AN INVESTIGATION INTO SOME ASPECTS OF THE DEVELOPMENT OF RELIGIOUS THINKING IN CHILDREN AGED BETWEEN SIX AND ELEVEN YEARS

Roger J. L. Murphy

A Thesis Submitted for the Degree of PhD
at the
University of St. Andrews

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DEPARTMENT OF PSYCHOLOGY

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A B S T R A C T

Children's thinking has been described by Piaget and others in general terms, which suggest that there are major developmental changes that affect children's thinking at various stages of their development. Some criticisms of Piaget's theory have related to his approach to describing children's thinking as a context free phenomenon. In relation to this point, arguments have been put forward for the need to investigate the development of children's thinking, within particular content areas, and the investigations reported in this thesis have concentrated on the development of religious thinking of children aged from 6 to 11 years.

A review of previous investigations into this area of children's thought development reveals major shortcomings, both in the experimental approaches used and in the theories that have been constructed. In

particular it is argued that there has been a tendency for investigators to propose stage development theories on the basis of inadequate results. It is argued that there is a need for investigations which approach this problem from new directions. As a first step, a series of investigations, which employ a variety of approaches and which investigate various cognitive and semantic factors that may influence the development of religious thinking in children, are presented.

The investigations that are reported involved individual interviews with 440 children, in the age range from 6 to 11 years. A variety of experimental techniques were employed, including those investigating the children's understanding of various biblical parables, their understanding of the meaning of words used in religious discourse, their conception of historical time and ability to sequentially order events in time, and the way that these factors affected their understanding of religious ideas.

The results of the investigations are discussed in terms of the variety of aspects, which they reveal, relating to the development of religious thinking in children. It is argued that this evidence does not support the idea of the development of religious thinking being a unidimensional stage related process; however, the evidence collected from these studies is insufficient to form the basis of an alternative model. It is argued that future studies that follow this approach will be necessary if a satisfactory theory is to be constructed.

The educational implications of these findings are discussed and it is argued that certain curriculum changes in the area of religious education may have been made on the basis of insufficient evidence and inadequate theories.

CERTIFICATE

I hereby certify that Mr Roger JL Murphy has completed nine terms of research work under my supervision, has fulfilled the conditions of the Resolution of the University Court, 1967, No. 1, and that he is qualified to submit the accompanying thesis in application for the Degree of Doctor of Philosophy.

[redacted]

Research Supervisor

10 September 1979

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CHAPTER ONE

THE DEVELOPMENT OF THINKING IN CHILDREN

1.1 Introduction

One popular approach to an understanding of the way children acquire knowledge, formulate opinions and generally develop in their thinking, in psychology in the past, has been to study the way that children's understanding of various concepts develops as they grow older. This method generally involves sampling populations of children of different ages to see whether patterns of development can be consistently observed, and, on the basis of observations such as these, theories are constructed to describe the normal development of children's thinking about these concepts, and the factors that are of prime importance in influencing this development.

Often, certain kinds of concepts will be mastered earlier than others, or else a certain level of understanding of particular concepts will be reached before another level, and observations such as these can lead to theories of thought development that have wider applications than for the particular concepts being studied. For instance, Jean Piaget's theory of cognitive development in children is based on studies of the development of a variety of concepts, from which Piaget has postulated an overall pattern of cognitive changes.

One problem with this method is that of deciding what the underlying cognitive factors are that will develop to allow a certain collection of concepts to be understood at a certain level, and then, once these factors have been established, the real test of

the theory is whether it can predict which other concepts can be acquired at the same stage of development. In other words, can a theory of cognitive development give an overall description of the cognitive factors underlying any thought or concept, and therefore give a probable indication of the order in which levels of thought and levels of understanding of different concepts may occur? Theories such as this will often assume a high importance for genetically determined biological maturational factors in influencing cognitive development, but still leave a certain amount of variance to depend on experiential factors. This is where a cognitive development theory, such as Piaget's, will conflict with a behaviourist view of development (e.g. Watson, 1968), which would see learning and experience as the prime factors influencing the sequence of the development of children's thinking.

It is possible to categorise three particular approaches to the problem of studying the development of thinking in children. The first of these is an approach that has already been mentioned briefly and that is usually associated with the work of Piaget. This approach depends on viewing children's thinking as a whole and analysing its major constituents. All thinking, Piaget claims, is based on a system of logic, which can be represented by a number of cognitive structures. Piaget also claims that the development of thinking is based on an invariant progress through a number of stages, which depend on distinct underlying cognitive structures. The details of Piaget's theory will be discussed in more detail in Chapter Two and again in later chapters in relation to our own results, but the main point to be made here is that Piaget's search is for a description of the underlying processes and structures which dominate children's thinking, regardless of what

the children are thinking about. Thus, Piaget's description of the development of thought is based on a system of logical operations which, it is claimed, is context-free and which can be used to explain children's level of thinking in any particular context.

The claim of Piaget that development depends on the maturation of logical systems (maturation is used here to allow for the influence of both biological and environmental factors), which in their turn dictate the style or level of children's thinking in any particular context, is a point where Piaget's theory has received much recent criticism - Piaget's claim is that the findings which have been produced and replicated on a number of his well known experiments (such as the classic class inclusion and conservation tasks) are in no way restricted to those particular tasks, or contexts, but are purely illustrative of an underlying developmental system which would dictate children's behaviour in all problem solving contexts. This issue of the transferability of Piaget's findings to other contexts has been seriously questioned by Brown and Desforges (1977), Bryant (1974), Donaldson (1978) and others, and we will be discussing their criticisms of Piaget, in relation to our own findings, in later chapters.

A second popular approach to the study of the development of children's thinking is to take a general theory of intellectual development such as Piaget's and apply it to a particular specialised area of children's thinking. The aim of this type of investigation is to explore how well the demands of a particular area of thought (or academic discipline in most cases) can be explained in terms of Piagetian levels of thinking, and also see how adequate an explanation Piaget's theory gives for

children's thought development in these areas. Examples of this approach can be found in the work of Shayer, on the demands of 'O' level examination syllabuses in Physics, Chemistry and Biology (Ingle and Shayer, 1971; Shayer, 1972 and 1974), Hallam (1966, 1967 and 1979) on historical thinking in children and adolescents and Goldman (1964a, 1964b, 1965a and 1965b) on religious thinking in children and adolescents. In addition to these studies, Peel (1972) reviewed a number of other studies of thought development in the secondary school years in the areas of science, history, geography, mathematics and religion. Peel was, in fact, a most influential figure in influencing a number of researchers into studying the application of Piaget's theory to a number of different educational disciplines, and he himself has written extensively on this topic (see, for example, Peel, 1959, 1960, 1971 and 1975). In Chapter Two we will be considering, in some detail, one particular study which was set up under Peel's supervision and which was conducted by Ronald Goldman, on the development of religious thinking in children and adolescents.

A third approach which may be taken to the study of children's thinking is to investigate children's thinking in relation to a particular task or problem, or group of tasks or problems, which might, for example, form one part of the educational curriculum. The essential difference between this approach and the previous approach is that it aims to identify skills and abilities within the context of a single problem, or related group of problems, which are important aspects of children's thought development. This approach has been strongly recommended by Brown and Desforges (1977) in an article in which they are highly critical of the progress made by

Piaget and those who have followed him in pursuing the first approach, which we have already outlined. Brown and Desforges conclude that, rather than following Piaget in attempting to construct a context-free (or content-free, as Brown and Desforges describe it) theory of cognitive development, "It would seem more profitable to locate cognitive structures within specific content domains." (Brown and Desforges, 1977, p15). This third approach, then, is based on the idea of taking a particular content area and investigating children's thinking in that context, with the intention of revealing the major skills and abilities (cognitive structures, in the terms of Brown and Desforges) which are relevant to that area. The question of the degree of overlap of cognitive and other skills between different content areas then becomes a secondary question, which can only be answered when sufficient individual content areas have been explored.

An additional advantage of following the third of these approaches is the opportunity which it allows for a more thorough diagnosis to be made of the actual skills which are involved in a task. Flavell (1977), in his most illuminative critique of Piaget's work, refers to this issue in a general discussion of the problems of making cognitive developmental diagnoses. Flavell describes a lower level of diagnostic problem, which is ascertaining whether a child "has" or "has not" acquired a certain cognitive ability; this problem is at its acutest when a child appears "to have it" but is actually making inspired guesses, or alternatively when he may appear "not to have it" under other conditions, when he may actually "have it". This, Flavell states, is what is generally thought of as the problem of cognitive developmental diagnosis, but he suggests an even greater diagnostic problem "is not just determining whether a child has or hasn't

acquired a certain cognitive ability (e.g. transitive inference), but is to do with determining the exact cognitive processes which are involved in a cognitive ability" (Flavell, 1977, p227). Others than Flavell have highlighted the importance of this issue. Smedslund (1969), for instance, referred to this as the problem of higher order inferences and wrote that, "An even more complex diagnostic task is to determine the exact content and sequencing of the mental processes involved in solving a given task." (Smedslund, 1969, p244). Thus, one can argue that one of the shortcomings of the work of those who have followed the first approach of searching for a general context-free theory of cognitive ability is that they have too loosely associated general labels for cognitive abilities (such as transitive inference) with wide ranging assortments of tasks, without closely enough investigating the actual processes involved in the solution of the tasks. The work of Bryant (1974) and Trabasso (1975) has shown that, in the case of transitive inference, there are a number of processes which go together to form the general ability which is used by most subjects to solve transitive inference problems. In addition to the variety of skills and processes involved, Bryant and Trabasso have also highlighted the fact that not all subjects will solve a given problem by using the same skills. There is often more than one route to the correct solution, and different routes may well involve the use of different skills. Driver (1978) reinforces this point by stating that two subjects may solve the same problem, one using what Piaget would call formal operations and the other using concrete operations.

The preceding arguments lead us to conclude that in future studies that seek to understand further the process of intellectual

development in children, three principles should be applied. Firstly, they should be carried out within restricted content areas, so that developmental features relevant to each particular content area can be identified. Secondly, the skills involved in solving tasks within these content areas should be analysed as closely as possible, to identify the underlying processes involved. Thirdly, the performance of individual children should be studied in such a way that differences in problem solving strategy, and hence in some cases the skills employed, can be identified.

In following the first of these principles, we have chosen a single content area as the context for the series of investigations to be reported in this thesis. We will be introducing the rationale behind our own investigations in the next section of this chapter, and in the following sections we will provide a brief survey of previous investigations in this particular area of children's thinking. A more detailed review of the literature relating to this earlier work and other relevant developmental research will be provided in Chapter Two. The remaining chapters of the thesis present the results of our own empirical investigations and discuss them in relation to the particular issue of the development of religious thinking in children, as well as discussing their implications for more general theories of intellectual development.

1.2 The Question to be Considered

The area of development of children's thinking that we are going to study in this thesis is that of the development of religious thinking[1]. This is an area which, at the present time, has a certain topical interest, because of the debate over compulsory religious education in British schools, and some of the arguments being used in this debate, which are based on theories about what children are capable of understanding about religion at different ages. We will address ourselves occasionally to the educational implications of our research, but the predominant viewpoint will be a psychological one.

As has already been mentioned in the previous section, there are in existence several psychological theories concerning the development of thinking in children, and we shall be looking at some of these to see how well they explain any developments, in religious thinking, that we observe. Inevitably this will mean considering some of Piaget's theories concerning the intellectual development of the child, but we will also look at some other theories of thought development in children, as well as some theories more specifically to do with the development of language in children. The importance of language, and the development of word meaning in particular, will be introduced as a key factor in our consideration of this topic. This approach will lead us into another central

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[1]Although we are interested in "religious thinking" as a general consideration, we shall be mainly considering thinking about the Christian religion, as this is the most prevalent religion in this country. However, this should not, we feel, hinder us from extrapolating to "religious thinking" in its application to different religions. (A fuller discussion of exactly what is meant by religious thinking may be found on pp216-217.)

theme of recent psychological enquiry, that of the interaction between language and thought, and we will be discussing some of the theoretical standpoints in this area in Chapter Two.

Basically, then, the question we are starting off from is "What are the major cognitive factors affecting the development of religious thinking in children aged 6 to 11 years[2]?" This, we recognise, is a complex question, and is one which presents a number of major research problems. Firstly, research into human thinking is always beset by the problem of bridging the gap between actual levels of thought and the evidence of that thought which is available to the experimenter. The normal practice is to infer, from subjects' actions or their responses to questions, what thought processes they have been through. This, clearly, is not an ideal method of investigating thinking and, particularly in the case of children, it may lead to ambiguous or even misleading results. The only solution to this problem appears to be to probe children's thinking from a number of different directions, combining, for example, different experimental techniques with observational studies, until as complete as possible an understanding of the children's competencies may be attained.

The preceding discussion of the first problem leads into the second problem, which is to do with constructing suitable experiments

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[2]The age group was not an arbitrary choice, but was chosen because it was thought to cover the most critical years of development, from the point of view of existing theories. For instance, in Piaget's theory these years are thought to contain the major cognitive restructurings, and in the major theories of the development of religious understanding, these are the years where there is the most disagreement between theories.

which reveal children's actual competencies. Recently, Donaldson (1978) has written with much insight about the problems of conducting research into children's thinking. It is clear, from her experience and the experience of other child development researchers, that children need to be confronted with meaningful tasks, and every effort needs to be made to make sure that they are both motivated to perform the tasks, and are clear about what it is that they have to do. Donaldson cites a number of examples to illustrate the point that small changes in the design of an experiment can have enormous effects on the performance of children. In many of these examples the task, which the children were required to perform, remained the same, and the only change which was made was in the way in which the task was presented to the children. We will be returning to discuss the work of Donaldson and her associates in more detail in later chapters, but at the present time the point to be made from her studies is that the design of experiments, in terms of the way tasks are presented to children, is crucial in determining the meaningfulness of the results which will be obtained.

Another problem in child development research relates to the choice between cross-sectional and longitudinal studies. In a cross-sectional study children from different age groups are studied and, if differences are observed between their performances on similar tasks, then inferences are drawn about the effect that development must have had on the older children. In longitudinal studies a single group of children are studied over a number of years, so that actual differences due to development may be observed. There have been relatively few longitudinal studies carried out in child development research (Wohlwill, 1973), and as Sigel and Cocking (1977)

conclude, this is a major deficiency in the available evidence which is presented in support of current developmental theories. Having said that, it is clear to see why cross-sectional studies have been more popular than longitudinal studies, in terms of the ease of carrying out such investigations within the time-span of most research programmes. Despite their limitations, cross-sectional studies are probably the best approach for exploratory investigations using new experimental techniques. In such studies, it is necessary to refine the experimental techniques as one moves from one study to the next, and in longitudinal studies this would not be possible. Even so, one must bear in mind that the findings from cross-sectional studies can only be interpreted after certain major assumptions have been made about the different groups of children representing the various age ranges, and longitudinal studies will always have a place in verifying such findings.

A final general problem with thought development research in children, is to do with the lack of control that it is possible to have over the experience of children. The most common approach to take to this, is to investigate children from the point of view that "given the experience that they have had, can they solve this task?". Occasionally, in cross-cultural studies or studies comparing differences between children brought up in families with social class differences, assumptions will be made about the different types of experience that the children will have had. In a small number of cases, experience has been manipulated by employing different classroom teaching methods (e.g. Hallam, 1979 and Houston, 1974), and there is now quite a literature on developmental training studies where experimental techniques have been employed to attempt

to enhance children's performance on certain experimental tasks (for a review of this work see Brainerd, 1978). In general, it is not possible, and is not considered to be humane, to control the experience of children on a large scale for experimental purposes. Because of the large amount of support that there has been for theories regarding biological factors as the major determinants of child development, and because of the similar experiences of children produced by education systems, this has not been perceived as a major problem. Indeed, in our own studies, we will not be controlling the experience of the children we investigate, and we will return to discuss the implications of this fact when we are discussing our results in later chapters.

Thus, if we return to the formulation of our problem as it was stated at the beginning of this section, we would now qualify our question by stating that before embarking upon our investigation we are aware that there are certain problems that will inevitably limit the degree of certainty which we can place on any conclusions which we might put forward. In designing our own investigations and in evaluating the work of previous researchers we will bear these problems in mind, and see how far it is possible to either minimise their effects or else estimate their possible influence on the results.

1.3 What Answers Already Exist?

In Section 1.1 we have already introduced our critique of general theories of cognitive development and their possible application to specific content areas, such as the one which we have outlined in Section 1.2, as the particular context for our investigations. In Section 1.1 we also argued the case for the need to concentrate child development research, in the area of thinking, on certain specific content areas, and as a result of this argument we have designated, in Section 1.2, an individual area for our enquiry. As we mentioned briefly in Section 1.1, the most well known investigations into the development of religious thinking of children have predominantly followed the second approach that we outlined in that section, which has meant that these studies have largely attempted to apply Piaget's general theory to this particular area of child development. The work we are referring to here is that, already mentioned, of Goldman (1964b) and also that of Peatling (1973).

In our detailed literature review, which will be presented in Chapter Two, we will mention in some detail a fairly large body of studies that have been conducted in this area, and a number of these have applied techniques which could be classified within the framework of our preferred third approach to studying children's development of thinking. We will, however, be making some general criticisms of this whole body of research and the existing state of both experimental techniques and theories in this area.

Out of all of the existing literature on this topic, Goldman's experimental findings and theories are the most well known, although

in terms of experimental work some of the other studies have been done on a similar scale. It will be argued, in Chapter Two, that Goldman has gone beyond the possible interpretations of his experimental data in constructing his theory, concerning the religious development of children. In addition, it will be argued that there is a striking lack of cohesion between Goldman's and other existing theoretical standpoints in this area. One of the major reasons that will be suggested for the unsatisfactory nature of the existing state of knowledge in this area, is the somewhat restricted approach which has been taken to researching into this aspect of child development.

These arguments will be developed in more detail in the next chapter, and will gradually form the rationale for the choice and design of our own investigations. They will also be developed in relation to previous research investigations that have been identified as being particularly relevant to the question we posed in Section 1.2. In case we may be misunderstood for taking a critical approach to previous investigations in this area, perhaps it should be said, at this point, that in many cases we feel that there is much to be learned from individual studies, and a good deal of this previous work has much to commend it. It is, however, our intention in critically assessing the whole spectrum of research techniques and theoretical positions in the area, to try to point the way to newer and more fruitful avenues of exploration and explanation. We are particularly aware that investigations within the study of the psychology of religion have always met with such problems that the whole field of study has had an extreme tendency to lack both cohesion and direction. This point is well illustrated by a quote from the introduction to a review of investigations into the

psychology of religion by James Dittes (1969).

> "... Yet the same complexity and intensity of important processes which attract psychological investigations of religion also frustrate it. The field has been marked largely by brief flurries of interest as one investigator after another is attracted to it, then bewildered by the difficulties of study. There has not been sustained development of theory, empirical findings, or research techniques. Publications today are not substantially advanced over the earliest writings. All surveys of the field agree, whether in apology or in indictment, on the primitive state of the study of the psychology of religion, and the material to be presented in this chapter provides little basis for disputing this judgment."
>
> (Dittes, 1969, p603.)

As has been pointed out by Brown, L.B. (1976), a comparison of Michael Argyle's (1958) review of the psychology of religion, with that of Argyle and Beit-Hallahmi (1975), suggests that the field can hardly be seen to have moved forward in more recent years either!

Thus, in drawing together investigations out of this particular area of the psychology of religion, which has indeed been marked by "flurries of interest", and little "sustained development of theories", we will hope at least to locate some of the blind alleys and pitfalls which have contributed to holding back previous enquirers, and at the same time try to see new approaches to our problem that will enable us to build on the foundations which have already been laid.

CHAPTER TWO

REVIEW OF THE LITERATURE

2.1 Introduction

In the literature review, to be presented in this chapter, we will be covering a number of different areas of research and theory related to different aspects of child development. Initially we will consider studies which are specifically related to the development of religious thinking in children. These have been carried out over a large time period and have employed a variety of approaches to investigating this problem. We will be making a number of critical comments about this body of literature, both in terms of the shortcomings of some of the individual studies and in terms of the progress which has been made overall.

In the remaining sections of this chapter we will provide a review of certain major psychological theories of the development of thinking in children, and a discussion of the relationship between these and the work which has been carried out specifically on children's religious thinking. In addition we will be reviewing literature, concerning the relationship between language and thought, and then discussing in some detail certain specific studies of word meaning development in children. The relationship between all of this previous work and our own investigations will also be discussed.

2.2 The Development of Religious Thinking in Children[1]

We will start this review by referring to the name that has been most closely associated with the question of the religious development of children during the last fifteen years or so, which is that of Dr. Ronald Goldman. However, before considering the significance of his contribution, which was brought to the eyes of the general public mainly by the publication of his two books (Goldman, 1964b and 1965b), let us look first at the background of research and theory which had come before that time.

Pre-Goldman Research

Early explorations into an understanding of religious development, published at around the turn of the century, lacked any clear basing of theory upon sound empirical research. Researchers such as Barnes (1892) and Brown (1892) recognised and catalogued problems that children, whom they had observed, were having in understanding certain religious ideas. Barnes, for instance, reported, as part of his study, on the compositions written by 1091 Californian children between the ages of 6 and 20, on the subjects of heaven and hell. There was, however, very little attempt made to formulate these fascinating observations into any kind of developmental pattern which could be mapped onto an understanding of how the problems had occurred, through processes of intellectual or other kinds of development in the children.

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[1]Some of the contents of this section are drawn from a review paper (Murphy, 1978) which itself was an updated version of a paper which was presented at the University of Lancaster Colloquium on the Psychology of Religion in 1976.

This kind of research can be contrasted with the more elaborate and detailed accounts of religious development, given by people less dedicated to empirical research and more concerned with setting up theoretical explanations. In this category could be placed men such as G. Stanley Hall (1908) who used a recapitulation theory to describe the first fourteen years, or so, of a child's religious development. It was his view that children's religious ideas developed in the same way as had the religions of many nations over several centuries. This involved developing from an animistic fetishistic stage, to a mythopoeic or myth forming stage, to a polytheistic stage, and then on finally to a spiritual-ethical theistic religion. This, in many ways, may be a theory which contains more insight than has ever been attributed to it in later years. Recent support for it could be drawn from the developmental theory of Jean Piaget (1952) in which, for example, he suggests a relation between egocentric and animistic modes of thought in early child development. Other theories, such as those of Bovet (1928) and Freud (1928), explained religious development in terms of a shifting of feelings, felt early on by children towards their parents, into a Deity concept, formed later, as a kind of parental substitute. (For a summary of the evidence supporting this theoretical approach, see Beit-Hallahmi and Argyle, 1975.) Again these are interesting theories, especially so in the light of later empirical evidence which has been collected showing relationships between parental images and images of God (Nelson and Jones, 1957; Strunk, 1959; and Deconchy, 1968), but they have failed to sustain much support for two main reasons. Firstly, their foundation depends on the kind of introspective psychoanalytical approach, which is now largely regarded as being unacceptable because of its subjectivity and consequent unreliability as compared with more scientific

or empirical methods of approach. Secondly, their explanations have concentrated upon the development of thinking about certain key concepts (e.g. God), and because of this it can be argued that they do not give an adequate description of the development of religious thinking as a whole. This second criticism also applies to the more recent work of Kousoulas (1973) who limited her investigation of religious development to a study of children's developing concepts of God.

Credit is usually given to Harms (1944) and Loomba (1942) for developing the first theories, based on empirical research, which described religious development as a structured process of religious thinking which moves through various stages of development as the child becomes older and more experienced. This idea of stage development is central to many modern theories of child development, and it is vital to an understanding of much of what has gone on in the theory and research on the development of religious thinking since 1944. A theory of stage development attempts to explain developmental processes in terms of fundamental changes that take place in the child, and which are characterised by different kinds of behaviour at each individual stage. This is not a random grouping together of like kinds of behaviour that occur at around the same time, but is a theoretical attempt to explain fundamental cognitive developmental changes which, at each of a number of stages of development, generate various characteristic kinds of behaviour. Stage development theories do not necessarily directly link the movement through stages with specific chronological ages; it is generally recognised that differences in children's experience, caused by living in different cultural environments, for example, will affect the rate of movement through

any sequence of stages. The concept of stage development in children has, of course, been made famous by Jean Piaget, and although he himself has not applied it specifically to religious development, he has applied it to moral development in children (Piaget, 1932). A more extensive discussion of Piaget's stage development theories will be provided in Section 2.3.

The first two stage development theories of religious development were constructed at almost the same time by Harms (1944) and Loomba (1942). Harms claimed to examine expressions of religious development by examining pictures of God drawn by several thousand children from 3 years upwards. He concluded from this that the development of religious experience was slower than any other field of experience, and also that there were three main stages which the children passed through in terms of their religious development.

Stage 1 (3-6 years)	The Fairytale Stage
Stage 2 (7-12 years)	The Realistic Stage
Stage 3 (12+ years)	The Individualistic Stage

Although this study is of interest because it was one of the first real attempts to apply a stage development theory to religious development, there are obvious criticisms in terms of the technique used for evaluating the children's drawings. In addition, the assumption of Harms that religion is basically a non-intellectual activity and is better expressed in a non-verbal form is highly questionable, and has never received much support from other researchers in this area. It is true that expressing thoughts about religion through written or spoken responses is difficult for children below a certain age, but even adults are limited in the way they can express such things, and it has never been accepted

that it is necessary to use picture drawing in studies of adults' understanding of religion. Loomba (1942), at about the same time, proposed another three stage theory of religious development, based on work done in India. He found a gradual transition from "a religion of pure externals" to a religion "of the inner life". He noticed that at around 7 years children stopped attributing things such as wind, sun and time and other phenomena of the physical world to the personal power of God, and started developing more "realistic" ideas of the world of nature.

Other studies that employed the idea of stage development in religious thinking were those of Elkind (1961, 1962 and 1963) on the child's conception of his religious denomination. These were studies of Jewish, Catholic and Protestant children and Elkind noted a general movement through three stages of religious identity concepts:

1. global undifferentiated concepts (5-7 years)
2. concretely differentiated concepts (7-9 years)
3. abstractly differentiated concepts (10-12 years).

This development described the child moving from a stage where he confused his denomination with his race and nationality, through a stage where he used observable features or actions to define his denomination (e.g. Catholics go to Mass every Sunday and go to Catholic schools), on to a stage where the child defined his denomination in terms of non-observable mental attributes such as belief and understanding.

These studies, along with one on the child's conception of prayer

(Long, Elkind and Spilka, 1967) which produced similar results, all employed a semi-clinical interview approach, where the child was asked certain standard questions in an otherwise unstructured interview situation. Elkind (1971) remarks in a later review that it is the unstructured nature of approaches like these, and that of Harms, that allows distinct stages in the development of spontaneous religious conceptions to appear. This is used as an argument against accepting the conclusions of studies such as that of Graebner (1960), which employed an "Ideas about God Inventory" and which did not reveal any age-related changes. Although Elkind may be correct in making this statement, there is certainly a danger of children's responses being manipulated in both structured and unstructured situations.

Another study which postulated a stage development theory of religious thinking was that of Deconchy (1964). In this study, Catholic children in France were required to produce five associations to several words of "secular or religious tonality". In particular, Deconchy used his semantic methodology to look at the way children's concepts of God developed between the ages of 7 and 16. By using factor analysis on his data, Deconchy located three main stages of development of the God concept:

1. Attributivity (9-10 years) - thinks of God in terms of attributes learned at school.

2. Personalisation (12-13 years) - three main themes of sovereignty, redeemer and fatherhood.

3. Interiorisation (15-16 years) - stress on subjective themes such as trust, dialogue and fear.

These, then, are the main studies which were carried out before Goldman's investigation. Credit must be given to Goldman for spotting

an area where there was a sparsity of research being done, but at the same time it should be noted that this fact alone was bound to increase the impact of what he published. It is, thus, very important, from the point of view of assessing Goldman's contribution, to separate out his actual research findings and the theories which he associated with them, from the controversies and debates which they appeared to generate and after a time became immersed in. What we are interested in assessing is whether Goldman's stage development theory of religious development was better than what had gone before and whether it now stands up to all of the available research evidence.

The Research and Theory of Ronald Goldman

Goldman's (1962) investigations, which were carried out nearly twenty years ago now, have received considerable attention in terms of the publicity that has been given to them, and also in terms of the debate which has ensued concerning their implications. A number of Goldman's reviewers (e.g. Fleming, 1965; Francis, 1976; Gates, 1976; Howkins, 1966; Langdon, 1969; and Prince, 1970) have levelled criticisms both at the conclusions which he drew from his work, and at the methods which he used to collect his results. After outlining the basic design of his study, we will go on to assess these criticisms in the light of Goldman's later replies to some of them (Goldman, 1967 and 1969).

Goldman initially interviewed 200 children in the age range from 6 to 17 years old, on their projected impressions of three pictures of "religious" significance (a mutilated Bible, a child entering church with a man and a woman, and a child kneeling and praying beside a bed) and also on their interpretations of three tape

recorded biblical stories (Moses at the Burning Bush, Israelites crossing the Red Sea, and the Temptations of Jesus). Each age group was represented by twenty children (ten boys and ten girls) and these groups were balanced for intelligence. The responses of the children were then evaluated by forty "independent theological experts" on an agreed scale of theological concepts. These were analysed by using the Guttman Scalogram method, which suggested that an age-related series of responses had been observed. Goldman described the process of development in terms of three main stages: pre-religious, sub-religious and fully religious, and drew parallels between these stages and those that Piaget has used to describe intellectual development in children in his theory.

Goldman did not start out with a clearly defined hypothesis, although it may be inferred that his hypothesis was that the development of religious thinking would conform to Piagetian stages of thought development. Closely allied to this was a particular interest in the Agreed Syllabuses (for religious education) being used in British schools. It was Goldman's view that certain biblical material, included in the Agreed Syllabuses, was unsuitable for children of certain ages, and having conducted his research he went on to publish a book specifically about the teaching of religion (Goldman, 1965b) along with a new religious education syllabus, based on his findings, and specially constructed teaching materials for use with this syllabus. Goldman's quite apparent theological and religious education presuppositions have led several of his critics to question the extent to which these biased both the way that he designed his investigations and the conclusions which he drew from them (Gates, 1976; Howkins, 1966; Langdon, 1969; and Prince, 1970). One way in which Howkins and Langdon

have suggested that Goldman biased his study was in terms of the particular Bible stories, which he chose to use, and in some subtle changes that he made to them before presenting them to the children. Both of these critics comment that it would have been difficult to think of a harder story for children to understand than the Temptations of Jesus, and this was the only New Testament story which Goldman included in his study. In addition, Howkins and Langdon commented on the way that Goldman left out any mention of the strong east wind in the story of the Crossing of the Red Sea, suggesting that this enhanced the magical effect of Moses raising his hand and the waters parting. Similarly, it is suggested that Goldman's inclusion of the word "suddenly", with reference to the appearance of the Angel in the story of Moses and the Burning Bush, is out of keeping with the original and may, again, have heightened the dramatic and magical effect of the story.

Another related set of criticisms of Goldman's studies concerns other ways in which his presuppositions may have influenced the design and outcome of his studies. Hilliard (1965) discusses several of these, including Goldman's selection of stories, and in particular he is most critical of the order in which the various questions about the three Bible stories were put to the children. Hilliard suggests that by placing the questions in the order in which he did, there was a distinct danger that, in some cases, Goldman implied to the children the answers that he expected to later questions. Hilliard concluded that Goldman's research suffered from "certain weaknesses in technique and limitations in scope" and that it needed "to be followed up by investigations which begin from the same point of view but are conducted with refined and improved techniques" (Hilliard,

1965, p15). Others have questioned Goldman's view of what constitutes mature religious judgment (Howkins, 1966; Langdon, 1969; Murphy, 1976 and Rowe, 1978), and although the judgments of the children's responses were evaluated by a team of "forty independent theological experts", it has been declared by Goldman that they all held a central-to-liberal theological viewpoint. In Goldman's terms mature religious thinking is equated with an abstract symbolic understanding of Bible stories, and this is a position which even Goldman recognised would not be shared by those who did not hold to his own theological viewpoint:

> "there will be those who differ radically in their theology from the above statements and in their case this research will have little to offer"
>
> (Goldman, 1964, p49).

In a society where mature adult thinkers have a great variety of religious viewpoints, it would seem unfortunate that Goldman has designated one of these as "mature religious thinking" and has based his studies around examining whether children have progressed to this particular style of religious thinking. It is interesting that a recent study by Hoge and Petrillo (1978) has tested Goldman's theory that highly developed abstract religious thinking was important if children were to form a positive attitude of religion. They found that their evidence was actually in the opposite direction, and that more abstract religious thinking was associated with negative views of doctrine and the church. Hoge and Petrillo also concluded that religious thinking is more influenced by educational experience than Goldman suggested, which reinforces the criticism of Cox (1968) that Goldman only investigated how children who had followed a particular educational course thought and in no way, therefore, logically investigated what type of religious thinking they would

have been capable of, if they had followed other courses.

Even more unfortunate is the fact that the major follow-up study to Goldman's work (Peatling, 1973) has followed both his approach to defining, and his specific definition of mature religious thinking. In the highly controversial field of studying religious thinking it would seem much more appropriate to investigate how religious thinking develops in children, rather than assuming that it develops in a certain way and trying to fit children's thinking into that pre-determined model.

Francis (1976) shares Hoge and Petrillo's (1978) doubts about the adequacy of Goldman's evidence for suggesting a link between poorly developed cognitive skills, in relation to religious thinking, and a decline in religious attitudes in the adolescent years. Both Francis and Hoge and Petrillo, in their own experimental work, have gone some way towards providing sufficient empirical evidence to counter Goldman's speculations about the causes of changes in children's religious attitudes. Indeed, Francis (1979a) has pointed out that the whole area of children's attitudes to religion has not received sufficient research attention for firm conclusions to be drawn about how children's religious attitudes develop, quite apart from understanding how this development is related to cognitive developmental changes.

Goldman has also been criticised by Attfield (1976) for neglecting to recognise that the Bible stories which he selected were, in some cases, presenting children with moral problems, the solution to which would depend on their level of moral development, quite apart

from attributes which Goldman put down specifically to religious development. This criticism emphasises the need, which we have already referred to, of making a detailed breakdown of the demands of tasks which are used in child development research. It also relates to the issue raised by Francis (1977a and 1977b) of the need which there is for researchers to formulate a closer definition of what actually is meant by "religious thinking" as opposed to any other sort of thinking.

Many of the criticisms that were levelled at the conclusions and applications, which Goldman drew from his investigations, could have been avoided if he had made it clear which of these depended on established research findings and which could be better described as his own speculations. Langdon (1969) discusses this point and suggests that Goldman would have made things much clearer "had his book Religious Thinking from Childhood to Adolescence been set out somewhat as follows:

Part I : Report of the research and its established findings.

Part II : Inferential conclusions.

Part III : Practical implications.

His second book would then have been a logical outcome of Parts II and III and would not appear, as it does at present, to be based on his 'established research findings'" (Langdon, 1969, p63).

At the present time we are most interested in Goldman's actual research findings, and despite the criticisms of these, which have already been noted, it must be stated that there was much about Goldman's work which was innovative and there were many aspects of his studies for which he has been commended (Hyde, 1968 and Cox, 1968).

It must also be recognised that some of the criticisms of Goldman's research methodology, in terms of the size of his samples and the fact that he used a cross-sectional approach (Fleming, 1965), are not really justifiable as he has followed the example of what are apparently quite acceptable studies in other areas of child development. Indeed Goldman (1967), himself, has replied quite adequately to a number of points relating specifically to the design of his experiments and has pointed out that this "was approved by no less eminent psychological researchers than Sir Cyril Burt and Professor E.A. Peel" (Goldman, 1967, p14).

Goldman's work should be seen as an important step towards developing an understanding of a largely unresearched area of child development. The deficiencies in his investigations should be noted along with an acceptance that he was inclined to speculate far beyond their possible implications. What is required in response to his investigations is for other researchers to follow up these initial studies, so that they may be in a better position to evaluate his speculative proposals concerning a theory of the development of religious thinking in children. As a first stage it should be possible to develop Goldman's own stories and questions technique, although there are clearly other aspects to religious thinking than can be tested in this way. What is required, in addition, is a range of studies which will apply other experimental techniques of child development research to this area of children's thinking.

In order to understand the process of development of religious thinking more fully, we need to look to see how children's development can be affected by the provision of religious materials and

experiences which are best suited to their limited intellectual and conceptual abilities. Also, if one is prepared to accept some form of stage development theory such as Goldman's, there is an obvious need to go on beyond this to further explorations into the ways that children's religious thinking differs from one developmental stage to another, and to look more closely at the factors that affect the movement through these stages.

Also a stage development theory, if it is really to be acceptable, needs to be based on some definite cognitive restructurings in the child, which are producing changes across a whole range of behaviour. This condition can be seen as a clear and fundamental tenet in Jean Piaget's stage development theory of intellectual growth in children (see Piaget, 1950, 1970a). Now it can be said that Goldman has come closer than most of the other stage theorists in this area, to providing an explanation of development along these lines. He did at least look at the religious thinking of his children, as it related to several religious stories and pictures, which is more than can be said for Harms, for instance, who was only looking at the child's representation of one religious concept (i.e. God). However, it would seem necessary to call into question the whole idea of a stage development theory of the development of religious thinking, until such time as an adequate theory can be provided for basic stages of cognitive restructuring, which would be necessary to explain such stage changes in thinking. It would also seem important that, if such a theory were to exist, it should be shown that changes were taking place across the whole range of religious thinking in children, which coincided directly with these stages of cognitive restructuring.

Goldman, undoubtedly, stands out as a major contribution to the area but it is surprising that, despite the amount of criticisms which were levelled both at Goldman's methodology and his conclusions, there has not been a greater amount of follow-up work done. We will now go on to review the more recent studies which have been done.

Post-Goldman Research

Peatling (1973) followed up Goldman's study by converting his structured interviews into a multiple choice test. This test employed the same three Bible stories, as were used by Goldman, and was originally administered to nearly 2,000 children in American Episcopal Schools. Peatling concentrated on differentiating between abstract and concrete religious thinking in his children, and claimed that his general findings supported Goldman's idea of a movement through various stages of religious thinking ranging from a purely concrete stage, through an intermediate stage and on to a more abstract stage later on. Peatling noticed slight differences in the ages at which his children passed through the various stages, and it is quite possible that these could be due to the effect of using a multiple-choice test approach to investigating their levels of thinking. Children at an early stage may be assisted by the availability of more abstract answers, whereas children at a later stage may be distracted by the availability of more concrete answers. Another explanation could be put forward in terms of basic differences in the children's rate of development, in the way that Piaget allows for décalage in his stage development theory. If this is, in fact, the case then the difference would not be so important, as a stage development theory is generally concerned more with describing the

order in which different stages are passed through, rather than the exact ages at which each particular stage is reached or left. Peatling, in fact, found his children moving out of the concrete stage earlier than Goldman's, whereas they took longer to reach the final stage of abstract religious thinking. This study, as well as lending support in a general way to Goldman's study, also highlights the distinction that Goldman drew between concrete and abstract religious thinking and it is highly questionable as to whether this is necessarily the most important factor in the development of religious thinking. Prince (1970), in an evaluation of Goldman's work, points out the important distinction between the psychological Piagetian use of the word abstract, to mean the ability to reverse one's thinking to entertain hypothetical propositions, and the more general use, especially in religious writings, to mean immaterial. Prince goes on to make the logical point that even when children cannot think abstractly in the psychological sense, they are still perfectly capable of appreciating abstract elements of religious thinking and experience in the general sense of the word. (This point is discussed further, in the introduction to Chapter Three.)

Peatling's (1973) Thinking About the Bible test has been used in a number of more recent research investigations (Hoge and Petrillo, 1978; Kay, 1978; Peatling, 1978; Peatling and Laabs, 1975 and Tamminen, 1976), but the results of these studies depend on the validity of Peatling's test as a good measure of the religious thinking of children and adolescents. The criticism that has been made of Goldman, concerning his narrow view of what developed religious thinking should be like, can equally well be made of

Peatling. Kay (1979) comments that "Interpretations of the results have, therefore, to make some allowance for the theological presuppositions in the test" (Kay, 1979, p5), and Rowe (1978) summarises his critique of Peatling's test by stating that "This American revised version looks a much cruder instrument than Goldman's tests and one cannot help wondering to what extent it really reveals the thinking of those who take it, or forces them to make options between possible answers which they feel are inadequate." (Rowe, 1978, p8). We have already argued that there is a need to move on to take new approaches to studying the development of religious thinking, and although Peatling's test may provide one way of doing this, it does not avoid many of the shortcomings which we consider exist in Goldman's studies.

Beechick (1974) has followed the earlier approach of Ainsworth (1961) in looking at the way that children of different ages interpreted the meaning of biblical parables. Beechick concluded that children go through three stages of development, during which they move from an understanding of parables in purely literal terms to a period when they draw some application to themselves, but only in terms of the actual events of the parables, to a final period when they use greater insight to understand the general meaning and application of the parables. This study has many interesting implications. Firstly, the task of having to draw a meaning out of a story is obviously one which requires certain intellectual abilities in the child, so it demonstrates the reliance that certain kinds of religious thinking have on intellectual operations. Secondly, the fact that Beechick showed that certain kinds of analogies are easier to understand than others, demonstrates that this development is not

just a simple one. Thirdly, Beechick suggested that this kind of understanding of a developmental process should indicate different ways of presenting parables to children, so that what is being taught may fall within the area of what the child is capable of understanding from the story.

There are obvious methodological problems with this type of study, which relies on presenting children with biblical stories and then asking them questions about them. The understanding of children in these age groups will depend, to a degree, on the kind of explanation they are given and also prior training on similar tasks. In this context, it is important to recall the comments of Cox (1968) concerning the point that investigating how children apparently think about certain concepts and stories is not the same as investigating what kind of thinking they are capable of, given different instruction and teaching. This is the problem which Bortner and Birch (1970) have referred to elsewhere, in stating that "performance levels under particular conditions are but fragmentory indicators of capacity" (Bortner and Birch, 1970, p735), and which Flavell (1977) calls "the problem of cognitive-developmental diagnosis" (Flavell, 1977, p227).

Despite this general criticism which is common to the studies of Peatling, Beechick and Goldman, it does seem that these studies have provided a good approach by which to examine the intellectual problems that children have in thinking about religion in their developing years. Also, by relating this kind of study more to the prior experiences that the children have had with religion, it may be possible to make this methodology more illuminating.

Stage Development Theory of Religious Thinking - An Overview

It seems clear that if we accept the comment of Elkind (1971), about the need for an unstructured approach to examining the development of religious thinking, then the majority of studies present us with a three stage picture of development (see Fig. 1). What these stages are called and when they are described as appearing seems, however, to vary a good deal. Obviously, methodologies have varied and undoubtedly the samples will have had individual differences, especially in terms of prior experiences with religious materials, with many groups being taken from denominational or church schools. It does seem, however, that all that many of these theories have in common is the fact that they have three stages, often first occurring at very different times. The very fact that all of these investigators have come up with such different explanations as to the process of development of religious thinking, could well lead us to question the usefulness of trying to apply a stage development theory at all. It could well be that if this approach of trying to derive theoretical stages from observational studies continues along these lines, we will continue to get as many stage development theories as we have investigators. This argument has been developed elsewhere by Murphy (1977b), in an article which suggests that the preponderance of three stage theories of the development of the religious thinking may be more a result of a rather stereotyped approach to researching into this area of children's thinking, rather than being an indicator of the real nature of this developmental process.

FIGURE 1

PROPOSED STAGE DEVELOPMENT THEORIES OF RELIGIOUS THINKING

PROPOSED BY	STAGE I	STAGE II	STAGE III
LOOMBA (1942) - ideas about God	RELIGION OF PURE EXTERNALS (up to 6)	REALISTIC (7-12)	RELIGION OF INNER LIFE (12+)
HARMS (1944) - pictures of God	FAIRYTALE (3-6)	REALISTIC (7-12)	INDIVIDUALISTIC (12+)
ELKIND (1961, 62, 63) - concepts of religious denominations	GLOBAL UNDIF-FERENTIATED CONCEPTS (5-7)	CONCRETELY DIFFER-ENTIATED CONCEPTS (7-9)	ABSTRACTLY DIFFER-ENTIATED CONCEPTS (10-12)
LONG, ELKIND AND SPILKA (1967) - concepts of prayer	"	"	"
GOLDMAN (1964) - understanding 3 Bible stories and projecting on 3 'religious' pictures	PRE-RELIGIOUS (up to 7/8)	SUB-RELIGIOUS (7/8-13/14)	RELIGIOUS (Above 13/14)
DECONCHY (1964) - semantic test of concepts of God	ATTRIBUTIVITY (9/10)	PERSONALI-SATION (9/10-12/13)	INTERIORI-SATION (15/16)
PEATLING (1971) - multiple choice questions on 3 Bible stories	CONCRETE (up to 9)	INTERMEDIATE (10-15)	ABSTRACT (16+)
BEECHICK (1974) - interpreting meaning of 3 biblical parables	INTUITIVE (up to 7)	CONCRETE OPERATIONAL (8-10)	FORMAL OPERATIONAL (11+)

The question that we must now ask is whether or not there is a simple pattern of development of religious thinking, or is it something that varies mainly with prior experience and training, and also the kind of task that is being performed? Whether or not stage development theories will help in providing the answer to this question remains to be seen. Movements in other areas of psychology (Phillips and Kelly, 1975), along with criticisms of Piaget's stage theory (Brown and Desforges, 1977 and 1979; Donaldson, 1978 and Driver, 1978) suggest that the demands being made of many existing stage theories may lead to a re-evaluation of the assumptions which they are based on, and a questioning of their usefulness. We will pursue this discussion concerning the status of stage development theories in developmental psychology, as a whole, in the next section of this chapter.

The influence of Piaget's stage development theory has been felt in many areas of child development research, and as such its influence on the studies reviewed in the previous sections is not surprising. What needs to be explored in more detail is the relationship between different stage development theories in different areas of children's development. Following this approach Jones (1968) attempted to related Harms's (1944) theory of religious development to three more general theories of child development; those of Robert Havighurst (1952) on the general development of children and adolescents, Jean Piaget (1952) on conceptual growth, and Erik Erikson (1959) on identity formation. At the end of this study she concluded that the theories of Erikson, Piaget and Harms could be integrated under a holistic model, but that these three theories did not fit together so well with Havighurst's. This

problem of integrating Havighurst's theory seems to be caused mainly by the fact that he only has one developmental stage to cover the pre-school period from 1 to 6 years of age, whereas the other three theories have two stages to cover this period. It is, perhaps, indicative of the lack of depth of this theoretical analysis that the problem of integration of the theories is met at the level of deciding how to divide up the years of development, rather than at a deeper level, such as the reconciling of the processes that these theories are proposing underly the developmental sequences which they describe. It is also unfortunate that this attempt to relate the somewhat isolated theoretical disciplines of religious development and other areas of child development, chose to use Harms's (1944) theory to represent theories of religious development, when the only record of it which we have is contained in one fairly short experimental paper. It also seems strange that, in 1968, Jones should choose to use this loosely formulated theory, without even considering other theoretical developments, such as Goldman's.

Recent work by Francis (1976), Gates (1976) and Hay (1977) may have marked the start of a movement away from both the approach and the theoretical standpoint of the stage development theorists. Francis (1976) has developed a test, which is designed to measure children's attitudes to religion, and he has used this to investigate empirically some of Goldman's propositions concerning the relationship between children's cognitive development and their attitude towards religion. As was mentioned in our discussion of Goldman's conclusions, Francis's work, along with the study of Hoge and Petrillo (1978), has shed considerable doubt on the

validity of Goldman's claims concerning the influence of cognitive development on children's religious attitudes. Both Gates (1976) and Hay (1977) have taken a much less structured approach to studying children's religious thinking and religious experience, and it is a characteristic of both of these studies that they have revealed a much greater richness in children's religious thinking than many previous investigations have credited them with. Gates's study involved interviews with 1,000 children, in the age range of 6 to 15 years, and during the course of these interviews children were questioned on a great variety of topics, such as superstition, death, space exploration, church attendance, and beliefs in Father Christmas and God. Because of the nature of this investigation, the analysis of the results was mainly descriptive. This was also the case with Hay's (1977) study of religious experience, in which he asked adults to recall the religious experiences which they had as children. Neither of these last two studies provide the type of empirical approach which is necessary to build theories on, but they have provided evidence to support the view that children's religious thinking, in the pre-adolescent years, may be more developed and involved than has sometimes been suggested.

In concluding this section, it is necessary to bear in mind the comments of both Gates (1975) and Batson (1971 and 1974) that a full understanding of the religious development of children will depend on much more than factors related to their cognitive development. It should, in this context, be recognised that by limiting our own explorations to the development of religious thinking in children, we are, in fact, only studying one part of their complete religious development.

2.3 Psychological Theories of the Development of Thinking in Children

Piaget has been described by Hunt (1969) as "the giant of developmental psychology". His contribution to theory and research on child development has been enormous, and his writings have been so extensive as to preclude any comprehensive evaluation within this review chapter. (Flavell, 1963 and 1977, has provided two among the best of a number of extensive reviews of Piaget's work.) We will, however, consider some of the essential features of Piaget's theory before discussing its implications for, and influence on, work on children's developing religious thinking.

At the centre of Piaget's theory are three concepts, termed assimilation, accommodation and equilibration. The theory states that children's cognitive systems tend towards a state of equilibrium; this is not a state of rest but is, in fact, a state of continual activity. The process of cognitive development is, therefore, based around maintaining equilibrium in the child's cognitive system. As the child interacts with the world around him, this equilibrium can only be achieved by a process of adaptation and change. The adaptive process, Piaget theorises, comes about through the processes of assimilation and accommodation. These two processes are interactive and complementary and are, therefore, difficult to separate; however, assimilation is essentially the process of fitting an interpretation of the external environment, as viewed by the child, into the child's existing cognitive structures. Accommodation involves an adaptation of the child's cognitive structures, so that new understandings of the external environment may be taken account of. Piaget suggests this model as an explanation of how

the child's cognitive system gradually evolves through maturation and experience.

Piaget goes much further than merely describing the processes of development, by hypothesising that the order of major cognitive changes is the same for all children. Although Piaget insists that development is a continuous process, he also claims that there are several major stages of development which are each represented by a single unified set of cognitive operations. All children move through these stages in the same invariant order, even though the speed with which they move through them will vary from child to child.

Piaget suggests that there are three main stages in the process of cognitive development, although within these there are certain sub-divisions. The first stage is called the sensori-motor period, and this is assumed to take place generally between birth and 18 months. During this stage, the child learns to distinguish himself[2] from the rest of the world and forms an understanding of the fact that things go on in the world which are independent from him and his actions. This is followed by the concrete operational period, which occurs approximately between 18 months and 11 years. This stage has two major subdivisions; the preoperational period which lasts up until around 7 years of age, and the later period during which concrete operations are established. It is this sub-period of concrete

[2]The personal pronouns 'he', 'his', 'him' and 'himself' are used in the customary way throughout this thesis on occasions when we are referring to a child who could equally well be male or female.

operations, which would, according to Piaget's guidelines, include most children within the age range which we are concentrating on, from 6 to 11 years. During this sub-period, children are expected to demonstrate their ability to solve tasks such as Piaget's conservation and class inclusion tasks, and their ability to perform these tasks is taken by Piaget to demonstrate the presence of operational structures, which allow them to decentre and reverse their thinking, by working back from one set of events to an earlier set of events (e.g. in the conservation experiments).

The final stage in Piaget's theory is the formal operational period, which normally starts at about 12 years of age, although as with all three of the periods Piaget goes to great lengths to stress that the ages which he quotes are intended to be averages. In this period, the child is thought to have moved into an adult stage of thinking. He will then be able to reason logically not only about actual things, but also about ideas, hypotheses and propositions. Piaget details the structures which he suggests underlie this level of thinking, and he describes these in terms of a mathematical model (Piaget, 1953).

Piaget's theory is undoubtedly elegant and has certainly had a major impact on the whole field of developmental psychology in recent years. Indeed, Modgil and Modgil (1976) have documented 37,000 research studies that have been inspired by Piaget's theory, and there surely have been many others. There are, however, many doubts that have been expressed about this theory, and those who have followed up Piaget's work have clearly had difficulty in building on his theory and refining it. One of the doubts, which

has been raised about this theory, concerns the relationship between it and Piaget's experimental data. His theory can be described as an "a priori" theory, in that the majority of his experimental work has been done to illustrate it. The question is frequently raised as to whether the theory has ever been properly tested or, indeed, whether it is, in fact, testable (Brown and Desforges, 1977; Driver, 1978). In addition, one problem with the replication studies which have been done is that so many of them have stuck closely to Piaget's procedures. Recent work by Donaldson (1978) and Bryant (1974), which will be discussed in more detail in later chapters, has indicated that changes in Piagetian tasks can lead to dramatic changes in the performances of children attempting them. Driver (1978) has pointed out that the weakest aspect of Piagetian type studies is the lack of analysis of the thought structures, which children use in solving the various tasks. In relation to this comment, Brown and Desforges (1977) have reported that the majority of studies that have presented the same children with a range of Piagetian tasks, which are supposed to be testing the presence of the same underlying cognitive structures, have revealed low correlations between the children's performances on the various tasks. This highlights an aspect of the untestability of Piaget's theory, because such instances can be explained in terms of the theory as instances of décalage (this concept is explained in more detail in Section 3.4). One can quite properly question, however, whether data such as these are not better interpreted by asking whether Piaget may have failed in his attempt to describe the underlying structures of children's thinking. In addition, as soon as one casts doubt on the structures which Piaget has modelled concrete and formal operational thinking on, one begins to cast doubt on the

invariant stage developmental aspects of his theory. It may be that the process of cognitive change is not as unified as Piaget has described it to be, and as we have already argued in Chapter One, it may be that a more fruitful approach will be to study the process of cognitive change as it relates to other developmental changes and in relation to specific tasks or specific areas of children's thinking. These conclusions are supported by those of Flavell (1977) which are part of a most illuminating evaluation of the current status of Piaget's theory:

> "My own hunch is that the concept of stage will not, in fact, figure importantly in future scientific work on cognitive growth. This does not imply disbelief in the existence of unidirectional and bidirectional developmental dependencies, wherein one development assists another and perhaps conversely. Nor does it imply that there is no unity or consistency in cognitive functioning across situations. But it does imply that there may be less unity, consistency, and developmental interdependence than theories like Piaget's would have us believe."
>
> (Flavell, 1977, p249).

We will leave that issue for further consideration, later on, and continue to briefly look at Piaget's theory in relation to other general theories of child development.

We have already mentioned Piaget's use of stages to describe the cognitive development of the child. These stages are not to be confused with another type of stage which is sometimes used (e.g. by Gesell, 1928), which merely lists specific behaviours that occur at different ages (e.g. the infant is found to crawl at such and such an age and to walk at another, and to run at another, etc.). The difference is that Gesell's stages are a list of empirical phenomena, and Piaget's are a theoretical taxonomy. In Piaget's

theory, different behaviour patterns merely point to the underlying cognitive restructurings which are involved in a movement between two stages. As we have already said (page 30), in our consideration of attempts to align theories of the development of religious thinking to Piaget's stage development theory, there has as yet been little consideration of fundamental cognitive restructurings, that might produce different types of religious thought. This means that much of the evidence that has been collected is more in support of a 'Gesell stage' type of theory, which is in fact just a convenient way of grouping together behaviour patterns that happen to occur around about the same time, rather than a fundamental cognitive theory of development. At this point we must once again call into question the idea that there is any real evidence at the present time, for taking a stage development view of religious thinking that uses the Piagetian conception of a stage development theory.

Another point, which we touched upon briefly in our introduction in Chapter One, was the issue of the differing roles of maturation and learning. There are two extreme positions in this controversy. First, there is that of the extreme predeterminist and then there is that of the extreme environmentalist. Gesell (1945) typified the extreme predeterminist, in the way he described different types of behaviour unfolding with the increasing age of the child, and also in his approach to the development of thought. It was his view that all behaviour patterns are determined by an innate process of growth, which he called maturation. Watson (1913) occupied the other extreme position, that of the environmentalist. It was the belief of the 'behaviourist school', of which Watson was probably the founder, that <u>all</u> behaviour is learned, and

furthermore that learning will always occur by the association of a stimulus with a response. It was also stated by them that a response will recur if it is positively reinforced, and be inhibited if it is negatively reinforced. Thus, as a developmental theory, this results in the view that the child's development will depend entirely upon the environment and his own particular experience of the environment.

Piaget himself comes somewhere in the middle of these two extreme positions. Like Watson, he emphasised the importance of the effect of the environment, but he considered this interaction from the point of view of the child actively discovering things from his manipulation of the environment. However, Piaget differs from Watson in that he also considered maturation as an important factor in development. He did not, however, go to the same extreme in this direction as had Gesell. Piaget's position is one of an 'interactionist', who views intellectual development as resulting from an interplay between internal and external factors.

Because of this 'interactionist' approach, Piaget's theory stood apart from those of the 'Learning Theorists' or 'Behaviourists' (e.g. Watson) and the 'Maturationalists' (e.g. Gesell), as it also did from the psychoanalytical school of Sigmund Freud. Freud (1905) viewed child development from a psychosexual viewpoint, in which he concentrated on instinctual drives and emotional conditions related to them, as being the basis of development of normal or neurotic personalities. Although Piaget started out from a partly psychoanalytical position, and even occasionally described his observations in Freudian terms in the

early days (e.g. Piaget, 1929), he gradually moved further and further away from this kind of explanation, as his theory was developed. He, for instance, gradually became dissatisfied with the Freudian clinical method, which was used widely at the time, and feeling that it relied too heavily on language, he sought to use partially non-verbal tests when studying children's thinking. In his theory also, the emotions which are of such importance to Freudians, are relegated to an insignificant position.

Unfortunately Piaget, unlike Freud (see page 18), never really considered the development of religious thinking in his studies of child development. He mentions children's religious explanations of natural phenomena in his works on the child's conception of the world (Piaget, 1929) and in his work on physical causality (Piaget, 1930), but even here he, like others who have come after him, may have allowed his own feelings about religion to bias his analysis of these statements. For instance, the following quotation from The Child's Conception of the World appears to imply more than the normal Piagetian experimental observations:

> "The child's real religion, at any rate during the first years, is quite definitely anything but the over-elaborated religion with which he is plied."
>
> (Piaget, 1929, p354).

The way in which he continues in this same passage suggests that this is one of the points, which we mentioned earlier, where Piaget was still using Freudian explanations for behaviour he could not otherwise explain:

> "... our results entirely support the thesis of M. Bovet, according to which the child spontaneously attributes to his parents the perfections and attributes which he will later transfer to God, if his religious education gives him the opportunity."
>
> (Piaget, 1929, p354).

Although Piaget himself does not directly apply his theory to the development of religious thinking, it is natural that others should try to do so, in the light of the fact that Piaget is now so widely thought of as the leading theorist in the field of development of children's thinking. Peatling and Goldman, certainly, have sought in Piaget's theories guidelines for their studies although, as we have already argued, they may not have done Piaget justice in the way they have used his theory. The debt owed to Piaget is indeed very large, and the only way in which it can start to be repayed is by viewing his theory in the way in which he intended that it should be viewed; that is, as a building block for future research and development of theories.

Psychological theories of the development of thought in children have had an increasing proximity to theories of language development and word meaning acquisition in children, and it is to these areas that we will now turn. It is sometimes argued that the development of certain kinds of concepts can be viewed as depending on certain cognitive processes that are quite independent of language. However, since we are limiting our investigations to a consideration of religious concepts, it is difficult to see how we can avoid the issue of language. Before considering directly theories of language development and word meaning, we must turn briefly to consider an issue that involves the relationship of language and thought.

2.4 Are Thought and Language Independent?

In addressing a question such as the one we are addressing in this thesis, it seems fundamental to consider how much a child's religious thinking will be limited by his religious language, as it exists at any given time. It is widely observable, on one hand, that children are sometimes capable of producing statements in religious language, the meaning of which they do not understand. On the other hand, they may, at the same time, have religious thoughts and experiences that they cannot verbalise.

What, then, are the developmental aspects of religious thinking? Is it more dependent upon religious language development than it is upon cognitive development, and can cognitive development be thought of, at all, in isolation from language development? This is part of a broader controversy which has attracted considerable attention throughout the development of modern day psychology; that is, the relationship between language and thought.

Throughout the history of psychology, fluctuations have occurred between the view that thought depends on language and that language is not necessary for thought. In fact, as early as 1890, William James was of the opinion that thinking was not dependent on language. One of the things that James used in defence of this position was evidence from a deaf-mute, who he showed was as capable of "a system of thought quite as effective and rational as that of a word user". Later controlled experiments with deaf subjects have added even more weight to the view that thought does not necessarily depend upon language (Furth, 1966; Piaget, 1970b, and 1970c; and Piaget

and Inhelder, 1966). However, one theory which opposed that of William James, and which came to be known as the Sapir-Whorf hypothesis, was developed in the 1920's. The view of Edward Sapir and Benjamin Whorf (see Mandelbaum, 1961 and Carroll, 1956) was that we are all constrained, in the way in which we think about things, by the language we speak. This argument, in essence, states that the way language provides individuals with words to differentiate between objects will govern the way that they think about these objects. For instance, in English we have two terms, yellow and orange, to describe a particular range of colours, and we usually think about colour in this range as being either yellow or orange. However, in the Zuni language they only have one term to describe the whole range of yellows and oranges, and as a result Lenneberg and Roberts (1956) have demonstrated in an experiment on colour memory that it is much more difficult for Zuni speakers to remember particular colours in this range than it is for English speakers. The idea that this demonstrates that thinking is necessarily determined by our language, is somewhat modified by Roger Brown (1956), whose view it is that language merely predisposes people to think in a particular way. For example, concepts which are not defined by a single word in a particular language can often be defined by several words, if need be, and this may mean that they are less likely to be defined in the thinking of the people who speak that particular language, but not that they are unable to think about such concepts. This view has been termed the weak form of the Sapir-Whorf hypothesis.

Support for the view that language determines thought also came from the behaviourist tradition of psychology which we discussed

briefly in the last section. As we mentioned before, behaviourists take an extreme environmental position in assuming that the infant's mind is like a blank slate upon which experience inscribes its lessons. Also, their approach was in terms of observable phenomena, and this meant that language was always seen as the vital input to the child and language was thought to be acquired by the child through selective reinforcement of his imitations of this speech input. Thought, being a non-observable phenomena, was considered as merely being internal vocalisations of the language that had been learned. This view of language acquisition has met with severe criticisms (e.g. Chomsky, N., 1959), but has been upheld by those working from within the 'behaviourist' tradition for a considerable period of time. We will discuss this issue of language acquisition in more detail in due course, but it is sufficient to note that at the present time the evidence (e.g. McNeill, 1966, 1970a, 1970b; and Slobin, 1971) is loaded heavily against this theory of language acquisition, and hence this particular argument for the dependence of thought upon language.

Bernstein (1961) is a further supporter of the view that language determines thinking, and he proposes this as the reason why children from working class backgrounds, who are assumed to have a restricted language code (this fact alone has been questioned by Houston, 1970), often do not reach the same levels of intelligence as children from middle-class backgrounds. Cromer (1974), in a recent review of these positions, comments that even if this is true it is unclear which is the causative factor; i.e. does the restricted language code cause lower intelligence, or does lower intelligence cause the restricted language code? There are

also a number of objections to Bernstein's position. For example, the very nature of the way that intelligence is tested is often highly loaded towards linguistic ability, and can hardly be equated directly to plain thinking.

The complete opposite of the view that thought depends upon language, is the view that language depends upon thought, and this is very close to the view taken by Piaget. In Piaget's theory, the child spends the first 18 months of life in a period of 'sensori-motor intelligence', during which time, by the process of interaction with the environment, which we have already discussed, the child is developing certain cognitive attainments (e.g. object permanence), which are the rudiments of 'pre-linguistic thought', and the building blocks of the later development of language. However, even accepting that this is so, some people (e.g. Bruner, 1964) have suggested that more developed levels of thinking, e.g. formal and concrete operational thought in Piaget's terms, are still dependent upon language rather than vice versa. In fact, Bruner even goes to the length of suggesting that language is the prime factor which, at this stage, enables the child to climb up to a new plane of symbolic manipulation. Piaget counters this argument by pointing to his studies (Piaget, 1970b and 1970c; Piaget and Inhelder, 1966) which give evidence to suggest that deaf subjects are just as capable of operational thought as those who have normal language, even though it typically takes a little longer to develop. Although this is not conclusive evidence, some later studies by Sinclair (1971) on non-handicapped children help to give strong support to his case.

Hermine Sinclair, like Piaget, claimed that language acquisition was dependent upon certain cognitive processes already having been attained by the child, and this view directly conflicts with that of Chomsky, who postulates that there are innate linguistic mechanisms which make up a language-acquisition device, and which make it possible for the child to learn any language to which it is exposed. Sinclair (1971) proposed some actual sensori-motor schemes, which she felt could be observed as cognitive attainments towards language acquisition, e.g. the child's ability to relate objects and actions to one another could be the basis for subject-object grammatical relations. Further support for this viewpoint comes from Lyons (1966), who comes to the same conclusion from a different direction and talks in terms of pre-linguistic learning in the first 18 months of development.

A further study by Ferreiro and Sinclair (1971), which looked at the ability of pre-operational children to reverse linguistically the order of two events in time, suggests that children are cognitively capable of solving a task such as this before they are linguistically capable of a temporal reversal. The task, in this case, was to talk about some actions, which had been carried out by two dolls, in the reverse order to that in which they had been carried out. When questioned, children at a certain stage knew in which order the events had occurred, but could not reverse them linguistically. This study again lends support to the view of Piaget, that cognitive development precedes linguistic development.

It is generally the case that, in the light of recent evidence such as this, few people now hold the view that thought depends on

language. The main question now seems to be whether language and thought develop independently of each other, or whether language development depends on cognition. Cromer (1974) comes out in favour of the former view, mentioning also that this was the basis of Vygotsky's (1962) classic work Thought and Language, and commenting that in the end both Piaget and Chomsky may be right as well!

Without wholly committing ourselves to the Vygotskian position of the independence of language and thought development, it would seem necessary to approach the problem of studying the development of religious thinking both from a linguistic and from a cognitive viewpoint, given that this approach to the development of thinking is the most favoured one in developmental psychology at the present time. Even if language development is eventually proven to be totally dependent upon cognitive development, we will have lost nothing, which would not be the case if we were to disregard language development and the opposite were found to be true.

It is at this point that our approach to this problem is probably beginning to take on a character that is particularly new to the study of religious thinking in children. For this reason we will find it necessary to examine the literature yet a little further, to consider previous studies of the development of word meaning in children.

It would seem to us that the past studies of the development of religious thinking in children have concentrated almost entirely upon trying to map out a sequence of stages which will fit in with

the Piagetian tradition. This could be one of the reasons why these stage theories, once developed, have lacked understanding of the theoretical assumptions underlying a cognitive stage development theory. The concentration on the purely cognitive aspects of the development of religious thinking would seem unfortunate, in view of the importance which is being placed on language development as a possible independent process.[2]

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[2]The distinction that is being drawn between concentrating on cognitive, as opposed to cognitive and linguistic, aspects of the development of religious thinking may confuse those who take the term cognitive to include linguistic acts. In this context we are distinguishing between an approach which seeks to explore language development itself, in addition to other aspects of cognitive development, rather than assuming that all linguistic acts are necessarily representing underlying cognitive competence.

2.5 The Development of Word Meaning in Children

In the last section we touched upon some of the current theories concerning the acquisition of language in children. Now we will go on to look at a sub-section of the study of language acquisition which is concerned with the development of word meaning in children. This, in a sense, is of prime importance to our particular consideration, in this thesis, as children in this age range (6 to 11 years old) have for the most part acquired many of the basic rudiments of language, but the development of word meaning is still an extremely active process for them. Also, the understanding of any religious concept is going to entail a degree of religious word meaning acquisition, and the teaching of religion will almost inevitably involve the use of a considerable amount of 'religious language'.

Eve Clark (1973) in the paper in which she first proposed her Semantic Feature Hypothesis, as an explanation of the process by which children acquire word meaning, also reviewed three other alternative theories. These were the 'Grammatical Relations Hypothesis', the 'Generalisation Hypothesis' and the 'Universal Primitives Hypothesis', and we shall now look briefly at each of these along with Eve Clark's 'Semantic Feature Hypothesis'.

'The Grammatical Relations Hypothesis' of McNeill (1970b) is based upon his view that children start to acquire language by learning the meaning of particular sentences, and 'word-meaning' only becomes a consideration later on when the child begins to use rules for constructing sentences. At this later stage of language acquisition, McNeill postulates two ways in which the child's lexicon of word

meanings may grow. The first is termed 'horizontal growth', and this represents a word entering the 'lexicon' (the child's 'dictionary') with only some of its semantic features, i.e. with only part of its normal adult meaning. This kind of 'dictionary entry' may be completed by the gradual addition of the other features. The other form of lexical growth is 'vertical development', and this describes a situation where a word enters the child's lexicon with all its semantic features, all at the one time. The only qualification here is that, at first, dictionary entries are 'separated', which means that the same semantic features are not always seen as being the same in different entries within the lexicon. It is unclear whether these two forms of growth are supposed to be alternative theories, or complementary theories. Certainly, if the former is the case, it would seem hard to hold by the 'vertical development' view in the light of data showing that children's word meanings develop with age (Eve Clark points this out, and we will be providing evidence on this ourselves in Chapter Four).

Eve Clark's (1973) main contentions with this theory are in terms of the idea that children can be at a stage where they can use words grammatically without knowing anything of the referential properties of the words and, because of its lack of consideration, of how semantic features are acquired and where they come from.

'The Generalization Hypothesis' of Anglin (1970) suggests a development from specific concrete relationships between individual words to more and more generalized relationships between groups of words. In terms of lexical development Anglin suggests a hierarchical

growth, with superordinate lexical items forming the higher categories in the hierarchy, and being acquired later on. For example, at an early stage, the child might have in his lexicon the words: Mummy, Daddy, Dog and Cat. Then, later, he may group together Mummy and Daddy as Parents, and Dog and Cat as Animals, and then at an even later stage, Parents and Animals might be grouped together as living things.

Anglin's data in support of this theory was drawn mainly from a series of experiments in which he looked at the relationship between twenty words. He applied sorting tasks, free recall, structural recall and a sentence frame completion task. From these tasks he drew up hierarchies of classification for these words. His approach is strongly criticised by Eve Clark (1973), in that she claims that he was not studying word meaning at all, but merely studying the knowledge of form-class membership of a group of words. She also criticised him for limiting his idea of a semantic feature to being merely the equivalent of a word.

"... a feature is a complex verbal concept rich in properties just as a word is" (Anglin, 1970, p95).

The final crushing criticism that Clark levels at Anglin's generalisation hypothesis is that most of the data reported elsewhere in the literature runs contrary to its predictions (e.g. Brown, 1958; and Clark E.V., 1971).

The third theory which Clark (1973) considers is the '<u>Universal Primitives Hypothesis</u>' of Postal (1966) and Bierwisch (1967). This

theory proposes that underlying any language there is a set of universal semantic primitives, along with some rules for the combination of these primitives into lexical items. The rules will vary from one language to the next, and therefore languages will differ in the way that they develop the semantic primitives into lexical items. This theory obviously depends upon biologically transmitted language universals (like that of Chomsky, N. (1957) on language acquisition), and Clark, E.V. (1973) merely goes as far as to point out that at the present time, although it is a very plausible idea, it is extemely difficult to either prove or disprove such an idea.

Clark, E.V. (1973), in developing her own 'Semantic Feature Hypothesis' to some extent builds on both the 'Universal Primitives Hypothesis' of Postal (1966) and Bierwisch (1967), and the idea of 'horizontal lexical development' in the 'Grammatical Relations Hypothesis' of McNeill (1970b). She states that:

> "... when the child first begins to use identifiable words, he does not know their full (adult) meaning: He only has partial entries for them in his lexicon, such that these partial entries correspond in some way to some of the features or components of meaning that would be present in the entries for the same words in the adult's lexicon. Thus, the child will begin by identifying the meaning of a word with only one or two features rather than with the whole combination of meaning components or features (qua Postal) that are used criterially by the adult. The acquisition of semantic knowledge then, will consist of adding more features of meaning to the lexical entry of the word until the child's combination of features in the entry for that word corresponds to the adult's. The hypothesis therefore assumes that the child's use and interpretation of words may differ considerably from the adult's in the early stages of the language-acquisition process, but, over time, will come to correspond to the adult model.
>
> Although the child does not know the full meaning of some word, there is nothing to tell him this fact and he will, therefore, use the word. As soon as he has attached some feature(s) of meaning to it, it simply has that meaning for him. The child will use those one or two features criterially in deciding when to apply the word and when not. Since he has only a

> partial characterization of the word's meaning set up, his referential categories may often differ considerably from the adult's for the same words. The child will make referential errors because he does not yet know the combination of features that will allow him to delimit his categories differently. The principal difference between child and adult categories at this stage will be that the child's are generally larger since he will use only one or two features criterially instead of a whole combination of features."
>
> (Clark, E.V., 1973, p.72).

The example which Clark, E.V. (1973) uses to describe this type of acquisition looks at the features which might at different stages be applied by a child to the word "dog". It might start out as meaning "four-legged". Then, as other four-legged things are added to the child's lexicon, other features will become necessary, e.g. sound - barking, size - relatively small (in comparison to cows, zebras, etc.), until eventually an adult-like collection of features will be added to it.

One area from which Clark, E.V. (1973) draws much of her evidence is that of occurrence of overextension in the meaning given to particular words by children at certain stages of their development. She quotes, for instance, the Donaldson and Wales (1970) finding that a group of children aged 3.5 to 4.1 years responded in an identical way to comments containing "same" and "different" (e.g. give me an object that is "the same as"/"different to" that one). In this case she argues that these results could be explained by the fact that the initial semantic features acquired by a pair of antonyms could be exactly the same, and until the child acquires the 'feature' of positive/negative polarity then there may well be confusion.

Other findings which she explains in this way are those of Donaldson and Balfour (1968), on the confusion of "more" and "less" in a group of 3-year-old children, and those of Donaldson and Wales (1970), on the confusion of "tall" and "short" in the 3.5 to 4.1 year-old children. She also uses evidence from Wales and Campbell (1970) on other pairs of dimensional adjectives (e.g. big-wee) as further support along the same lines.

Clark (1973) also uses an enormous quantity of data from diary studies of child language development, to demonstrate the universal over-extension of the use of certain words by children learning to speak many different languages. Here she is arguing that the children's categories are obviously delimited differently from adult's, and by her theory at this stage they would be expected to use these words correctly some times but incorrectly (by the adult categorisation) at other times.

A third kind of overextension that Clark refers to in support of her theory is that of a similar nature to the first kind we mentioned. In this case Clark argues that the child's incomplete lexical entry leads him to treat certain words synonymously (e.g. tell and ask, boy and brother) until he learns some of the semantic features which differentiate them. The data used here are taken mainly from Chomsky, C. (1969) and Piaget (1928), and again the 'Semantic Feature Hypothesis' seems to give an adequate explanation for what has been observed in studies on children ranging in age from 5.0 to 12.0 years old.

Clark, E.V. (1973) also extends her theory to discuss possible ways in which semantic features may be acquired, which is an area which the earlier theories did not touch upon. We shall not however go any further into the Semantic Feature Hypothesis, here. (The reader who wishes to know more will find a well laid out account of the theory in Clark, E.V. 1973).

Whether or not Eve Clark's Semantic Feature Hypothesis continues to gather support or not, it gives us a good insight into some of the processes by which children may acquire the meaning of words. Let us briefly review some of the main points which this hypothesis raises, in particular, for studies of children's thinking. Firstly, a traditional interview approach when used on its own could provide some very misleading results. For example if the child's language is at a particular stage of development that is markedly different from that of the adult, or even slightly different with respect to a crucial factor, then the child may well understand something quite different, by what is said by himself <u>and</u> by what is said by the experimenter, than the experimenter or any other adult would. Thus, even if the child "appears to understand the question" or "appears to understand the instructions" or "appears to understand the story", this understanding may be quite different from what is intended.

It does seem that if children do acquire the meaning of words in the way suggested by Clark (i.e. by gradually adding features), and they do overextend the use of words, while the full meaning is being acquired, then any study of cognitive development or language development which disregards the state of the semantic development of the child will almost certainly be missing out important factors.

As a result of this consideration we will spend some time in this thesis addressing problems to do with the semantic development of certain words that might be central to the development of religious understanding and religious thinking in the child. In this way we hope to add a further dimension to the more traditional studies that have been done in the past. This will be done in addition to some interview-type studies in which we hope to explore further the effects of cognitive development on religious understanding.

To re-state what we are now suggesting, it is in our view not enough to question the child on his understanding of religious concepts and religious stories, as has been done in the past. We must go to the roots of his developing language to try to discover what he means by the words he is using, and what he understands by the words we are using. Thus we should now re-state our objective (see p.9) and say that we now plan to investigate various cognitive and semantic factors affecting the development of religious thinking in children aged from 6 to 11 years old.

2.6 Summary and Conclusions

We have now spanned a larger area of literature than is usual in a review of this kind, but we feel that this was most necessary to explain the rationale for what follows. In the past, as can be seen from our review, studies of the development of religious thinking in children have lacked cohesion and direction, and have also been done mainly in isolation from work on other aspects of child development. A good summary evaluation is given by Strommen (1971) in the introduction to the book he edited, which is an extremely comprehensive review of the religious development literature of the past four decades:

> "Three words can be used to describe the bulk of the research reviewed by the authors. They are the words used by Brayfield in 1964 to characterize the results of 25 years of research in vocational guidance: sporadic, fortuitous and unsystematic. Of the thousands of studies which were located, few build on previous research to yield systematic results. Many of the studies appeared to be one-shot or chance-circumstance efforts. Further, only a few were guided by a theory or set of hypotheses, resulting often in data of little meaning or questionable value. The best label that can be given to much of what was found is "exploratory research"."
>
> (Strommen, M. 1971, p.XVIII)

The reader may be reminded here of an earlier quotation by James Dittes (see p.15) on the whole state of research on the psychology of religion, and this we would suggest demonstrates that research on the development of religious thinking in children, far from being an exception, is typical of the field, in that it has characterized all that has been lacking in studies of the psychology of religion in the past.

We feel that the new movements in the study of cognitive development and language acquisition, which we have also reviewed, are more encouraging, and it is for this reason that we feel that the greatest hope for future studies of religious development, is to seek new direction, methodologies and theoretical standpoints from these areas. As a first move in this direction we intend to approach the problem of the development of religious thinking in children, aged from 6 to 11 years old, from a related cognitive and semantic development perspective.

CHAPTER THREE

THE DEVELOPMENT OF UNDERSTANDING OF PARABLES

3.1 Introduction

A consideration of the development of religious thinking in children as a cognitive process depends to an extent on locating cognitive factors which are of central importance to this development. One such factor which has been related to religious thinking, in the past, is the development of the ability to think or reason abstractly. However, as we mentioned earlier (see page 32) there has been a certain amount of controversy over whether the kind of abstract thinking, which Piaget claims occurs only after his adolescent stage of formal operational thinking has been reached, is in fact necessary for abstract religious thinking. Piaget, when he refers to abstract thinking, as Prince (1970) has pointed out, is meaning the ability of the child to reverse his thinking so that a hypothetical proposition can be considered. This would seem to be a quite different use of the word from when it is used to refer to religious ideas, and it has the general sense of immaterial. In Piaget's terms 'abstract thinking' is the capacity for logical propositional thought, which can be, and often is in the physical sciences, applied to concrete entities and experiences. This type of abstract thinking can, of course, be applied in a similar way to religious concepts and ideas; however, the confusion here arises from the fact that these concepts and ideas may themselves, in the general sense, be termed 'abstract'. Prince summarises the problem by stating that "It does not follow logically that because children cannot yet think abstractly (in the psychological sense)

they cannot appreciate some abstract (in the general sense) element of religious thinking and experience" (Prince, 1970, p97).

Unfortunately, the issue of abstract thinking in relation to religious material is even more complicated than this confusion between the abstractness of the thinking and the abstractness of the concepts and ideas. There is a related theological controversy over how abstractly or concretely it is appropriate for individuals to think about religious ideas. In theological terms, it is quite conceivable for a mature and intellectually developed adult to think concretely about certain religious concepts or ideas. This can be seen to present problems when certain approaches are taken to studying the development of religious thinking, as an aspect of children's overall cognitive development.

One approach, which has been used to study the development of the children's understanding of abstract religious ideas, has been to present them with biblical stories and then test their understanding of these, either by means of a semi-structured interview (e.g. Goldman, 1964b and Beechick, 1974) or by the use of a multiple-choice type of questionnaire (e.g. Ainsworth, 1961 and Peatling, 1973).

All of these studies have been used in their own way in support of stage development theories of religious thinking but, as we saw earlier, differences in the methodology used often seemed to produce differences in the findings.

A major criticism of the work of Goldman and Peatling has been that they equated mature religious thinking with an abstract

symbolic understanding of the stories which they used. This is clearly a point of conflict for those who hold the view that a literal or historical interpretation of biblical stories need not necessarily be inconsistent with mature religious thinking.

This problem has, to a great extent, been avoided in the studies of Ainsworth (1961) and Beechick (1974), which dealt purely with the child's understanding of biblical parables. In the understanding of parables, there would seem to be much wider agreement about the degree of abstraction which is required to provide a fully developed understanding of their meaning.

This, in itself, is one of the reasons why, in this chapter, we shall take parables as the basis of our study of cognitive developmental influences on religious story meaning.

Ainsworth (1961) and Beechick (1974) apparently quite independently came up with three fairly similar main levels of understanding of parables. These ranged from a level where the parable is understood at a purely literal level and the child understands it as a simple story, through an intermediate level, to a level where the child understands the allegorical meaning of the parable and can provide an appropriate application.

In both of the studies mentioned, when the children's responses were categorised into these different levels of understanding, it appeared that there were developmental changes and that the allegorical meanings were only appreciated by older children. Also, there appeared to be a gradual development towards this

allegorical level of understanding, and in both cases it appeared to have been reached by most of the children by the time they were ten years old. In the years before that age, the children appeared to move from a stage where they could only appreciate the literal meaning of the parables, on to a stage where they started to make simple applications, which showed a partial understanding of the allegorical meaning of the parables.

All of this raises certain fundamental questions for our interest in the role of cognitive factors in the development of religious understanding. For instance, have these studies located a single cognitive factor or a collection of factors, the development of which determines the understanding of parables and perhaps other religious stories? Also, are the findings dependent on the methodology used, or would different methods of testing the understanding of parables produce different results?

Finally, can one assume that the difficulties that are encountered in understanding one parable are common to all parables, or will the rate of development of understanding of different parables vary?

In the following series of experiments we propose to investigate these questions further, and in order to do this we will consider the influence of six factors on the development of understanding of parables in children.

These six factors are as follows.

(1) Age of the child presented with the parable.
(2) Content of the parable.
(3) Style of language which the parable is told in.

(4) Method used to test the child's understanding of the parable.

(5) Sex of the child.

(6) Social class of the child.

These factors will be studied by telling different parables, in different styles of language, to children of different age, sex and social class, and then using different methods to test their understanding of the parables.

The research design used will ensure that all of these factors are studied within a series of experiments, which will in turn look at the effect of individual factors or combinations of factors.

Rather than presenting these experiments one by one, we will first of all introduce the general experimental procedure and then discuss the specific methodologies, materials and results[1], as they reflect on each of the different factors.

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[1]A preliminary discussion of the results of these investigations has been reported by Murphy (1977a).

3.2 The Parables Experiments

Method

The children were interviewed individually on their understanding of four parables. Before these interviews started, as in all the other interviews reported in this thesis, the experimenter would always spend a few minutes building up rapport with each child before the actual experiment began. This usually entailed asking the child questions about activities he (or she) was interested in at school or at home. After this every child was asked if he, or she, knew what a parable was. If the child didn't know what a parable was, then this concept was established by explanation and example. This entailed an explanation of how a parable was a story which had a meaning to it and how it was told to teach something, beyond the literal interpretation of the story, to the people who heard it. This point was illustrated by explaining how the popular children's story about the shepherd boy, who used to cry out "Wolf!", when there wasn't a wolf, and eventually got eaten by a wolf because no one came when he cried out for help, teaches that the telling of lies can have consequences. The child was then asked to explain to the experimenter, what the difference was between a parable and an ordinary story. Once the experimenter was satisfied by the child's explanation, the experiment commenced.

Each child was then read a parable from a typed sheet of paper, which the child was allowed to follow while the parable was being read through. (Support for using this method of telling the parables to the children, rather than using tape recorded versions, can be found in Campbell and Campbell, 1976.) If, after this first

reading, or at a later stage, the child requested to hear the parable through again, or showed that he (or she) had forgotten it, then the parable was read through once again, in the same way, by the experimenter. After the parable had been read through, the child was asked a series of leading questions to try to establish what the child had understood the parable to mean. After this the child was asked to tell the parable back to the experimenter and the whole of this interview was recorded on a concealed tape recorder, ready for later analysis. This procedure was then repeated for the other three parables.

In a later part of this series of experiments, some children were given a multiple-choice test in place of the semi-structured interview after two of the four parables which they had been told. This was administered verbally, and the children were required to justify their response choice after each question. The multiple-choice test included the major leading questions from the semi-structured interviews, and the multiple-choice responses to be chosen from were the responses that had most frequently been given by children previously tested on the parables, by the semi-structured interview method. The three choices which were given each time also represented examples of responses cetagorised into the three levels of understanding that were used in the analysis of these interviews.

The six biblical parables which were presented were:-

The Two Houses (Mt.7:24-27)
The Good Samaritan (Lk.10:25-37)
The Pharisee and The Tax Collector (Lk.18:9-14)
The Rich Fool (Lk.12:13-21)
The Sower (Mt.13:1-9)
The Lost Sheep (Lk.15:1-7).

These parables were largely taken from The Children's Bible (Edited by Shirley Steen, 1973), but modernised versions of three of them which were developed specially for this study (The Rich Fool, The Good Samaritan, The Pharisee and The Tax Collector) were also presented later on in the series of studies. The aim of these modernised versions was to translate culture bound factors in the parables into a cultural setting more familiar to the children.

The different versions of the six parables and the questions used to test the children's understanding of them can be found in the Appendix (see page 241).

Sample

The sample consisted in all of 200 children. This was made up of 50 children (ten at each age from 7 to 11 years old) from each of four different schools. The schools, which the children came from, varied in that one was an independent fee-paying private boys' boarding school, one was a Catholic school, and two drew their pupils almost exclusively from 'working class' housing schemes in Dundee. All of these four schools were situated in the East of Scotland.

The sample of 50 from each school was randomly selected, using the method outlined on page 125, and in the three mixed schools the sample was made up by taking 5 boys and 5 girls from each particular age group. The groups of children represented the age spans, 7.0 to 7.11 years, 8.0 to 8.11 years, 9.0 to 9.11 years, 10.0 to 10.11 years, and 11.0 to 11.11 years and the mean ages of the groups were 7.6, 8.6, 9.6, 10.6 and 11.6 years.

Method Used in Analysing the Results

Each individual interview was assessed by two independent judges, who were both well acquainted with the three categories of understanding which the responses were to be placed in. These levels of understanding were based upon those used by Beechick (1974) and Ainsworth (1961) and were as follows:-

Level One - The child could only repeat facts or elements of the parable, and showed no more than a literal understanding of the parable.

Level Two - The child could make an application from the parable, in a simple way, which showed a movement in the direction of understanding the allegorical meaning of the parable.

Level Three - The child showed an understanding of the allegorical meaning of the parable.

In the majority of cases, the two independent judges agreed in their classification of the children's responses. In the remainder of the cases (between 5 and 10 per cent) agreement was reached by discussing and comparing the responses and, occasionally, by more closely defining the different levels of understanding used.

In assessing the children's responses in the individual interviews, relating to each parable, the judges rated the overall level of understanding on the basis of the children's responses to the four questions considered collectively. In the case of the multiple choice assessment of the children's levels of understanding, a slightly different method was used. Their responses to each of the three questions were scored separately and their overall level of understanding was calculated on the following basis:

1) If the child gave either two or three responses, at any one level for a parable, then he was classified as being at that level of understanding for that parable.

2) If the child gave one response at Level Two and one each at Levels One and Three, then the child was classified as being at Level Two for that parable.

3.3 Results of The Parables Experiments

We will not present, all at one time, the results of the complete series of these experiments, as they involved a large number of children and several hundred interviews. We will, however, study each of the six variables which we are considering as having a possible effect on the children's understanding of these parables, in turn. This will involve us in presenting and analysing the results of those particular experiments which relate to the influence of each of these factors. This will eventually involve us in presenting the entire set of results, but only those sections relating to the influence of each individual variable will be considered at any one time.

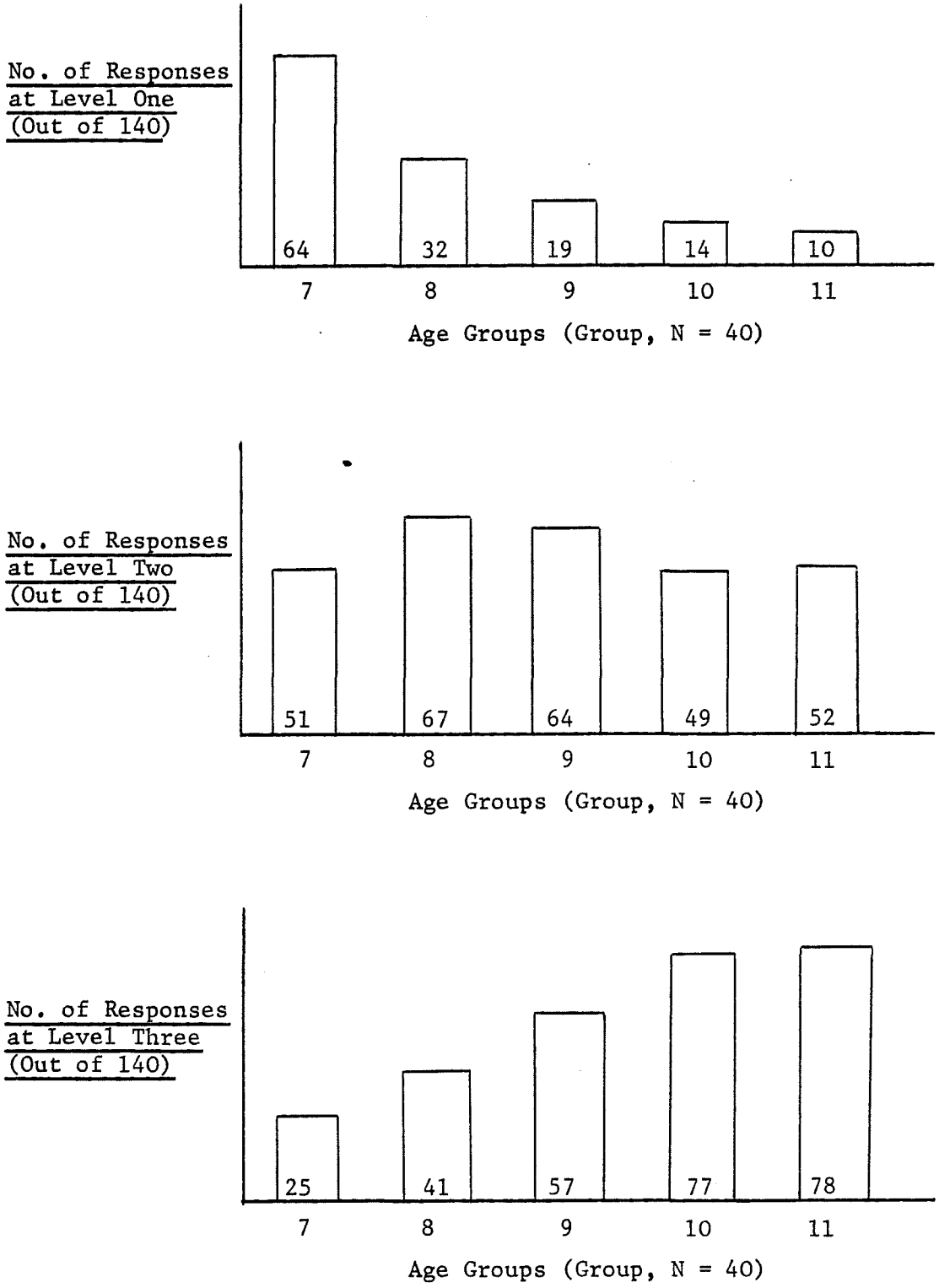
(1) The Effect of Age

Both Beechick (1974) and Ainsworth (1961) have previously demonstrated the effect of age on the development of understanding of parables, with increasing age being related to an increasing tendency to understand parables at an allegorical level, instead of at a literal level. These two earlier studies suggested that, at around ten years of age, most children were capable of understanding the allegorical meaning of parables and this was, to a great extent, confirmed by our study.

Figure 2 represents the results from all the 200 children included in our sample. It shows the levels of understanding demonstrated by them in all the semi-structured interviews, on the meaning of the six parables used. (This analysis excludes the data from the small number of multiple-choice type interviews, which will be

presented in a later section, but the trends in that data were also of a similar nature to the ones shown.)

FIGURE 2 Number of Responses at Each Level by Age, in 140 Semi-Structured Interviews on 6 Parables



The trends in the data at each level were tested for significance by using a Least Squares Regression Analysis. This entailed fitting a straight line ($Y = \alpha + \beta X$) to the data, calculating the best estimate of the gradient of this line $\hat{\beta}(= \frac{\Sigma x_i y_i}{\Sigma x_i^2})$ and then testing the Null Hypothesis that $\hat{\beta} = 0$.

The statistical analysis of the data showed the number of Level One responses to have a significant negative trend ($t = -3.82$, with 3 degrees of freedom, significant at the .05 level); the number of Level Two responses to have no significant trend ($t = -0.56$, with 3 degrees of freedom, not significant), and the number of Level Three responses to have a significant positive trend ($t = 7.93$, with 3 degrees of freedom, significant at the .01 level).

These results thus confirm the hypothesis that, as children increase in age within these limits, then they are more likely to produce Level Three responses when asked about the meaning of these parables and are less likely to produce Level One responses. The results also show that Level Two responses occur with about the same frequency throughout all three of the age groups tested.

(2) <u>The Effect of the Content of the Parable</u>

The second factor which we investigated in these experiments was the effect of the content of a parable on the level of understanding of children of different ages.

In order to explore this factor, we will consider the results of an experiment which involved a group of 100 children, who were

tested on their understanding of the standard versions of The Rich Fool and The Good Samaritan parables. The results of this experiment are presented in Table 1, in terms of the number of children, in each age group, responding to the parables at each of the three levels of understanding. Tables 2, 3 and 4 provide Chi-Squared tests of significance for the effect of parable content on the level of performance of these children, at each of the three levels of understanding. It can be seen from these analyses that there is a significant difference (at the .01 level) between the performance of the children on these two parables at all three levels.

It could be argued that these results are mainly produced by the criteria used in separating out the responses at the three different levels for each of the two parables. In other words, one might argue that the results do not show that The Rich Fool is a more difficult parable to understand than The Good Samaritan, but that they merely show that the criteria used in determining Level Three responses in the case of The Good Samaritan are easier to satisfy than are the criteria used in determining Level Three responses for The Rich Fool.

We would argue very strongly against this, on the grounds that exactly the same general criteria were applied in both cases. The difference between a Level Two response and a Level Three response was always that one was an application, which showed little connection with the apparent meaning of the parable, whereas the other showed an understanding of the apparent meaning of the parable.

TABLE 1

A Comparison of the Response Levels of 100 children for The Rich Fool and The Good Samaritan parables.

No. of Level One Responses

PARABLES	AGE GROUPS (GROUP, N=20)					TOTALS
	7	8	9	10	11	
THE RICH FOOL	12	4	2	1	1	20
THE GOOD SAMARITAN	3	0	0	0	2	5

No. of Level Two Responses

PARABLES	AGE GROUPS (GROUP, N=20)					TOTALS
	7	8	9	10	11	
THE RICH FOOL	8	13	10	12	13	56
THE GOOD SAMARITAN	8	3	6	2	2	21

No. of Level Three Responses

PARABLES	AGE GROUPS (GROUPS, N=20)					TOTALS
	7	8	9	10	11	
THE RICH FOOL	0	3	8	7	6	24
THE GOOD SAMARITAN	9	17	14	18	16	74

TABLE 2 Total Number of Responses at level one v. levels two and three, for the Rich Fool and the Good Samaritan parables (N = 100)

PARABLE	LEVEL OF UNDERSTANDING	
	ONE	TWO AND THREE
THE RICH FOOL	20	80
THE GOOD SAMARITAN	5	95
Chi-Squared (with 1 d.f.) = 8.96 (Significant at the .01 level)		

TABLE 3 Total Number of Responses at level two v. levels one and three, for the Rich Fool and the Good Samaritan parables (N = 100)

PARABLE	LEVEL OF UNDERSTANDING	
	TWO	ONE AND THREE
THE RICH FOOL	56	44
THE GOOD SAMARITAN	21	79
Chi-Squared (with 1 d.f.) = 24.41 (Significant at the .01 level)		

TABLE 4[2]

Total Number of Responses at level three v. levels one and two, for the Rich Fool and the Good Samaritan parables (N = 100)

PARABLE	LEVEL OF UNDERSTANDING	
	THREE	ONE AND TWO
THE RICH FOOL	24	76
THE GOOD SAMARITAN	74	26
Chi-Squared (with 1 d.f.) = 48.03 (Significant at the .01 level)		

[2]Separate analyses have been presented in Tables 2-4 for the number of responses at each level of understanding, in relation to the combined number of responses at the other two levels. This method of analysis was used in preference to an overall test of the number of responses at level one v level two v level three, in order to pinpoint the exact levels at which significant differences in understanding occurred.

However, this point might be seen to place a certain constraint on any claim, which we might make, that these two parables differed in terms of the degree to which children in this age range could understand them.

We will, however, now consider data from another experiment which tested the understanding of 75 children on The Two Houses and The Good Samaritan parables. Tables 5, 6, 7 and 8 show how a comparison of the children's understanding of these parables again yielded significant differences in performance at all three levels of understanding. Once again, it may be seen that the children were more likely to have reached a Level Three understanding of The Good Samaritan parable. This additional result would appear to reinforce the argument that we have put forward that different parables can present different levels of difficulty to children within this age range.

Thus the first observation we made, that age affects the development of understanding of parables, must now be qualified by saying that this factor interacts with the content of the parable factor in such a way that understanding of parables, at a certain age, will vary between parables, depending on the particular content of the parables. For example, at 8 years of age, most children in our sample were capable of understanding the allegorical meaning of The Good Samaritan parable, whereas they were mostly not able to understand the allegorical meaning of The Rich Fool and The Two Houses parables.

TABLE 5 A Comparison of the Response Levels of 75 children for The Two Houses and The Good Samaritan parables.

Number of Level One Responses

PARABLES	AGE GROUPS (GROUP, N = 15)					TOTALS
	7	8	9	10	11	
THE TWO HOUSES	11	4	2	4	1	22
THE GOOD SAMARITAN	2	0	0	0	2	4

Number of Level Two Responses

PARABLES	AGE GROUPS (GROUP, N = 15)					TOTALS
	7	8	9	10	11	
THE TWO HOUSES	4	7	7	5	8	31
THE GOOD SAMARITAN	5	1	6	2	2	16

Number of Level Three Responses

PARABLES	AGE GROUPS (GROUP, N = 15)					TOTALS
	7	8	9	10	11	
THE TWO HOUSES	0	4	6	6	6	22
THE GOOD SAMARITAN	8	14	9	13	11	55

TABLE 6 Total Number of Responses at level one v. levels two and three, for the Two Houses and the Good Samaritan parables (N = 75)

PARABLE	LEVEL OF UNDERSTANDING	
	ONE	TWO AND THREE
THE TWO HOUSES	22	53
THE GOOD SAMARITAN	4	71
Chi-Squared (with 1 d.f.) = 13.45 (Significant at the .01 level)		

TABLE 7 Total Number of Responses at level two v. levels one and three, for the Two Houses and the Good Samaritan parables (N = 75)

PARABLE	LEVEL OF UNDERSTANDING	
	TWO	ONE AND THREE
THE TWO HOUSES	31	44
THE GOOD SAMARITAN	16	59
Chi-Squared (with 1 d.f.) = 6.07 (Significant at the .05 level)		

TABLE 8 Total Number of Responses at level three v. levels one and two, for the Two Houses and the Good Samaritan parables (N = 75)

PARABLE	LEVEL OF UNDERSTANDING	
	THREE	ONE AND TWO
THE TWO HOUSES	22	53
THE GOOD SAMARITAN	55	20
Chi-Squared (with 1 d.f.) = 27.32 (Significant at the .01 level)		

These findings would seem to suggest that the development of understanding of parables does not depend on a simple cognitive developmental change, but is dependent on a more complex pattern of changes which allow different parables to be understood at different ages.

(3) The Effect of the Style in which the Parable was told

Three of the parables used in this series of experiments were told in two different forms. One form of each of these parables was a standard version, which was told in a simple children's story form of language and the other was a modernised version, which was an attempt to transfer the story from the standard version into our present day culture.

Again, we were interested in exploring whether there were more factors involved in the children's development of understanding of parables, and whether this understanding would be improved if the parable told related to the culture with which the children were more familiar.

Tables 9, 11 and 12 compare the performance of two independent groups of children on the two versions of each of these three parables. Tables 10 and 13 are provided as a control on these independent groups to establish whether, in general, their understanding of the parables was significantly different. The pair of groups responsible for the results reported in Table 10 (Groups One and Two) are the same groups responsible for the results reported in Table 9. Likewise, the pair of groups responsible for the results reported in Tables 11 and 12 (Groups Three and Four), are compared with each other in Table 13.

TABLE 9

Percentage of children at each Level of Understanding, out of those given semi-structured interviews on the Modernised Version (Group One, N = 100) and the Standard Version (Group Two, N = 50) of The Pharisee and the Tax Collector parable by Age Groups (with numbers divided equally between Age Groups)

LEVEL OF UNDERSTANDING	VERSION OF PARABLE	AGE GROUPS				
		7	8	9	10	11
ONE	MODERNISED	30	10	5	5	0
	STANDARD	20	60	20	0	0
TWO	MODERNISED	40	45	30	25	15
	STANDARD	70	40	50	10	30
THREE	MODERNISED	30	45	65	70	85
	STANDARD	10	0	30	90	70

TABLE 10

Percentage of children, from Groups One (N = 100) and Two (N = 50), at each Level of Understanding when given semi-structured interviews on the Standard Version of The Two Houses parable by Age Groups (with numbers divided equally between Age Groups.)

LEVEL OF UNDERSTANDING	GROUP No.	AGE GROUPS				
		7	8	9	10	11
ONE	ONE	75	20	30	35	25
	TWO	70	30	10	10	0
TWO	ONE	15	65	45	30	30
	TWO	30	60	70	40	70
THREE	ONE	10	15	25	35	45
	TWO	0	10	20	50	30

TABLE 11

Percentage of children at each Level of Understanding, out of those given semi-structured interviews on the Modernised Version (Group Three, N = 50) and the Standard Version (Group Four, N = 100) of The Rich Fool parable, by Age Groups (with numbers divided equally between Age Groups)

LEVEL OF UNDERSTANDING	VERSION OF PARABLE	AGE GROUPS				
		7	8	9	10	11
ONE	MODERNISED	30	0	0	0	0
	STANDARD	55	20	10	5	5
TWO	MODERNISED	70	100	90	90	80
	STANDARD	45	65	50	60	65
THREE	MODERNISED	0	0	10	10	20
	STANDARD	0	15	40	35	30

TABLE 12

Percentage of children at each Level of Understanding, out of those given semi-structured interviews on the Modernised Version (Group Three, N = 50) and the Standard Version (Group Four, N = 100) of The Good Samaritan parable, by Age Groups (with numbers divided equally between Age Groups)

LEVEL OF UNDERSTANDING	VERSION OF PARABLE	AGE GROUPS				
		7	8	9	10	11
ONE	MODERNISED	20	10	0	0	0
	STANDARD	15	0	0	0	10
TWO	MODERNISED	10	10	10	0	10
	STANDARD	40	15	30	10	10
THREE	MODERNISED	70	80	90	100	90
	STANDARD	45	85	70	90	80

TABLE 13

Percentage of children from Groups Three (N = 50) and Four (N = 100), at each Level of Understanding, when given semi-structured interviews on the Standard Version of The Two Houses parable by Age Groups (with numbers divided equally between Age Groups)

LEVEL OF UNDERSTANDING	GROUP No.	AGE GROUPS				
		7	8	9	10	11
ONE	THREE	60	10	10	30	10
	FOUR	65	25	10	20	5
TWO	THREE	20	60	50	40	40
	FOUR	35	45	50	25	45
THREE	THREE	20	30	40	30	50
	FOUR	0	30	40	55	50

These results may be more easily assessed in the summary form in which they appear in Tables 14 to 18. Here the levels of understanding of all the children in each group are compared, on the basis of those who have understood the allegorical meaning of the parable (i.e. those judged to be at Level Three) as against those who have not (i.e. those judged to be at Levels One and Two). This analysis shows a significantly better performance (at the .05 level) on the Standard Version as opposed to the Modernised Version of The Rich Fool parable, and also on the Modernised Version, as opposed to the Standard Version of The Pharisee and The Tax Collector parable. These results take on added significance in the light of the fact that in the control experiments (see Tables 15 and 18), there was found to be no significant difference in the performance of Groups One and Two, and Groups Three and Four, on The Two Houses parable. This finding suggests that any differences in Tables 14, 16 and 17 are caused by the two different versions of the parable being used, rather than by any intrinsic difference between the two groups of subjects.

One surprising aspect of these results, is that The Rich Fool parable appears to have been easier to understand in the Standard Version than it was in our Modernised Version. This result may be used, along with the fact that there was no significant difference in the performance of the children on the two versions of The Good Samaritan parable, to highlight the problem of translating stories, such as these parables, into an easier form for children to understand. However, the result with The Pharisee and The Tax Collector parable, does suggest that parables

TABLE 14[3]

Total Number of Responses at Level Three v Levels One and Two, for the Modernised Version v the Standard Version of The Pharisee and The Tax Collector parable
(Modernised Version (Group One): N = 100
Standard Version (Group Two): N = 50)

VERSION OF PARABLE	LEVEL OF UNDERSTANDING	
	THREE	ONE AND TWO
MODERNISED	59	41
STANDARD	20	30
Chi-Squared (with 1 d.f.) = 4.05 (Significant at the .05 level)		

TABLE 15

Total Number of Responses at Level Three v Levels One and Two, for Group One v Group Two on The Two Houses parable.
(Group One: N = 100, Group Two: N = 50)

GROUP No.	LEVEL OF UNDERSTANDING	
	THREE	ONE AND TWO
ONE	26	74
TWO	11	39
Chi-Squared (with 1 d.f.) = 0.10 (N.S.)		

[3]The analyses presented in Tables 14-18 all compare the number of responses at Level Three with the combined number of responses at the other two levels.

Further analyses could have been conducted both between all three levels and for each of the other two levels separately. These were, however, deemed to be superfluous in the light of the significance of these results and also the critical nature of this particular comparison.

TABLE 16

Total Number of Responses at Level Three v Levels One and Two, for the Modernised Version v the Standard Version of The Rich Fool parable.
(Modernised Version (Group Three): N = 50
Standard Version (Group Four): N = 100)

VERSION OF PARABLE	LEVEL OF UNDERSTANDING	
	THREE	ONE AND TWO
MODERNISED	4	46
STANDARD	24	76
Chi-Squared (with 1 d.f.) = 4.56 (Significant at the .05 level)		

TABLE 17

Total Number of Responses at Level Three v Levels One and Two, for the Modernised Version v the Standard Version of The Good Samaritan parable.
(Modernised Version (Group Three): N = 50
Standard Version (Group Four): N = 100)

VERSION OF PARABLE	LEVEL OF UNDERSTANDING	
	THREE	ONE AND TWO
MODERNISED	43	7
STANDARD	74	26
Chi-Squared (with 1 d.f.) = 2.15 (N.S.)		

TABLE 18

Total Number of Responses at Level Three v Levels One and Two for Group Three v Group Four on The Two Houses parable. (Group Three N = 50, Group Four: N = 100)

GROUP No.	LEVEL OF UNDERSTANDING	
	THREE	ONE AND TWO
THREE	17	33
FOUR	35	65
Chi-Squared (with 1d.f.) = 0 (N.S.)		

can be understood better by children, at these ages, if they are translated into a suitable modernised form.

If this hypothesis is, in fact, confirmed by later studies, it will stand alongside the earlier finding of differences between performance on different parables, in suggesting a variety of factors to do with style, content and language, which can be seen as determining children's levels of understanding of parables. This idea is in conflict with the views of Ainsworth (1961) and Beechick (1974), who proposed the development of understanding of parables as a simple cognitive developmental process, the development of which would depend purely on the development of a certain ability to think abstractly.

(4) The Effect of the Method used to Test the Children's Understanding

The fourth factor which we investigated was the effect of the method of testing used to determine the child's level of understanding of parables. This involved testing two groups of children, all drawn from the same two schools, with either semi-structured interviews, as before, or with multiple choice tests, which were developed especially for use in these experiments (see page 241). Again, a control condition was run, which involved all the children being tested by a semi-structured interview on another parable (The Good Samaritan), to determine whether there were any basic differences between the performances of the two groups, caused by factors other than the method of testing.

Tables 20 and 22 show a significant difference in the pattern of responses for the interview and test methods, and this difference does not occur in the control condition, summarised in Table 24, where the same two groups of subjects were all given the same interview on The Good Samaritan parable.

As with the previously reported effect of using modernised versions of parables, the effect of using different testing methods provides a shift in the levels of understanding in both directions. For The Two Houses parable, our multiple-choice method produced more Level Three responses and less Level One responses than the interview method whereas, with The Pharisee and The Tax Collector parable, our multiple-choice method produced more Level One responses and less Level Two responses than were obtained with the interview method.

These differences could be explained in terms of the multiple-choice test items chosen, which in one case may have been more appropriate than in the other. However, the main fact which is demonstrated by these results remains unchanged; i.e. the level of understanding of parables which children appear to have will depend, to a certain extent, on the method used to test this understanding. It would seem possible, from these studies, to develop methods of testing children's understanding of parables which would show a more developed understanding than the interview method, used previously, appeared to show.

One possible explanation for the improved performance, when the multiple-choice method of testing was used, could be that the

TABLE 19 — A Comparison of the Response Levels of the two groups of 50 children, tested by different methods, on The Two Houses parable, by age

LEVEL OF UNDERSTANDING	TESTING METHOD USED	AGE GROUPS (GROUP, N = 10)				
		7	8	9	10	11
ONE	INTERVIEW (GROUP 5)	9	2	2	5	2
	MULTIPLE CHOICE (GROUP 6)	3	1	0	1	0
TWO	INTERVIEW (GROUP 5)	1	5	3	4	3
	MULTIPLE-CHOICE (GROUP 6)	5	4	5	1	3
THREE	INTERVIEW (GROUP 5)	0	3	5	1	5
	MULTIPLE-CHOICE (GROUP 6)	2	5	5	8	7

TABLE 20 — Total Number of Responses at Levels One, Two and Three for the Interview Method and the Multiple Choice Method of testing The Two Houses parable, using two groups of 50 children

TESTING METHOD USED	LEVELS OF UNDERSTANDING		
	ONE	TWO	THREE
INTERVIEW (GROUP 5)	20	16	14
MULTIPLE-CHOICE (GROUP 6)	5	18	27
Chi-Squared (with 2 d.f.) = 13.24 (Significant at the .01 level)			

TABLE 21 A Comparison of the Response Levels of Two Groups of 50 children, tested by different methods, on the Pharisee and The Tax Collector (Modernised Version) parable, by age.
(Interview Method (Group Five): N = 50
Multiple-Choice Method (Group Six): N = 50)

LEVEL OF UNDERSTANDING	TESTING METHOD USED	AGE GROUPS (GROUP, N = 10)				
		7	8	9	10	11
ONE	INTERVIEW (GROUP 5)	3	0	0	0	0
	MULTIPLE-CHOICE (GROUP 6)	3	4	2	0	2
TWO	INTERVIEW (GROUP 5)	3	3	5	3	2
	MULTIPLE-CHOICE (GROUP 6)	6	0	0	0	0
THREE	INTERVIEW (GROUP 5)	4	7	5	7	8
	MULTIPLE-CHOICE (GROUP 6)	1	6	8	10	8

TABLE 22

Total Number of Responses at Levels One, Two and Three for the Interview Method and the Multiple Choice Method of testing The Pharisee and The Tax Collector (Modernised Version) parable.
(Interview Method (Group Five): N = 50
Multiple-Choice Method (Group Six): N = 50)

TESTING METHOD USED	LEVELS OF UNDERSTANDING		
	ONE	TWO	THREE
INTERVIEW (GROUP 5)	3	16	31
MULTIPLE-CHOICE (GROUP 6)	11	6	32
Chi-Squared (with 2 d.f.) = 9.14 (Significant at the .05 level)			

TABLE 23

A Comparison of the Response Levels of Group Five (N = 50) and Group Six (N = 50) when tested by semi-structured interviews on The Good Samaritan parable, by age.

LEVEL OF UNDERSTANDING	GROUP No.	AGE GROUPS (GROUP, N = 10)				
		7	8	9	10	11
ONE	FIVE SIX	2 1	1 0	0 0	0 0	1 0
TWO	FIVE SIX	2 3	0 3	2 0	0 0	1 1
THREE	FIVE SIX	6 6	9 7	8 10	10 10	8 9

TABLE 24[4]

Total Number of Responses at Levels One, Two and Three for Group Five and Group Six, when tested by semi-structured interviews on The Good Samaritan parable.
(Group Five: N = 50, Group Six: N = 50)

GROUP No.	LEVELS OF UNDERSTANDING		
	ONE	TWO	THREE
FIVE	4	5	41
SIX	1	7	42
Chi-Squared with levels one and two combined (with 1 d.f.) = 0 (N.S.)			

[4]It could be argued that the Good Samaritan parable was not an ideal choice for the control condition, because of the relative ease with which the children understood it. This fact only became apparent after this series of parables experiments had been completed and analysed.

children had a chance of guessing the higher level responses. This, however, was ruled out to a considerable extent by ensuring that the children recorded at least two out of three responses, at Level Three (see p75), before they were judged to have obtained that level of understanding for that parable. By guessing, therefore, a child could only expect to obtain less than 26% of responses at Level Three, and this would seem to exclude guessing as a possible explanation of the striking changes in the levels of understanding which we found, particularly with The Two Houses parable. In addition to this, there is an extensive literature relating to the issue of guessing on multiple-choice tests (see, for example, Ebel, 1972; Slakter, 1968a, 1968b; Wood, 1977), and the general consensus of opinion is now that the phenomenon of random guessing on such tests is rare and that factors which are applied to correct scores to take account of guessing, in most cases, are unnecessary.

Another criticism of multiple-choice testing, which is sometimes made, is that the correct choice either stands out too obviously <u>or</u> is too similar to the other choices given. We feel, however, that by choosing our multiple-choice answers from the responses given most frequently by children in previous experiments, using the interview method, we have protected ourselves also from this failing.

In summary then, we can say that as well as the factors to do with the parables themselves, which we have already seen as being of importance, there is another factor which affects the child's

apparent level of understanding of a parable, and that is the method by which that understanding is tested.

(5) The Effect of Sex Differences on the Results

The fifth factor we shall look at is the sex of the children, to see whether there is any difference in the performance of boys and girls, at the different ages studied.

This study involved 100 children (50 boys and 50 girls) all drawn from the same two schools, with each age group of 20 children containing 5 boys and 5 girls from each of the two schools.

TABLE 25 A Comparison of the Response Levels of 50 Boys and 50 Girls, Tested on their Understanding of Four Biblical Parables, by Age. (Numbers Divided Equally Between Age Groups.)

LEVEL OF UNDERSTANDING	SEX	AGE GROUPS (GROUP, N=10)				
		7	8	9	10	11
ONE	Boys	23	10	10	6	4
	Girls	18	11	4	4	2
TWO	Boys	10	21	17	14	13
	Girls	13	20	19	15	14
THREE	Boys	7	9	13	20	23
	Girls	9	9	17	21	24
Overall Chi-Squared (with 2 d.f.) = 2.78 (N.S.) with age groups combined						

Table 25 shows the number of boys and girls, in each age group, at each level of understanding of the parables, and an analysis of these results, which combined the children from the different age groups, yielded no significant differences in the number of boys and girls at each level of understanding. This result is in line with recent studies suggesting that there are few consistent differences between the cognitive and intellectual abilities of the two sexes (Maccoby and Jacklin, 1975; Wittig and Petersen, 1979). On the other hand, there is some other evidence that religious education is more popular with girls than it is with boys and also that they obtain better examination grades in it (Murphy, 1979). It is, however, clear from the work of Hilton and Berglund (1974), in the field of mathematics, that sex differences in attainment levels vary considerably between different age groups, and as Murphy's (1979) results were based on the performance of girls and boys, aged 15 years and over, there is no particular reason why the findings of that study should hold with these much younger children.

(6) The Effect of Social Class Differences on the Results

The final factor which we investigated in this series of experiments was social class. This involved a study of children from two quite different schools. (One was an independent fee paying boys' preparatory school, and the other was a state run primary school situated in the centre of a large area of local authority housing schemes.) The children from one school came from predominantly upper middle class homes, whereas the children from the other school came from mainly working class homes. There were 50 children in each group and they were all tested on their understanding of two

biblical parables (The Good Samaritan and The Rich Fool). The results are presented in Table 26, and again it can be seen that there are no significant differences between the performances of the two groups.

Thus, we can conclude that the social class or the social background of the children is not a factor which appears to affect their understanding of parables. This finding is interesting in the light of the work of Bernstein (1961), which suggests that children from working class backgrounds have a lower level of intelligence, caused by their restricted language code. If either of these things, which Bernstein proposes, are true, then they do not seem to have affected the understanding which these children appeared to have of the meaning of these two parables.

TABLE 26

A Comparison of the Response levels of two groups of children from different social backgrounds, interviewed on their understanding of two Biblical parables, by age.
(Middle Class, Group N = 50, Working Class, Group N = 50)

LEVELS OF UNDERSTANDING	SOCIAL CLASS	AGE GROUPS				
		7	8	9	10	11
ONE	MIDDLE	9	2	1	0	1
	WORKING	5	2	1	1	2
TWO	MIDDLE	7	8	12	8	7
	WORKING	10	8	4	6	8
THREE	MIDDLE	4	10	7	12	12
	WORKING	5	10	15	13	10
Overall Chi-Squared with age groups combined (with 2 d.f.) = 1.26 (N.S.)						

3.4 Summary and Conclusion about the Development of Understanding of Parables in Children

In this series of experiments we have looked at evidence suggesting that age, content and method of testing are all important factors in any consideration of the development of understanding of parables in children. We have also seen evidence to suggest that the cultural context of a parable may be another important factor, although the children's sex and social class were seen not to be of importance.

In the past, the development of understanding of parables, like various other types of developing religious thinking, has been closely linked to simple patterns of cognitive development. We have argued that this approach is mistaken, and that the developmental changes taking place in individual children are much more complex than those normally attributed to them by those who widely apply simplistic theories of cognitive development to such areas of thinking.

Gallagher (1978), in a recent discussion of the relationship between the child's understanding of metaphors and analogies and cognitive developmental theories, stresses the mapping skills which are involved in seeing how the parts of a metaphor or an analogy correspond to the thing which they are describing. This skill has also been compared to Piaget's system of correspondences by Cohen (1974), in an article in which he emphasises the complex mental operations involved both in generating and understanding metaphors. Both Gallagher and Cohen discuss the understanding of metaphors and analogies as though the skills involved fall firmly within Piaget's stage of formal operations. Lunzer (1978) goes even further than

this in claiming that acceptance of lack of closure, the skill of moving flexibly among possible correspondence hypotheses, is the hallmark of formal thought. Despite this, both Gardner (1973) and our own study appear to have provided some evidence of understanding of analogies and parables amongst pre-adolescent children. Gardner's study was, in fact, concerned with the artistic development of children and their appreciation of various art forms, but it is interesting to note that Gardner concluded that:

> "Formal operations may even at times serve to hinder artistic development, since the tendency to focus on underlying content, to abstract out meaning, to be sensitive to the explicit demands of a task, to proceed in a systematic and exhaustic manner and, above all, to translate problems and questions in logical propositional terms, may all militate against the sensitivity to detail and nuance and the faithfulness to the particular properties of object and medium that are vital for the artist". (Gardner, 1973, p308.)

This evidence has to be balanced against a large number of studies which suggest that an increase in the complexity of the construction and appreciation of analogies and metaphors occurs in early adolescence (Billow, 1975; Gardner et al, 1975; Lunzer, 1965; Orlando, 1971).

The studies presented in this chapter have provided evidence that children in the 7-11 year old age range show differing levels of understanding of a variety of different biblical parables presented in different forms. One possible explanation for this finding is that the children had, in fact, been taught the meaning of these parables and what were being revealed were varying levels of retention of learned facts. The validity of this explanation is difficult to determine because of the virtual impossibility of controlling for learning effects; however, it was the intention that the variations in the presentation format of the parables and in the

way in which the children's understanding of them was tested would mitigate against learned responses dominating the results. An alternative explanation, in terms of a theory of fitting the understanding of parables into a strict model of stage related cognitive development, would be that we were observing examples of horizontal décalage. This is the expression used by Piaget to describe lapses in performance when a child has moved into a new stage of cognitive development but does not demonstrate the operation characteristics of the new stage in all tasks.

There are two major objections to this second possible explanation of the findings. Firstly, if we are to place the skills necessary for understanding parables within the stage of formal operations and explain the majority of failures to understand these parables as examples of horizontal décalage, then we would be assuming that the majority of these children (who were all between 7 and 11 years old) had reached the stage of formal operational thinking. Even within the loosest interpretation of the relationship between ages and stages, this would appear to be an unlikely state of affairs. Secondly, we would stand along with Brown and Desforges (1977) in being unwilling to accept, as support for a stage-development theory, a set of data which shows more evidence of heterogeneity than homogeneity amongst the performances of children on a group of tasks, supposedly presenting similar cognitive demands. One has to recognise, in this context, that if the concept of horizontal décalage is allowed to be used to explain away all contradictory evidence, then a stage development hypothesis can never be adequately tested.

A final explanation of these findings, which is the one we would favour, is that the results demonstrate an inter-relationship between

the different demands of the parables, as they were presented in their various forms, and individual differences between the children tested. In addition, it is likely that some of these individual differences between the children could be explained by a general, but not necessarily a stage related, theory of intellectual development. Francis (1979b) has made a general critique of studies of children's understanding of parables, on the grounds that they have not recognised the distinct differences in the various types of parable. In addition to this, Francis argues that different parables are based on different forms of language, which present the listener with different cognitive demands. Francis goes on by following Linneman (1966) in classifying the generic term parable into four different types: the allegory, the illustration, the similitude and the parable proper. Francis uses the example of studies into children's understanding of parables as part of a general argument about the need to link very closely the study of different types of religious language and the study of children's developing understanding of religious discourse. This argument is clearly very much in line with our own view, expressed in Chapter Two, that the problem of studying the child's developing understanding of religion needs to be viewed as a semantic and linguistic problem as well as a purely cognitive problem.

Thus, the great amount of variation in the results of the children, of different ages, on the different versions of various parables would appear to suggest that much more than a simple stage related cognitive developmental explanation is required. The explanation which is preferred is one which regards both the different versions of the various parables and the different modes of testing the

children's understanding of the parables as presenting the children with a variety of cognitive, linguistic and semantic demands. The fact that there was a degree of homogeneity within the responses of the children within individual age groups, throughout the series of experiments, suggests that there were general factors influencing the development of all of these children. As they grow older children become more able to cope with intellectual demands, but the nature of the process by which these developments take place will only be understood in the light of further work by those who seek to understand the development of cognitive processes and the development of language use and comprehension in children. The understanding of cognitive processes is clearly beginning to receive much attention from those interested in individual differences and intellectual development (see, for example, Sternberg, 1979 and Snow, 1979) and child language is already a rich area of enquiry, as was pointed out in the literature review in Chapter Two.

CHAPTER FOUR

THE DEVELOPMENT OF RELIGIOUS WORD MEANING

4.1 Introduction

In Chapter Two, it was noted that the study of word meaning development has been largely neglected by those interested in studying the development of religious thinking in children. One study by Deconchy, J.P. (1964) used the word-association method, to investigate the development of the child's concept of God. The procedure he used was to present individual stimulus words to a group of children who were each required to write down five words, which they associated with each of the stimulus words. One of the six stimulus words he used was God, and the other five were "words of secular or religious tonality". This is really the only study that goes any way towards attempting to study the development of religious word meaning, and it has obvious shortcomings in that it only deals with one word of any great religious significance (i.e. God), and also because the association method, which was so popular with those who took a psychoanalytical approach to psychology, is not now widely regarded as a very reliable method for collecting data in studies of this kind.

In the experiments to be reported in this chapter, two different approaches were used to study the word meaning development of a variety of terms of religious importance. The first of these studies applied the opposites test, as used by Eve Clark (1971), to a set of twelve pairs of opposites, which were made up of one

group of largely abstract words, and a second group of words which are commonly used in religious/moral teaching. In a series of subsequent studies the triadic comparisons technique of Levelt (1970a) was employed to compare the related meanings of several groups of words, which were made up mainly of words of religious significance. This technique was derived from the Repertory Grid Technique, as used in Personal Construct Theory by Kelly (1955), and involves presenting words in groups of three, and asking individual children to put together those two words that "go together best" or that "mean about the same". The children were also required to justify their choices verbally, and these justifications are used in the final analysis of the results. The main analysis of the triadic comparison choices is represented by Johnson's (1967) hierarchical clustering analysis, which clusters together those words which are most strongly related by the children's choices. The application of this form of analysis to studies analysing language data has been recommended by Levelt (1970a), and has also been successfully used both by himself (Levelt, 1969) and by Miller, G.A. (1969). Also Fillenbaum and Rapoport (1971), in a study of nine semantic domains of word meaning, employed this technique, and in support of their use of it they quote Miller (1967) as saying that it "seems to offer more promise for semantic theory than any of the other techniques psychologists have used to probe the structure of the semantic lexicon".

Fillenbaum and Rapoport (1971), like Miller (1967, 1969) view the hierarchical clusters as actual quantitative psycholinguistic models, and this is a point we will be discussing further in the introduction to the series of experiments.

First of all, however, the findings of our preliminary experiment, using Eve Clark's (1971) opposites test, will be reported.

4.2 The Opposites Test Experiment

Eve Clark (1971, 1972) has used the opposites test in studying the acquisition of pairs of antonyms. She has discussed her results in terms of the polarity of the different pairs, and has developed theories which attribute to pairs a positive and a negative member, and this is seen as a major factor affecting their order of acquisition of meaning.

In this study the test was used merely to see whether certain pairs of opposites had been acquired by children in the age range, 6.0 to 9.0 years old. Our investigation was limited to answering the question, "Have children in this age range acquired an understanding of these words as pairs of opposites?" The application of this question to our wider interests is in terms of the use of these terms in religious teaching and religious stories, and the limitations that will be imposed upon children in this age range if they have not acquired these pairs as opposites in their semantic development.

At the start of the test, each child was asked if he knew what an opposite was. If he said that he did, then he was tested on a few easy examples such as Yes and No, Soft and Hard, etc., to make sure that he really did know. On the other hand, if he said that he did not know what an opposite was, then this concept was described to him, using examples, and then he was tested on the same easy examples as the other group to ensure that he now understood. At this point it was assumed that all the children knew what an opposite was and the actual testing began.

The test consisted of presenting verbally, in a random order, a complete set of individual words from two sets of pairs of words, asking the child each time for the opposite of the word presented. The only constraint on the order of presentation of words was that each member of a particular pair came in a position earlier in the list than the other member of the pair in exactly half the trials.

Subjects

Forty children in the age range 6.0 to 9.0 years old were tested, and for the purpose of the analysis they were divided up into two groups of twenty. The first group consisted of twenty children, aged between 6.0 and 7.11 years (Mean Age = 7.0 years), and the second group consisted of twenty children aged between 8.0 and 8.11 years (Mean Age = 8.6 years).

Materials

The pairs of words used were:

Group One (Moral/Religious)	Group Two (Abstract)
Good - Bad	Light - Dark
True - False	Day - Night
Right - Wrong	Summer - Winter
Love - Hate	Life - Death
Innocent - Guilty	North - South
Natural - Supernatural	East - West

Results

The results were tabulated in terms of correct and incorrect responses, in order to see which pairs were best understood (see Table 27), and also to see the type of incorrect responses which were given (see Tables 28 and 29).

TABLE 27 - Levels of Correct Performance on Opposites Test

Levels of Correct Performance	6, 7 Year Olds (N=20)	8 Year Olds (N=20)
≥75%	Good-Bad (90%) Light-Dark (82.5%) Day-Night (80%) East-West (77.5%) Right-Wrong (75%)	Good-Bad (100%) Light-Dark (90%) Summer-Winter (85%) Right-Wrong (85%) Day-Night (80%)
≥50%	Summer-Winter (72.5%) Love-Hate (52.5%)	East-West (65%) True-False/Untrue (53%) Life-Death (53%) North-South (50%) Love-Hate (50%)
≥25%	True-False/Untrue (45%) Life-Death (27.5%) North-South (27.5%)	Natural-Supernatural/ Unnatural (33%)
<25%	Innocent-Guilty (2.5%) Natural-Supernatural/ Unnatural (0%)	Innocent-Guilty (15%)

TABLE 28 - Opposites Test Responses (6, 7 Year Olds, N=20)

STIMULUS WORDS	RESPONSE WORDS (WITH FREQUENCY)				
RELIGIOUS/MORAL					
Good	Bad (18)	Unkind (1)	Not good(1)		
Bad	Good (18)	Happy (1)	Horrid (1)		
True	False (6)	Not true (5)	Lies (2)	Other†(2)	N.R.*(5)
False	True (8)	Real (1)	Teeth (1)		N.R.(10)
Right	Wrong (11)	Left (5)	Draw (2)	Other (1)	N.R. (1)
Wrong	Right (19)				N.R. (1)
Love	Hate (12)	Smile (1)	Unlove (1)		N.R. (6)
Hate	Love (9)	Like (7)	Friend (1)		N.R. (3)
Innocent	Uninnocent(2)	Guilty (1)			N.R.(17)
Guilty	Unguilty (3)	Not guilty(2)	Truth (1)		N.R.(14)
Natural	Unnatural (4)				N.R.(16)
Supernatural					N.R.(20)
ABSTRACT					
Light	Dark (15)	Night (1)	Unlight (1)	Other (1)	N.R. (2)
Dark	Light (18)	Morning (1)	Undark (1)		
Day	Night (19)	Winter Day(1)			
Night	Day (13)	Morning (5)	Midday (1)		N.R. (1)
Summer	Winter (14)	Spring (4)	Autumn (1)		N.R. (1)
Winter	Summer (15)	Autumn (2)	Sunny (1)	Other (1)	N.R. (1)
Life	Death (8)	Dead (1)	Die (1)	Other (1)	N.R. (9)
Death	Alive (5)	Life (3)	Die (1)	Other (3)	N.R. (8)
North	West (8)	South (5)	East (4)		N.R. (3)
South	West (10)	North (6)	East (1)		N.R. (3)
East	West (18)	North (2)			
West	East (13)	North (2)	South (3)		N.R. (2)

† Other = Other responses given than those already listed.
* N.R. = No response given.

TABLE 29 - Opposites Test Responses (8 Year Olds, N=20)

STIMULUS WORDS	RESPONSE WORDS (WITH FREQUENCY)				
RELIGIOUS/MORAL					
Good	Bad (20)				
Bad	Good (20)				
True	Untrue (6)	False (5)	Not true (5)	Other† (4)	
False	True (11)	Unfalse (2)	Real (2)		N.R.* (5)
Right	Wrong (14)	Left (3)	Draw (1)	Other (2)	
Wrong	Right (20)				
Love	Hate (10)	Unlove (5)	Not love (1)	Other (2)	N.R. (2)
Hate	Life (10)	Love (7)			N.R. (3)
Innocent	Uninnocent (5)	Guilty (4)	Liar (1)	Other (2)	N.R. (8)
Guilty	Not guilty (7)	Unguilty (8)	Innocent (2)	Other (1)	N.R. (2)
Natural	Unnatural (10)	Not natural (2)			N.R. (8)
Supernatural	Unsupernatural (3)	Natural (1)			N.R. (16)
ABSTRACT					
Light	Dark (18)	Night (1)	Heavy (1)		
Dark	Light (18)	Daylight (1)	Cart (1)		
Day	Night (18)	Afternoon (1)	Night-time (1)		
Night	Day (14)	Morning (4)	Light (2)		
Summer	Winter (16)	Autumn (2)	Not summer (1)		N.R. (1)
Winter	Summer (18)	Autumn (2)			
Life	Death (12)	Dead (2)	Killed (1)		N.R. (5)
Death	Life (10)	Alive (5)	Life (1)	Other (2)	N.R. (2)
North	South (9)	West (6)	East (4)		N.R. (1)
South	West (11)	North (5)	East (2)		N.R. (2)
East	West (17)	North (1)	South (1)	Other (1)	
West	East (9)	South (5)	North (3)		N.R. (3)

† Other = Other responses given than those already listed.
* N.R. = No response given.

When scoring the responses it was found that there were a few alternative correct responses which could be given as opposites to some of the words. For the purpose of our analysis, "untrue" and "false" were both accepted as the opposite of "true", and "unnatural" and "supernatural" were both accepted as the opposite of "natural". However, because of their different meanings, "left" (instead of "wrong") was not scored as a correct response to "right", and "heavy" (instead of "dark") was not scored as a correct response to "light". (These were of course quite valid responses, in one sense, and it was unfortunate that this ambiguity in the stimulus words existed.) Also, negations (e.g. "not bad") were not counted as valid opposites.

There were a very few isolated occurrences of free association (e.g. "teeth" as a response to "false"), but these were very rare and on the whole the children seemed to understand what was being required of them.

Discussion

It is clear from the results that some pairs of opposites are known better than others, by children in this age range. Also, children in the 8 year old group performed significantly better overall on the task than did the children in the 6,7 year old group ($\chi^2 = 8.44$, with 1 degree of freedom, significant at the .01 level). Also, performance on the moral/religious pairs of opposites was not as good as it was on the abstract pairs.

Another interesting observation was that children in the older age group had a much greater tendency to use negations (e.g. "not love", "unlove") than did the children in the younger group (75 occurrences as opposed to 25 in the 6,7 year old group). In contrast to this, children in the younger group were more likely to give no response at all to a word than were the children in the older group (123 occurrences as opposed to 58).

Two somewhat surprising features of the results were the much better level of performance of both groups on East-West than on North-South, and also the fact that the younger group performed even better on East-West than the older group did.

The main finding of this experiment, however, was that children within this age range were shown not to have completely acquired certain pairs of opposites which are often used in religious/moral teaching (e.g. true-false, innocent-guilty, and natural-supernatural). This conclusion does not say that the children have not acquired any meaning for the individual words making up these pairs, but it does suggest that in Eve Clark's (1973) terms, the "semantic feature" of polar opposition had not, in these cases, as yet been fully acquired by these children.

We will go on now to use another experimental technique, which should allow us to investigate a <u>variety</u> of features of word meaning, among several groups of words, mainly of religious significance.

4.3 The First Series of the Triads Experiments

One way of investigating the meaning of individual words is to explore their relatedness to other individual words and to groups of words. Miller (1969), for example, used a sorting task on a set of 48 common nouns, where the subjects were required to sort the words into groups on the basis of similarity of meaning. Miller was here testing the assumption that when items are clustered this reflects a decision to ignore particular conceptual features which would normally distinguish these items. In the analysis of his data, Miller used hierarchical clustering techniques, and the justification here was that "hierarchical (taxonomic) organisation based on relations of class inclusion is a pervasive feature of the subjective lexicon" (Miller, 1969).

Anglin's (1970) studies, which we have already mentioned in Section 2.5, were also along these lines and were used in support of the view that lexical information about word meaning may be stored in terms of a hierarchical classification of words.

The series of studies that we will be reporting in this section are of a similar nature to those of Anglin (1970) and Miller (1969), in that they employ a technique that seeks to observe the way in which groups of words are partitioned or clustered in relation to one another. However, in place of the sorting method used in these studies, we will be employing a triadic comparisons technique, the inspiration for which, as has already been mentioned in Section 4.1, was found in the Repertory Grid Technique used in Personal Construct Theory. When this technique is used in Personal Construct Theory,

the task normally involves first of all getting subjects to name twenty or thirty people whom they know. They are then presented with the names of three of these people and are asked to choose two, saying in what way these two people are alike and are different from the third person. By repeating this procedure with different combinations of names, a whole matrix of judgments (or constructs, as they are called) is collected, and these are then analysed to see to what extent the person is using a variety of constructs to partition this group of people. (For further details of this use of the triadic comparisons method see Kelly, 1955.)

The way in which this technique will be used here for studying word meaning, is by replacing the people with a group of words. The relationship of this group of words can then be studied, by presenting them in sets of three to the subject, and asking him to put together the two "which mean about the same" or "go together best" and explain why these two have been put together, relative to the third word in the set. By these justifications of triadic selections, aspects of the features of the word meaning, which are being used for partitioning these groups of words, may be studied. Also by analysing the grouping of words together, using Johnson's hierarchical clustering technique, it will be possible to study the degree of relatedness of different subsets (or clusters) of words out of the original groups. The closer that words are clustered together, the more related they are within the context of the group.

It is important to realise that, although this experimental approach has features in common with the sorting tasks of Miller (1969) and

Anglin (1970), especially because of the fact that they too employed hierarchical clustering analyses, our studies are being interpreted from a totally different standpoint. That is, we are in no way intending to set up hierarchical psycholinguistic models in support of the Generalisation Hypothesis, but are purely using hierarchies to illustrate the degree of communality of meaning that some words have relative to other words within the context of an overall group. In fact, we will be demonstrating in the second series of these studies that the structure and underlying justifications for these hierarchies can be changed quite radically by slightly changing the context of the overall groups.

Our aim is primarily to study the word meaning development of several groups of words, many of which are relevant to the development of religious thinking, and for this purpose we are seeking to use techniques that have been proven by their previous use elsewhere. The discussion of our results in terms of issues that are concerned with the merits of various current overall theoretical views of word meaning will be a secondary consideration.

We will now outline the experimental procedure which will be used throughout the two series of experiments.

Method

The groups of words studied always contained five words, and these words were presented on pieces of card, three at a time. The child was asked to look at the card as it was presented, and the three words on the card were then read out by the experimenter. The child was then asked, "Which two out of these three words go together best?"

and also, as a subsequent prompt, "Which two words mean about the same?". When the child had chosen two words out of the three, he was then asked, "Why do those two go together best?" and, "Why are those two different from that word?" (pointing to the one that had been left out). All of the children's selections and justifications for their choices were recorded by the experimenter, and the stimulus words were presented in all the possible sets of three (that is, each group of five words was represented by ten presentations of three words, covering all the possible combinations). In each of the experiments three groups of words were tested concurrently, in such a way that the order of presentations of sets of three words was randomised among the groups. In other words, each trial could equally well be a set of three words, all from any one of the three different groups of five words. This randomisation was employed as an attempt to counteract any effect that one trial might have on a subsequent trial if the words were drawn from the same group.

Subjects

In each of the two series of experiments, there was a group of 69 children, who were the subjects, and this group was made up of three sub-groups of 23 children, aged 6, 8 and 10 years old. The groups used in the two experiments were made up of different children, although the ages used were the same, and they were taken from the same classes in the same school. The groups of children represented the age spans 6.0 to 6.11 years, 8.0 to 8.11 years and 10.0 to 10.11 years and the mean ages of the groups were 6.6, 8.6 and 10.6 years old.

The method of selection of subjects for this and all the other experiments, which are reported here, was for the experimenter to randomly select names from the school registers. The only constraint was that the children were of the correct age for any particular group. Occasionally children chosen in this way were not included in the sample, on the advice of either the class teacher or the head teacher of the school. This happened very rarely, and was usually only done if the child had been officially classified as educationally subnormal. It was felt that in these cases the experimental tasks might be over-demanding for the children, and that their responses might bias the sample in an uncontrollable way.

It should be noted that a few children appeared not to understand the task, or were not able to provide answers to the questions. There were only a few of these, and they were replaced by additional children of the same age.

Materials

In the first series of the Triads Experiments, the three groups of words studied were as follows.

Group One	Group Two	Group Three
Good	Hymn	God
Bad	Church	Jesus
True	Bible	Angel
Evil	Cathedral	Devil
Wrong	Prayer	Man

Group One consisted of words of a moral/religious nature, some of which were studied in the opposites test, previously reported. Group Two involved religious objects or acts, and Group Three involved people or beings of religious significance.

4.4 Method for Presenting the Results of the Triads Experiments

The results of this series of experiments will initially be presented in three different forms. Firstly, they will be given in the form of a matrix, showing the number of times each pair of words was put together by the children in any one age group.

The second type of presentation of the results is a hierarchical clustering analysis, and the technique used is that of Johnson (1967). Levelt (1970a) gives a detailed account of how this analysis can be applied to language data. Basically what happens is that the matrix data, which represents similarity (or relatedness) measures for all the pairs of words from the original group of words, are transformed into a hierarchical clustering scheme (H.C.S.) by systematically putting together the most highly related pair of words (in terms of the similarity measures) and then re-computing the similarity matrix, considering words which have already been clustered together as one unit in the matrix. This re-computing of the data matrix may be either done by the minimum (or diameter) method or by the maximum (or connectedness) method. The essential difference here is that if two words have been clustered together and there is a choice involved in deciding which of their individual relatedness measures to take, to determine the relatedness of the pair to another word, then one decides on the basis of taking either the higher measure (in the connectedness method) or the lower measure (in the diameter method). Obviously these two different methods might well, in some cases, yield quite different hierarchical structures and the choice between the two methods has to be made on the basis of whether,

in any particular set of data, the similarity (or relatedness) measure s(x,i) is a better estimate of s((x,y)i) than s(y,i), where x and y are the two words which have already been clustered together and i is the word they are being related to. The decision between the two methods rests on taking either the greater or lesser value out of s(x,i) and s(y,i). In some cases it seems appropriate to apply both methods, if there is no way of choosing between them, but in others (e.g. Levelt, 1970b) there seem to be good grounds for using the connectedness method. For example, Levelt (1970b) was using the method to provide relatedness estimations for all pairs of words from test sentences (e.g. "the boy has lost a dollar"). Having ascertained that "a" and "dollar" are strongly related, and when deciding the relatedness of "a dollar" with the other words, it would seem most appropriate for Levelt to take the maximum relatedness value of either of the two words, on the grounds that one of them (dollar) is probably the key member of the pair and will better represent the relatedness of "a dollar" to the other words than will "a" on its own. This argument rests on the assumption that "dollar" will have a higher relatedness value to other words than will "a", and the fact that this is the case in the data (in all apart from one case ("the"), where the difference is extremely small) adds very strong support to this approach.

It is debatable whether this same argument could be applied to our data. For instance, having clustered together God, Jesus and Angel because of their strong relatedness, can we assume that whichever of them is most strongly related to Devil, best represents the cluster? We would argue that this probably is the best way of

performing the analysis, but this argument is not essential as, in almost all cases with our data, both methods yield identical solutions, apart from the value of the weakest hierarchical relationships. Thus both methods will, in almost all cases, cluster the words together into the same hierarchically organised groups, and the only differences will be in terms of the weakest relatedness values (at the top of the hierarchies, as we have drawn them). As these values are largely irrelevant to our interests and do not vary much between the two methods anyway, we will not compute the hierarchies by both methods but will remain with our preferred method, which is the connectedness method. However, the very fact that both methods do in almost all cases give the same topological structure, is in itself extremely good evidence that there are latent hierarchical structures in the data and that they have not just arisen as an artifact of the particular method chosen. This point is made by Levelt (1970a) in support of doing both methods of the analysis in cases where this is of interest:

> "It has been argued that in the ideal case, where there is no experimental error and where the data structure is fully hierarchical, the diameter and connectedness methods give identical solutions, both topologically and numerically ... It can be shown that if the two solutions are topologically identical, i.e. give the same clusters and subclusters, the data do not violate the ultrametric inequality. This can be taken as evidence for the existence of a latent hierarchical structure". (Levelt, 1970a, p106.)

The third form in which the results of these two series of experiments will be presented is in terms of a classification of the justifications used by the children to support the pairing together of particular words or groups of words. These justifications have

been grouped together into sets of similar types of justifications, where this seemed to be appropriate, and these are only presented in the cases where they are of importance for interpreting the clusters of words, to which they refer.

4.5 The Results of the First Series of the Triads Experiments

TABLE 30 Relatedness Matrix for Group One Words (N=23, 6 Year Olds)

	Good	Bad	True	Evil	Wrong
Good	0	19	51	8	19
Bad		0	15	30	35
True			0	9	19
Evil				0	19
Wrong					0

(Max Possible Relatedness Score = 69)

TABLE 31 Relatedness Matrix for Group One Words (N=23, 8 Year Olds)

	Good	Bad	True	Evil	Wrong
Good	0	24	50	10	14
Bad		0	11	36	42
True			0	4	16
Evil				0	23
Wrong					0

(Max Possible Relatedness Score = 69)

TABLE 32 Relatedness Matrix for Group One Words (N=23, 10 Year Olds)

	Good	Bad	True	Evil	Wrong
Good	0	15	58	2	5
Bad		0	2	50	48
True			0	1	7
Evil				0	42
Wrong					0

(Max Possible Relatedness Score = 69)

FIGURE 3 H.C.S. Solution (Connectedness method) for Group One Words (N=23, 6 Year Olds)

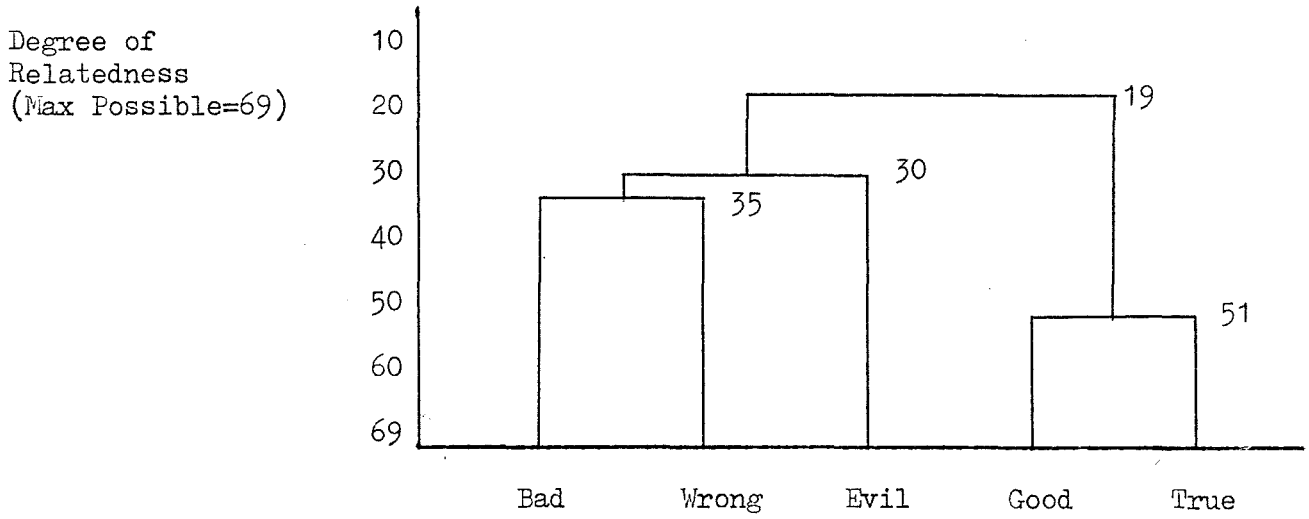


FIGURE 4 H.C.S. Solution (Connectedness method) for Group One Words (N=23, 8 Year Olds)

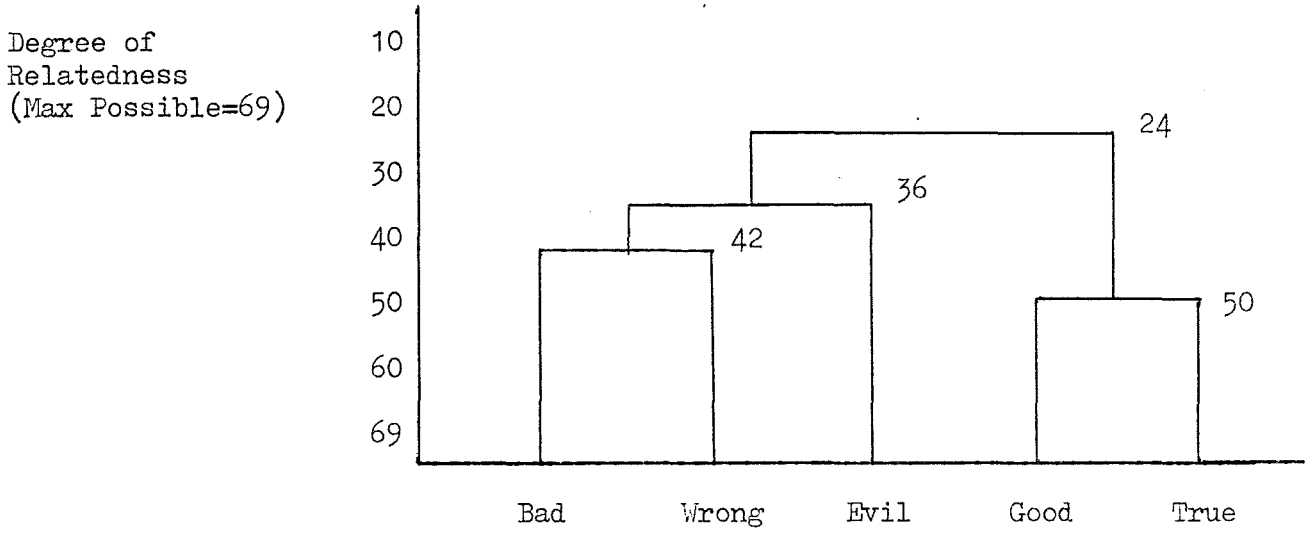


FIGURE 5 H.C.S. Solution (Connectedness method) for Group One words (N=23, 10 Year Olds)

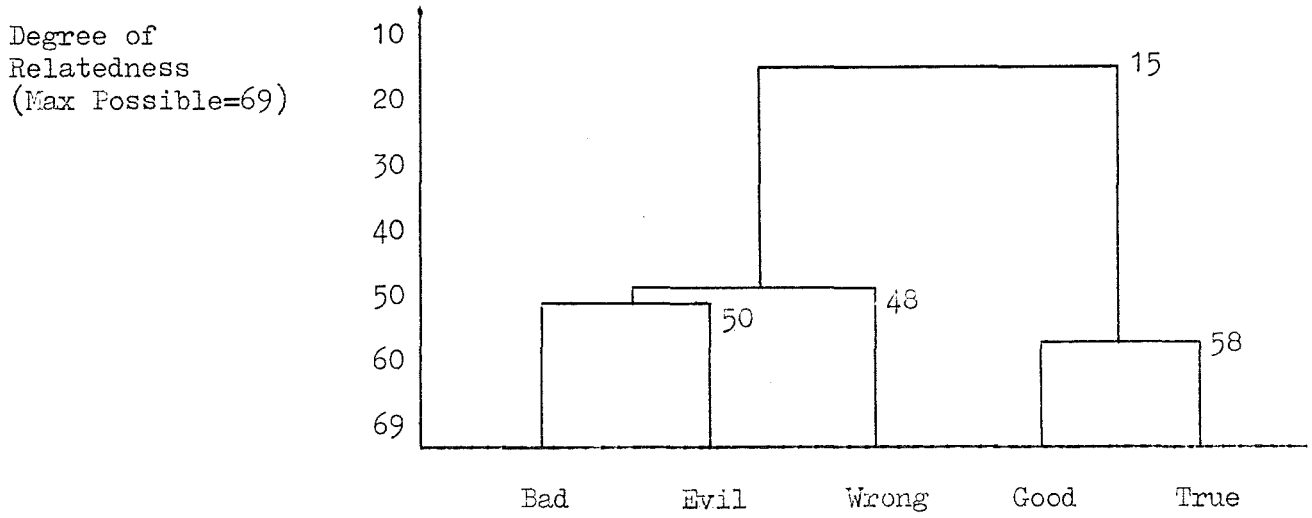


TABLE 33 Classification of Justifications, for Three Age Groups, Pairing Selected Group One Words

a. Justifications given for putting Good and True together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Good/Both Good/Gooder/ Goodest/Better/Good to tell Truth	39	Good/Both Good/ Not Bad/Not Wrong/ Both Nice/Good to tell Truth	36	Good/Both Good/ Nice/Not Wrong/ More Good/Not Bad/ Not Wicked	40
				Right/True/Truthful	11
Various Other Justifications	12		14		7
Total Number of Justifications Given	51		50		58

b. Justifications given for putting Bad and Evil together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Both Bad/Bad/Bad Men/ Unkind/Wicked and Bad	28	Both Bad/Bad/ Horrible/Not Good/ Not Nice/More Bad/ Horrible	28	Both Bad/Bad/ Horrible/Not Nice/ Not Good/Wrong/ Wicked	50
Like Each Other	2				
Various Other Justifications	0		8		0
Total Number of Justifications Given	30		36		50

c. Justifications given for putting Bad and Wrong together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Both Bad/Bad/More Bad/ Worse/Bad Things	27	Both Bad/Wrong/Bad/ Not Nice/Not Good	30	Not Nice/Wrong/Bad/ Not Good/Less Bad	38
Not Right/Mistakes	3	Not Right/Shouldn't Be	4	Not Right/Shouldn't Do	6
Various Other Justifications	5		8		4
Total Number of Justifications Given	35		42		48

TABLE 33 (cont.)

d. Justifications given for putting Evil and Wrong together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Very Bad/Both Bad/ Wicked/Wicked and Bad/ Wrong	16	Both Bad/Both Wrong/ Bad Things/Not Good	19	Both Bad/Bad/Wrong Both Wrong/Not Nice Doing Bad Things	32
				Not Right	5
Various Other Justifications	9		4		5
Total Number of Justifications Given	25		23		42

TABLE 34 Relatedness Matrix for Group Two Words (N=23, 6 Year Olds)

	Hymn	Church	Bible	Cathedral	Prayer
Hymn	0	23	37	6	34
Church		0	29	27	25
Bible			0	9	34
Cathedral				0	6
Prayer					0

(Max Possible Relatedness Score = 69)

TABLE 35 Relatedness Matrix for Group Two Words (N=23, 8 Year Olds)

	Hymn	Church	Bible	Cathedral	Prayer
Hymn	0	18	48	1	43
Church		0	19	42	20
Bible			0	1	35
Cathedral				0	3
Prayer					0

(Max Possible Relatedness Score = 69)

TABLE 36 Relatedness Matrix for Group Two Words (N=23, 10 Year Olds)

	Hymn	Church	Bible	Cathedral	Prayer
Hymn	0	10	42	2	50
Church		0	18	51	11
Bible			0	4	42
Cathedral				0	0
Prayer					0

(Max Possible Relatedness Score = 69)

FIGURE 6 H.C.S. Solution (Connectedness method) for Group Two words (N=23, 6 Year Olds)

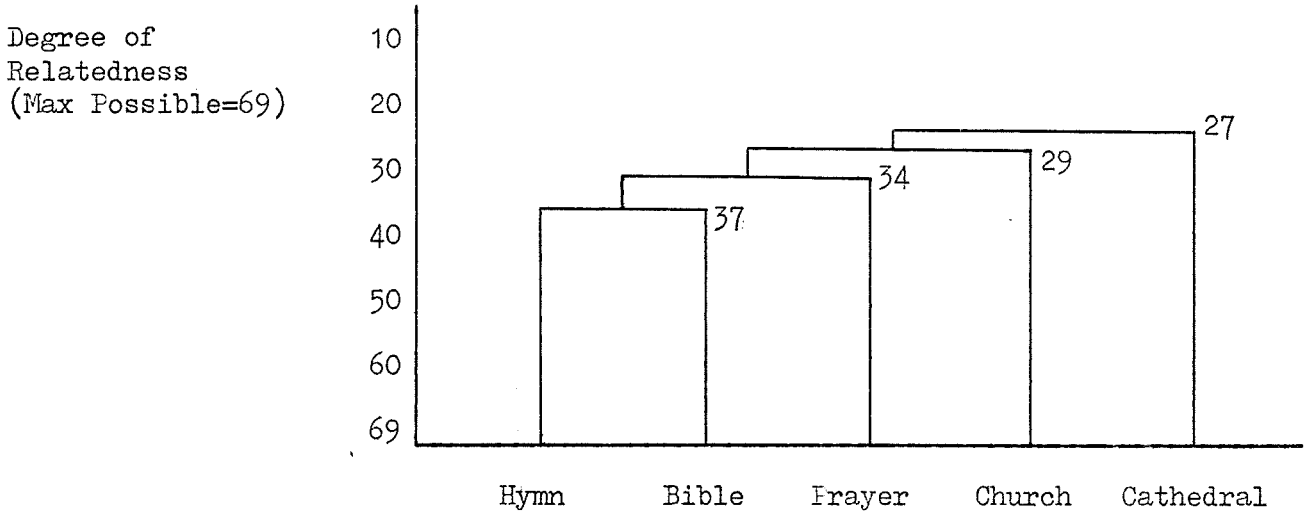


FIGURE 7 H.C.S. Solution (Connectedness method) for Group Two words (N=23, 8 Year Olds)

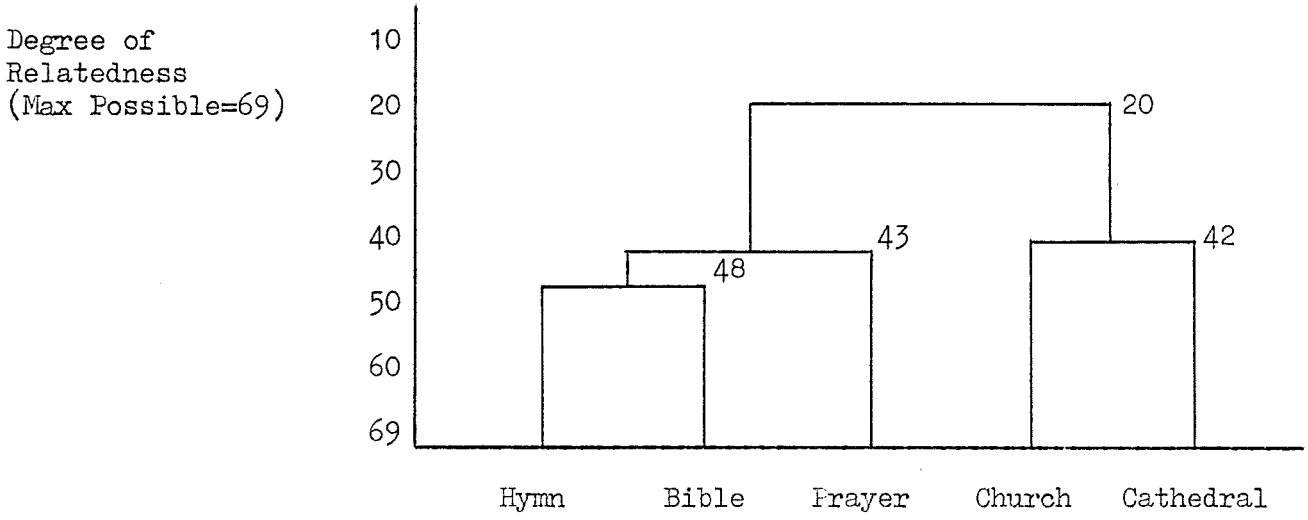


FIGURE 8 H.C.S. Solution (Connectedness method) for Group Two words (N=23, 10 Year Olds)

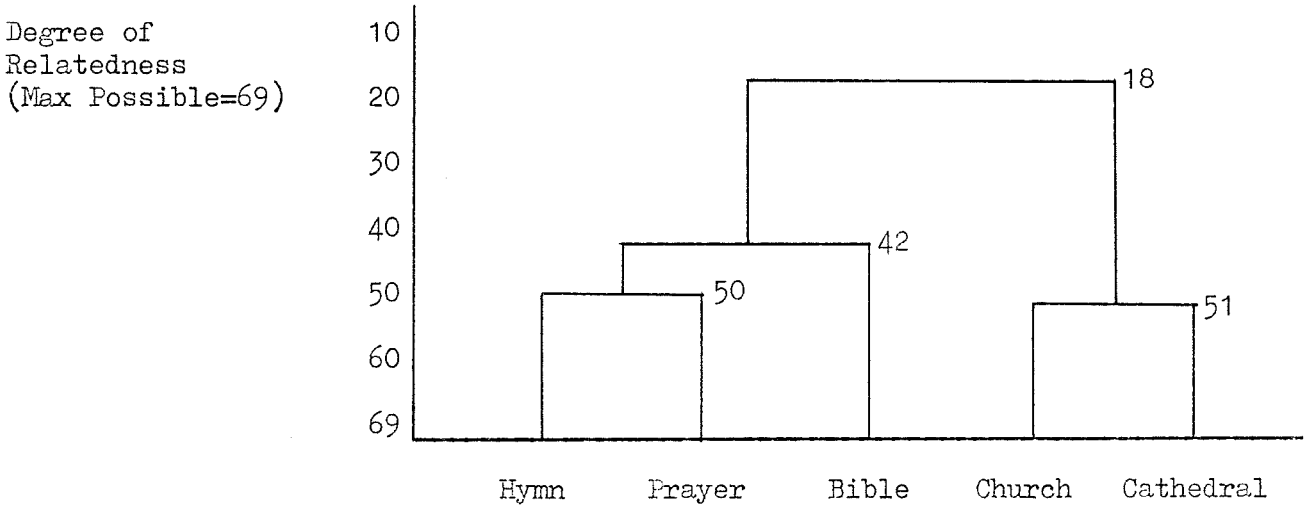


TABLE 37 Classification of Justifications, for Three Age Groups, Pairing Selected Group Two Words

a. Justifications given for putting Church with Hymn, Bible or Prayer, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Do/Say/Sing/Read in Church	70	Do/Say/Sing/Read in Church	42	Do/Say/Sing/Read in Church	26
		To do with God	5	About Jesus(or God)	7
Various Other Justifications	7		10		6
Total Number of Justifications Given	77		57		39

b. Justifications given for putting Hymn and Prayer together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Say or Sing	25	Say or Sing	15	Say or Sing	14
Songs	4	In Bible/In Hymn-book	8	To do with Church or God	6
		Not Buildings	7	Actions/Require Action	5
		To Jesus/God	4	Not Buildings	5
				In Books	4
				Not Books	3
Various Other Justifications	5		9		13
Total Number of Justifications Given	34		43		50

TABLE 37 (cont.)

c. Justifications given for putting Church and Cathedral together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Churches	16	Buildings/Built	29	Buildings/Built/ Made of Bricks	26
Go to on Sunday	3	Places	4	Churches	8
Look alike	2	Have Graves	3	Preach in them	3
Various other Justifications	6		6		14
Total Number of Justifications Given	27		42		51

d. Justifications given for putting Bible and Hymn together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
You get hymns in the Bible	25	You get hymns in the Bible	10	You get hymns in the Bible	15
Say or Do in the Church	4	Not Buildings	7	Books	8
About Jesus (or God)	4	About Jesus (or God)	4	Read/Sing	7
Read/Sing	3	Books	6	Both in Church	4
		Read/Sing	4	Not Buildings	4
Various Other Justifications	1		17		4
Total Number of Justifications Given	37		48		42

TABLE 37 (cont.)

e. Justifications given for putting Bible and Prayer together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 year Olds	
You get Prayers in the Bible	18	You get Prayers in the Bible	9	You get Prayers in the Bible	1[illegible]
Say or Sing Both	9	Read/Can Read	5	Read/Talk/Say	5
To God	2	Not Buildings	4	Not Buildings	5
		To do with Jesus (or God)	4	To do with Jesus (or God)	5
Various Other Justifications	5		13		9
Total Number of Justifications Given	34		35		42

TABLE 38 Relatedness Matrix for Group Three Words (N=23, 6 Year Olds)

	God	Jesus	Angel	Devil	Man
God	0	55	45	7	19
Jesus		0	37	8	26
Angel			0	8	20
Devil				0	5
Man					0

(Max Possible Relatedness Score = 69)

TABLE 39 Relatedness Matrix for Group Three Words (N=23, 8 Year Olds)

	God	Jesus	Angel	Devil	Man
God	0	66	37	9	20
Jesus		0	33	10	27
Angel			0	8	6
Devil				0	14
Man					0

(Max Possible Relatedness Score = 69)

TABLE 40 Relatedness Matrix for Group Three Words (N=23, 10 Year Olds)

	God	Jesus	Angel	Devil	Man
God	0	60	36	6	30
Jesus		0	31	10	29
Angel			0	11	14
Devil				0	3
Man					0

(Max Possible Relatedness Score = 69)

FIGURE 9 H.C.S. Solution (Connectedness method) for Group Three words (N=23, 6 Year Olds)

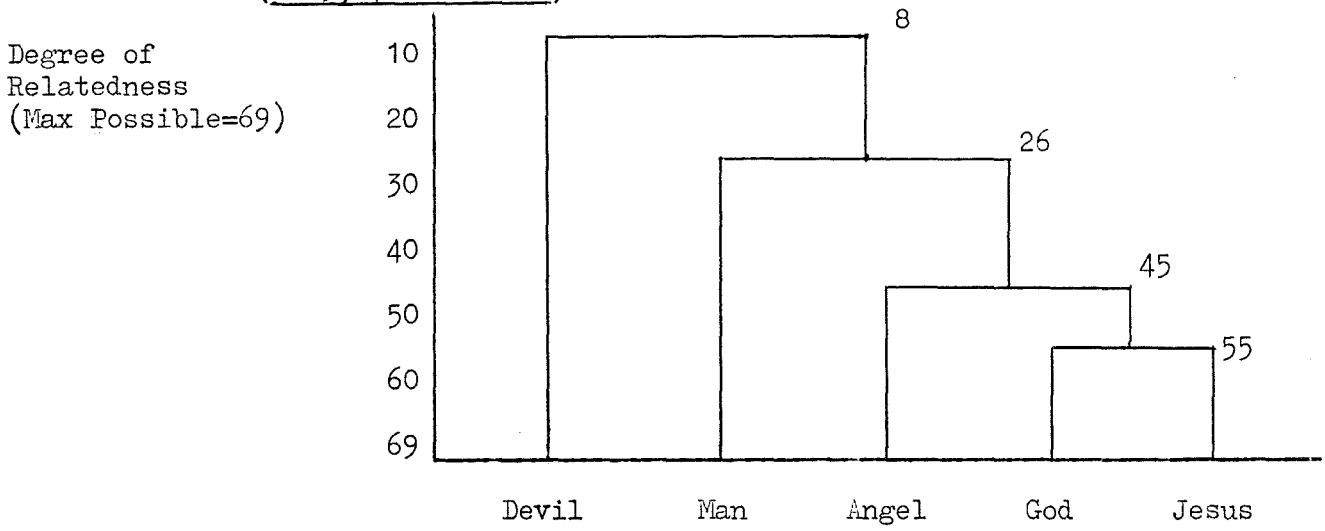


FIGURE 10 H.C.S. Solution (Connectedness method) for Group Three words (N=23, 8 Year Olds)

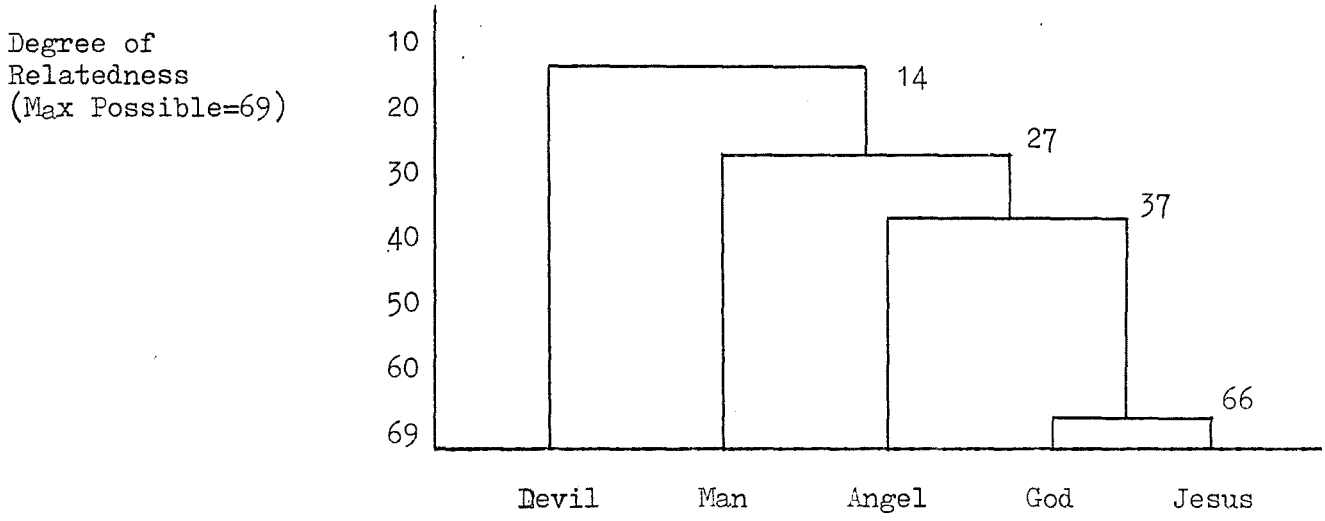


FIGURE 11 H.C.S. Solution (Connectedness method) for Group Three words (N=23, 10 Year Olds)

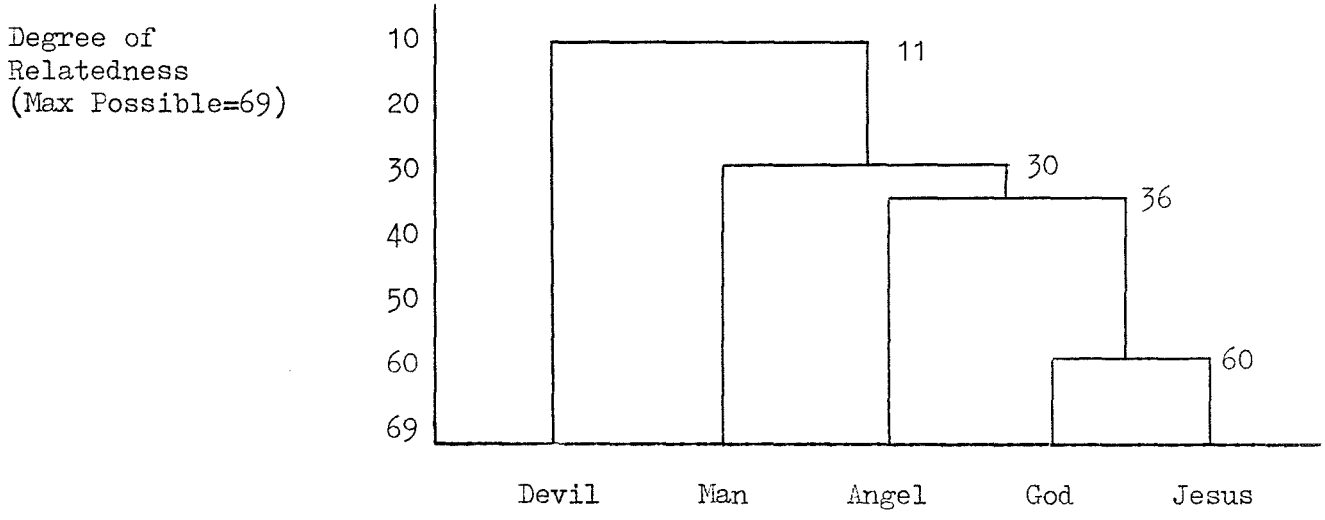


TABLE 41 Classification of Justifications, for Three Age Groups, Pairing Selected Group Three Words

a. Justifications given for putting God and Jesus together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Good/Gooder/Kind/Nice More Good	17	Good people/Good/ Good Men	12	Relations/Jesus is Son of God/God is Jesus' Father	25
In Heaven/In the Sky	9	Relations/Jesus is Son of God/God is Jesus' Father	13	Kind/Nice/Good/ Not Wicked	7
Same Thing	7	Same Thing/Like Each Other/Nearly the Same	8	Same Thing	5
Men/Not Ladies	2	Both Men	7	In Heaven	4
		In Heaven/In the Sky	7	Both Men	7
Various Other Justifications	20		19		12
Total Number of Justifications Given	55		66		60

b. Justifications given for putting Angel with God or Jesus, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Good/Gooder/Better/Kind	38	Good/Kind/Good People/Not Wicked/ Nice People/Not Bad	27	Not Wicked/Not Bad/ Good/Nice	27
Live in Sky(or Heaven)	21	In Heaven/Up High/ Up There/In the Sky	25	Live in Heaven (or the Sky)/Up in Heaven (or the Sky)	9
Lived at the same time/ Did things together	6	Dead people	4	Angels are helpers (or servants) of God and Jesus	9
Nearly the same/ Like each other	6	Not seen/Don't normally see them	3	Help people	3
Various other Justifications	11		11		19
Total Number of Justifications Given	82		70		67

4.6 Discussion of the Results of the First Series of Triads Experiments

When one takes an overall view of the results of these experiments, there are several things which immediately stand out:

1. There is good evidence for the fact that within the groups of words, which were selected, there was a degree of clustering into sub-groups of words with high degrees of relatedness.
2. These clusterings often appear within all three age groups, although there is a tendency for them to become more strongly defined as the groups get older in age.
3. When these related clusters of words are analysed in terms of the justifications used to relate them, then it is clear that in certain cases there are much more clearly defined age changes. In other words, a group of words that are related to each other in just the same way by the different age groups, may be being related to each other because of quite different features of their meanings, by individual age groups. This fact only becomes evident when the hierarchical clustering analyses are studied along with the analysis of the justifications, for the main pairings and clusters within the H.C.S. solutions.

We will now consider separately the results for each of the three groups of words.

The Group One Words

The Group One Words give a good demonstration of the first two general observations which were mentioned in the last section, i.e. they form two distinct clusters, and although these two clusters

appear in all three age groups, there is a tendency for relatedness within the clusters to increase with age (see Figures 3, 4 and 5). On the other hand, the justifications tend to suggest a partitioning of these words mainly in terms of them being either "good" or "bad", in all three age groups, and so the third general observation (of age changes in justifications given) is not demonstrated at all in this group.

It has already been demonstrated in the Opposites Test, reported earlier in this chapter, that "good" and "bad" are a pair of opposites, the meaning of which is generally known to 6 and 7 year olds. Now these results take us beyond that, and we can suggest that they are also a pair of opposites which have a tendency to be used to define the meaning of terms such as True, Evil and Wrong, by children between the ages of 6 and 10.

The Group Two Words

The Group Two Words also cluster into two distinct sub-groups, but only for the 8 and 10 year olds. By contrast, the 6 year olds appear not to relate any of these words to each other in any particular way, and for this age group the pattern of results is very similar to that which would be expected if the pairs of words had been chosen together completely at random.

The main factor which arises in the 8 and 10 year old groups is the clustering together of Church and Cathedral, as opposed to Hymn, Bible and Prayer, and this is usually justified in terms of their being "buildings". On the other hand, when the 6 year olds

get Church and Cathedral together in a triad (with either Bible, Hymn or Prayer), they tend to put Bible, Hymn and Prayer with Church, on the grounds that they are "said, sung, read or done in Church".

One partial explanation of these results could be that Cathedral is not a well-known word for the 6 year olds and that they therefore always tend to avoid it when it appears in a triad, and take the remaining two words together (see Tables 34, 35 and 36).

The Group Three Words

It is clear from the results of the Group Three Words that God and Jesus are closely associated by all three age groups, and also that Devil, Man and Angel are related more to God and Jesus, than they are to each other.

In the classification of the justifications for this group, there is a good example of the general observation which we mentioned earlier, concerning the relating of the same pairs of words, by different age groups, for different reasons. God and Jesus are paired together for a number of different reasons by the 6 year olds (see Table 41), the main one being that they are "both good", or that "they live in Heaven (or in the Sky)". However, in the 10 year old group they are paired mainly because of their father - son relationship (i.e. "Jesus is the Son of God", or "God is the Father of Jesus"). The justifications of the 8 year old group fall somewhere between these two positions, and could be viewed as a kind of transition stage.

This observation would appear to greatly emphasise the importance of using justifications in the interpretation of these clusterings, in that as the meanings of words develop they may be paired together in the same way but for quite different reasons.

Summary

From this first series of results it would appear that this method could well produce valuable insights into the developing meaning of groups of words, especially when the results are interpreted using analyses of the justifications used. One factor which still needs to be investigated is the question of how much influence these particular groups of words had on the individual pairings. Before discussing the results in any more detail we will investigate this question in a further set of experiments, using three groups of words, which are modified forms of the three groups which we have already studied.

4.7 The Second Series of the Triads Experiments

Materials

In the second series of the Triads experiments, the three groups of words studied were as follows:

Group Four	Group Five	Group Six
Good	Hymn	God
True	Prayer	Jesus
Bible	Song	Minister
Storybook	Poem	Father
Fairytales	Reading	Policeman

Each group contained one pair of words which had already been shown to be closely related in the first series of experiments. This time, however, they were placed within groups which were designed partly to test out the strength of their relatedness within the context of a different group of words.

Method and Subjects

Exactly the same method was used as with the first series of experiments, and the same numbers of subjects in the same age groups were also used. The subjects selected for this second series of Triads experiments were drawn from the same classes in the same schools as the subjects who participated in the first series. No subject who was included in the previous sample was included for a second time, but apart from this constraint the groups were chosen on the same basis as before.

4.8 Results of the Second Series of the Triads Experiments

The results of this second series of experiments will be presented in the same way as were those for the first series.

TABLE 42 Relatedness Matrix for Group Four Words (N=23, 6 Year Olds)

	Good	True	Bible	Storybook	Fairytales
Good	0	20	17	13	11
True		0	46	19	19
Bible			0	27	14
Storybook				0	44
Fairytales					0

(Max Possible Relatedness Score = 69)

TABLE 43 Relatedness Matrix for Group Four Words (N=23, 8 Year Olds)

	Good	True	Bible	Storybook	Fairytales
Good	0	36	19	12	14
True		0	34	9	12
Bible			0	23	14
Storybook				0	57
Fairytales					0

(Max Possible Relatedness Score = 69)

TABLE 44 Relatedness Matrix for Group Four Words (N=23, 10 Year Olds)

	Good	True	Bible	Storybook	Fairytales
Good	0	35	27	6	8
True		0	48	11	7
Bible			0	24	9
Storybook				0	55
Fairytales					0

(Max Possible Relatedness Score = 69)

FIGURE 12 H.C.S. Solution (Connectedness method) for Group Four Words (N=23, 6 Year Olds)

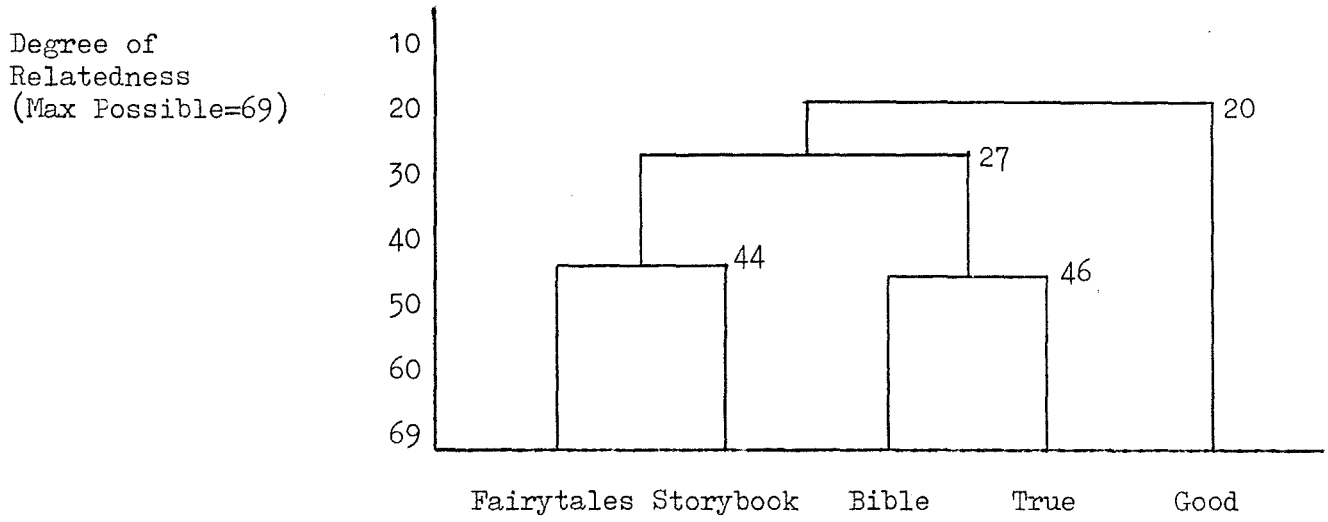


FIGURE 13 H.C.S. Solution (Connectedness method) for Group Four Words (N=23, 8 Year Olds)

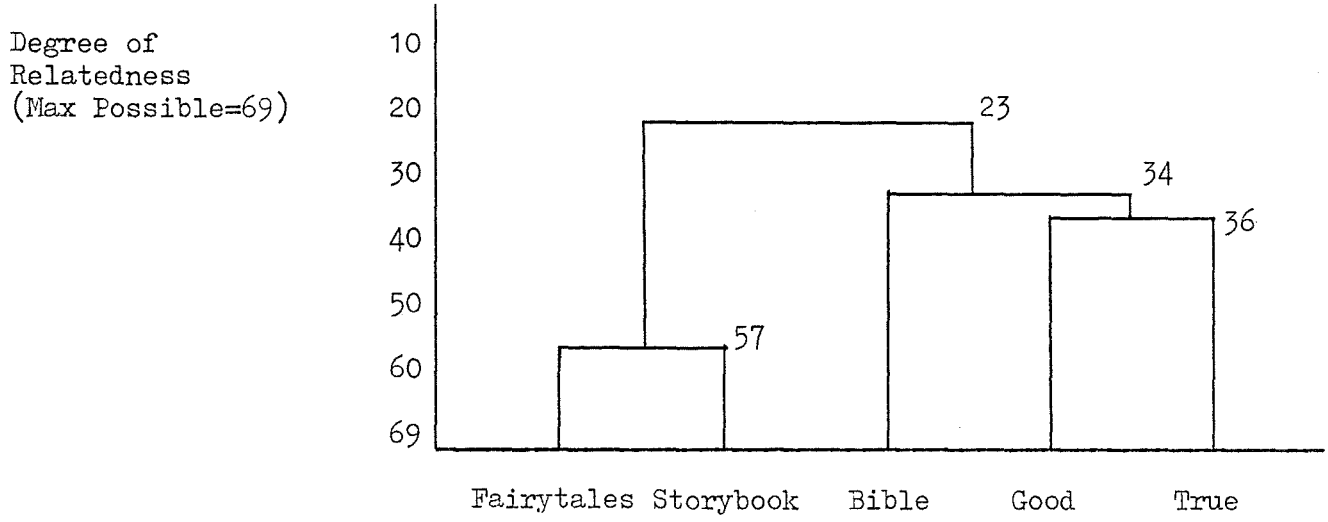


FIGURE 14 H.C.S. Solution (Connectedness method) for Group Four Words (N=23, 10 Year Olds)

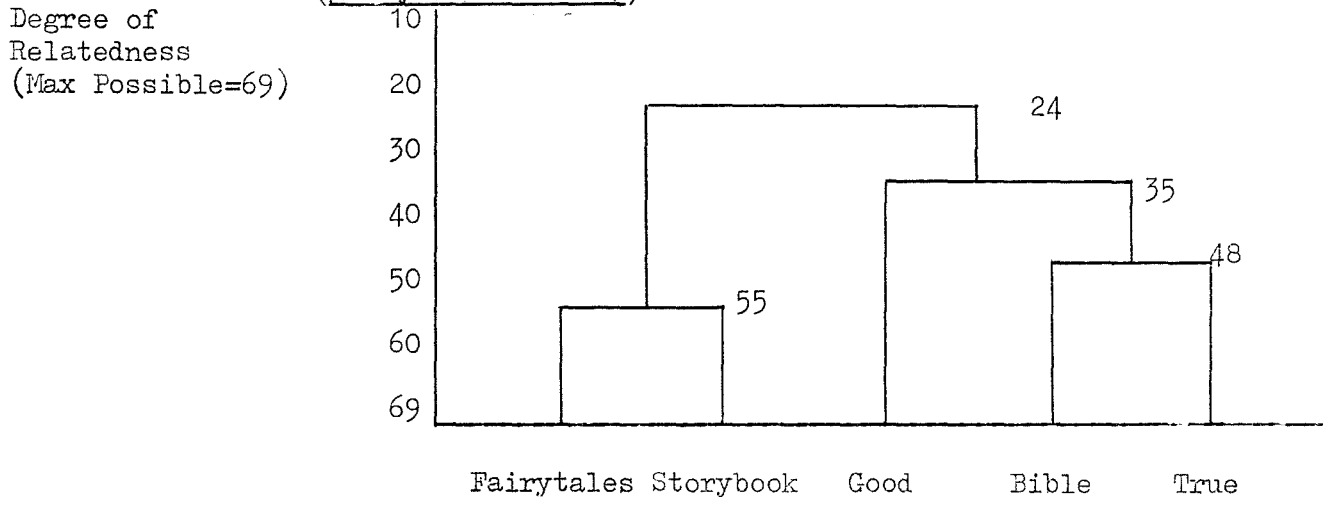


TABLE 45 Classification of Justifications, for Three Age Groups, Pairing Selected Group Four Words

a. Justifications given for putting Fairytales and Storybook together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Fairytales must be in Storybook/Fairytales in Storybook usually	15	You get Fairytales in Storybooks	18	Make believe/Made up/Not true/Usually not true	20
You can read both	7	Books	12	You get Fairytales in Storybooks	15
Books	6	Both storybooks/ Both have stories in	11	Stories	8
Not True	5	You read both	11	Books	6
		Made up/May be not true	2	You can read them	4
Various other Justifications	11		3		2
Total Number of Justifications Given	44		57		55

b. Justifications given for putting Bible and True together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Bible is true/Bible was true/Bible can be true	39	Bible is true/Bible is supposed to be true/ Bible is nearly true	28	Bible is true/Most things in the Bible are true	41
		It tells you to be true in the Bible	3	Both true/Both right	5
Various Other Justifications	7		3		2
Total Number of Justifications Given	46		34		48

TABLE 45 (cont.)

c. Justifications given for putting Good and True together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Good is true	7	Good is true	10	Both good	9
Both Good	4	Can be both	4	Both true	6
Try to be both	3	Both good	3	Telling truth is good	3
		Good manners	3	Being kind/being helpful	3
Various other Justifications	6		16		14
Total Number of Justifications Given	20		36		35

d. Justifications given for putting Bible and Storybook together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Books/In books	12	Books	12	Books/Both books	9
Can read both	6	Read them/Can read them	7	Read them	8
The Bible is a story-book/The Bible is out of a storybook	4	Tell stories	3	Can be good	2
				True	2
Various other Justifications	5		1		3
Total Number of Justifications Given	27		23		24

TABLE 46 Relatedness Matrix for Group Five Words (N=23, 6 Year Olds)

	Hymn	Prayer	Song	Poem	Reading
Hymn	0	30	42	8	4
Prayer		0	23	19	26
Song			0	20	14
Poem				0	44
Reading					0

(Max Possible Relatedness Score = 69)

TABLE 47 Relatedness Matrix for Group Five Words (N=23, 8 Year Olds)

	Hymn	Prayer	Song	Poem	Reading
Hymn	0	34	60	9	7
Prayer		0	18	28	16
Song			0	18	4
Poem				0	36
Reading					0

(Max Possible Relatedness Score = 69)

TABLE 48 Relatedness Matrix for Group Five Words (N=23, 10 Year Olds)

	Hymn	Prayer	Song	Poem	Reading
Hymn	0	33	56	13	8
Prayer		0	15	31	20
Song			0	15	1
Poem				0	38
Reading					0

(Max Possible Relatedness Score = 69)

FIGURE 15 H.C.S. Solution (Connectedness method) for Group Five Words (N=23, 6 Year Olds)

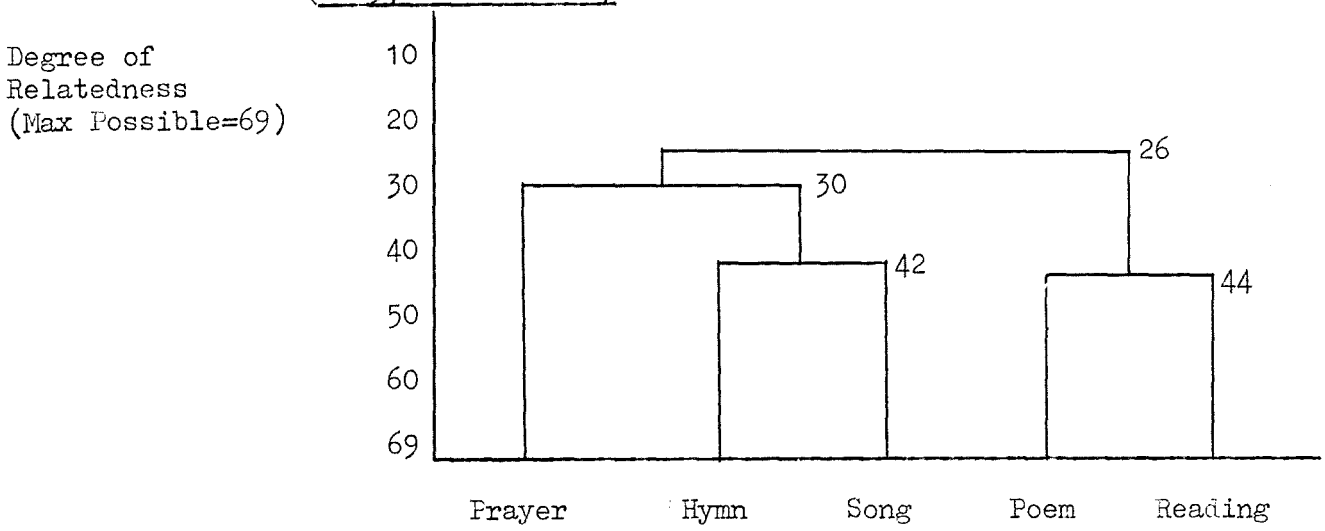


FIGURE 16 H.C.S. Solution (Connectedness method) for Group Five Words (N=23, 8 Year Olds)

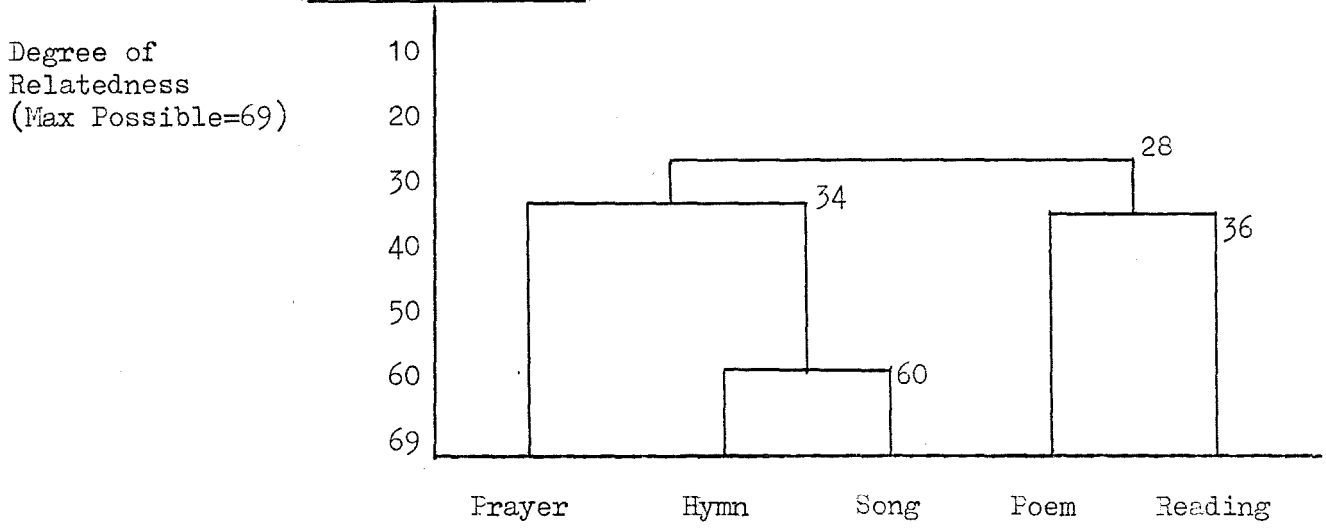


FIGURE 17 H.C.S. Solution (Connectedness method) for Group Five Words (N=23, 10 Year Olds)

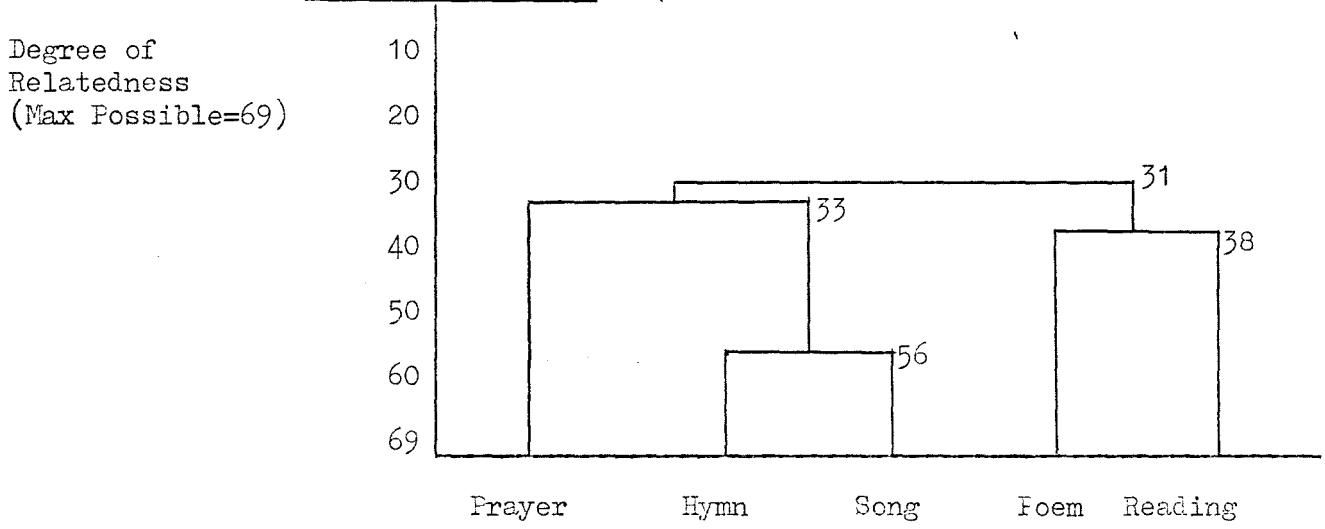


TABLE 49 Classification of Justifications, for Three Age Groups, Pairing Selected Group Five Words

a. Justifications given for putting Hymn and Song together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Sing both/Songs	40	Sing both/Songs	60	Sing both/Songs	51
Read Both	2			To do with music/ Have tunes	4
Various Other Justifications	0		0		1
Total Number of Justifications Given	42		60		56

b. Justifications given for putting Poem and Reading together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Read a Poem/Both are read	33	Can read/Read both/ Read a Poem	28	Read both/Read a poem/Just read/ Have to read	29
Talk in both/Say both	3	Say aloud/Say them	5	Not singing/Don't say	5
Don't sing them	2	Write and read	2	Speak both	2
Various other Justifications	6		1		2
Total Number of Justifications Given	44		36		38

TABLE 49 (cont.)

c. Justifications given for putting Hymn and Prayer together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Say or Sing Them	8	Do in church/to do with church	11	Praise to God/To God/To do with God or Jesus	16
Both talking to Jesus/ Both to God/God likes to hear	6	Do together	7	Do these in Church/ To do with Church	6
Do in Church/Do at services/Do at Sunday School	5	To do with Jesus/ About Jesus/Try to speak to Jesus	5	Sing both/Songs	4
Do together	3	Say or Sing them	4	To do with each other	2
Various other Justifications	8		7		5
Total Number of Justifications Given	30		34		33

d. Justifications given for putting Prayer and Poem together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Say both/Talk in both	9	Speak both/Say both	16	Say both/Speak both/ Do out loud	12
Read both	2	Can read both	5	Read both	7
		Out of book	2	Not singing	2
Various Other Justifications	8		5		10
Total Number of Justifications Given	19		28		31

TABLE 50 Relatedness Matrix for Group Six Words (N=23, 6 Year Olds)

	God	Jesus	Minister	Father	Policeman
God	0	50	29	19	6
Jesus		0	32	19	8
Minister			0	20	23
Father				0	24
Policeman					0

(Max Possible Relatedness Score = 69)

TABLE 51 Relatedness Matrix for Group Six Words (N=23, 8 Year Olds)

	God	Jesus	Minister	Father	Policeman
God	0	63	38	21	2
Jesus		0	36	20	2
Minister			0	15	7
Father				0	26
Policeman					0

(Max Possible Relatedness Score = 69)

TABLE 52 Relatedness Matrix for Group Six Words (N=23, 10 Year Olds)

	God	Jesus	Minister	Father	Policeman
God	0	65	40	13	5
Jesus		0	42	14	4
Minister			0	13	8
Father				0	26
Policeman					0

(Max Possible Relatedness Score = 69)

FIGURE 18 H.C.S. Solution (Connectedness method) for Group Six Words (N=23, 6 Year Olds)

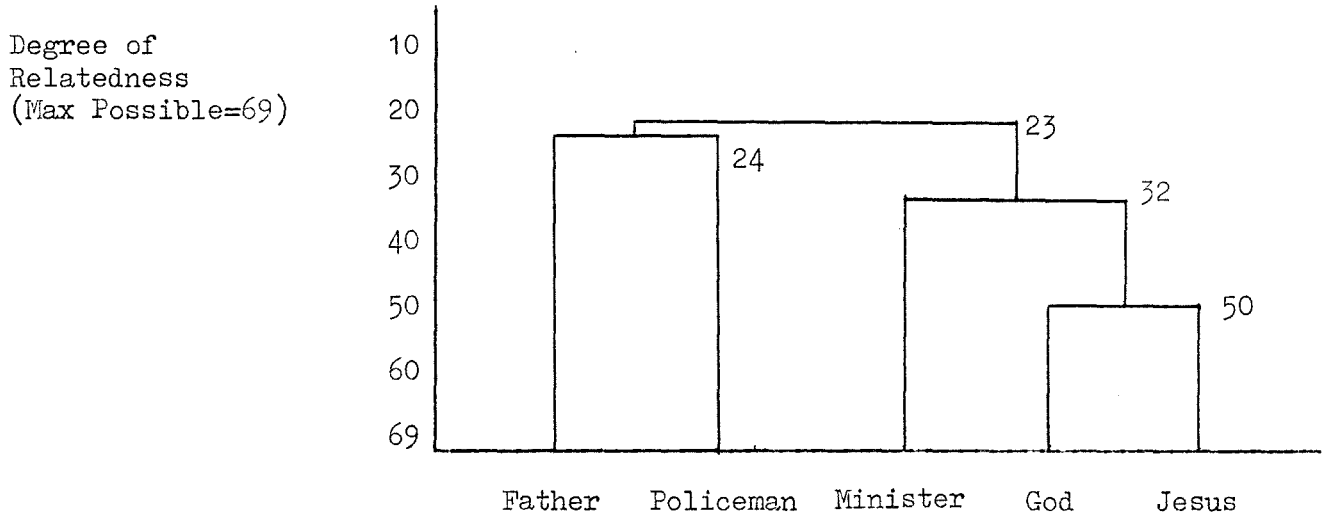


FIGURE 19 H.C.S. Solution (Connectedness method) for Group Six Words (N=23, 8 Year Olds)

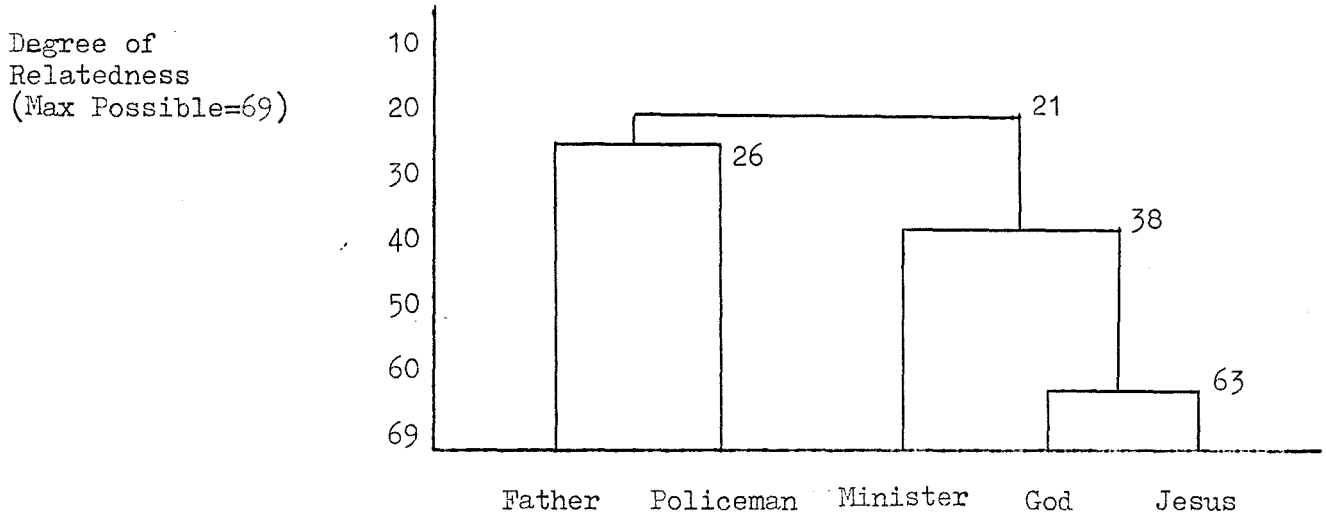


FIGURE 20 H.C.S. Solution (Connectedness method) for Group Six Words (N=23, 10 Year Olds)

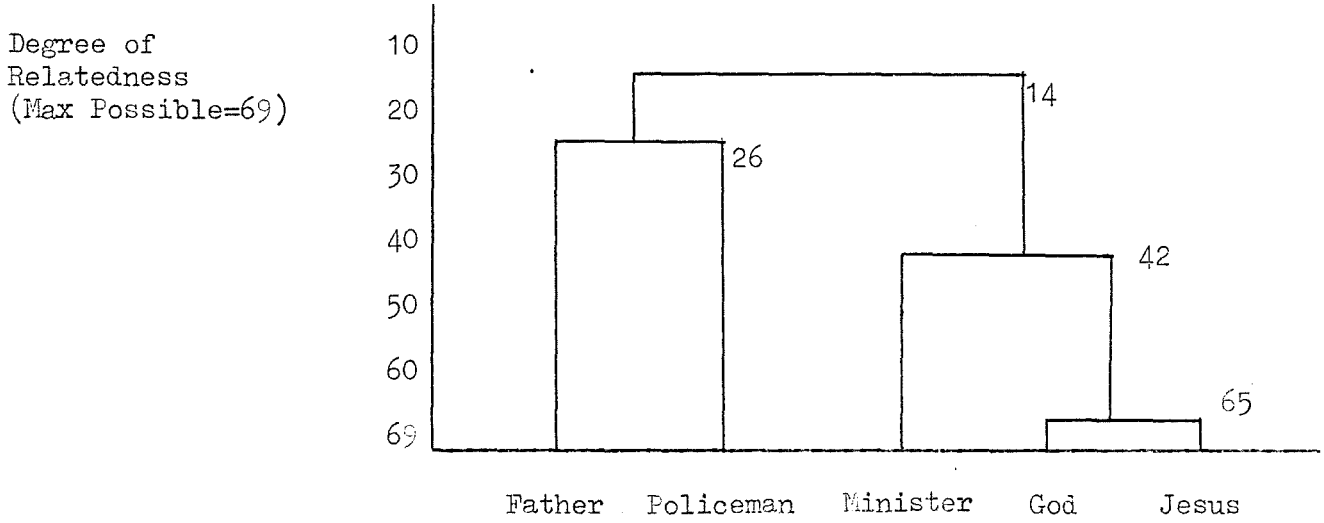


TABLE 53 Classification of Justifications, for Three Age Groups, Pairing Selected Group Six Words

a. Justifications given for putting God and Jesus together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Help you/Help people/Both are kind	11	Related/Father and Son/Jesus is God's Son	24	Jesus is the Son of God/God is the Father of Jesus	22
Jesus is God's Son	10	Kind people/Good people/Both do good	9	Religious men/ Holy/Both religious	13
		God knows Jesus/ Jesus knows God	3		
Jesus came from God	6	In the Bible	3	To do with the Bible	7
Live in Heaven/Both in Heaven	6	Both Spirits	3	In Heaven	4
Various Other Justifications	17		21		19
Total Number of Justifications Given	50		63		65

b. Justifications given for putting Father and Policeman together, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Father is a Policeman/ Policeman is a Father/ Father can be a Policeman	15	Policeman could be a Father/Father could be a Policeman	13	Both men/People	7
Both men	5	Both help you	3	Father could be a Policeman	5
Might have children	3	Not to do with church	3	Both work	4
		Father could tell Policeman something	3	Not to do with church/ Not religious	3
Various Other Justifications	1		4		7
Total Number of Justifications Given	24		26		26

TABLE 53 (cont.)

c. Justifications given for putting Minister with God or Jesus, and frequency of occurrence

6 Year Olds		8 Year Olds		10 Year Olds	
Minister is interested in God (Jesus)/Minister speaks about God	34	Minister knows about God (Jesus)/Minister speaks about God (Jesus)/Minister sings about God (Jesus)	41	Minister tells about God (Jesus)/Minister has something to do with God (Jesus)	27
Minister is in the church and God (Jesus) is in the sky	5	To do with church	13	Minister prays to God (Jesus)/Minister talks to God (Jesus)/ Minister helps you pray to God (Jesus)	13
Minister prays to God	4	Both Holy	4	Both religious	12
				To do with church	11
Various other Justifications	18		16		19
Total Number of Justifications Given	61		74		82

4.9 Discussion of the Results of the Second Series of the Triads Experiments

The three main general observations which were made about the first series of the Triads experiments (see Section 4.6) were again observed in these experiments, i.e. clustering of the groups of words into sub-groups; similarities in the clusters of different age groups; and differences in justifications given by different age groups for similar clusterings. There is, however, one additional important observation, which can be made by comparing the results of this series of experiments with the first series. This has to do with the influence of the other words in a group on particular word pairings, and may be seen by comparing the three pairings which occur in both series of experiments (i.e. God and Jesus, Hymn and Prayer, and Good and True). The influence of the other words may be seen in some cases to affect the strength of the word pairings, (cf. Figures 3, 4 and 5 with Figures 12, 13 and 14) and in others to affect the justifications given for pairing the words (cf. Tables 41 and 53).

To illustrate this point more fully, we will now consider each of the three groups of words separately. At the same time, we shall attempt to determine what additional information about word-meaning development may be obtained from these results, both on their own and in comparison with the results of the first series of experiments.

The Group Four Words

In all three age groups there was a strong pairing of Fairytales with Storybook, as opposed to Bible, True and Good. Also, it is interesting to note that even in the 6 year old age group, Bible was much more strongly associated with True than it was with

Storybook or Fairytales. This pairing of Bible with True appears in all three age groups, and only in the 8 year old age group was the relationship of Good with True stronger. This is a major change around from the first series of experiments (see Section 4.5), and is the first demonstration of the general observation which we mentioned previously concerning the effect of group context on the strength of specific word pairings, i.e. Good and True in the Group Four context of Fairytales, Storybook and Bible are not nearly as strongly related as they were in the first series of experiments, in the Group One context of Bad, Wrong and Evil. In fact, in Group Four, Good and True were only put together 91 times out of a possible 207, whereas in Group One they were put together 159 times out of a possible 207. There is clearly a significant difference between the relatedness of these two words in the different contexts of the two groups ($\chi^2 = 45.3$, with 1 degree of freedom, significant at the .01 level).

These results can also be seen to suggest that whatever the 6 year old children's conception of the Bible is, it does not have much in common with Storybook or Fairytales. In fact, it is most strongly related to True, whereas Storybook and Fairytales are not. In relation to this it is also interesting to note, from the analysis of the justifications (see Table 45), that in the 10 year old group the strongest justification for putting Fairytales with Storybook was that they are "made up" or "not true".

Group Five Words

The Group Five Words, like the Group Four Words, fall into two fairly well defined clusters for all three age groups. These two

clusterings were based upon Hymn and Song going together fairly strongly throughout, and having Prayer associated with them, as opposed to Poem and Reading, which constituted the other cluster throughout.

Again in this group it was clear that the context of a new grouping affected the relationship of the pair of words (i.e. Hymn and Prayer), which were closely associated in the first series of experiments. Not only was the strength of their relationship considerably reduced (cf. Figures 6-8 and 15-17), but also the justifications used for putting them together tend to be of a different type (cf. Tables 37 and 49). In Group Two in the context of Bible, Church and Cathedral, Hymn and Prayer were usually put together because they were "said" or "sung", whereas in Group Five, in the context of Poem, Reading and Song, they were more often put together because they had "to do with Jesus or God or Church".

Thus to the significant change in the degree of relatedness, from 127 (out of 207) to 97 (out of 207), (χ^2 = 8.2 with 1 degree of freedom, significant at the .01 level), we must add the significant change in justifications used for putting Hymn and Prayer together. In Group Two "said" or "sung" were used 54 times (out of 127) as justifications for putting this pair together, as opposed to 16 times (out of 97) in Group Five (χ^2 = 19.9 with 1 degree of freedom, significant at the .01 level). Also "to do with God, Jesus or Church" was used as the justification for putting this pair together 49 times (out of 97) in Group Five, as opposed to only 10 times (out of 127) in Group Two (χ^2 = 38.3 with 1 degree of freedom, significant at the .01 level).

This result would seem to indicate that if one is interested in exploring the development of meaning of words by this method, then the make-up of the group of words chosen is of great importance. In order to explore the meaning of individual words or the relatedness of pairs of words, it may thus be necessary to test them in the context of different groups of other words, to get a fuller impression of the way in which they relate to other words.

Group Six Words

The strong degree of relatedness of God and Jesus remained virtually unchanged in the context of Minister, Father and Policeman in Group Six and, once again, this could be seen in all three age groups as by far the strongest clustering. After that, Minister was clustered with God and Jesus, as opposed to Father and Policeman, who constituted the second cluster.

Amongst the justifications used for clustering the words together in this way, it was notable that the 10 year olds used a considerable number of justifications along the lines of "religious" as against "not religious". When this is taken along with observation in Group Five of Hymn and Prayer being put together because "they have to do with God, Jesus or Church", it gives a certain amount of evidence for the fact that children at these ages are using secular versus religious (or some similar distinction) as one way of conceptualising these words. This is another additional piece of information which was demonstrated by the particular groups of words chosen for use in the second series of experiments.

Again in this group God and Jesus were justified as going together increasingly because of their father-son relationship as the groups got older. There were, however, more of these justifications in the younger groups than there were in the context of the Group Three words used in the first series of experiments.

4.10 The Triads Experiments - Summary and Conclusions

Throughout both series of experiments, the Triadic comparisons technique has provided us with a considerable amount of information about the word meaning development of the words tested, particularly in relation to the other words in the groups within which they were tested.

In all but one group of words, even the 6 year old children were able to relate the words to each other in such a way as to form distinct clusters. Also, by studying these clusters along with the justifications given by the children, we were able to get considerable insight into the features of the meaning of the words which the children were using in order to relate them to one another.

Developmental changes were observed, both in terms of the strength of the relatedness of different groups (or clusters) of words and in terms of the features of word meaning which were used by different age groups in justifying the relatedness of particular pairs or clusters of words.

On the whole, these findings would seem to suggest that even at 6 years of age the groups of words tested had sufficient meaning for the children to relate them to one another, and at 8 and 10 years of age there seemed to be a development in the features of meaning which were used to relate the words, as well as in the degree to which particular groups (or clusters) of words were related to each other.

This method should hold much promise for future studies of the development of religious word meaning, particularly where it is applied to well chosen groups of words which best display developing features of meaning of individual or clusters of words.

4.11 Conclusions about the Development of Religious Word Meaning in Children

In concluding this chapter it is fair to say that the studies which we have reported lend support to the idea that the words of religious significance, which were studied, were developing in the meaning which they had for the children we tested.

In the Opposites test experiment we saw pairs of opposites of a religious/moral nature, whose meaning had been better acquired by children aged 8 years old than it had by children of 6 and 7 years old. We also saw pairs which were hardly known by either group.

In the Triads experiments we studied the relatedness of the meanings of different words in groups, and we saw how the strength of relatedness of similar words could increase with age, and how this relatedness was often justified in a more developed (or adult-like) way by the older children. We interpreted these findings mainly in terms of a development of word meaning in the particular words involved in these related groupings.

During the course of the two series of Triads experiments, we noted certain methodological issues, particularly to do with the effect of group context upon the results. This was not necessarily seen as a weakness in the method, but more as an indication that different aspects of the meaning of certain words could be studied by manipulating the group context within which they were studied. On the whole, the triadic comparisons technique seems to have lived up to earlier expectations, and on the basis of these results could

offer much to future studies of the development of religious thinking (Murphy, 1978b).

Our own results have clearly provided evidence to indicate the usefulness of the Triads technique, but a much larger investigation would be required to comprehensively investigate children's developing religious vocabulary. Even children in the 6 to 10 year old age range appear to have a fairly extensive vocabulary of words which have either a religious meaning or have particular relevance for religious discourse. It would be an extremely valuable exercise to exhaustively investigate the relatedness of such a group of words amongst children within this age range, but because of the time consuming nature of the task and the detailed analysis which is necessary to collate and interpret the results, it could only realistically be carried out as part of a major research programme conducted by a team of researchers, over a number of years.

If it is indeed the case, as these studies have suggested, that words of such central importance to religious thinking as God, Jesus, Church, Hymn, Prayer, Bible, Good, Bad, and True are still developing in meaning for children in this age range, then much of what we said earlier has been confirmed. It would seem, on these grounds, essential to consider the development of religious thinking in children both as a problem of religious word meaning development and as a problem of cognitive development.

We will now turn to an approach to the problem which may involve us more in a consideration of cognitive developmental factors, although the issues concerning religious word meaning which have been discussed in this chapter will not be forgotten.

CHAPTER FIVE

THE DEVELOPMENT OF UNDERSTANDING OF HISTORICAL TIME AND THE ABILITY TO SEQUENTIALLY ORDER EVENTS IN TIME

5.1 Introduction

In the two preceding chapters, an attempt was made to open up some different aspects of the development of religious thinking in children aged from six to eleven years, by employing a variety of research methodologies, and by approaching this process from two quite different directions. In this chapter this same developmental process will be considered from a third quite different direction; and it is indicative of the complex nature of this area of child development, that each of these three different research approaches can bring to light quite different aspects of the process. Also, it is noticeable that the further one researches into this developmental process, the more one becomes aware of other important considerations and directions, from which further studies could be made.

In the course of our consideration of the cognitive developmental aspects of the child's development of religious thinking, we became aware of one particular aspect which, although it would seem to be of obvious importance and had been mentioned on more than one occasion in discussions of this problem, had received little consideration in religious thinking research studies. This is children's development of understanding of the concept of time, with particular reference to historical time.

The importance of this concept in relation to religious thinking has been mentioned by Goldman (1965b),

> "Awareness of time itself moves from an immature idea to more mature concepts as children grow older. In terms of a span of time, young children appear to have no notion of how long an hour or a day is. It is only gradually that they acquire both a time sense and a time-reading skill. As their span of comprehended time increases, so does their idea of sequence in time. For the young child time appears to be disjointed, having no coherent sequence. What we loosely call a historical time sense is still relatively undeveloped by the time pupils move up into secondary schools. We should reflect upon these facts when we consider the historical sequences assumed in many current religious syllabuses for children in the primary school". (Goldman, 1965b, p35.)

and also by O'Neil and Donovan (1970).

> "Perhaps the broadest concept of all is the notion of salvation history. It is a fact that history as such is not taught in the primary grades, for a very simple and important reason. Young children do not possess a sense of history. Although a child can memorise sets of historical facts, the notions of temporal dimension, of causality, of social forces, and of personal motivations are beyond his grasp. Hence he cannot understand history, only historical facts. Furthermore, it can legitimately be questioned whether he can even really understand an historical fact, since isolated data of history have no significance apart from an interpretation of their context. So we have a strange anomaly: we do not teach American history in the fourth grade, but we attempt to teach Hebrew history. We do not expect a young child to grasp the dilemma of Lincoln, but we present him with the dilemma of Abraham." (O'Neil and Donovan, 1970, p83.)

Clearly, these two writers are writing from within the different contexts of British and American schools, but the point they are making is very much the same. Much religious teaching is based on events which happened a long time ago, and an appreciation of many religions depends very much on understanding the relationship and sequential ordering of various events which happened at different points of time in history. Children, in being taught about Christianity, for instance, need not only to be able to appreciate the significance now, of events which occurred thousands of years

ago, but also need to be able to relate different events which occurred at different points of time, within this time span, to one another. Quite apart from developing an understanding of the concept of historical time, which will allow a consideration of historical events to be meaningful, children also require the ability to sequentially order events in time in order that their relationship, one to the other, may be appreciated.

These considerations of being able to sequentially order events and understanding the concept of historical time, may also be related to the problem of children's understanding of religious stories, and in this context one may go on to ask two fundamental questions. Firstly, might children's understanding of certain religious stories be limited by their lack of a concept of historical time, within which to place the events of these stories, and thus appreciate their significance? Secondly, might children's understanding of these stories also be limited by their lack of ability to sequentially order the events of the stories in a way which will allow them to appreciate their relationship one to the other, and thus understand the overall significance of the stories?

We will return to these two questions later, but first we shall consider previous research work which has been done to investigate children's developing understanding of the concept of time and their ability to sequentially order events within different time spans.

5.2 A Review of the Relevant Literature

There are clearly many aspects to the development of a concept of time, and the development of a concept of historical time is only one of them. Many of the studies, which have investigated children's understanding of time, have concentrated on their knowledge of time words, or their ability to tell the time by clocks, and historical time has rarely been touched upon. There is, of course, an important interrelationship between the different aspects of the time concept, and many researchers (e.g. Friedman, 1944, and Flickinger and Rehage, 1949) have attempted to trace children's development in terms of their mastery of the different aspects at different ages. It is noticeable in these, and other schemes, that the concepts of historical and universal time are usually the last to be acquired and are quoted by Flickinger and Rehage, for instance, as not being fully acquired until children are approximately 16 years of age.

The difficulties, which younger children have in conceiving historical time, are understandable. This is particularly true when one realises that even adults struggle in their construction of mental time schemes. This has been shown by studies where adults have been asked to use their knowledge of events, which have happened at different dates in history, as a basis for such a scheme (Vikainen, 1961). It is probably because of the fact that it is such a difficult concept for younger children, that there are so few studies which have investigated it. The difficulties experienced by the children may also explain some of the methodological problems, which appear to have been experienced by those who have tried to experiment in this area.

A classic study is that of Sturt (1925), in which she studied about 200 children, aged from 4 to 13. In this study she investigated different aspects of the time concept. In one part of this study, Sturt attempted to explore the historical time aspect by using items that dealt with 'B.C. dates', and others which required temporal ordering of historical characters. An example of the materials that she used is the 'John - Mary' test. In this test children were given the following information:

> "John was born in 1898.
> Mary was born in 1901.
> Who is the older?"

They were then given the following instruction:

> "I want you to write down just one name, either John or Mary, whoever is older."

Based on the results of this and similar tests, Sturt concluded that children only begin to acquire some of the time concepts necessary for a study of history, when they are about 10 years of age.

Several of Sturt's tests were replicated by Bradley (1948), in a study in which he actually touched upon the problem of the relationship between children's understanding of the concept of historical time and their religious understanding. The following two items are abstracted from Bradley's 'Questions' test, which was given as a group test to children aged from 8 to 13 years and as an individual test to children aged from 5 to 7 years.

Q.16 "Do you all know who Robin Hood was?"
(If the answer was a chorus of "No" a few explanatory remarks were made about him, such as, "He was a robber and lived in the forest in England".)
Then: "He lived in the year eleven hundred and eighty seven (1187)".

(a) "Was your mother alive then?"
(b) "Was your grandmother alive then?"

Q.17 "Was Jesus alive on earth then?" (Bradley, 1948, p68.)

Bradley took 75% or more children, at any one age, answering the question correctly, as his criterion for success. He reported that 80% of his 7 year olds answered 16(a) correctly, and 83% of his 9 year olds answered 16(b) correctly. However, with Question 17, even the 13 year olds were only able to answer correctly 67% of the time so that, for this question, the criterion for success was not met by any age group.

It may, however, be possible that the replies to Question 17 were in fact biased by factors other than a lack of understanding of historical time. Bradley comments:

> "Question 17 was so designed as to forestall replies based on theological dogma, but this seems to have influenced most children in view of the low score even for the 13 year olds. It is possible that many children believe Jesus to be alive on earth now; e.g. the writer was told of a small girl, who asked, 'Does Jesus live up on the hills or down on the flat?'" (Bradley, 1948, p73.)

Bradley's overall conclusion is of a gradual development of understanding different aspects of time between 5 and 13 years of age. He suggests that this may begin with an understanding of the day "and thereafter succeeds knowledge of progressively shorter and longer periods". (Bradley, 1948, p77.) Finally, he concludes that:

> "In general, the capacity to understand the conventional time-scheme and to use particular time-words correctly is later in developing than is usually believed, and this is of major significance, particularly in relation to the teaching of history. In particular, Oakden and Sturt's (1922) conclusion that there is a sudden access of time-knowledge between the ages of 10 and 11 is not confirmed, and the process is seen to be essentially gradual, even and continuous". (Bradley, 1948, p77.)

The reader may be surprised at this point to have been taken through a review of work on the child's conception of time, with

no mention of the classic studies of Piaget (1946, 1955). The reason for this is that Piaget's studies were almost entirely limited to studying the child's appreciation of time in experimental situations, which had just taken place. For instance, in a typical experiment, two dolls are raced on a table in front of the child. The race is started with a click, and because one doll moves faster than the other, she is noticeably ahead when the two dolls are simultaneously stopped a few seconds later.

In general, Piaget found that up to 6 years of age, children admitted that the dolls started at the same time, but denied both that they stopped at the same time and that they were running for the same length of time. The children also tended to claim that the faster moving doll took longer and stopped later. Then, between 6 and 7 years of age, the children usually agreed that the dolls started and stopped at the same time, but insisted that the faster moving doll still took longer. It was not until 7 to 8 years of age that the period of movement for each doll was accepted by the children as being the same.

On the basis of the results from experiments such as this one, Piaget concluded that up until about 7 or 8 years of age, children's concepts of time and space are indistinguishable and that their idea of time is intermingled with their ideas of space and spatial changes.

Although Piaget's experiments in this area are exploring aspects of children's conception of time, which we are not directly interested in at present, his conclusions do suggest a possible explanation for

the fact that historical time appears to be such a difficult concept for younger children to cope with. If children at these young ages rely heavily on cues such as space and spatial changes, on which to base time judgments, then they are clearly going to be disadvantaged when the periods of time run into years or even centuries!

Perhaps we can conclude this brief review of the literature on the child's conception of time by saying that, although the research in this area has lacked an element of experimental rigour, it is suggestive of the fact that children even up to the age of 13 or so experience considerable difficulties in appreciating the concept of historical time. This must, we feel, necessitate a further look at the effect this factor has upon the child's religious understanding.

In our own experiments, we propose to investigate the understanding which children in the 6 to 8 year old range have of historical time, and then try to relate this understanding to certain problems which these children may have with religious materials. We will do this in preference to studying historical time from the point of view of discovering at what age children <u>fully</u> understand this concept, as we consider that an unhelpful and often misleading approach. Before children <u>fully</u> understand things, they can often have <u>considerable</u> understanding, and even adults spend most of their time dealing with concepts which they only partially understand. Thus, to sharpen the question to be addressed in this chapter, we shall be looking at whether there is any interaction between the partial understanding of time, which children aged from 6 to 8 years have, and the problems which they may encounter with certain religious materials.

5.3 Some Exploratory Experiments

At the start of this part of the investigation, we were only too aware of the problems of designing experiments which would be at an appropriate level of difficulty for children in this age range and which would provide meaningful results concerning their developing understanding of the concept of time. We therefore decided, as a first step, to try out on a limited basis, various materials which we felt might be useful in providing information about children's understanding of time and also their ability to order events in time.

These exploratory experiments were made up of five short tests, which were all administered to groups of 6 year olds (5 boys, 5 girls), 7 year olds (5 boys, 5 girls) and 8 year olds (5 boys, 5 girls). They were administered in a random order from one subject to the next, but the series of tests was always preceded by a short time of discussion between the child and the experimenter in order that a certain amount of rapport might be established. We shall now give a brief description of each of the five tests:

1. The Meals Test

   In this test the children were asked three questions:

   a. Tell me what the different meals are that you have during the day?

   b. What order do they come in?

   c. At what time do you have them?

In section a. a certain amount of prompting was used in order to steer the children away from specific dishes (e.g. meat and potatoes, baked beans on toast, etc.) to general names (e.g. breakfast, lunch,

tea, dinner, etc.). The other two questions appeared to be understood fairly well.

2. The Seasons of the Year Test

In this test the children were asked two questions.

a. What are the different seasons of the year?

b. What order do they come in?

Again, prompting was used in a. to ensure the child knew the correct names before being asked b.

3. The Faces Test

This test is derived from, and is similar to, Bradley's (1948) 'Picture Arrangement' test. The children were presented with a set of five photographs of a baby boy, a boy, a youth, a middle-aged man and an old man and were told that they were all pictures of people which "were taken one day recently". They were then asked the following:

a. Put them in order, from the youngest to the oldest.

b. Who would have been born the longest time ago?

c. When E (the youth) was born, which of the others would have been alive then?

4. The Universality of Time Test

This test was, again, a slightly modified version of one used by Sturt (1925) and Bradley (1948). Its aim was to test whether the children's conception of time encompassed the idea of time being the same everywhere.

First each child was asked:

a. What is the time now?

If they were unable to respond correctly to this first question, then they were prompted with the correct time by the experimenter.

Next, they were asked:

b.1 What is the time in Dundee now?

If b.1 failed to elicit a response, a subsidiary prompt question b.2 was used.

b.2 If you were in Dundee now and you looked at a clock, what time would it say?

(Dundee was a local town which was well known to all the children, as it was the main shopping centre for the area.)

5. The Historical Time and the Bible Test

This last series of questions was designed specifically to explore the children's understanding of historical time, and also attempted to relate this to their knowledge of biblical events.

The series of questions proceeded as follows:

a.1 What is the longest time ago that you know anything about?

If the children limited their responses to events within their own personal lifetime, this question was followed by a subsidiary prompt question:

a.2 Do you know about things that happened a long time ago, even before you were born?

b. How long ago did the stories in the Bible happen?

c. How long ago was it that Jesus lived on the earth?

The wording of c. was designed to try to avoid responses referring to the present day spiritual life of Jesus (e.g. 'Jesus is alive today'). The intention was to test the child's understanding of the time lag between the physical life of Jesus recorded in the Gospel narratives and the present time.

d. Is there anyone alive now who was alive then?

Prior to e. each child was asked to name a character from the Old Testament of the Bible. The name of this character was then used in the following question:

e. Did he/she live before, after, or at the same time as Jesus?

Clearly these questions were of an exploratory nature, and to respond correctly in some cases the children needed a small amount of biblical knowledge. However, the school timetable did include regular religious education classes as well as worship sessions and so it seemed a reasonable assumption to make, that the children would all have had the necessary opportunity to master the historical sequencing of these events, assuming that their conception of historical time and their ability to sequentially order events in time allowed for this.

5.4 Results of the Exploratory Experiments

Because of the small samples used in these exploratory experiments, any conclusions drawn from the results can only be of a tentative nature. For this reason we will not present a formal analysis of the data, but we will however discuss it in summary form, both in terms of the success of the individual tests in eliciting information about the children's concepts of time and their ability to sequentially order events in time, and in terms of any indications of developmental changes which were observed.

In the 'Meals Test' all of the children were able to name and order correctly the main meals of the day. However, the final question about the timing of these meals was only answered completely correctly by all ten of the 8 year olds and eight of the ten 7 year olds, and four of the ten 6 year olds.

The 'Seasons of the Year Test' was answered correctly by about two-thirds of the children (8 x 10 year olds, 6 x 7 year olds and 6 x 6 year olds). The fact that many of the children were able to order the meals sequentially and not the seasons, suggests that these two tests were partly tests of memory or rote learning rather than tests of the ability to order sequentially events in time.

The 'Faces Test' was done almost perfectly by all the children (only two 6 year olds gave the wrong order). In fact, the children seemed to find this test particularly easy and some were even amused at being asked to do something which seemed so simple. Again, one could validly question how much the children needed to understand the concept of historical time to be able to perform this task correctly.

The 'Universality of Time Test' was answered correctly by about two-thirds of the children (8 x 8 year olds, 6 x 7 year olds and 6 x 6 year olds). Many commented that although the time was the same in Dundee, it was not everywhere in the world. America and Australia were frequently mentioned as places where the time would be different.

The 'Historical Time and the Bible Test' was probably the most productive and was also probably the nearest to testing the aspects of the concept of historical time, which we were most interested in. In response to question a., the majority of the children gave details of events which had happened within their own experience a year or two previously. Even when they were given the extra prompt question, a.2, quite a few could not improve upon this, and most of the others responded with "hundreds of years ago" or "centuries and centuries ago". A few mentioned events which had happened before they were born. (The Second World War, for instance.) One rather precocious 8 year old said that he wasn't sure if he could put an exact date to the creation!

The responses to questions b. and c. were even more vague. The majority of the children seemed to have no idea at all where to place the Bible stories on any sort of time scale, and those that did respond named any number of years from "last year" to "millions of years ago". Only one child out of the thirty (the same one that could not put a date to creation) gave an estimate of how long ago Jesus lived on the Earth, which was anywhere in the region of 2,000 years ago.

All of this may sound somewhat anecdotal, but it does seem to go some way towards confirming our suspicion that children in this age range

will have great difficulty in appreciating the historical time aspect of the religious events about which they are taught.

The responses to question e. provided even more evidence along these lines. All thirty children were able to name an Old Testament character (usually Adam, Eve, Noah or Moses), although a few needed a little prompting or correction. However, when asked whether this character lived before, after, or at the same time as Jesus, their responses revealed considerable confusion. Only three 6 year olds, three 7 year olds and four 8 year olds got this right, which is no higher success rate than could have been obtained by chance. Thus, on the basis of this limited evidence, one is led to suppose that few, if any, of these children had any understanding of the temporal relationship between the life of Jesus and the events recorded in the Old Testament of the Bible. Amongst a group of children who did appear to have a certain amount of knowledge about the Bible, this observation does seem to be of some importance.

Thus, these exploratory experiments do confirm our suspicions about the influence of the children's continuing developing concept of historical time on their ability to appreciate the relationship between various religious events. However, those tests which were designed to test the children's ability to sequentially order events may have been less successful. By working with events which were well known to the children (e.g. 'Daily Meals'), it seems as though we may have been purely testing rote learning. Thus, the next series of experiments was designed to test sequential ordering ability in more depth.

5.5 The Sequential Ordering Experiments

The problem of sequential ordering can be reduced to the level of three events, say A, B and C, which have happened in a particular order at different points in time. The question is to what extent can the child conceive of this sequential ordering and thus relate these events one to the other. One way of exploring this is to ask the child questions, the answers to which depend on an understanding of the correct sequential ordering of these events.

Subjects

The subjects used in all of the experiments to be reported in the remainder of this chapter were the same two groups of 16 x 6 year olds (8 boys and 8 girls) and 16 x 8 year olds (8 boys and 8 girls). The group of 6 year olds had a mean age of 6 years 6 months and were all between 6 years 4 months and 6 years 8 months. The group of 8 year olds had a mean age of 8 years 6 months and were all between 8 years 2 months and 8 years 9 months.

In order to minimise any effect caused by the order of the presentation of the different experiments, these were presented in a random order to each individual child. These experiments have been divided up into two groups and the details of the experiments within each group will now be described, along with the presentation of their results.

5.6 The Races Tests

The 'Races Tests' involved presenting each child with the results of several different races between four children. This was done by showing each child a card with some results written on it and then reading these out to that child, allowing the child to follow on the card while the results were being read out. After the results had been read out, each child was asked a series of three questions, which were designed to test whether the child had grasped the sequential ordering of the results of that particular race. The children were perfectly free to refer back to the results card while answering these questions.

There were two sets of questions, which could be asked after each set of results, and half of the children were asked one set of questions and the other half the other set. The children were allocated to the different sets of questions in a random way. The only constraint being that half of each age group were given one set, and the other half the other set.

1. Race One

In a race: Peter came before John
and John came before Neil
and Neil came before Keith.

Questions (Set A)

1a. Who won between Keith and John?
1b. Did Neil finish before Peter?
1c. Did John finish before Neil?

Questions (Set B)

1a. Who won between John and Keith?
1b. Did Peter finish before Neil?
1c. Did Neil finish before John?

It can be seen that the difference between the two sets of questions was purely one of reversing the names used in each question. The aim of this was firstly, to control against children who might tend to guess either the first or second name as the correct answer and secondly, to see if this affected the difficulty of the questions asked.

2. Race Two

In a race: Jane came after Linda
and Linda came after Mary
and Mary came after Susan.

Questions (Set A)

2a. Who won between Linda and Susan?
2b. Did Mary finish before Jane?
2c. Did Linda finish before Mary?

Questions (Set B)

2a. Who won between Susan and Linda?
2b. Did Jane finish before Mary?
2c. Did Mary finish before Linda?

It can be seen that the main difference between Race One and Race Two, apart from the use of girls' names instead of boys' names, was the use of 'after' in the presentation of the results rather than 'before'. Also, Race Two differs from the other two races by the fact that the b. and c. questions are asked in terms of 'before', whereas the results are given in terms of 'after'.

3. Race Three

In a race: Jill came after Wendy
and Fiona came after Jill
and Anne came after Fiona.

Questions (Set A)

3a. Who won between Fiona and Wendy?
3b. Did Wendy finish after Anne?
3c. Did Fiona finish before Jill?

Questions (Set B)

3a. Who won between Wendy and Fiona?
3b. Did Anne finish after Wendy?
3c. Did Jill finish before Fiona?

Race three differs from Races One and Two in the order in which the names are presented in the results. In Races One and Two, the names were presented in the same order in which they finished, going from first to last in Race One and last to first in Race Two. In Race Three, the names have to be rearranged to give the correct order.

5.7 Results of the Races Tests

TABLE 54 Number of Correct Responses From 6 and 8 Year Olds To Set A and Set B Questions About the Three Races

	6 year olds (N=16)		8 year olds (N=16)		
	Set A Questions	Set B Questions	Set A Questions	Set B Questions	TOTALS
Race One	15*	16	21	17	69
Race Two	6	12	8	9	35
Race Three	16	10	20	21	67
TOTALS	37	38	49	47	171

(* Each cell is out of a maximum of 24)

Discussion of the Results

There are four major observations which may be made about the results of these experiments:

1. There was no significant difference between the number of correct responses given to the Set A and the Set B questions. ($\chi^2 = 0$, with 1 degree of freedom, not significant.)

2. The number of correct responses given to the questions asked about the results of Race Two was significantly less than the number of correct responses given to the questions asked about Races One and Three ($\chi^2 = 31.0$, with 1 degree of freedom, significant at the .01 level).

3. Overall, the 8 year olds gave a greater number of correct responses than could have been expected by chance (probability of 96 or more correct, by chance, out of 144 <.01 by the normal approximation

to the Binomial Distribution), whereas the 6 year olds did not (probability of 75 or more correct out of 144 by chance = 0.32, by the normal approximation to the Binomial Distribution).

4. Overall, the 8 year olds gave a significantly higher number of correct responses than did the 6 year olds (χ^2 = 5.76, with 1 degree of freedom, significant at the .05 level).

Thus, it would seem as though even these apparently quite simple sequential ordering tasks were generally beyond the ability of the 6 year olds and were only beginning to be mastered by the 8 year old children. These results confirm the suspicion which we had in discussing the results of the previous series of exploratory experiments. It does now appear likely that the high levels of performance that were recorded in the previous experiments might have been the result of rote learning. By using novel situations in this series of experiments, we have been able to demonstrate the difficulties which young children can have with sequential ordering tasks.

One other interesting aspect of the results of this series of experiments, was the difference that there was between the levels of correct performance on the three different tests. This was based on the fact that the children in both age groups appeared to find Race Two considerably harder to order than Races One and Three. As the questions asked in all three cases were of a similar nature, this difference must have been a consequence of the way in which the results of the three races were differently presented. Intuitively, one might have expected the results of Race One to have been easier to order than the results of the other two races, because of the fact that the

names were actually given in the correct order. (Peter came before John, John came before Neil, etc.) However, there was clearly more to the difference than this. Race Three, which was apparently ordered just as successfully as Race One, only differed from Race Two in that its results started with the first and second finishers in the race, whereas the Race Two results started with the finishers, who had come last and next to last. This must lead us to conclude that although the children did not appear to have any trouble coping with individual pairs of results, which were reversed (e.g. John came after Peter, instead of Peter came before John), their performance was seriously affected when both the individual pairs of results and the order of presentation of the individual pairs were reversed (i.e. gave later finishers before previous finishers).

5.8 The Biblical Events Tests

The 'Biblical Events Tests' involved presenting each child with a sequence of biblical events. These were mainly lists of names of people who lived at different times during biblical history, although in one case actual events were used. Again, the children were shown a card, this time with the order of events written on it, and then, after they had read these, they were asked three questions to determine whether or not they had acquired the sequential order of the events. As before, the children were free to refer back to the card while answering the questions.

Once again, there were two sets of questions which were used, and half of the children answered one set and the other half the other set. The children were allocated to the two different sets of questions in the same random way as before.

1. Biblical Events Test One

In the Bible, it says that:

Adam lived hundreds of years before Noah
and Noah lived hundreds of years before Moses
and Moses lived hundreds of years before Paul.

Questions (Set A)

1a. Who lived first, Paul or Noah?
1b. Did Moses live before Adam?
1c. Did Noah live after Moses?

Questions (Set B)

1a. Who lived first, Noah or Paul?
1b. Did Adam live before Moses?
1c. Did Moses live after Noah?

As in the Races Tests, the purpose of the two different sets of questions was merely to change around the order in which the names were given in the questions. Again, the aim of this was to control against those who might tend to always guess the first or second name as the correct answer, and also to see if this change affected the difficulty of the questions asked in any way. It was also possible in this test to introduce the concept of an actual time span (i.e. hundreds of years).

2. Biblical Events Test Two

In the Bible, it says that:

Rachel lived hundreds of years after Eve
and Ruth lived hundreds of years after Rachel
and Mary lived hundreds of years after Ruth.

Questions (Set A)

2a. Who lived first, Rachel or Mary?
2b. Did Ruth live after Eve?
2c. Did Rachel live before Ruth?

Questions (Set B)

2a. Who lived first, Mary or Rachel?
2b. Did Eve live after Ruth?
2c. Did Ruth live before Rachel?

Apart from the different set of names, Test Two is different from Test One in that it employs "after" instead of "before" in the sequential order.

3. Biblical Events Test Three

In the Bible, it says that:

Jacob died before Samson was born
and Samson died before David was born
and David died before Peter was born.

Questions (Set A)

3a. Who lived first, Peter or Samson?
3b. Did David live before Jacob?
3c. Did Samson live before David?

Questions (Set B)

3a. Who lived first, Samson or Peter?
3b. Did Jacob live before David?
3c. Did David live before Samson?

Test Three introduces a sequential order in terms of 'dying' and 'being born'. Thus, the major difference between this and Test One is that the biblical characters are placed in a sequential order by this method rather than by living 'hundreds of years' apart.

4. Biblical Events Test Four

In the Bible it says that:

Benjamin was born after Cain died
and Saul was born after Benjamin died
and James was born after Saul died.

Questions (Set A)

4a. Who lived first, James or Cain?
4b. Did Benjamin live before Saul?
4c. Did James live before Saul?

Questions (Set B)

4a. Who lived first, Cain or James?
4b. Did Saul live before Benjamin?
4c. Did Saul live before James?

Test Four is a variation on Test Three in that it still orders the biblical characters in terms of 'dying' and 'being born', but this time it does this by the use of 'after' rather than 'before'. It therefore has the same relationship to Test Three as Test Two had to Test One.

5. Biblical Events Test Five

A long time ago Joseph was put in prison in Egypt.

Hundreds of years after that the walls of Jericho fell down.

Hundreds of years after that David fought Goliath.

Hundreds of years after that Daniel was put in the Lions' Den.

Questions (Set A and B)

5a. Could Daniel have been at Jericho when the walls fell down?

5b. Was Joseph put in prison before Daniel was put in the Lions' Den?

5c. Could Joseph have seen David fighting Goliath?

This time, the sequential order consists of four isolated biblical events. Again, they are ordered in terms of being 'hundreds of years' after each other. Thus, there is a close similarity between this test and Test Two. However, the questions asked on this occasion are of a somewhat different nature. As these questions could not be reversed in the same way in which the others were, they were used in exactly the same form in Set A and in Set B.

5.9 Results of the Biblical Events Tests

TABLE 55 Number of Correct Responses From 6 and 8 Year Olds To Set A and Set B Questions About the Biblical Events

	6 year olds (N=16)		8 year olds (N=16)		
	Set A Questions	Set B Questions	Set A Questions	Set B Questions	TOTALS
Test One	16*	18	20	24	78
Test Two	15	13	20	18	66
Test Three	12	17	21	23	73
Test Four	16	15	21	22	74
Test Five	15	17	18	21	71
TOTALS	74	80	100	108	362

(* Each cell is out of a maximum of 24)

Discussion of the Results

Once again, there are four major observations which can be made about the results of these experiments:

1. There was no significant difference between the number of correct responses given to the Set A and the Set B questions ($\chi^2 = 1.90$, with 1 degree of freedom, not significant).

2. There was no significant difference between the number of correct responses given to each of the five tests ($\chi^2 = 4.35$, with 4 degrees of freedom, not significant).

3. Overall, the 8 year olds gave a greater number of correct responses than could have been expected by chance (probability of 208 or more correct, by chance, out of 240 <.01 by the normal approximation to the Binomial Distribution). However, this time the 6 year olds also gave

a greater number of correct responses than could have been expected by chance (probability of 154 or more correct, by chance, out of 240 <.01 by the normal approximation to the Binomial Distribution).

4. The number of correct responses given by the 8 year olds was significantly greater than the number given by the 6 year olds (χ^2 = 4.64, with 1 degree of freedom, significant at the .05 level).

Although the two groups of 6 and 8 year old children produced significantly more correct responses to the questions concerning the Biblical Events Tests than would be expected by chance, it is noticeable that the 8 year olds performed significantly better than the 6 year olds and also that the 6 year olds generally made quite a large number of incorrect responses. In considering the performance of the 6 year olds on these tests, one inevitably must ask what aspect of the task was difficult for them. In a similar set of developmental experiments known as the transitive inference experiments (where the child is given information of the type A>B and B>C and has to infer that A>C), there has been much discussion over why children fail to give the correct responses (Braine, 1964; Smedslund, 1965; Bryant and Trabasso, 1971; Halford and Galloway, 1977). One of the major issues in this controversy is whether or not the children can actually remember the information which they are given at the time when they are asked the questions. Bryant and Trabasso (1971) claimed that as long as 4 and 5 year old children could remember the information given to them, then they would be capable of transitive inference. Support for this view was found in the work of Roodin and Gruen (1970), who used a procedure similar to our own, in which they made the given information visible to the children at the time when they were asked questions about it. This

procedure did seem to improve the performance of very young children on the task, but whether or not memory is the crucial problem which children have with this task is still very much under question (de Boysson-Bardies and O'Regan, 1973; Harris and Bassett, 1975; and Halford and Galloway, 1977).

Throughout developmental psychology there are problems of diagnosis. At one level one attempts to determine whether a child has or has not acquired a certain cognitive ability, and at a higher level (Smedslund, 1969) one attempts to determine what the mental processes are that are involved in successfully solving the task. Flavell (1977) describes this later problem as the gap between problem presentation and subject's response. In respect to transitive inference, Trabasso (1975) has made some steps towards describing these intermediate mental processes. He has proposed that transitive inference problems are usually solved by the subject constructing an internal image-like representation of the entire array of relationships. Thus, if the subject is told that A>B, B>C, C>D, D>E (A, B, C, D and E would commonly be five differently coloured sticks), then he would construct an image-like representation of the entire array A>B>C>D>E. When subsequently questioned about any relationship between members of this array, the subject would then be able to successfully read the correct response off his internal representation. Unfortunately, this process is not a complete description of the way that all people solve transitive inference problems; however, it does provide a useful model by which we might expect children to attempt to solve the Biblical Events Tests and the Races Tests. It also serves as an explanation of how a concept of historical time might be constructed by the child. Without such an internal representation, it is easy to

see how correct solutions to sequential ordering tests and also tests requiring a historical time concept are infrequently obtained from young children.

5.10 Summary and Conclusions about Historical Time and Sequential Ordering

In this chapter we have studied the results of a series of experiments relating to children's understanding of historical time and also their ability to sequentially order events in time. In these studies we have seen how 6 year old and, to some extent, 8 year old children had difficulties with some fairly simple experimental situations which required them to have acquired certain basic cognitive abilities. Although not all of these tests were directly related to the children's understanding of religious concepts and the general development of their religious thinking, we would argue that without these abilities the children's understanding of any religion based on historical events must be severely limited. It would also seem that these children would have difficulty understanding stories (religious or otherwise) if the structure of the stories was such as to require them to construct a sequential order of events in order to understand the overall meaning of the story. Recent support for this latter conclusion can be found in the work of Botvin and Sutton Smith (1977), who have identified the retention of sequence as a crucial problem affecting children's understanding of fantasy narratives.

It would therefore seem as though we have identified a basic cognitive[1] ability, which is an important constituent of the overall cognitive development which allows mature religious thinking to take place. Without the ability to sequentially order events and place them within a continuum of historical time, children have to rely on a type of rote learning of the order and relationship between events, and this must be a real obstacle in the way of their developing understanding of religion.

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[1]The extent to which this apparent cognitive ability may depend upon linguistic factors remains an open question.

This finding can be seen as adding considerable support to the general approach which has been taken throughout the studies reported in this thesis. Brown and Desforges (1977) in an article, which was critical of Piaget's attempt to create a content-free theory of cognitive development, have suggested that the most fruitful way forward is to study the particular cognitive skills and procedures which are deployed in particular settings. They cite Bruner (1973), Klahr and Wallace (1973), and Schaeffer et al (1974) as examples of this approach and our own study can also be viewed within this context. What we appear to have identified are a set of skills, to do with sequential ordering and appreciating the concept of historical time, which are most influential in determining children's level of understanding of religious ideas, concepts and stories. We are not claiming that these skills are not relevant to other areas of children's thinking, but they will clearly be much more important in some areas than in other areas. Their central importance in the field of religious thinking would make us want to agree with the conclusion of Brown and Desforges "... that initially we must abandon the search for general structures and set about producing taxonomies of behaviour for specific areas of the curriculum. In the long term, when sufficient taxonomies have been established, we may look again for general structures, but to start, as Piaget does, with a search for such generality has proved to be inappropriate." (Brown and Desforges, 1977, p16).

What is needed in the study of the development of religious thinking in children is not further attempts to explain observations solely in terms of Piaget's general theory of cognitive development. A much more fruitful approach, at this stage, would be one which built

on the findings reported in this and the earlier chapters, in an attempt to construct a taxonomy of the skills involved with and appropriate to the specific area of the development of the religious thinking in children. Only then will we be in a position to see how much overlap there is between these skills and the ones that are relevant to other areas of children's thinking.

CHAPTER SIX

SUMMARY, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

6.1 Summary

In a review of the existing literature on the development of religious thinking in children, in Chapter Two, criticisms were levelled at the existing theoretical models and at the research methodologies upon which they were constructed. Elsewhere (Murphy, 1977b and 1978a) it has been suggested that the deficiencies in the existing theoretical models may largely be the result of a very restricted methodological approach to this problem. It has also been proposed that the implementation of new research approaches might be a profitable way of moving towards a greater theoretical understanding of these developmental processes.

Taking a broader view of this general area of psychological research, it was observed that the psychology of religion as a whole had received scant attention in the past, in comparison with other areas of psychology. Although this clearly has something to do with the problems which are particular to work in this area, it does seem as though this branch of research could do with being brought into line with current developments in other areas of psychology, rather than lagging behind them as seems to have been the tendency in the past. Scobie (1977) and Francis (1978) have recently debated about whether a revival was on the way, in the field of the psychology of religion. It could

be argued that such a thing will depend primarily upon researchers in this area catching up with and utilising developments in other areas of psychology. In the studies presented in the preceding chapters, it has certainly been the intention to utilise knowledge and research methodologies developed in other areas, and the debts owed in this respect have been acknowledged where this was appropriate.

In the review of previous research into the development of religious thinking in children, it was noted that many of the studies were based on a methodology of asking children open-ended questions, and, in most cases, these questions related to biblical stories, which the children had just been told. Although it was clear that this general approach could produce interesting results, it did seem as though the use of this rather restricted methodology might have led to a somewhat restricted understanding of this area of children's development.

In the series of experiments reported in Chapter Three, this widely used stories and questions methodology was employed, and by varying a number of factors a test was made of the robustness of the previously reported results. Many earlier researchers in this area (e.g. Beechick, 1974; Goldman, 1962; and Peatling, 1973) had suggested that underlying children's responses to questions about biblical stories were certain fundamental cognitive developmental factors. Furthermore, they had suggested that the type of response which could be expected from children in these situations would depend almost entirely upon the particular stage of cognitive development, which the children had reached at that particular time. Our own results went some way towards confirming our suspicion that

this may be an over simplified view of this developmental process. In fact, our own results tended to show that there were a variety of factors which affected the way that the children responded to the questions which we asked concerning the particular set of biblical parables which we used. The parable itself, the form of language it was narrated in, and the way in which the children's understanding of it was tested, all appeared to be extremely important factors in this respect. Also, the great amount of variability which could be produced in the results by varying any of these factors suggested that the results were not merely dependent on stage-related cognitive developmental factors.

The recently reported child development work of Donaldson (1978) and her associates in Edinburgh, carries a similar message to our own findings in respect of the fact that they, too, showed how important the actual structure of the experimental situation is in determining the outcome of developmental studies. Donaldson levels some very telling criticisms at many of the classic Piagetian developmental tests, showing, for example, that a slight change in the standard type of class inclusion question - "Are there more black cows or more cows?" to "Are there more black cows or more sleeping cows?" has a considerable effect on children's responses. The particular example quoted is one of a series of experiments, conducted by James McGarrigle, which suggest that many of the consistently found class inclusion effects may be more a result of the strangely contrived format of this particular Piagetian task than of the supposed cognitive developmental changes which it is used to support.

Donaldson and her associates demonstrate, in a number of different examples, that slight variations, in Piagetian tasks, which are normally made with the intention of making it easier for the children to understand exactly what the experimenter requires, can considerably affect the performance levels of children from varying age groups on these tasks. Donaldson considers that the reason for this is that it is unrealistic to consider that a problem can be disembedded from the context in which it is presented to the child. Thus, minor changes in the wording of questions (as demonstrated by the example already quoted from McGarrigle's experiments), or changes in the way in which a problem is presented, are, in fact, important contextual aspects of that problem, which can considerably influence children's performance. A good example of a contextual change in the presentation of a problem is to be found in the 'hiding games' experiment of Hughes and Donaldson (1979). This experiment was based on the 'mountain task' of Piaget, which was used by Piaget to demonstrate that children below the age of 6 or 7 years are highly egocentric and cannot take account of another person's viewpoint (Piaget, 1926; Piaget and Inhelder, 1956). In Piaget's task the child is confronted with a model of three mountains, each of which is a different colour, and a doll is placed so that it is looking at the mountains from a different position. The child is shown a set of pictures of the mountains taken from different angles and is asked to choose the picture which shows what the doll sees. Piaget and Inhelder found that children below the age of about 8 years were unable to do this, and there was a distinct tendency for children below the age of 6 or 7 to choose the picture showing their own point of view. This finding has been replicated several times by Aebli (1967), Dodwell (1963), and Garner and Plant (1972).

Hughes and Donaldson changed the context of this task and presented it to children as a hiding game, in which they used models to represent a situation where a boy was trying to hide, within various configurations of walls, from a policeman who was looking for him. In order to solve the task correctly, in each case, the children needed to take account of what the policeman (or policemen, in some of the cases) could see. Hughes and Donaldson found that very few 3 or 4 year old children had any difficulty with this task and were able to conclude that they had been able to "reveal the presence of well co-ordinated, "decentred" thinking in 3 and 4 year old children." (Hughes and Donaldson, 1979, p138). They go on to discuss why children who fail the mountains task can be so successful on their task, and suggest reasons such as the visual complexity of the array in the mountains task, and the fact that with their task children immediately grasped what they had to do. As we have already argued in Chapter One, there are close similarities between the position of Donaldson, and her co-workers, and the positions of Bryant (1974) and Brown and Desforges (1977), all of whom are challenging Piaget on the basis of the fact that his experimental results often depend on the particular contexts of his widely used tasks.

The parallel which emerges with the work presented here is one of challenging existing theoretical positions by varying the experimental methodologies commonly used to provide supporting evidence for them. If a theory is robust it should be capable of dealing with results from any variety of experimental situations, let alone those derived from slight variations of the same situations, and at the present time it would seem as though many stage development theories (including those of Piaget and Goldman) are susceptible to such a scrutiny.

There are many reasons why it is unfortunate that research into the development of children's religious thinking has revolved so much around studies investigating children's responses to questions about religious stories. The fact that this has been the case must surely have something to do with the way that religious education has been taught in schools in the past, but this approach has certainly narrowed the research efforts into what we consider to have been a most misleading and unproductive area. The whole field of children's understanding of stories is a largely untapped one (recent work by Applebee, 1978; Mandler and Johnson, 1977; and Lawrenson, 1978 may mark a step towards the end of this situation), which itself presents difficulties, and by their very nature, stories present children with a whole variety of problems which are extremely difficult to separate out.

The child has to be able to attend to the story while it is being read. He also needs to understand enough of the language used in each phrase or sentence to be able to form an understanding of the meaning of that part of the story. He then has to piece together the elements of the story so that he can form an appreciation of the development of the story and its structure as a whole. He will also be relying on his existing knowledge and understanding of the matters dealt with in the story in order to enhance his understanding of the way they are described in this context. After all of this, the child will need to understand the experimenter's questions and be able to respond to them in a way which the experimenter will understand, before his level of understanding of the story can be measured. Hence, any answer which a child might give to a question about a story may be influenced by a number of different variables.

Whichever technique is used for testing the child's understanding of the story, it will be extremely difficult to determine which of these variables is, in fact, influencing the child's responses. Thus, a major disadvantage with dealing purely with the understanding of religious stories is that one is not only studying the development of a child's religious thinking, but a number of other important variables all at the same time.

In Chapter Two, we highlighted an inevitable problem which faces almost any investigation which relates to children's cognitive development; that is, the complex relationship between language and cognition. The dilemma here, was whether cognitive development may be regarded as being so dependent on language acquisition that one could assume that one was studying cognitive development when one was studying usage and comprehension of language, or whether one has to regard them as separate and only loosely related entities which have independent developmental processes of their own. The conclusion that we reached was that it would be unsafe to conclude that language and cognition are entirely interrelated, with one necessarily being dependent on the other and with there being no possibility of independent developments taking place. Because of this, it was one of the aims of the studies reported in Chapters Four and Five to try, as far as was possible, to investigate separately various cognitive and linguistic (we concentrated largely on semantic) factors, which might independently affect the development of children's religious thinking. It is hoped that these studies will mark the start of a new approach to studying the development of religious thinking in children and the recent production of a standardised test of religious language

comprehension by Turner (1978) is at least one indication that such a change has now started to take place.

The studies reported in Chapter Four utilised Kelly's (1955) triadic comparisons technique in a way which had been suggested by Miller (1967) as being suitable for use as a means of studying semantic development. A number of groups of words, most of which had obvious religious significance, were studied and by an analysis of the children's triadic selections and the justifications given for making these selections, a greater understanding of the way in which they associated, and differentiated between, the meanings of the words was obtained. These results were set alongside others obtained from the application of Eve Clark's (1971) opposites test to two other groups of words, which again included a number of words of religious significance. The results from the opposites test were, however, limited by the fact that they merely reflected whether the children in the two different age groups had or had not acquired the semantic feature of polar opposition (Clark, E.V., 1973) for the various pairs of words studied. Although this in itself was an important aspect of the children's semantic development for these words, it has to be viewed alongside the many other aspects of that same development which are of similar importance. The data from the triadic comparisons test were also limited to a certain extent, in that they tended to reflect on the children's understanding of the meaning of various words by relating those words to certain other prescribed groups of words. Although this information gives us an insight into another aspect of the child's semantic development for those words, it is important to establish that this, too, is only giving a partial picture of their overall semantic development, as

defined by the individual meaning attached by the children to each of these words. In other words, we were not obtaining an exhaustive view of the children's lexical competence, but were attaining some knowledge about relevant aspects of it through a straightforward study of performance on this particular test. We considered it unlikely that it would be possible to study children's understanding of the meaning of religious words without studying it through use and, therefore, aligned ourselves somewhat to the Wittgensteinian position that the best way to study meaning is to study it through use. In this case, use was studied through the justifications given for pairing various words together.

Through the data from the Triads experiments, it was possible to get a considerable insight into various aspects of the understanding of the meaning of certain religious words, which the three groups of 6, 8 and 10 year old children had acquired. This technique seemed to be most successful in producing results which would have been difficult to obtain through direct questioning of the children. The fact that even the 6 year old children related the individual words to one another in all but one of the six groups of words, provided a valuable opportunity to explore a revealing aspect of their religious thinking. When one bears in mind that according to Goldman (1962) children of this age still have approximately seven or eight years to go before they reach the stage of being capable of fully religious thinking, then these results become all the more fascinating. These particular children may or may not have been capable of the level of abstract thinking about religious ideas and concepts which Goldman equated with mature religious thinking, but what is clear is that they were capable of some kind of religious thinking and their

understanding of the meaning of various religious words was clearly going through a state of development and change.

In Chapter Five, we turned from the question of the meaning of religious words to the influence of children's understanding of historical time, and their ability to sequentially order events in time, on their developing religious thinking. In a preliminary series of experiments, the problems which many children in the 6 to 8 year old age range have with sequential ordering and historical time were explored. Although the 8 year olds generally performed better on the tasks than the 6 year olds did, there was an indication in the results that the tasks which the 8 year olds were able to master reasonably successfully were all ones which involved situations which were familiar to them. This suggested that the success of the 8 year olds on these tasks might have been more a result of rote learning of the order of events than any evidence of a particular development in the ability to sequentially order events along a given time span.

In a second series of experiments, two groups of 6 and 8 year old children were presented with a series of more novel sequential ordering tasks. These involved sorting out the order of the participants in various races from certain given information about their relative positions. Both groups of children appeared to have considerable difficulty with these tasks, although the 8 year olds did show some evidence of performing at a level which was higher than would have been expected if they had chosen their responses at random.

In a third series of experiments, the same children were presented with information about certain biblical events and were asked a set of questions designed to test their ability to sequentially order these along a continuum of historical time. Again, the 8 year olds performed better than the 6 year olds on these tests, but on this occasion both groups performed at a level which was higher than could have been expected by chance. On the whole, the 6 year olds only demonstrated a limited ability to order sequentially the biblical events in time, and the large number of incorrect responses given by children in this age group suggested that this might well be an important area of difficulty for them, in coming to an understanding of certain religious facts and ideas. It was hypothesised that the method most likely to be employed in successfully solving these tasks would be an internal mental construction by the child of the order of the events. Where a low rate of success was recorded in responding to the questions, this may well have reflected an inability on the part of the children to construct such an internal representation of these sequential orderings.

6.2 Conclusions

In introducing the approach to be followed throughout the present collection of studies, it was suggested that a move towards employing new research methodologies in this area of child development might lead to a different perspective on the developmental changes taking place. This hypothesis necessarily depended, among other things, on the success of the various methodologies employed, and it is important in making an overall evaluation of the present contribution to this area of research to consider first whether or not our own methodologies could, in fact, be considered to have been successful.

In child development research, there is always the problem of designing experiments which provide meaningful results. Success in this field depends partly upon constructing experiments which capture sufficiently the attention of young children, so that they become willing participants. Linked to this, is the need to construct experiments where the experimenter can communicate to the child what is expected of him. It is of little consequence to report the results of experiments, which children have failed to complete, if the reason for this is not that the child did not have the ability to complete the experiment, but is because the experimenter failed to communicate to the child what was expected of him in the first place. Donaldson's (1978) criticisms of many of Piaget's results, as we have already discussed, are based around the idea that children frequently fail to successfully complete Piagetian tasks, not because of a lack of cognitive competence, but because of a communication problem between them and the experimenter.

A final requirement for experiments which are to be of particular use in this type of child development research, is that they should yield information which gives a fair representation of children's cognitive capabilities. This is clearly much more difficult to evaluate than the first two requirements, but in terms of the validity of the findings is just as important.

We would claim that, on all three of these counts, the present experiments attained a fairly high level of success. In each case the experiments captured the attention of the children and, as far as could be seen, they generally understood what was being required of them. As far as the last criterion is concerned, one can certainly say that the experiments appeared to yield information about the developmental state of the children's religious thinking, which was more revealing than that provided by a number of previous studies which used the basic story and question methodological approach, which we have already described.

The results of these experiments, apart from providing specific evidence about several aspects of the development of religious thinking in children, have provided a considerable challenge to the existing theoretical conceptualisation of this process as a simple unidimensional stage development process. Francis (1976, 1977a and 1977b) has criticised previous researchers in this area concerning their very loose definition of what they mean by religious thinking, and it would seem as though it is at this fundamental level that the whole enterprise has floundered up until now. Goldman, Peatling and others have talked authoritatively about the development of religious thinking, as though

the definition of this phenomenon was apparent and agreed by everyone. Goldman, in fact, defines religious thinking as normal thinking "directed towards religion" (Goldman, 1964b, p3), but we would question whether one can talk about this phenomenon as though it is a simple process which will develop along a unidimensional scale. Our results suggest that there are many aspects to religious thinking, and far from being a simple developmental process it is, in fact, a very complex one which embraces many aspects of children's development of cognition and language, at the points at which these developmental processes relate to their developing thinking about religion.

In the past, studies of the development of religious thinking in children have frequently approached the problem by analysing children's responses to sets of open-ended questions about particular religious stories. On the basis of the levels of understanding demonstrated by the children in answering these particular sets of questions, generalisations have been made about the state of their development of religious thinking. The assumption being made here was that whatever the factors were which were involved in the development of religious thinking in children, their effect would be observable when children were asked questions about these religious stories. We would argue that this is a rather over-simplified approach to the problem.

It would appear to be much more sensible to regard children's religious thinking as depending on a large number of inter-related factors. Many of these factors have implications for a wide range of children's thinking, whereas some are more specifically related to religious thinking. Examples of the more general factors include

the following:- the ability to entertain abstract as opposed to concrete ideas, the ability to conceptualise historical time and to sequentially order events in time, and the level of linguistic development in relation to an understanding of a variety of forms of language, including the meaning of a number of words commonly used in relation to moral and religious discourse. Examples of the more specifically religious factors include:- exposure to religious ideas, discourse or literature, the level of semantic development in relation to an understanding of a number of specifically religious words (such as some of those included in the triads experiments reported in Chapter Four), and conceptual development in relation to religious teaching and ideas.

At the start of this investigation, it was indicated that the intention was to think of religious thinking largely in terms of thinking about the Christian religion. This, of itself, may help to provide some definition of what is meant by religious thinking in the present discussion. We are referring to the child's ability to think about, grapple with and also understand the ideas of a historical religion based around an approximately defined body of teaching. This definition would include, but would not be the same as, equating religious thinking with the child's ability to entertain in his thinking or imagination anything in the realm of superhuman or supernatural beings or forces. This definition would also be different from one which equated religious thinking with thoughts portraying a relationship with, commitment to, or worship of a superhuman or supernatural being or force. These things could be included within our definition, but would not describe it. We would rather operate from the position which

accepts that the person who is not committed to a particular religious stance can think about a religion and can reach various levels of understanding of that religion. Under this position, but depending upon the particular level of understanding of the religion attained and on various other more general abilities, such as those which traditionally have been associated with the concept of general intelligence, all individuals will be capable of a certain level of religious thinking, which can be associated with the particular religion in question.

Thus, having stated these constraints, we would conclude by rejecting a simplistic model of the development of religious thinking in children, which equates religious thinking with the ability to be able to apply certain stage related styles of thinking to religious stories. Furthermore, we would claim that the development of religious thinking can only be understood as a much more complex process which allows for the effect of a number of different factors, each of which will be influenced by separate developmental processes. Because of the nature of these factors and the developmental processes associated with them, we would anticipate that, to some extent, the development of the religious thinking of individuals is something which continues on through childhood and adolescence into adulthood, middle and old age. To assume that someone has reached a fully developed stage of religious thinking once they can understand a religious story at a non-literal abstract level, would seem to us to be a misrepresentation of the whole problem of investigating the development of the way that individuals think about religion.

The results reported in the earlier chapters of the present investigation all relate to studies carried out with children between the ages of 6 and 11 years old, and so it would be foolish to claim wider insights into the overall developmental process than these results permit. However, the fact that the children studied in these investigations would have been widely regarded by previous investigators as not being capable of religious thinking, leads us to take up a fundamentally different standpoint, both about this issue and the broader issue of what the development of religious thinking is understood to mean. We would claim to have demonstrated various aspects of the developing religious thinking of these children, and, of these aspects, we would anticipate that several would continue to develop throughout a large part of the children's lives. For example, we have touched upon the issue of the development of religious word meaning, and in Chapter Four we looked in some length at the relatedness of the meanings of several groups of words of religious significance. It is difficult to imagine a point in time when one would want to claim that the relatedness of the meanings of these words was fully developed. Certainly, in the different age-groups within which we studied their relatedness, there was evidence of developments taking place, which it is anticipated could have gone on for some considerable amount of time. Likewise, the ability to abstract meaning from parables and the development of a concept of historical time, are both things which could easily be assumed to go on developing well beyond the limited years of growth within which we chose to study them.

6.3 Implications

When one considers the implications of research into the psychological development of children, one naturally tends to think in terms of the application of such research findings to the field of education. It is sometimes claimed, however, that developmental psychology has been able to contribute very little of any great importance to educational policies and practices. Whilst regretting the possibility of such an extreme lack of influence, one is at the same time aware of the harmful way in which tentative research findings are sometimes used as a justification for major changes in the way that children are taught. Clearly, there is a need for established research findings and theories to be examined in terms of their possible implications for education, but this is a process which will necessitate careful re-evaluation, by both developmental psychologists and educationalists, of the research evidence, as well as the existing teaching practices, and changes should only be brought about where clear evidence for their benefits can be observed.

The research of Goldman into children's development of religious thinking is perhaps as good an example as can be found anywhere, of a piece of child development research that has resulted in rapid and dramatic educational changes. The whole approach towards teaching young children in primary schools and Sunday schools about religion, both in Britain and elsewhere, underwent a major revolution in the mid 1960s, and the influence of Goldman's work in bringing about this change was not inconsiderable. It can certainly be argued that the way in which Goldman's findings were presented to the general public influenced these events, but now we must question whether Goldman's

theoretical position is robust enough to be used as a foundation for changing educational practices.

Goldman and others, who sought to apply his research findings, claimed that too much exposure to teaching about the Bible at too early an age would hinder children's understanding of the Christian religion later on. Thus, the suggestion was that teachers should move away from biblically based R.E. syllabuses and keep these until children reached a stage of "readiness for religion".

Goldman and his associates, at the same time, introduced R.E. teaching guides based around a life-theme approach which, according to Goldman, included a certain amount of biblical material because the designers had "one eye on those conventional teachers, who might find the series more acceptable in this way" (Goldman, 1969, p51). Basically, the philosophy behind the new approach was that the children might come to a religious understanding of life through studying life in more depth, rather than by studying religion or religious teachings.

We discussed, in Chapter Two, the fact that Goldman can be held to have gone way beyond his own research evidence in suggesting these educational changes, and he was undoubtedly influenced considerably in drawing the conclusions which he did, by his own theological position. We would now want to question even the slight relationship, which might have been thought to have existed, between Goldman's research evidence and his proposed changes in R.E. curricula. It was never completely clear how his stage related theory for the development of religious thinking led to the

conclusion that it would be harmful to expose children to certain religious materials and ideas, before they had reached a fully developed stage of religious thinking. Now that we are wanting to call the stage related theory into question in the light of our own evidence, this would seem to leave the supposed educational implications of this theory with no more status than any other proposed curriculum innovation. That is, if Goldman's proposed innovations do lead to enhanced attainment of educational objectives then well and good, but without any such evidence there is no reason to believe that they are better than, or even as good as, the existing teaching methods.

Thus, the major implications of the current investigation are a calling into question of the usefulness of existing stage development theories of religious thinking, along with the educational innovations which have been based on these theories. No simple theoretical alternative is offered in place of the stage development theories, as it appears from the evidence of our own investigations that a much more complex multi-dimensional model would be required to attempt to describe this whole area of children's cognitive and semantic development. The major implication of this for religious educators is that much of what they may have accepted as necessary changes, resulting from the research findings of developmental psychologists, may need to be reconsidered in the light of future developments in such theories.

6.4 Recommendations

Our analysis of previous research studies, along with our own results, has led us to conclude that there is an urgent need for a move away from the existing theoretical approach to this area of child development. We have argued that a new paradigm is needed, which will give a more realistic explanation of the processes underlying the development of religious thinking in children. With such a paradigm, it might be possible to make more useful applications to the interests of those concerned with the religious education of young children.

One of our major arguments has been that the construction of any such new paradigm will depend, in the first instance, on radically new approaches being taken into research in this area of children's development. In our own studies, we have attempted to open up some new methodologies, but we are aware that a great deal more work of this kind will be needed before satisfactory theoretical models can finally be constructed. In particular, we have emphasised the need to approach this area, both as a cognitive developmental problem and from the perspective of semantic and linguistic development. In the past, this area has been treated mainly as a cognitive developmental problem, and one of the results of investigating the important influence of linguistic development will, we feel, be to reveal the greater complexities which, in reality, exist.

Thus, we would argue that apart from there being a great need for new methodological approaches to this problem, there is a

particular need to approach it, at least partly, as a problem of linguistic development. The field of child language development is a particularly rich one at the moment, and we have demonstrated in a limited way how research methodologies from that area can easily be redirected towards this problem.

Another limitation, of which we are most aware, is that the methodologies employed in our own investigations have relied entirely upon cross sectional analyses of different groups of children of different ages. We have tended to test the development of various aspects of the religious development of these children without making any attempt to enquire into or manipulate the factors which have influenced and produced that development. This is, as we mentioned in Chapter 1, a most acceptable approach within the field of child development research, and is not necessarily inferior to longitudinal studies which trace the development of the same group of children across an age span of several years. There would be, however, much to be learned from future studies in this area if they were to include some longitudinal investigations, particularly if these studies could vary the type of experience that different groups of children had of religious materials and ideas. Such studies are extremely difficult to mount and the degree to which the experience of children can be manipulated is always a limiting factor. However, observations of the effects of various religious education curriculum programmes on the developing religious thinking of groups of primary school children could provide some most interesting evidence for those interested in the applications of findings from research in this area, to the methods used to teach children about religion. Longitudinal studies of this type could also provide

useful information for those concerned with coming to a psychological understanding of this area of a child's thought development.

To conclude an investigation such as this, by stressing the need for more research and a greater variety of research methodologies, may seem like an admission of the inadequacies of the work reported. However, in this case, we would claim that our own studies have convinced us of the great possibilities that there are for further research in this area, and have also provided encouraging evidence for those who are prepared to experiment with new research methodologies in future attempts to further understanding of this important area of children's development.

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APPENDIX

THE PARABLES AND THE QUESTIONS

THE PARABLES AND THE QUESTIONS.

THE RICH FOOL (Standard Version)

a. The Story.

A rich man had a very good farm and his barns could not hold all the crops that grew. So he said to himself, "I'll tear down my barns and build bigger ones. I'll store enough riches to last for years, and then I can start having fun."

But God said to the man, "You fool! This night you will die. Then who will have all your riches?"

After telling the story Jesus said, "All the people are fools who get rich on earth but not in heaven."

b. The Questions.

1. What was Jesus trying to teach by telling that story?
2. Why did God call the man a fool?
3. How can we avoid being like the fool?
4. What does Jesus want us to learn from that story?

THE RICH FOOL (Modernised Version)

a. The Story

A rich man who already had a lot of money in the bank, thought that if he got twice as much money stored up then he would be able to stop working and have a good time.

But God said to the man "You fool! To-night you are going to die. Then what will happen to all your money?"

After telling this story Jesus said, "All the people are fools who get rich on earth but not in heaven."

b. The Questions.

1. What was Jesus trying to teach by telling that story?
2. Why did God call the man a fool?
3. How could we avoid being like the fool?
4. What does Jesus want us to learn from that story?

THE GOOD SAMARITAN (Standard Version)

a. The Story

One day a young man asked Jesus how he could know who his neighbour was. He wanted to be able to obey the commandment to love his neighbour.

Jesus told him this story.

"A man was travelling from Jerusalem to Jericho, along a lonely road. He was attacked by a gang of robbers who beat him up, almost killing him, and they escaped with all his money.

A priest happened to be travelling along the same road, and when he saw the man's body lying by the roadside, he crossed to the other side of the road and passed by without stopping. Some time afterwards one of the Temple assistants also came along the road, and seeing the injured man he too crossed over, and passed by on the other side.

Then a third man came along, who was a Samaritan, and in those days the Samaritans were very unpopular and hardly anyone even talked to them. When he saw the man lying there, he felt sorry for him. Kneeling down he washed his wounds with the oil and wine which he was carrying, and bandaged them. Then he lifted the man on to his own horse and took him to the nearest inn. He gave the innkeeper some money and instructed him, "Look after this man. On my return journey I will call in and if you have had any additional expenses I will pay them."

Then after telling this story, Jesus turned to the young man and said, "Which of the three men proved to be a neighbour to the man who had been attacked?"

"Why, the one who took pity on him", said the young man.

"Then go and do the same", replied Jesus.

b. The Questions.

1. What was Jesus trying to teach by telling that story?
2. Who does Jesus want us to be like in that story?
3. What kind of people should we help?
4. What does Jesus want us to learn from that story?

THE GOOD SAMARITAN (Modern Version)

THE STRANGER AND THE INJURED MAN

a. The Story

One day a man was going on a journey, but on his way he was attacked by robbers. They stripped him of his clothes and money and beat him up and left him lying half-dead beside the road.

While he was lying on the ground a minister came along and he just looked at him and went by on the other side of the road. Later an elder of the church came by; he crossed the road and looked at the traveller but did not help him - he just went away.

Then a stranger from another country came along the road. The man did not think this stranger would help him because he was from a foreign country that was not popular. But the stranger stopped and helped him bathe his wounds. Then the stranger gave him some of his clothes to wear and took him to the nearest hotel. At the hotel he gave the manager some money to look after the man until he was better and said that if it cost any more than that, he would pay the next time he came to the hotel.

b. Questions

1. What was Jesus trying to teach by telling that story?
2. Who does Jesus want us to be like in the story?
3. What kind of people should we help?
4. What does Jesus want us to learn from that story?

THE TWO HOUSES

a. The Story

There was a wise man who built his house on a foundation of rock. Rain and floods and strong winds came, but the house stood firm on the rock.

There was also a foolish man. He built his house on the sand. The rain and floods and strong winds came and the house on the sand blew down.

Jesus said "Anyone who hears my words and obeys them is like that wise man. Anyone who hears my words and does not obey them is like that foolish man".

b. The Questions.

1. What was Jesus trying to teach by telling that story?
2. What kind of house was He talking about?
3. What kind of storm was He talking about?
4. What does Jesus want us to learn from that story?

c. The Multiple-Choice Test

1. What was Jesus trying to teach in this story?

a) That if you are building a house it is better to build it on rock or hard ground. It is less likely to fall down if it is on rock and not on sand.

b) That He is like a rock and the houses are like peoples' lives. If you build your life on Him and obey Him then that is good.

c) That if they were sensible they would think about things before they did them. If they were silly they would do things without thinking about them.

2. What do the houses represent in the story?

a) Peoples' lives.
b) Ordinary houses.
c) Good and Bad.

3. What do the rains and strong winds represent in the story?

a) A storm in the night.
b) Things that blow houses down.
c) Things that spoil peoples' lives.

THE LOST SHEEP

a. The Story

Jesus knew that the Scribes and Pharisees complained that he spoke to tax-collectors and sinners, so to explain why he did this he told them the following parable.

"What man with a hundred sheep, having lost one of them would not leave the other ninety-nine and go searching for the missing one? And having found it put it joyfully on his shoulders and carry it home and call all his friends and neighbours for a celebration and say, "Isn't it marvellous, I've found my sheep which was lost." In the same way, there is more rejoicing in heaven over one sinner who repents than over ninety-nine good men who have no need of repentance."

b. The Questions.

1. What was Jesus trying to teach by telling that story?
2. What was the lost sheep, in the story, supposed to be like?
3. Who was the man supposed to be like, who went to look for the sheep?
4. What does Jesus want us to learn from that story?

THE SOWER

a. The Story

"Imagine", said Jesus, "a farmer going out to sow some seeds. As he worked some seeds fell on the edge of the path where they were quickly eaten up by the birds. Some seeds fell on the stones and rocks, where there was little soil. They sprang up, but, as soon as the sun shone, they withered, and having weak roots, died. Others fell among thorns and weeds and were choked. Others fell on rich soil and these grew strong and healthy and produced a rich crop".

Then He explained the meaning of this story to His disciples. The seed, He said, was the word of God. Those on the edge of the path are people who hear the word, but, before it takes root in their hearts, the Devil comes and carries it off. The man, who hears it on the rocky ground, is the one who welcomes it, but his enthusiasm doesn't last. The first time he is put to the test the word withers and dies, because it has no roots in him. The one who receives it in the thorns and weeds, is the one who hears the word, but is more concerned with the material things of life, and the word is choked by the lure of riches. And the one who receives the word in rich soil is the one who hears and truly understands and shares his harvest with others.

b. The Questions

1. What was Jesus trying to teach by telling that story?
2. What did the seeds represent in the story - what were they like?
3. What was the good soil in the story supposed to be like?
4. What does Jesus want us to learn from that story?

THE PHARISEE AND THE TAX-COLLECTOR

Standard Version.

a. The Story

Jesus talked about false pride. He said. "Two men went into the temple to pray. One was a Pharisee and the other was a tax-collector.

The Pharisee stood there and said this prayer to himself. "I thank you God that I am not greedy, wicked and bad like other people, and particularly that I am not like this tax-collector here. I go without food twice a week and give part of my money to the Temple, regularly."

The tax-collector stood a little distance away, hardly daring to look up to heaven. And beating his breast to show his sorrow, said, "God, please be merciful to me, a sinner."

The tax-collector went home on good terms with God. The Pharisee did not. For the man who is humble will be raised up. And the man who sets himself up above others will be humbled."

b. The Questions

1. What was Jesus trying to teach by telling that story?
2. Why was God pleased with the Tax-Collector after he had been to the Temple?
3. Why was God not pleased with the Pharisee after he had been to the Temple?
4. What does Jesus want us to learn from that story?

THE PHARISEE AND THE TAX-COLLECTOR

(Modern Version)

'THE PARABLE ABOUT HUMILITY'

a. The Story

Jesus was teaching about men who were very proud of themselves, when they shouldn't have been, and he told the people this parable:

"One day two men went into a church to pray, and one man who was very proud of himself said this prayer "Thank you God that I don't do lots of wicked and bad things like that man over there. I never do anything wrong like he does and I give quite a bit of the money I earn to the church."

The other man who felt very guilty for the things he had done kept in the background and prayed to God saying:

"God please have mercy on me because I am a sinner."

This man went home on good terms with God. The proud man did not. For the proud shall be humbled, but the humble shall be honoured."

b. The Questions

1. What was Jesus trying to teach by telling that story?
2. Why was God pleased with the second man after he had been to the church?
3. Why was God not pleased with the first man after he had been to the church?
4. What does Jesus want us to learn from that story?

c. The Multiple-Choice Test

Parable about Humility

1. What was Jesus trying to teach by this story?

a) To be good and pray to God.

b) Not to show off about the good things you have done. Ask God to forgive you for all the bad things you have done.

c) Not to be wicked and bad.

2. Why did the second man go home on good terms with God?

a) Because he had asked God to forgive him for all the wrong he had done.

b) Because he was a good man.

c) Because he didn't say anything about the first man in his prayers.

3. Why did the first man go home on had terms with God?

a) Because he didn't give enough money to the church.

b) Because he was too proud of himself and had been showing off.

c) Because he was a bad man.