and its fiber content was polyester.

Jacket A and Jacket B were also the same in color. The fabrics, threads and fasteners chosen were navy-blue in color. Color was not to be a factor in this study; thus, a color was chosen which would not influence a subject's answer or choice of which jacket he prefered to put on. The focus of this study was to explore whether the degree of dressing difficulty would influence a child's choice in jackets, not aesthetics.

The jackets were constructed using patterns. Jacket A was constructed using a Jalie pattern. The pattern number was 2943-AB (created in 1986). Jalie patterns are distributed by MSC Sewing Specialties Inc. Jacket B was constructed using an anorak pattern (style #450) by Unique Patterns, a division of the MacPhee Outerwear Workshop LTD. The two jackets were constructed to fit preschool children age 49 months to 61 months. The sizes made were a child's size 3, 4 and 6. Both patterns' sizing correlated by chest size, and the length of the jackets were the same. The chest sizes were as follows: size 3 (53 cm); size 4 (58 cm); and size 6 (63 cm). A stand-up collar was created by the researcher for Jacket B, as it was not included in the pattern. This was done to maintain some collar consistency

within the two jackets.

Jacket A's design features consisted of set-in sleeves, a slightly fitted bodice and a separating zipper. The separating zipper was located in the center front of the jacket (see Appendix B). These design features within Jacket A were viewed to be features which would hinder self-dressing (Boettke and Zook (1956), Craig (1973), Brown (1980), Ryan (1966), Braise and Ryan (1951), and Jaffe (1972)); thus, this jacket was rated as difficult.

Jacket B's design features consisted of raglan sleeves, a loosely fitted bodice and a button/buttonhole closure in the center front with a total of five 2 cm buttons (see Appendix B). These design features within Jacket B are viewed as features which would encourage and promote self-dressing; thus, this jacket was rated as easy.

Since Jacket B did have a button/buttonhole fastener, it was decided to have a set of jackets for boys and a set for girls. That is, the location of the buttonholes was on the right side of the jacket for girls and on the left side of the jacket for boys. This was done to be consistent with the way our society constructs men and women's clothing with regards to buttons/buttonholes.

The buttons on Jacket B were the sew-through button type with two holes and 2 cm in diameter. Each button had a thread shank, which allows for a smoother fastening process. The buttonholes were horizontally placed on the jackets using

an Elna buttonhole attatchment on an Elna sewing machine. The buttonholes were 3 cm in length, which accomodated the diameter and thickness of the buttons with ample space for the buttons to pass through easily. The buttons/buttonholes were evenly spaced on each jacket with 6 cm between one another. A small tab, arrow-shaped, was placed 6 cm down from the bottom buttonhole to possibly help aid the children locating the bottom buttonhole, but it was kept the same color on the jacket as not to become an outstanding aesthetic feature on the jacket and influence the children's final selection.

The separating zipper on Jacket A was a chain zipper with plastic teeth. The zipper tape was a woven polyester/cotton blend. Each zipper had a tab 1.5 cm in length on it. The length of the zipper varied with the different sizes. Size 3 was 36 cm long. Size 4 was 41 cm long, and size 6 was 46 cm long. The zippers went the total length of the jacket starting 1 cm from the bottom hem to approximately 1 cm from the collar edge. The form of application for the separating zipper was the exposed zipper in that the zipper was visible and exposed.

Subject Data Collection Sheet

In order to record all the necessary data for this study two main data sheets were created. Personal and test data were recorded in a checklist and narrative form on both data

sheets.

The first data sheet contained personal data about the subject and contained information about the subject's jacket (See Appendix C). The top of the page consisted of the date the testing took place, the age of the subject in months and the sex of the subject. Underneath this information was a checklist to record information about the subject's jacket. Design features such as sleeve type, fastening system, fastener placement, bodice type, bodice length, fastener length, and lining type were all listed in a checklist format. Space was allowed for any additional comments regarding the subject's jacket in case the checklist did not cover it.

The second data sheet was designed specifically for recording the data taken while observing a subject dressing with the three testing jackets (See Appendix C). The data sheet was divided into two separate sections. These sections were known as dressing episodes. This was done to examine which component of dressing caused more emotional responses from a subject. The first section recorded information from the step of the child orientating the jacket into proper position, to putting his arms through the sleeves, and then pulling the jacket up over his shoulders. The second section dealt with the fastening of the jackets through manipulation of a fastener.

Within this data sheet there was space to record which

jacket was being observed, and which jacket the subject preferred putting on at the end of the testing. This was done through introspection, or direct questioning, of the subject. The subjects were also asked how they felt about putting on each jacket by the researcher through visually displaying three picture cards with faces on them. The child was asked which picture best described how he felt while putting on the jacket in question (see Figure 3).

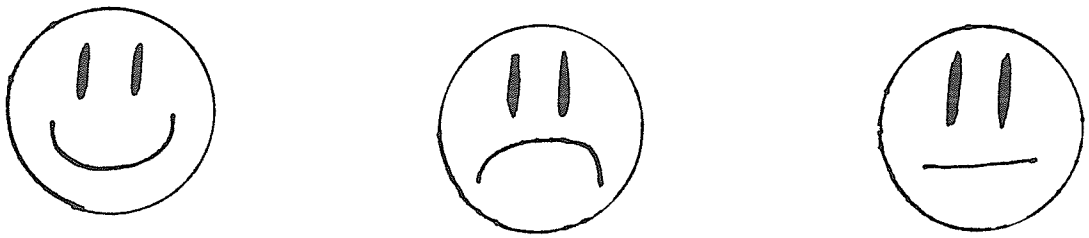

Figure 3. The three picture faces used during testing.

Each dressing episode had a checklist for the observer to record the subject's dressing abilities with any of the three jackets. It recorded the dressing steps a subject accomplished or had problems with while dressing into a jacket. Beside each checklist there was room to record which emotional response (i.e. facial, vocal or bodily) occured during that dressing episode. Recording the emotional response was not done in a checklist format; rather, it was written down as observed using a master list of possible responses (i.e. facial, vocal or bodily) and then recording

the intensity at which it occurred (i.e. +2, +1, 0, -1, -2).

Emotional response was recorded as emotion displayed in an expressive form, or any emotion displayed facially, vocally or bodily. The terms and definitions used for each group (i.e. facial, vocal or bodily) were combined from the references of: Brockman, Whitely and Zubek (1973); Jones (1972); and McGrew (1972). Each emotional response was recorded as negative or positive (Brockman, Whitely and Zubek, 1973).

Facial response was recorded as follows:

+2= Broad, clear smile
+1= Simple smile
Bright look on face
Grinning
0= Any relatively neutral (sober) facial expression
-1= Chew lip
Slight frown
Slight pout
Pucker face
-2= Pronounced frown
Pronounced pout
Eyes swell with tears
Red face

Vocal response was recorded as follows:

+2= Boasting or bragging about ease of task
Laughing out loud about task
+1= Giggling
Whistle while doing task
Humming while doing task
0= Any vocalization clearly not positive or negative in manner (eg. burps, hiccups, ect.)
-1= Fussing
Whining about task
Whimpering about task
-2= Crying
Screaming in anger

Bodily emotional response refers to the posture or

stance of an individual and possible physical reactions to a situation. They will be recorded as:

+2= Jumping up and down in excitement
Cheering
+1= Straight upright posture
Shoulders back (slightly exaggerated)
0= Normal posture
No exaggerated movement
-1= Shoulders rounded forward
Head lowered (eyes avoid)
Shrugging
Fists clenched
Fumbling
-2= Posture withdrawn inward
Stamping in anger
Rejection of task (no longer attempts task)

All of these emotional responses were coded. Facial response was F. Vocal response was V. Bodily response was recorded as B. The type of response was recorded as well as the level of intensity it occurred. For example, if the child displayed a broad, clear smile it was recorded as F(+2).

Verbal helps were also recorded. A verbal help is, "a verbal suggestion to encourage or urge a child to dress; the verbal help does not instruct, nor does it serve as a substitution for manual help" (Key et al., 1936, p.116). They are given when it appears the child could continue on with the task only the child is expecting manual help because the child is tired or discouraged with the task. For example, Johnny has gotten tired of the jacket and is almost finished it. A verbal help would be, "That's great, Johnny! You're almost finished." It encouraged the child to go on, but it did not instruct him in any manner. The number of

verbal helps was noted for each jacket in a checklist format, and verbal help was coded as VH.

Other data recorded included the amount of time (to the nearest tenth of a second) each of the two episodes took the subject, and whether or not the subject completed the task. The dressing task was rated complete if the jacket was put on correctly (eg. arms in proper armholes, hands through cuffs and main fastening system on jacket done completely and properly). The task was rated as incomplete if one of these dressing tasks was not completed fully or properly.

Procedure

Before any testing took place the researcher familiarized herself with the subjects through participation in a few of their daily classroom activities. An attempt was made to interact with every child in the classroom. This was done to help reduce some of the fear felt when a stranger asks a child to perform a task for them. By interacting with the children the researcher was no longer a stranger when the testing was to occur.

On the actual testing day the study was introduced to the children by the researcher, and what would be required of them during the testing. It was introduced as a game called, "Pick A Jacket". Introducing it as a game was felt to ease the child from thinking it was a performance test. Also, it

might help insure a larger participation rate from the children. If the children felt the activity was fun yet, challenging they may wish to participate.

The procedure for the game was introduced as follows:

"Good morning/afternoon, boys and girls. Today I would like to play a game with you, if you'd like. It's called "Pick A Jacket".

"First , I would like to ask you when you go to the store to buy clothes with your mommy or daddy do they make you try on what you are buying?"

At this point the answers are usually, "Yes".

"Today we will pretend we are buying a winter jacket. I have two jackets I'd like you to try on, and I'd also like you to put on your own jacket. It's kind of like a dressing game. You put on the three jackets and do them up. At the end of the game I will give you a little something for helping. If you don't want to play this game when I call your name just let me know, okay?"

"Hey! Do you know what the best part of this game is?"

"No one can loose!"

The two observers are introduced to the children at this point as, "a couple of friends who are helping me play the game today". Their first names are given as well to make the children feel more at ease when introducing them.

This brief introduction explained what the child would be asked to do , and it told the children that participation

was not manditory. The fact no one could loose made it appealing to the children because it was not a competition; it was for fun. The "little something" was a small happy face sticker. It provided incentive for the child to participate, and it was hoped the children would walk away with the sticker feeling happy by seeing a happy face.

The actual testing procedure with the subjects required two assistants to record the emotional responses occurring while the child was putting on the jackets. Having two persons recording these observations increased the reliability of the observations and helped eliminate bias or inaccurate observations.

The researcher was responsible for timing episodes, checking off which areas were incomplete or complete, the questioning of the child to find out how he felt putting on the jacket (i.e. happy, unhappy or not sure), and asking which jacket he preferred to put on the most. It was emphasized that aesthetics should not play a role in their choice.

The procedure can be broken down into steps which were followed for each child tested as follows:

1. Check to make sure there is a parental consent form allowing the subject to participate in the study.
2. Ask the subject to allow the researcher to look at the subject's jacket.
3. Record all the design features in the subject's

jacket.

4. Record the date of testing, age of the child and the sex of the child.
5. Ask the child to put on his jacket (Jacket C) first and record possible emotional responses, time and completed or incompleted dressing steps for each dressing episode.
6. If it is apparent after 20 seconds into the task the child is not on his/her way to completion ask the child if they still want to continue on with the task.
7. At the end of task ask the subject how he felt about putting on the jacket (i.e. happy, unhappy or not sure) and display the picture card with the faces to help the child decide.
8. Randomly choose Jacket A or Jacket B and repeat steps five and six. Both jackets are to be tested, but the order which they occur is randomized for every subject.
9. When the child finishes dressing with all three jackets ask him which jacket he liked putting on the best. Emphasize that it is not which jacket he likes for aesthetic reasons; rather, which jacket did he like putting on the best.
10. At the end of the testing give the child a happy face sticker and thank him for participating.

A prompt was given to a subject in the second episode if after 20 seconds the child is obviously not on his way to completion. The researcher would say to the child, "Would you still like to continue?" This prompt was found necessary because loss of subjects was occurring at the very beginning of the testing. Plus, it seemed apparent the children did not know how to say or display they did not want to continue on with the task. The prompt allowed the child the choice to continue on with the task or reject it. This also kept within the ethical considerations towards the child such that the child could withdraw from the study at anytime and not feel pressured to continue in the study against his will.

Statistical Analysis

The method of data analysis used in this study was chi-square testing at a .05 significance level. The .05 significance level is an acceptable amount of error to be allowed in this study leaving only a small percentage of error to chance. This method of analysis allowed testing for a general association between two variables.

An analysis of variance testing (based on Type 1 Sum of Squares) was used when testing the variables time, sex and age; thus, testing how time is influenced by these variables.

Raw data and frequency results are recorded in

univariate and bivariate form in Appendix E.

CHAPTER FIVE

RESULTS

The results from this study reflected the two episodes found within the data collection format. Within these two episodes variables such as time, jacket preference (stated and inferred), responses to task, completion rate, emotional responses, and verbal helps were recorded through observation during testing. Data relating to the subjects such as sex and age were found through inquiry.

The results were obtained through a participant-observation form of observation. The researcher was known by the subjects, and the researcher's presence was visible during testing. Two additional observers participated in the collection of data for this study. They recorded possible facial, vocal and bodily responses during testing, and they recorded the number of verbal helps given during testing for each subject. An interobserver-reliability of 84.1% was found to exist between these two observers.

The researcher was in charge of recording the sections of dressing the subjects completed or did not complete during the donning of the jackets; the time taken by the subjects to put on the jacket for both dressing episodes; asking the

subject how he/she felt while putting on the jackets (i.e happy, not happy or not sure); and at the end of putting on the three jackets ask the subjects which jacket they preferred "putting on" the most.

Data Relating to the Subjects

A total of 50 subjects were observed in this study. The subjects were located within the Winnipeg School Division #1, and they were all in nursery school level of education. Their ages ranged from 49 months to 61 months, and the mean age was 55 months in age. Twenty-three of the subjects were between the ages of 49 to 55 months; twenty-seven were found to be 56 to 61 months in age.

Both sexes participated in this study with 17 of the subjects being males and 33 being females. The males were 34% of the sample, and the females were 66% of the sample. Table 2 displays the age and sex distribution of the subjects in this study.

TIME

The results concerning the variable time reflected the two main episodes found within the data collection sheet. The first episode was labeled sleevetime, and the second episode was labeled finishtime. Sleevetime included the time it took the subject to orient the jacket into position, putting the arms through the sleeves, and positioning the

Table 2

Age and Sex Distribution of Subjects

	Sex	
Age (in months)	Male	Female
49	0	1
50	1	1
51	1	3
52	1	5
53	2	5
54	2	2
55	1	2
56	1	2
57	1	4
58	1	2
59	4	3
60	1	3
61	1	0
Total	17	33

jacket in question on the shoulders. Finishtime included sleevetime and the fastening task for the jacket. Finishtime was the completion time of the jacket or until the subject feels he/she is finished the task.

Sleevetime and finishtime are discussed separately to explore the possiblity of one section causing more difficulty or ease of dressing during the donning of the three different jacket types. If time is generalized to only one time recording per jacket the parts which may influence the whole task may be covered up in the one time recording.

SLEEVETIME RESULTS

Sleevetime was classified as the time taken to orient the jacket into proper position, putting the correct arms through the proper sleeves and pulling the jacket over the shoulders. The sleevetime was within the first episode.

The mean sleevetime of the 50 subjects for Jacket A was 15.12 seconds, 14.88 seconds for Jacket B and 11.70 seconds for Jacket C. These results indicate that Jacket A took the longest to complete, and Jacket A was the supplied garment by the researcher which was rated as difficult.

When divided by sex, sleevetime differences were evident (Table 3). For each of the jacket types, the females were able to complete this episode more quickly than the males.

Table 3

Sleevetime Results (in seconds) by Sex

Jacket Type	Sex	
	Male	Female
A	17.58	13.95
B	19.82	12.30
C	14.19	10.42

Age was also examined to see if it was an influential factor upon sleevetime. Age was split into two groups. Subjects 55 months and younger were placed in one group, and the subjects 56 months and older were in another group. There were 27 subjects in the 55 months and younger group, and the 56 months and older group had 23 subjects. When divided by age, sleevetime differences were not evident (Table 4). Age did not have a consistent effect for all subjects. That is, the younger subjects did not do better or worse than the older subjects for all three jacket types, and the same can be said in regards to the older subjects.

Table 4

Sleevetime Results (in seconds) for Two Age Groups

Jacket Type	Age	
	Age<=55	Age>=56
A	14.20	17.34
B	17.35	14.77
C	12.46	12.16

Age and sex combined were also explored to observe if they influenced sleevetime results (see Table 5). For each jacket type there were eight males 55 months and younger, nine males 56 months and older, nineteen females 55 months and younger, and fourteen females 56 months and older.

Table 5

Jackets' Sleevetimes by Sex and Age

	Sex	Age<=55 N	Age>=56 N	Mean	Standard Deviation	Minimum Value	Maximum Value
Jacket A	F	19	-	12.89	4.34	5.00	20.00
	M	8	-	15.50	10.70	7.00	40.00
	F	-	14	15.00	8.96	6.00	36.00
	M	-	9	19.67	10.12	10.00	40.00
Jacket B	F	19	-	12.95	4.06	7.00	20.00
	M	8	-	21.75	11.72	10.00	45.00
	F	-	14	11.64	5.96	5.00	25.00
	M	-	9	17.89	8.94	7.00	30.00
Jacket C	F	19	-	10.42	6.90	2.00	35.00
	M	8	-	14.50	7.09	7.00	25.00
	F	-	14	10.43	5.32	4.00	20.00
	M	-	9	13.89	8.58	7.00	30.00

An analysis of variance testing was performed on sex, age, and sex and age combined (see Table 6). It was found that sex was significant in relation to Jacket B and sleevetime. That is, females will complete Jacket B's sleeves sooner than males. The other two jacket types did not reveal significant results. The other two variables of age, and sex and age combined did not reveal any significant differences.

Table 6

Analysis of Variance Results for Sleevetime

(Based on Type 1 Sum of Squares)

	Jacket A		Jacket B		Jacket C	
	FValue	PR>F	FValue	PR>F	FValue	PR>F
Age	1.90	0.175	0.52	0.474	0.01	0.938
Sex	2.23	0.142	12.32	0.001*	3.36	0.073
Age and Sex	0.18	0.673	0.35	0.554	0.02	0.881

Note: d.f.= 1

* p <.05

FINISHTIME RESULTS

In this study finishtime was the amount of time it took the subject to completely put on the jacket type. Finishtime includes sleevetime and the completion of the fastening

system into its time. The actual finishtime consists of either (a) the child completes all steps in the dressing episodes (sleeves and fastener), or (b) the subject completes the task as best as he/she feels it can be done. In the case of (b) the child may only partially complete the fastening task but stops performing the task because the subject feels he/she is done. It was recorded how many subjects completed the task (C), how many did not complete the task but partially completed the fastener (F) or how many subjects completed the sleeves but never attempted the fastener (S).

Finishtime contains subjects who completed the task fully, and those who did not complete the task fully. All subjects received a prompt within their finishtime per jacket type to allow for consistency in testing.

Looking at the three jackets' finishtime, including subjects who completed the task and those who did not, Jacket A's mean finishtime was 46.02 seconds. Jacket B's mean finishtime was 81.56 seconds, and Jacket C's mean finishtime was 43.18 seconds. From these results it appears Jacket B had the longest finishtime.

Sex was examined to see if it was a possible influencing factor on finishtime. Finishtime in this incident included those who completed the task fully, and those who did not complete the task fully.

When divided by sex, finishtime differences were not evident (Table 7). Females did not perform better than

males, and males did not perform better than females.

Table 7

Finishtime Results (in seconds) by Sex

Jacket Type	Sex	
	Male	Female
A	42.76	47.73
B	68.43	80.47
C	48.97	43.26

Age was also examined to see if it had an influential effect on the jackets' finishtime. Subjects who completed the task, and those who did not were included. Age was split into two separate groups, as for sleevetime, where subjects 55 months and younger were in one group, and subjects 56 months and older were in another group.

When divided by age, finishtime differences were not evident (Table 8). Younger subjects did not perform better than older subjects, and older subjects did not perform better than younger subjects.

Table 8

Finishtime Results (in seconds) for the Two Age Groups

Jacket Type	Age	
	Age<=55	Age>=56
A	42.48	48.02
B	65.74	83.83
C	53.05	39.18

Age and sex combined were also examined to explore whether these two variables combined had an effect on the finishtime per jacket type. Finishtime included those who did complete, and those who did not complete the dressing task. Table 9 records the results found for the finishtimes with age and sex combined.

An analysis of variance test was performed upon the varaibles sex, age, and sex and age combined. The results (see Appendix E) indicated for the variables sex and age there were no significant values. However, the variable sex and age combined obtained significant results for Jacket B and Jacket C. For Jacket B younger males had a faster finishtime (54.88) than younger females (91.79), and older females had a faster finishtime (70.71) than older males (100.56). For Jacket C younger females had a faster finishtime (43.42) than younger males (58.38), and older males had a faster finishtime (29.67) than older females

Table 9

Jackets' Finishtimes by Sex and Age

	Sex	Age<=55 N	Age>=56 N	Mean	Standard Deviation	Minimum Value	Maximum Value
Jacket A	F	19	-	54.26	24.72	16.00	119.00
	M	8	-	34.13	17.29	20.00	73.00
	F	-	14	42.14	23.30	16.00	102.00
	M	-	9	45.22	16.60	24.00	70.00
Jacket B	F	19	-	91.79	34.61	44.00	205.00
	M	8	-	54.88	27.00	25.00	111.00
	F	-	14	70.71	32.63	25.00	119.00
	M	-	9	100.56	28.11	60.00	160.00
Jacket C	F	19	-	43.42	22.19	15.00	107.00
	M	8	-	58.38	28.22	19.00	110.00
	F	-	14	42.86	26.41	12.00	100.00
	M	-	9	29.67	13.58	16.00	63.00

(42.86). Figures 4 and 5 visually display these results.

Finishtime can also be viewed in different groups. That is, those subjects who totally completed the task (C), those subjects who got as far as the fastening system but did not complete the fastener (F), and those subjects who only were able to complete the sleeves with no attempt at the fastening system (S). This data is summarized in Appendix F. Sex (M and F), age (<=55 or >=56), jacket type (A, B and C), and completion rate (C, F or S) are represented.

Hypothesis 1

For each jacket type there is no significant relationship between the time taken to put on the jackets due to:

(A) sex

(B) age.

Time was viewed in two separate groups (sleevetime and finishtime) to explore if one section caused more difficulty than the other in the dressing process. It was felt that if time was generalized to only one time recording per jacket the parts which influence the whole task may be covered up in the one time recording.

An analysis of variance was performed on sleevetime, and the variables age and sex were tested to see if they were significant factors on sleevetime. It was found for Jacket B sex is a significant factor in the amount of time it will take a subject to complete sleevetime. Females will complete

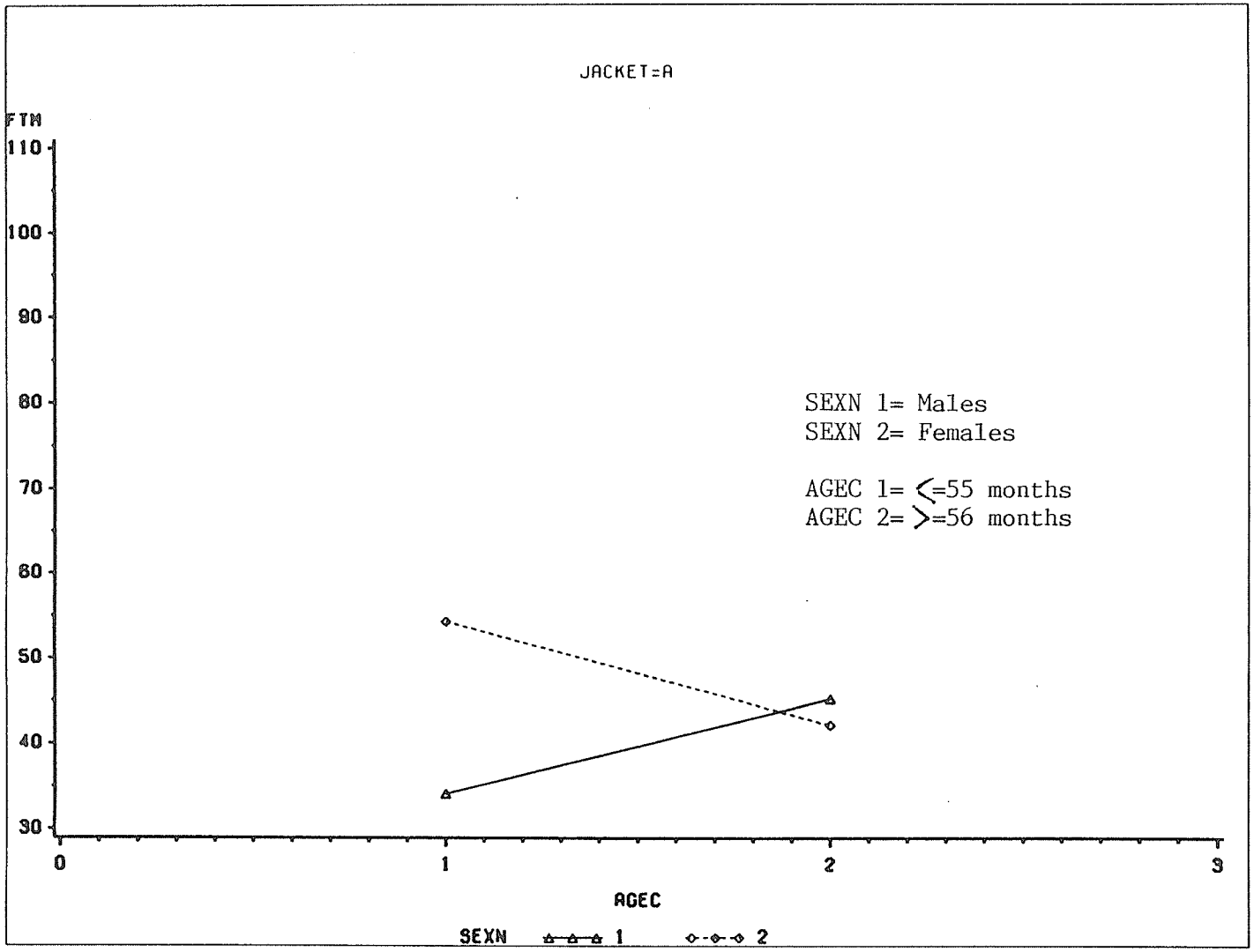

Figure 4. Finishtime for Jacket A by age and sex.

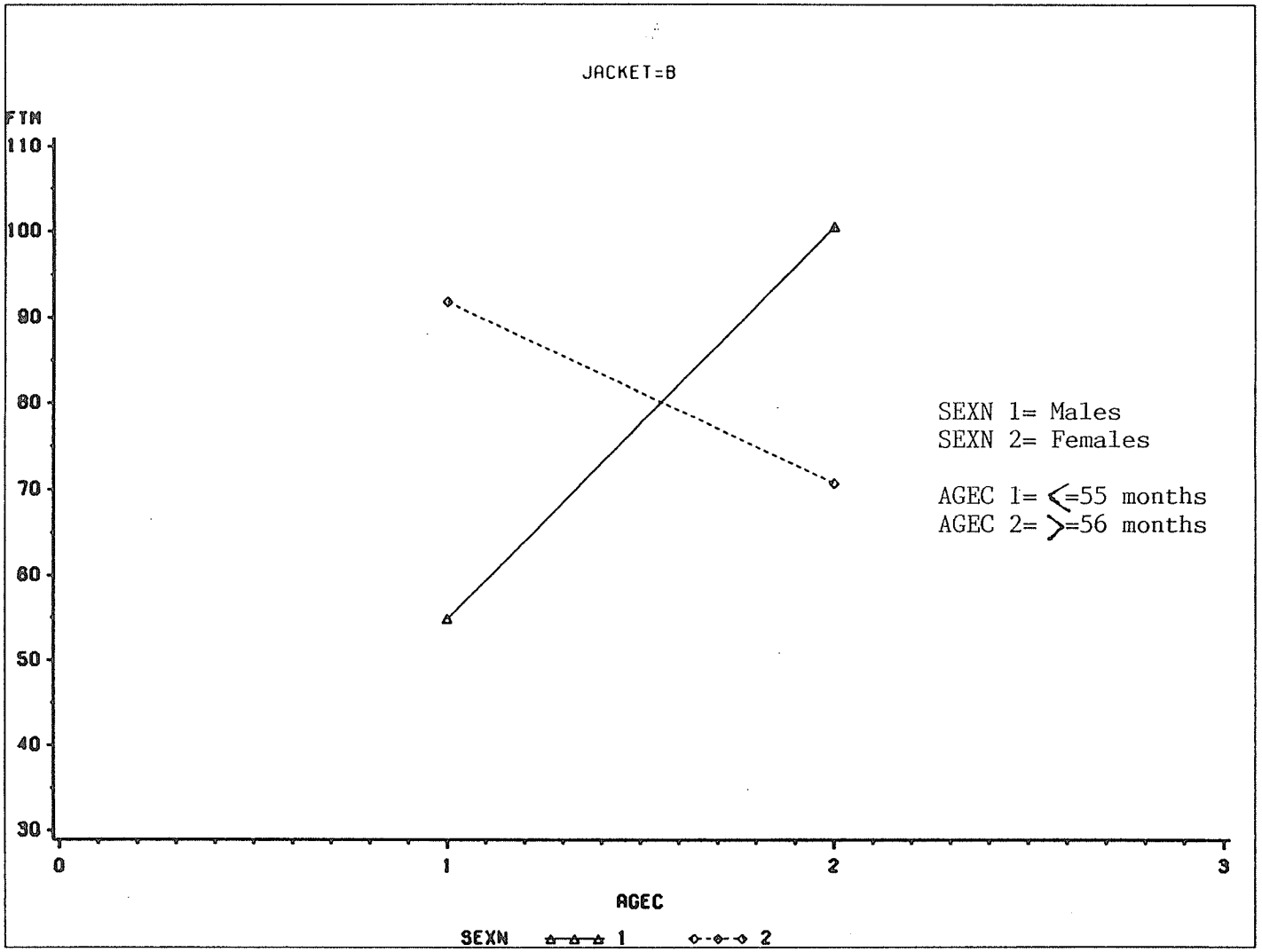

Figure 5. Finishtime for Jacket B by age and sex.

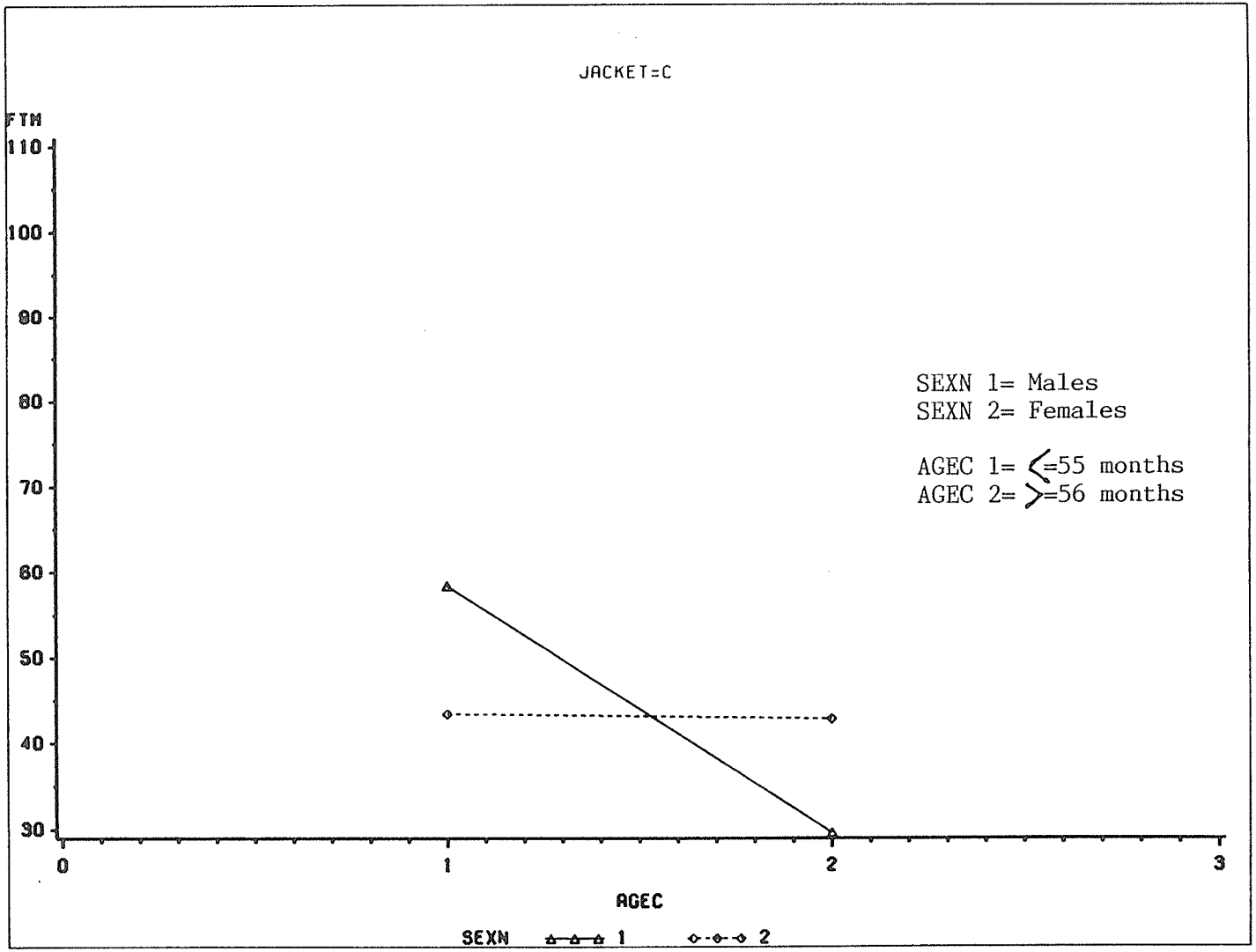

Figure 6. Finishtime for Jacket C by age and sex.

Jacket B's sleeves sooner than males. Age was not a significant factor on sleevetime.

An additional test was done on age and sex combined to find out if these two variables together influenced sleevetime. The results from this test found values which were not significant on sleevetime.

Finishtime included subjects who did complete the task, and it also included subjects who did not complete the task fully. A prompt accompanied each jacket type after 20 seconds into the task consisting of: "Did you still want to continue on with this (putting on the jacket)?" All subjects, except for those who completed before 20 seconds, received the prompt.

An analysis of variance was done on finishtime to see if sex and age had an influence on finishtime. For both sex and age the results obtained revealed that neither sex or age has an influence on the finishtime per jacket type. However, an additional test on sex and age combined yielded results which were significant for Jacket B and C. Younger males (55 months and younger) will have a faster finishtime than younger females for Jacket B. Younger females will have a faster finishtime for Jacket C than younger males. Older females (56 months and older) have a faster finishtime for Jacket B than older males. Older males (56 months and older) have a faster finishtime for Jacket C than older females.

COMPLETION RATE OF JACKETS

In general, when examining which jacket (A, B or C) had the most subjects completely finish all aspects of the task it was found that Jacket B and Jacket C had a tie of 29 subjects each completing these jackets. Jacket A had only 27 successful completions. Jacket B and Jacket C had 58% of the subjects being able to complete these jackets, and Jacket A had 54% of the subjects completing this jacket type.

Chi-square testing at a .05 significance level was performed on each jacket type (A, B and C) to see if sex had an influence on completion rate (see Table 11). The chi-square value for Jacket A was 1.19, Jacket B was 3.00, and Jacket C's was 3.61. These values are not significant.

Age was also considered as a possible factor in the completion per jacket type. The sample was divided into two age groups with one group consisting of those subjects 55 months and younger, and the other group was those subjects 56 months and older.

Chi-square testing at a .05 significance level was performed on these results (see Table 10). Age was shown to be an influential factor for the completion of Jacket A. Older subjects are more likely to complete Jacket A than younger subjects.

Table 10

Frequencies and Chi-square Values for the Completion Rate of the Jacket Types

	Jacket Type	Age		Sex	
		Age<=55	Age>=56	Male	Female
Complete	A	10	17	11	16
Not Complete	A	17	6	6	17
	χ^2 Value=	6.80*		1.19	
Complete	B	15	14	7	22
Not Complete	B	12	9	10	11
	χ^2 Value=	.15		3.00	
Complete	C	14	15	13	16
Not Complete	C	13	8	4	17
	χ^2 Value=	1.66		3.61	

Note: d.f.=1

* $p<.05$

Hypothesis 2

There is no significant relationship between the completion of the task and:

(A) sex

(B) age.

Chi-square testing at a .05 significance level was used to test if sex or age had an influential effect upon the completion of the jacket types. It was found for sex there were no significant chi-square values; therefore, sex is not a significant factor in the completion of the jacket types.

However, when testing age it was found Jacket A had a chi-square value of 6.80. This is a significant value; therefore, Hypothesis 2 is rejected in relation to age and Jacket A. Older subjects (56 months and older) are more likely to to complete Jacket A than younger subjects (55 months and younger). Jacket B and C did not have significant chi-square values for age and completion rate.

PREFERRED JACKET TYPE BY SUBJECTS

Each subject was asked at the end of testing which jacket he/she preferred to put on the most. It was emphasized that aesthetics, or the appearance of the jacket, was not to be a part in their selection. They were to chose the jacket which they liked "putting on" the most. It was found that thirteen of the subjects preferred Jacket A, eight preferred Jacket B and twenty-nine preferred Jacket C. It appears through these results that the subjects preferred Jacket C, their own jackets, the most.

From the thirteen subjects who preferred Jacket A five were males, and eight were females. For Jacket B one was a

male, and seven were females. Jacket C's results found that eleven were males, and eighteen were females.

Chi-square testing using a .05 significance level was done to see if the jacket chosen and sex had any relationship (see Table 11). A chi-square value of 1.97 was found, and this result signifies that there is no relationship between jacket chosen and sex.

Age was also examined to find out if it had an influential factor on jacket preference. Chi-square testing at a .05 significance level was done (see Table 11) on the age groups (55 months and younger and 56 months and older) and jacket chosen. A chi-square value of 1.80 was found. This value is not significant; therefore, age is not an influential factor in jacket type chosen by a subject.

Table 11

Frequencies and Chi-Square Values Obtained for Sex and Age

Jacket	Sex		Age	
Type	Male	Female	Age<=55	Age>=56
A	5	8	6	7
B	1	7	6	2
C	11	18	15	14
χ^2 Value=	1.97		1.80	

Note: d.f.= 2

* p<.05

It was thought that the preferred jacket may have been chosen on the basis of successful jacket completion. All the subjects were combined into one group and not split into sub-groups (i.e. sex or age) for this testing. For those who chose Jacket A eleven were successful in completion and two were not. Out of the group that chose Jacket B six were successful and two were unsuccessful in completing the task. For those who chose Jacket C seventeen were successful in completion and twelve were not. Chi-square testing at a .05 significance level on these results revealed a value of 2.99. This chi-square value is not a significant value. There is no relationship between jacket chosen and success in completion.

An additional chi-square testing was performed to see if a jacket was preferred through inferred positive reactions. The jacket which received the most positive reactions either facially, vocally or bodily was viewed as the jacket preferred by the subject (see Table 12). Since there were two episodes viewed for each jacket both episodes were considered, and both sexes were considered separately. Also, since it was possible the number of positive reactions for the jackets could be a tie and additional element of response (i.e. Jacket A, Jacket B, Jacket C, or Tie) was added.

Table 12

Frequencies and Chi-square Values for Jacket Preferred Inferred Through Facial, Vocal or Bodily Responses by the Sex Groups for Both Episodes

Response	Jacket Type	Episode One Sex		Episode Two Sex	
		Male	Female	Male	Female
Facial	A	0	5	4	3
	B	2	4	0	3
	C	3	6	3	4
	Tie	12	18	10	23
	χ^2 Value=	3.06		3.66	
Vocal	A	0	2	2	3
	B	0	2	2	2
	C	2	2	1	3
	Tie	15	27	12	25
	χ^2 Value=	2.58		.73	
Bodily	A	0	2	1	3
	B	1	2	0	5
	C	3	9	3	2
	Tie	13	20	13	23
	χ^2 Value=	1.90		4.30	

Inferred facial responses for jacket preference of each episode by the sexes were tested using chi-square testing at the .05 significance level for the two episodes revealing a chi-square value of 3.06 for episode one and 3.66 for episode two. These are not significant chi-square values.

Inferred vocal responses for jacket preferred of each episode by the sexes were tested using chi-square testing at the .05 significance level for the two episodes revealing a chi-square value of 2.58 for episode one and .73 for episode two. These values are not significant chi-square values.

Inferred bodily responses for jacket preferred of each episode by the sexes were also tested using chi-square testing at the .05 significance level for the two episodes revealing a chi-square value of 1.90 for epiosode one and 4.30 for episode two. These are also not significant chi-square values.

Hypothesis 3

There is no significant relationship between the preferred jacket chosen and:

(A) sex

(B) age

Chi-square testing at a .05 significance level was used to test if sex or age have a significant influence on the preferred jacket type chosen. A chi-square value of 1.97 was found for jacket type chosen and sex. This is not a

significant value, and Hypothesis 3 is not rejected for preferred jacket chosen and sex.

Age was also tested using a chi-square test at a .05 significance level. A chi-square value of 1.80 was found. This value is not significant in its value; thus, Hypothesis 5 is true for jacket chosen and age.

STATED RESPONSE TO PUTTING ON THE JACKETS

The subjects were asked at the end of putting on each jacket how he/she felt while putting on that particular jacket type. The possible responses were happy, not happy or not sure. The researcher provided a chart with three facial responses corresponding to the three possible responses to help the subject visualize which of the actual responses he/she felt.

Table 13 displays the frequencies of responses found per jacket type by both sexes. It is evident that for both sexes, Jacket C received the most "happy" responses to putting on the jacket.

Chi-square testing at the .05 significance level was performed to find out if jacket type influenced the type of responses by the two sexes. Jacket A had chi-square value of 2.27, Jacket B had a 3.06 value, and Jacket C's value was 12.62. Jacket C's chi-square value is significant suggesting that this jacket type influenced the type of response given by the sexes. Males and females were more likely to respond

they were happy about putting on Jacket C (their own jacket).

Table 13

Frequencies for Stated Responses to Putting on the Jacket Types and the Chi-Square Results for Sex

Jacket Type	Sex	Response Stated			χ^2 Value
		Happy	Unhappy	Not Sure	
A	M	7	3	7	2.27
A	F	17	9	7	
B	M	5	4	8	3.06
B	F	17	8	8	
C	M	13	0	4	12.62*
C	F	22	5	6	

Note: d.f.= 2

* $p<.05$

Table 14 displays the frequency results found for age and stated response. Age was tested to find out if it had an effect on the possible responses given. Chi-square testing was performed and the following chi-square results were found: Jacket A had a value of .62; Jacket B's value was 2.75; and Jacket C had a value of 1.68. These chi-square values are not significant; therefore, age is not significant factor influencing possible responses given.

Table 14

Frequencies for Stated Responses to Putting on the Jacket Types and the Chi-square Results for Age

Jacket Type	Age	Response Stated			χ^2 Value
		Happy	Unhappy	Not Sure	
A	Age<=55	13	8	6	.62
A	Age>=56	11	5	7	
B	Age<=55	13	4	10	2.75
B	Age>=56	9	8	6	
C	Age<=55	21	2	4	1.68
C	Age>=56	14	3	6	

Note: d.f.= 2

* p<.05

Hypothesis 4

There is no significant difference between the level of satisfaction felt (i.e. happy, not happy or not sure) donning the jacket types due to:

(A) sex

(B) age.

Chi-square testing at the .05 significance level was performed on sex and age in regards to the level of

satisfaction indicated by the subjects for each jacket type. When examining sex and the level of satisfaction felt donning the jacket types it was found Jacket C had the only significant chi-square value. The actual value came to 12.62. Hypothesis 4 can be rejected in regards to sex and level of satisfaction felt donning Jacket C. This jacket (their own) influenced the response the sexes gave. Males and females were more likely to respond that they were happy about putting on Jacket C than not happy or not sure.

Age and the level of satisfaction felt donning the jacket types was also tested, and the chi-square values for this area revealed no significant values for any of the jacket types. Age is not a significant factor in the level satisfaction felt donning the jacket types.

EMOTIONAL RESPONSES TO THE JACKETS

Emotional responses could occur facially, vocally or bodily. They were recorded in both episodes found within the datasheet. Each emotional response (facial, vocal and bodily) was tested separately within each of the two episodes for all three jackets (A, B and C). Age and sex were tested as possible variables which could influence an emotional responses and its intensity (i.e. positive, negative or neutral) per jacket type (see Table 15).

Facial, vocal and bodily responses by both sexes for

Jacket A, B and C within episode one and two were tested using chi-square testing on these three jackets separately at a .05 significance level.

Table 15

Chi-Square Values for the Emotional Responses

Emotional Response	Jacket Type	Episode One		Episode Two	
		Age	Sex	Age	Sex
	A	2.01	2.22	.29	.89
Facial	B	2.46	3.21	.19	2.60
	C	2.58	1.22	1.08	.01
	A	3.03	1.55	1.69	.54
Vocal	B	4.74	.40	2.68	1.09
	C	.87	2.57	.05	.62
	A	3.17	1.12	2.83	1.26
Bodily	B	1.76	.82	3.83	1.67
	C	.04	.27	7.09*	5.27

Note: d.f.= 2

* $p<.05$

When divided by sex, bodily responses in episode two for Jacket C indicated the chi-square value is within the positive range (5.991) by which it could be a significant result; however, it did not exceed or equal 5.991.

Age was also tested to find out if it was an influential factor on the emotional responses and their intensities (i.e. positive, negative or neutral) per jacket type. Age was split into two groups, as in the other areas, where one group was those subjects 55 months and younger, and the other was those subjects 56 months and older. The facial, vocal and bodily responses were tested for both episodes using chi-square testing at a .05 significance level.

When divided by age, bodily responses for episode two by the age groups for Jacket C revealed its chi-square value is significant. Thus, age could influence the bodily response given by the two age groups for Jacket C. Older subjects are more likely to react positively to Jacket C (their own jacket) than younger subjects. Younger subjects are more likely to react in a neutral manner towards Jacket C.

For the actual frequencies found for each emotional response (i.e. facial, vocal and bodily) refer to Appendix G.

Hypothesis 5

There is no significant relationship between the jacket type (i.e. Jacket A, B or C) and the degree of emotional response (i.e. positive, negative or neutral) due to :

(A) sex

(B) age.

All three emotional responses (facial, vocal and bodily) and their intensities (positive, negative and neutral) were recorded for each jacket type. The variables age and sex were examined separately.

It was found through chi-square testing at the .05 significance level of both dressing episodes by the sexes that there was only one incident which was within the positive range of being significant. Jacket C produced a chi-square value of 5.27 within episode two for the bodily responses. This value is within the p.05 value (5.991) but does not equal or exceed the amount (5.991). This value could indicate that for Jacket C females are more likely to show a positive bodily response than males. Females are also more likely to display a neutral bodily response than males to Jacket C.

Age was also tested using a chi-square test at a .05 significance level to see if age influences the type of emotional response (facial, vocal or bodily) and its intensity (positive, negative or neutral) per jacket type. It was found for Jacket C in episode two the chi-square value came to 7.09 for the bodily responses. Hypothesis 5 is rejected for age in this case. Age is a an influential factor in the bodily responses given for Jacket C. Older subjects (56 months and older) are more likely to react positively to Jacket C (their own jacket) than younger subjects (55 months and younger). Younger subjects are more

likely to react in a neutral manner towards Jacket C.

VERBAL HELPS

A verbal help was defined as, "a verbal suggestion to encourage or urge a child to dress; the verbal help does not instruct, nor does it serve as a substitute for manual help" (Key et al., 1936, p.116). Verbal helps were given in each episode, for each jacket type, during the donning of the jacket.

The variables sex and age were explored separately to find out if either had an influence on whether or not a verbal help was used more or less per jacket type for each variable. The two episodes were looked at separately for each jacket (see Table 16).

When divided by sex, verbal helps in episode one for Jacket B indicated a significant value. Thus, for Jacket B males were more likely to need a verbal help while donning the sleeve type, which was a raglan sleeve.

The results for the sexes in episode two upon performing chi-square testing with a .05 significance level indicated both Jacket A and Jacket C had significant values. For Jacket A females were more likely to need a verbal help while donning this jacket type. For Jacket C females were also more likely to need a verbal help to continue on with the donning of this jacket.

Age was also tested to find out if it influenced whether or not a verbal help was necessary during the donning of the jacket types. Age was split into two groups, as in previous areas tested, where one group consists of those subjects 55 months and younger, and the other group consists of those subjects 56 months and older.

Table 16

Chi-Square Values for Verbal Helps Given Per Jacket Type

Jacket	Episode One		Episode Two	
Type	Age	Sex	Age	Sex
A	.09	1.39	.28	4.91*
B	.09	6.20*	1.08	.10
C	0	.23	7.74*	3.89*

Note: d.f.= 1

* $p<.05$

When divided by age, significant results only occurred within episode two for Jacket C. Younger subjects are more likely to need verbal helps than older subjects for Jacket C.

The actual frequencies found for the verbal helps needed by the two variables age and sex per jacket type are within Appendix G.

Hypothesis 6

There is no significant relationship between jacket type (i.e Jacket A, B or C) and whether or not a subject will need a verbal help due to:

(A) sex

(B) age.

Chi-square testing was performed at a .05 significance level to test whether or not a subject needed a verbal help per jacket type due to age or sex. Both dressing episodes were tested separately to explore if one had more influence than the other. When testing sex it was found in episode one that Jacket B had a significant chi-square value of 6.20 meaning that Hypothesis 6 could be rejected in this case. Males were more likely to need verbal helps than females while donning Jacket B. Episode two revealed that Jacket A and Jacket C had significant chi-square values of 4.91 (Jacket A) and 3.89 (Jacket C) causing Hypothesis 6 to be rejected for these two jacket types. For Jacket A females were more likely to need a verbal help while donning this jacket type, and for Jacket C females were also more likely to need a verbal help while donning this jacket type.

Age had no significant chi-square values in episode one making Hypothesis 6 true for this episode, but in episode two Jacket C had a significant chi-square value of 7.74 causing Hypothesis 6 to be rejected in this case. It was found that

younger subjects were more likely to need verbal helps while donning with Jacket C. Jacket A and B did not have significant chi-square values; thus, Hypothesis 6 still holds true for these two jacket types.

CHAPTER SIX

DISCUSSION AND CONCLUSIONS

The data obtained in this study suggests that, depending on the jacket type, sex and age can influence the time (sleevetime and finishtime) taken, the completion rate, stated response (i.e. happy, unhappy or not sure) to putting on the jacket types, number of verbal helps given, and the emotional response given. The data indicates which jacket was preferred by the subjects, but it also indicates how design and fastener type could influence a child's dressing ability and attitude towards a jacket type.

The discussion and conclusions of the results will occur in the following sections: time and completion rate; stated responses to putting on the jacket types; verbal helps; and emotional responses to putting on the jacket types.

Time and Completion Rate

Time and completion rate of the jackets will be discussed together. These two areas can be brought together to allow the results to be more relevant and uniform in their discussion. Time will be split into the two separate

sections (i.e. sleevetime and finishtime) for the discussion and conclusions, as done in previous chapters.

Sleevetime

The mean sleevetime of the jackets were as follows: Jacket A 15.12 seconds; Jacket B 14.88 seconds; and Jacket C 11.70 seconds. These sleevetime results seem to indicate that Jacket A took the longest to put on. The sleeve type for Jacket A was a set-in sleeve, and it was considered the hardest to complete. The time results seem to confirm the notion that set-in sleeves are more difficult to complete, and this sleeve type should be avoided in children's wear as it can hinder their dressing performance.

Sex was found to influence sleevetime but only for Jacket B. Upon performing an analysis of variance it was found that females completed Jacket B's sleeve type faster than males. Thus, the sleeve type, a raglan sleeve, is inductive of faster dressing for females than males.

A comparison of the two test jackets, Jacket A and Jacket B, reveal for sleeve type Jacket B's sleeve is better for speed and ease in dressing through the faster sleevetime (14.88 seconds) than Jacket A (15.12 seconds). Jacket C's sleeve type was not consistent as the researcher had no control over the type of jacket the subjects owned. Although Jacket C's sleevetime was the fastest, its results suggest that perhaps familiarity influenced the speed and ease in

which the subject was able to dress.

Finishtime

The finishtime data was the total time the subject took to complete the task, or the total time it took the subject to complete the task as best as he could. Thus, finishtime includes those subjects who fully completed the task, and those who partially completed the task.

The actual mean finishtimes for the jackets were as follows: Jacket A, 46.02 seconds; Jacket B, 81.56 seconds; and Jacket C, 43.18 seconds. Jacket C (their own jacket) and Jacket A had the quickest finishing times, and Jacket B took substantially longer to finish. Jacket C and Jacket A contained separating zippers as their main fastening system compared to Jacket B which had 5 button closures with 2 cm buttons in diameter as its main fastening system. Although Jacket A and jacket C did have faster finishing times the number of subjects who completed Jacket A fully was less than Jacket B. It was found that 27 subjects (54% of the sample size) completed Jacket A fully; whereas, 29 subjects (58% of the sample size) completed Jacket B. Twenty-nine subjects (58% of the sample size) also completed Jacket C. These results seem to suggest that although Jacket A had a faster finishing time than Jacket B, more subjects were more likely to finish Jacket B fully than Jacket A.

These results seem to corroborate the results of

fastener studies such as Becker's (1984) in that children are able to complete button closures successfully before completing separating zippers. Jacket C also had a good completion rate; however, the subjects were familiar with this jacket as it was their own. They had ample opportunity to practice with the jacket.

It was also found upon performing an analysis of variance on finishtime that the variables sex and age combined play an influential part on Jacket B's and Jacket C's finishtime. For Jacket B it appears younger males had a faster finishtime (54.88 seconds) than older males (100.56 seconds), but older males are more likely to complete the task than younger males. Only two out of eight of the younger males completed the task fully; whereas, five out of nine of the older males fully completed the task. For the females, older females had a mean finishtime of 70.71 seconds compared to the younger females having a mean finishtime of 91.79 seconds. Both groups of females were fairly even in completion rate. For younger females 12 out of 19 completed the task compared to 11 out of 14 of the older females completion of the task.

Comparing both sex and age groups it was found that younger males have a faster finishtime (54.88 seconds) than younger females (91.79). However, older females had a faster finishtime (70.71 seconds) than older males (100.56). Comparing the percentage of younger males to younger females

who actually completed the task fully 25 percent of younger males completed the task fully versus 63.16 percent of younger females. This suggests that younger females may have a longer finishtime, but younger females have a higher completion rate than younger males.

When comparing older females percentage of completion to older males it was found that older males have a 55.56 percentage of completion compared to older females who have a 78.57 percent completion rate. Again, it appears females are more likely to complete the task than males. It was also found for this group (i.e. the older group) that females have a faster finishtime (70.71 seconds) than males (100.56 seconds).

These results reinforce what has already been stated about females and their ability to manipulate button closures before males (Becker, 1984). The higher percentage of actual completion for the females suggests they are better able to manipulate button closures than males. Also, when comparing the mean number of buttons able to complete by each age and sex group the following results were obtained: younger males had a mean of 1.75 buttons completed; younger females had a mean of 4.37 buttons completed; older males had a mean of 3.89 buttons completed; and older fmales had a mean of 4.14 buttons completed (see Appendix E). These results suggest once again females are able to complete more buttons than males. It also shows that through maturation males do

gradually develop the capacity to manipulate buttons.

The finishtime for Jacket C had significant results upon performing an analysis of variance. Age and sex combined were influential on its finishtime. It was found younger males took longer (58.38 seconds) than older males (29.67 seconds), and younger females took longer (43.42 seconds) than older females (42.86 seconds). Comparing the two age and sex groups younger males have a longer finishtime than younger females, and older females have a longer finishtime than older males.

When comparing percentages of those who actually completed the task it was found that 62.50 percent of younger males completed the task compared to 47.37 percent for the younger females. For the older subjects 88.89 percent of the older males completed the task versus 50 percent of the older females.

These results suggest that males are more likely to complete their jacket (i.e. Jacket C), which contains a separating zipper, than females. Younger males may have a longer finishtime, but they are more likely to complete the jacket than females. Older males have a faster finishtime than older females and are more likely to complete the task than females.

It should be noted that for Jacket A age was a significant factor in the completion of this jacket type. Older subjects were more likely to complete this jacket type

than younger subjects. Sex was not considered a significant factor. Set-in sleeves, slightly fitted bodice and a separating zipper made this jacket difficult to complete, and those subjects who are older should be able to handle this task better than younger subjects because of their advantage in time and maturation level in their development over the younger subjects.

It appears that completion time is influenced by sex and age for certain fastener types located upon the jackets, and the rate of completion is also affected by sex and age. The results seem to reinforce past research on fasteners and developmental skills. Girls are able to manipulate button closures better than boys (Becker, 1984), and age will determine the level of motor skills a child can accomplish (LeFrancois, 1983). This information is important in the understanding of dressing development in children. Noting there are differences between the sex and age groups is important for the developmental process, and it indicates the progression one follows during this developmental task.

Dressing has the same characteristics as other developmental tasks do. It follows a distinct pattern of occurrence and is unique for every individual. Thus, dressing should be viewed as being just as important to the child as any other developmental task encountered in his life, and it should be dealt with the same seriousness (i.e. improper introduction to the skill could affect other

developmental areas.

Stated Response to Putting on the Jacket Types

The subjects were asked after each jacket how putting on the jacket (i.e. Jacket A, B and C) made them feel (i.e. happy, not happy or not sure). A display chart of the three possible responses was shown with facial responses to help the subjects decide how it was they felt while putting on the jacket types.

Jacket C received the most (35) "happy" responses to putting on the jacket with Jacket A receiving the second most (24), and Jacket B received the third most (22).

It was found through chi-square testing that Jacket C was within the positive range for sex to be a significant factor influencing the response to be given for that jacket. Males and females were more likely to respond they were happy about putting on Jacket C.

A subject responding he is happy about putting on his own jacket is not surprising since this jacket is his own, and he is comfortable with the jacket through familiarity. Hurlock (1978) does suggest that children do have favorite clothing they like to wear every day; thus, this suggests children do get attached to their clothing. The familiarity of the clothing and how it works, along with the attachment factor, would give a child a sense of security and happiness. Therefore, the fact Jacket C received more happy responses is

not surprising.

Verbal Helps

Verbal helps were given when it appeared the child could continue on with the task only the child is expecting manual help because the child is tired or discouraged with the task. They were verbal suggestions to help the child along during the dressing task. The verbal helps did not tell the child how to do the task, rather, they encouraged a child to continue on.

Through chi-square testing it was found that age and sex can be influential factors on the number of verbal helps needed per jacket type. Age had only one significant result within episode two. Younger subjects (55 months or younger) required more verbal helps than older subjects (56 months and older) for Jacket C. It appears then that Jacket C's fastener type (i.e. separating zipper) required more encouragement for younger subjects to carry on.

Sex obtained three significant chi-square results. One was within episode one. For Jacket B males needed more verbal helps than females. The other two significant results were within episode two. It was found that for Jacket A females were more likely to require verbal helps than males, and for Jacket C females were more likely to require a verbal help than males.

It appears for sex and age that the separating zipper

fastener type found on either Jacket A or Jacket C required a significant number of verbal helps. This suggests the fastener type is difficult to manipulate on one's own. This would correlate to Becker's (1984) findings. Separating zippers are last on the list of fasteners to be able to manipulate; thus, it would require help or encouragement to carry on the task because of its difficulty.

The number of verbal helps needed can also be compared to the time it took the subjects to complete Jacket A. Jacket A required the most time to complete the jacket because of the difficulty of the fastener type (separating zipper), and therefore required more encouragement to complete the jacket.

Emotional Responses to Putting on the Jacket Types

The main purpose of this study was to examine preschool children's emotional responses to dressing with winter jackets. It was found through chi-square testing the only emotional response from the three (i.e. facial, vocal or bodily) which revealed significant results was the bodily responses. In episode two age influenced the type of bodily response (i.e. positive, negative or neutral) given to Jacket C. Older subjects were more likely to react positively to Jacket C than younger subjects. Younger subjects are more likely to react in a negative or neutral manner towards Jacket C.

The chi-square value for sex was within the range of being significant for the bodily responses. Once again the result was reflective of Jacket C, and it was within episode two. It was found that females were more likely to react positively to Jacket C than males. Males were the only ones who reacted negatively to Jacket C.

Although from the three emotional responses, bodily response was the only one to reveal significant results it is encouraging that at least one revealed some sort of emotional reaction while dressing was occuring. The fact that the significant results occured in episode two reveals the fastener type, a separating zipper, does cause some emotional stress on a child while dressing. Older subjects reacting more positively to Jacket C's fastener type (a separating zipper) relates to Becker's (1984) findings and development in general. Separating zippers require the most manipulation skills, and this skill can only be acquired through time and maturation.

The sex results were interesting. Females reacted more positively to Jacket C within episode two than males suggests there could be a sex difference in reactions to dressing. Perhaps females take more pride in dressing than males and like the act of being able to dress themselves better than males. Perhaps the actual challenge of dressing is more satisfying to females than males. These are only speculations, but they are relevant for further research in

this area.

The fact any emotional responses occurred at all, and were significant in value, is of interest to those studying the development of children. If clothing does cause a child emotional stress or joy it is influencing the child within. This is important to the child's overall concept of himself for if he reflects negatively upon himself future developmental area could be influenced (Gesell, 1940; Akmakjian, 1975). Dressing should be viewed more seriously as an important developmental skill during a child's development, and understanding that certain design features and fasteners are mastered before others will ease the amount of stress encountered during dressing for a child. The introduction of dressing skills needs to be encountered gradually and correlate to a child's capabilities just as in any other developmental area.

CHAPTER SEVEN

SUMMARY AND RECOMMENDATIONS

Summary

The main purpose of this study was to examine preschool children's emotional responses to dressing with winter jackets. An aim of this study was to indicate the importance of dressing during the course of development, and its possible effects on children.

Fifty children within three Winnipeg School Division No.1 schools were tested using a participant-observation form of observation. Both sex groups were represented with 17 of the subjects being male and 33 subjects being female. The ages of the subjects ranged from 49 months to 61 months. Twenty-seven of the subjects were between the ages of 55 months and younger while 23 of the subjects were between the ages of 56 months and older.

There were three test jackets: Jacket A, Jacket B and Jacket C. Jacket A consisted of set-in sleeves, a slightly fitted bodice and a separating zipper. This jacket was considered difficult to manipulate because of its features. Jacket B consisted of raglan sleeves, a loosely fitted bodice and five button closures with buttons 2 cm in diameter. This jacket was considered easy to manipulate because of the

favorable features found within the jacket to enhance self-dressing. Jacket C was the subjects' own jacket. The Jacket C's sleeve types varied with 68 percent having set-in sleeves, 22 percent had raglan sleeves and 10 percent had kimono sleeves. One hundred percent had a separating zipper as a fastener located in the front center of their jackets. Jacket C was used as an indication of the child's possible potential dressing skill. Jacket A and Jacket B were supplied by the researcher.

The collection of data was done by the researcher plus two additional observers. The researcher interacted with the children mainly while the observers recorded the emotional responses (facial, vocal or bodily) that occurred and the intensity (positive, neutral or negative). The two observers also recorded the number of verbal helps which were given while the donning of the jackets was occurring. There was an interobserver reliability of 84.1% between the two observers. The researcher recorded the sex and age of the subject, and she recorded the time it took the subject to complete each episode of dressing, whether or not the child completed the task fully, the actual number of buttons the child manipulated, the response given to the task (i.e. happy, not happy or not sure), and the jacket the subject preferred putting on the most. A happy face sticker was given at the end of testing to the subject for participating in the study.

The dressing task was split into two episodes. The first episode consisted of positioning the jacket to put the arms into the sleeves, putting the arms into the correct sleeveholes and pulling the jacket up onto the shoulders. The second episode consisted of manipulating the main fastener type located on the jacket types. When discussing time the two episodes are labeled. Episode one is considered sleevetime, and episode two is considered finishtime. Finishtime is the complete time, including sleevetime, which it took the subject to complete the jacket fully, or the time it took the subject to complete the jacket as best as he could.

Both episodes were considered when calculating the results. Chi-square testing was performed on time (sleevetime and finishtime), jacket preference (stated and inferred), responses to the tasks, completion rate, number of verbal helps, and emotional responses to the jacket types using sex and/or age as a variable interacting upon these areas.

The mean sleevetimes of all the jackets found Jacket A (15.12 seconds) with the longest time. Jacket B had a mean sleevetime of 14.88 seconds and 11.70 seconds for Jacket C. An analysis of variance testing revealed for Jacket B sex is a significant factor for sleevetime. The females completed Jacket B's sleeve type (raglan) sooner than the males.

The mean finishtimes for the jacket types were as

follows: Jacket A 46.02 seconds; Jacket B 81.56 seconds; and Jacket C 43.18 seconds. Upon an analysis of variance testing it was found that for Jacket B and Jacket C sex and age combined are significant factors influencing finishtime. For Jacket B males 55 months and younger had a faster finishtime (54.88 seconds) than females the same age (91.79 seconds), but females 56 months and older had a faster finishtime (70.71 seconds) than males the same age (100.56 seconds). However, it should be noted that females, in general, had a higher percentage of fully completed jackets than males for Jacket B.

For Jacket C sex and age combined were also influential on the finishtime. Younger males took longer (58.38 seconds) than younger females (43.42 seconds); whereas, older females took longer (42.86 seconds) than older males (29.67 seconds). Males had a higher percentage of completion rate than females.

For completion rate it was found for Jacket A age is an influential factor effecting completion. Older subjects are more likely to complete Jacket A than younger subjects.

The preferred jacket by introspection was found to be Jacket C where twenty-nine subjects chose it as the jacket they liked putting on the most. Jacket A came second with thirteen subjects preferring it, and Jacket B came last with eight preferring it.

Jacket C revealed positive chi-square values for the

stated response to putting on this jacket type (i.e. happy, not happy or not sure) with sex as a variable. Males and females were more likely to respond they were happy about putting on Jacket C.

For verbal helps it was found, within episode two, that age influenced the results for Jacket C. Younger subjects required more verbal helps than older subjects. Sex obtained three significant results. Within episode one, males required more verbal helps than females for Jacket B. Episode two revealed two significant results for Jacket A, females were more likely than males to require verbal helps, and for Jacket C females were more likely to require verbal helps than males.

The results for emotional responses found only bodily responses to have any significant results. There were no significant results for facial or vocal responses. In episode two age influenced the type of bodily response (i.e. positive, negative or neutral) given to Jacket C. Older subjects were more likely to react positively to Jacket C than younger subjects. Younger subjects are more likely to react in a negative or neutral manner towards Jacket C. Also within episode two sex was found to be within the positive range of being significant for Jacket C. Females were more likely to react positively to Jacket C than males. Males were the only ones who reacted negatively to Jacket C.

The results found in this study suggest the variables

sex and age could have influence on time, completion rate, stated response to jacket, verbal helps, and emotional responses. The design features and fastener systems on the three different jacket types were influential on these results as well. Manufacturers, parents and significant others who deal with children's clothing need to understand which design features and fastening systems are favorable for a child's developmental level, since these factors are significant during the dressing process.

Dressing needs to be viewed as a significant developmental process every child must go through. Significant emotional responses indicate that dressing does effect a child's state, thus influencing the child internally and possibly psychologically. The dressing experience could effect other developmental areas. Proper developmental steps to the dressing task need to be followed, just as in other developmental tasks, or the child could be affected.

Recommendations

To further enhance and explore this area several recommendations should be made.

A larger sample size could increase the possible chances for response. Perhaps there would have been significant facial or vocal responses if the sample was larger.

A perfectly balanced sample would be desirable where there are equal numbers of males and females, and there are

equal numbers of older and younger subjects.

An added feature within the procedure should be included. Since many of the children chose their own jackets as the jacket they preferred putting on the most, the question should be asked a second time to find out which of the test jackets they preferred putting on the most. This would allow for a comparison between the test jackets' characteristics which are consistent and controlled.

A longitudinal study of children in their everyday dressing surroundings would be the ideal situation for this type of study. Testing over a long period of time would increase the chances of the children behaving more naturally and reflect their everyday personalities.

A longitudinal study of the children, preferably in their home environment, would allow for more indepth observations of how children tackle the dressing task on a day to day basis and which items of clothing, or design features, cause a child the most stress. Emotional responses to dressing by children could perhaps indicate the way in which a child will tackle other developmental tasks to be encountered in the future. If dressing is a stressful act with no positive reactions perhaps in the future a child will refrain from ever attempting something for the fear of failure. Does the repeated failure in dressing, or inability to dress oneself, have serious effects on a child and his development? It seems dressing as a developmental action has

been overlooked as an important factor in a child's overall development (i.e. social, psychological, etc.). It is an everyday action we all must perform in our society just like walking, talking, going to the washroom, etc. These other developmental tasks have been given attention, why not dressing?

Another element of this study which could be further explored is children's sense of aesthetic qualities in clothing and their importance to children. Many of the children chose their own jacket as the jacket type which they preferred putting on the most. This did not necessarily mean their jackets were easier to put on, but the fact their jackets had some aesthetic appeal may have influenced their choice. It was emphasised that aesthetics were not to play a role in their choice, but perhaps children are unable to do this.

The children's preference of their own jacket leads to another area of study. Do children have a strong bond to their clothing? Is their clothing important to them? Do they aquire a sense of identity from it?

These recommendations could increase the information relating to children and dressing. The fact that significant results occured indicates the possiblity of emotional occurences happening while children are dressing. Thus, dressing could influence children more than we give it credit for, and it should be considered as a significant

developmental process in a child's development.

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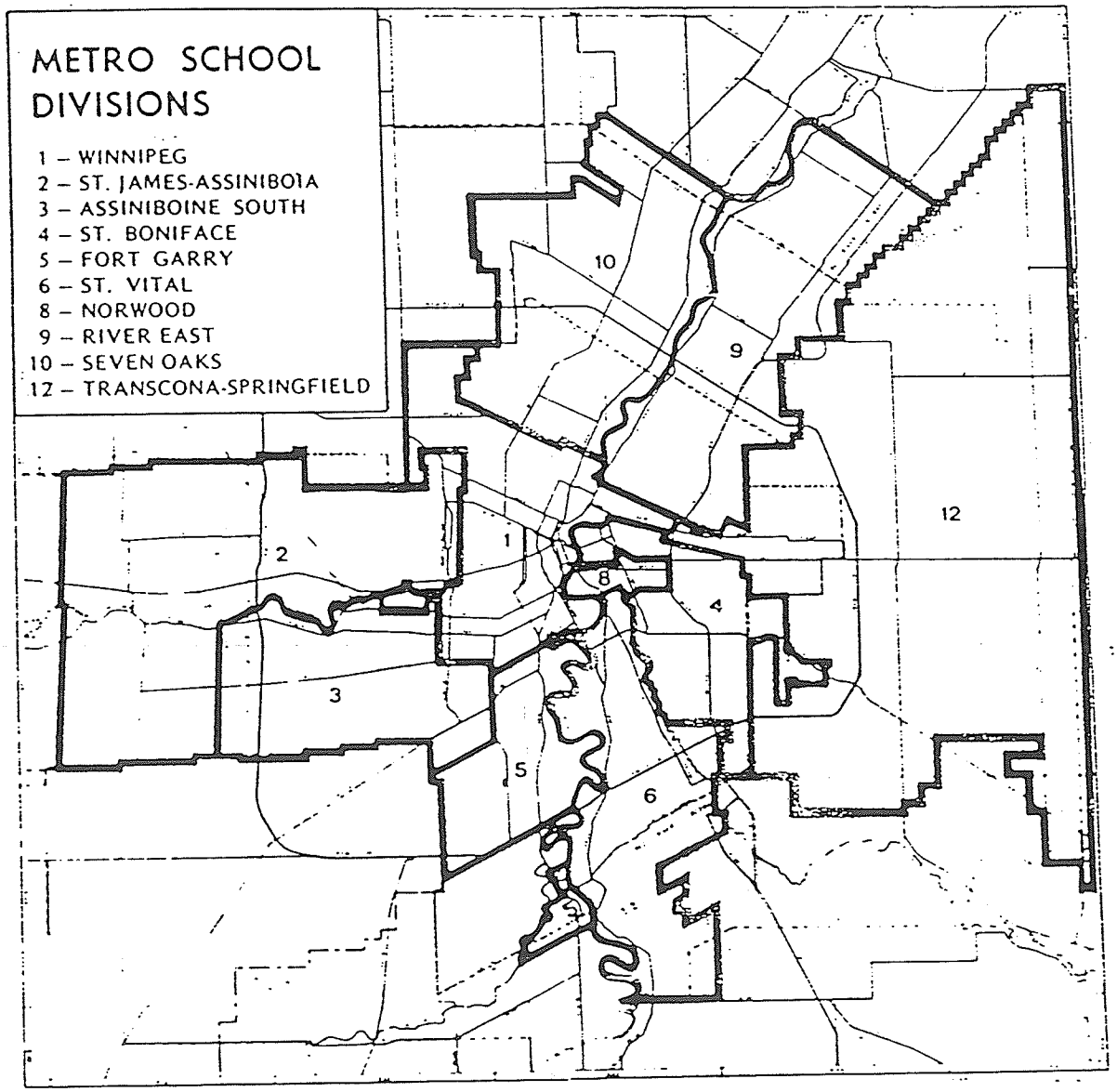
APPENDIX A

A Geographical Map of the Winnipeg Metro School Divisions



APPENDIX B

Characteristics of Children's Own Jackets (N=50)

Sleeve Type	
Raglan	11
Set-in	34
Kimono	5

Cuff Type	
Rib Knit	33
Elastic	16
Strings	0
Snaps	0
Straight	1

Fastening System	
Buttons	0
Snaps	0
Velcro	0
Hooks/Eyes	0
Zipper	0
Separating Zipper	50

Fastener Placement	
Front (center)	50
(diagonal)	0
Back	0

Bodice	
Straight Bottom	15
Elastic Bottom	17
Rib Knit Bottom	18

Waist Area	
Straight	47
String/Tie	3
Belt	0

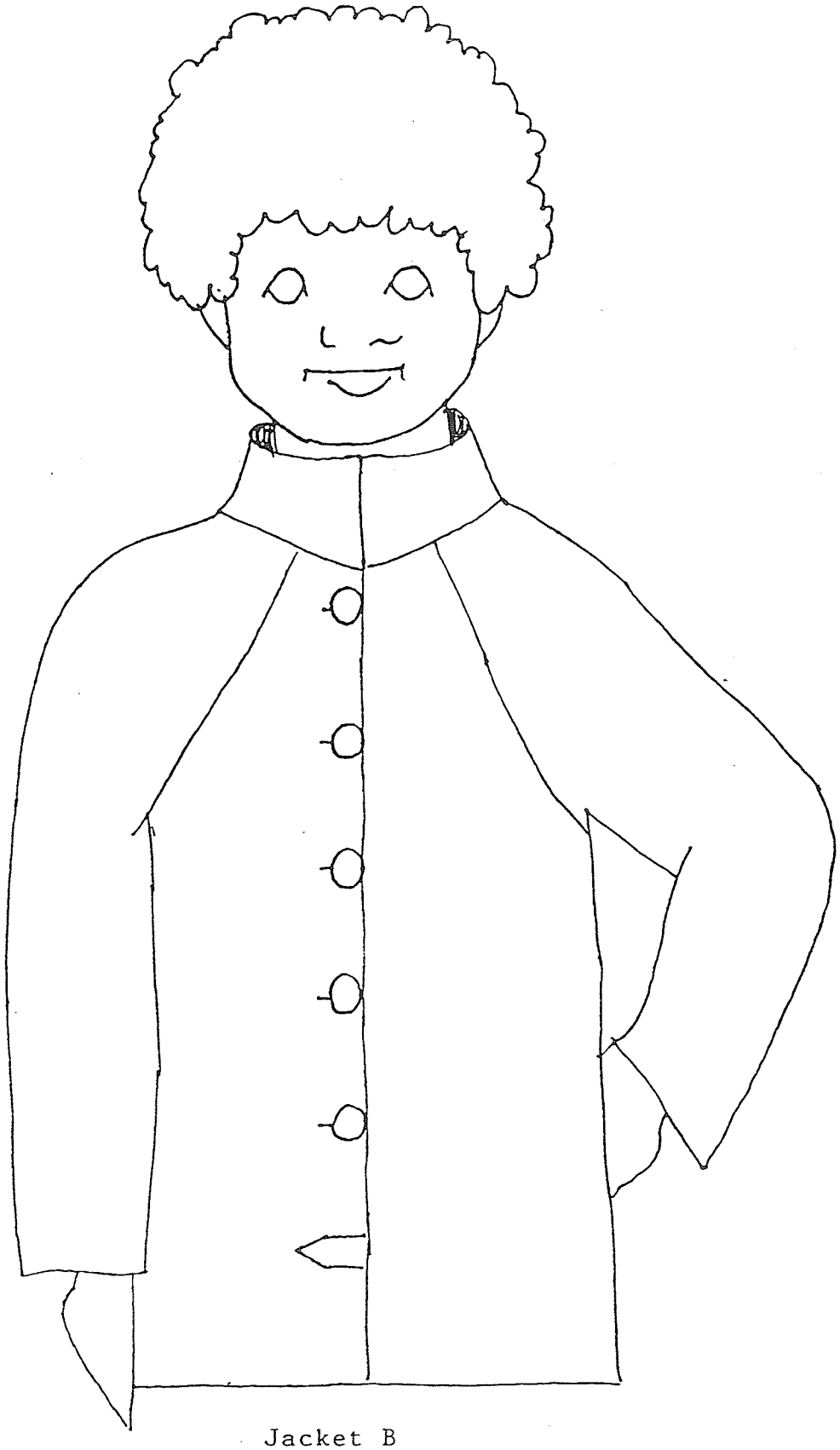
Bodice Length	
Waist	39
Hip	10
Knee	1

Fastener Length	
Full	50
Half	0
Three-quarters	0

Lining	
Slippery	36
Not Slippery	14

Second Fastener	
Buttons	2
Snaps	14
Velcro	3
Hooks/Eyes	0
Zipper	0
Separating - Zipper	0

Jacket A



Jacket B

APPENDIX C

Checklist for Subject's Jacket Type

Date:

Age of subject:

Sex of subject:

Subject's Jacket Type

Sleeve type

..... Raglan

..... Set-in

..... Kimono

..... Rib knit cuff

..... Elastic cuff

..... Strings/ties

..... Snaps/cuffs

Fastening System

..... Buttons

..... Snaps

..... Velcro

..... Hooks/eyes

..... Zipper

..... Separating Zipper

Fastener Placement

..... Front (center)

..... (off-center)

..... (diagonal)

..... Back

Bodice

..... Straight

..... Elastic bottom

..... Rib knit bottom

..... String/ tie waist

..... Belt waist

Bodice Length

..... Waist

..... Hip

..... Knee

Fastener Length

..... Full

..... Half

..... Three-quarters

Lining

..... Slippery

..... Not slippery

Additional Comments:

Dressing Episodes' Checklist

Jacket A (Zipper) .....
Jacket B (Buttons) .....
Jacket C (Subject's) .....

Subject prefers Jacket A .....
Jacket B .....
Jacket C .....

Dressing Episodes	Comments and Emotional Responses
1. ..... Orients jacket into proper position Arms/Sleeves ..... Right arm through right armhole ..... Difficulty with right armhole ..... Left arm through left armhole ..... Difficulty with left armhole ..... Right hand through right cuff ..... Difficulty with right cuff ..... Left hand through left cuff ..... Difficulty with left cuff. ..... Pulls jacket up onto shoulders Time:	Facial- Vocal- Bodily- Verbal Helps ....
2. Fastening Jacket Zipper ..... Places bottom stop into slider ..... Difficulty placing bottom stop into slider ..... Grabs tab to pull up ..... Does zipper up to top ..... Does not do zipper up to top Other Types ..... Buttons ..... Velcro ..... Snaps ..... Difficulty with fastener type ..... Completes jacket ..... Does not complete jacket Time:	Facial- Vocal- Bodily- Verbal Helps .... Subject's response to faces: ..... Happy ..... Unhappy ..... Not sure

APPENDIX D

To Whom it may concern,

I am a graduate student in the Department of Clothing and Textiles at the University of Manitoba, working under the supervision of Professor E. Shannon. For my Master's thesis, I am examining preschool children's emotional responses (facial, vocal or bodily) to dressing with winter jackets, and trying to determine which type of response (negative or positive) is occurring the most while dressing into winter jackets.

The Winnipeg School Division has allowed me to conduct a study in your child's nursery school classroom, subject to parental approval. Also, the children will be free to choose to participate or not to participate in the study as they see fit and to withdraw from the study at any time.

Each child will be asked to put on three winter jackets. Two of the jackets will be supplied by myself, and the third jacket will be the children's own. While the child is putting on the jackets, I will be observing emotional responses (facial, vocal or bodily) made by the child and noting whether the response is negative or positive. The observations and interpretations of the observation will remain confidental, and the children will remain anonymous. This study will not assess the behavior of individual children.

This proposal has been approved by the Ethics Committee of the Faculty of Human Ecology. If you are willing to allow your child to participate in this study, please fill out the consent form enclosed and return it to your nursery school teacher as soon as possible.

Thank you for your cooperation. For further information, please contact me at home (255-0756) or at the university (474-9292).

Sincerely,

Laurel-Jean Prendergast-Shea

I, parent of _____ at _____school consent to allow him/her to participate in the above study.

Date _____

Signature _____

APPENDIX E

Key to Raw Data

ID= Subject

AGE= Subject's Age in Months

SEX= Male or Female

SLTIME= Sleevetime in seconds

FINTIME= Finishtime in seconds

FINAL= Totally Completes Jacket (C); Completes Sleeves Only (S)
Fastener Not Complete (F)

JACKET= Jacket A, B or C

RESP= Response to Putting on Jacket

HAP= Happy UNH= Unhappy NTS= Not Sure

FA= Facial Response in Episode One

VA= Vocal Response in Episode One

BA= Bodily Response in Episode One

FB= Facial Response in Episode Two

VB= Vocal Response in Episode Two

BB= Bodily Response in Episode Two

Raw Data Scores

	ID	AGE	SEX	SLTIME	FINTIME	FINAL	JACKET	RESP	FA	VA	BA	FB	VB	BB
1.														
2.	1	54	M	40	73	F	A	HAP	+	0	0	+	0	0
3.	1	54	M	45	111	F	B	NTS	+	0	0	-	0	0
4.	1	54	M	7	73	C	C	HAP	0	0	0	+	0	0
5.	2	58	M	20	55	F	A	NTS	-	0	0	0	0	0
6.	2	58	M	30	110	F	B	NTS	-	0	0	0	0	0
7.	2	58	M	7	16	C	C	HAP	0	0	0	+	0	0
8.	3	53	F	12	55	F	A	NTS	+	0	0	+	0	0
9.	3	53	F	20	68	F	B	HAP	0	+	0	-	-	0
10.	3	53	F	2	35	C	C	HAP	+	0	0	+	+	0
11.	4	56	F	15	102	C	A	HAP	0	0	0	-	0	0
12.	4	56	F	5	42	F	B	HAP	0	0	0	0	0	0
13.	4	56	F	10	37	F	C	NTS	-	0	0	+	0	0
14.	5	58	F	25	37	C	A	UNH	0	0	0	-	0	0
15.	5	58	F	5	25	F	B	HAP	0	0	0	-	0	-
16.	5	58	F	5	17	C	C	NTS	+	0	0	+	0	+
17.	6	56	M	16	35	C	A	HAP	0	0	0	0	0	+
18.	6	56	M	15	160	C	B	HAP	0	0	0	0	+	0
19.	6	56	M	9	30	C	C	HAP	+	0	0	+	0	+
20.	7	53	F	10	40	F	A	NTS	0	0	0	+	-	0
21.	7	53	F	12	97	F	B	NTS	+	0	0	+	0	0
22.	7	53	F	7	42	F	C	NTS	+	0	0	+	0	0
23.	8	54	F	20	97	C	A	HAP	0	0	0	+	0	+
24.	8	54	F	18	65	C	B	NTS	+	0	0	+	0	+
25.	8	54	F	12	20	C	C	HAP	0	0	0	0	0	0
26.	9	52	F	20	82	F	A	HAP	0	0	0	0	0	0
27.	9	52	F	13	71	C	B	HAP	0	0	0	0	0	0
28.	9	52	F	10	55	F	C	HAP	+	0	+	0	0	0
29.	10	59	M	32	65	C	A	NTS	0	0	+	+	0	+
30.	10	59	M	30	60	F	B	UNH	+	0	0	-	0	-
31.	10	59	M	10	29	F	C	HAP	0	0	+	0	0	+
32.	11	54	F	12	26	C	A	HAP	0	+	0	+	+	+
33.	11	54	F	12	100	C	B	HAP	+	-	0	+	0	+
34.	11	54	F	7	58	C	C	HAP	+	0	+	0	0	0
35.	12	52	F	16	65	F	A	HAP	0	0	0	-	-	-
36.	12	52	F	15	141	C	B	HAP	0	0	0	+	0	+
37.	12	52	F	10	30	C	C	HAP	+	0	0	+	0	+
38.	13	49	F	13	119	F	A	HAP	+	-	0	0	0	0
39.	13	49	F	20	68	C	B	HAP	0	0	0	0	0	+
40.	13	49	F	15	107	C	C	HAP	+	0	0	0	0	0
41.	14	55	F	16	35	C	A	NTS	+	0	0	+	+	+
42.	14	55	F	10	44	F	B	HAP	+	0	+	+	0	+
43.	14	55	F	9	21	C	C	NTS	+	0	0	0	0	0
44.	15	53	F	14	40	F	A	HAP	0	0	0	+	0	+
45.	15	53	F	14	80	C	B	NTS	+	0	0	+	0	+
46.	15	53	F	14	65	C	C	HAP	+	0	0	+	+	+
47.	16	57	F	9	31	F	A	HAP	0	0	0	+	0	0
48.	16	57	F	20	65	C	B	HAP	+	0	+	0	0	+
49.	16	57	F	20	70	F	C	NTS	+	0	0	+	0	0
50.	17	61	M	14	70	F	A	NTS	0	0	0	-	-	0
51.	17	61	M	8	79	F	B	HAP	0	0	0	-	0	+
52.	17	61	M	7	25	C	C	HAP	+	0	0	+	+	+
53.	18	57	M	40	55	C	A	NTS	+	0	+	+	+	+
54.	18	57	M	16	95	C	B	UNH	0	0	+	0	+	+
55.	18	57	M	14	25	C	C	HAP	+	+	+	0	0	+
56.	19	53	M	20	40	F	A	NTS	0	0	0	-	0	-
57.	19	53	M	30	40	F	B	UNH	0	-	0	-	-	-
58.	19	53	M	25	110	F	C	HAP	0	-	0	0	-	0
59.	20	53	F	19	49	F	A	HAP	+	-	0	+	-	0
60.	20	53	F	7	115	C	B	HAP	0	+	0	+	+	+
61.	20	53	F	14	39	F	C	HAP	+	0	+	0	0	0
62.	21	59	F	15	30	C	A	UNH	+	0	0	+	0	+
63.	21	59	F	15	110	C	B	UNH	+	0	0	+	+	0
64.	21	59	F	10	100	F	C	UNH	+	0	+	+	0	0

65.	22	51	F	11	49	F	A	UNH	+	+	0	+	0	+
66.	22	51	F	12	75	F	B	UNH	+	0	0	+	0	0
67.	22	51	F	10	36	F	C	UNH	+	0	0	0	0	0
68.	23	57	F	16	39	C	A	UNH	0	0	0	0	0	+
69.	23	57	F	11	80	F	B	UNH	+	0	0	0	0	-
70.	23	57	F	10	24	C	C	HAP	0	0	0	0	0	+
71.	24	59	F	21	45	F	A	UNH	+	0	+	+	0	-
72.	24	59	F	11	60	C	B	NTS	+	0	0	+	0	+
73.	24	59	F	20	67	F	C	HAP	+	0	+	+	0	0
74.	25	53	M	7	23	F	A	UNH	+	0	+	0	0	0
75.	25	53	M	20	39	F	B	NTS	+	0	+	0	0	0
76.	25	53	M	14	46	F	C	HAP	+	0	0	0	0	-
77.	26	54	M	13	34	C	A	HAP	0	0	0	0	+	+
78.	26	54	M	10	74	C	B	HAP	0	0	0	0	0	+
79.	26	54	M	25	80	F	C	HAP	+	+	+	0	0	0
80.	27	51	M	9	21	C	A	HAP	0	0	0	0	0	+
81.	27	51	M	14	45	C	B	HAP	0	0	0	0	0	0
82.	27	51	M	11	19	C	C	HAP	0	0	0	+	0	+
83.	28	52	F	11	45	F	A	NTS	0	0	0	0	0	0
84.	28	52	F	10	80	F	B	UNH	0	0	0	0	0	0
85.	28	52	F	5	50	F	C	NTS	0	0	0	0	0	0
86.	29	50	F	5	30	C	A	HAP	+	0	0	0	+	+
87.	29	50	F	20	101	C	B	NTS	0	0	0	0	0	+
88.	29	50	F	4	40	F	C	HAP	0	0	+	0	-	0
89.	30	53	F	15	54	F	A	UNH	0	0	0	0	0	0
90.	30	53	F	13	205	F	B	NTS	0	0	0	-	0	0
91.	30	53	F	13	30	F	C	HAP	0	0	0	0	0	0
92.	31	52	F	10	63	F	A	UNH	0	0	0	-	0	0
93.	31	52	F	10	80	C	B	HAP	0	0	0	0	0	0
94.	31	52	F	7	33	C	C	HAP	+	+	+	0	0	+
95.	32	56	F	13	26	C	A	HAP	+	0	+	+	0	0
96.	32	56	F	12	52	C	B	NTS	0	0	0	+	0	+
97.	32	56	F	15	30	C	C	HAP	0	0	0	+	0	+
98.	33	60	M	10	24	C	A	HAP	+	0	0	+	0	+
99.	33	60	M	25	90	C	B	NTS	+	0	0	+	0	+
100.	33	60	M	15	25	C	C	HAP	0	0	0	+	0	+
101.	34	52	M	10	27	C	A	NTS	+	0	+	+	0	+
102.	34	52	M	25	25	S	B	NTS	+	0	0	0	0	0
103.	34	52	M	15	52	C	C	NTS	+	0	+	0	0	0
104.	35	59	M	15	41	C	A	HAP	+	0	+	+	0	+
105.	35	59	M	10	89	C	B	HAP	+	0	+	+	+	+
106.	35	59	M	30	63	F	C	NTS	+	0	+	0	-	0
107.	36	55	M	10	20	C	A	UNH	0	0	0	0	0	0
108.	36	55	M	10	60	F	B	NTS	0	0	0	0	0	0
109.	36	55	M	12	39	C	C	HAP	0	0	+	0	0	-
110.	37	57	F	25	35	C	A	HAP	0	0	+	0	0	+
111.	37	57	F	13	55	C	B	HAP	0	0	+	0	0	+
112.	37	57	F	10	31	C	C	HAP	0	0	0	0	0	+
113.	38	55	F	10	45	C	A	UNH	0	0	0	0	0	0
114.	38	55	F	10	85	C	B	HAP	0	0	0	0	0	0
115.	38	55	F	35	60	C	C	HAP	0	0	0	0	0	0
116.	39	50	M	15	35	F	A	UNH	+	+	+	0	0	0
117.	39	50	M	20	45	F	B	NTS	+	+	+	+	0	0
118.	39	50	M	7	48	C	C	HAP	+	0	+	+	0	+
119.	40	60	F	9	19	C	A	HAP	0	0	0	+	0	+
120.	40	60	F	25	117	F	B	UNH	0	0	0	0	0	-
121.	40	60	F	7	77	F	C	UNH	0	0	0	0	0	0
122.	41	59	F	7	31	C	A	HAP	0	0	+	+	0	+
123.	41	59	F	7	60	C	B	HAP	0	0	+	+	0	+
124.	41	59	F	5	17	C	C	HAP	+	0	+	+	+	+
125.	42	58	F	36	68	C	A	UNH	0	-	-	0	-	0
126.	42	58	F	15	36	F	B	NTS	0	0	0	-	-	0
127.	42	58	F	15	35	F	C	UNH	+	+	+	0	-	0
128.	43	59	M	20	35	C	A	NTS	0	0	0	0	0	+

129.	43	59	M	20	104	F	B	NTS	0	0	+	0	0	0
130.	43	59	M	26	34	C	C	NTS	0	0	0	0	0	+
131.	44	51	F	10	54	F	A	HAP	+	0	+	+	0	0
132.	44	51	F	10	76	C	B	HAP	0	0	0	+	0	+
133.	44	51	F	9	69	F	C	HAP	+	0	0	0	0	+
134.	45	59	M	10	27	C	A	HAP	0	0	0	+	0	+
135.	45	59	M	7	118	C	B	UNH	+	0	0	+	0	+
136.	45	59	M	7	20	C	C	NTS	0	0	+	0	0	+
137.	46	51	F	5	16	C	A	NTS	0	0	0	+	0	+
138.	46	51	F	13	98	C	B	UNH	0	0	0	+	0	+
139.	46	51	F	8	15	C	C	UNH	+	0	+	+	0	+
140.	47	60	F	6	40	C	A	NTS	+	0	+	0	0	+
141.	47	60	F	6	50	C	B	UNH	+	0	+	+	0	+
142.	47	60	F	5	53	F	C	HAP	+	0	+	0	0	+
143.	48	57	F	7	71	F	A	NTS	0	0	0	0	0	0
144.	48	57	F	13	119	C	B	UNH	0	0	0	0	0	+
145.	48	57	F	10	30	C	C	HAP	0	0	0	0	0	+
146.	49	60	F	6	16	C	A	HAP	0	0	0	+	0	+
147.	49	60	F	5	119	C	B	HAP	0	0	0	0	0	0
148.	49	60	F	4	12	C	C	HAP	0	0	+	0	0	+
149.	50	52	F	16	67	F	A	HAP	+	0	+	-	0	0
150.	50	52	F	7	95	C	B	HAP	0	0	+	0	0	+
151.	50	52	F	7	20	C	C	HAP	+	0	+	+	0	+

Table 17

Analysis of Variance Results for Finishtime

(Based on Type 1 Sum of Squares)

	Jacket A		Jacket B		Jacket C	
	FValue	PR>F	FValue	PR>F	FValue	PR>F
Age	0.63	0.433	0.03	0.867	2.36	0.131
Sex	1.73	0.196	0.17	0.679	0.02	0.879
Age and Sex	3.08	0.086	12.15	0.001*	4.05	0.05*

Note: d.f.= 1

* p<.05

Table 18

The Number of Buttons Each Subject Manipulated by Sex and Age

Sex			
Male		Female	
Age<=55	Age>=56	Age<=55	Age>=56
0	1	0	3
0	5	4	2
1	2	5	5
5	3	5	5
5	5	5	4
0	5	5	5
3	5	5	5
0	4	4	5
$\bar{x}$=1.75	5	5	4
	$\bar{x}$=3.98	4	5
		2	0
		5	5
		4	5
		5	$\bar{x}$=4.14
		5	
		5	
		5	
		5	
		$\bar{x}$=4.37	

APPENDIX F

The Sleevetime Results for Sex and Age

THE FINAL STANDINGS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C.V.
JACKET=A AGEC=AGE<=55 SEX=F									
SLTIME	19	12.89473684	4.34478918	5.00000000	20.00000000	0.99676300	245.00000000	18.87719298	33.694
JACKET=A AGEC=AGE<=55 SEX=M									
SLTIME	8	15.50000000	10.70380440	7.00000000	40.00000000	3.78436634	124.00000000	114.57142857	69.057
JACKET=A AGEC=AGE>=56 SEX=F									
SLTIME	14	15.00000000	8.96145593	6.00000000	36.00000000	2.39504984	210.00000000	80.30769231	59.743
JACKET=A AGEC=AGE>=56 SEX=M									
SLTIME	9	19.66666667	10.12422837	10.00000000	40.00000000	3.37474279	177.00000000	102.50000000	51.479
JACKET=B AGEC=AGE<=55 SEX=F									
SLTIME	19	12.94736842	4.06165927	7.00000000	20.00000000	0.93180854	246.00000000	16.49707602	31.371
JACKET=B AGEC=AGE<=55 SEX=M									
SLTIME	8	21.75000000	11.71994637	10.00000000	45.00000000	4.14362678	174.00000000	137.35714286	53.885
JACKET=B AGEC=AGE>=56 SEX=F									
SLTIME	14	11.64285714	5.95634300	5.00000000	25.00000000	1.59189963	163.00000000	35.47802198	51.159
JACKET=B AGEC=AGE>=56 SEX=M									
SLTIME	9	17.88888889	8.93650441	7.00000000	30.00000000	2.97883480	161.00000000	79.86111111	49.956
JACKET=C AGEC=AGE<=55 SEX=F									
SLTIME	19	10.42105263	6.90664567	2.00000000	35.00000000	1.58449318	198.00000000	47.70175439	66.276
JACKET=C AGEC=AGE<=55 SEX=M									
SLTIME	8	14.50000000	7.09124208	7.00000000	25.00000000	2.50713268	116.00000000	50.28571429	48.905
JACKET=C AGEC=AGE>=56 SEX=F									
SLTIME	14	10.42857143	5.31636495	4.00000000	20.00000000	1.42085830	146.00000000	28.26373626	50.979
JACKET=C AGEC=AGE>=56 SEX=M									
SLTIME	9	13.88888889	8.57969178	7.00000000	30.00000000	2.85989726	125.00000000	73.61111111	61.774

The Finishtime Results and the Sex, Age and Completion Rates

THE FINAL STANDINGS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C.V.
FINAL=C SJ=FA AGEC=AGE<=55									
FINTIME	6	41.50000000	28.83574171	16.00000000	97.00000000	11.77214226	249.00000000	831.50000000	69.484
FINAL=C SJ=FA AGEC=AGE>=56									
FINTIME	11	40.27272727	24.60931088	16.00000000	102.00000000	7.41998641	443.00000000	605.61818182	61.107
FINAL=C SJ=FB AGEC=AGE<=55									
FINTIME	13	90.38461538	21.26240211	65.00000000	141.00000000	5.89712931	1175.0000000	452.08974359	23.524
FINAL=C SJ=FB AGEC=AGE>=56									
FINTIME	9	76.66666667	29.94995826	50.00000000	119.00000000	9.98331942	690.00000000	897.00000000	39.065
FINAL=C SJ=FC AGEC=AGE<=55									
FINTIME	11	42.18181818	27.83098339	15.00000000	107.00000000	8.39135722	464.00000000	774.56363636	65.979
FINAL=C SJ=FC AGEC=AGE>=56									
FINTIME	7	23.00000000	7.70281334	12.00000000	31.00000000	2.91138978	161.00000000	59.33333333	33.490
FINAL=C SJ=MA AGEC=AGE<=55									
FINTIME	4	25.50000000	6.45497224	20.00000000	34.00000000	3.22748612	102.00000000	41.66666667	25.314
FINAL=C SJ=MA AGEC=AGE>=56									
FINTIME	7	40.28571429	14.86286520	24.00000000	65.00000000	5.61763501	282.00000000	220.90476190	36.894
FINAL=C SJ=MB AGEC=AGE<=55									
FINTIME	2	59.50000000	20.50609665	45.00000000	74.00000000	14.50000000	119.00000000	420.50000000	34.464
FINAL=C SJ=MB AGEC=AGE>=56									
FINTIME	5	110.40000000	30.12142095	89.00000000	160.00000000	13.47070896	552.00000000	907.30000000	27.284
FINAL=C SJ=MC AGEC=AGE<=55									
FINTIME	5	46.20000000	19.66468917	19.00000000	73.00000000	8.79431635	231.00000000	386.70000000	42.564
FINAL=C SJ=MC AGEC=AGE>=56									
FINTIME	7	25.00000000	5.94418483	16.00000000	34.00000000	2.24669069	175.00000000	35.33333333	23.777
FINAL=F SJ=FA AGEC=AGE<=55									
FINTIME	13	60.15384615	21.23615688	40.00000000	119.00000000	5.88985019	782.00000000	450.97435897	35.303
FINAL=F SJ=FA AGEC=AGE>=56									
FINTIME	3	49.00000000	20.29778313	31.00000000	71.00000000	11.71893055	147.00000000	412.00000000	41.424

THE FINAL STANDINGS

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	STD ERROR OF MEAN	SUM	VARIANCE	C.V.
FINAL=F SJ=FB AGEC=AGE<=55									
FINTIME	6	94.83333333	56.67245069	44.00000000	205.00000000	23.13643111	569.00000000	3211.7666667	59.760
FINAL=F SJ=FB AGEC=AGE>=56									
FINTIME	5	60.00000000	37.99342048	25.00000000	117.00000000	16.99117418	300.00000000	1443.5000000	63.322
FINAL=F SJ=FC AGEC=AGE<=55									
FINTIME	8	45.12500000	12.40319659	30.00000000	69.00000000	4.38519221	361.00000000	153.83928571	27.486
FINAL=F SJ=FC AGEC=AGE>=56									
FINTIME	7	62.71428571	23.05583285	35.00000000	100.00000000	8.71428571	439.00000000	531.57142857	36.763
FINAL=F SJ=MA AGEC=AGE<=55									
FINTIME	4	42.75000000	21.39119757	23.00000000	73.00000000	10.69559878	171.00000000	457.58333333	50.038
FINAL=F SJ=MA AGEC=AGE>=56									
FINTIME	2	62.50000000	10.60660172	55.00000000	70.00000000	7.50000000	125.00000000	112.50000000	16.971
FINAL=F SJ=MB AGEC=AGE<=55									
FINTIME	5	59.00000000	30.25723054	39.00000000	111.00000000	13.53144486	295.00000000	915.50000000	51.283
FINAL=F SJ=MB AGEC=AGE>=56									
FINTIME	4	88.25000000	23.12826554	60.00000000	110.00000000	11.56413277	353.00000000	534.91666667	26.208
FINAL=F SJ=MC AGEC=AGE<=55									
FINTIME	3	78.66666667	32.02082656	46.00000000	110.00000000	18.48723283	236.00000000	1025.3333333	40.704
FINAL=F SJ=MC AGEC=AGE>=56									
FINTIME	2	46.00000000	24.04163056	29.00000000	63.00000000	17.00000000	92.00000000	578.00000000	52.264
FINAL=S SJ=MB AGEC=AGE<=55									
FINTIME	1	25.00000000	.	25.00000000	25.00000000	.	25.00000000	.	.

APPENDIX G

Table 19

Frequencies of the Verbal Helps Given Per Jacket Type for the Sex and Age Groups and Their Chi-Square Values

	Verbal Help Given	Jacket A				Jacket B				Jacket C			
		Sex		Age		Sex		Age		Sex		Age	
		Male	Female	<=55	>=56	Male	Female	<=55	>=56	Male	Female	<=55	>=56
Episode One	Yes	2	1	2	1	3	0	2	1	1	1	1	1
	No	15	32	25	22	14	33	25	22	16	32	26	22
	X^2 Value=	1.39		.09		6.20*		.09		.23		0	
Episode Two	Yes	0	8	5	3	8	17	15	10	1	10	10	1
	No	17	25	22	20	9	16	12	13	16	23	17	22
	X^2 Value=	4.91*		.28		.10		1.08		3.89*		7.74*	

Note: Degrees of freedom= 1

* $p < .05$

Table 20

Frequencies of the Facial Responses for the Sex and Age Groups and Their Chi-Square Values

	Response	Jacket A				Jacket B				Jacket C			
		Sex		Age		Sex		Age		Sex		Age	
		Male	Female	⟨=55	⟩=56	Male	Female	⟨=55	⟩=56	Male	Female	⟨=55	⟩=56
Episode One	Positive	7	12	12	7	8	11	10	8	8	19	18	11
	Negative	1	0	0	1	1	0	0	2	0	1	0	1
	Neutral	9	21	15	15	8	22	17	13	9	13	9	11
	X^2 Value=	2.22		2.01		3.21		2.46		1.22		2.58	
Episode Two	Positive	7	17	12	12	4	15	11	8	7	13	9	11
	Negative	2	5	4	3	4	4	4	4	0	0	0	0
	Neutral	8	11	11	8	8	11	12	11	10	20	18	12
	X^2 Value=	.89		.29		2.60		.19		.01		1.08	

Note: Degrees of freedom= 2

* $p < .05$

Table 21

Frequencies of the Vocal Responses for the Sex and Age Groups and Their Chi-Square Values

	Response	Jacket A				Jacket B				Jacket C			
		Sex		Age		Sex		Age		Sex		Age	
		Male	Female	<=55	>=56	Male	Female	<=55	>=56	Male	Female	<=55	>=56
Episode One	Positive	1	2	3	0	1	2	3	0	2	2	2	2
	Negative	0	3	2	1	1	1	2	0	1	0	1	0
	Neutral	16	28	22	22	15	30	22	23	14	31	24	21
X^2 Value=		1.55		3.03		.40		4.74		2.57		.87	
Episode Two	Positive	2	3	4	1	2	2	1	4	1	3	2	2
	Negative	1	4	3	2	2	2	2	1	2	2	2	2
	Neutral	14	26	20	20	13	29	24	18	14	28	23	19
X^2 Value=		.54		1.69		1.09		2.68		.62		.05	

Note: Degrees of freedom= 2

* $p < .05$

Table 22

Frequencies of the Bodily Responses for the Sex and Age Groups and Their Chi-Square Values

	Response	Jacket A				Jacket B				Jacket C			
		Sex		Age		Sex		Age		Sex		Age	
		Male	Female	<=55	>=56	Male	Female	<=55	>=56	Male	Female	>=55	<=56
Episode One	Positive	6	8	5	8	5	6	4	7	8	13	11	10
	Negative	0	1	0	1	0	0	0	0	0	0	0	0
	Neutral	11	24	22	14	12	27	23	16	9	20	16	13
X^2 Value=		1.12		3.17		.82		1.76		.27		.04	
Episode Two	Positive	10	14	10	14	6	18	12	12	9	14	8	15
	Negative	1	2	2	1	2	3	1	4	2	0	2	0
	Neutral	6	17	15	8	9	12	14	7	6	19	17	8
X^2 Value=		1.26		2.83		1.67		3.83		5.27		7.09*	

Note: Degrees of freedom= 2 .

* $p < .05$