

ANIMISM IN TWO GENERATIONS: AN INVESTIGATION OF
SELECTED PERSONALITY FACTORS

by

Robert Emil Billingham

Dissertation submitted to the Graduate Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY
in
Management, Housing and Family Development

APPROVED:

V. R. Fu, Chairman

H. O. Protinsky

J. W. Maxwell, Jr.

G. A. Hugston

D. E. Hinkle

May, 1979
Blacksburg, Virginia

7/16/79 amc

Acknowledgements

It is with special feelings that I would like to thank the following people for the tremendous support that they have been kind enough and willing enough to provide. Surprisingly, each of them happens to be on my advisory committee which really has made working with them not only a personal joy, but also the most important learning experience of my career. Thanks to:

and

I would also like to thank for showing me that it ain't all that bad out there. Let's hope it stays that way.

To and a million thanks for putting up with the quirks, lateness, sour moods. Also thanks for the food and the laughs.

Thanks,

Table of Contents

Acknowledgements	ii
List of Tables	v
I. INTRODUCTION	1
Piaget's Theory	2
Research on Animism	3
Purpose of Study	5
Statement of the Problem	5
Rationale for the Study	5
Hypotheses	6
II. REVIEW OF LITERATURE	7
Other Theories of Animism	11
Standardized Animism Tests	12
Alternative Explanations for Animism	13
Studies Supporting Piaget	15
Animism Among College Students	16
Animism Among the Elderly	17
Animism and Personal Styles	17
Conclusions	18
Definition of Terms	19
III. PROCEDURE	21
Subjects	21
Instruments	22
Animism Test	22
Locus of Control	26
Democratic-Autocratic Scale	27
Method	28
Method of Analysis	29
IV. RESULTS	31
Description of Subjects	31
Fathers	31
Mothers	35
Children	38
Hypothesis 1	43
Hypothesis 2	43
Hypothesis 3	48
Hypothesis 4	49
Hypothesis 5	53
Hypothesis 6	57
Hypothesis 7	63

V. SUMMARY	69
REFERENCES	75
APPENDICES	79
Appendix I: Animism Test	80
Appendix II: Internal/External Locus of Control Test	83
Appendix III: Traditional Family Ideology Scale	84
Appendix IV: Letter of Introduction	86
Appendix V: Follow-up Letter	87
Appendix VI: Instructions for the Parents	88
Appendix VII: Parents' Background Information Sheet	89
Appendix VIII: Children's Background Information Sheet	91
VITA	92
ABSTRACT	

List of Tables

Table		
1:	Animism Test Reliability	24
2:	Characteristics of Fathers	32
3:	Father's Response to Animism Test	34
4:	Characteristics of Mothers	36
5:	Mother's Response to Animism Test	39
6:	Characteristics of Children	40
7:	Children's Response to Animism Test	42
8:	Males' and Females' Inanimate & Animate Objects Scores	44
9:	Children's Inanimate & Animate Objects Scores by Educational Level of Father	47
10:	Black & White Children's Inanimate & Animate Object Scores Using Separate Variance Estimate	50
11:	Relationship Between Parents' and Children's Animism Scores	52
12:	Males Locus of Control and Animism Test Scores	55
13:	Females Locus of Control and Animism Test Scores	56
14:	Animism Scores of Sons of Autocratic and Democratic Fathers	58
15:	Animism Scores of Daughters of Autocratic and Democratic Fathers	59
16:	Animism Scores of Sons of Autocratic and Democratic Mothers	60
17:	Animism Scores of Daughters of Autocratic and Democratic Mothers	61
18:	Correlation Coefficients Between Animism & Achievement Sub-Test Scores	65
19:	Regression of Animate Test Scores on School Achievement Sub-Test Scores	67

Chapter I

Introduction

Piaget has written that intellectualism, animism, and artificialism are the three " . . . most outstanding features of the child's conception of the world" (1930, p. 1). He has devoted almost a third of his early book, The Child's Conception of the World (1929), to the topic of animism. Animism is used by Piaget (1929) to describe the tendency to regard objects as living and endowed with will.

Piaget, in developing a theory of development, has emphasized the cognitive and intellectual development of the child. He has described in detail a child's cognitive stages of development. In his later writings (1951) however, he has devoted only three pages to the topic of animism. In The Growth of Logical Thinking from Childhood to Adolescence (Piaget and Inhelder, 1959) the only mention of animism was in reference to the situation which arises when a child is confronted with problems for which he has neither classifications nor organized operations. In such a situation, the child will revert to animistic thinking in order to fill in the gaps in his immature cognitive skills.¹ If animism is, as Piaget suggested, one of the outstanding features of the child's conception of the world, then the understanding of this phenomenon is of vital importance in our understanding of cognitive development.

¹While it might appear that Piaget had lost interest in the topic of animism, this is indeed not the case. Having defined and described the stages of animism, Piaget (1930) proceeded to determine if there was a system of thinking, peculiar to the child, which was connected to mental realism, animism, and artificialism.

Animism results from the child's inability to distinguish the physical from the psychical world. As the child's cognitive abilities improve with age, and pass from a lower level of ability to a higher level, so too does animistic thinking pass through an age-related sequence of developmental changes.

Piaget's Theory

Piaget (1929) has proposed that a child must pass through four stages of animistic thinking before he is able to finally view the world from a realistic viewpoint. In the first stage, which lasts until the age of six or seven, the child believes that everything that is any way active or useful is alive. Life is even attributed to objects that are stationary. During the second stage, which lasts from six or seven to eight or nine, the child attributes life to only those things which move. In this stage, for example, objects such as the sun, moon, and bicycles are said to be alive while objects such as tables and stones are not. In the third stage, which lasts from eight or nine to eleven or twelve, movement is still the criterion for attributing life to objects, but a distinction is made. Life is only attributed to those objects which appear to move themselves as opposed to a movement which is caused by an outside agent. In this stage, for example, the sun and moon are regarded as alive because they appear to move themselves while bicycles are not since someone must make them move. In the last stage, which is not reached before the ages of 11 or 12, life is restricted to the plant and animal world.

These ages and stages, according to Piaget (1929), adequately represent the spontaneous development in the decline of animistic thinking.

However, he does point out the difficulty of placing a particular child in a specific stage with any certainty. According to Piaget, children as young as six or seven years old have already progressed to the fourth stage of animistic development.

Research on Animism

Laurendeau and Pinard (1962) investigated prelogical thinking in young children. The results of their study led them to believe that there can be no doubt as to the existence of animistic beliefs among children. However, they stated that it may be inappropriate to assign ages to the stages of development.

Russell and Dennis (1939) developed a standardized procedure to test animism. This procedure was used extensively (Russell & Dennis, 1939; Dennis & Russell, 1940; Russell, 1940a; Russell, 1940b; Russell, Dennis & Ash, 1940), and the results tended to support Piaget's (1929) theory of animistic development.

Some authors (Bruce, 1941; Huang & Lee, 1945; Klingensmith, 1953; Lowrie, 1954; Klingberg, 1957) question Piaget's (1929) theory of animistic development. They believe that animistic responses made by children are the result of insufficient information about the environment. They further argue that animistic responses decrease with age because the child gains more input and knowledge from his environment as he ages.

Concepts that are related to animism (death, feeling, and knowledge) have also been studied (Safier, 1964; Berzonsky, 1971; Looft, 1974; Berzonsky, 1977). Based on the findings of their investigations various investigators have concluded that their studies confirmed Piaget's (1929)

theory of animistic development and its effect on the related concepts such as death, feeling, and knowing.

Animism among populations other than children has also been studied. Dennis (1953), Crannell (1954), Voeks (1954), Crowell (1957), and Simmons and Goss (1957) studied animism among college students. In all of the studies cited, animistic responses were used by many of the subjects. As with the research on child animism, the researchers did not agree as to why college students used animistic responses. The explanations given ranged from the students' having immature cognitive skills (Dennis, 1953) to "the students didn't really mean what they were saying" (Voeks, 1954).

Animism among the elderly has also been studied. Once again, even though animistic responses were consistently found among the subjects, the explanations given by the researchers for these responses did vary. While Dennis and Mallinger (1949) suggested that animism among the elderly was due to neurological deterioration, Sheehan and Papalia (1974) believe that animistic responses among the elderly were no more uncommon than at any other age in the life cycle.

When the initial research sought to investigate animism among children, additional research has led to the recognition that animism exists among adolescents, college students, and elderly samples. At all of the age levels examined, various researchers have debated whether the animistic responses given by the subjects are the result of immature cognitive skills or whether they are the result of a lack of knowledge. However, regardless of the theoretical viewpoint, the evidence is clear that animistic responses exist in all stages of the life span.

Purpose of the Study

The present study was conducted to provide additional information concerning animism. The relationship between parental interaction with the child and the child's locus of control was also investigated. Specifically, the present study will seek to investigate whether or not parents may actually influence their children's animistic beliefs.

Statement of the Problem

This study was an attempt to investigate (1) First, the relationship between the parent's animistic responses, as ascertained on an animism test, and their children's responses to the same test. (2) Second, the relationship between a child's score on an animism test and his locus of control scores, as ascertained by the Bialer Locus of Control Questionnaire (1961). (3) Third, the relationship between a child's animism score and the type of interaction between the child and his parents.

Rationale for the Study

Several studies have attempted to isolate the factors which influence animism (Safier, 1964; Berzonsky, 1971; Looft, 1974; Berzonsky, 1977). However, no research has been conducted to investigate the role the parents play in the maintenance of animistic beliefs among children who, according to Piaget (1929), should no longer use animistic responses. Considering the important role parents usually play in the child's development, this relationship needs to be investigated. It can be assumed that since the parents are significant models who interact verbally with the child in a variety of situations, the child's animistic

responses would be more similar to those of the parents than to those of other adult models.

An additional rationale for the present study is based on Looft and Bartz's (1969) suggestions that "Fresh conceptualizations and . . . improved methods of investigation are needed to give impetus and direction to the revival of research on animism" (p. 14). The present study is an improvement over earlier interview and questionnaire studies in that the present study measures the degree to which a person is animistic. Earlier studies simply sought to determine whether or not a person could be classified as animistic.

Hypotheses

Based on previous research, the following hypotheses were investigated:

- 1) There will be no difference between male and female animism scores.
- 2) There will be no difference between the animism scores of those children with highly educated fathers and the children with less educated fathers.
- 3) There will be no difference between animism scores and ethnic grouping.
- 4) There will be a positive relationship between parents' and childrens' animism scores.
- 5) There will be no difference in animism scores between those students who are internalized and those who are externalized.
- 6) There will be no relationships between children's animism scores and type of parental interaction.
- 7) There will be no relationship between animism scores and achievement test scores.

Chapter II

Review of Literature

In order to fully understand Piaget's (1929) theory of animistic development, it is necessary to first understand his ideas concerning the interaction between biological and social factors in a child's conscious development. Piaget (1929) has stated that if one is able to ascertain the very beginning of thought, then one will find a consciousness that is unable to "make any distinction between the self and things" (p. 235). There are two factors which work together to produce this type of consciousness. The first of the factors is the biological or individual factor which, Piaget (1929) has asserted, controls the relations between the organism and its environment. He further suggests that it is impossible in any biological reaction to separate the organism from its environment. The fact that the organism can not separate itself from its environment has led Piaget (1929) to conclude that in the early period of life, the self and the external world is not separated. They are, in fact, a continuum.

The second factor which contributes to the production of a consciousness which cannot distinguish between the self and things is the social factor. The social factors are most apparent in the child's very early life. The social atmosphere surrounding the young infant ensures that an adult, especially the mother, intervenes in all of the child's actions. For example, when a child cries due to some discomfort, the relief of this discomfort is dependent upon another person. Because

others are responsible for the child's actions, the child's consciousness of self is not the result of an innate system. Consciousness develops gradually as a function of the contacts between a child and others.

Piaget (1929) has summarized the effect that the social and biological factors have on the development of consciousness, and, consequently their role in animistic thinking as follows:

Thus both the social and the biological factors combine at the beginning of the mental life to ensure an absence of differentiation between the world and the self, whence arises the feelings of participation and the magical mentality which results. p. 236

Piaget (1929), in analyzing the responses given by his subjects, has identified two types of animistic tendencies: diffuse animism and systematic animism. Diffuse animism is the general tendency, found in children, to confuse the living with the inert. Systematic animism is the rationalizations which are used by a child to explain why an inanimate object is alive.

Piaget (1929) has further stated that there are four types of causes, which work in association with each other, that explain the genesis of animism. Two of these causes are found within the individual and the other two are found in the social order. The two causes of animism which are found within the individual are indissociation and introjection. Indissociation results in diffuse animism while introjection results in systematic animism.

Indissociation results from the fact that the child is unable to dissociate the subjective from the objective in his thinking. The

child believes that all external movement is necessarily purposive, and all activity is necessarily conscious. Therefore, the child believes that every object knows what it is, where it is, and what attributes it possesses. Piaget (1929) has stated that , "The dissociation of ideas (which result in a giving up of animistic beliefs) can only result from his becoming progressively aware of his self and his own thought" (p. 238). The ability to dissociate is not the result of either wider knowledge, the ability to control circumstances, or experimentation. Dissociation results from a radical change in the qualitative development of the child's mind. Piaget (1929) has concluded:

In short, animism, or at any rate diffuse animism, results from the indissociation of primitive ideas and only the growth of the knowledge of the self (resulting from social intercourse and comparisons with others) can enable these ideas to become dissociated. (p. 240-241)

Since indissociation of ideas can only account for diffuse animism, another explanation must be given for systematic animism. The explanation for systematic animism offered by Piaget (1929) is introjection. For Piaget (1929), introjection is the tendency to situate in others, or in things, the reciprocal feelings to those we experience from their contact. Introjection is a direct result of egocentrism. Since egocentrism is the tendency to believe that everything evolves around the self, to give up egocentricity is to give up introjection. Piaget (1929) cautions that even though introjection and indissociation are responsible for two types of animism, introjection is impossible without indissociation. Therefore, introjection and indissociation work together in a relationship which produces both diffuse and systematic animism.

According to Piaget (1929) the two social factors which favor the persistence of animism in children are the child's participation in his social environment and the moral obligation which is forced on him by education. The first of these social factors is all important. During the first years of life, the child develops the totally egocentric belief that he is surrounded by thoughts and actions directed to his well being. The child begins believing that he is constantly seen, understood, and forestalled. As the child grows older and begins to interact with siblings or peers he still maintains his belief that his least syllable is understood. This is the root of the child's egocentric language. Piaget (1929) has suggested that the child's egocentric feelings led him to believe that even inanimate objects are aware of his thoughts and actions.

The feeling of moral obligation, which the child acquires in the course of his education, is the second social factor which enhances animism in children. Children are required to follow instructions and obey rules even if these instructions and rules make no sense to the child. These instructions and rules come to be regarded by the child as living entities which observe the child's behavior. It is from this perspective, for example, that children give the response that the moon, sun or tree, etc. sees them when they are bad. The child, therefore, believes that natural law has a moral origin. This in part explains why a child who has tripped and hurt himself may believe that he is being punished for some earlier misdeed.

While Piaget (1929) believes that both social and individual factors influence the formation and development of child animism, he

also believes that adult language plays an extremely important role in the systemization of child animism. He asserted that adult language provides the conditions necessary to foster the child's animism. This is exemplified by the observation that children take metaphors literally.

There are two reasons, according to Piaget (1929), why adult language supports animism in children. First, adults speak in images which they have outgrown. Examples of this are, "the sun is trying to break through the mist," "the view takes your breath away," "the car hums as it goes," or "the train races down the track." Second, language itself dramatizes the simplest judgments. The fact that subjects are separated from the verb allows the mind to endow the subject with activity and qualities of its own. As an example, to separate the subject wind from the verb blows perpetuates the ideas that the wind can be independent of the action of blowing, that there can be a wind that does not blow, and that the wind exists apart from its outward manifestations. Even though adults know that the wind and other inanimate objects do not live or have a will, adults use language to refer to them as if they actually do possess these traits.

Other Theories of Animism

Laurendeau and Pinard (1962) conducted a cross-sectional study to investigate the existence and sequence of stages of mental development. In this study, the child's concept of life was also investigated. The authors found that many of the children attribute life to inanimate objects. They concluded that it would be impossible not to recognize the form of thinking that Piaget termed animism. However, the authors

believed that the stages described by Piaget were incomplete. They suggested that the framework proposed by Piaget was too restrictive to include all possible responses made by children. The authors further asserted that, although the presence of Piaget's criteria for differentiation of the living from the nonliving (i.e. usefulness, movement, and spontaneous movement) could not be denied, the children's use of these criteria was not as systematic as formulated by Piaget.

Laurendeau and Pinard (1962), based on their research findings, presented a developmental scale which they believed was a more accurate representation of the stages an individual passes through as the use of animistic thinking gradually disappears. The four stages were classified as follows: (1) In Stage 0, the subjects did not understand the meaning of the questions they are being asked about objects. They also did not attach any particular importance to their answers. (2) In Stage 1, the subjects attributed life to one or more inanimate objects. (3) In Stage 2, which the authors believed was probably a transitional stage, the subjects discovered autonomous movement. (4) In Stage 3, the last stage, Laurendeau and Pinard's Stage 3 corresponded to Piaget's fourth stage. Laurendeau and Pinard did not assign corresponding ages to the stages by ages for their primary concern was to describe the evolution and the extension of animistic beliefs.

Standardized Animism Tests

Russell and Dennis (1939) developed a questionnaire and a standardized testing procedure, based on Piagetian concepts, to test animism. A series of studies were conducted (Russell & Dennis, 1939; Dennis &

Russell, 1940; Russell, 1940a; Russell, 1940b; Russell, Dennis & Ash, 1940; Russell & Dennis, 1941; Dennis, 1942; Dennis & Mallinger, 1949) using the standardized procedure. These studies sought to determine if animism was indeed a universal phenomenon.

Russell (1942) developed a paper and pencil test for group testing. He reported that there was a 95 percent agreement between trained examiners who compared the paper and pencil test results with the results obtained from an individual testing procedure. The subjects who were administered the individual procedure were individuals who had been randomly selected from the subjects who had taken the paper and pencil test. The five percent disagreement found between the paper and pencil test and the individual procedure was due to the inadequacy in the responses by the subjects and was believed to be the only drawback to using the written test with older subjects.

Alternative Explanations for Animism

The explanations given by several other authors to the animistic responses of their subjects were quite contrary to Piaget's theory. Bruce (1941) found that, although the children tested could be classified according to the stages described by Piaget, the term animism was unwarranted. She proposed that a gradual evolution in understanding the meaning of the word alive was a better explanation for the responses generated by the children. Bruce (1941) believed that a child would observe a certain characteristic (i.e. movement) in an adult and then generalize life to inanimate objects that also moved. Animism would be given up by the child as he became more skilled at discriminating

between the living and non living. Probably the most recognized criticism of Piaget's theory of animism was advanced by Huang & Lee in 1945. These authors believed that for children the word alive, as used by Piaget (1929) and Russell & Dennis (1939), and having life might have different meanings. Huang & Lee (1945) found that children were stricter in granting an object the status of having life than that of living. Animism was interpreted by Huang & Lee (1945) as a result of a lack of information on the part of the subject and therefore, was not a cognitive phenomenon.

Klingensmith (1953) also offered an alternative explanation for animistic responses. He proposed that animistic responses were the result of the child's limited vocabulary rather than gross misinterpretation of reality. The author further suggested that when a child stated that an object was alive he meant much less by the term than most adults do.

Other authors have also disagreed with Piaget's theory of animism. Lowrie (1956) had suggested that wrong answers indicate a lack of knowledge on the part of the subjects. That is, many of the people who use animistic terms do not really mean what they are saying, they use analogies without saying so. Klingberg (1957), using the method devised by Huang & Lee (1945) to study animism among Swedish children, had obtained results which were extremely similar to those of Huang & Lee (1945) in regard to the order in which inanimate objects were said to be living and to be having life. Lastly, King (1960-61) concluded that there was no evidence to support Piaget's (1929) theory of development. He believed his results supported the idea of gradual development of the reasoning process by a more systematic organization of concepts.

All of the studies mentioned above share the common belief that animistic responses are the result of insufficient information on the part of the child. Animistic responses decrease with age because the child gains more input and knowledge from his environment as he ages. This animistic theory, which assumes that animism is due to the fact that children have less information than adults, has been termed a computer theory by Safier (1964).

Studies Supporting Piaget

While a few authors questioned whether child animism was a form of reasoning which is quantitatively different from the reasoning used by adults, many authors support Piaget's theory. Safier (1964) found a decrease in animism and death scores with increasing age. Berzonsky (1971) found that children revert to the use of unnaturalistic explanations (of which animism is one) when they were confronted with a phenomenon which was beyond their ability to explain. Looft (1974) found that there were no sex differences in animistic responses. Looft (1974) had also discovered no differences in the level of animism between those children who were given a verbal test and those who were given a non-verbal test. Berzonsky (1974) found that differences in conceptual tempo (i.e. reflective vs. impulsive) were related to performance on animistic tests. Berzonsky (1977) also found that reflective children could make significant progress in developing non-animistic thought if placed in a learning situation which stressed the biological differences between what is living and nonliving.

Animism Among College Students

Piaget (1929) postulated that animistic thought would be given up by the age of 11 or 12. A number of studies conducted at American colleges and universities had found animistic responses were given by many college students. Dennis (1953) using the standardized procedure developed by Russell (1942), found that as high as 48 percent of the college students in his study displayed animistic thought. He concluded that in the absence of scientific instruction, educated persons possessed many conceptions of the world that were identified with those of the child and of the uneducated. This finding was later substantiated by Crannell (1954).

Voeks (1954) repeated Dennis' (1953) experiment with additional questions added to illuminate the responses given. She found that animistic responses were given by college students but that those students who labeled something living almost never endowed it with any characteristic peculiar to life in the biological sense.

Other authors have also studied animism among college students. Bell (1954) found that there was a negative correlation between grades made on a course exam and animistic responses given by the subjects on an animism test. Crowell (1957) stated that persons who had perfect scores (no animistic responses) on an animism test scored significantly higher on a college aptitude test than did those subjects who gave many animistic responses. Simmons and Goss (1957) found that 40 percent of the students in an Introductory Psychology Class made one or more animistic response. Brown (1965) found that objects that had acquired significance for the individual were treated as if they were animate.

Lastly, Mikulak (1970) found no sex difference in animism among college students.

Animism Among the Elderly

Very little research has been conducted which investigates animism among the elderly. Dennis and Mallinger (1949), using the testing procedure developed by Russell and Dennis (1939), discovered a great deal of animism among their elderly subjects. Dennis and Mallinger (1949) found that the subjects in their study who were over 90 years old were more animistic than were the 70 year old subjects. Dennis and Mallinger (1949) concluded that the greater number of animistic responses among the 90 year olds was due to neurological deterioration.

Sheehan and Papalia (1974) studied the nature of the life concept across the life span. Using individuals between the ages of six to 86 years of age, Sheehan and Papalia (1974) found a high level of animistic responding at each of the age levels tested. Sheehan and Papalia (1974) interpreted their results as not supporting the idea of neurological deterioration in the later years. Instead, they believed that the adults' ability to choose whether or not to respond in animistic terms might represent a more flexible approach to questions concerning the nature of the life concept.

Animism and Personal Styles

Two personal styles were relevant to the present study. The first was the child's locus of control. Since children must induce from earlier interactions with their environment whether or not an object is alive, locus of control may have encouraged or hindered giving up

animistic thinking. Since externals tend to view environmental forces as the dominant factors in their lives, it may be difficult for them to give up belief systems which may suggest that objects in the environment have control over their lives. Internals, on the other hand, may find it easier to give up immature belief systems since they may feel that they, and not the objects external to them, are in control of their lives. Berzonsky (1974) found no differences between children who were designated externals and those who were designated internals.

The second personal style which was investigated dealt with whether the child was a member of a family system which was evaluated as being either autocratic or democratic. Since autocratic family systems emphasize conventionalism, authoritarian submission, exaggerated masculinity and femininity, extreme emphasis on discipline, and moralistic rejection of impulse life (Levinson & Huffman, 1955), children from these families may in fact be less likely to give up their immature animistic beliefs. This retarding of animistic development would result from the fact that these children would be less likely to achieve the stage of formal operations since freedom to explore alternatives is necessary for abstract thinking. There had been no studies which investigated the relationship between animism and Family Ideology.

Conclusion

While the question of what animism really is may never be fully answered, the research is very clear on some issues. First, animistic responses exist across the life span. Second, usually a large minority or a majority of subjects respond animistically. Third, animistic

responses exist regardless of whether the testing procedure is a questionnaire, a multiple choice test, or a non-verbal picture test. Fourth, animism exists regardless of the formal educational level of the individual. It must be noted here that there is some evidence to indicate that advanced knowledge of biology, as it deals with factors that constitute life, may affect an individual's ability not to respond in an animistic manner. Lastly, older adolescents and adults may know better, but they use animistic responses anyway.

These facts indicate that the tendency to respond animistically is influenced by factors that have yet to be discovered by research. One of these factors may be verbal modeling. Since adults choose to respond in an animistic manner, they may be reinforcing other adults, as well as children, to also use animistic responses. Further research is needed to investigate the role of adult models have on child animism.

Definition of Terms

Animism - the tendency to regard objects as living and endowed with will. For this study it was the degree to which children and adults responded that inanimate objects were alive as determined by their scores on the Semantic Differential Animism Scale.

Diffuse animism - the general tendency, found in children, to confuse the living with the inert.

Dissociation - the ability of the child to separate the subjective from the objective in his thinking.

Egocentrism - the tendency to believe that the self is the center of the universe and that everything revolves around the self.

Ideology - the body of ideas reflecting the social needs and aspirations of an individual, group, class, or culture.

Indissociation - the inability of the child to dissociate the subjective from the objective in his thinking. This leads the child to believe that all subjects know what they are and where they are.

Introjection - the tendency to situate in others, or in things, the reciprocal feelings to those we experience from their contact.

Locus of Control - the belief that the events in one's life are either controlled by the self or are controlled by agents external to the self. Locus of Control was determined by a modified version of the Bialer Locus of Control Questionnaire (Bialer, 1961). Originally the Bialer Locus of Control Questionnaire was administered individually. In the present study it will be modified for self-administration.

Systematic animism - the rationalizations used by the child to explain why an inanimate object is alive.

Traditional Family Ideology - the belief that the traditional family consisted of autocratic parents who dominated the behavior and thinking of their children. Traditional Family Ideology was determined using the T.F.I. Scale developed by Levinson and Huffman (1955).

Chapter III

Procedure

I. Subjects

The superintendent of a public school system in Northern Alabama was approached about recruiting all of the 5th- (442) and 6th-(501) grade students in the school system and their parents as subjects in the present study. The superintendent and the director of student personnel and guidance introduced the proposal to the principals of the six schools in the system. The principals were then to decide if they would allow the investigator to recruit subjects in their schools. Three of the six principals agreed to let their schools participate in the study in that the investigator was allowed to recruit the 5th- and 6th-grade students and their parents as subjects for the study. In addition, the principal of the laboratory school, run by the University of North Alabama, was contacted about recruiting 5th- and 6th-grade students and their parents as subjects, and he agreed to take part.

The four schools which allowed subjects to be recruited had a total of 530 5th- and 6th-grade students. Of these, 530 students a total of 132 (25%) and at least one parent agreed to take part in the study. After seven weeks it was assumed that all of the subjects who were going to return the questionnaires had done so. Of the 132 students who had agreed to take part in the study 96 (73%) had returned their questionnaires. In addition,

95 mothers and 71 fathers also returned questionnaires for a total of 262 subjects.

II. Instruments

All subjects were asked to fill out an information background sheet, and an animism test. In addition, the children were asked to respond to the Bialer Locus of Control Questionnaire (Bialer, 1961), and the parents were asked to respond to the Traditional Family Ideology Scale (Levinson and Huffman, 1955).

Animism Test

An animism test using a semantic differential procedure was developed for this research. This test (Appendix I) consists of 15 items. Four of these items represent animate objects (Dog, Bird, Flower, Tree) and 11 items represent inanimate objects (Fire, River, Clouds, Sun, Bicycle, Automobile, Chair, Rock, Dish, Book, Lightning). Each of these items had been used in various animism studies in the past. Once the 15 objects to be used had been selected, the order in which they were listed on the Animism Test was randomly assigned.

Earlier studies of animistic development in children have simply asked children to respond yes or no to the question of whether or not an object is living. Additional questions, such as Why do you think so, have been asked to try to understand the reasoning behind the responses.

The present study attempts to explore the degree to which children are animistic by allowing the subjects to express the degree which they feel an object is living. In a truly biological

sense objects are either living or not living, but the present study assumes that people respond to objects (e.g. talking to one's car) as if there were degrees of living.

In order to disguise the continuum of interest in the present study (i.e. living--not living) four additional continua were chosen. These continua were: 1) Hard - Soft, 2) Rough - Smooth, 3) Hot - Cold, and 4) Has Feelings - Does Not Have Feelings. The order in which the five continua were presented was randomly assigned and then held constant for all of the 15 objects.

Berzonsky (1973) found an inverse relationship between a child's ability to identify inanimate and animate objects correctly. Based on this finding two scores were obtained in the present study. The first score was the subjects inanimate objects score and the second score was the child's animate objects score. These scores were obtained by adding the total degree to which the subjects said each animate or inanimate object was alive. The higher the score, the more alive an object was believed to be.

In order to ascertain the reliability of the instrument a test-retest reliability was obtained. The instrument was administered to 102 5th and 6th-grade students in a public school system in Western Virginia. These same students were re-tested one week later. Of the 102 subjects, 64 (63%) completed both tests. These tests were used for assessing the reliability. In addition to the 15 objects on the Animism Test, the reliabilities of the total inanimate objects score and the animate objects score was determined (see Table 1).

Table 1
Animism Test Reliability

Item	r	sig
Fire	.4145	.001
River	.3273	.004
Clouds	.5466	.001
Sun	.2988	.008
Bicycle	.5392	.001
Automobile	.6268	.001
Chair	.5360	.001
Dog	.2184	.041
Bird	.3245	.004
Rock	.6423	.001
Dish	.6394	.001
Flower	.2551	.021
Tree	.5894	.001
Book	.6382	.001
Lightning	.6828	.001
Inanimate Objects Score	.7797	.001
Animate Objects Score	.4377	.001

All of the objects reached significant levels of reliability. The reliability of the objects ranged from .2184 ($p = .041$) for Dog to .6828 ($p < .001$) for Lightning. The reliability for the inanimate objects ranged from .2988 ($p = .008$) for Sun to .6828 ($p < .001$) for Lightning. For the animate objects the reliability ranged from .2184 ($p = .041$) for Dog to .5894 ($p < .001$) for Tree. The reliability for the total inanimate objects score was .7797 ($p < .001$), and for the total animate objects score the reliability was .4377 ($p < .001$).

While all of the objects reached significant levels of reliability, it should be noted that many of the coefficients are low. This is especially true for the animate objects Dog ($r = .2184$) and Flower ($r = .2551$) and for the inanimate object Sun ($r = .2988$). Even when all of the objects with a coefficient of less than .5 are considered, the results are consistent with Piaget's theory of animistic development.

The group of children tested were expected to be in a state of transition to the highest stage in animistic development (e.g. only plants and animals are alive). However, it would be expected that a great deal of fluctuation in just how alive they rated an object would exist. This would be true because these children may not yet have well established definitions of life, at least in the biological sense.

This idea is further supported when the inanimate objects with low (less than .5) coefficients are examined. These objects

(Fire, River, and Sun) also tended to be rated incorrectly by the fathers and mothers (see Tables 3 and 5). Since the children weren't quite sure how to classify these objects, it would be expected that their ratings would fluctuate between testing sessions.

It is interesting to note that the objects Dog and Flower have the lowest level of reliability. This may suggest that individuals in the stage of transition from stage 3 to stage 4 of animistic thinking may experience some difficulty with these objects. The results of this pilot study indicated that the animism test designed for this study is a reliable instrument in the study of animistic development.

Internal - External Locus of Control Questionnaire

All of the children were asked to respond to an internal - external locus of control questionnaire. A modified Bialer Locus of Control Questionnaire (1961) was used in the present study. The original questionnaire was administered verbally and individually. In the present study it was modified for paper and pencil administration. This modification consisted of presenting the 23 questions to the children on paper and having them mark either the yes or no space provided for each question (Appendix II).

On some of the statements a "yes" response is scored as internal control and on the remaining responses a "no" response is scored as internal control. On Appendix II those responses for which "no" response reflects internal control are marked with an

asterisk. The scale was scored so that the greater the individual's score, the greater was his or her internal control.

To ascertain the reliability of the Bailer Locus of Control Test, Cross (1978) used a test-retest procedure with a sample of 62 subjects. After a five-week interval the reliability of the instrument was found to be .65. This reliability coefficient was statistically significant ($p < .05$).

Democratic - Autocratic Scale

In order to better understand the influence that parents had on their children's animistic development the degree to which a parent is autocratic or democratic was also investigated. Furthermore, since the primary concern of the present study was with the family as a system, an instrument which measured the degree to which an individual was either autocratic or democratic within a family context was used.

An abbreviated form of the Traditional Family Ideology Scale (Levinson and Huffman, 1955) was used to assess the degree to which the parents in the study were autocratic or democratic (Appendix III). The abbreviated TFI Scale consists of 12 six-point Likert-type items. Responses to each item are given a value on a scale ranging from +3 (strong agreement) to -3 (strong disagreement). The individual's score for each item is summed to give a total score. The higher the score, the more autocratic the individual is considered to be.

Five groups (Total N=507) of subjects in Boston were used to

develop the abbreviated TFI Scale. These groups were: 1) Harvard Summer Session (N=84), 2) Boston University Sophomores (N=236), 3) Boston University Freshmen (N=76), 4) Registered Nurses (N=46), 5) Student Nurses (N=65). The reliability of the abbreviated TFI Scale was .92 using a split-half (odd-even correlation corrected by the Spearman - Brown formula) estimate. Also, using the Harvard summer session group the test-retest reliability after a six-week interval was .93.

The original TFI Scale was developed to investigate some of the characteristics of the democratic - autocratic personality as they are manifested in the realm of family ideology. Levinson and Huffman (1955) found that the TFI Scale correlated .65 with the E (Ethnocentrism) and .75 with the F (Authoritarianism) Scales developed by Adorno et al. (1950). Further, the abbreviated TFI Scale correlates .64 and .67 with the E and F scales respectively.

III. Method

Each child in the 5th- and 6th-grade of the four schools that participated was given a letter of introduction to be carried home to his or her parents (Appendix IV). This letter introduced the investigator and asked the parents if they, and their school age child, would be willing to take part in an investigation which was being conducted to better understand the way in which parents and their children interacted with each other. The parents were to sign this letter in deciding whether they would take part in the study or not.

Two days later a follow-up letter (Appendix V) was sent to all of the students' parents. This letter thanked those parents who had agreed to take part in the study and encouraged those who had not yet made a decision to take part in the study.

The following week a folder containing all the questionnaires was sent, via the children, to the homes of the families who had agreed to take part in the study. Besides the Animism Test, Family Ideology Test and Locus of Control Test, the folder contained instructions for the parents (Appendix VI) as well as background information sheets for the Parents (Appendix VII) and for the children (Appendix VIII).

The teachers in the individual classrooms collected the questionnaires as they were returned and turned them in to the school office where they were picked up by the investigator. The teachers were asked to remind their students each day to return the completed folders, the degree to which individual teachers encouraged their students to complete and return the questionnaires is not known. At the end of seven weeks 96 completed questionnaires had been returned.

IV. Method of Analysis

The following statistical procedures were used to analyze the data in the present study. First, the Pearson Product Moment procedure was used to determine the reliability of the Animism Test and the relationship between the parents' scores and their children's scores. Second, an analysis of variance procedure was

used to determine the effects of Race, Sex, Father's level of education, Family Ideology, and Locus of Control on the child's animistic development. Lastly, a multiple regression procedure was used to investigate if any relationship existed between animism and school achievement.

Chapter IV

Results

Description of Subjects

I. Fathers

A detailed description of the 71 fathers who took part in the present study is presented in Table 2. The majority of the fathers were white (N=64). The small number of black (N=6) and other (N=1) made racial comparisons between the fathers meaningless. Therefore, all analysis involving fathers treated all fathers as one group.

The fathers ranged in age from 27 to 63 years. The mean age of the fathers was 40.31 years and the median age was 39.14 years.

Only nine of the fathers had not graduated from high school while 27 had graduated from college. Of these, nine had received Masters Degrees and nine had received Post Masters Degrees. Of the fathers who had not graduated from college, 17 had been trained at a technical or trade school, one had attended a community college, and four had received some college education.

The majority of the fathers were Protestant (N=66) with three Jewish and one Buddhist father taking part in the study. The Protestant fathers belonged to the following denominations: Baptist (N=22), Methodist (N=16), Church of Christ (N=13), Episcopalians (N=5), Presbyterians (N=4), Assembly of God (N=2), and Lutherans (N=1). While one father rated his religious beliefs

Table 2
 Characteristics of Fathers

Variable	Classification	Number	Percent
Sex	Male	71	100.0
Race	Black	6	8.5
	White	64	90.1
	Other (Chinese)	1	1.4
Age	Range 27-63 years Mean 40.31 Median 39.143 Mode 37.0		
Education	Some Elementary School	3	4.2
	Some High School	6	8.3
	Graduated High School (included G.E.D.)	14	19.4
	Technical or Trade School	17	23.6
	Community College	1	1.4
	Some College	4	5.6
	Undergraduate Degree	9	12.5
	Masters Degree	9	12.5
	Ph.D. or Other Professional Degree	9	12.5
Religious Preference	Catholic	0	0.0
	Jewish	3	4.3
	Protestant	66	94.3
	Other	1	1.4
Importance of Religious Beliefs	Not at all Important	1	1.4
	Not too Important	6	8.3
	Somewhat Important	18	25.0
	Very Important	28	38.9
	Extremely Important	19	26.4
Marital Status	Married	72	100.0
Political Viewpoint	Liberal	10	13.9
	Moderate	33	45.8
	Conservative	29	40.3

as being not at all important, the majority (47 or 65.3%) rated their religious beliefs as being very important or extremely important.

Politically, the fathers tended to be somewhat moderate. While 10 (13.9%) of the fathers rated their political viewpoint as being liberal, 33 (45.8%) rated themselves as moderates and 29 (40.3%) rated themselves as conservatives.

The fathers as a group tended to score slightly above the theoretically neutral point of 40 on the Traditional Family Ideology (TFI) Scale. The mean for the father's TFI Scale was 45.16 (s.d.=11.57). The scores ranged from a low of 16 to a high of 65 and the median score was 47.00. This suggests that these fathers as a group tend to be somewhat autocratic in their family systems.

Table 3 indicates the responses given by the fathers to the various animate and inanimate objects on the Animism Test. The majority of the fathers attributed life to the animate objects. The percentages of fathers who stated that the animate objects were living were as follows: Dog (94.6%), Bird (97.1%), Flower (95.7%), and Tree (97.1%).

The inanimate objects tended to be more difficult for the fathers to answer correctly. The percentages of fathers who stated that the inanimate objects were not alive was as follows: Fire (57.4%), River (47.1%), Clouds (60.9%), Sun (47.1%), Bicycle (80.0%), Automobile (82.6%), Chair (82.6%), Rock (85.5%), Dish

Table 3

Father's Response to Animism Test

The degree to which objects are rated as living
and the percent of Fathers giving this rating

Object	Living 5		4		3		2		1		Not Living 0	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Fire	4	(5.9)	9	(13.2)	6	(8.8)	6	(8.8)	4	(5.9)	39	(57.4)
River	10	(14.3)	12	(17.1)	6	(8.6)	6	(8.6)	3	(4.3)	33	(47.1)
Clouds	3	(4.3)	5	(7.2)	2	(2.9)	11	(15.9)	6	(8.7)	42	(60.9)
Sun	9	(13.2)	11	(16.2)	7	(10.3)	6	(8.8)	3	(4.4)	32	(47.1)
Bicycle	1	(1.4)	6	(8.6)	1	(1.4)	1	(1.4)	5	(7.1)	56	(80.0)
Automobile	0	(0.0)	3	(4.3)	1	(1.4)	6	(8.7)	2	(2.9)	57	(82.6)
Chair	1	(1.4)	4	(5.8)	4	(5.8)	1	(1.4)	2	(2.9)	57	(82.6)
Dog	62	(89.9)	0	(0.0)	0	(0.0)	2	(4.3)	0	(0.0)	1	(5.4)
Bird	61	(88.4)	0	(0.0)	5	(7.2)	1	(1.4)	1	(1.4)	2	(2.9)
Rock	2	(2.9)	0	(0.0)	1	(1.4)	3	(4.3)	4	(5.8)	59	(85.5)
Dish	0	(0.0)	1	(1.4)	0	(0.0)	1	(1.4)	1	(1.4)	66	(95.7)
Flower	53	(75.7)	10	(14.3)	1	(1.4)	1	(1.4)	2	(2.9)	3	(4.3)
Tree	54	(78.3)	8	(11.6)	2	(2.9)	2	(2.9)	1	(1.4)	2	(2.9)
Book	2	(2.9)	2	(2.9)	4	(5.8)	3	(4.3)	6	(8.7)	52	(75.4)
Lightning	7	(10.1)	6	(8.7)	8	(11.6)	1	(1.4)	2	(2.9)	45	(65.2)

(95.7%), Book (75.4%), and Lightning (65.2%). Among the inanimate objects Fire, River, Sun, and to a lesser degree Clouds and Lightning tended to be the most difficult for the fathers to rate as not living.

II. Mothers

A detailed description of the 95 mothers who took part in the present study is presented in Table 4. The majority of the mothers were white (N=84), while blacks (N=10) and other (N=1) made up the rest of the subjects. As in the case of the fathers, the small number of black and other mothers made racial comparison meaningless, so all analysis treated all mothers as one group.

The mothers ranged in age from 27 to 52 years. The mean age of the mothers was 36.53 years and the median age was 36.3 years.

The educational levels of the mothers was very similar to the fathers. Ten mothers had not completed high school as compared to nine fathers. The majority of the mothers (N=30) had graduated from high school. There were 27 mothers, as well as fathers, who had graduated from college. However, 15 mothers, as compared to nine fathers, had received their B.S. degree. While nine fathers had master's degrees, only eight mothers had received their master's. None of the mothers had earned a Post-Master's Degree. Mothers who had attended technical or trade school (N=11), community college (N=5), and those who had received some college education (N=12) made up the rest of the education variable.

Table 4

Characteristics of Mothers

Variable	Classification	Number	Percent
Sex	Female	95	100.0
Race	Black	10	10.4
	White	84	88.4
	Other (Chinese)	1	1.1
Age	Range 27-52 years		
	Mean 36.532		
	Median 36.30		
	Mode 37.00		
Education	Some Elementary School	2	2.1
	Some High School	8	8.4
	Graduated High School (included G.E.D.)	30	31.6
	Technical or Trade School	11	11.6
	Community College	5	5.3
	Some College	12	12.6
	Undergraduate Degree	15	15.8
	Post Bachelors Work	2	2.1
	Masters Degree	8	8.4
Post Masters Work	2	2.1	
Child Cared For by Others	Yes	44	46.3
	No	51	53.7
Religious Preference	Catholic	1	1.1
	Jewish	1	1.1
	Protestant	91	96.8
	Other	1	1.1
Importance of Religious Beliefs	Not at all Important	0	0.0
	Not too Important	6	6.3
	Somewhat Important	20	21.1
	Very Important	39	41.1
	Extremely Important	31	31.6
Marital Status	Single	1	1.1
	Married	79	83.2
	Widowed	1	1.1
	Divorced	14	14.7
Political Viewpoint	Liberal	11	11.8
	Moderate	55	59.1
	Conservative	27	29.0

The number of mothers who reported that their children had been cared for by others, prior to entering school, and those who were the only care-givers were almost equal. There were 44 mothers in the former group and 51 in the latter group. Of those children cared for by others, 19 were enrolled in preschools or daycare centers, 15 were cared for by relatives and 10 by babysitters.

The majority of the mothers were Protestant (N=91). The rest were represented by one Catholic, one Jewish, and one Buddhist. The largest number of Protestant mothers were Baptist (N=35), Church of Christ (N=17), and Methodist (N=15). The remaining mothers listed the following denominations: Episcopalian (N=7), Presbyterian (N=6), Pentecostal (N=2), Assembly of God (N=2), Mennonite (N=1), Missionary Baptist (N=1), non-denominational (N=1), Lutheran (N=1), and Mormon (N=1). While none of the mothers rated their religious beliefs as not at all important, six rated their beliefs as not too important, 20 rated their beliefs as somewhat important, 39 rated their beliefs as very important and 30 rated their beliefs as extremely important.

While all of the fathers reported their marital status as married, there was more variety among the mothers. Seventy-nine of the mothers were married, 14 were divorced, one was widowed, and one was single.

In their political viewpoints, the mothers tended to be more moderate than the fathers. Eleven mothers rated themselves as being liberal, 55 rated themselves as moderates, and 27 rated themselves as conservatives.

The mothers, like the fathers, scored slightly above the theoretically neutral point of 40 on the T.F.I. Scale. The mean for the mothers was 42.20 (s.d.=12.08). The scores ranged from a low of 12 to a high of 71 and the median score was 41.6. This suggests that the mother in this study tend to be slightly autocratic in their family systems.

Table 5 presents the responses given by the mothers to the various animate and inanimate objects on the Animism Test. The majority of the mothers attributed life to the animate objects. The percentages of the mothers who stated that the animate objects were living were as follows: Dog (98.9%), Bird (98.9%), Flower (97.8%), and Tree (98.9%).

As with the fathers, the inanimate objects were more difficult for the mothers to answer correctly. The percentages of mothers who stated that the inanimate objects were not alive were as follows: Fire (57.8%), River (47.3%), Clouds (64.9%), Sun (56.0%), Bicycle (87.8%), Automobile (87.8%), Chair (88.9%), Rock (80.6%), Dish (93.4%), Book (81.3%), and Lightning (61.1%). The inanimate objects: River, Sun, Fire, and Lightning tended to be the most difficult for the mothers to rate as not living.

III. Children

A detailed description of the 96 children who took part in this study is presented in Table 6. Sixty-one of the children were females and 35 were males. The majority of the children were white (N=84), with 11 blacks and one Buddhist taking part in the study.

Table 5

Mother's Responses to Animism Test

The Degree to which objects are rated as living
and the percent of mothers giving this rating

Object	Living 5		4		3		2		1		Not Living 0	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Fire	15	(16.7)	2	(2.2)	9	(10.0)	5	(5.6)	7	(7.8)	52	(57.8)
River	17	(18.7)	13	(14.3)	8	(8.8)	5	(5.5)	5	(5.5)	43	(47.3)
Clouds	10	(11.2)	5	(5.6)	5	(5.6)	8	(9.0)	4	(4.5)	57	(64.0)
Sun	13	(14.3)	5	(5.5)	5	(5.5)	8	(8.8)	9	(9.9)	51	(56.0)
Bicycle	3	(3.3)	0	(0.0)	2	(2.2)	1	(1.1)	5	(5.6)	79	(87.8)
Automobile	2	(2.2)	1	(1.1)	0	(0.0)	5	(5.6)	3	(3.3)	79	(87.8)
Chair	3	(3.3)	2	(2.2)	0	(0.0)	2	(2.2)	3	(3.3)	80	(88.9)
Dog	88	(93.6)	2	(2.1)	0	(0.0)	3	(3.2)	0	(0.0)	1	(1.1)
Bird	89	(94.7)	2	(2.1)	1	(1.1)	1	(1.1)	0	(0.0)	1	(1.1)
Rock	4	(4.3)	2	(2.2)	2	(2.2)	3	(3.2)	7	(7.5)	75	(80.6)
Dish	1	(1.1)	1	(1.1)	1	(1.1)	3	(3.3)	0	(0.0)	85	(93.4)
Flower	77	(82.8)	10	(10.8)	1	(1.1)	2	(2.2)	1	(1.1)	2	(2.2)
Tree	81	(88.0)	5	(5.4)	3	(3.3)	1	(1.1)	1	(1.1)	1	(1.1)
Book	6	(6.6)	3	(3.3)	1	(1.1)	3	(3.3)	4	(4.4)	74	(81.3)
Lightning	13	(14.4)	5	(5.6)	11	(12.2)	2	(2.2)	4	(4.4)	55	(61.1)

Table 6

Characteristics of Children

Variable	Classification	Number	Per Cent
Sex	Male	35	36.5
	Female	61	63.5
Race	Black	11	11.5
	White	84	87.5
	Other (Chinese)	1	1.0
Age	Range	10-13 years	
	Mean	11.104	
	Median	11.105	
	Mode	11.00	
Favorite Subject	Math	41	42.7
	Reading	4	4.2
	Science	8	8.3
	Language	5	5.2
	English	2	2.1
	Social Studies	6	6.3
	Spelling	23	24.0
	P.E.	4	4.2
	Art	1	1.0
	History	1	1.0
Sibling Order	Only	26	27.1
	Oldest	25	26.0
	Middle	14	14.6
	Youngest	30	31.3
	Twin	1	1.0

The children ranged in age from 10 to 13 years. The mean age of the children was 11.10 years, and the median age was 11.10 years.

The children listed Math (N=41) as their favorite subject in school followed by Spelling (N=23), Science (N=8), Social Studies (N=6), Language (N=5), P.E. (N=4), Reading (N=4), English (N=2), Art (N=1), History (N=1), and Writing (N=1).

The children were fairly evenly distributed among the sibling positions in the family. Most of the children were Youngest (N=30), with Only (N=26), Oldest (N=25), Middle (N=14) and Twin (N=1) accounting for the remaining children.

The range of scores on the locus of control test was from a low of eight to a high of 22. The mean score was 15.13 and the median score was 15.55.

Table 7 indicates the responses given by the children to the various animate and inanimate objects on the Animism Test. The majority of the children attributed life to the animate objects. The percentages of children who stated that the animate objects were living were as follows: Dog (97.9%), Bird (95.8%), Flower (92.5%), and Tree (95.7%).

The inanimate objects tended to be more difficult for the children to answer correctly. The percentages of children who stated that the inanimate objects were not alive were as follows: Fire (57.8%), River (53.3%), Clouds (64.1%), Sun (57.0%), Bicycle (80.6%), Automobile (73.0%), Chair (95.9%), Rock (85.2%), Dish

Table 7

Children's Responses to Animism Test

The degree to which objects are rated as living
and the percent of children giving this rating

Object	Living 5		4		3		2		1		Not Living 0	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Fire	10	(11.1)	5	(5.6)	3	(3.3)	6	(6.7)	14	(15.6)	52	(57.8)
River	8	(8.7)	11	(12.0)	8	(8.7)	4	(4.3)	12	(13.0)	49	(53.3)
Clouds	2	(2.2)	6	(6.5)	6	(6.5)	7	(7.6)	12	(13.0)	59	(64.1)
Sun	7	(7.5)	12	(12.9)	6	(6.5)	8	(8.6)	7	(7.5)	53	(57.0)
Bicycle	3	(3.2)	4	(4.3)	5	(5.4)	2	(2.2)	4	(4.3)	75	(80.6)
Automobile	2	(2.2)	2	(2.2)	4	(4.5)	9	(10.1)	7	(7.9)	65	(73.0)
Chair	3	(3.3)	1	(1.1)	2	(2.2)	3	(3.3)	4	(4.3)	79	(85.9)
Dog	86	(91.5)	2	(2.1)	2	(2.1)	2	(2.1)	0	(0.0)	2	(2.1)
Bird	83	(87.4)	3	(3.2)	2	(2.1)	3	(3.2)	0	(0.0)	4	(4.2)
Rock	3	(3.4)	0	(0.0)	1	(1.1)	5	(5.7)	4	(4.5)	75	(85.2)
Dish	1	(1.1)	1	(1.1)	1	(1.1)	4	(4.6)	3	(3.4)	77	(88.5)
Flower	71	(76.3)	9	(9.7)	3	(3.2)	2	(2.2)	1	(1.1)	7	(7.5)
Tree	73	(77.7)	6	(6.4)	8	(8.5)	3	(3.2)	0	(0.0)	4	(4.3)
Book	3	(3.3)	3	(3.3)	4	(4.4)	3	(3.3)	2	(2.2)	76	(83.5)
Lightning	12	(13.6)	2	(2.3)	6	(6.8)	9	(10.2)	8	(9.1)	51	(58.0)

(88.5%), Book (83.5%) and Lightning (58.0%). The inanimate objects: Fire, River, Clouds, Sun, and Lightning tended to be the most difficult for the children to rate as not living.

IV. Examination of Hypotheses and Discussion

Hypothesis 1: There is no difference between male and female animism scores.

Since Piaget (1929) stated that both males and females progress through identical stages in their animistic development, no sex differences were expected. The results support the hypothesis.

A one-way ANOVA procedure was utilized to examine if any sex differences existed when boys' and girls' inanimate objects mean score and their animate objects mean score were compared. As indicated in Table 8 no significant differences were found between males' and females' inanimate objects and animate objects mean scores.

When the inanimate objects mean score was compared, the females had a higher mean score ($\bar{X}=8.62$) than did the males ($\bar{X}=8.00$) but the difference was not significant. When the animate objects mean scores were compared, the females had a higher mean score ($\bar{X}=18.13$) than did the males ($\bar{X}=17.31$). Once again however, the difference was not significant. This result was consistent with Piaget's theory that cognitive development is the same for females and males.

Hypothesis 2: There is no difference between the animism scores of those children with highly educated fathers and those children with less educated fathers.

Table 8

Males' and Females' Inanimate and
Animate Objects Scores

	Inanimate Objects		Animate Objects	
	\bar{X}	s.d.	\bar{X}	s.d.
Males	8.00	9.98	17.31	4.11
Females	8.62	10.02	18.13	3.57

Inanimate Objects

Source	df	S.S.	M.S.	F	F Probability
Between	1	3.86	3.86	.039	.84
Within	91	9119.21	100.21		
Total	92	9123.07			

Animate Objects

Source	df	S.S.	M.S.	F	F Probability
Between	1	14.83	14.83	1.04	.31
Within	94	1344.49	14.30		
Total	95	1359.32			

According to Piaget (1929) all children progress through the same stages in their cognitive development. However, there may be a great deal of fluctuation in the rate at which different children progress through these stages. It was assumed that the greater the educational level found in the home the more likely it would be that the home would provide a richly, stimulating environment for the child.

Since the father in most families is more likely to have a higher level of formal education than the mother, the father's level of education was used as the criteria for grouping in this study. The two groups that were used were: 1) those fathers with less than a B.S. degree, and 2) those fathers with a B.S. degree or greater. Table 9 shows that this hypothesis was supported on the inanimate objects score, but was rejected on the animate objects score.

It must be noted that the Bartless-Box F test for homogeneity of variance revealed that the variances between the two groups on the animate objects score differed significantly from each other ($p < .01$). Closer inspection reveals that the variance for the children of the less educated fathers was 18.02 while the variance for the children whose fathers were more educated was 5.86. This difference in variance reflects the fact that the range of scores for the animate objects of the two groups were very different. The children whose fathers were more educated had scores which ranged from 10.0 to 20.0 while the children whose fathers were less educated had scores which ranged from 5.0 to 20.0.

Since there was a significant difference in the variances between the two groups on the animate objects score, the one-way ANOVA procedure was utilized for the inanimate objects scores and a t-test which is based on separate variance estimates was used to examine the animate objects scores.

Table 9 indicates that there was no difference between the inanimate objects mean scores of the children whose fathers were more educated and those whose fathers were less educated. When the inanimate objects mean scores are compared for the two groups, the children whose fathers were less educated scored higher ($\bar{X}=8.30$) than did the children whose fathers were more educated ($\bar{X}=7.88$). However, the difference was not significant. Table 9 also indicates that on the animate objects mean score, the children whose fathers were more educated scored higher ($\bar{X}=19.11$) than did those children whose fathers were less educated ($\bar{X}=17.24$; this difference was statistically significant ($p < .05$)).

The results tend to indicate that more educated parents, in this case the fathers, may have better defined ideas of what is alive and therefore provide more accurate information to their children either through modeling or through the use of environmental stimuli such as books, field trips, etc. Less educated parents may, or may not have as well defined ideas of what alive is. Even if they do have well defined ideas, they may simply not know how to transfer these ideas to their children. Therefore, it takes these children longer to move to the fourth stage of development.

Table 9

Childrens' Inanimate and Animate Object
Scores by Educational Level of Father

	Inanimate Objects		Animate Objects	
	\bar{X}	s.d.	\bar{X}	s.d.
More Educated Father	7.88	9.56	19.11	2.42
Less Educated Father	8.30	8.83	17.24	4.25

Inanimate Objects

Source	df	S.S.	M.S.	F	F Probability
Between	1	2.15	2.15	.026	.87
Within	58	4740.83	81.74		
Total	59	4742.98			

Animate Objects
Using Separate Variance Estimate

Group	n	\bar{X}	t	df	2-Tail Prob
More Educated	18	19.11	-2.20	52.96	.03*
Less Educated	45	17.24			

*p < .05

Hypothesis 3: There is no difference between animism scores and ethnic grouping.

According to Piaget (1929) all children must pass through the same stage in their animistic development, therefore, no racial differences were expected. The analysis of the data supported this hypothesis.

First, the Bartlett-Box F test for the homogeneity of variance was statistically significant indicating a difference between the variances of the black and white subjects. This time, however, the variances were significantly different from each other on both the inanimate objects ($p = .023$) and animate objects ($p = .005$) scores.

While the ranges in scores between blacks and whites on the inanimate objects score did not differ (0.0 to 34.0) for the blacks and 0.0 to 35.0 for the whites, the difference in the variance between the groups was large. The variance for the black children was 227.78 while the variance for the white children was 83.07.

The ranges in scores on the animate objects was also similar for the two groups. For the blacks the range was from 5.0 to 20.0, while for the whites the range was from 8.0 to 20.0. The variance for the blacks was 34.89, and for the whites the variance was 10.86. Once again an analysis using a t-test based on separate variance estimates was utilized to analyze the data.

The data in Table 10 indicate that when the t-test with separate variance estimate was used to analyze the data no differences existed between the two ethnic groups. The mean inanimate

objects score for blacks was higher ($\bar{X}=14.00$) than was the mean score for the whites ($\bar{X}=7.80$). However, the animate objects mean score for the whites was higher ($\bar{X}=18.19$) than was the mean score for the blacks ($\bar{X}=14.91$).

Neither the inanimate objects score nor the animate objects score was significantly different for blacks or whites. While these results were consistent with Piaget's theory, that race alone should have little or no influence on a child's cognitive development, a note of caution is in order. Since there were only 11 black respondents to the Animism Test, caution must be encouraged when interpreting the results of this analysis. However, this result is consistent with the study by Bruce (1941) which also found no racial differences in the animistic responses given by children.

Hypothesis 4: There is a positive relationship between parents' and childrens' animism scores.

Piaget (1929) stated that animistic thinking should be given up by the time the child reaches the age of 11 or 12. Various research however, has shown that this is not the case (e.g. Dennis, 1957; Bell, 1954; Crannell, 1954; Crowell, 1957; Dennis & Mallinger, 1949; Sheehan & Papalia, 1974).

One of the factors which may inhibit the giving up of animistic thinking is language. Piaget (1929) stated, "Adult language provides the very conditions necessary to foster the child's animism . . ." (p. 248). If this is indeed the case, it would be expected that the child's animistic responses would be very similar to the

Table 10

Black and White Childrens'
Inanimate and Animate Objects Scores
Using Separate Variance Estimate

	Inanimate Objects		Animate Objects	
	\bar{X}	s.d.	\bar{X}	s.d.
Blacks	14.00	15.09	14.91	5.91
Whites	7.80	9.11	18.91	3.30

Inanimate Objects

Group	n	\bar{X}	t	df	2-Tail Prob
Blacks	10	14.00	1.27	9.82	.23
Whites	82	7.80			

Animate Objects

Group	n	\bar{X}	t	df	2-Tail Prob
Blacks	11	14.91	-1.81	10.83	.10
Whites	84	18.19			

adults' responses with whom the child identifies. In this case the childrens' responses should be very similar to their parents' responses. The results partially support this hypothesis.

In order to analyze the relationship between parents' and childrens' animistic responses a Pearson Product Moment Correlation procedure was utilized for each of the 15 objects on the Animism Test and also for the total animate and inanimate objects scores. The data in Table 11 indicate three results needing further comment. First the fathers' scores were significantly related to the child's scores for only two objects. Second, the mothers' scores were significantly related to the children's scores on 13 objects. Lastly, the father's score and the children's scores were significantly related on two of the three objects for which there was no significant relationship between the mother's score and the children's score. It might also be noted that the mothers' and fathers' responses were significantly related for the animate objects but on only one inanimate object (River) were the mothers' and fathers' responses significantly related.

These results suggest that the mother-child relationship may be much more important in the development of cognitive skills, at least animistic skills, than has previously been assumed. Exactly why the mothers' responses are more similar to the child's than are the fathers' is not clear. However, some research (Rebelsky & Hanks, 1972) suggests that fathers spend very little time interacting with their children. This fact suggests that

Table 11
 Relationship Between Parents' and
 Children's Animism Scores

Object	Relationship		
	Father/Mother	Father/Child	Mother/Child
Fire	-.0451	-.0670	.2120*
River	.3547***	.0936	.3526***
Clouds	.1524	.0796	.2216*
Sun	.1592	-.0748	.2089*
Bicycle	-.0500	-.1186	.1705*
Automobile	-.0304	.1515	.3169***
Chair	-.0846	-.0311	.3576***
Dog	.2055*	.1674	.1531
Bird	.2040*	.1955*	.1557
Rock	.1234	.0388	.3216***
Dish	-.0547	.3946***	.0763
Flower	.1996*	.0627	.2199*
Tree	.1952*	.0355	.2586**
Book	.1062	.1238	.3663***
Lightning	-.0331	-.0826	.3828***
Total Inanimate Objects	.0723	.0706	.4941***
Total Animate Objects	.2484**	-.0566	.2750**

*p < .05; **p < .01; ***p < .001

children are more likely to model the mothers' responses because she would be a more available source of reinforcement. Certainly more research is needed in this area.

Hypothesis 5: There is no difference in animism scores between those students who are internalized and those who are externalized.

While a person who is an external is more likely to believe that objects outside of himself are the major reinforcers in his life, a person who is an internal is more likely to assume personal responsibility for his own reinforcement. It would seem that an external would retain his animistic beliefs longer than would an internal. However, Berzonsky (1974) found that there was no difference between internals and externals in their animistic responses. In order to more fully examine the influence that locus of control had on animism, boys and girls were analyzed separately. The results of the analysis fail to support the hypothesis.

The Bartlett-Box F test for the homogeneity of variance was statistically significant indicating a difference between the variance of the internal and external males. These variances were statistically different from each other on both the inanimate objects ($p = .029$) and animate objects ($p < .001$). The Bartlett-Box F test also indicated a significant difference between the internal and external females on the animate objects score ($p = .003$).

Because of the significant differences in the variances between the internal and external males scores, a t-test using separate variance estimate procedure was used to analyze their responses. The t-test using separate variance estimate procedure was also used to analyze the responses of the internal and external female's animate objects scores. A one-way ANOVA procedure was used to analyze the internal and external females' inanimate objects scores.

As can be seen in Table 12 significant differences exist between internal and external males on both the animate and inanimate objects mean scores. On the inanimate objects, the internal males ($\bar{X}=4.07$) scored significantly lower ($p < .02$) than did the external males ($\bar{X}=11.30$). The reverse was true on the animate objects scores. The internal males ($\bar{X}=19.73$) scored significantly higher ($p < .001$) than did the external males ($\bar{X}=15.50$).

Table 13 shows that there was no significant difference in the inanimate or animate objects scores between internal and external females. However, the differences that did exist were in the same direction as they were for the males. For the inanimate objects score, the internal females scored lower ($\bar{X}=6.59$) than did the externals ($\bar{X}=11.12$); and the opposite was true for the animate objects score. The internal females scored higher ($\bar{X}=18.85$) than did the externals ($\bar{X}=17.22$).

The fact that significant differences were found for the males in this study, whereas Berzonsky (1974) found no differences,

Table 12
 Males'
 Locus of Control and
 Animism Test Scores

	Inanimate Objects			Animate Objects		
	n	\bar{X}	s.d.	n	\bar{X}	s.d.
Internals	15	4.07	6.27	15	19.73	0.59
Externals	20	11.30	11.21	20	15.50	4.69

Inanimate Objects

Group	n	\bar{X}	t	df	2-Tail Prob
Internals	15	4.07	2.42	30.87	.02
Externals	20	11.30			

Animate Objects

Group	n	\bar{X}	t	df	2-Tail Prob
Internals	15	19.73	-4.00	19.81	.001
Externals	20	15.50			

Table 13

Females'
Locus of Control and
Animism Test Scores

	Inanimate Objects			Animate Objects		
	n	\bar{X}	s.d.	n	\bar{X}	s.d.
Internals	32	6.59	9.48	34	18.85	2.54
Externals	26	11.12	10.30	27	17.22	4.46

Inanimate Objects (One-way ANOVA)

Source	df	S.S.	M.S.	F	F Probability
Between	1	293.28	293.28	3.02	.09
Within	56	5438.37	97.11		
Total	57	5731.65			

Animate Objects (Separate Variance Estimate)

Group	n	\bar{X}	t	df	2-Tail Prob
Internals	34	18.85	-1.70	39.05	.10
Externals	27	17.22			

may be explained by the fact that Berzonsky (1974) used the yes-no procedure to determine the level of animism in his subjects, whereas the present study looked at the degree of animism.

Locus of control, at least for males, may influence the schema that is used in deciding whether an object is alive or not. Since this schema is induced from previous environmental interactions, the external child, who already thinks animistically may simply continue to be reinforced for believing that objects are alive. The internal child, who is reinforcing himself, may find it much easier to give up his animistic beliefs because he realizes that the inanimate objects can not reinforce his behavior.

Why there was no significant differences found between internal and external females is difficult to explain. Since Piaget (1929) stated that animistic development should be the same for both males and females, a difference between internal and external females was expected (given the results found for the males). This is an area that warrents further investigation.

Hypothesis 6: There is no difference between children's animism scores and type of parental interaction.

To fully investigate the influence that a autocratic or democratic parent might have on a child's animistic development, the influence of the autocratic/democratic father and mother were analyzed separately for each sex of the children. The results obtained fully supported the hypothesis.

Table 14-17 show that whether the father was autocratic or democratic does not affect the inanimate objects or the animate

Table 14

Animism Scores of Sons of Autocratic
and Democratic Fathers

	Inanimate Objects			Animate Objects		
	n	\bar{X}	s.d.	n	\bar{X}	s.d.
Sons of Democratic Fathers	12	9.83	10.01	12	17.17	3.79
Sons of Autocratic Fathers	14	4.86	6.65	14	18.71	3.29

Inanimate Objects

Source	df	S.S.	M.S.	F	F Probability
Between	1	160.00	160.00	2.29	.14
Within	24	1677.38	69.89		
Total	25	1837.38			

Animate Objects

Source	df	S.S.	M.S.	F	F Probability
Between	1	15.47	15.47	1.24	.28
Within	24	298.52	12.44		
Total	25	313.99			

Table 15

Animism Scores of Daughters of
Autocratic and Democratic Fathers

	Inanimate Objects			Animate Objects		
	n	\bar{X}	s.d.	n	\bar{X}	s.d.
Daughters of Democratic Fathers	12	9.92	10.96	12	18.25	3.11
Daughters of Autocratic Fathers	31	8.35	9.49	33	17.85	4.08

Inanimate Objects

Source	df	S.S.	M.S.	F	F Probability
Between	1	21.10	21.10	.22	.65
Within	41	4024.01	98.15		
Total	42	4045.11			

Animate Objects

Source	df	S.S.	M.S.	F	F Probability
Between	1	1.42	1.42	.10	.76
Within	43	638.49	14.85		
Total	44	639.91			

Table 16

Animism Scores of Sons of Autocratic
and Democratic Mothers

	Inanimate Objects			Animate Objects		
	n	\bar{X}	s.d.	n	\bar{X}	s.d.
Sons of Democratic Mothers	19	10.68	10.23	19	16.21	4.43
Sons of Autocratic Mothers	16	5.25	9.13	16	18.63	3.38

Inanimate Objects

Source	df	S.S.	M.S.	F	F Probability
Between	1	256.49	256.49	2.70	.12
Within	33	3131.10	94.88		
Total	34	3387.60			

Animate Objects

Source	df	S.S.	M.S.	F	F Probability
Between	1	50.64	50.64	3.18	.08
Within	33	524.91	15.91		
Total	34	575.54			

Table 17

Animism Scores of Daughters of
Autocratic and Democratic Mothers

	Inanimate Objects			Animate Objects		
	n	\bar{X}	s.d.	n	\bar{X}	s.d.
Daughters of Democratic Mothers	24	8.88	10.78	27	18.41	3.71
Daughters of Autocratic Mothers	33	8.55	9.75	33	17.94	3.56

Inanimate Objects

Source	df	S.S.	M.S.	F	F Probability
Between	1	1.51	1.51	.02	.90
Within	55	5716.80	103.94		
Total	56	57.31			

Animate Objects

Source	df	S.S.	M.S.	F	F Probability
Between	1	3.25	3.25	.25	.62
Within	58	764.39	13.18		
Total	59	767.64			

objects score of his children regardless of their sex. The same holds true for mothers.

Sons of democratic fathers scored higher ($\bar{X}=9.83$) on the inanimate objects than did sons of autocratic fathers ($\bar{X}=4.85$). Sons of democratic fathers, however, scored lower ($\bar{X}=17.17$) on the animate objects than did the sons of autocratic fathers ($\bar{X}=18.71$).

Daughters of democratic fathers scored higher on the inanimate objects ($\bar{X}=9.92$) than did the daughters of autocratic fathers ($\bar{X}=8.35$). The daughters of democratic fathers also scored higher ($\bar{X}=18.25$) on the animate objects than did the daughters of autocratic fathers ($\bar{X}=17.85$).

Sons of democratic mothers scored higher on the inanimate objects ($\bar{X}=10.68$) than did sons of autocratic mothers ($\bar{X}=5.25$). Sons of democratic mothers scored lower on the animate objects ($\bar{X}=16.21$) than did the sons of autocratic mothers ($\bar{X}=18.62$).

Daughters of democratic mothers scored slightly higher on the animate objects ($\bar{X}=8.88$) than did the daughters of autocratic mothers ($\bar{X}=8.55$). Daughters of democratic mothers scored higher on the animate objects ($\bar{X}=18.41$) than did daughters of autocratic mothers ($\bar{X}=17.94$).

Since a positive relationship had been found between the mother's animism scores and the childrens' animism scores, it was expected that, at least for the mothers, the type of interaction between parent and child would produce significant results. The results, of course, did not support this conjecture.

One explanation might be that animism is influenced by verbal modeling (Piaget, 1929) and not by a given personality trait (i.e. democratic/autocratic). A second explanation may be that children do not perceive their mothers as the authority in the family and therefore feel more free to interact with her at an interpersonal level, hence the verbal modeling. There is some research support for this explanation. Elder (1962) found that adolescents rated their fathers as being more Autocratic and Authoritarian while they rated their mothers as being more Democratic, Equalitarian and Permissive.

These results suggest that the personality traits of individuals that the child comes into contact with may have little influence on animistic development. However, the type or quality of the interpersonal relationship may play a large role in the child's giving up his animistic beliefs.

Hypothesis 7: There is no relationship between animism scores and achievement test scores.

Since Piaget (1929) stated that assimilation of the environment by the organism enhances the movement from the lower stages of cognitive development to the higher stages, the role that educational achievement plays in animistic development was investigated.²

²Since the child spends as much as eight hours a day in school, it is assumed that the school setting is the second most important source for obtaining information to be assimilated by the child.

The California Achievement Test Battery, 1970 ed., Form A, Level 3, scores (percentiles and grade placement) were obtained for 56 of the children in this study. The C.A.T. had been administered to these children within the past eight months. While C.A.T. scores were available for 11 other children, it had been over two years since these children had taken these tests. Fourteen other children had taken the Iowa Achievement Test, Form 2, but only grade placement evaluations were available. Since the C.A.T. percentiles are the most useful in the present analysis, only those 56 children for whom the C.A.T. percentile scores are available will be used to investigate the relationship of achievement test scores and animism scores. The four scales and their subscales that are tested by the C.A.T. are as follows: Reading with the subscales of Vocabulary and Comprehension, Math with the subscales of Computations and Concepts and Problems, Language with the subscales of Mechanics of English and Usage and Structure, and Spelling.

A multiple regression analysis was conducted to more fully understand the relationship between animism scores and school achievement test scores. The results obtained indicated that certain skills measured by school achievement tests may, in fact, influence an individual's animistic development.

Table 18 shows the correlations between the seven subscales of the C.A.T. and the inanimate and animate objects scores. There is a negative correlation between all of the subscales except mechanics of English, and the inanimate objects score. There is

Table 18
 Correlation Coefficients Between
 Animism and Achievement Test Scores

<u>Scales and Subscales</u>	<u>Inanimate Objects</u>	<u>Animate Objects</u>
Reading:		
Vocabulary	-.2970*	.3092*
Comprehension	-.3545**	.3375*
Math:		
Computations	-.3042*	.3306*
Concepts & Problems	-.3873**	.3612**
Language:		
Mechanics of English	-.2346	.3170*
Usage & Structure	-.2680*	.3612**
Spelling	-.2914*	.3596**
Inanimate Objects		-.4345***

*p < .05; **p < .01; ***p < .001

a positive correlation between all of the subscales and the animate objects score. This result suggests that school achievement is indeed related to the child's correct conception of the world. Table 18 also shows the strong negative correlation between the inanimate objects and the animate objects scores.

When the inanimate objects scores were regressed on the achievement subtest scores, only 19 percent of the variance in the inanimate objects scores (R^2) could be attributed to the linear combination of achievement subtest scores (Table 19). The multiple correlation coefficient, $R=0.44$, was not statistically significant indicating that the relationship between the inanimate objects scores and the linear combination of achievement test scores could be attributed to a chance occurrence.

This, however, was not the case when the animate objects scores were regressed on the school achievement subtest scores. Table 19 indicates that 30 percent of the variance in the animate objects scores (R^2) could be attributed to the linear combination of school achievement test scores. Further, the multiple correlation coefficient, $R=0.55$, was statistically significant.

The order of importance the subscales in their contribution to the variance in the animate objects scores was next examined. The most important contributor to the variance was Language's subscale Usage and Structure which contributed significantly ($F=9.66$; $d.f.=7, 46$; $p < .01$) to the variance.

Table 19

Regression of Animate Test Scores
on School Achievement Test Scores

Inanimate Objects

<u>Independent Variable</u>	<u>b</u>	<u>Beta</u>	<u>F</u>
Spelling	-.62	-.19	.56
Vocabulary	.65	.20	.53
Comprehension	-.87	-.27	.72
Computation	.13	.04	.02
Concepts & Problems	-.14	-.46	2.49 ¹
Mechanics of English	.11	.37	1.70
Usage & Structure	-.31	-.09	.24

constant = 15.22; $R^2 = .19$; n = 56

¹Since H_0 was retained this level of significance is meaningless.

Animate Objects

<u>Independent Variable</u>	<u>b</u>	<u>Beta</u>	<u>F</u>
Spelling	.21	.15	.44
Vocabulary	-.26	-.20	.59
Comprehension	.41	.30	1.07
Computations	-.19	-.15	.31
Concepts & Problems	.88	.07	.07
Mechanics of English	-.21	-.18	.45
Usage & Structure	.77	.55	9.66**

constant = 12.72; $R^2 = .30$; n = 56

**F value significant at .01 level

These results, coupled with the results showing the significant relationship between the mother/child responses, indicates that language may be the most important factor in the child's animistic development. This is not to say that animistic development is not stage developmental. However, the proper use of language, either through verbal modeling or through formal education, may help determine the rate at which an individual passes from one stage to the next.

This appears to be especially true for the animate objects score. Since the child initially believes that all objects are alive, it is only the correct definition of what living really means that enables the child to give up his animistic beliefs. Since this correct meaning of living can only come from outside agents (e.g. parents, books, education), the child's exposure to models who themselves use the correct meaning of living would enable the child to more easily give up his immature cognitions for the more mature (i.e. correct) ones.

Chapter V

Summary

The purpose of the present study was first, to develop an instrument which could be used to measure the degree to which a person responded animistically to several items. Second, this study sought to investigate various factors which might influence, either positively or negatively, an individual's animistic development. The factors investigated included those which were internal to the individual (sex, race and locus of control), those which were external to the individual (father's level of education and family ideology) and those which were both internal and external to the individual (parent/child relationship and achievement test scores). Lastly, this study sought to provide additional information on animism which might integrate the two theories of animistic development (stage theory and learning theory) by providing a more accurate description of the course and forces influencing animistic development.

The present research approached the study of animistic development primarily from the cognitive-developmental framework. The cognitive theory of animistic development was developed by Piaget in 1929 in his book The Child's Conception of the World. For Piaget (1929) animism represents one facet of cognitive development. As with all areas of cognitive development, an individual must progress from one stage to the next higher stage until the highest stage of development is reached. In animistic development there are four stages.

While Piaget (1929) states that these stages cannot be skipped, the rate at which an individual progresses from one stage to the next is highly individualized. The rate at which the individual is able to assimilate new information from the environment and then is able to accommodate himself to the environment determines the rate of stage progression.

Subjects for the present study consisted of fifth and sixth grade students and their parents in a public school system in Northern Alabama who volunteered to take part in the study (N=96 students, 95 mothers and 74 fathers). These subjects filled out an Animism Test which had been developed for this study and a locus of control test developed by Bialer (1961). The parents filled out a family ideology questionnaire. Additional background information was also obtained from all of the subjects. The tests were all self administered. Each child took home a folder containing all the questionnaires and returned them to their teachers when the materials had been completed.

The results in the present study were consistent with both the stage theory and the learning theory of animistic development. First, animistic responses were present in all of the three groups of subjects (children, fathers, and mothers). Second, the children seemed to have had some difficulty in responding correctly to the animate objects. This was not unexpected since Piaget (1929) predicted that at the age of 11 or 12 children would be in a state of transition from the third stage of animistic development to the final stage. This transition period would be accompanied by a great deal of confusion and flux in their responses.

Third, the fact that there were no differences in the responses of the children due to sex or race suggest a general developmental trend in animistic development. Since the present study consisted solely of volunteers, it is likely that those persons who volunteered were very similar to each other regardless of racial and sexual differences. These results are, therefore, consistent with Piaget's (1929) theory.

Fourth, the fact that male internals responded significantly differently from male externals indicated that the strategies which the child (males) used may in fact influence his cognitive development. The fact that no differences were found for females may indicate that females use similar cognitive strategies regardless of where they believe their reinforcement comes from.

Fifth, learning theory receives some support from the fact that children with more educated fathers had significantly higher animate object scores than did children with less educated fathers. This seems to indicate that the more educated fathers were more likely to reward correct (i.e. non-animistic) responses than less educated fathers. It can also be assumed that the more educated fathers are more likely to provide a more stimulating environment which would provide more opportunities for rewarding their childrens' correct responses. However, it might also be inferred that in a more stimulating environment the child would be able to assimilate more concepts into his existing cognitive structure.

Sixth, the result which gave the most support to the learning

theory of animistic development was that the children's responses were most similar to their mother's responses. This may suggest that the child responds more similarly to the person from whom he is most likely to receive reinforcement.

Lastly, the school achievement test results also support the learning theory of animistic development. Children are more likely to be positively reinforced in schools for giving correct responses. In other words, a child who states that a dog is not living is very likely to be told he is incorrect.

The fifth and sixth results stated above need to be discussed further. Piaget (1929) cautions that language can retard the movement from a lower stage of animistic development to the next higher. A child's movement to a higher stage may also be retarded by modeling although he may be cognitively mature enough for the higher stage of development. Hence, Piaget's (1929) theory and learning theory may, in fact, compliment each other in explaining the possibilities of retarded development in animistic thinking.

The implications of this study for theory development is that animistic development appears to develop in a natural sequence while being influenced by the reinforcers that arise from interpersonal relationships. The important role of language can not be underestimated. Whether it is through modeling or school achievement, language seems to be a most important factor in determining the course of animistic development. The results of this study suggest that stage theory and learning theory may be much more complimentary to each other than is presently assumed.

The present study was plagued by a number of methodological problems and limitations that future research may seek to eliminate. The first of these was the small number of subjects in each group (96 children, 95 mothers, and 74 fathers). An allied problem was that these subjects were all volunteers and therefore may have been a rather homogenous group regardless of such factors as sex and race.

Third, there was very little control over the actual testing situations of the subjects. Since all testing was done by the individuals in their own home, it was extremely unlikely that similar conditions existed during testing.

Fourth, although the teachers who volunteered to use their classrooms were asked to encourage their students to return the questionnaires, there was no way to tell if this was done or if so, to what degree.

Obviously, the results of this study must be interpreted cautiously due to the above limitations. Also, because of the methodological problems, generalization of the results should not be attempted. However, if the results of the present study are viewed as suggesting trends in the animistic development of children, and if these results led to future research in animism, while avoiding the problems which beset this study, then perhaps this study has contributed to our knowledge of cognitive development.

Because of the results obtained in the present study, and because of the methodological problems encountered, the following recommendations are made for future research. First, more research is needed to determine the factors that might account for the strong similarity between the

mothers' and their childrens' responses. Second, a more structured testing situation should be utilized. Third, future studies might use a random selection procedure for obtaining subjects instead of using volunteers. Fourth, a three generational study might be desirable to determine if the mother-child relationship exists into the adult years of life. Fifth, research investigating the negative relationship between the fathers' and mothers' scores might yield useful information concerning the husband-wife dyad.

Lastly, research is needed to try to determine whether animism is the result of verbal modeling or if it is indeed a cognitive structure. The results of the present study highlighted the need for more research in this area. The results of a relationship between the mothers' and childrens' responses, and the significant role of the Usage and Structure of Language subscore, suggest that language is important in animistic development. However, the results do not indicate whether an underlying cognitive structure cause the language or whether language is being interpreted as reflecting a cognitive structure. Also, the results of the present study do not indicate whether it is the adults' animistic responses that influence the children or whether it is the childrens' responses that influence the adults. Clearly more research is needed.

REFERENCES

References

- Adorno, T. W.; Frenkel-Brunswik, Else; Levinson, D. J. & Sanford, R. N. The authoritarian personality. New York: Harper, 1950.
- Bell, R. C. Additional data on animistic thinking. The Scientific Monthly, 1954, 79, 67-69.
- Berzonsky, M. D. The role of familiarity in children's explanations of physical causality. Child Development, 1971, 42, 705-715.
- Berzonsky, M. D. Reflectivity, internality and animistic thinking. Child Development, 1974, 45, 785-789.
- Berzonsky, M. D.; Ondrako, M. A. & Williams, G. T. Modification of the life concept in reflective and impulsive children. The Journal of Genetic Psychology, 1977, 130, 11-17.
- Bialer, I. Conceptualization of success and failure in mentally retarded and normal children. Journal of Personality, 1961, 29, 303-324.
- Brown, L. B. & Thouless, R. H. Animistic thought in civilized adults. The Journal of Genetic Psychology, 1965, 107, 33-42.
- Bruce, M. Animism vs. evolution of the concept "alive." The Journal of Psychology, 1941, 12, 81-90.
- Crannell, C. W. The response of college students to a questionnaire on animistic thinking. The Scientific Monthly, 1954, 78, 54-56.
- Cross, Gail M. Use of teacher comments to effect an internal shift of control. Unpublished Master's Thesis. Towson State College, Towson, Maryland. 1978.
- Crowell, D. H. & Dole, A. A. Animism and college students. Journal of Educational Research, 1957, 50, 391-395.
- Dennis, W. Animistic thinking among college and university students. The Scientific Monthly, 1953, 76, 247-249.
- Dennis, W. & Mallinger, B. Animism and related tendencies in senescence. Journal of Gerontology, 1949, 4, 218-221.
- Dennis, W. & Russell, R. W. Piaget's questions applied to Zuni children. Child Development, 1940, 11, 181-187.
- Elder, G. H. Structural variations in the child-rearing relationship. Sociometry, 1962, 25, 241-262.

- Freud, S. Totom and taboo. (Translated by J. Strachey.) New York: W. W. Norton and company, 1950.
- Huang, I. & Lee, H. W. Experimental analysis of child animism. The Journal of Genetic Psychology, 1945, 66, 67-74.
- King, W. H. The development of scientific concepts in children. British Journal of Educational Psychology, 1960, 31, 1-20.
- Klingberg, G. The distinction between living and not living among 7-10 year old children, with some remarks concerning the so-called animism controversy. The Journal of Genetic Psychology, 1957, 90, 227-238.
- Klingensmith, S. W. Child animism: What the child means by "alive." Child Development, 1953, 24, 51-61.
- Laurendeau, M. & Pinard, A. Causal thinking in the child. New York: International Universities Press, Inc., 1962.
- Levinson, D. & Huffman, P. Traditional family ideology and its relation to personality. Journal of Personality, 1955, 23, 251-273.
- Looft, W. R. Animistic thought in children: Understanding of "Living" across its associated attributes. The Journal of Genetic Psychology, 1974, 124, 235-240.
- Looft, William R. & Bartz, Wayne H. Animism revived. Psychological Bulletin, 1969, 71, 1-19.
- Lowrie, D. C. Additional data on animistic thinking. The Scientific Monthly, 1954, 79, 69-70.
- Mikulak, A. T. A note on Piaget's animism. The Journal of Experimental Education, 1970, 38, 59-60.
- Piaget, J. The child's conception of the world. (Translated by J. and A. Tomlinson.) New York: Harcourt, Brace; London: Kegan Paul, 1929.
- Piaget, J. The child's conception of physical causality. (Translated by M. Gabain.) New York: Harcourt, Brace; London: Kegan Paul, 1930.
- Piaget, J. The origins of intelligence in children. (Translated by M. Cook.) New York: International Universities Press, 1952.
- Piaget, J. & Inhelder, B. The growth of logical thinking from childhood to adolescence. (Translated by A. Parsons and S. Milgram.) New York: Basic Books, 1958.

- Rebelsky, F. & Block, R. Crying in infancy. Journal of Genetic Psychology, 1972, 121, 49-57.
- Russell, R. W. Studies in animism: II. The development of animism. The Journal of Genetic Psychology, 1940, 56, 353-366.
- Russell, R. W. Studies in animism: IV. An investigation of concepts allied to animism. The Journal of Genetic Psychology, 1940, 51, 83-91.
- Russell, R. W. Studies in animism: V. Animism in older children. The Journal of Genetic Psychology, 1942, 60, 329-335.
- Russell, R. W. & Dennis, W. Studies in animism: I. A standard procedure for the investigation of animism. The Journal of Genetic Psychology, 1939, 55, 389-400.
- Russell, R. W. & Dennis, W. Note concerning the procedure employed in investigating child animism. The Journal of Genetic Psychology, 1941, 58, 423-424.
- Russell, R. W.; Dennis, W.; & Ash, F. E. Studies in animism: III. Animism in feeble-minded subjects. The Journal of Genetic Psychology, 1940, 57, 57-63.
- Safier, G. A study in relationships between the life and death concepts in children. The Journal of Genetic Psychology, 1964, 105, 283-294.
- Sheehan, N. & Papalia, D. The nature of the life concept across the life-span. Paper presented at The 27th Annual Meeting of the Gerontological Society, Portland, Oregon, October 28-November 1, 1974.
- Simmons, A. J. & Goss, A. E. Animistic responses as a function of sentence contexts and instructions. The Journal of Genetic Psychology, 1957, 91, 181-189.
- Tylor, E. B. Primitive culture. (3rd ed.) London, 1891.
- Voeks, V. Sources of apparent animism in students. The Scientific Monthly, 1954, 79, 406-407.

APPENDICES

Appendix I

ANIMISM TEST

Instructions

BELOW YOU WILL FIND A LIST OF 15 OBJECTS THAT YOU ARE FAMILIAR WITH. UNDER EACH OBJECT YOU WILL FIND A LIST OF WORD PAIRS THAT PEOPLE OFTEN USE TO DESCRIBE THESE OBJECTS. PLEASE PLACE AN X OR ✓ UNDER THE NUMBER FOR EACH WORD PAIR THAT BEST SHOWS HOW YOU WOULD DESCRIBE THESE OBJECTS.

LOOK AT THE EXAMPLE BELOW. THIS IS HOW A CHILD DESCRIBED A PERSON. FOR THE WORD PAIR HARD-SOFT, THE CHILD PLACED A CHECK UNDER THE NUMBER 2. THIS MEANS THAT A PERSON IS BELIEVED TO BE FAIRLY SOFT. IF A CHECK WERE PLACED UNDER THE 4, THEN THE CHILD WOULD HAVE FELT THAT A PERSON WAS FAIRLY HARD. NOTE THAT 5 MEANS THE OBJECT IS VERY HARD WHILE A 0 MEANS THAT THE OBJECT IS VERY SOFT. THE NUMBERS BETWEEN 5 AND 0 STAND FOR DEGREES OF HARDNESS AND SOFTNESS. THIS METHOD IS TO BE USED FOR ALL OF THE WORD PAIRS. THAT IS, 5 MEANS VERY HOT AND 0 MEANS VERY COLD AND THE OTHER NUMBERS ARE DEGREES OF HOTNESS AND COLDNESS.

EXAMPLE

	<u>PERSON</u>						
	5	4	3	<u>2</u>	1	0	
It is HARD	—	—	—	✓	—	—	It is SOFT
It is LIVING	✓	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	✓	It is SMOOTH
It is HOT	—	—	✓	—	—	—	It is COLD
It has FEELINGS	—	✓	—	—	—	—	It does NOT HAVE FEELINGS

REMEMBER, DIFFERENT PEOPLE GIVE DIFFERENT RESPONSES, AND THERE ARE NO RIGHT OR WRONG ANSWERS. ALL RIGHT, READ EACH OBJECT AND PAIR OF STATEMENTS CAREFULLY AND MARK HOW YOU WOULD DESCRIBE THE OBJECTS. MARK AND ANSWER FOR ALL OF THE WORD PAIRS.

	<u>FIRE</u>						
	5	4	3	<u>2</u>	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	<u>RIVER</u>						
	5	4	3	<u>2</u>	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	<u>CLOUDS</u>						
	5	4	3	<u>2</u>	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	5	4	3	<u>SUN</u> 2	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	5	4	3	<u>BICYCLE</u> 2	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	5	4	3	<u>AUTOMOBILE</u> 2	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	5	4	3	<u>CHAIR</u> 2	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	5	4	3	<u>DOG</u> 2	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	5	4	3	<u>BIRD</u> 2	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	5	4	3	<u>ROCK</u> 2	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is Living	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	5	4	3	<u>DISH</u> 2	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	5	4	3	<u>FLOWER</u> 2	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	5	4	3	<u>TREE</u> 2	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	5	4	3	<u>BOOK</u> 2	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

	5	4	3	<u>LIGHTNING</u> 2	1	0	
It is HARD	—	—	—	—	—	—	It is SOFT
It is LIVING	—	—	—	—	—	—	It is NOT LIVING
It is ROUGH	—	—	—	—	—	—	It is SMOOTH
It is HOT	—	—	—	—	—	—	It is COLD
It has FEELINGS	—	—	—	—	—	—	It does NOT HAVE FEELINGS

Appendix II

INTERNAL/EXTERNAL LOCUS OF CONTROL TEST

Instructions

THESE ARE NOT TESTS. I AM JUST TRYING TO FIND OUT HOW KIDS YOUR AGE THINK ABOUT CERTAIN THINGS. I AM GOING TO ASK SOME QUESTIONS TO SEE HOW YOU FEEL ABOUT CERTAIN THINGS. THERE ARE NO RIGHT OR WRONG ANSWERS TO THESE QUESTIONS. SOME KIDS SAY "YES" AND SOME SAY "NO". AFTER YOU READ EACH QUESTION, IF YOU THINK YOUR ANSWER SHOULD BE YES, OR MOSTLY YES, MARK "YES". IF YOU THINK YOUR ANSWER SHOULD BE NO, OR MOSTLY NO, THEN MARK "NO." REMEMBER, DIFFERENT CHILDREN GIVE DIFFERENT ANSWERS, AND THERE ARE NO RIGHT OR WRONG ANSWERS. JUST MARK "YES" OR "NO", DEPENDING ON HOW YOU THINK THE QUESTION SHOULD BE ANSWERED. ALL RIGHT, READ CAREFULLY, AND ANSWER "YES" OR "NO."

1. When somebody gets mad at you, do you usually feel there is nothing you can do about it? Yes ___ No ___
2. Do you really believe a kid can be whatever he wants to be? Yes ___ No ___
3. When people are mean to you, could it be because you did something to make them be mean? Yes ___ No ___
4. Do you usually make up your mind about something without asking someone first? Yes ___ No ___
5. Can you do anything about what is going to happen tomorrow? Yes ___ No ___
6. When people are good to you is it usually because you did something to make them be good? Yes ___ No ___
7. Can you ever make other people do things you want them to do? Yes ___ No ___
8. Do you ever think that kids your age can change things that are happening in the world? Yes ___ No ___
9. If another child was going to hit you, could you do anything about it?
Yes ___ No ___
10. Can a child your age ever have his own way? Yes ___ No ___
11. Is it hard for you to know why some people do certain things? Yes ___ No ___
12. When someone is nice to you, is it because you did something right?
Yes ___ No ___
13. Does it ever help to think about what you will be when you grow up?
Yes ___ No ___
14. Can you ever try to be friends with another kid even if he doesn't want to? Yes ___ No ___
15. When someone gets mad at you, can you usually do something to make him your friend again? Yes ___ No ___
16. Can kids your age ever have anything to say about where they are going to live? Yes ___ No ___
17. When you get in an argument, is it sometimes your fault? Yes ___ No ___
18. When nice things happen to you, is it only good luck? Yes ___ No ___
19. Do you often feel you get punished when you don't deserve it? Yes ___ No ___
20. Will people usually do things for you if you ask them? Yes ___ No ___
21. Do you believe a kid can usually be whatever he wants to be when he grows up? Yes ___ No ___
22. When bad things happen to you, is it usually someone else's fault?
Yes ___ No ___
23. Can you ever know for sure why some people do certain things? Yes ___ No ___

(PLEASE TURN THE PAGE AND CONTINUE)

7. It is somehow unnatural to place women in positions of authority over men.
- | | | | | | | |
|----------------|--------------|---------------|------------|------------------|-----------------|-------------------|
| Strongly Agree | Mostly Agree | Tend to Agree | Don't Know | Tend to Disagree | Mostly Disagree | Strongly Disagree |
|----------------|--------------|---------------|------------|------------------|-----------------|-------------------|
-
8. The family is a sacred institution, divinely ordained.
- | | | | | | | |
|----------------|--------------|---------------|------------|------------------|-----------------|-------------------|
| Strongly Agree | Mostly Agree | Tend to Agree | Don't Know | Tend to Disagree | Mostly Disagree | Strongly Disagree |
|----------------|--------------|---------------|------------|------------------|-----------------|-------------------|
-
9. A woman whose children are at all messy or rowdy has failed in her duties as a mother.
- | | | | | | | |
|----------------|--------------|---------------|------------|------------------|-----------------|-------------------|
| Strongly Agree | Mostly Agree | Tend to Agree | Don't Know | Tend to Disagree | Mostly Disagree | Strongly Disagree |
|----------------|--------------|---------------|------------|------------------|-----------------|-------------------|
-
10. If a child is unusual in any way, his parents should get him to be more like other children.
- | | | | | | | |
|----------------|--------------|---------------|------------|------------------|-----------------|-------------------|
| Strongly Agree | Mostly Agree | Tend to Agree | Don't Know | Tend to Disagree | Mostly Disagree | Strongly Disagree |
|----------------|--------------|---------------|------------|------------------|-----------------|-------------------|
-
11. There is hardly anything lower than a person who does not feel a great love, gratitude, and respect for his parents.
- | | | | | | | |
|----------------|--------------|---------------|------------|------------------|-----------------|-------------------|
| Strongly Agree | Mostly Agree | Tend to Agree | Don't Know | Tend to Disagree | Mostly Disagree | Strongly Disagree |
|----------------|--------------|---------------|------------|------------------|-----------------|-------------------|
-
12. The facts on crime and sexual immorality show that we will have to crack down harder on young people if we are going to save our moral standards.
- | | | | | | | |
|----------------|--------------|---------------|------------|------------------|-----------------|-------------------|
| Strongly Agree | Mostly Agree | Tend to Agree | Don't Know | Tend to Disagree | Mostly Disagree | Strongly Disagree |
|----------------|--------------|---------------|------------|------------------|-----------------|-------------------|
-

(PLEASE TURN PAGE AND CONTINUE)

Appendix IV

COLLEGE OF HOME ECONOMICS



VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DEPARTMENT OF MANAGEMENT, HOUSING AND FAMILY DEVELOPMENT (703) 951-6163

Dear Parents,

This letter is being sent to you to request your help. I am an instructor at Virginia Polytechnic Institute and State University in Blacksburg, Virginia. Currently I am completing my work for a Ph.D. in child development.

Your help is GREATLY needed on a project being conducted to understand how parents and their children think and feel about certain things. You and your child have been chosen to participate in this project because it is felt that there are many positive insights that you can contribute in helping us understand children and their parents better.

When you return this letter with your name signed agreeing to take part in this project, your child will bring home a folder with three questionnaires (THESE ARE NOT TESTS) in it. One questionnaire is for your child and one is for each parent to fill out. If you are an only parent, only one questionnaire will need to be filled out. When these questionnaires are completed, your child will return them to his/her school where I will pick them up.

Please note that this project is in no way connected to your child's school work. Your child's teacher will not see the questionnaires at any time. Your signature will also allow me to have access to your child's achievement test scores. These are needed to understand how achievement influences thinking.

Let me insure you that this project CAN NOT be completed without your help. Your contribution to this project may eventually cause educators and child development experts to re-examine the way we think about children and their parents.

Sincerely,

Robert E. Billingham

Yes, we will take part in this project. Signature _____

No, we will not take part in this project. Signature _____

Appendix V

COLLEGE OF HOME ECONOMICS



VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DEPARTMENT OF MANAGEMENT, HOUSING AND FAMILY DEVELOPMENT (703) 951-6163

Dear Parents,

This second letter is to thank you for the tremendous support that you have given to this project. It is truly a nice feeling to know that so many of you have agreed to take part in this project. Thank you very much for your support.

Those of you who have not yet sent in your permission to be used in this study may still do so by signing and returning this letter. Those parents who have already agreed to take part in this project do not need to return this letter.

If at first you felt that you did not want to take part in this study but have since changed your mind, you may still take part by signing and returning this letter.

For those of you who have agreed to take part in this project, your child will be bringing home a folder with the questionnaires in it next Tuesday, Feb. 6, and your child will return them to his/her school when they are completed.

Once again, thank you very much for your support.

Sincerely,

Robert E. Billingham

Yes, we will take part in this project. Signature _____

No, we will not take part in this project. Signature _____

Appendix VI



COLLEGE OF HOME ECONOMICS

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DEPARTMENT OF MANAGEMENT, HOUSING AND FAMILY DEVELOPMENT (703) 951-6163

Dear Parents,

These questionnaires have been made as simple as possible so that your child can fill them out without any help. However, there may be some questions that they are unable to understand. If this proves to be the case, please feel free to help your child, but only in helping him/her to understand the question. Please DO NOT suggest an answer for them.

Some of these questions may not seem to make much sense, but they all serve an important need. Please mark an answer for all of the questions.

It would be a great help to me if you would put your child's first name (ONLY) below your signature. This way it will be easier to keep track of which questionnaires have and have not been returned.

Lastly, please return all of the materials that are in your folder even if they have not been filled out.

Thank you once again for your cooperation.

Robert E. Billingham

Appendix VII

PARENT'S QUESTIONNAIRE

Background Information

BELOW YOU WILL FIND SEVERAL QUESTIONS. PLEASE READ AND ANSWER EACH QUESTION CAREFULLY. PLEASE NOTE THAT AT NO TIME ARE YOU TO GIVE YOUR NAME. WE ARE NOT INTERESTED IN ANY ONE PERSON'S OPINION BUT IN THE OVERALL PATTERN OF MANY PEOPLE.

SEX: MALE _____ FEMALE _____

RACE: BLACK _____ WHITE _____ OTHER _____

HOW OLD ARE YOU? _____

EDUCATION:

PLEASE CIRCLE THE LAST GRADE THAT YOU COMPLETED IN SCHOOL

ELEMENTARY/SECONDARY: 1 2 3 4 5 6 7 8

HIGH SCHOOL: 9 10 11 12 DID YOU RECEIVE YOUR DEGREE? Yes ___ No ___

TECHNICAL OR TRADE SCHOOL: HOW MANY YEARS? _____ WHAT SKILL ARE YOU TRAINED IN? _____

COMMUNITY COLLEGE: HOW MANY YEARS? _____ DID YOU EARN A DEGREE? Yes ___ No ___
WHAT SKILL OR TRADE ARE YOU TRAINED IN? _____

COLLEGE: 1 2 3 4 DID YOU EARN A DEGREE? Yes ___ No ___ WHAT IS YOUR MAJOR? _____ WHAT IS YOUR MINOR? _____

MASTERS (M.A., M.S., etc.) HOW MANY YEARS? _____ WHAT IS YOUR MAJOR? _____
WHAT IS YOUR MINOR? _____

DOCTORATE (Ph.D., Ed.D., D.D., etc.) WHAT IS YOUR AREA OF SPECIALITY? _____

M.D. OR OTHER PROFESSIONAL DEGREE: _____

OCCUPATION: NOTE, HOUSEWIFE, HOMEMAKER, etc. ARE CONSIDERED AN OCCUPATION.
WHAT IS YOUR CURRENT OCCUPATION? _____

HOW LONG HAVE YOU HAD THIS JOB? _____

WHAT JOB HAVE YOU WORKED ON THE LONGEST? _____

IF YOU ARE CURRENTLY UNEMPLOYED, WHAT WAS YOUR LAST EMPLOYMENT? _____
HOW LONG WERE YOU EMPLOYED THERE? _____

CHILDCARE:

PRIOR TO THE TIME THAT YOUR CHILD ENTERED SCHOOL, WAS YOUR CHILD KEPT BY A BABY SITTER, RELATIVE, DAY CARE CENTER, OR PRE-SCHOOL WHILE YOU WORKED? Yes ___ No ___

IF YOU ANSWERED "YES" TO THE ABOVE:

WHO KEPT YOUR CHILD? _____

AT WHAT AGE WAS YOUR CHILD FIRST CARED FOR BY OTHERS? _____

HOW MANY HOURS WAS THIS CARE GIVEN EACH DAY? _____

HOW MANY YEARS, PRIOR TO SCHOOL, WAS YOUR CHILD CARED FOR BY OTHERS _____

RELIGION:

WHAT IS YOUR RELIGIOUS PREFERENCE:

CATHOLIC _____

JEW _____

PROTESTANT (SPECIFY) _____

OTHER (SPECIFY) _____

HOW IMPORTANT A ROLE DO YOU FEEL YOUR RELIGIOUS BELIEFS PLAY IN YOUR LIFE?

NOT AT ALL IMPORTANT _____

NOT TOO IMPORTANT _____

SOMEWHAT IMPORTANT _____

VERY IMPORTANT _____

EXTREMELY IMPORTANT _____

MARITAL STATUS:

SINGLE _____

MARRIED _____

WIDOWED _____

SEPARATED _____

DIVORCED _____

COHABITING _____

POLITICAL VIEWPOINT:

HOW WOULD YOU DESCRIBE YOURSELF POLITICALLY?

LIBERAL _____

MODERATE _____

CONSERVATIVE _____

BIRTH ORDER: PLEASE LIST, IN ORDER OF BIRTH, THE SEX OF AND AGE OF ALL CHILDREN LIVING IN YOUR HOME. PLEASE USE M FOR MALES AND F FOR FEMALES. PLEASE CIRCLE THE LETTER FOR THE CHILD/CHILDREN THAT BROUGHT THIS QUESTIONNAIRE HOME.

(OLDEST) ___ ___

 ___ ___

 ___ ___

(YOUNGEST) ___ ___

 ___ ___

Appendix VIII

CHILDREN'S QUESTIONNAIRE

Background Information

BELOW YOU WILL FIND SEVERAL QUESTIONS. PLEASE READ AND ANSWER EACH QUESTION CAREFULLY. PLEASE NOTE THAT AT NO TIME ARE YOU TO GIVE YOUR NAME. WE ARE NOT INTERESTED IN ANY ONE PERSON'S OPINION BUT IN THE OVERALL PATTERN OF MANY PEOPLE. IF AT ANY TIME YOU NEED HELP UNDERSTANDING A QUESTION, PLEASE ASK YOUR PARENTS FOR HELP.

SEX: BOY _____ GIRL _____

RACE: BLACK _____ WHITE _____ OTHER (SPECIFY) _____

HOW OLD ARE YOU? _____

WHAT SUBJECT DO YOU LIKE THE BEST IN SCHOOL? _____
 HOW WELL DO YOU DO IN THIS CLASS (DO NOT GIVE A GRADE)
 EXCELLENT _____ GOOD _____ FAIR _____ POOR _____ BAD _____

WHAT SUBJECT DO YOU LIKE THE LEAST IN SCHOOL? _____
 HOW WELL DO YOU DO IN THIS CLASS (DO NOT GIVE A GRADE)
 EXCELLENT _____ GOOD _____ POOR _____ BAD _____

**The vita has been removed from
the scanned document**

ANIMISM IN TWO GENERATIONS: AN INVESTIGATION OF
SELECTED PERSONALITY FACTORS

by

Robert Emil Billingham

(ABSTRACT)

Cognitive development has, the past few years, become one of the most heavily researched areas of human development. The cognitive developmental theory of Jean Piaget (1929, 1930, 1952) has been the major focus of this research.

The present study was also an investigation of one of the many aspects of Piaget's theory. The present study focused on Piaget (1929) theory of animism because animistic beliefs were believed, by Piaget, to be the most basic form of thinking. If this is indeed the case then the study of animism should lead to understanding the very basis for an individual's conception of the world.

Several personality factors, both those that are inseparable from the individual (sex, race, and locus of control), those which are primarily in the environment (parents education and family ideology), and those which are to a great extent under the control of the child (parent/child relationship and school achievement) were investigated in terms of animism.

Two hundred sixty five subjects (96 children, 95 mothers, and 74 fathers) from a public school system in northern Alabama volunteered to

take part in the study. Each subject completed an Animism Test and the parents filled out a family ideology questionnaire while the children filled out a locus of control test.

The results of the study supported Piaget's (1929) theory of animistic development. However, the results also indicated that language, both the child's and adult model's, may play a significant role in the animistic development of children.