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An Empirical Investigation of the Concept of Death in Children

A Dissertation
Presented to the
School of Graduate Studies and Research
University of Ottawa

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Suzanne M. Derry
September, 1979

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Acknowledgments

The author wishes to express deepest gratitude to her advisor, Dr. Bertha Mook. Dr. Mook's generosity in both her time and her considerable talent was a major inspiration.

Very special thanks go to the Carleton School Board Research Committee, the Briargreen, Fisher Heights and Riverview Public Schools, their faculties and staffs, for their courage and cooperation in a potentially controversial study. The author is particularly grateful to the parents and children, without whose participation this study would not have been possible.

To those fellow students who gave so freely of their advice, research assistance, and moral support: Gregory Banwell, Susan Julius, Patricia Gervais-Wilson, and Anthony Mustello, the author is deeply indebted.

A final note of deepest appreciation is extended to the author's family for their support and encouragement, and especially their unwaivering faith.

Abstract

The purpose of the present study was twofold. The first goal was to construct an objective, continuous measure of the death concept in children. A second aim was to re-evaluate the roles of death-related experience, separation, and socioeconomic level in the development of the death concept. The responses of 609 children between five and 12 years of age to the experimental death-concept measure and the Otis Lennon Mental Ability Test were investigated. Demographic information was also obtained from their parents. Evidence for the construct and criterion validity of the experimental death-concept measure was demonstrated, and a continuous scoring system was developed. Children with death-related experience and simple separation experience were found to have more advanced death concepts than children with no such experience. Socioeconomic level did not differentiate among children's death-concept scores at any of the three age group levels. These findings were discussed in the light of previous research, and the implications for future inquiry were explored.

Review of Literature

The present investigation represents an empirical study of the concept of death in children. There has been theoretical and research interest in this area since the first half of the century. However, normative data has not emerged. Comparable measures have not been devised. The role of experience has not been well identified.

An understanding of the nature of the death-concept* development has particular importance for teaching children about death, for supporting bereaved children, and for facilitating the healthy development of an understanding of death.

A more subtle but perhaps most critical reason for studying how children discover death is the fact that, since the beginning of the twentieth century, western civilization has increasingly chosen to hide and disguise the natural phenomenon of death (Aries, 1974; Gorer, 1955; Anthony, 1972). This leaves parents and teachers with a great responsibility for teaching children about death. These persons look to science, and especially to psychology, which has insufficient knowledge to offer, to give them guidance.

This chapter will trace the evolution of the scientific interest in children's concepts of death. The first section will introduce the main theoretical orientations which gave rise to

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*In the present text, the terms "death concept" and "concept of death" are used interchangeably.

the initial investigations into children's concepts about death. The subsequent section will explore the research which has been generated by those theories. The final section will describe the objectives of the present study and relate these objectives to previous research.

While it must be recognized that man's relationship with the death phenomenon is an extremely complex one, involving a dynamic interplay among affect, cultural values, the concept of death, and personal history, etc., the present study focuses its attention only upon the development of the concept of death per se.

Theoretical Origins

Two major developmental psychological theories have bearing upon children's concepts of death. These are the psychoanalytical theory and the Piagetian theory of cognitive development. In spite of their different focuses, each laid foundations that have generated research inquiry into the death concept. This has occurred although neither theory deals directly and specifically with the development of the death concept.

The psychoanalytic interest in children's experience of death phenomena has largely focused on the mourning of children for a dead parent, and the pursuant affective processes. The concept of death becomes meaningful in this framework in so far as it serves the mourning process.

Freud viewed man's relationship to death as central to mental life and incorporated this into his theory by means of a death instinct (Freud, 1915, 1928). He saw children's thinking

about death as particularly relevant in the development of obsessive compulsive and melancholic neuroses (Freud, 1925). He was the first to observe that young children do not seem to distinguish between death and separation in their understanding, thus making the true, complete mourning process impossible (Freud, 1925).

Freud wrote extensively on the importance of mourning, both as an essential process for adapting to the loss of a love object and as an important source of psychopathology when miscarried (Miller, 1971). Both Helen Deutch (1937) and Melanie Klein (1948) further stressed the importance of unresolved grief in childhood as a significant factor in later adult psychopathology, both of a neurotic and psychotic nature. "... Every loss of a loved one in later life will reactivate this archaic conflict and discloses itself through the difficulty of internally re-establishing... the lost object." (Klein, 1948) As a result, much attention became focused upon the nature of mourning in childhood, and upon those factors which influence its outcome (Spitz, 1945; Bowlby, 1960; Freud & Burlingham, 1944; and others). Many theorists contend that the process of mourning places on children demands that are beyond their ability to meet, because the necessary ego functions are not yet developed (Wolfenstein, 1966; Fleming and Altschul, 1963; Deutch, 1937). Viewed in this way, bereavement in childhood must ncessarily be pathological (incomplete), and therefore produce adult illness.

There are numerous theorists who disagree with the "incomplete ego" position. Their theories range from Bowlby's early view that full adult mourning is possible from as young as

six months of age (Bowlby, 1960), to the more moderate position that childhood mourning differs in nature from that of the adult, due to the child's immaturity in both cognition and personality (Rochlin, 1959; Nagera, 1970).

Anna Freud supported her father's observation that young children, especially before three, do not distinguish between death and separation in either their concept or affect (A. Freud and D. Burlingham, 1943). She also described at length the behavior and affective dynamics of bereaved and separated children in her Hempstead Clinic during World War II (Freud and Burlingham, 1944).

Anna Freud (1960) was the first to stress the necessity for the development of a concept of death before mourning can become possible. She reduced mourning to its elemental components, including reality testing, object constancy, etc., and located these elements in a developmental perspective.

Furman (1964), elaborating upon A. Freud's position, believed that a clear concept of death is an essential pre-requisite to successful mourning: "...the mourning task is initially dependant upon the ability to have a concept of death." (p. 325) Arthur and Kemme (1964) went on to state that the intellectual struggle with the concept, alone, may produce sufficient difficulty as to preclude "working through the loss."

A. Freud (1960) was also the first to point out the absence in psychoanalytic research of studies of bereaved children who remain outside institutions: "From direct observation we know little or nothing about the duration of grief in those instances where mother has to leave temporarily or permanently

while the child remains at home" (p. 59). Several authors in subsequent case studies and analytically oriented theoretical discussions have echoed this deficiency (Birtchnell, 1969; Bendiksen & Fulton, 1975; Arthur & Kemmè, 1964). They have also pointed out the need for some normative developmental research on the emergence of the death concept in non-bereaved normal children.

The theory of Jean Piaget deals with the concept of death largely by implication, as a corollary to the concept of life. Piagetian theory places central importance on the concept of life in the child's cognitive development of causal thought and understanding of his world. Piaget has demonstrated that the concept of life moves through successive cognitive-developmental stages until it reaches maturity. Initially, the child attributes life qualities to all that exists. Gradually, the child moves from this position of animism to a realistic distinction between the concepts of life and death.

This development occurs within a larger process in which the child is differentiating his personal self from the world of objects and other persons, and in which he moves from omnipotent egocentricity to reciprocity and reversibility. Consequently, the child moves from the belief that the world is entirely alive and under human command, through several intermediary stages, to the point where he understands that some things are not alive, some things are no longer alive, and some things are indeed alive, but will at some point not be alive, which includes himself.

Thus, in Piagetian terms, the ability to comprehend the reality of a personal life and its corollary, personal death, is an example of the attainment of the ultimate objective of mature conceptual thought. The phenomenon of death challenges each of the intermediary stages of understanding, which are insufficient to explain it (Piaget, 1967).

Piaget believes that experience does not facilitate growth in understanding unless the child is at a developmentally receptive stage for processing such experience (Piaget, 1967). Both he and some of his students (Flavell, 1971) propose the existence of certain universal experiences which propel the child forward in his cognitive growth.

According to Piaget, a full understanding of life and, by implication, of death is possible only when the child has reached the formal operational level of thought. Prior to this developmental level, there is a succession of stages in thinking which approximate in characteristic ways the fully developed concept of death. The Piagetian theory, therefore, views the full development of the concept of life and its corollary, death, as essential to mature cognitive development. This theory holds that life and death are complex concepts whose attainment requires the resolution of immature stages of cognitive thought.

In comparison to Piagetian theory, the psychoanalytic theory holds the position that the development of the death concept is important to healthy resolution of mourning. There is considerable debate within this school about when and how the death concept develops, with some theorists (Bowlby, 1960)

contending very early understanding while others (Wolfstein, 1966) believe it does not evolve fully until after adolescence. There is general agreement, however, that the ability to mourn the loss successfully is essential to normal personality development.

In summary, there is a theoretical basis, which has emerged from several directions, for viewing the development of the concept of death as important. The significance of the cognitive and affective dimensions of the death concept in child development is recognized by Kastenbaum when he writes:

> It seems to us both in process and content, the child's fundamental construction of reality involves working with the challenging questions of directionality, finality, limits, and separation -- death-related problems, all... The basic point is that we do not understand a child's core process of cognitive and personality development without also understanding how he or she is progressing in the discovery and integration of death. (Kastenbaum, 1974, p. 13)

Thus, in an effort to understand the process by which a child "discovers and integrates death," research has attempted to separate this process into its elemental parts. The focus of the present research is upon the cognitive development of the death concept, as distinct, albeit artificially so, from affective and attitudinal development. Within this context the psychoanalytic and Piagetian theories become complimentary components of the foundation for research inquiry into the development of the death concept in children.

Early Research

Prior to 1940, inquiry in the area of children's ideas about death had been sparse and fragmented. Such studies were methodologically weak and/or speculative in nature (Hall, 1907; Gesell, 1946). They rarely emerged from a theoretical framework, and were often retrospective from a clinical population (Schilder & Wechsler, 1934). More importantly, children's concepts in this area were not viewed in developmental terms, but rather as simply quantitatively different from adult concepts.

The research work of Jean Piaget initiated the systematic study of children's cognitive development. His work focused on the orderly process of development through sequential stages, with each stage displaying more realistic thinking than its antecedent. Using the theory and methods of Piaget, Sylvia Anthony (1970) was the first to propose that children's ideas about death evolve and undergo qualitative, progressive changes as they pass from ignorance to adult-like concepts.

Anthony's (1970) research was carried out in the 1940's. She explored the concepts, affects, and causal speculations of children regarding death and discussed the theoretical implications of her findings. Anthony pursued a dual course of investigation: that of direct inquiry and that of naturalistic observation. The more naturalistic technique involved utilizing a group of willing parents who recorded all their children's behaviour, questions, and remarks about death in diaries, which were given to Anthony.

The direct inquiry involved 128 children from London and surrounding areas in 1940, drawn from child guidance clinics, special schools, and her own neighbourhood. Anthony administered the Geneva Story Completion Test, and asked each child, "What does 'death' mean?"

The responses to the Geneva Story Completion Test were analyzed into percentages, and conclusions regarding children's concern, affect, and attitude about death were drawn. The responses to the "death" question were categorized into five levels, and percentages were computed. The five categories were:

1) ignorance of the word;

2) awareness of the word, but erroneous or very limited definition (6-7 year olds);

3) a clear concept, which is associated with limited specific events, and/or restricted to humans (5-8 year olds);

4) correct concept with limited reference (8-9 year olds);

5) a correct concept complete with logical and biological description (9-12 year olds).

Anthony observed an age-concept relationship in which mental age was more strongly related than chronological age to the level of death concept. She also noted that children's experiences with death influenced their concepts.

Though methodologically unsophisticated in the context of today's standards, this study was significant in

several ways. It initiated developmental inquiry into the death concept. The methodological technique of categorizing responses into a developmental framework has greatly influenced later research in this area. Most importantly, to date, her assumptions and conclusions have yet to be well challenged. These include the progressive stages in understanding of the concept of death, the importance of mental age, and the significance of death-related experiences to death-concept development.

Following shortly after Anthony's work, Nagy (1947) investigated children's ideas about death from a more psychoanalytic, developmental standpoint. She assembled compositions, drawings, and interviews about death from some 300 children in Budapest between the ages of three and ten years. She organized their responses into three distinct categories:

1) The first category consisted of no definitive concept of death. Children in this stage were seen as viewing death in one of two ways. Firstly, death may have been equated with sleep or departure. Secondly, death was recognized as a separate state, but it was regarded as gradual and/or temporary, and therefore was not entirely distinct from life. This category was observed in children between the ages of three and six.

2) The second category consisted of death responses which showed children personifying death, e.g., a dark angel, grim reaper. Although children expressed such ideas across

all ages tested, this response was seen to be most frequent between the ages of five and nine.

3) The third category, which was the conception of death as a cessation of corporeal activities, was reached only after nine years of age.

From a methodological standpoint Nagy's research has major shortcomings. Her interpretations were not based on clearly limited groupings, nor was there any estimation of the validity of the results. Her sample population is likely unrepresentative of the 'typical' child, since the children of the 1930's and 1940's in Budapest were subject to many environmental experiences which are unlikely for the average child, namely enemy occupation and war. These events may well have influenced the children's view of death. Her second stage (personification) may be questionable in so far as her methodology included drawings, which necessitate a concretization of an abstraction and which could, therefore, easily evoke a personified response. However, her finding with regard to the personification of death has been a focus of interest in some later research, although it has never been replicated.

The discrepancies between the Nagy and Anthony (1940) methods of interviewing for and of classifying responses to death questions were the first indication of what was to become a major need for researchers in this area, i.e., a generally agreed-upon method of obtaining and classifying death question responses, such that research might be comparable.

Recent Research

No published research focusing specifically upon the development of the concept of death could be found between 1947 and 1964 in the English speaking literature: In 1964, research interest in the development of the death concept was renewed, accompanied by increased methodological sophistication. Two major advances have been made: in part due to increased awareness of the work of Piaget, there was an increased clarity in the distinction between the cognitive and affective features of the death concept; in addition, considerable effort has been made to determine what factors influence the development of the understanding of death.

Research inquiry has therefore taken dual directions, which are discussed separately in this section. The first area of research focus has been upon the discovery of the essential concept features which characterize the development of the death concept. A second orientation for investigation has been the effort to elucidate those factors which directly influence the development of the death concept.

Concept features: Drawing upon the earlier work of Anthony (1940) and Nagy (1947), most researchers have assumed that a progression of understanding exists between the very young child's ignorance and the older child's fuller comprehension. Considerable research interest was focused on the discovery of the essential features which characterize the death-concept development.

Safier (1964) attempted to clarify the role of animistic thinking in the development of the death concept in 30 boys by reversing the "life concept" study of Piaget (1929). She selected ten items (6 animate, 4 inanimate) and inquired whether or not each item was alive, hurt when hit, grew up, and died. She concluded that there was a structured sequence and a relatively continuous process of modal development, rather than clear-cut stages. According to her, this sequence evolved from animism and reversibility (age 7), through to the attribution of external causality, to an awareness of natural inevitability and universality of death (age 11). Although Safier's sample size was small and the response categories employed were poorly defined, her research raised the important issue of whether death concept development is of a sequential, relatively continuous nature, or of a discrete stage-by-stage process.

Portz (1965) sought to elaborate the "sequential understanding" position by specifically investigating what were the essential features of the death concept. Portz (1965) studied 90 boys between four and nine years of age, utilizing an experimental projective technique (MAPS of death topics), both before and after a direct interview about death. He further interviewed the mother of each child to determine both maternal attitude and the child's previous experience with death. He found that the awareness of permanence, irreversibility, inevitability, cessation of bodily function, and natural event all increased with age. He also supported

Safier's (1964) findings regarding animism. Portz's findings relevant to the role of experience will be described and discussed in the following section.

Melear (1973), in a similar study, obtained results that support the findings of both Portz (1965) and Safier (1964). Melear (1973) directly questioned forty children between the ages of three and twelve about death. His questions included those most frequently raised in earlier research about death, e.g., temporary or final, is it a person, how or what dies, what causes it, are there degrees of death, etc.. His resulting categories are similar to those of Safier (1964) and Portz (1965), except that he found some children as young as six years old who displayed fully developed concepts and children as old as ten who remained unclear as to the cessation of bodily functioning.

In a somewhat more circumscribed study, Childers and Wimmer (1971) questioned 15 children between four and ten years old about irreversibility and universality of the death phenomenon. They found that by ten years of age all of the children were sure of the universality of death, while many were not aware of its irrevocability.

When viewed as a group, the works of Safier (1964), Portz (1965), Childers & Wimmer (1971), and Melear (1973) appear to lend support to several conclusions. Firstly, when chronological age was used as the measure of cognitive development, sequences of development were supported, but

stages per se were not. Secondly, there was a great variance as to when the sequences occur chronologically among children. Thirdly, the stages these researchers found were suprisingly complementary. They can be summarily integrated into the following four categories:

1. Ignorance of the concept.
2. Death is a temporary immobilization by constraint; reversible, not inevitable, and caused by intentional external force.
3. Death is a permanent, universal, inevitable, partial cessation of bodily functioning, intentionally caused by external force.
4. Death is permanent, irreversible, universal, inevitable, total cessation of bodily functions and a natural event.

The first category of response has not been observed in children older than seven, while the last step has not been found in any children younger than six. Beyond these gross parameters, however, there is little reliable, normative information.

In 1972 Gerald Koocher initiated an investigation into the development of the concept of death which provided a new basis for the potential exploration of two central questions which have occupied researchers thus far. Those are the issues of whether stages in death-concept development are meaningful, and how the death concept relates to cognitive development in general.

Koocher's objective was merely to demonstrate a relationship between Piagetian levels of conceptualization

and the development of the death concept. His systematic introduction of Piagetian developmental theory into the design of his investigation led to a methodological contribution, and validated earlier assumptions about the relationship of death-concept stages to Piagetian cognitive stages.

Koocher (1972) grouped seventy-five children between the ages of six and fifteen into three groups, according to their level of Piagetian conceptual development: pre-operational, concrete operational, and formal operational, based on performance of four tasks derived from Philips (1969). He then asked each child four questions regarding death, hypothesizing that their responses would be in accord with their level of cognitive development. He employed judges to classify the death responses. Findings for the different questions were as follows:

Question 1) "What makes things die?" Statistical analysis showed the pre-operational group to be significantly different from the concrete operational group and even more different from the formal operational group.

Question 2) "How do you make dead things come back to life?" Only some pre-operational children attempted to explain how this was possible. None of the concrete or formal operational children believed this was possible.

Question 3) "At what age will you die?" This question produced a great variety of estimates, with the variance decreasing significantly with each successive cognitive level of advancement.

Question 4) "What will happen when you die?" Responses were of such variety that they were reported in percentages, rather than analyzed.

Koocher explained that the results from three of his questions (excluding the last one) supported the hypothesis that death concepts are related to the Piagetian conceptual development framework (C = .37). His findings demonstrated the importance of magical thought in the death concept of the pre-operational child, the importance of reciprocity skills for the concrete operational child, and the clarity of realistic, fully developed concepts of death for the formal operational child.

Hansen (1973) conducted research similar to Koocher's (1972) in comparing children's concepts of death with their Piagetican level of conceptual development. She examined 36 middle-class boys, 12 within each of the 5- to 6-year, 7- to 8-year, and 11- to 12-year age ranges. Recordings of the children's responses to questions about the reversibility, inevitability, universality of death, and the degree of corporeal cessation, as well as projective stories, were analyzed by two judges. The judged ratings of the death concept

were then compared to the child's Piagetian level of cognitive development. The results indicated significant differences between all three groups. The youngest group saw death as a reversible, partial cessation of life. The middle group viewed death as a universal, inevitable, total cessation of corporeal life. The older group portrayed concepts of body-soul differentiation and various ideas about the possibilities of reincarnation and afterlife.

Hansen (1973) added to the study of death-concept stages a new dimension that was not considered earlier and that has not been assessed since, namely the notion that formally operational children differ from concrete operational children less in their awareness of death facts than in the way they employ the fact, e.g., to contemplate, speculate, etc., regarding death.

Overall, the Koocher (1972) and Hansen (1973) studies are of particular value in contributing to an empirical basis for the theoretical framework of the death-concept investigation. In addition, numerous questions are raised which call for further inquiry within the Piagetian frame of reference.

In a pilot study employing a methodology similar to that of Koocher (1972), the writer (Derry, 1976) found a significant relationship between Piagetian levels of congnitive development and the levels of children's death concepts. This relationship was particularly manifest in the area of death causality. It was further discovered that death-causal

concepts tended to be more advanced than the general level of cognitive development.

The major drawback of the Koocher-type of study proved to be the imprecise nature of the measures, which precluded rigorous mathematical analysis. It seemed that without more refined measures, the effort to understand how children develop death concepts is seriously hindered.

Discussion: The body of research reviewed thus far has been essentially exploratory in nature. It has served to identify and, to a limited extent, to describe the essential dimensions of the death concept.

The varied methods of obtaining death-concept data, the consistent use of judge-rating methods of classifying death concept data, and the wide range of criteria employed in assessing responses have yielded a well documented number of essential death concept features. The results of different studies are difficult to compare, however, and the relationships between conceptual elements remains unclear.

While the development of the death concept has been identified, it has yet to be well described as a developmental phenomenon. Some research has shown moderate correlations between the death concept and mental and chronological ages (Peck, 1966; Childers and Wimmer, 1971). Other studies have found a relationship between Piagetian stages of general conceptual development and the development

of the death concept (Koocher, 1972; Hansen, 1973). A cohesive, normative framework that clearly demonstrates a developmental progression has not yet emerged.

It further remains to be determined whether the death concept has any distinctive features that are unique in the unfolding of cognitive development. While this has been assumed, the significance and uniqueness of the death concept in conceptual development has never been demonstrated.

Influential factors: Together with the research that has sought to clarify the development of the death concept, another group of studies has been carried out with a somewhat premature objective, but one of similar importance. This second focus of research in the area of death-concept development has been aimed at establishing those factors which influence this development.

Two studies have attempted to correlate mental age with the conceptual development of death. Peck (1966) and Childers and Wimmer (1971) found that chronological age and mental age both correlate with death-concept development. The studies disagree, however, as to which factor correlates more highly. Childers and Wimmer found mental age to be more highly related ($C = .48$) to the level of death concept than chronological age ($C = .37$), while Peck (1966) found the opposite. However, in neither instance was the significance of these observations tested.

Portz, in his 1965 research (previously described), compared the death concepts of boys, exploring the influence of death and separation experiences. He grouped 90 boys into three categories: 1) those who had experienced the death of a primary family member; 2) those who had been separated for a lengthy period from their families; and 3) those who had no such experiences. Experience was determined by parents' reports.

Portz found that boys with death experience had significantly better death concepts than control children. He further found that boys with lengthy separation experiences had significantly poorer death concepts than the control group.

Peck (1966) also addressed her research to the exploration of factors that influence the development of the concept of death. She compared 48 boys on the dimensions of death-related experience (death or separation from a parental figure), age (3 to 6 years and 6 to 9 years), IQ (low, average, and high), socioeconomic status (low and high), and level of death concept (experimenter-rated). She determined that children's death concepts fell into age-related categories. Both chronological age and mental age correlated with the level of death concept, with CA ($r = .41$) showing a stronger relationship than MA ($r = .36$). Peck found that neither socioeconomic status nor traumatic experiences were related to death-concept development.

Peck's (1966) research was methodologically flawed by excessive control of the sample groups (4 independent variables yielding 24 groups of 2 individuals each) and by the use of parametric analysis techniques on ordinal data, which did not seem justified. The study did, however, address the need for the issue of influential factors to be assessed in an interrelated manner.

Bolduc (1972) also investigated the influence of death-related experience upon death-concept development. She used two groups of 52 children, matched for age, sex, IQ, and socioeconomic status. One group had experienced the death of a primary family member, while the second group served as a control with no such experience. The children's death concepts were measured by a projective technique (e.g., six death stories followed by questions) and a direct interview. Bolduc (1972) demonstrated from her study that children with death-related experiences had more highly developed concepts of death than did control subjects with no such experience.

Tallmer, Formanek, and Tallmer (1974) studied 200 children between three and nine years of age and found death experience (parental reports of concrete experiences) to have no significant import. However, they did find a social class difference, in that urban Black, lower-class children displayed better death concepts than did matched middle-class White children.

Discussion: In a very fundamental way, each of the reviewed studies that has attempted to assess an influential factor has been premature. In the absence of a comparable measure, and in the absence of normative data, there is no real basis for suggesting which responses are more or less appropriate than what might normally be expected.

These studies demonstrate that mental and chronological age correlate with death-concept development. They also raised several questions about the role of experience in influencing that development, but offered few consistent answers.

The role of death-related experience in the development of the death concept is perhaps the most often investigated, yet this has yielded mixed results. Portz (1965) and Bolduc (1972), who both defined death-experience as the death of a primary family member, found that such experience improves the death concept. Peck (1965) included in her group of "bereaved" children those who had experienced separation from the family (foster children) as well as those who had experienced the death of a family member, and this grouping revealed no significant effect upon the death concept. Tallmer et al (1974) used parents' reports of "any concrete death experience" as the criterion for their death experience group and found no influence from that experience. Each of these studies employed different criteria for assessing the death concept, as well as different means of defining the death experience.

The role of separation also appears to have some effect upon the death concept. Portz (1965) found children with lengthy separations from their families during the first two years of life to have significantly poorer death concepts than children with no such experience. This result was somewhat precidented by the research of others (Spitz, 1945; Bowlby, 1960; Freud and Burlingham, 1944), who had found that such separation experiences tended to produce poorer development in most areas.

From the review presented here, there is an apparent need for a more comprehensive, normative understanding of the development of the death concept. Indeed, it appears unclear just what the developmental progression is, the characterization of which should logically preceed questions of what determines its rate of evolution. The confusion of results from previous research may attest to the lack of a complete understanding of the developmental phenomenon itself, as well as premature evaluation of what influences the phenomenon. However, previous research does provide several consistent characteristics upon which new research can be built.

Purpose of the Present Research

In light of the presented review, and given the broad scope of potential inquiry in the area of death-concept

development, it seems wise to extend and build upon these previous findings. In order to develop a firmer foundation and a clearer frame of reference for future research, there is value in attempting to discover the dvelopmental characteristics of the death concept.

In general, death-concept research carried out thus far has been focused upon the description and classification of children's reasoning processes regarding death. While this approach perhaps yields the richest and clearest understanding of children's thinking, it precludes the discovery of certain other important information. Because classification data is limited to non-parametric analysis, complex and multi-dimensional research questions cannot be answered. In this context, the importance to the death-concept development of IQ, experience, socioeconomic level, sex, and other such variables, individually or in interaction, is difficult to determine. Furthermore, only the grossest changes or trends are uncovered by ordinal measures. In contrast, a continuous measure of the death concept may sacrifice some breadth in its information, but would make more complex research questions feasible and perhaps uncover more subtle changes or trends in the development of the death concept.

In particular, the present study proposes to further explore the relationship between the death concept and general conceptual development. In attempting to

develop and utilize a more comprehensive measure of the death concept and relate it to a measure of general intelligence, this study sets out to devise an experimental death questionnaire which incorporates those concept features which previous researchers have regarded as significant. These features include permanence, reversibility, inevitability, degree of cessation of corporeal activity, animism, causality, universality, and awareness of personal death.

In order for such a measure to be at least as meaningful as earlier measures, however, it must not only demonstrate a strong relationship with such early measures but must also show characteristics similar to those found for the earlier measures. These would include at least moderate relationships with both mental and chronological age.

Thus, the first goal of the present study is to develop an objective measure of the death concept which will permit more precise investigation by providing a more uniform method of measuring the concept. Should such a measure permit a continuous level of scoring, more complex parametric designs in research will be possible.

The previous employment of judge-rated measures has done much to elucidate the essential death-concept features. However, this methodology, which employs ordinal

measures, necessitates simple, non-parametric research designs and fairly limited analysis. It therefore seems necessary to pursue a normative study and to develop a more rigorous measure, a measure based on earlier findings but lending a more standard, consistent operational definition to the death concept. Such a measure would allow more comparable research and could lead to more solid, normative information about death-concept development. This information might, in turn, enhance the manner in which death is explained to children and the manner in which childhood bereavement is supported, and in general serve to facilitate the healthy development of the death concept.

Utilizing such a measure, it should become possible to investigate in a more exacting way the relationship which may exist between those phenomena which have an effect upon the development of the death concept and the actual development of the death concept. Some of those features which have been investigated in previous research are socioeconomic status and death-experience variables. Earlier explorations of the role of these factors have led to conflicting results, which may be due to the disparities in the definitions of the death concept and the limitations imposed by non-parametric design.

Thus, the second purpose of the presented research is to employ the new death-concept measure in an investigation

of hypotheses which have produced contradictory results in the past.

One of the aforementioned variables which may influence the development of the death concept and which this study seeks to investigate is socioeconomic status. Because the role of socioeconomic status has been neither consistently nor clearly outlined, many researchers have either controlled or matched subjects on this variable (Koocher, 1972; Hansen, 1973; Bolduc, 1972). Two studies specifically examined the effect of socioeconomic level upon the death concept with conflicting results (Peck, 1966; and Tallmer, Formanek, and Tallmer, 1974). Furthermore, it has widely been found that socioeconomic status (which subsumes childrearing practices, cultural involvement, etc.) influences cognitive development, generally (Havinghurst, 1976). Consequently, the first hypothesis-testing objective of this study is to utilize the experimental death-concept measure to investigate the effect of socioeconomic level upon the development of the death concept. The hypothesis is that socioeconomic level will differentially influence children's death concepts. Information in this area may serve to provide an indication of those experiences related to SES which may enhance or retard death-concept development.

The second hypothesis-testing objective of this study is to contribute to an understanding of which and how relevant life experiences affect the development of the death concept. An understanding of these experiences would be

essential to preventing impairment and facilitating enhancement of the concept where desirable. The theory of Piaget would suggest that death experience will enhance the death concept but only at certain critical points where the concept is developmentally emergent. The theory and research of the psychoanalysts would predict that separation would impair the death concept, as it produces regression in most other areas. Research to date (Portz, 1965; Peck, 1966; Bolduc, 1972; and Tallmer et al, 1974) has arrived at conflicting results.

Thus the present research seeks to assess the roles of death experience and separation in the development of the death concept, utilizing the experimental measure of the death concept. Our study thus has two additional hypotheses: that death experience will improve the death concept, and that separation will impair the death concept.

In summary, the proposed study has two main objectives: to develop an objective, interval-level measurement of the death concept which has comparable validity to earlier measures, and to investigate the hypothesis that socioeconomic status, death experience, and separation each have an influence on the development of the death concept.

The rationale for hypothesis one lies in the empirical fact that socioeconomic status has generally been found to influence cognitive development.

Hypothesis 1: Socioeconomic status will differentially influence the death concept.

The basis for the second hypothesis rests in the Freudian theory that holds that death concept understanding is a part of the mourning process. Piagetian theory also suggests that experience may enhance concept development.

Hypothesis 2: Death-related experience will improve the death concept of children compared to a control group with no concrete death experience.

The rationale for hypothesis three is based on the empirical findings of classic psychoanalytic research (Spitz, 1945; Bowlby, 1960; Freud & Burlingham, 1944) which have consistently held that separation experience impairs development in almost all areas.

Hypothesis 3: Separation will impair the death concept in children compared to a control group with no concrete death experience.

Method

Participants

The children who participated in this study were drawn from three public schools from the Carleton School Board in suburban Ottawa, Ontario, Canada.[1] Letters of informed consent were sent to the parents of all children enrolled in each school in grades K-5. There was a 73% positive response from all parents solicited. Four of the children who did have permission to participate were for various reasons dropped from the study: two were eliminated because each had had a parent die within the past year, while a third was suffering a terminal illness; the fourth was a five-year-old who did not wish to participate.

The remaining sample consisted of 609 children, 335 male and 274 female. The children had a mean socioeconomic level of 5.70 (S.D. = .91) based upon the standard measure of occupational categories employed by the U.S. National Institute of Mental Health. This measure has a range of one to nine, and the children's socioeconomic statuses were fairly broad in their representation (see Table I). The mean I.Q., as measured by the Otis Lennon Mental Ability Test, was 111 (S.D. = 21.8) with a range of 74 to 150. The religious affiliations of the sample children were also heterogeneous (see Appendix H).

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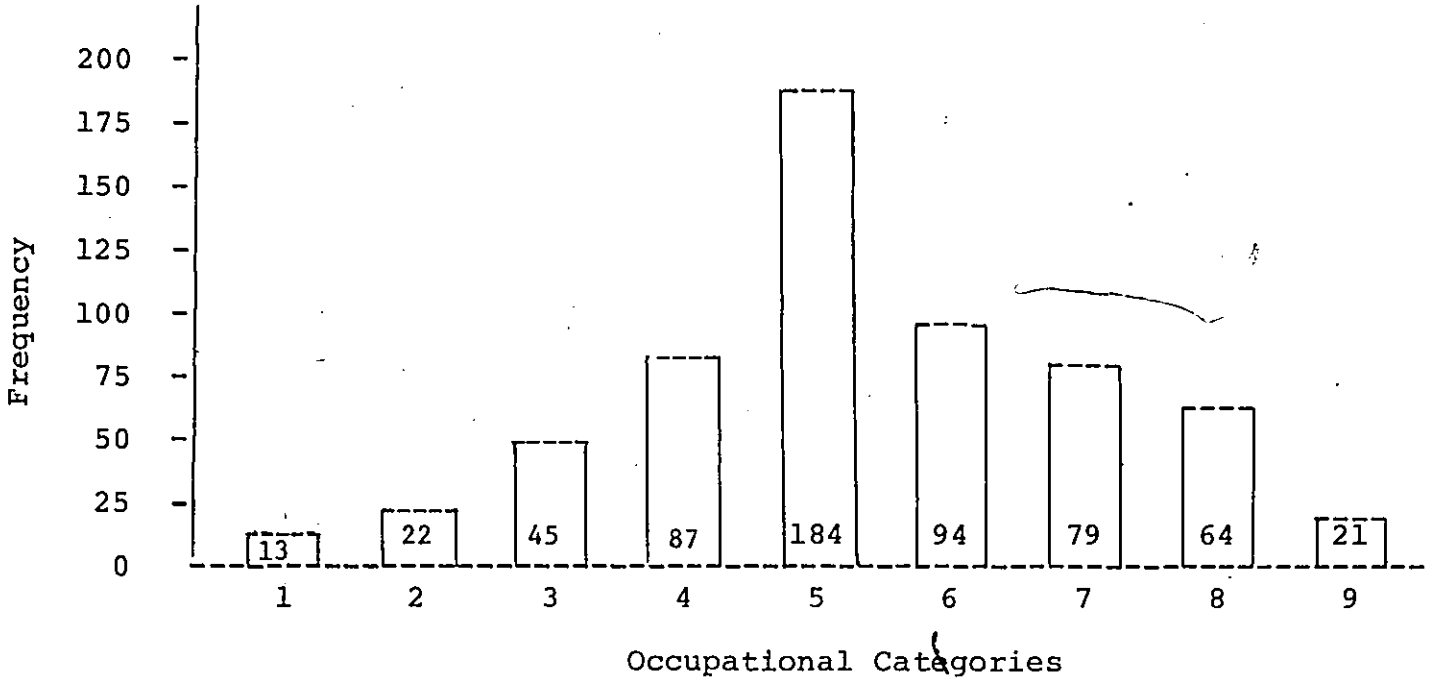
[1]The participating schools were Briargreen, Fisher Heights, and Riverview Elementary Schools.

TABLE 1

Distribution of SES Scores



Measures

The measures employed were a parents' questionnaire, the standard measure of occupational categories employed by the U.S. National Institute of Mental Health, the Otis Lennon Mental Ability Test, and the experimental death questionnaire.

The parents' questionnaire (see Appendix B) consisted of demographic items asking for children's birth dates, parents' occupations, marital status, and religious preference. The purpose of the questionnaire was to ensure the heterogeneity of the sample and to provide a basis for grouping children along the research variables of interest: SES, Separation, and Death Experience.

The standard measure of occupational categories was used as the sole measure of socioeconomic status. This measure is employed by the U.S. National Institute of Mental Health and has been widely used in epidimiological studies.

The standard measure of occupational categories is an ordinal measure with nine well defined levels ranging from a "level one," which includes such occupations as executives in large corporations, etc., to a "level nine," which includes full time students (see Appendix I).

The Otis Lennon Mental Ability Test is a highly standardized group intelligence test, which by means of several forms (Primary I, Elementary I, and Elementary II) yields a comparable I.Q. for children from five to twelve years of age (Burros, 1975). The test-retest reliability on successive forms of the test over a two-year period has yielded a minimum correlation of .80; further, the measure correlates .86 with academic success. The odd-even reliability of the various forms ranges from .79 to .92 (Otis and Lennon, 1969). The intended purpose of utilizing this test in the present study was to provide a measure of general intelligence and mental age.

The experimental death questionnaire (see Appendix A) was comprised of 24 items. The items were constructed by the writer and based on eight concept features which have been identified in previous research as essential components of the sequential development of the death concept:[1]

1. awareness of the word (Anthony, 1940),
2. animistic thinking (Safier, 1964; Portz, 1965; Melear, 1973; Koocher, 1972),
3. permanence (Anthony, 1940; Nagy, 1947; Portz, 1965; Melear, 1973; Koocher, 1972),
4. reversibility (Anthony, 1940; Nagy, 1947; Portz, 1965; Melear, 1973; Koocher, 1972),

(cont'd)

[1]The advice of several recognized experts on children's death-concept development was sought during item construction, but such advice was forthcoming only from Dr. Gerald Koocher, to whom the author is indebted.

5. inevitability (Anthony, 1940; Portz, 1965; Childers & Wimmer, 1971; Melear, 1973, Koocher, 1972),

6. degree of corporeal cessation (Anthony, 1940; Nagy, 1947; Portz, 1965; Melear, 1973; Koocher, 1972),

7. universality (Anthony, 1940; Portz, 1965; Childers & Wimmer, 1971; Melear, 1973; Koocher, 1972), and

8. causality (Anthony, 1940; Portz, 1965; Melear, 1973; Koocher, 1972.

Item #1 was designed to establish the child's awareness of the word "death." Items #2 through #5 were intended to discover animistic thinking and realistic application of the death concept. The television was selected to asses mechanical animism, because the idiomatic use of "dying" as "mechanical breakdown" seemed less frequently associated with this familiar machine than with most others. Questions #6 and #7 were oriented toward the permanence feature. Belief in reversibility was sought in questions #8 and #9. The word "usually" was inserted in item #8 in order to avoid potential confusion which might result from the child's awareness of the existence of extraordinary medical interventions. Awareness of inevitability was evaluated in items #10 and #11. The degree of corporeal cessation involved in death was the objective of questions #12 to #15. The universality of death was questioned in items #16 to #18. Causal understanding was the aim of #19 to #21. Finally, items #22, 23, and 24 sought to discover the extent to which the child believed that death applied to himself and his own life (Anthony, 1940; Nagy, 1947).

The death questionnaire was individually administered. For the purposes of the present research, each correct answer was initially scored as one, while each incorrect response was scored as zero. Item #1 was credited if the child answered yes. All other items were assessed to be correct if they adhered to the currently accepted adult understanding of the death phenomenon: death is the inevitable, irreversible, permanent, total cessation of corporeal functioning, which occurs universally in all organic matter and is variably caused by chance. Scoring was based on yes/no response, not reasons given. The purpose of the death questionnaire was to provide a quantifiable, objective measure and an operational definition of the death concept.

The actual experimental death questionnaire was supplemented with five extra questions (see Appendix C). The first three focused on the child's experiences with death. The last two supplemental questions were filler items designed to redirect the child's attention away from the topic of death, allowing the interview to end on a fairly low point of potential affective arousal.

Death experiences were separated into three groups. The first group of respondents, labeled "death experience," consisted of those children who had experienced the death of a very familiar person, one whom the child had seen at least once a week prior to death. A second group of respondents,

designated as "no death experience," included children who had never known anyone who died, never had a pet die, nor had ever seen anyone who was dead. The third group constituted the remainder of the children who had some death-related experiences and therefore more exposure than the "no death experience" group, but less direct exposure than the "death experience" group.

A child was considered to have "separation experience" if his parents reported their marital status as separated or divorced. The child must also have reported no significant death experience.

Procedure

Letters of informed consent, designed to maximize cooperation (modeled after Koocher, 1973), and the demographic questionnaire were sent to the parents of all children in kindergarten through fifth grade in each of the three schools. The letters were distributed to the children by their classroom teacher. Twenty-three parents phoned the experimenter for further information, at which time the exact nature of the research was explained. Of these, 21 agreed to permit their child's participation. A random selection of ten parents who had refused permission were telephoned by the experimenter to ascertain their reasons for not participating. Seven of these stated that their child did not wish to participate. Two indicated that they did not feel that research was an appropriate school activity, and one replied that the permission form had been lost.

Three weeks following receipt of the informed consent and demographic questionnaire, the Otis Lennon Mental Ability Test was administered to all of the 609 participating children in their own classroom setting. The examiners employed were all doctoral students in psychology with extensive previous experience in test administration. All testing was carried out in accordance with the standardized administration instructions, which accompany the Otis Lennon Mental Ability Test.

The experimental death questionnaire and supplemental items were administered to all participants approximately two weeks following the intelligence testing. The interviews were carried out by three female examiners, all of whom were doctoral students in psychology with extensive experience in individual test administration with children. None of the examiners was aware of the results of previous measures.

All children from a given class were tested sequentially during a single class session. This was done to avoid giving children the opportunity to discuss their experiences with each other. Each child was further cautioned at the end of the testing not to discuss the interview with his classmates until recess, or lunch (i.e., the next class break).

Each child was interviewed individually outside his classroom. A uniform set of instructions was given (Appendix E). Each question was asked verbatim without elaboration,

except for the probe, "Can you tell me more about it?" When children were unsure of an answer, they were encouraged to guess. Participants who declined to guess were not pressed further, and their answer was recorded as incorrect. If a child appeared upset by the questioning, each examiner was prepared to spend extra time to deal with this, but the problem did not arise.

Once all of the data from the children were collected, children were selected for the hypotheses-testing portion of the study. Data of the remaining children were used in the sample for the measure-assessment phase of the study. The purpose of this selection procedure was twofold: it assured that all samples came from the same population and, secondly, allowed validation of the measure, since it was developed on one sample and applied as a dependent variable with the other two samples.

Results

Data analysis was carried out, firstly to assess the experimental death questionnaire, and secondly to assess responses in light of the research hypotheses. Data from children who were selected into the hypothesis-testing sample were not included in the analysis of the questionnaire.

Measurement of the Death Concept

The data in this portion of the analysis were from 384 children: 173 female and 211 male.

In order to assess the construct validity of the experimental death-concept measure, a common factor analysis was carried out on all 24 items. These items had been scored one for a correct response and zero for an incorrect response; there were no missing data. An alpha technique was used with a selection criterion of an eigenvalue equal to or greater than one. A varimax rotation was then carried out, resulting in seven factors. Table 2 illustrates the communalities, eigenvalues, and percent of variance for the rotated factors, and Table 3 presents the rotated factor matrix. The obtained communalities indicate the criterion reliability of each of the items. The unrotated factor matrix and the communalities, eigenvalues, and percent of variance for the unrotated factors are given in Appendices F and G, respectively.

TABLE 2

Communalities, Eigenvalues, and Percent of Variance
for Varimax Rotated Factors

VARIABLE	EST COMMUNALITY	FACTOR	EIGENVALUE	% OF VAR	CUM %
VAR01	0.31553	1	9.39524	39.1	39.1
VAR02	0.33126	2	4.65143	19.4	58.5
VAR03	0.27095	3	3.04864	12.7	71.2
VAR04	0.61652	4	2.22450	9.3	80.5
VAR05	0.43664	5	1.80307	7.5	88.0
VAR06	0.41142	6	1.56713	6.5	94.5
VAR07	0.25552	7	1.31146	5.5	100.0
VAR08	0.33907				
VAR09	0.22067				
VAR10	0.20966				
VAR11	0.33926				
VAR12	0.42345				
VAR13	0.27070				
VAR14	0.33775				
VAR15	0.77302				
VAR16	0.36916				
VAR17	0.51366				
VAR18	0.26378				
VAR19	0.34906				
VAR20	0.17853				
VAR21	0.27374				
VAR22	0.31507				
VAR23	0.40076				
VAR24	0.50014				

TABLE 3

Varimax Rotated Factor Matrix for
Experimental Death Concept Measure

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7
VAR01	-0.29525	0.10416	0.30319	-0.15778	0.11347	-0.16649	0.24513
VAR02	-0.04655	0.01412	0.09177	-0.03847	-0.01775	0.56330	0.04770
VAR03	-0.09742	0.05542	0.01749	0.11043	-0.04855	0.49007	-0.05292
VAR04	0.07363	-0.00367	0.06306	-0.05017	0.72888	-0.06654	0.26422
VAR05	0.18264	0.09194	-0.00180	0.08825	0.61110	-0.01989	-0.11289
VAR06	0.02280	0.02774	0.11547	0.53686	0.08395	0.22262	0.22844
VAR07	-0.12754	0.02232	0.05648	0.14959	0.04228	0.03328	0.45861
VAR08	0.09289	0.26701	-0.04826	0.47642	0.06402	-0.10324	0.12355
VAR09	0.02061	0.11883	0.07302	0.44334	-0.04504	0.01221	-0.04371
VAR10	0.42981	0.04555	0.05463	0.11895	0.04497	0.04552	-0.04403
VAR11	0.55132	0.07661	0.04078	0.02157	0.03531	-0.05919	0.15016
VAR12	0.10536	0.61269	0.06505	0.04578	0.01484	0.10304	-0.02134
VAR13	0.11849	0.35915	0.30948	-0.06276	0.08348	0.08638	0.11620
VAR14	-0.00071	0.54871	0.04224	0.12242	0.08322	-0.05525	-0.09900
VAR15	0.02528	0.86012	-0.03815	0.11204	-0.06609	0.02374	0.11924
VAR16	0.32756	0.05283	0.48844	-0.05241	0.09210	0.03160	0.09054
VAR17	0.26233	0.10866	0.63933	-0.00208	0.04088	-0.03630	0.14615
VAR18	0.36730	-0.04369	-0.06700	0.01466	0.04179	-0.05795	0.34226
VAR19	0.08532	0.03358	0.49708	0.27843	-0.01535	0.11428	-0.05355
VAR20	-0.00638	-0.04109	0.32542	0.16388	-0.06565	0.14043	-0.14120
VAR21	0.46401	0.05854	0.11431	0.00356	-0.03156	-0.17737	0.09736
VAR22	0.35364	-0.03715	0.24904	-0.08179	0.22743	-0.12371	0.22985
VAR23	0.51888	0.00695	0.25003	0.00264	0.20237	-0.02114	0.16604
VAR24	0.59984	0.06264	0.32334	0.04286	0.14728	-0.01649	-0.08981

For the purpose of interpretation, a factor loading of .35 was used as a cut-off value, in order to avoid double loadings. Factor one contains items #10, 11, 18, 21, 22, 23, and 24. Based on the contents of these items, this factor appears to measure the degree to which a child sees death as an inevitable event applying to all people, thus it is labeled "universal-inevitability." Items #12, 13, 14, and 15 weigh on factor two and seem to tap the death-concept feature which involves the "degree of cessation of corporeal activity." Factor three includes items #16, 17, and 19, which share the elements of "causality." Items #6, 8, and 9 in factor four are concerned with the "reversibility" of death. Factor five contains items #4 and 5, which include the realistic objects of the death phenomenon, and is thus labeled "non-animism." Items #2 and 3 tap "animism" in factor six. Factor seven contains item #7, which is concerned with the "permanence" of death. Items #1 and 20 did not load at the criterion magnitutde on any of the seven factors.

For the purpose of subsequent analysis, a scoring system using the factor analytic data was employed. Based on Cattell (1957), each item was given the value of the square of its highest factor loading (Rummell, 1970). For example, a correct response to item #2 was credited with a value of .32, item #3 with .34, etc., while an incorrect

response received zero credit. Items #1 and 20 were eliminated because they did not meet the cut-off value for factor loading previously described. The correct item values earned by each child were then summed across factors, yielding a death-concept score. Table 4 indicates the correlation matrix between the overall Death Concept Score (DCS) and each of the factor-associated sums of weighted items.

In order to assess criterion validity, correlations were sought for the DCS and for the factor-associated item groupings with IQ, MA, and CA. Table 5 illustrates the obtained correlation matrix. A Point Biserial Correlation between DCS, the factor-associated items, and sex was not significant ($p < .10$).

A further assessment of criterion validity was sought by evaluating the relationship of the new measure to the previously employed categorizations (Safier, 1964; Portz, 1965; Childers & Wimmer, 1971; Melear, 1973). These categorizations were summarized and integrated by the writer into four levels as presented on page 15. Children in the present study were grouped into these four categories, based on their patterns of response on the death questionnaire. These groupings were then compared with the DCS and weighted factor scores using the Spearman Rank Correlation. The relationship between the DCS and weighted factor scores and grouping technique is illustrated in Table 6.

TABLE 4

Pearson Correlation Matrix for DCS
and Weighted Items Summed by
Factor Association (N = 384)

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	DCS
FACTOR1	1.0000	.1257*	0.4295**	0.1353*	-0.2499**	-0.1090*	0.1934**	0.6387**
FACTOR2		1.0000	0.1344*	0.2649**	0.0363	0.0580	-0.0826+	0.6618**
FACTOR3			1.0000	0.1677**	0.1395*	0.0616	0.1457*	0.6470**
FACTOR4				1.0000	0.0865+	0.0932+	0.2084**	0.5067**
FACTOR5					1.0000	-0.0714	0.0867+	0.2726**
FACTOR6						1.0000	0.0036	0.2126**
FACTOR7							1.0000	0.3358**
DCS								1.0000

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

TABLE 5

Pearson Correlations of MA, CA, IQ with DCS, and Weighted Items Summed by Factor Association (N = 384)

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	DCS
MA	0.4183**	0.0651	0.4589**	0.0356	0.0933+	-0.0157	0.0833+	0.3688**
CA	0.4126**	0.0378	0.5385**	0.0414	0.1070*	-0.0711	0.0810+	0.3724**
IQ	0.1932**	0.0627	0.1324*	0.0373	0.0334	0.0582	0.0205	0.1727**

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

TABLE 6

Spearman Rank Correlation of Judge Based Categories with DCS and Weighted Items Summed by Factor Association (N = 384)

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	DCS
CATEGORIES	0.2383**	0.4761**	0.2574**	0.5863**	0.1554**	0.4892**	0.1740**	0.7137**

** $p < .001$

For the purpose of describing the developmental course of the death concept as measured by the death-concept questionnaire, Table 7 shows the percentage of correct responses to each item of the questionnaire and the mean DCS by mental ages. Table 8 illustrates the percentage of correct responses to each item and the mean DCS (sum of correct weighted items) by chronological ages. Tables 9 and 10 show the means and standard deviations of the sum of items grouped according to their factor associations by MA and CA respectively.

In summary, a factor analysis of the experimental death questionnaire produced seven orthogonal factors which were labeled. A death-concept score was devised based on the sum of squared factor weights for correct responses. It was shown that this DCS correlated significantly with IQ, though shared variance was minimal, with MA, with CA, and with the categorization technique used in previous research. The DCS did not show a significant relationship to sex. Finally, normative data were presented to describe the developmental progression of children on the items, death-concept score, and factors of the experimental death-concept questionnaire.

SES, Experience, and Death-Concept Development

In order to test the first hypothesis, that socioeconomic level affects the development of the death concept, 90 children with no death-related experience were

TABLE 7

Percent Correct Item Response & Mean DCS by MA Item

MA GROUP	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DCS X	DCS S.D.
5-0 to 5-11	5	20	80	80	100	80	80	60	80	60	40	20	60	40	100	100	20	20	60	60	60	60	100	40	40	4.23	1.019
6-0 to 6-11	30	33	83	77	90	100	67	50	77	73	77	60	83	83	87	93	17	33	70	63	73	63	73	60	63	4.64	.973
7-0 to 7-11	58	52	85	88	98	98	85	47	79	88	79	83	79	83	88	81	24	52	90	62	86	81	85	74	86	5.046	.938
8-0 to 8-11	48	71	94	77	100	100	94	67	81	73	73	83	88	90	85	83	48	79	92	67	81	90	94	79	91	5.396	.666
9-0 to 9-11	46	87	89	76	100	100	87	70	91	87	85	94	87	94	96	91	72	96	91	80	83	94	100	96	98	5.80	.634
10-0 to 10-11	44	93	80	82	100	100	89	68	93	86	93	91	93	98	96	98	68	98	93	82	77	98	100	89	100	5.877	.405
11-0 to 11-11	49	100	80	84	100	100	92	69	80	80	84	90	74	96	86	82	76	98	98	92	86	94	98	98	98	5.659	.740
12-0 to 12-11	48	94	92	81	98	98	88	69	83	83	86	94	79	100	90	75	85	98	100	79	90	98	98	96	98	5.681	.801
13-0 to 13-11	25	100	92	64	100	100	76	68	80	84	100	96	96	100	96	100	84	96	92	92	92	96	100	96	96	5.917	.492
14-0 to 14-11	12	92	92	83	100	100	75	67	67	67	100	100	92	100	100	92	92	100	92	83	83	100	100	100	100	5.886	.532
15-0 to 15-11	5	100	100	60	100	100	80	60	80	80	80	100	100	100	100	100	100	100	80	80	80	100	100	100	100	5.962	.271

TABLE 8

Percent Correct Item Responses & Mean DCS by CA Item

CA GROUP	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	DCS X	DCS S.D.
5-0 to 5-11	24	35	89	89	96	92	85	39	62	69	62	65	77	69	81	77	19	12	77	62	73	57	81	50	65	4.380	.870
6-0 to 6-11	71	57	87	91	96	99	86	62	80	87	68	73	89	85	90	86	31	58	80	68	89	70	83	69	83	5.111	.970
7-0 to 7-11	59	63	93	71	100	100	78	63	88	76	81	81	78	88	88	90	48	80	88	68	71	95	97	90	88	5.405	.818
8-0 to 8-11	55	89	80	80	100	100	91	67	91	80	93	95	93	95	87	86	58	93	93	82	87	98	98	91	100	5.710	.705
9-0 to 9-11	59	93	88	70	100	100	95	66	86	83	92	93	86	97	95	86	85	98	100	95	85	98	100	100	98	5.860	.564
10-0 to 10-11	78	98	89	80	99	99	81	69	83	83	89	92	83	100	92	92	81	100	92	81	87	97	99	95	99	5.796	.621
11-0 to 11-11	35	94	83	74	100	100	83	60	74	83	86	94	74	100	87	77	86	97	94	77	83	89	98	91	94	5.53	.771

TABLE 9

Mean and Standard Deviation of Weighted Items Summed by Factor Assocaition for M.A. Levels

MA GROUP	N	FACTOR 1 $\bar{X}$	FACTOR 1 SD	FACTOR 2 $\bar{X}$	FACTOR 2 SD	FACTOR 3 $\bar{X}$	FACTOR 3 SD	FACTOR 4 $\bar{X}$	FACTOR 4 SD	FACTOR 5 $\bar{X}$	FACTOR 5 SD	FACTOR 6 $\bar{X}$	FACTOR 6 SD	FACTOR 7 $\bar{X}$	FACTOR 7 SD
5-0 to 5-11	5	.718	.448	1.314	.256	.280	.368	.530	.183	.826	.165	.44	.246	.126	.115
6-0 to 6-11	30	1.035	.472	1.367	.374	.335	.316	.509	.201	.847	.162	.442	.154	.105	.107
7-0 to 7-11	58	1.307	.375	1.264	.504	.425	.314	.594	.190	.884	.118	.472	.163	.098	.106
8-0 to 8-11	48	1.361	.335	1.313	.490	.606	.302	.597	.183	.90	.00	.476	.142	.140	.100
9-0 to 9-11	46	1.496	.148	1.406	.326	.765	.205	.627	.167	.90	.00	.459	.172	.146	.098
10-0 to 10-11	44	1.505	.154	1.481	.245	.769	.180	.635	.134	.90	.00	.443	.172	.143	.099
11-0 to 11-11	49	1.494	.161	1.258	.460	.812	.148	.601	.197	.90	.00	.448	.185	.146	.098
12-0 to 12-11	48	1.522	.153	1.247	.473	.804	.162	.604	.158	.881	.130	.479	.154	.144	.098
13-0 to 13-11	25	1.533	.155	1.513	.093	.825	.157	.564	.213	.90	.00	.439	.171	.143	.100
14-0 to 14-11	12	1.578	.040	1.447	.230	.838	.112	.497	.294	.90	.00	.484	.120	.140	.103
15-0 to 15-11	5	1.524	.148	1.54	.00	.85	.112	.568	.214	.90	.00	.454	.131	.126	.115

TABLE 10

Mean and Standard Deviation of Weighted Items Summed by Factor Assocaition for C.A. Levels

CA GROUP	N	FACTOR 1 $\bar{X}$	FACTOR 1 SD	FACTOR 2 $\bar{X}$	FACTOR 2 SD	FACTOR 3 $\bar{X}$	FACTOR 3 SD	FACTOR 4 $\bar{X}$	FACTOR 4 SD	FACTOR 5 $\bar{X}$	FACTOR 5 SD	FACTOR 6 $\bar{X}$	FACTOR 6 SD	FACTOR 7 $\bar{X}$	FACTOR 7 SD
5-0 to 5-11	24	1.009	.517	1.186	.534	.247	.234	.518	.224	.851	.142	.487	.142	.081	.104
6-0 to 6-11	71	1.194	.439	1.344	.470	.480	.329	.60	.169	.872	.137	.490	.142	.130	.103
7-0 to 7-11	59	1.397	.384	1.332	.384	.610	.298	.574	.211	.90	.00	.460	.160	.132	.102
8-0 to 8-11	55	1.519	.151	1.360	.420	.724	.242	.625	.141	.90	.00	.440	.173	.141	.099
9-0 to 9-11	59	1.544	.110	1.37	.407	.835	.138	.632	.143	.90	.00	.440	.173	.139	.100
10-0 to 10-11	78	1.509	.152	1.398	.306	.806	.149	.584	.208	.888	.102	.465	.166	.145	.098
11-0 to 11-11	35	1.467	.222	1.241	.465	.797	.184	.569	.219	.90	.00	.435	.178	.126	.104

randomly selected from the total sample. Three chronological age groups were formed: 5-0 to 7-6, 7-7 to 9-6, 9-7 to 12-0, with 30 children at each level. Three socioeconomic levels were differentiated on the basis of grouping the parents' score on the standard measure of occupational categories into high, medium, and low (high = 1, 2, and 3; medium = 4, 5, and 6; low = 7, 8, and 9). Each socioeconomic level included 10 children from each age group. The participants were therefore randomly selected from the larger sample groups of children of the same age, experience, and ISP rating.

The organization of data led to a two-way analysis of variance design with three levels of each independent variable: chronological age and SES group. A two-way F analysis of variance was carried out on the death-concept scores. The resulting values, as seen in Table 11, showed a significant main effect for chronological age only ($F(2,81) = 23.797$, $p < .001$.) There was no significant effect for socio-economic level, nor was there a significant interaction between SES and CA. The computed power of this contrast is .25. A post hoc analysis of the chronological age main effect with the Scheffe Test showed significant differences ($p < .05$) between the youngest age group ($\bar{X} = 4.28$, $SD = .939$) and each of the older age groups. The difference between the middle ($\bar{X} = 5.41$, $SD = .602$) and oldest ($\bar{X} = 5.66$, $SD = .679$) age groups was not significant. Further analysis of the SES groups by scores on factor associated item groupings were also non-significant.

TABLE 11

Analysis of Variance Table of DCS by Socio-economic Level and Chronological Age

Source	df	SS	MS	F
SES	2	.7284	.3642	.5314
Age	2	32.6215	16.3107	23.7967**
SES/AGE	4	.3463	8.6563	.1263
Error	81	55.5191	.6854	

**p < .001

For the purpose of assessing the second and third hypotheses concerning the role of experiences upon the development of the death concept, 135 children were selected: 45 from each chronological age group (5-0 to 7-6, 7-7 to 9-6, 9-7 to 12-0). Fifteen children in each age group were from each of the following experience groups, determined by the supplemental questions: death-related experience, separation experience, and no concrete death-related or separation experience. Death experience was defined as a child's recollected exposure to the death of a very familiar person whom the child had seen at least weekly prior to the death. Separation experience included children whose parents were either separated or divorced. (The sample did not include any children who were separated from both parents.) The no death related or separation experience category served as a control group and contained children from intact families who had never known anyone who had died, had never had a pet die, nor had ever seen anyone who was dead.

This selection of children generated a two-way analysis of variance design with three levels of each independent variable; chronological age and experience. A two-way F analysis of variance was carried out on the death concept scores. Experience levels produced a significant main effect, $F(2,126 = 4.34$, $p < .05$, as did chronological age; $F(2,126) = 9.47$, $p < .001$. This can be seen in Table 12. There was no significant interaction.

Table 12

Analysis of Variance Table of DCS by Experience and Chronological Age

Source	df	SS	MS	F
Experience	2	5.7357	2.8678	4.343*
Age	2	12.5004	6.2502	9.4654**
Experience/Age	4	3.1584	.7896	1.1958
Error	126	83.2006	.6603	

* p < .05
**p < .001

A post hoc analysis of the chronological age main effect with the Scheffe Test shows the youngest group ($\bar{X}$ = 4.95, SD = .982) differing from each of the two older groups ($p < .05$). The middle ($\bar{X} = 5.6$, SD = .681) and oldest ($\bar{X} = 5.58$, SD = .729) groups did not show significant differences. A Dunnet test was used to clarify the main effect of experience. Both the death-related experience group ($\bar{X} = 5.6$, SD = .749) and the separation experience group ($\bar{X} = 5.43$, SD = .748) had significantly ($p < .05$) better death concept scores than the no experience control group ($\bar{X} = 5.1$, SD = .895).

A subsequent two-way analysis of variance of the death-related experience groups by each of the first four-factor associated item groupings was done. This showed a significant experiential effect on only that group of items associated with factor one, universal inevitability. The obtained result, $F(2,126) = 9.24$, $p < .001$, is illustrated in Table 13. A post hoc analysis with the Dunnet test showed both the death experience group ($\bar{X} = 1.44$, SD = .22) and the separation experience group ($\bar{X} = 1.44$, SD = .21) to have significantly ($p < .05$) better death concept scores on factor items than the no experience control group ($\bar{X} = 1.24$, SD = .38).

In summary, the role of socioeconomic level was explored with chronological age in an analysis of variance of death-concept scores. The analysis showed no significant effect for socioeconomic levels. Chronological age was significant such that the youngest children differed significantly from the two older groups of children. The influence

of death-related experience and separation experience was contrasted with no experience in an analysis of variance of death-concept scores. A similar analysis of their scores associated with factors one, two, three, and four was also done, since these factors accounted for most of the identified variance. Groups with death-related and separation experience had significantly better death-concept scores and scores on factor one than their counterparts with no such experience.

Table 13

Analysis of Variance Of Weighted Items Summed according to Association with Factor 1 Experience and Chronological Age

Source	df	SS	MS	F
Experience	2	1.133	0.566	9.264**
Age	2	2.453	1.226	20.063**
Experience/Age	4	0.545	0.136	2.231
Error	126	7.641	0.061	

**p < .001

Discussion

Since the analysis of the findings in this research was carried out in two parts, it is reasonable to preserve this distinction in the discussion for the sake of clarity. The first section deals with the construction of the death-concept measure. The subsequent section explores the actual hypotheses testing of the research. A third section will evaluate the present research and discuss its implications for future inquiry.

Measurement of the Death Concept

The initial objective of the study was to develop a death-concept measure which incorporated the significant concept features, identified in earlier research. It was also hoped that such a measure would be sufficiently quantifiable to allow parametric analysis. In order to meet this objective, two essential steps were necessary: the preliminary analysis of the validity of the death-concept measure and the development of a continuous level of measurement in a scoring system. For the purpose of establishing validity, two types were initially sought: construct validity and criterion-related validity.

A common factor analysis technique was used to assess the construct validity of the experimental measure. Seven orthogonal factors emerged, the contents of which correspond

to the significant death-concept features which have been identified in earlier research.

Factor one contained items which focused on the universality and inevitability features of the death concept. These two features had been found important in several earlier studies (Safier, 1964; Portz, 1965; Melear, 1973; Childers & Wimmer, 1971). Logically, the fact that the two features occurred together was not surprising, since the two ideas are very tightly interwoven. If everyone dies, it must be inevitable.

The second factor dealt with the degree of cessation of corporeal activity. This concept element was first noted by Anthony's (1940) work in the 1940's and has been a fairly consistent finding in later research (Portz, 1965; Melear, 1973; Hansen, 1973).

The items on factor three involve the notion of causality. Children's belief that death is imposed by an external force changes to an awareness of death as a natural consequence of organic life only as they approach the full conceptual understanding (Anthony, 1940; Safier, 1965; Portz, 1965; Melear, 1973; Koocher, 1972).

The fourth factor tapped the belief in the reversibility of death, which has also been repeatedly found in other investigations (Anthony, 1940; Safier, 1964; Portz, 1965; Melear, 1973; Koocher, 1972; Hansen, 1973).

The items on factor five have been labeled non-animism. Piaget (1967), in his discussion of animistic

thinking, viewed such ideas as the excessive attribution of life qualities. Thus, the young child holds both appropriate and inappropriate beliefs about what dies. This factor appeared to capture the early, appropriate awareness of what dies. These non-animism items, more than any others, seemed to reflect the child's awareness of the existence of the death phenomenon (Anthony, 1940).

Factor six contained items which evaluated the inappropriate application of the death phenomenon to inorganic objects. Based upon Piagetian theory, researchers of the death concept have labeled this feature "animism" (Anthony, 1940; Safier, 1964; Portz, 1965; Melear, 1973; Koocher, 1972; Hansen, 1973).

The awareness of the permanence of death was questioned by factor seven. The influence of this concept feature has been observed by Portz (1965), Melear (1973), Koocher (1972), and Hansen (1973).

The experimental death-concept measure adhered to and supported the construct which has emerged from earlier research. This construct holds that the death concept contains specific core features which contribute to its development (Anthony, 1940; Safier, 1964; Portz, 1965; Melear, 1973; Koocher, 1972; Hansen, 1973). The death-concept measure identified and measured the central elements of the death concept within the framework of the present empirical understanding of the development of the death concept. It was

limited to the extent that it does not contain other more exploratory elements beyond the conventional and previously demonstrated. Therefore, there may be other equally or more important elements in the death concept which remain outside the scope of the present instrument.

In order to develop a scoring system which would be of a continuous level of measurement, items were assigned weights reflecting the amount of variance each item contributed to the measure. This resulted in the elimination of two items and an overall death-concept score (DCS) of an interval level of measurement. This further allowed for the development of normative values for each factor, permitting the comparison of children on each respective factor.

The criteria against which a measure of the death concept can be evaluated should necessarily be convergent rather than absolute in nature, because there is no clear, concrete manifestation of a "real" death concept. Thus, a valid measure of the death concept should manifest at least the same characteristics found in other measures of the death concept. Based on the findings of previous studies, a valid measure of the death concept should correlate moderately with both mental and chronological age. Furthermore, because judges in earlier research have in general found a progression in children's understanding of the death concept, a valid measure of the death concept should also correlate with this well characterized progression.

Moderate but significant relationships were found between the death concept score and measures of mental and chronological age. These relationships are of similar magnitude to those found in earlier research (Peck, 1966; Childers and Wimmer, 1971). A low but significant relationship was found between the DCS and IQ. These relationships indicate that, while the death concept can well be considered to have qualities which are shared with general conceptual development and life experiences in the broad sense, it may retain some unique features of its own within the framework of conceptual development.

The relationship of each of the factors to IQ, MA, and CA presents a most interesting picture. The factors which are concerned with universal inevitability, causality, non-animism, and permanence correlate with MA and CA. Those factors which tap the degree of corporeal cessation, reversibility, and animism do not correlate with either MA, CA, or IQ. These results suggest that the death concept is indeed a complex one. The various features of the concept appear to be influenced by different factors. This finding alone suggests that this method of measuring the death concept has a nature which merits particular inquiry both into the characteristics and interrelationships of its component elements.

The leveling-off and slight decrease in factors two, four, six and DCS at CA 10 and 11 need to be discussed. This may account in part for the fact that the above-

mentioned factors two, four, and six did not correlate with IQ, MA, or CA. Two earlier researchers, Melear (1973) and Childers and Wimmer (1971), observed similarly that some children, as old as eleven, displayed unsureness about bodily cessation (factor 2) and irreversability (factor 4), specifically. It is difficult within the present study to clearly assess the significance of the observed decrease in the mean scores of ten and eleven year olds. Tables 7, 8, 9, and 10 suggest that variance also increases at these ages. These observations could be partially explained by the saltatory curve so common in developmental variables. The influence of other important variables such as experience, affective development, or the like may also have some effect. It remains for future research to clarify and explain these curious results.

The correlation between the DCS, each factor, and the four categories of concept (used in early research which employed judges) was sufficiently high to indicate significant similarity between the two methods of inquiry. This relationship could be expected in view of the fact that the content of the death-concept measure was based upon the concept elements which the judges in earlier research had identified. The fact that the relationship was not higher may be viewed as indicative of differences in the level of refinement of the two measurement techniques. The DCS and its factors employ an interval level of measurement. Judge-

rated categories are essentially ordinal measures, and therefore are necessarily more subjective, and prone to error, in their dimensions. Furthermore, since those responses upon which judges do not agree can not be clearly evaluated, they are often excluded. This is not the case in an objective measure.

Specific effort to assess the reliability of the DCS data was not made in the present study. There are indications of internal reliability from the factor analysis itself. A broader range of items, sampling each concept variable, would improve the possibility of demonstrating this, however. Furthermore, the emergence of the same factors in the hypothesis-testing sample as in the measure development sample attested to some stability in the measurement characteristics of the death-concept measure. Better evidence of reliability is desirable, however, and should be one of the aims of future research.

While the previous research has not focused attention upon the influence of gender upon the death concept, it has often been a controlled variable (Safier, 1964; Portz, 1965; Hansen, 1973; Peck, 1966; and Bolduc, 1972). The present study found no significant relationship between gender and the DCS or any of the concept elements. This result should facilitate participant selection in the future and extend the generalizability of research findings across the sexes.

The measure developed in the present study met the objective of a convergent criterion, logically characteristic of a valid measure of the death concept. The DCS correlated with earlier measures of the death concept and with both MA and CA. The finding of relationships of similar magnitude between MA and CA to the DCS offered a possible resolution to the conflicting results of Childers and Wimmer (1971) and Peck (1966) as to which relationship was stronger. The non-parametric correlations used in these studies are difficult to compare, and the two studies employed different measures of the death concept. Therefore, there is a high probability that these observed differences were due both to variations in the concept elements that were used and to chance.

The practical implications of this new measure are several. First of all, research in the area of death-concept development had become deadlocked in recent years. This was partly due to the inability to investigate the more complex issues because of the absence of a continuous measure of the death concept amenable to parametric analysis. It is hoped that this new measure will make more elaborate investigation possible. A second useful result from this measure is the means for the development of norms, which it provides. Norms can provide a standard reference for those who would need to assume what an average child of, say, eight knows about death. Such norms may be useful to

pediatricians, teachers, counselors, and the like. Another possible use of such a measure with norms is that it can be used to assess the death-concept developmental progress of groups of children with unusual experiences, e.g., earthquake, war, etc., to enhance our understanding of the effects of such experiences.

In summary, the experimental death-concept measure manifested both construct and criterion-related validity. Furthermore, it produced a scoring system which allows for the evaluation of the overall death concept while also giving an indication of performance on each of the core features of the death concept. While the experimental death-concept measure would not yet be appropriate in a clinical or educational setting, it has emerged as a fundamentally sound experimental tool, as was intended. It is hoped that further research will expand and clarify the value of this measure.

SES, Experience, and the Death-Concept Development

The first research hypothesis held that socioeconomic status would differentially influence the development of the death concept. This hypothesis was not accepted, because no significant differences were demonstrated between the death-concept scores of children of low, middle, and high socioeconomic levels. Nor was any difference found on any of the factors of the death-concept measure. This

finding is consistent with the results of Portz (1965) and Peck (1966), which also demonstrated no significant influence from socioeconomic status upon the death concept.

Tallmer, Formanek, and Tallmer (1974) provided the only study to date which showed a differential effect on the death concept of SES as measured by parental occupation and neighbourhood of residence. While many of the details of that study are not available, they did compare urban poor children, most of whom were Black, with middle-class children, most of whom were White. This suggests the possibility of an ethnic difference between the two socioeconomic groups which were compared in that study. Further research is needed to elucidate any possible effect of SES.

The second research hypothesis of the present study was that death-related experience would positively affect the death concept of children compared with a control group of no such experience. This hypothesis was supported by the present investigation. This result is in line with the research findings of Portz (1965) and Bolduc (1972), which indicated that those children who had experienced the death of a family member manifested higher levels of death concept.

Peck's (1966) study found no effects from "death experience" upon the death concept, where death experience referred both to the death of a family member or to lengthy

separation from the family. This divergence from the present findings might be explained by several factors. The "no experience" control group in the present study was devoid of any exposure to concrete death experience, not only family-member death experience. The death experience group in the Peck study included foster children, who traditionally have severe and multiple deprivation experiences which could retard development generally and thereby offset the gains which the truly death-experienced children might display (A. Freud, 1960). Thus, it seems reasonable to suggest that the death-experience group in the Peck study was not characteristic of typical children with simple death-related experience.

Tallmer, Formanek, and Tallmer (1974), in comparing a "death experience" group with a "no death experience" group, found no systematic effect from death experience. Their death-experience group included children whose parents had reported their children to have had "any concrete death experience." This differs from the present study in two significant ways. Firstly, children's reports of their own experiences were the basis of the present groupings. This seems more valid, since it involves a first-hand account rather than a secondary source of reported experience. Secondly, the definition of death-related experience in the present study is more specific and meaningful. It is quite unclear what would be included in "any concrete death experience." Furthermore, based on

informal observation, it would be difficult to find a child over five years old who had never seen a dead bird or other animal, for example on the highway. One must therefore question just what the distinction was in the Tallmers et al study between children with "any concrete death experience" and those with no such experience.

The finding that death experience enhances death-concept development has several theoretical implications. If we assume Piaget's position that experience enhances knowledge at critical times, then it is suggested that almost any age is critical to the emergent understanding of some aspect of the death concept. This is consistent with the present finding, since the death concept in Piagetian terms is a complex concept which is incorporated in the conceptual advances at each cognitive developmental stage.

In psychoanalytic terms, the present finding suggests that the struggle to understand death conceptually is indeed a part of the child's mourning process, as was indicated by A. Freud (1960) and Furman (1964). It further suggests that with appropriate guidance around the concept of death, this stumbling block to successful mourning can be overcome.

The third research hypothesis held that children having separation experience would have impaired death concepts compared to children from intact families, based

upon the earlier findings of Portz (1965). This hypothesis was not only unacceptable, but the opposite was found. This finding is unprecedented. Portz (1965) found that separation impaired death concepts in three- to nine-year-old children, who had experienced lengthy separations from their mothers at an early age. The important and significant difference between this study and the present one lies in the definition of separation. The definition employed here included children whose parents were either separated or divorced, where one of the parents was seen infrequently.

Many researchers (Freud and Burlingham, 1944; Spitz, 1945; Bowlby, 1960, and others) have consistently found that early, lengthy separation from the mother figure has a rather massive negative effect on the entire development of the child. A. Freud (1960) has pointed out that such a separation is usually compounded by a loss of familiar surroundings and a general upheaval of all those conditions which comprise a secure reality for the child. As a result, such separations resemble much less the death of a loved one and much more a personal death in life for the child, since total separation implies that the child loses his investment in the world he knows. This experience is very close to that described for adults near their own death (Kubler-Ross, 1969). Within this context, the finding of Portz (1965) is entirely meaningful, because such a

separation experience as just described, should seriously impair development, including that of the death concept.

The children with separation experience in the present study had no such devastating trauma as the children in the Portz study. They had merely been separated for long periods of time from one parent, for the most part at no earlier than four years of age, while remaining in familiar surroundings. From an experiential point of view, this type of event is truly separation, while the other sort of experience is little different from personal death. An essential difference between the two is the possibility of return from separation in the latter case and the absence of that possibility in death.

The pictures that emerge here are of two quite different kinds of separation experience. The first is a massively traumatic experience, similar to a personal death, which impairs the development of the death concept. The second is an experience which, though probably painful, is far less devastating and more clearly a separation. This latter type of separation appears to enhance the death concept as it was measured in the present study.

Actually, these findings are quite reconcilable if one views the development of the death concept as a differentiating process. Such a process would begin with the young child being unaware of any differences between

separation and death. Portz (1972) and A. Freud (1944) have written that prior to the age of about five to seven, the child equates death and separation cognitively as well as affectively. Anthony (1940), Portz (1972), A. Freud (1944), and many psychoanalytic theorists have emphasized that death is viewed by the child as having the characteristics of separation, e.g., temporary, reversible, and avoidable. It appears that the reverse may also be true, such that separation is felt by the young child to have the same qualities as death. If the young child, in fact, experienced separation as temporary, reversible, and avoidable, it would not be the troublesome experience that it so often is to him. A Freud (1944) and Bowlby (1973) have even observed that children who were accustomed to the daily goings and comings of their fathers were able to accept lengthy separations from their fathers without much apparent distress. This was not true in the case of the father's death. Only as the child matures do the concepts of temporal change become meaningful in experience. What can be postulated here is that, for the young child, the experience of loss is felt as both temporary and permanent at the same time -- that is, undifferentiated. The child will demand that his dead pet wake up at the same time and with equal ardor as he weeps at his permanent, irreversible loss. When mother leaves on a trip, he laments his hopeless abandonment at the same time as he demands her return.

It is entirely consistent, then, that both death-related experience and simple separation experience can serve as concrete facilitative events around which the child may differentiate the two phenomena. Furthermore, it is also understandable that a drastic, pervasive separation, because it is experientially not very different from personal death, may make the differentiation of the two phenomena more difficult. The validation of this proposal awaits further inquiries, but is supported by the present study.

Evaluation, Contribution, Implication of the Research

This section will critically evaluate certain aspects of the presented research which have particular bearing upon future inquiry. An assessment of some important methodological features will be made, and the implications for future research will be outlined.

The sampling procedure which included the decision to extract the children to be used in the hypothesis testing from the normative sample had two obvious effects. Firstly, it assured that the hypothesis-testing sample came from the same population as the normative sample. The second consequence was less positive. Because many of the children with death and separation experiences were extracted, the normative sample was not representative in this respect. Thus, the normative sample contained fewer children with death and and separation experiences than could be expected to occur

naturally. It is hoped that this could be avoided in future normative studies with the death-concept measure.

The Otis Lennon Mental Ability Test was used to measure IQ and MA, and, as such, it served the intended purpose. This instrument, however, provides only a gross indication of cognitive development. It would be desirable for future researchers to attempt to use more specific measures of the various elements of cognitive development. This might contribute to a richer understanding of the relationship of the death concept to the processes of cognitive development.

The death-concept measure that was developed and employed in the presented research remains only an initial attempt in the development of a new measure of the death concept. The questionnaire developed here is still a research tool. It provides an instrument with which future researchers can begin to ask more complex questions about the death concept, which have previously been unanswered partially because of the absence of a parametric measurement technique. However, it must be granted that this DCS measure does very little to extend our knowledge of the nature and the richness of children's thinking about death.

More validation studies are also needed. It is impossible at this point to know whether some of the results yielded by the death-concept measure can be attributed to inherent characteristics of the actual death concept or to

limitations of the instrument itself. A good example of this difficulty is the amount of variability observed in the percent correct responses of the upper age groups shown in Table 8. There appears to be a good deal of decreasing understanding between ten and eleven years of age for the sample children. The significance of this visual impression was not assessed.

If one looks at Table 10, however, where a similar variability can be noted among some of the factors and where standard deviations are provided, one can see that the variability is probably not of significant proportions to greatly jeopardize the validity of the measure. It remains, nevertheless, to be determined whether this variability is a characteristic of the new measure, of the developing concept, or of the sample of this particular study. There may be several explanations. Most obvious are weakness in the measure and/or peculiarities of the sample. One more interesting possibility is that death-concept development may be saltatorial. That is, conceptual understanding may reach a peak at 9 or 10 years, and decrease slightly until a fuller understanding is reached in adolescence. Such a finding would be in line with the thinking of some psychoanalytic theorists (e.g., Wolfstein, 1966; Fleming and Altschul, 1963; and Deutch, 1937), who believe that personal affective integration with the death concept does not occur until

adolescence. Demonstration of the exsitence of a saltatory pattern of death-concept development would require the inclusion of older children and adolescents in a future sample, and the questioning might include the affective dimension of the understanding of the phenomenon of death.

In a global sense, the validity of the new death measure holds, but in specific areas it remains to be established. Additional reliability evidence is also needed. It would greatly enhance the present measure if it could be expanded to include other conceptual variables, since the present questionnaire is primarily a reformulation of well established concept elements.

The techniques used to group children according to their death-related experience were fairly innovative and produced some interesting results. The "death experience" group contained children who recalled the death of a familiar person whom the child had seen more than once a week prior to the demise. This was the first known study to use children's own reports of their experience. Other studies have used parental reports of the child's experience (Portz, 1965; Peck, 1966; and Tallmer, Formanek, & Tallmer, 1974). In one sense the present method seems more valid, since it is a first-hand account of recalled experience rather than being culled from a secondary source. On the other hand, a young child who senses the examiner's interest may fabricate an experience in

an effort to please the adult. Thus, perhaps a more reliable way of obtaining indicators of experience would be a dual approach, combining a child's recollection with parental corroboration.

A further novel feature of the "death experience" grouping was the definition of "death experience." The present definition encompasses a broader range than the death of a primary family member, which was used by Portz (1965) and to some extent by Peck (1966). It is, however, more specific than "any concrete death experience," which was the definition of Tallmer, Formanek, and Tallmer (1974). A qualitative comparison of the degrees of death experiences is needed. Such an investigation would clarify the role of death experiences and improve the meaningful selection of future subjects with death experience.

The method used for selecting children with separation experiences was discussed in some detail earlier. The effect of this technique, however, has raised numerous questions about the developmental effects of separation experience per se, in addition to the role such experience plays in the development of the death concept. The present study suggests that certain types of separation may have some positive effects. Further study of the differential effects of various types of separation experiences seems very much warranted. This study, for example, offers no

data on such important factors as age at initial separation and duration of separation. It is hoped that future investigators will employ a more specific and controlled definition of separation.

A final point should be raised with respect to the nature of the control group. In the present study, this group contained children who did not recall ever having known or seen anyone who had died, nor having had a pet who had died. The use of such a control group has particular merit when one considers the vast array of potentially influential experiences which fall between a death in the child's own family and no concrete death experience of any kind. The nature of such a control group raises some questions, however. There is the possibility that such children may represent an artificial, albeit common, population, impoverished in significant life experiences. It would seem wise, therefore, to compare such "no concrete death experience" children which other children who have some usual experiences with death, apart from actual bereavement. Such a study would clarify whether such control is meaningful. Further, it would give an indication of how such "inexperienced" children differ from the more heterogeneously experienced, non-bereaved population of children.

Summary and Conclusion

The purpose of the present study was twofold. The first goal was to construct an objective, continuous measure of the death concept in children. The second objective was to re-evaluate the roles of death-related experience, separation, and socioeconomic level in the development of the death concept.

In view of the first objective, an experimental death-concept measure was constructed. The responses of 609 children between five and twelve years of age to the experimental death-concept measure and the Otis-Lennon Mental Ability test were investigated. Demographic information was obtained from the parents of the participating children in order to determine the socioeconomic level of functioning.

The experimental death-concept measure was shown to contain seven factors which correspond to the death-concept features found in earlier research. An interval-level scoring system was devised which gives an overall death-concept score as well as indications of performance on each factor. Evidence for the construct and criterion validity was demonstrated, and the first objective was, therefore, accomplished.

The first hypothesis, which held that socioeconomic level would differentially influence the development of the death concept, was not confirmed. This finding is in

agreement with two earlier studies. It is suggested that the single study which found this factor to be significant may have reflected uncontrolled cultural differences. The second hypothesis, that death-concept experience improves the death concept, was supported and in agreement with some previous research findings. The fact that two earlier studies did not find this result is viewed as due to major methodological flaws. The third hypothesis, that separation would impair death concepts, was not proven; on the contrary, an enhancing effect from simple separation was demonstrated. This finding is seen as theoretically consistent with the view that younger children do not differentiate separation from death. Simple separation is shown to enhance the differentiation, while it is speculated that the more pervasive death-like separation, studied in the past, may obscure the distinction between death and separation.

The several methodological advances which were made in the present study were evaluated, and their implications for future inquiry were discussed. Further research is needed to clarify and extend the validity of the death-concept measure. This measure opens the door for more complex and detailed studies of the development of the death concept, with the goal of understanding its governing principles.

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Appendix A

Experimental Death Questionnaire

1. Do you know what death means?
2. Does a T.V. die?
3. Do clouds die?
4. Do animals die?
5. Do people die?
6. Can someone die more than once?
7. Does death last forever?
8. When someone is dead do they usually stay dead?
9. Can dead things be brought back to life?
10. Do some people live forever?
11. Will everybody die?
12. Can dead people think about things?
13. Do dead things ever feel hungry or cold?
14. Can dead people move?
15. Can dead people do anything?
16. Do living things die only when they are killed?
17. Do only old people die?
18. Do all living things die at sometime?
19. Does someone always make things die?
20. Do living things usually die on purpose?
21. Could something living die at any time?
22. Will anyone you know every die?
23. Will anyone in your family ever die?
24. Will you ever die?

Appendix B

Parents Questionnaire

Childs Name: .....

Birthdate: .....

Age: .....

Grade: .....

Sex: .....

Parental Marital Status: .....

Father's Occupation: .....

Mother's Occupation: .....

Religous Preference: .....

Religious Activity: Very Active .....

Moderately Active .....

Not Active .....

Appendix C

Experience Questions:

25. Did you ever know anyone who died? Who? Relationship?
26. Did you ever have a pet die?
27. Did you ever see anyone or anything that was dead? Who or What was dead? Relationship?
28. What church do you attend? (religion)
29. Do you have any brothers or sisters? Number and age of each.

Appendix D

Dear Parent:

Your child has been selected as a potential participant for research being conducted by a doctoral student from the University of Ottawa. Your permission is required for her/him to participate.

The project is concerned with childrens understanding of the difference between animate and inanimate objects. Your child will be asked questions about the differences between things that are living and things that are not. The interviews required would be carried out during school, but will not involve any significant loss of class time.

Your child's participation would be very much appreciated. If you have any further questions please contact Suzanne Derry at 232-4558 between 4:00 and 6:00 pm.

Thank you,

principal,

Please fill out and return to school:

.....

My child may ..... may not ..... participate in the above outlined project.

Child's name ..... Grade .....

.....
Parent's signature

If you have agreed to your child's participation, please fill out the following questionnaire.

Appendix E

Examiner Instructions for Death Questionnaire

Begin:

I'm going to ask you some questions, because I want to know what you think. There is not necessarily a right answer, so if you don't know an answer, tell me what your ideas are about the question. If you do not want to answer, you don't have to.

End:

Thank you very much for helping me; do you have any questions you would like to ask me about what we have done?

APPENDIX F

Unrotated Factor Matrix Using Alpha Factor for Experimental Death Concept Measure

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7
VAR01	0.47557	-0.19013	-0.00901	-0.14962	0.05159	-0.06516	-0.15441
VAR02	-0.02198	0.26357	-0.29743	0.02193	0.30464	-0.20447	0.19660
VAR03	-0.09369	0.36031	-0.19815	0.07174	0.18573	-0.11819	0.19727
VAR04	0.33890	-0.22243	0.13972	0.05653	0.53370	0.37580	-0.06578
VAR05	0.29029	-0.02882	0.15655	-0.00515	0.25598	0.46821	0.20448
VAR06	0.23011	0.38716	-0.03757	0.43170	0.10622	0.03993	-0.09024
VAR07	0.28761	-0.00294	0.06414	0.26983	0.16960	-0.18527	-0.18114
VAR08	0.24191	0.30141	0.32447	0.25137	-0.08663	0.08343	-0.08339
VAR09	0.12201	0.34883	0.06079	0.20251	-0.16312	0.10272	-0.04564
VAR10	0.36373	0.00308	-0.00381	0.08111	-0.12176	0.00540	0.23640
VAR11	0.49819	-0.15499	0.08868	0.07947	-0.09840	-0.12081	0.16906
VAR12	0.27755	0.44262	0.29901	-0.21118	0.02799	-0.09089	0.08525
VAR13	0.36780	0.19370	0.01108	-0.25361	0.14369	-0.09058	-0.06773
VAR14	0.17583	0.35441	0.33825	-0.25016	-0.00831	0.06314	0.00817
VAR15	0.25373	0.50570	0.54997	-0.28853	0.05970	-0.25249	-0.02152
VAR16	0.52771	-0.00546	-0.25634	-0.14578	0.01320	-0.00158	-0.05864
VAR17	0.58375	0.07154	-0.28061	-0.18528	-0.02572	-0.00967	-0.23243
VAR18	0.33712	-0.23021	0.11054	0.22411	0.04231	-0.17960	0.02520
VAR19	0.32635	0.32525	-0.31352	0.00925	-0.10216	0.11154	-0.12503
VAR20	0.10054	0.24358	-0.30081	-0.01574	-0.09991	0.08409	-0.03410
VAR21	0.43996	-0.16724	0.06181	0.00495	-0.19726	-0.08265	0.05133
VAR22	0.48748	-0.24475	-0.05308	-0.00221	0.09087	0.04157	-0.06837
VAR23	0.59956	-0.15836	-0.07344	0.04027	0.02986	0.01632	0.08973
VAR24	0.62662	-0.05491	-0.13075	-0.07490	-0.15040	0.10517	0.21933

APPENDIX G

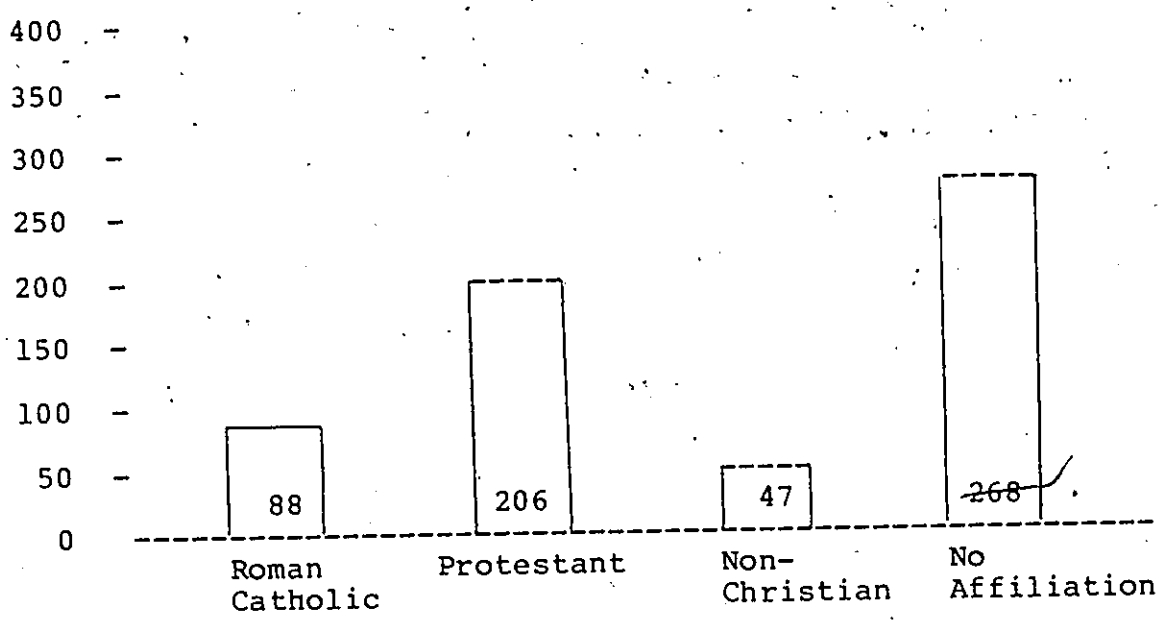
Communalities, Eigenvalues, and Percent of Variance for Unrotated Factors

VARIABLE	EST COMMUNALITY	FACTOR	EIGENVALUE	% OF VAR	CUM %
VAR01	0.28866	1	3.99548	16.6	16.6
VAR02	0.16549	2	2.31625	9.7	26.3
VAR03	0.15322	3	1.71021	7.1	33.4
VAR04	0.40241	4	1.41348	5.9	39.3
VAR05	0.31930	5	1.31295	5.5	44.8
VAR06	0.21100	6	1.19003	5.0	49.7
VAR07	0.17618	7	1.09600	4.6	54.3
VAR08	0.21779	8	0.97085	4.0	58.4
VAR09	0.15994	9	0.93977	3.9	62.3
VAR10	0.18667	10	0.88601	3.7	66.0
VAR11	0.28848	11	0.87527	3.6	69.6
VAR12	0.43720	12	0.80971	3.4	73.0
VAR13	0.23475	13	0.73791	3.1	76.1
VAR14	0.29297	14	0.70395	2.9	79.0
VAR15	0.52440	15	0.66864	2.8	81.8
VAR16	0.34919	16	0.66037	2.8	84.5
VAR17	0.38599	17	0.63941	2.7	87.2
VAR18	0.21140	18	0.59159	2.5	89.7
VAR19	0.22395	19	0.53025	2.2	91.9
VAR20	0.14158	20	0.50044	2.1	94.0
VAR21	0.24775	21	0.46862	2.0	95.9
VAR22	0.36112	22	0.37766	1.6	97.5
VAR23	0.41201	23	0.34091	1.4	98.9
VAR24	0.47900	24	0.26409	1.1	100.0

Convergence required 11 iterations

APPENDIX H

Frequency of Religious Affiliation



Occupational Scale of the
Index of Social Position Rating

APPENDIX I

Standard Measure of Occupational Categories

1 = EXECUTIVE OR MAJOR PROFESSIONAL

This category includes senior and junior executives, presidents, vice-presidents, chairmen and members of the board of directors of large companies, etc. Also Doctors, Lawyers, Engineers, Dentists, Professors, Architects, etc.

2 = MIDDLE MANAGEMENT AND LESSER PROFESSIONALS

This category includes general managers, sales managers, production managers, secondary and elementary school teachers, registered nurses, accountants, clergymen, etc.

3 = ADMINISTRATORS OR SUPERVISORS AND SMALL BUSINESS OWNERS

Administrators are those involved with the management of service institutions such as hospitals, social agencies, government agencies, educational agencies, etc. Supervisors are those people who in their working roles are charged with co-ordinating and directly watching over the work of others (e.g., inspectors, foremen). Small business owners include all those people who are self employed and/or have other employees. Some examples are retailers, tailors, jewelers, grocers, electricians, contractors, etc.

4 = CLERICAL OR TECHNICAL PERSONNEL

Clerical personnel are typically white-collar workers who are engaged in the single, repetitive routine tasks of recording information and reporting statistics. These include stenographers, secretaries, bookkeepers, cashiers, telephone operators, office machine operators, etc. Technical personnel are technicians who have a high level of competence and skill in occupations resulting from new technology. This includes laboratory technicians, electricians, surveyors, draftsmen, radiologists, computor operators, etc.

5 = SKILLED WORKERS OR CRAFTSMEN

Skilled workers or craftsmen are those workers who possess distinctive abilities in producing a product or providing a service and who achieve a certain degree of competence in order to be designated as a master rather than an apprentice. Some examples are commercial artists, musicians, mechanics, appliance

servicemen, carpenters, painters, plumbers, crane operators, machinists, etc.

6 = SEMISKILLED WORKERS

This category includes those who have low level abilities which are not very difficult to acquire. Some examples are hairdressers, barbers, bartenders, truck drivers, deliverymen, bus drivers, etc.

7 = UNSKILLED LABOURERS

Unskilled workers include all those workers engaged in manual labor requiring no special skills. This includes farm labourers, factory and construction labourers, and service labourers. Some examples are dockworkers, miners, janitors, farmhands, unskilled construction workers, waitresses, domestics, etc.

8 = HOUSEWIFE

This category includes women who have no occupation outside the home.

9 = STUDENT

This category includes persons who are full-time students at an educational institution. If it is only a part-time student, then the occupation which takes up the rest of the person's time should be coded.

0 = Unknown.

Biographical Statement

Suzanne M. Derry was born to Beryl and Hermann Derry in Portland, Maine, USA, on August 16, 1947. She was educated in the public elementary schools of Cape Elizabeth, Maine, and graduated from St. Joseph's Academy for Girls in 1965. In September, 1965, she entered the College of Liberal Arts at the University of Maine, from which she graduated with the B.A. degree in psychology in 1969. In September, 1969, she entered the College of Graduate Studies at the University of Rhode Island, from which she graduated with the M.S. degree in school psychology in 1975. Prior to receiving the M.S. degree, she served a one-year internship at the Nathan Bishop School, Providence, Rhode Island. In September, 1971, she began a three-year term of employment as staff psychologist with the York County Counselling Service, a comprehensive mental health center in southern Maine. In September, 1975, she entered the Faculty of Psychology of the College of Graduate Studies at the University of Ottawa. Prior to the awarding of the Ph.D. degree, she served as an intern in psychodiagnostics and psychotherapy at the Child Study Center of the University of Ottawa.