CHILDREN'S CONCEPTS OF DEATH RELATED TO COGNITIVE DEVELOPMENT

Thesis for the Degree of M. A.
MICHIGAN STATE UNIVERSITY
VIRGINIA CLARE WULF
1973

ABSTRACT

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By

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The present study was concerned with the development of the child's concept of death and its relationship to cognitive development. Past research had shown that there are three major stages of death conceptualization in children (Cousinet, 1940; Nagy, 1948; and Mitchell, 1969). The ages at which these stages appear are similar to Jean Piaget's three stages of cognitive development, the pre-operational, concrete operational, and formal operational thought processes, and it was hypothesized that the child's concept of death developed concomitantly with his cognitive development (Nagy, 1948, and Mitchell, 1969).

The present study sought to test three hypotheses:

1) that the child's level of cognitive development and level of death conceptualization are significantly related,

2) that the specific cognitive area of egocentrism is more highly related to death conceptualization than the area of classification or the general level of cognitive functioning, and

3) that the largest rate of change in death conceptualization occurs between the ages of 6 and 8 years, when the child first begins to experiment with logic in his cognitive thinking.

Sixty-nine children from 4 to 11 years of age were tested for level of cognitive development and level of death conceptualization. The tests consisted of five egocentrism tasks, five classification tasks, one question related to physical causality, and twenty-one questions about death which included four questions related to experience with death. Correlations and partial correlations were obtained between the variables of death knowledge and death experience, cognitive development, egocentrism, and classification, with age held constant.

The results upheld the first and third hypotheses, that cognitive development and death conceptualization are significantly related and that the greatest change in death conceptualization occurs between 6 and 8 years of age. However, in comparing successive year levels, significant differences in cognitive skills and death knowledge were found only between 4- and 5-year-olds and between 6- and 7-year-olds; thus the large change in death conceptualization between 6 and 8 years was due

only to the significant difference between the 6- and 7-year-olds. Results did not support the hypothesis that egocentrism is more highly related to death concept formation than is classification or general cognitive development. Children's experiences with death were found to be significantly related to death conceptualization, and thus there is a combined effect of cognitive development and experience with death in the formation of the child's death concept.

The author concluded that the study of death conceptualization is yet in its infancy, and that there are a diverse number of variables which must be considered before death concept formation can be truly understood.

Approved by: Lucy R. Ferguson

Date: May 11, 1973

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Psychology

1973

To The Memory Of My Father

ACKNOWLEDGMENTS

I wish to express my appreciation to Dr. Lucy Ferguson, my committee chairman, for her insight, patience, and continued guidance in all areas of this study, to Dr. Marvin Eisen for his theoretical suggestions, and to Dr. Lawrence Messé for his help in the statistical analysis of the data.

My thanks to Mrs. Ann Eddington, director of Eastminster Day Care Center, and to Mrs. Lynn Cherry-holmes, principal of Cornell Elementary School, for the use of their schoolrooms and children, for their patience and cooperation throughout the testing, and for their courageous support in carrying out a study in this "sensitive" area.

I thank the seven undergraduates who served as testers and scorers, especially Jeanne Ranger, who also helped to condense and categorize the answers to the death questions for the content analysis.

I also wish to express my appreciation to the children of this study for being cooperative and candid, and to their parents for granting permission for them to be involved in the study.

My thanks to Dr. Leon Weaver, for his support and direction throughout my undergraduate and graduate training, and for his encouragement and interest in my personal and career goals.

I am indebted to my mother, my aunt, and my sister, for without their love and their acceptance of my goals, this thesis could never have become a reality.

And finally, my sincere thanks to Rik, for his continual support, interest, love, and understanding from the inception through the completion of this thesis.

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CHAPTER I

BACKGROUND AND HYPOTHESES

The present study is concerned with discovering whether cognitive development, as described by Piaget's theory of cognitive stages, is related to the development of a death concept. It is designed to find out whether the growth of cognitive structures and the growth of a death concept develop concomitantly. While much research has been done on Piaget's concepts, little is known about what specific cognitive processes are involved in the development of a precise and limited concept such as death. In fact, little research has been done at all concerning the development of death conceptualization in childhood. This lack of research on the subject of death may be related to the fact that death, even in these modern times, continues to be a taboo subject in our culture. In the United States, especially, we are psychologically unprepared for death, grief, and bereavement--the human condition. Death, one of the two most universal of life's processes, is not dealt with by homes, schools, or society. This is a

serious handicap, for in the United States, one family in ten has suffered a broken home by the time a child is 18 years of age (Clausen, 1960). And it has further been found that parental loss in a child's early years correlates significantly with later emotional problems (Bowlby, 1961).

It is time we, as a society and as individuals, begin to deal with death openly with our children. If we can find a relationship between cognitive processes and death conceptualization, perhaps we can devise a better way of explaining death to children of different ages.

Literature Review

Several studies have sought to understand the development of the death concept in children. Kimball (1971) found that death is not a fact for the child under 3 years of age; that such a young child knows only the physical separation from its mother. Von Hug-Hellmuth (1965) found that for the child from 3 years of age to 8 or 9 years of age, death is conceived of as merely a temporary separation and is therefore not tragic. The child learns from fairy tales that death is like a sleep from which one can be awakened or like a distant journey from which one can return. This conception of death is often reinforced by parents who describe the death of a

relative in terms of sleep or a journey. From this, the child may view death as a graduated concept, depending upon how "far away" the deceased went.

For the child under 6, egocentrism plays a large part in his conception of death. For him, words contain power and give him a feeling of omnipotence. He believes that wishes and the magic of words can make someone die, and thus ascribes to himself the power over life and death (Grollman, 1967, and Von Hug-Hellmuth, 1965).

Moriarity (1967) found that religious beliefs and rituals may play an important role in the school-age child's concept of death. He may learn that death leads to an afterlife or that it is a punishment for aggressiveness and sin. Yet the abstract concept of death is meaningless for the young child, and Moriarity points out that young children may get a more real and literal knowledge of death from seeing dead animals than from religious or philosophical discussions.

Schilder and Wechsler (1934), using play observations, stories, and direct questioning with children between 5 and 15 years of age, concluded that most children deal realistically with death in that although they don't want to die, they rarely express a fear of death. However, these children also did not believe that their own deaths were probable.

Cousinet (1940) differentiated between ages of children and found three major developmental stages in children's thinking about death: 1) the refusal to accept death, 2) the substitution of severe but curable illness for death, and 3) the disappearance of death as a troublesome concept.

A more comprehensive study of the child's concept of death was done by Sylvia Anthony (1940) who used parents' written accounts of their children's spontaneous interest in death, a story-completion test, and the revised Stanford-Binet Intelligence Scale (1937) to study the death-concept of children between 3 and 13 years of age. Anthony found five distinguishable stages of children's thoughts on death, ranging from ignorance to a clear definition of death in logical or biologically essential terms. These stages of understanding were related more to the child's intellectual performance than to his mere age or personal experience of death. Generally, the child of 5 or 6 years attached meaning to death but not in logical or biological terms. By 8 or 9 years, causal or logical explanations were used to some degree. These findings seem to parallel those of Piaget on the development of the concept of causality. Piaget (1955) states that before the age of 7 or 8, the child is not interested in logical justification and merely asserts without proving. The ages

7-8 years become the turning point in the child's thought, as the need for justification and logic appears.

A later study by Nagy (1948) also revealed a possible parallelism to Piaget's developmental studies. Nagy used compositions, drawings, and discussions with children and found three major stages of the conception of death. In the first stage, ages 3-5 years, the child conceives of death as temporary and reversible. Life and consciousness are attributed to the dead, who are conceived of as merely being asleep. In the second stage, ages 5-9 years, death is personified and is associated with aggressive intent on the part of others. Death is not viewed as inevitable in this stage, as the children could conceive of others dying, but not of their own death. The last stage appears after 9 years of age, when death is seen as being universal and related to natural laws. Nagy attributed these stages to the developmental processes studied by Piaget. The first stage occurs when the child is at the egocentric period of development; he imagines his world as he experiences it; thus everything is imagined as living. During the second stage, which coincides with the concrete operational period, the child is ruled by artificialism, the belief that the world is made by and for man. Thus death is seen as an eventuality but is outside of man and not universal. The last stage coincides with Piaget's formal operations period.

The child is governed by reality and causal thinking and sees death as the cessation of corporal activities.

Mitchell (1969) also theoretically related Piaget's stages to those of the development of the death-concept. She interprets Piaget's findings in a way comparable to the child's development of a concept of death. Before age 6, the child views everything functional as living. From 6 to 9 years, life is defined by movement and death is thus the lack of movement. From 9 to 12 years, spontaneous and impelled movement are distinguished, and life is clearly distinguished by 12 years of age. Mitchell does state that these ages may be too old in relation to American children, but that the sequence is irreversible. If these stages do begin and end a year or two sooner, then one can see a strong relationship between Piaget's conceptual framework and that of Nagy's concerning death.

At this point, a more detailed discussion of Piagetian theory seems necessary. Piaget describes a system of intellectual development based in structural and operational terminology. While he regards intellectual development as a continuous process, he emphasizes stages of development. These stages not only denote that at a certain age most children function in a certain way, but also describe the sequences or operations through which a child passes as he moves from a less to a more mature form

of thinking. The development of these structures begins at birth and follows a fixed, irreversible order of succession through the different levels of cognitive development. The succession of these levels, however, may be accelerated or retarded by particularities of the physical, social, and cultural environment (Piaget, 1956). Thus the progression through Piaget's cognitive stages involves the transformation of organized structures of thought and action which emerge out of the individual's process of maturation and his interaction with the social environment (Kohlberg, 1969). The restructuring or modification of these structures implies that each successive stage of cognitive development integrates the structures of preceding stages rather than substituting new ones. Each stage also involves both an aspect of assimilation of the recently acquired process and an aspect of preparation or accommodation for the process of the following stage. The transition from one stage to the next is thus a fluid rather than an abrupt change, and the age at which each transition occurs may differ from one child to another as a function of maturation and environment.

From this framework, Piaget has theorized four major stages of cognitive development. The first, the sensorimotor period, from birth to 18 months of age, entails the utilization of the infant's reflexes to develop

practical knowledge and is conceptualized as primarily preverbal. This stage will not be dealt with in this study, as it involves children under 2 years of age who, according to Kimball (1971), have no concept of death. The next stage, the preoperational period, lasts from approximately 2 to 6 years of age and is marked by the emergence of symbolic functioning. It is during this period that the acquisition of language takes place and symbolic play appears. This stage is also marked by egocentrism, the inability to see others' viewpoints and to communicate to others the workings of one's thought processes (Piaget, 1951). The use of logical thought processes also is lacking in the preoperational stage. The child of this level thinks largely in perceptual rather than conceptual terms and he is thus tied to concrete thought processes as opposed to abstract reasoning. It is this preoperational period which appears to coincide with Nagy's (1948) first stage of death conceptualization where death is seen as reversible and with Anthony's (1940) first stage where death is not defined in logical terms. Thus the preoperational aspects of egocentrism and lack of logic appear to influence the child's concept of death at this stage. Logical thought processes begin to develop during the period of concrete operations, from about 6 to 10 years of age. During this period, the ability to deal

with classes, relations, and numbers is expanded and the use of reasoning about concrete objects becomes developed. The age of 6 to 7 years has often been called the "age of reason" because it is during this period that the child's conception of causality is expanded beyond egocentric beliefs. This probably explains Anthony's (1940) finding of the appearance of logical explanations in the death conceptualization of 7- and 8-year-olds and Nagy's finding that by age 7 or 8, death is seen realistically, as permanent and irreversible. It does not appear to be until the period of formal operations, however, which begins to develop at approximately 10 years of age, that the child learns how to deal logically and abstractedly with ideas as well as concrete objects. Thus, while the death of others is a concrete fact and can be dealt with logically at age 7, it is not until the period of formal operations when death of the self, a more incomprehensible and abstract conceptualization, can be understood, according to Nagy (1948).

Thus in the realm of cognitive development, the school age child progresses from a stage of preoperational thought to that of concrete thought and finally to a stage of formal operational thought; and in the realm of death conceptualization, the child progresses from a stage of concreteness to one of abstraction. Thus Piaget's concepts

of egocentrism and logic, which develop sequentially from the subjective to the objective and from the concrete to the abstract, appear to have relevance for the study of death conceptualization. Although Piaget's work deals primarily with cognition as manifested by children's thinking about problems relating to quantity, size, space, and other impersonal objective properties of the environment and there is thus no body of systematic findings about the relationship of death conceptualization to cognitive development, much of the work that has been done in other areas such as social development can be related to the present study.

One such area of social development is moral judgment, which Piaget (1932) hypothesized as developing concomitantly to cognitive development and which he later divided into specific developmental stages similar to those of cognitive development (Piaget, 1951). Recently, Lee (1971) conducted an experiment to test the hypothesis that moral and cognitive development progress sequentially and concomitantly. Using six Piagetian cognitive tasks and nine morally conflicting story situations, Lee tested children between 5 and 17 years of age who ranged from the preoperational to the formal operational periods. Her findings gave support to Piaget's hypothesis and also to Kohlberg's (1969) premise that all social development,

including moral judgment, entails a progression through a sequence of stages parallel to those of cognitive development and that a child's understanding of morality, or any other natural or social phenomenon (such as death) is limited to the extent that he is able to perceive, interpret, classify, and integrate the environmental stimuli in meaningful ways. Studies in other social development areas such as role-taking and communication skills also indicate similar parallel age trends (Flavell, 1968).

Theories of cognitive and social development have also indicated that environmental experience is an important aspect of these two developmental areas (Kohlberg, 1969). Lee (1971) suggested that richer environmental stimulation would facilitate changes in both cognitive structures and moral judgment, one area of social development. Thus the development of social knowledge is hypothesized as being affected by social experience as well as by cognitive growth and maturation.

From this discussion, it becomes evident that if death conceptualization is taken to be another area of social development, it should also develop sequentially and concomitantly with cognitive development and be affected by environmental experiences. The present author believes that knowledge of death, although based primarily on natural or physical as opposed to social phenomena, contains

elements of social development in that it is dealt with in social institutions such as religion as well as in interpersonal and social relations, either indirectly through discussions or directly through experiencing the death of a friend or relative. Thus, like moral development, death conceptualization should develop concomitantly with cognitive development, as indeed it theoretically appears to do in past studies of death concept formation in children (Moriarity, 1967; Cousinet, 1940; Anthony, 1940; Nagy, 1948; and Mitchell, 1969). While a recent study by Koocher (1972), using four Piagetian tasks and four death questions, confirmed this hypothesis, the present research, which was begun before the completion of Koocher's study, expanded the study of death conceptualization and cognitive development and formulated some additional hypotheses to be tested.

Statement of the Problem

From the literature, it becomes apparent that there is a definite parallelism between a child's concept of death and his level of cognitive development. Studies on the development of a death-concept in children have mentioned this parallelism repeatedly and have pointed out the similarity of age between cognitive and death-concept stages. Several studies of death-concept development have

also discussed the cognitive-death concept parallelism in terms of the different Piagetian frameworks of egocentrism, artificialism, and realism (Anthony, 1940, and Nagy, 1948).

In view of the literature presented, the present study is an attempt to test empirically whether the growth of cognitive structures and the growth of a death-concept do, in fact, occur concomitantly. Another goal of the present study is to formulate a less subjective method of measuring a child's conception of death than the story completions, drawings, and parental accounts used in earlier studies. Hopefully, this objective set of questions could become a standard questionnaire on the subject of death.

Hypotheses

The following hypotheses will be tested:

1. The child's level of cognitive development, as measured by Piagetian tasks, and his level of death-conceptualization are significantly related; i.e., they develop concomitantly.

2. Those areas of cognitive development which require similar processes of logic as those needed for death-conceptualization will be more highly correlated with death-concept development than a more

general measure of cognitive development or a measure of cognitive development not related to death conceptualization. Thus, the concept of egocentrism will be more highly related to death-conceptualization than would the more general category of egocentrism and classification combined or the category of classification alone.

3. The largest rate of change in death-conceptualization will occur between the ages of 6 and 8 years, when the child first begins to experiment with logic in his cognitive thinking.

Pilot Study

A pilot study was done to ascertain if there was any validity to the hypothesis that a correlation existed between the stages of death-conceptualization and Piaget's stages of cognitive development. Also, since an original set of questions about death was used, the pilot study served as an indicator of those questions which would be valuable in obtaining relevant information on children's knowledge of death.

Twelve children were used from public schools and homes in the Lansing, Michigan, area. There were three age groups of children, with four subjects in each group,

two males and two females. The age groups consisted of 4- and 5-year-olds, 7-year-olds, and 10-year-olds. These age groups were selected because they fell within the three major stages of children's concepts of death that Nagy had found, and it was desired partially to replicate her work to ascertain if these age differences indeed existed.

Two independent sets of questions were used, one tapping the child's cognitive level of development and one tapping his concept of death (Appendix A).

The results of the pilot study confirmed that there is a relationship between cognitive development and death conceptualization, with age and experience with death also being related to death-knowledge, although less so than cognitive development.

Several other interesting findings were also suggested. From the data, it appeared that religious beliefs were not important in the development of a death-concept as Moriarity (1967) had found, as the majority of children were unsure of the religious affiliation of their families or were not aware of religious beliefs concerning an afterlife. It was also found that, contrary to Nagy's (1948) findings, 5-9 year olds can conceive of their own deaths, although this conceptualization was based on an immature death-concept. There also appeared to be no sex

differences concerning ages of development or definition of death, and whether a child was afraid of death or not was also found not to be a factor influencing a child's death-concept.

The death and Piaget items were checked for internal consistency, and modifications were made with consideration of these results. (Modifications will be explained in the "method" section.)

CHAPTER II

METHOD

Subjects

Sixty-nine subjects were obtained between the ages of 4 and 11 inclusively, with at least six children at each age. It was decided to use this grouping of subjects rather than the three groups of the pilot study so that the transitional ages, where more variability should be found, could be observed.

The variables of sex and religious affiliation were not controlled, as the pilot study indicated that these variables did not significantly modify the results.

Subjects were obtained through an elementary school and a day-care center in the Lansing area. After permission from the schools was obtained, letters were sent to the parents of children of the desired ages describing the general nature of the study and asking permission to use their child. A permission form and a stamped, addressed envelope were enclosed for their use. Parents' reactions to the research were also solicited so that any relationship between these reactions and the results could be

studied. (See Appendix B for a sample of the parent letter and permission form.) Of the 218 letters sent to parents, 80 were returned granting permission. (See Chapter IV for a discussion of parental reactions.)

Materials

Each child was administered a series of eleven Piagetian cognitive tasks to determine his level of cognitive functioning and a series of death-related questions to determine his knowledge about death.

The first set of questions was based on Piaget's techniques and theories and was mainly task-oriented in nature. These questions covered two major areas of cognitive development, namely classification and egocentrism. Although these areas are not a global representation of cognitive development according to Piaget, they tap areas which this author believes to be related to conceptualization of death. The pilot study indicated that the classification tasks were empirically related to the development of a concept of death, in that the ages of the three major stages of classificatory development were identical to the ages of death-conceptualization stages of Nagy's study and of the pilot subjects. The egocentrism task, while not as empirically related as the classification tasks, appears to be related in content as seen from previous research on

death-conceptualization (Nagy, 1948). That is, the logical process needed to overcome an egocentric view of the world is the same as that needed to conceptualize death in a realistic way.

The five classificatory tasks were obtained from research done by Kofsky (1966), who studied the ages at which various classificatory tasks were passed, and from Flavel (1963). The tasks include conservation of hierarchy and horizontal reclassification (both passed on the average by 7 years of age) and hierarchical classification, and two tasks of inclusion (passed by 10 years of age).

The five tasks tapping egocentrism were obtained from research by Flavel (1968), Piaget (1951), and Elkind (1962) and include the following: perceptual egocentrism (passed at 6 years of age), left-right discrimination (passed at 7 years of age), story-telling (passed at 9 years of age), and morality and relational concepts (passed at 10 years of age). While not all of these items are related to the concept of egocentrism in the same way, they all deal with the task of suppressing one's own egocentric viewpoint in order to relate objectively to the situation at hand and arrive at the correct response.

Ideally, cognitive tasks tapping knowledge of physical causality would probably show the greatest correlation with death-knowledge because physical causality appears to

be both empirically and conceptually related to the process of death conceptualization (Anthony, 1940; Nagy, 1948; and Mitchell, 1969). However, since no studies verifying normative ages at which various physical causality tasks are mastered had been done, a group of such tasks could not be included in the present study. The one physical causality task on animism of the pilot study was included, however, as a partial check on this hypothesis.

Descriptions of all of these Piagetian tasks and the criteria for passing them are in Appendix C.

The second set of questions was based principally on the set of death questions from the pilot study (Appendix A). Several changes were made, however, as some of the items did not discriminate adequately between the age groups and some of the questions tapped material which the pilot study found to be irrelevant. Thus items 10, 16, 20, 21, and 22 were omitted from the final study because they tapped unneeded information, and item 13 was dropped because it did not discriminate between ages of children. While item 18 of the pilot study (item 15 of the present study) did not adequately distinguish between ages, it was embellished to include similar sub-questions because Nagy (1948) had found it to be discriminative between 4- and 7-year-olds and the present author felt that the added sub-questions might strengthen the results in the direction

of Nagy's findings. Two new items were added to the final study, items 17 and 21 (in Appendix D). Item 17 deals with the concept of chance in death, and item 21 deals with the child's ability to formulate a definition after having answered the preceding questions. The present author predicted that both of these items would not be correctly answered until the age of 10 years, when the onset of the concept of chance and the ability of abstraction occur.

The set of questions concerning death consisted of two parts. Most of the questions tapped the child's knowledge of death and death-related concepts. Because experience may play a part in a child's concept of death, four questions (items 4, 18, 19, and 20) tapped the child's experiences with death or information resources from which the child may have learned about death.

The death questions for the present study are listed in Appendix D.

Procedure

The examiners consisted of three pairs of undergraduates. The testing was done in pairs so that one person could write down the child's answers verbatim as the other asked the questions. The undergraduates were familiarized with the testing by the present author and

given Appendices C and D which contain the cognitive and death questions. They first administered the tests to the author, who played the role of a child, to ensure that the method of testing was understood and that they were sensitive in their questioning.

The questions were administered to each child individually, in a private room with a large desk or table and three chairs. The child was told that the examiners wished to understand children and what they thought about different things. No reference was made to the subject of death. The Piaget questions were asked first as they were unemotional and task-oriented, and gave the child a chance to adjust to the surroundings and the examiners before the more anxiety-producing questions on death were asked. The questions on death were presented as "some different kinds of questions" and again no reference was made to death so that the children would not bias their answers to the first several questions.

Scoring of the cognitive tasks and death-related questions was done after the entire session, so that no expectations of the child's performance on the death questions could be formed. The recording of the children's responses by the examiners, however, may have been biased to some degree because the examiners were aware in a general way of the children's ages and the hypothesized stages of

cognitive development and death knowledge. The use of a tape recorder in future research would eliminate this possibility.

The Piaget tasks were scored on a simple pass-fail system. No intermediate scores were given for partially-correct answers. This scoring system was used instead of the three-point system of the pilot study because the various stages of cognitive development are attained at different ages for the various Piagetian tasks used in this study. Since these skills develop at different times and rates, the pass-fail method (one point for passing, zero for failing) was used. Predictions could then be made as to how many of the tasks would be passed at a certain age. For example, 7-year-olds should attain a total score of approximately 4, and 10-year-olds should get a total score of about 11. Pass-fail criteria for the Piaget items are listed in Appendix C.

Answers to the death-knowledge questions were scored in the following manner: a score of zero was given to answers which revealed no understanding or a misunderstanding of death and to responses of "I don't know"; a score of one was given to answers which contained some understanding, i.e., a mixture of right and wrong information or a correct response with incorrect or no reasoning behind it; and a score of two was given to answers

revealing both good understanding and realistic reasoning. Death-experience questions were also scored on a zero to two scale: a score of zero for no remembered experiences; a score of one if the child had seen the dead in pictures or television, or had remembered being told about death but had forgotten the specific details; and a score of two for having seen the dead first-hand and/or for remembering specific death-related discussions. The death-scoring procedure was done on a zero to two scale rather than on a simple pass-fail basis because it was found from the pilot study that most of the questions were not answered totally correctly until ten years of age; thus the answers had to be scored parallel to the three stages of death-conceptualization to show age differences. (See Appendices E and F for a more complete description of the scoring.)

The scoring was done by the present author and two undergraduates. The scoring procedure was explained to the undergraduates and Appendices C, D, E, and a set of sample answers to the death questions were given as guides to scoring (Appendix F). Each undergraduate then scored two practice protocols and these scores were compared with the present author's scores for the same two protocols. Discrepancies were discussed and misunderstandings of the procedure were cleared up at this time. Each person then independently scored the protocols for all the subjects,

without the knowledge of age or grade to bias their results. Each protocol was thus scored three times, and the consensus score was taken if there were any discrepancies. Interscorer reliability was calculated by dividing the number of scores in agreement by the total number of scores. The interscorer agreement (discrepancies included) was 92% for the overall set of protocols, 90% for the death questions, and 95% for the Piaget tasks.

Reliability of the death questionnaire was estimated by calculating a product-moment correlation between the odd and even numbered questions. The correlation (.62) was then corrected for attenuation with the Spearman-Brown prophecy formula for split-half reliability. The corrected correlation was .77, indicating that the death questionnaire was a reliable measure of death knowledge.

Data Analysis

Each child's scores on the two questionnaires were averaged and compared. The statistical procedure consisted of doing product-moment correlations between Piaget scores, death knowledge scores, and age, and a partial correlation between death and Piaget scores, with age being the variable held constant, so that any relationship found was not merely a function of age and/or maturation alone. In this way, it was possible to look

at the relation of death conceptualization to differences in maturity of cognitive development above and beyond the influence of chronological age on both. The author looked at not only a child's total cognitive-score correlation with his death-concept score, but also at the correlations of each of the two major areas of cognitive development, classification and egocentrism, with the death-concept and at the correlation of death experience with the death-concept. Thus, several sets of correlates were studied for each of the first two hypotheses previously mentioned.

For the third hypothesis, an analysis of variance was computed between ages for levels of responses in both death-concept and cognitive development so that significant changes could be studied.

CHAPTER III

RESULTS

Product-moment correlations were obtained for age with death knowledge, and for age and death knowledge with general cognitive development, egocentrism, classification skills, and death experience (Table 1). All of these first order correlations were significant at the .01 level. Because age, cognitive development, and death knowledge were so highly correlated with each other, it was necessary to compute partial correlations between death knowledge and the other variables with age held constant before testing the first two hypotheses.

Hypothesis I. The child's level of cognitive development and level of death-conceptualization are significantly related.

The results upheld this first hypothesis. The partial correlation between total cognitive development and death knowledge with age held constant was .33, which is significant at the .01 level (Table 2). Thus, cognitive development and death-conceptualization appear to develop concomitantly and are thus significantly related.

Table 1

Product-Moment Correlations*

	Age	Cognitive Development	Egocentrism	Classification	Death Experience	Death Knowledge
Age						
Cognitive Development	.75					
Egocentrism	.72	.86**				
Classification	.51	.77**	.42			
Death Experience	.57	.48	.43	.35		
Death Knowledge	.72	.69	.63	.58	.64	

* N = 69

** Part-whole correlations

However, one must not assume a causal relationship between these two variables, as no research has yet been done on causal relationships between death knowledge and cognitive development irrespective of age.

Table 2

Partial Correlations with Death Knowledge*
(Age Held Constant)

	Correlations	Level of Significance
Death Experience	.40	.001
Classification	.36	.001
General Cognitive Skills	.33	.01
Egocentrism	.23	.05

* N = 69

Although the partial correlation between death knowledge and cognitive development was found to be significant, the relationship between death knowledge and death experience with age held constant was higher still, yielding a partial correlation of .40, which is significant at the .001 level (Table 2). This suggests that knowledge about death is a complex variable, related to a variety of processes or events, including experience with death as well as cognitive development, which comprise different aspects of death knowledge.

Hypothesis II: The specific area of egocentrism is more highly related to death-conceptualization than classification or a general level of cognitive development.

This hypothesis was not upheld by the data, as the partial correlation between egocentrism and death knowledge was only .23 as compared to .33 for the partial correlation between general cognitive development and death knowledge (Table 2). The partial correlation between classification and death knowledge, however, was actually slightly higher than that between general cognitive development and death knowledge, yielding a correlation of .36. This suggests that a knowledge of death entails processes more similar to classification than to egocentrism, although both may be necessary for a conceptualization of death. An investigation of the correlations of egocentrism, classification, and death experience respectively with death knowledge with the separate age levels suggested that experience with death affects death conceptualization progressively to a greater extent as the child matures. However, the groups within year levels are too small to permit a presentation or interpretation of these results.

The variable of physical causality was not found to be related to death knowledge, but this may be an unfair conclusion, as there was only one question related to

physical causality and thus little room for variations among age groups (Table 3).

Table 3

Percent of Physical Causality Correct

Age	N	%
4	6	66
5	6	50
6	9	77
7	12	75
8	10	70
9	12	100
10	8	100
11	6	66

Hypothesis III: The largest rate of change in death-conceptualization occurs between the ages of 6 and 8 years, when the child first begins to experiment with logic in his cognitive thinking.

To test this hypothesis, the raw scores of death knowledge and cognitive development were converted to proportions of the total possible score so that differences in scores would reflect only different effects of the measures and not the different scoring systems. The transformed scores were subjected to an unweighted means

analysis of variance whose factors were age and measure (repeated within a subject). The ANOVA revealed a significant main effect for age (F = 22.0655, df = 7, 61; p .00001) as predicted. The test also revealed a significant main effect for the two measures (F = 41.8431, df = 1, 61; p .00001); the transformed scores for the Piaget tasks were consistently higher than those for death knowledge (Table 4).

Table 4

Mean Transformed Scores of Death Knowledge and Cognitive Development

Age	N 69	Death Knowledge	Cognitive Development
4	6	.2936	.3636
5	6	.4009	.4697
6	9	.3757	.4040
7	12	.5238	.6288
8	10	.5905	.6909
9	12	.5893	.7273
10	8	.5833	.8182
11	6	.6389	.8182

While this might lead to the conclusion that children's levels of cognitive development are somewhat more advanced than their knowledge about death, this effect may be merely

a function of the different questionnaires and their arbitrary zero-points and ceilings. In fact, none of the children achieved the highest possible score of 42 for death knowledge, the highest score being only 31. This was not true for the cognitive tasks, where the highest score of 11 was achieved by some of the subjects. Perhaps if more difficult Piagetian tasks were added to raise the ceiling of cognitive development scores, the main effect for measure might lessen in significance or disappear.

No significant interaction between age and measure was found, again upholding the prediction that death knowledge and cognitive skills develop concomitantly.

Hypothesis III was upheld by the data in that the differences in transformed score means of death knowledge and cognitive development between 6 and 8 years of age were .2198 and .2869 respectively, higher than those for any other two year span (Table 4). Looking at the rate of change of one year spans (Figure 1), however, it becomes apparent that the largest rate of change for the two measures occurs between 6 and 7 years of age. Individual age comparison *F*-tests of the transformed mean scores for consecutive ages revealed that the change rate of the measures between 6 and 7 years of age was significant at the .001 level ($F = 16.5236$, $df = 1, 61$). The change rate between 7 and 8 years of age was not significant. Thus,

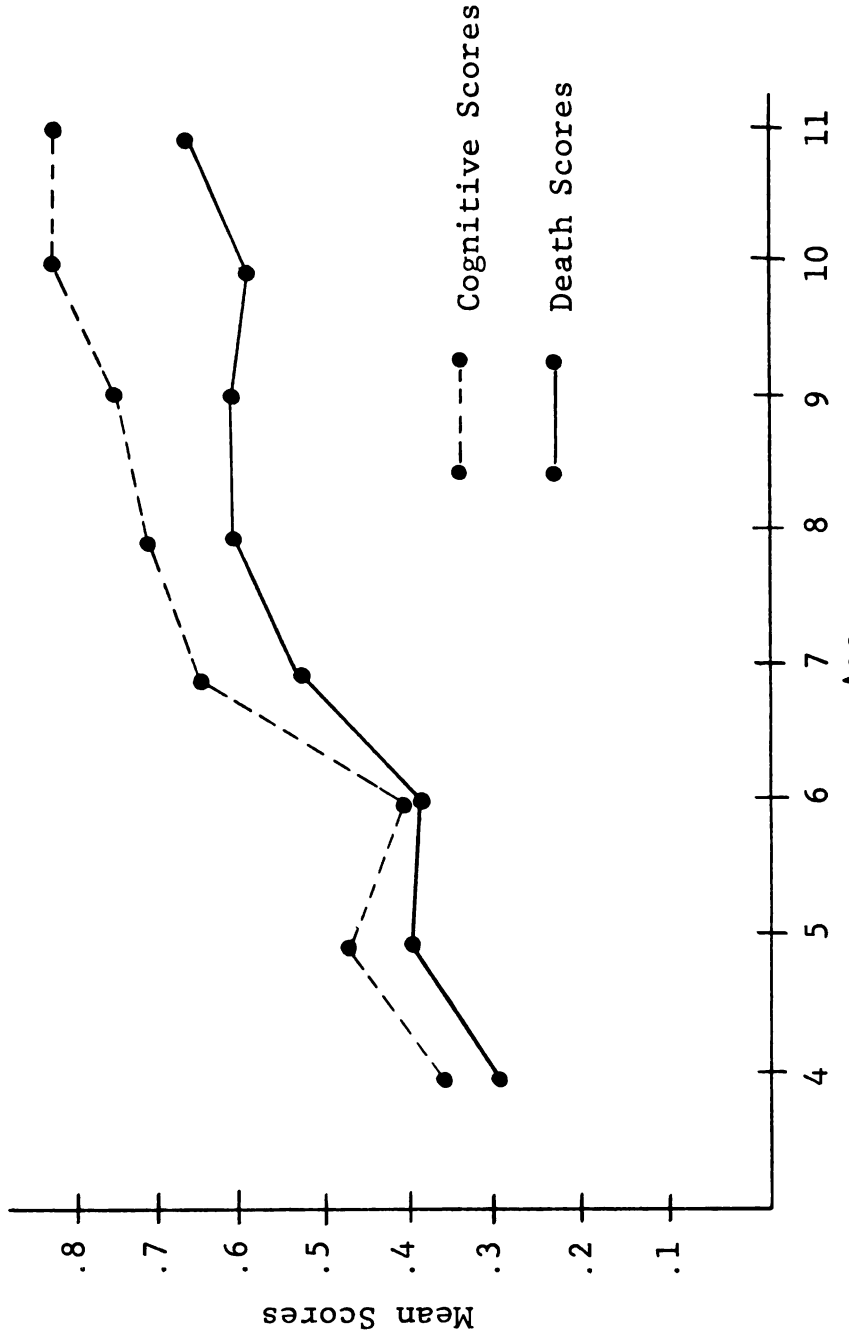

Figure 1

Mean Transformed Scores of Death Knowledge and Cognitive Development

although the rate of change in death knowledge and cognitive skills appears highest between 6 and 8 years of age, this change rate is only large because of the significant 6- to 7-year-olds' mean rate of change. The only other significant change for the two measures occurred between 4 and 5 years of age (F = 5.4107, df = 1, 61; p .05). This may be a function of different populations or settings, as the 4-year-olds were obtained from a day-care center and the 5-year-olds were obtained from an elementary school. Changes between other ages were small and insignificant. It appears, then, that the rate of change in both measures reaches a peak between 6 and 7 years of age and then levels off as the children approach puberty.

CHAPTER IV

DISCUSSION

Hypotheses

The findings of this investigation clearly support the hypothesis that children's concepts of death are related to cognitive development. Death conceptualization and cognitive skills were also found to develop sequentially and concomitantly. Thus the child's understanding of death, a social phenomenon, is limited to the extent that he is able to perceive, interpret, classify, and integrate the environmental stimuli in meaningful ways. Children with low levels of cognitive functioning, therefore, generally have less mature concepts of death than children with higher levels of functioning whose experimentation with logic gradually leads them to shed concrete death concepts in favor of more abstract ones. As tapped by the two measures, concomitant growth was dramatically shown in the specific jump in scores between the 6- and 7-year-olds. Both the changes in death conceptualization and in cognitive development were equally and most highly significant in this one year span. While

the cognitive rate of change was theoretically expected, in that 6 to 7 years of age is known as Piaget's "age of reason" when the onset of logic occurs, the fact that death knowledge also advances significantly between 6 and 7 years of age clearly points to the parallelism in development of cognitive skills and death knowledge.

The role of the environment was clearly found to be of importance in the process of death conceptualization in that the relationship between experience with death and death knowledge was slightly stronger than that between cognitive development and death knowledge. This supports not only Kohlberg's (1969) assertion that cognitive structure development is the result of an interaction between maturation of the individual and environmental experiences, but also his assertion that social development, such as moral judgment (or death conceptualization), is also affected by experience as well as by cognitive development and maturational levels. Thus, it appears that a knowledge of death is affected as much by experience with death as by age, maturation, and general cognitive functioning. That is, a child with little death experience may have a comparable concept of death to a child with more death experience if the former child's cognitive level of functioning is higher; similarly, a young child using preoperational constructs may have a more mature concept of death than a child using

concrete operations if the preoperational child's experience with death is greater. This was found to be true in several instances in the present study. If a child's concept of death seemed more mature or less mature than children of his age with a similar score on cognitive functioning, one had only to look at his death experience score in 6 out of 9 cases to find an answer to the apparent discrepancy between cognitive and death knowledge scores; and if a child's experience with death seemed more or less extensive than children with a similar death concept, a look at the child's level of cognitive functioning solved the discrepancy between his death experience and death knowledge scores in 8 out of 13 cases.

The specific process of egocentric thinking, although significantly related to death conceptualization, was not found to be as strongly related as classification skills or general cognitive development. This might suggest that the ability to see different points of view is less important to the process of death conceptualization than is the ability to think logically and abstractly. This interpretation is reflected in the finding that the greatest change in death conceptualization occurs during Piaget's "age of reason," when logical thinking first occurs (between 6 and 7 years of age). Thus, this study's hypothesis that the greatest change in death conceptualization

occurs between 6 and 8 years of age was upheld, but this change was largely a function of the significant change between 6 and 7 years of age, while the change between 7 and 8 years of age was insignificant.

Although a more precise understanding of death concept formation and its relation to cognitive development would require longitudinal data (by allowing the opportunity to study individual children's development through the cognitive and death concept stages), the present study does uphold the premise that the two processes develop concomitantly. In studying a complex variable such as death knowledge, however, one must be careful to look at more than one related factor so that oversimplifications, unwarranted causal assumptions, or over-estimations of one particular association are not made. In future studies of death conceptualization, it would be interesting to include more than four death experience items as well as different areas of cognitive development in a questionnaire, so that other, yet unknown relations might be found.

Parental Reactions to the Study

In addition to cognitive development and experience with death, another area of study that may help to explain the development of children's concepts of death is parental

attitudes towards death, which were obtained in this study from the permission forms.

Of the 218 permission letters sent to parents, 80 were returned granting permission, 59 were returned denying permission, and 79 did not reply. (The final sample size only totaled 69, as some of the children did not finish the testing and some were not needed because the author wished to keep the age groups similar in size.)

Of the parents granting permission and giving their reactions to the study, several attitudinal trends became apparent. The major attitude expressed was the belief in the relevance of this and other studies on death. Out of this belief stemmed an interest in knowing the general results of the study. Eight of the parents mentioned recent deaths or funerals that their child had experienced and this fact often was followed by the desire to know their child's responses to the death questions. In fact, a total of 15 parents requested specific details of their child's responses. Religious beliefs were mentioned by six of the parents from both positive ("religion helps us to face death") and negative ("religion deals unrealistically with death") viewpoints. Five parents stated that death was talked about freely at home, usually in relation to specific events such as the death of a person or animal. While five of the parents expressed a trust in

their children to handle the questions candidly, four parents expressed some ambivalence and fear of their children's possible sensitivity to being questioned about death.

Of the negative responses that were elaborated upon, the majority of parents feared that the questioning could cause psychological strain to their child. This was usually expressed in a straightforward manner such as "my child is too sensitive, anxious, and easily depressed" and "he is only in kindergarten--he's too young." The recent death of a family member or friend was mentioned only twice, and few of these parents said anything about the relevance or worth of the study. In fact, three parents implied that research about death was unnecessary and unappreciated: "My reactions to this study? Negative!" Five of the parents feared that my probing would interfere with their teachings and their child's beliefs, and four also did not want their child to miss time from school.

In general, it seems as if the parents who replied negatively were more protective of their children, and perhaps more anxious about the subject of death themselves, as few mentioned personal experiences with death. In comparison, parents granting permission were often very self-disclosing about their own attitudes and philosophies of death as well as about personal experiences they had had.

But the fact that so many of these parents wanted to know their own child's responses may perhaps be an indication that, as for the parents denying permission, death is not an easy topic for them to discuss with their children. Thus it appears that children may learn about the concept of death from their parents, but that they may also learn the anxieties and fears associated with death.

Of the parents who were ambivalent about or against the idea of their child participating in this study, it is evident that their major concern was the fear that discussing death would be disturbing or harmful to their child. In this study, it became apparent that this fear was, for the most part, unfounded.

Incomplete Protocols

Of the children that the researchers attempted to test, six children had to be dropped from the research results. One would be tempted to assume that these children were dropped because their anxiety concerning death interfered with the testing. This was the case, however, for only two of the children. Two of the children, 4- and 5-year-old girls, refused to answer questions or participate in the study, but since they were not told what the study was about, there could be no relationship to death anxiety. Two of the children, a 5-year-old girl and 6-year-old boy, started the testing but did not complete

the first section on cognitive skills. Again these children did not know that questions about death would follow, and again death anxiety could not be a cause for their refusal to continue. Only two of the children, 4- and 10-year-old boys, began the questions on death and were unable to complete them. While death anxiety might not necessarily have been the reason for stopping since the few responses obtained did not seem different from other children's responses, a description of the testers' observations and an examination of the parents' reactions to the study clearly indicate that the children became upset because of the questions about death. During the testing session, both children became physically uneasy, began to move around in their seats, and tried to distract the tester when the tester began asking the questions about death. From the permission slips, it is also apparent that both parents were aware of their child's concerns and fears about death, another indication that the children experienced death anxiety during the testing.

Of the children tested, only these two or approximately 3% of the children experienced a level of anxiety sufficient to prevent them from continuing. This per cent is considerably less than one might guess, which might lead one to conclude, as one parent did, that "children are more candid about death than adults." But

perhaps a larger amount of anxiety may have been found among the children whose parents denied permission. One might conclude, however, that if parents are open and secure about their death concept, their children will be also.

Content Analysis

Because so much information can be lost by looking only at statistical findings, the present author studied the children's answers to the death questions and found some interesting trends not covered by the three hypotheses.

The death questions seemed to tap four major subject areas: 1) general facts about life (items 1, 2, 9, 10, 11), 2) general facts about death (items 8, 12, 14, 15, 16, 17, 21), 3) knowledge of events occurring shortly after death (items 3, 5, 6, 7, 13), and 4) experience with death (items 4, 18, 19, 20).

In the first subject area, most of the children thought they would die if they held their breath, except for the 4-year-olds who all said they didn't know what would happen. The majority of the 11-year-olds (66%) said that their face would turn red. Only seven children, ranging in age from 7 to 11 years, gave the highest level response, that they would faint. Only three of the

69 children (a 4-, 10-, and 11-year-old) said they believed in ghosts, although most of the children knew that ghosts were figments of the imagination, dead spirits, or people with white sheets. Almost half of the children (43%) felt that no one would ever want to stop living, but the per cent of children believing this decreased with age (Table 5).

Table 5

Negative Answers to Death Question Number 9: "Do some people want to die?"

Age	N	%
4	6	100
5	6	83
6	9	89
7	12	33
8	10	20
9	12	25
10	8	25
11	6	0

The sharp decrease between the 6- and 7-year-olds suggests that the inception of logic, which also occurs at this time, may be influencing the child's thinking about this question. Six children ranging in age from 7 to 11 years thought that they could live forever and gave such

interesting answers as "Indians can," "if you take communion," and "in heaven you can." Although no 4- to 6-year-olds thought they could live forever, the 4-year-olds' concept of life span was unrealistically small, with a mean prediction of 12.8 years, and at least half of the 5- and 6-year-olds gave unrealistic life span predictions (outside of 65 to 100 years of age). The per cent of unrealistic answers to the question of life span (item 10) decreased with age (Table 6). The fact that most of the children could give the predicted age at which they might die is contradictory to Schilder and Wechsler's (1934) and Nagy's (1948) findings that children from 5 to 9 years of age cannot conceive of their own death.

Table 6

Realistic Answers to Death Question Number 10: "How old do you think you'll live to be?"*

Age	N	%
4	6	0
5	6	50
6	9	33
7	12	75
8	10	70
9	12	75
10	8	86
11	6	100

* A realistic answer was considered to be between 65 and 100 years of age.

In the second category, general facts about death, the concept of death as a violent phenomenon was presented at all ages, and the idea of dying by illness was only mentioned by children 7 years of age and older. Thus, most children thought it would hurt to die. Eight children believed that one could not die at any time, but after 8 years of age the idea of unpredicted death was accepted as fact. This finding was contradictory to the present author's prediction that children would not reach this level of response until 10 years of age. Another eight children believed that one could come back to life after dying, although none of these were 4- or 5-year-olds. This, coupled with the fact that no 4- or 5-year-olds believed in an eternal life, suggests that the finality and inevitability of death is accepted more readily at young ages than at older ages. This acceptance is probably related to the fact that the young child's concept of death is unrealistic. Half of the 4-year-olds, for example, believed that the dead could hear (a finding which upheld Nagy's results) and no child under 7 years of age gave a correct answer to the question "what is death?" item 21. The per cent of correct responses to "what is death?" increased with age, although about half of the older children (9, 10, and 11 years of age) continued to give synonymous answers such as "death is when

you die" or "when you're not alive" (Table 7). Contrary to Nagy's (1948) findings, only three of the children (a 4-, 7-, and 11-year-old) personified death, for example: "death is someone that comes down and kills you." This suggests that children in America use different mechanisms than personification as a means of mastery over death. One such mechanism may in fact be the use of synonymous answers instead of descriptive detail in answering "what is death?" By discussing death in synonymous as opposed to descriptive terms, the finality and inevitability of death are avoided to some degree.

Table 7

Responses to Death Question Number 21: "What is death?"

Age	N	% Erroneous	% Synonymous	% Correct
4	6	100		
5	6	66	33	
6	9	78	22	
7	12	18	75	8
8	10	30	50	20
9	12	31	23	46
10	8	25	25	50
11	6	33	33	33

The third subject area, which tapped knowledge of events occurring shortly after death, also yielded some interesting trends. Of the 4- and 5-year-olds, all but one 5-year-old did not know what a funeral was. The older children were all able to define a funeral realistically, usually mentioning the fact that people go to see the dead person and that a priest or minister is present. In response to how dead people look, a few of the children (none younger than 7 years of age) described the dead in terms of discoloration of the skin or lack of body heat; most described the dead in terms of functions they could no longer perform, such as "can't hear or talk" and "not breathing or moving." Although this upholds Mitchell's (1969) findings that children often define death by lack of movement, it is interesting that, although most of the children related death with violence, only four children mentioned the presence of blood or mutilation. The fact that the body rots after death was not acknowledged by the 4-year-olds, but this fact was recognized increasingly with age (Table 8). Only four of the 69 children (a 7- and 11-year-old and two 9-year-olds) stated that people are not sad when someone dies, but except for the 7-year-old, all gave logical explanations of why this might be true, for example: "if an enemy died, you wouldn't be sad."

Table 8

Realistic Answers to Death Question Number 13: "What happens to a dead person's body?"*

Age	N	%
4	6	0
5	6	33
6	9	22
7	12	50
8	10	80
9	12	83
10	8	63
11	6	100

* A realistic answer was considered one that referred to the decomposition of the body.

The death experience category, previously dealt with statistically, also yielded some interesting facts about how children learn about death. Most of the children at all ages had seen dead bugs and animals within the past year, and none of the children younger than 6 years of age had ever seen a dead person. Few of the children younger than 7 years of age had talked about death with their parents, although this was based on the child's memory and cannot be taken completely as objective fact. But even of the older children (9 through 11 years

of age), only about half of them said they had talked to their parents about death. The parent's explanations, however, were for the most part realistic and usually referred to a specific death-related event. About half of all the children learned about death in other ways, usually from television, movies, and unrelated adults (such as teachers and priests). It is interesting that ten of the children between 4 and 9 years of age stated that they mysteriously "just know" about death, that something inside them "had told" them what death was. Children from all of the age levels said they had known a person (usually a relative) who had died, and this per cent generally increased with age. For the younger children, however, it was sometimes unclear as to whether they had actually known someone personally or whether they had merely heard their parents discussing someone's death.

Conclusion

The development of death conceptualization in children is a complex and difficult process to analyze. While death concept formation in children is clearly related to cognitive processes, there are a multitude of other variables such as parental attitudes, religious upbringing, and experience with death that contribute to the formation of a death concept in children as well

as in adults. The complexity of interaction among these variables is yet unknown, but perhaps through future experimentation, the process of death conceptualization will become less a mystery to psychologists and parents as well.

This author suggests several areas of future research. The present study could be extended to include children ranging from 4 to 20 years of age. This would permit an analysis of the relationship between cognitive development and death knowledge through adolescence; the present author predicts that this relationship would decline in significance and perhaps become insignificant in the adolescent years. Another area of research that might produce added knowledge about the formation of death concepts in children would be a study directly comparing parental death concepts with those of children. Parents and their children could be given the same questionnaire on death and correlations could then be made between death concepts of the parent and child. Such a study could answer the following questions: Are parent and child concepts of death related? From which parent does the child learn most about death? Are children's memories about experiences with death accurate?

Surely there is a wealth of information to be learned about death concepts in adults as well as in

children. The study of death conceptualization is yet in its infancy, and there are a diverse number of variables which must be studied before death concept formation can be truly understood.

APPENDIX A

PILOT STUDY TASKS AND QUESTIONS

PIAGET TASKS

(PILOT STUDY)

1. Classification

Present red and blue squares and circles
Ask child to sort them by shape, then by color
Then ask the following questions:
    Are all the blue ones circles? Why?
    Are all the squares red? Why?
    Are all the circles blue? Why?
    Are all the red ones squares? Why?

2. Number

Present a pile of 20 bottlecaps
Take a set of 8 (bunched) and ask the child to take the same amount
Make two rows of the same number in a one-to-one correspondence, and ask the child if there is the same number in each row and why
Change the spacing of one of the rows and repeat the questions

3. Distance

Present two "roads," one straight and one with angles
Move "car" a certain distance on straight road and ask child to move same distance on angle road
Repeat two times, then switch "roads"

4. Quantity

Present equal-sized clear glasses with:
    Unequal amounts of water
    Same amounts of water
        and ask: "Is there more, less, or the same amount in each and why?"
Then pour one of glasses into different shaped glass and repeat question

5. Chance

Present two identical sets of blocks with different colors
Put one set in a bag and ask child to draw out two, but make predictions as to what colors he will get
Repeat three times

6. Egocentrism

Present a variety of objects, let child walk around them to see their position
Seat child, ask him what he can see
Then ask what a doll can see from two different locations

7. Area Conservation

Present two "meadows" made up of 3 to 5 squares each
Rearrange the squares, asking the child if there is still the same amount of "grass" in each meadow and why

8. Morality

Tell two situational stories with two characters in each story
Ask child who should be punished more

9. Quantity

Present equal size balls of clay
Roll one into a sausage and ask child if they are still equal and why
Then roll back into a ball, ask same question

10. Animism

Present a box hanging from a twisted string
Ask child why the box is turning

QUESTIONS ON DEATH

(PILOT STUDY)

1. If you hold your breath for a long time, what will happen? Why?
2. Are there such things as ghosts? What are they?
3. Do you know what a funeral is? What is it?
4. Have you ever seen something dead? What?
5. Do dead people look the same as when they were alive? If not, how do they look different? Why?
6. Why are dead people buried?
7. Are people sad when someone dies? Why?
8. Does it hurt to die? Why or why not?
9. Do some people want to die? Why?
10. How old do you want to live to be?
11. How old do you think you'll live to be? Why?
12. Can people live forever? Why or why not?
13. Can children die? Babies? Why or why not?
14. How can someone die?
15. What happens after someone dies? (To their body?) Why?
16. Are you afraid of dying? Why or why not?
17. Can people come back to life after dying? Why or why not?
18. Can dead people dream? Why or why not?
19. Is sleeping anything like dying? Why or why not?

20. Do you belong to a church? What religion?

21. What does your religion say about death?

22. Do you know what a soul is? What is it?

23. Have your parents ever told you about death? What did they say?

24. If not, how did you learn about death?

25. Has any person or animal you've known ever died?

APPENDIX B

LETTER TO PARENTS

Dear Parents,

My name is Virginia Wulf and I am a graduate student in clinical psychology at Michigan State University. Recently, I have become involved in research concerning the development of a child's concept of death. It is my hope that in gaining an understanding of exactly how a child learns about death, we may be in a better position to formulate a better way of conveying to each child this inevitable fact of life.

I am writing to you at this time to ask permission to question your child. I realize that this is a sensitive topic, and will therefore conduct each interview carefully, employing questions of a general nature, seeking only the child's present knowledge of death. Questions such as "What happens when someone dies?" and "What is a funeral?" will be used. If you do agree to allow me to question your child, which would be done at his school, please do not give him any additional information or prompt him in any way. There is no "correct" answer for him to give.

Enclosed is a permission request form. Please answer, sign it, and return it to me as soon as possible; a stamped envelope is enclosed for your convenience. As a part of this research, I am also interested in parents' reactions to a study of death. I would therefore appreciate it if you would jot down some of your feelings about this research. Please include your reasons for granting or not granting permission for your child to be a subject in this study. If I do not hear from you within 10 days, I will contact you again, probably by phone.

If you have any questions regarding this research in more detail, please feel free to write or call me. Your anticipated cooperation is appreciated.

Sincerely yours,

Virginia C. Wulf

109 Olds Hall
Michigan State University
East Lansing, Michigan 48823
(517) 489-1108

In addition:

Because many parents want to know exactly how much time will be spent with their child and how the time will be used, I have added this page to describe my research in more detail.

In studies of children's concepts of death, there appears to be a relationship between a child's death concept and his level of cognitive development as measured by a series of concrete tasks developed by Jean Piaget, a French psychologist. My research consists of asking children cognitive-oriented questions as well as death-related questions.

I will spend about 45 minutes with each child individually. For the first 30-35 minutes, I will ask the child to answer questions related to objects or materials in front of him. For example, I will present the child with two identical sets of different colored blocks, one of which will be put in a bag. The child will be asked to draw out blocks from the bag, guessing first which colors they will be. This task taps the child's concept of "chance," one of the cognitive areas of development.

Many children see the cognitive part of the questioning as fun, and it gives both the child and myself an opportunity to become acquainted. Only the

last 5-10 minutes will be spent asking the child about death. These questions will be asked with care and sensitivity, and in no way will the child be forced to answer a question or continue with the questions if he does not feel that he can do so.

I hope this gives you a better idea of what I will be doing with your child if you consent to his participation in my research.

I understand that Miss Wulf's research consists of asking children questions about death.

☐ I give my permission for my child to be questioned about death.

☐ I do not give permission for my child to be questioned about death.

Name of Child: _____

Child's School: _____

Child's Birthdate: _____

Date: _____ _____
Parent's Signature

Your Reactions to This Study:

APPENDIX C

PIAGET TASKS AND SCORING CRITERIA

PIAGET TASKS AND SCORING CRITERIA

I. Classificatory Tasks

1. Conservation of hierarchy--pass at 7 years of age (from Kofsky, 1966)

   Materials: 2 blue squares
   6 red squares

   Procedure: Present all of the squares and ask: "If I took away all the reds, are there just blues left, just squares left, or both blues and squares? Why? If I took away all the reds, would there be more blues or more squares left or as many blues as squares? Why?

   Criteria for success: Two correct answers

2. Horizontal reclassification--pass at 7 years of age (from Kofsky, 1966)

   Materials: 8 wooden blocks: 2 red, 2 yellow, 2 green, 2 blue (one of each color is a triangle and one a square)

   Procedure: Each child is asked: a) to sort all the objects that are alike into classes, b) to sort a different way, and c) to explain each complete grouping.

   Criteria for success: To pass, the child must sort into groups in which a) all the blocks are alike in some respect, and b) all that possess the criterial attribute are included in the group. Then the child must change his criteria and produce a new arrangement which conforms to the above requirements (i.e., one color group and one shape group).

3. Inclusion I--pass at 10 years of age
(from Kofsky, 1966)

Materials: 9 blocks: 2 blue triangles, 4 blue squares, 3 red triangles

Procedure: The child must compare a number of objects in different classes by answering the following questions:
a) Are there more blues or squares?
b) Are there more reds or triangles?
c) Are there more triangles or blues?

Criteria for success: Two or three correct answers

4. Inclusion II--pass at 10 years of age
(from Flavell, 1963)

Materials: 2 red squares, 2 blue squares, 5 blue circles

Procedure: The child is asked the following questions:
a) Are all the blue ones circles? Why?
b) Are all the squares red? Why?
c) Are all the circles blue? Why?
d) Are all the red ones squares? Why?

Criteria for success: All the questions must be answered correctly

5. Hierarchical classification--pass at 10 years of age
(from Kofsky, 1966)

Materials: 7 triangles: 4 red and 3 blue

Procedure: The triangles are arranged in 2 parallel rows with both reds and blues in each row. The experimenter says: "All of these are called MEF's (pointing to each of the shapes in both rows) but only some are TOV's. What are MEF's? Which are the TOV's?"

Criteria for success: The child must point to MEF's and TOV's and explain his actions. To classify correctly, the child must define MEF's in terms of an attribute shared by all of them (ex.: triangles). TOV's must be defined by an attribute shared by part but not all of the group (ex.: blue).

II. Egocentrism Tasks

1. Perceptual egocentrism--pass at 6 years of age (from Flavell, 1968)

   Materials: Two sets of three colored pictures. One set consists of pictures of animals and one set shows various winter scenes.

   Procedure: The experimenter says: "I have some pictures to show you," and presents one set of pictures right side up to the child, who is urged to name them. E then says that a game will be played where the child will cover his eyes while E picks his favorite picture. The child then opens his eyes and is shown the picture so that it is seen right side up. Then the child is asked to pick his favorite picture while E covers his eyes. When the child shows E the picture, the orientation in which the child presents the picture is noted. The "game" is then played with the second set of pictures.

   Criteria for success: The child must orient the picture right side up from E's point of view on both trials to pass.

2. Left-right discrimination--pass at 7 years of age (from Piaget, 1951)

   Materials: Pencil, penny, bracelet

   Procedure: The child is asked the following:
   a) Show me your right hand; your left hand; your right leg; your left leg
   b) Show me my right hand; my left hand; my right leg; my left leg (E sits opposite the child)
   c) (A coin is placed on the table to the left of a pencil from the child's viewpoint.) Is the pencil to the right or the left? And the penny?
   d) (E puts a coin in his right hand and a bracelet on his left arm.) You see the penny--is it in my right or left hand? And the bracelet?

Criteria for success: All answers must be correct; that is, the child must be able to see left and right from another's viewpoint.

3. Story-telling--pass at 9 years of age (from Flavell, 1968)

Materials: Seven pasteboard cards with the following pictures on each card:
1) The boy is walking along the sidewalk, whistling and waving a stick.
2) The boy looks frightened and drops his stick as he sees a rather ugly looking dog running towards him.
3) The boy runs, looking anxiously over his shoulder at the dog, who is in hot pursuit.
4) The boy is shown running with arms outstretched toward an apple tree laden with fruit; the dog is not shown in the picture and the boy's face (showing fear in the two previous pictures) is hidden by a branch of the tree.
5) The boy scrambles up the tree, with the dog nipping at his heels.
6) The boy is shown standing up in the tree; the dog can be seen across the street, trotting away (he looks smaller in this picture, and with no visible evidence of ferocity); although the boy's head is partly turned in the dog's direction, it shows no particular emotional expression.
7) The boy is seated in the tree, munching an apple, with the dog nowhere in evidence.

Procedure: The child is given the series of seven pictures (in the above order) and is asked to tell the story which the pictures illustrate. Three of the seven pictures are then removed (cards 2, 3, and 5--those with pictures of a threatening dog). The child is then asked to pretend that a doll is a real person and is asked to tell the story which the doll would tell from looking at the remaining four pictures alone.

Criteria for success: Because of the way the series is constructed, the four-picture sequence suggests a radically different story from the original seven-picture sequence. The child's problem is to suppress his previous perspective and look at the four pictures naively, as if seeing them for the first time. The child's second story must include some non-fear motive for the boy to climb the tree, i.e., the dog must not be seen as a motive for climbing and must be seen as irrelevant to the story. This is in contrast to the first story, where the dog is central to the story and is the primary factor motivating the boy to climb the tree.

4. Morality--pass at 10 years of age (Flavell, 1963)

Materials: Two situational stories (below)

Procedure: The child is told the following stories. After each story, he is asked: "Who should be punished more? Why?"

1) John steals 5 loaves of bread to feed his poor and hungry family, and Steven steals one loaf of bread just for himself.
2) Sally accidentally breaks 15 cups while helping her mother clean the shelf, and Cathy accidentally breaks one cup while trying to steal cookies.

Criteria for success: The child must decide that the intent of the act is more important than the outcome and must thus choose to punish the person whose motives were immoral. The child who sees rules not as stemming from external authority but as stemming from mutual respect and cooperation will answer correctly.

5. Relational understanding--pass at 10 years of age (from Elkind, 1962)

   Materials: None

   Procedure: The child is asked the following question: If Allan has three brothers, Bob, Carl, and David, how many brothers does Carl have? How many brothers are there in the family?

   Criteria for success: The child must answer both questions correctly. At 5-7 years of age, the child is unable to coordinate his own point of view with that of his siblings. That is, he will deny that his brother also has a brother. At 7-9 years of age, the child is aware of the relation between having and being a brother, but cannot readily construct one from the other. It is not until 10 years of age that the child can answer the above questions accurately, by being able to conceptualize symmetrically and abstractly.

III. Physical Causality

1. Animism--pass at 7 years of age (from Flavell, 1963)

   Materials: A box on a twisted string

   Procedure: The experimenter presents the box hanging from the string. He holds just the string and as the box turns, asks: "Why does it turn?"

   Criteria for success: The child must give a realistic answer, i.e., that the string is twisted or that the E in some way has turned the box. Animistic answers such as "it just wanted to" which gives life-like qualities to objects, and answers such as "the wind blew it" which denies reality (we are indoors) are failures.

APPENDIX D

QUESTIONS ON DEATH

QUESTIONS ON DEATH

1. If you hold your breath for a long time, what will happen? Why?
2. Are there such things as ghosts? What are they?
3. Do you know what a funeral is? What is it?
4. Have you ever seen something dead? What? When?
5. Do dead people look the same as when they were alive? If not, how do they look different?
6. Why are dead people buried?
7. Are people sad when someone dies? Why or why not?
8. Does it hurt to die? Why or why not?
9. Do some people want to die? Why or why not?
10. How old do you think you'll live to be? Why?
11. Can people live forever? Why or why not?
12. How can someone die?
13. What happens to a dead person's body?
14. Can people come back to life after dying? Why or why not?
15. Can dead people dream? Think? See? Hear? What do they do? Why?
16. Is sleeping anything like dying? Why or why not?
17. Can a person die at any time? Why or why not?
18. Have your parents ever told you about death? What did they say?
19. If not, how did you learn about death?

20. Has any person or animal you've known ever died? Who? How old were you then?

21. If someone asked you what death was, what would you tell them?

APPENDIX E

SCORING CRITERIA OF DEATH QUESTIONS

SCORING CRITERIA OF DEATH QUESTIONS

Death Knowledge

Level 1: No understanding or wrong understanding

Any statement which reveals the child's lack of knowledge concerning death and related topics. Answers for this level could range from "I don't know" to a false belief the child may have constructed or learned from someone.

Examples: "You can die from holding your breath."
"People can live forever."
"I don't know."

Level 2: Mixed levels of understanding and/or incorrect or lack of logical reasoning

Answers which may be correct but for which no reason is given and correct answers with a lack of logical reasoning.

Examples: "Yes, people are sad when someone dies because they can't play baseball any more."
"People don't dream when they die because they stay awake all the time."

Answers which contain both correct and incorrect elements:

Examples: "People can't live forever, but they can live to be 300 years old."
"Babies can die, but not when they're real little."
"Yes, it hurts to die."

Level 3: Correct understanding of death and logical explanations for answers

Examples: "Dead people are buried because they rot and smell."
"Sometimes it hurts to die and sometimes it doesn't. It depends upon whether you die of a heart attack or in a car accident, or in your sleep or from old age."

Death Experience

Level 1: No remembered experiences

The child does not remember any death-related experiences.

Examples: "My parents never told me about death."
"I've never seen anything dead."

Level 2: Vaguely remembers being told about death and/or has had vicarious or distant death-related experience

Examples: "I've seen dead people on TV."
"My mom told me something about death, but I can't remember what."
"My girlfriend's gramma died."

Level 3: Remembers details of informative death-related discussions and/or has had first-hand experience with death-related events

Examples: "I went to my gramma's funeral."
"My dad told me that dead people go to heaven."
"I saw my dog die. He was hit by a car."

APPENDIX F

EXAMPLES OF DIFFERENT LEVELS FOR THE DEATH QUESTIONS

EXAMPLES OF DIFFERENT LEVELS

FOR THE DEATH QUESTIONS

1. If you hold your breath for a long time, what will happen? Why?

   0: You'll die
   1: Face gets redder and redder
   2: You'll faint

2. Are there such things as ghosts? What are they?

   0: Yes or don't know
   1: Not really, but child believes they exist
   2: No

3. Do you know what a funeral is? What is it?

   0: Don't know; any incorrect answer
   1: A funeral is when someone gets buried; any other reference to death
   2: A funeral is where people go to see the dead person and mourn for him--before being buried

4. Have you ever seen something dead? What? When?

   0: Can't remember; no
   1: Seen dead people on TV; seen animals dead
   2: Seen a person dead

5. Do dead people look the same as when they were alive? If not, how do they look different?

   0: Don't know
   1: Yes, eyes closed, lying down
      or
      No, aren't breathing, are cold
   2: Yes and no, with examples of both answers

6. Why are dead people buried?

   0: Don't know
   1: No place else to put them; it's the law
   2: They will rot and smell

7. Are people sad when someone dies? Why or why not?

   0: Don't know; no
   1: Yes, because they can't play with them any more; they liked them
   2: Yes, some reference to the finality of death

8. Does it hurt to die? Why or why not?

   0: Don't know
   1: Yes, die in car accident or other violent death
      or
      No, die in sleep
   2: Yes and no, depending on how one dies

9. Do some people want to die? Why or why not?

   0: Don't know
   1: Yes, one specific and insignificant reason (ex.: they don't like school)
   2: Yes, general reason of unhappiness (ex.: life is too sad for them)

10. How old do you think you'll live to be? Why?

   0: Unreasonable age, outside the range of 65 to 100
   1: Age between 65 and 100, but reason does not pertain to "general life expectancy" (ex.: "You get too old after that.")
   2: Age between 65 and 100, statement such as "that's how long most people live to be."

11. Can people live forever? Why or why not?

   0: Yes; don't know
   1: No, general reason such as "get too old after that"
   2: No, reason relating to the deterioration of organs or the body in general

12. How can someone die?

0: Don't know
1: From violence or accident
or
From malfunction of body
2: From both of the above

13. What happens to a dead person's body?

0: Don't know
1: Reference to burial, heaven, or "it just lies there"
2: Reference to deterioration of body

14. Can people come back to life after dying? Why or why not?

0: Yes; don't know
1: No, no reference to finality of death
or
Yes, religious reason such as reincarnation or living with God
2: No, reference to finality of death

15. Can dead people dream? Think? See? Hear? What do they do? Why?

0: Yes
1: No, statement personifying dead person ("They just sit there")
or
Yes, because of religious reason such as reincarnation
2: No, statement referring to non-existence of person after death.

16. Is sleeping anything like dying? Why or why not?

0: Don't know
1: Yes; lying down, eyes closed, etc.
or
No; can't breathe, move
2: Yes and no, with above examples

17. Can a person die at any time? Why or why not?

0: No; don't know
1: Yes, but exceptions given
2: Yes, reference to accident or bodily dysfunction at any time

18. Have your parents ever told you about death? What did they say?

0: No; don't know, don't remember
1: Yes, but can't remember
2: Yes, general or specific discussion remembered

19. If not, how did you learn about death?

0: No other way
1: Friends, books, TV; but no specific remembrance
2: Same as #1, but event is remembered

20. Has any person or animal you've known ever died? Who? How old were you then?

0: No, can't remember
1: Yes, person outside of family or an animal
2: Yes, person inside the family

21. If someone asked you what death was, what would you tell them?

0: Don't know, erroneous or synonymous definition
1: Reference to accidents, burial, heaven, etc.
2: Death defined in terms of cessation of life by physical injury or the end of organ functioning

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