THE ROLE AND RELATIVE IMPORTANCE OF LANGUAGE IN THE DEVELOPMENT OF PERSPECTIVE TAKING SKILLS IN YOUNG CHILDREN

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ABSTRACT

This study was undertaken in order to investigate the role of language in the development of perspective taking skills in young children. Theory, research, and observation into the development of these skills supports the view that language may be important in this development. The purpose of this experiment was to provide empirical research on the role of language in the development of these skills.

There were two research questions being addressed by this study. They were: 1) Does the level of language competence play a role in the successful development of conceptual and perceptual perspective taking; and 2) How do children with normal language development compare to children with delayed language development in their development of conceptual and perceptual perspective taking?

The experiment was designed with one independent variable (language) and two dependent variables (conceptual and perceptual perspective taking tasks). Two groups of four year old children differing only in their language development (one normal, one delayed) were administered both a conceptual and a perceptual perspective taking task.
The results of the statistical analyses comparing the two groups on each task revealed that the group with normal language development performed significantly better than the delayed language group on the conceptual task, while the groups performed equally well on the perceptual task. The results indicated that language plays a more important role in the development of conceptual perspective taking, and a less important role in the development of perceptual perspective taking.
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CHAPTER ONE
INTRODUCTION

Purpose of the Study

This study attempts to determine the role and relative importance of language in the development of perspective taking skills in young children. In carrying out this investigation the following assumptions were made: a) that linguistic elements contribute to the development of perspective taking and therefore in the development of social cognition overall; and b) that like language and cognition, social-cognitive skills develop sequentially.

A consequence of the first assumption and the broad position taken by this investigation is therefore, when language is delayed developmentally, perspective taking skills will also be delayed developmentally.

Research Questions

In studying the developmental relationship between the growth of language and perspective taking, several questions need to be addressed:

1 a) Does the level of language skill play a role in the successful development of conceptual perspective taking?
b) Does the level of language skill play a role in the successful development of perceptual perspective taking?

2 a) How do children with normal language development compare to children with delayed language in their development of conceptual perspective taking?

b) How do children with normal language compare to children with delayed language in their development of perceptual perspective taking?

Scope of the Study

This study concentrates on two perspective taking skills which have been identified in the literature: 1) conceptual perspective taking, which is the ability to assess what another person is thinking or knows about a particular situation; and 2) perceptual perspective taking, which is the ability to assume another's perceptual viewpoint which in terms of this study, involves identifying what another person is seeing. The target population for the study consists of two groups of four year old children from two Vancouver preschools. One group was described by teachers as having normal language development and the other group described by their teachers and speech pathologist as having delayed language development.
Objectives

At the conclusion of this study we will have:

a) Evidence for the broad assumption that children with delayed language will also demonstrate delayed perspective taking skills.

b) Evidence to test the assumption that the level of language competency plays an important role in the development of conceptual perspective taking skills, and a minor role in perceptual perspective taking.

c) Findings which bear upon Vygotsky’s theory regarding the relationship between the development of thought, language and social cognition.

Importance of the Study

Theory, research and observation into the development of social cognition in young children supports the view that there are several complex processes involved in how children conceptualize and reason about their social world. According to Luria and Yudovich (1971), complex mental processes, including the early acquisition of knowledge and the formation of concepts are not innate properties of mind but develop as the child interacts with the environment, and communicates with people in his or her environment.
Taking this line of reasoning further, Damon (1981) and Flavell (1985) have suggested that it may be that social interaction and the development of concepts about cognition underlie children's development of the ability to restructure their thoughts and develop the cognitive performance necessary for everyday intellectual and social life. One basic assumption derived from recent research in the area of social cognition is that the way in which one conceptualizes and reasons about others will have a major effect on how one interacts with others (Shantz, 1983). If this assumption is correct, then the development of perspective taking is an important area for study in young children.

The specific area of investigation being addressed in this study is the development of perceptual and conceptual perspective taking in young children. Perspective taking, in particular conceptual perspective taking, is believed to be an ability important to the development of effective communication and social interaction (Kurdek & Rodgon, 1975). As well, perspective taking is thought to be a developmental prerequisite for acquiring at least some specific knowledge about the appearance-reality distinction, which is important in helping the child to understand that what something may not be what it appears to them. Such
skills, in turn, are thought to be important in the development of pretend play and fantasy and may help to prevent misperceptions, misunderstandings, false beliefs and deception (Flavell, 1985).

Recently, theorists and some researchers have increasingly suggested that language may play an important role in the development of social cognition, in particular the ability to take another person's perspective (Kusche & Greenberg, 1983; Shantz, 1983; Shatz, 1983). They support Vygotskian theory (Vygotsky, 1962) that claims there are interactive relationships between the development of social interaction, language, thought and social cognition. In figure 1, (refer to p. 16 in chapter 2) the solid arrows demonstrate a necessary condition where language requires social interaction (which begins right at birth with parents, hospital staff et cetera) to develop and where language and thought are necessary components for the development of social cognition. The broken arrows demonstrate interactive relationships whereby one area enhances the development of another area (i.e. social interaction and thought and language and thought).
Figure 1. A Vygotskian View of the Interactive Development of Social Interaction, Language, Thought and Social Cognition.

This interactive theory has started researchers asking if children with language difficulties would also exhibit similar difficulties in their development of social cognition (Kusche & Greenberg, 1983; Shatz, 1983), because research has shown that children with delayed or disordered cognitive development generally have delayed or disordered social cognitive development (Baron-Cohen, Leslie & Frith, 1985).

Some preliminary investigations of exceptional children and their perspective taking abilities have indicated relationships between language and the development of specific perspective taking skills (Kitano, Stiehl & Cole, 1978; Kusche & Greenberg, 1983; Baron-Cohen et al., 1985). These studies have looked at perspective taking skills in down syndrome, autistic and deaf children as compared with normal children. It has been found that while down syndrome
and deaf children were delayed in their conceptual perspective taking and language skills, conceptual perspective taking skills in both groups increased with age (mental age for the downs group) and experience. Autistic children have been found to be disordered both in their perspective taking and their language skills, with neither improving substantially with age and experience (Kitano et al., 1978; Kusche & Greenberg, 1983; Baron-Cohen et al., 1985).

These results support the view that there is a relationship between the level of language competency and the development of conceptual perspective taking skills. However, it would appear that the research does not go far enough. Since these studies have dealt with children with more than just language delays or disorders, they cannot conclude that it is language per se, but rather one of any number of other variables (i.e. cognitive delays, amount of social experience, environment, et cetera) which may be affecting these children's performance on conceptual perspective taking tasks. To determine whether language development does in fact affect the development of perspective taking skills, we need to isolate language as an independent variable.
Therefore, one approach to ascertaining the role and relative importance of language in the development of perspective taking skills, is to study a population of language delayed children and compare them to a group of children with normal language development, when both groups have completed both a conceptual and perceptual perspective taking task. This is the unique contribution of this study, in that an attempt is made to control for other variables by selecting groups who appear to differ only in their language development.

Organisation of the Study

Chapter one has stated the purpose of the study, the research questions, the objectives and the importance of this study. Chapter two provides the relevant theory and research base of the study in three main sections: a) the historical, theoretical background to the problem; b) the relevant empirical literature; and c) studies which deal with language involvement in perspective taking skills. Chapter three outlines the design of the study, including the choice of test instruments, selection of subjects and the procedure used to gather and analyze the data gathered. Results of the data collection are presented in chapter four, with both a statistical and descriptive analysis and a
discussion of the findings. The final chapter includes a general discussion of the findings and conclusions regarding the research questions, theoretical implications, educational implications and further research suggestions.
CHAPTER TWO
REVIEW OF THE LITERATURE

The purpose of this chapter is to provide a rationale for the proposed study by reviewing the relevant theoretical and empirical literature. In attempting to demonstrate a theoretical link between Vygotskian theory and the current study, the chapter first addresses how the Piagetian theory of cognitive development sets the stage for investigating the development of social cognition. Secondly it focuses on how Vygotskian theory emphasizes the interrelatedness of the development of language, cognition and social cognition in young children. Following this, there is a review of studies which look at the contrasts of the development of perspective taking skills in children whose development is normal and delayed. Finally, there is consideration of studies which suggest that there may be some language involvement in the development of perspective taking.

This chapter reviews literature in three main areas: a) literature discussing the emergence of social cognitive theory; b) current research on conceptual and perceptual perspective taking in young children; and c) studies investigating delays or disorders in the development of
perspective taking.

The History of Social-Cognitive Theory

According to Shantz (1983), the development of social knowledge and reasoning as an intense focus of study has been very recent, emerging during the past fifteen years. The reason for this is believed to lie in the history of the field of psychology itself, in that social and cognitive development were historically studied in isolation from one another. The division of the two areas produced an uncomfortable division for those who saw behaviour as unified and adaptive, changing constantly with the biological development of the individual. In recent years, therefore, the field of social-cognitive development focused on understanding the relation between social behaviour and cognitive development in a more holistic way.

Two basic assumptions which have been derived from studying the area of social-cognitive development in this way are: 1) that the way in which one conceptualizes and reasons about others has a major effect on how one interacts with them; and 2) that social interaction and experiences strongly influence the child’s conceptions (Damon & Killen, 1982; Flavell, 1985; Shantz, 1983). Another important effect of the development of this field of study is that it
supports an extension of the study of cognitive development from traditional non-social problems and processes to social problems and processes. Thus, social cognition as an area of inquiry can be viewed as evolving in response to two historical dichotomies in psychology: the study of thinking and behaving, and the study of social and non-social knowing (Shantz, 1983).

Typically, the research in social cognition has come from different philosophical roots. In some studies social cognition is viewed as a specific sort of knowledge, pertaining to social interaction, with a focus on the organization and orientation of this knowledge as it develops through the life span. In this approach, social knowledge is viewed as an individual's means of interpreting social interaction, and is therefore viewed as an aspect of cognition. The models based on this approach attempt to define the special categories and principles that structure social knowledge at each stage of development (Damon, 1981).

Other studies have considered social cognition as the process by which persons become aware of one another's interpretations of meaning through communication and social interaction. These studies have investigated children's early abilities to engage in perspective taking (Chandler, 1976; Baron-Cohen, Leslie & Frith, 1985; Flavell, Botkin,
Piagetian Theory

The first major work in the area of social cognition came directly from the Piagetian theory of cognitive development. Piaget (1959) suggested that cognitive and social development were inseparable and parallel. He described the nature, context and content of all thought as inherently social with thought shaping social life. Also, he proposed that the character of the child’s changing cognitive organization exercised control over the kinds of social interactions in which children would successfully engage. As a consequence, the social and logical groupings which he identified as emerging during the course of development were not regarded as merely coincidental but were viewed as different facets of the same developmental process (Chandler, 1976).

Piaget (1959), believed that:

The further a man has advanced in his own time of thought, the better able is he to see things from the point of view of others and to make himself understood by them. (p. 39)

He viewed young children, in contrast to adults, as egocentric, claiming that much of the time when young children spoke they did not try to adopt the perspective of
their listeners. He found that children under the age of seven were very poor communicators because they were not able to take the perspective of another.

After looking at language development in conjunction with the development of thought, Piaget suggested that not only was children's thought egocentric but, consequently, their language was similarly limited (because language develops from thought). However, he pointed out that verbal egocentrism was much more variable than intellectual egocentrism since it depended more on external social factors.

Piaget believed that there were two broad areas of cognition, impersonal (person-to-object) and interpersonal or social (person-to-person). He believed that children were egocentric in their understanding of both the social group and the external world. Impersonal cognition referred to the individual's cognitive structuring of the physical, inanimate world as seen, for example in his/her developing conceptions of logic. Interpersonal cognition referred to the individual's cognitive structuring of the social world, that is, how he or she came to perceive others and make inferences about their inner states (i.e. thinking and feeling) (Piaget, 1959).
Piaget suggested that in order to understand other people and the outside world, two conditions were necessary: 1) consciousness of oneself as a subject, with the ability to detach subject from object so as not to attribute animate characteristics to inanimate objects, and 2) avoidance of regarding one’s own point of view as the only possible one. Therefore, to establish a place in the group, children must learn to adapt to a social setting as well as a physical setting by constructing an understanding which includes adjusting to others points of view.

In order to test children’s egocentrism, Piaget collected data from tasks which were devised to assess the ability of the child to take account of someone else’s point of view. Thus, social-cognitive research in the Piagetian vein primarily focused attention on the interpersonal by looking only at the child’s perceptual perspective taking skills.

Researchers such as Donaldson and Hughes (Donaldson, 1978) have provided theoretical and empirical support for the growing belief that preschool children are not nearly so limited in their ability to ‘decentre’ or appreciate someone else’s perspective as Piaget had maintained. As well, there is no evidence that this so-called egocentrism is a serious barrier to communication for the young child. The
abandonment of the belief in pronounced childhood egocentrism has far reaching implications whose significance is better understood in relation to language development.

Donaldson and Hughes (Donaldson, 1978) believe that all humans are egocentric to a certain extent throughout their lives. Their research on young children, taken with Bruner (1977) and Trevarthen's (1979) work on infants and their communication with adults, tends to support the claim that even young children can 'decentre'. They have found that even at a very young age children are able to interact effectively with adults, which tends to suggest the ability to decentre to a reasonable degree.

**Vygotskian Theory**

Vygotsky's (1962) theory argues for an interactive relationship between social interaction, language and thought, with social interaction considered crucial for the development of language, and where language is important but not always necessary for the development of thought and vice versa. He believes that the use of language as an analytic tool helps children to first experience, then develop concepts. As well, he believes that it is the internalization of external dialogue that brings the powerful tool of language to bear on the stream of thought,
causing thought to undergo many changes as it becomes speech.

Vygotsky views adults’ verbal interaction with children as important for stimulating the children’s actions and thinking. He sees the primary functions of speech, for both children and adults, (a) as communicative and (b) for social contact. Therefore, he believes that the earliest speech of children must be essentially social.

In Vygotsky’s conception, egocentric speech is a phenomenon of the shift from the social, collective activity of children to their more individualized activity, and not vice-versa as Piaget suggests. He views egocentric speech as a 'separate linguistic form' which is an extremely important genetic link in the transition from vocal to inner speech. The decreasing vocalization of egocentric speech denotes a developing abstraction from sound into the development of inner speech. This skill is believed to be the ability to 'think words' without vocalizing, using language as a tool to aid thought in problem solving. The development of inner speech is believed to be a new skill which is brought in from the outside along with socialization.

Vygotsky found that the weaker children’s contact is with the group (i.e. possibly isolated from the group due to
physical or environmental reasons) the less the social situation will force children to adjust their thoughts to others and thus use social speech. However, this situation does not increase egocentric speech but rather depresses it, according to experimental evidence provided by Vygotsky (1962).

Direct communication between minds is impossible both physically and psychologically. Communication, according to Vygotsky can only be achieved in a roundabout way, in that thought must first pass through meanings and then words. Therefore, to comprehend another’s speech, it is not sufficient to understand just his or her thoughts, instead we must also know the intention behind what is said. According to Vygotsky, unless this is accomplished no psychological analysis of an utterance is complete.

Although many see conflicts in the views of both Piaget and Vygotsky, others take the view that both their positions are defensible and may, if taken together as two sides of a coin shed light on the role language plays in children’s cognitive development (Shafer, Staab & Smith, 1983). The two taken together suggest an interactive relationship between the development of thought and language, wherein Piaget views cognitive development as the more important component, while Vygotsky views language as the essential
component, both suggesting that one cannot develop without the other.

In the Piagetian perspective we see that cognitive and social development are inseparable, while Vygotsky recognizes that cognitive and social development are separate. He recognizes however that there is an interaction between the development of language, thought and social cognition. Thus, expanding our understanding of the intricate relationships between the development of the different areas.

According to Vygotsky, the child’s ability to communicate effectively with others requires the ability to understand another’s words, thoughts and intentions. Implicit in Vygotsky’s theory is the belief that language plays an important and essential role in the development of children’s ability to function effectively in a social world.

Research on Perspective Taking

One easily identifiable area in the literature on the development of social cognition is a large group of studies which have followed the Piagetian vein and focused primarily on children’s social perspective taking abilities (Chandler, 1976; Flavell et al., 1968; Kurdek, 1977; Kusche & Greenberg, 1983; Selman, 1971). Much of the research on
social perspective taking consists of efforts to detail and better understand the character of the skills involved in the context of interaction.

The question of when children typically develop the capacity to adopt the roles and perspectives of others depends on how such perspective taking skills are defined, and on what one is willing to accept as evidence of their occurrence. In Piagetian terminology, the ability to take another's perspective can be seen as the development of social and cognitive decentering. Kusche and Greenberg (1983) and Selman (1971) describe role-taking as "the ability to view the world from another's perspective."

Flavell et al. (1968) defined perspective taking as:

...that process in which the individual somehow cognizes...certain attributes of another person. The attributes in question are ... inferential rather than directly perceptible, for example the other's needs, intentions, opinions and beliefs, and emotional, perceptual or intellectual capacities and limitations (p. 5).

Studies relating children's social-cognitive development to their ability to take the perspective of another person have included tasks looking at: perceptual skills (an inference a child makes regarding another person's visual, auditory or other perceptual experience) (Devries, 1970; Fishbein, Lewis & Keiffer, 1972; Piaget & Inhelder, 1956); conceptual skills (an inference a child
makes regarding another's internal experience, thoughts, desires, attitudes and plans) (Flavell et al., 1968); and affective skills (the ability to assess another person's emotional state) (Kurdek, 1977; Kurdek & Rodgon, 1975).

Generally, one or more types of perspective taking (perceptual, conceptual or affective) are examined in relation to one or several indices of behaviour (i.e. prosocial, communication, cognitive). Children from preschool age to early adolescence have been studied and depending on the complexity of the task (i.e. story-telling tasks are better with the older children and nonverbal tasks better with the younger), different results have been found (i.e. skills appearing at different age levels in different studies) (Baron-Cohen et al., 1985; Kurdek & Rodgon, 1975; Kusche & Greenberg, 1983; Marvin, Greenberg & Mossler, 1976; Selman, 1971). The research to date has not produced any definitive results but there have been interesting findings. Before reviewing these findings from the literature, measurement problems must be examined. The quantity, complexity and unproven validity of available measures necessitates caution in interpreting and comparing results of the different studies assessing perspective taking abilities in young children.
Measurement Tasks

A number of different procedures have been developed over the years for the purpose of assessing perspective taking skills in children. Three principal types of perspective taking measures have been employed in the research, and they are defined by the content area they assess: perceptual, conceptual and affective perspective taking skills (Kurdek & Rodgon, 1975).

Perceptual Tasks.

Perceptual perspective taking tasks generally measure children's ability to assume another's visual viewpoint (i.e. identify what another person is seeing). Traditionally, early studies used perceptual tasks which were both too novel and too complex to accurately determine the ability of perspective taking as it already existed in young children. A classic example is Piaget & Inhelder's (1969) 'Three Mountains' task. This task was designed to determine the ability of the child to take account of what another is seeing. The model is composed of three distinct mountains which are placed in front of a child seated at a table. The child is asked to determine what the doll (who is seated in a different place at the table facing the mountains) sees.
Since a complex verbal description would be difficult for a young child to produce, they are given either a set of pictures of the mountains (taken at different angles) and asked to choose the picture the doll sees or given three cardboard mountains and asked to arrange them so as to represent what the doll sees. Piaget found children up to the age of eight or nine were not as a rule able to complete the task successfully. Instead they chose the picture or arranged the mountains to what they themselves saw.

Piaget then attributed these results to young children's lack of ability to see their own momentary viewpoint as one of a set of possible viewpoints, and to coordinate these views into a single coherent system. He suggests that children do not appreciate or understand that what they see is relative to their own position: instead they take it to represent absolute truth or reality, or the world as it truly is. Unfortunately, this task and other perceptual perspective taking tasks like it require cognitive skills and often expressive and receptive language skills far beyond the competence of children (aged 4 to 5), thus resulting in inaccurate findings because the tasks are not measuring what they propose to measure.

According to Donaldson (1978), there is now powerful evidence refuting Piaget's results. Hughes, cited in
Donaldson (1978), devised a much simpler task to test Piaget's claims, involving manipulation of dolls, with one doll being hidden from the other doll's view. His task is conceptually similar to Piaget's and Inhelder's experiment, yet its procedure was much easier for young children to use. The results were dramatic. Thirty children between the ages of three-and-a-half and five years achieved a success rate of ninety percent, casting doubt upon the validity of Piaget's measure.

In trying to reconcile Hughes' findings with Piaget's, Donaldson suggests that Hughes' task is easily grasped by the child because it makes human sense with motives and intentions which capture children's attention because Hughes built in a narrative framework involving the intention to escape, pursue and capture, while Piaget's task is psychologically abstract. Hughes' task also required children to decide what would be seen, not how it would appear, and it requires children to decentre (go beyond only what they see or think) by not only trying to determine what another sees but also feels or thinks.

Other perceptual perspective taking tasks have included variations of the 'Three Mountains' task, matching games such as Fishbein, Lewis and Keiffer's (1972) Disney characters, Flavell et al.'s (1968) hiding/guessing game,
and DeVries' (1970) social guessing game.

The problem with most tasks which are purported to measure perceptual perspective taking is that many of them also measure conceptual perspective taking at the same time. For example, DeVries' social guessing game is a task which has two parts: one measuring perceptual and the other measuring conceptual perspective taking. Therefore, it is very hard to make conclusive statements in that perceptual perspective taking has not necessarily been independently investigated.

**Conceptual Tasks.**

Conceptual perspective taking tasks evaluate the children's ability to assess what another person knows or thinks about a particular situation. Conceptual measures usually utilize one of three general paradigms, (1) communication behaviour, (2) game-playing or (3) story analysis (Kitano et al., 1978; Shantz, 1975). Communication tasks require children as the speaker to adapt their messages to the listener's needs, which are different from theirs (Flavell et al.'s (1968) blind listener task).

In the game-playing paradigm, the child tries to anticipate another's strategy in order to successfully compete or cooperate with another person involved (e.g.
Flavell et al.'s Nickel-dime task and DeVries' guessing game).

The third format for measuring conceptual perspective taking involves retelling of stories. The majority of tasks provided a series of sequential pictures for the child to narrate a story from.

One problem with both the communication and the story analysis measures is that young children are required to use complex language which is often well above their capabilities. No reported problems with game-playing.

**Affective Tasks.**

Affective measures of perspective taking assess children's ability to determine another's emotional state, including both the other person's feelings and reasoning for those feelings. Such tasks usually require the child to predict the affective state of a character in an emotionally charged situation, which is presented either verbally or visually (Kurdek & Rodgon, 1975).

Semantic, as well as methodological difficulties have characterized studies of young children's affective perspective taking. The valid assessment of this ability must ensure that the subject is concentrating on how the other is perceiving an event. This necessitates setting up
a highly structured task which is often subject to inaccurate findings.

Current Research on Perspective Taking in Young Children

Marvin et al. (1976) devised a guessing game which examined conceptual perspective taking (making an inference about another's state of knowledge) in young children. They looked at eighty middle-class children between the ages of 2.6 and 6.5 years. The measurement task was a game which consisted of three participants (mother, child and investigator) sitting in a circle with two toys in the middle of the circle. Each participant took a turn hiding their eyes while the other two decided upon one of the toys as their secret. The object of the game was to determine whether or not the child could infer who knew which toy was chosen by asking: 1) Does mommy know which toy was chosen? 2) Do you? and 3) Does the experimenter?

The results of this study indicated that children as young as four years of age were able to differentiate their own conceptual perspectives from those of others and to make inferences about the limitations in those perspectives. Their findings also indicated that perspective taking is a multidimensional (different types of skills), social-cognitive skill, whose dimensions are multifaceted (skills
developing at different ages, requiring different prerequisites). The authors attributed their findings of 4 year olds having developed conceptual perspective taking skills to the simplicity of the task and the familiarity of the setting (the child's own home). They suggest a fruitful area for future research would be to look into the many relationships between interaction within a group and the child's conception of that group.

Selman (1971) studied sixty middle-class children's conceptual and perceptual perspective taking abilities. He employed two tasks, a perspective taking task with two parts, using a three room model and three toys where the child must make and explain predictions about a peer's response in a situation in which the child has information not available to the peer. He also used a simple hiding/guessing game developed by DeVries (1970) involving the child repeatedly choosing which hand the penny is in.

The results of both tasks indicated that conceptual perspective taking is an age-related, social-cognitive skill. As well, Selman found that four distinctive age-related levels of perspective taking skills may be defined between the ages of four and six, with this development by no means complete by six. The levels range from the child being unable to differentiate between the perceptions of
self and other, up to the child being aware of different perceptions between self and other.

The results of the perceptual perspective taking task indicated that perceptual perspective taking is also an age-related skill that precedes the development of conceptual perspective taking.

Kurdek and Rodgon (1975) also looked at conceptual and perceptual perspective taking in children, but in contrast to the other studies they also looked at affective perspective taking. The subjects were 167 kindergarten through sixth-grade children, so the children were also older. The three tasks used to measure the different perspective taking skills were: 1) a revolving tray paradigm to assess perceptual perspective taking (child must turn tray until it matches the other person’s tray); 2) Flavell’s changing story task to measure conceptual perspective taking; and 3) a picture 'show me' task to assess affective perspective taking skills. The results revealed that conceptual perspective taking was mastered earlier than perceptual perspective taking and that affective perspective taking was the least developed.

As well, Kurdek and Rodgon provide support for the position that perspective taking is a multidimensional social-cognitive skill with three forms that appear in early
childhood (before kindergarten) and develop along a continuum at different rates. This is important in that it alerts researchers to the fact that if perspective taking is to be examined, more than one of the skills needs to be investigated in order to get a true profile of the child's ability to take another person's perspective. The authors also suggest that it might be beneficial in the selection of perspective taking tasks to choose tasks of equal complexity to accurately ascertain the order of development between the three perspective taking skills.

**Summary**

As a group, the studies investigating the development of perspective taking have provided considerable support for the view that perspective taking skills appear in early childhood, around age 4, and not in later childhood (age 7-8) as Piaget had suggested (Kurdek, 1977; Kurdek & Rodgon, 1975; Kusche & Greenberg, 1983; Marvin et al., 1976; Selman, 1971). The studies have also supported the notion that children are able to decenter at an early stage, strengthening Vygotsky's claim that children are social beings striving to communicate with others. They have also supported the idea that perspective taking skills are multidimensional and multifaceted. As well, the research
findings have identified a sequence for the acquisition of perspective taking skills providing an immediate area for future research.

Furthermore, the research provides a base for investigating different variables (i.e. language, cognition and perceptual discrimination) in relationship to the development of social cognition, and in particular perspective taking. These researchers have suggested that the ability to take another person's perspective is essential to the development of effective communication. Although the relationship between perspective taking ability and communicative competence is difficult to ascertain, it is believed by many researchers that other variables such as language and mental representation must be examined in relationship to perspective taking to determine communicative competence (Shantz, 1983; Shatz, 1983).

In light of the variety of perspective taking measures and the variety of findings investigators must be careful to choose tasks which work on the premise of simple, easily distinguishable stimuli. Minimizing the task demands and engaging the child is as realistic a situation as possible would give young children the opportunity to demonstrate their natural ability to consider another person's perspective (Kurdek & Rodgon, 1975). Results of perspective
taking studies must be evaluated with careful attention to type of perspective taking assessed, as well as conceptual and operational definitions employed.

Language Involvement in Social Cognition

Recent research has started to investigate delays or disorders in the development of social cognition, and, in particular, perspective taking skills, by looking into atypical cases such as deaf, autistic and down syndrome children (Baron-Cohen et al., 1985; Kusche & Greenberg, 1983). These studies have reported that special needs children, in general, exhibit developmental delays in their perspective taking abilities. This delay is believed to contribute to inappropriate behaviours toward others, and a delay in the development of communicative competence and social skills, while being essentially unrelated to general intelligence (Kitano et al., 1978). More specifically, however, studies on autistic children have reported disorders, not just delays, in the development of social-cognitive skills. These disorders in the development of social-cognitive skills appears to be attributable to a disorder in the ability to construct higher order mental representations, which is a skill that requires a certain amount of language development for its development. It is
the disorders in both these areas that are believed to be contributing factors (possibly with other confounding factors, such as a disorder in cognitive development, or little experience in social interactions starting very early on) to autistic children's inability to communicate effectively with others.

Following Vygotsky's lead researchers have recently begun to investigate whether linguistic elements do influence, developmentally, the growth of social cognitive skills (Baron-Cohen et al., 1985; Kitano et al., 1978; Kusche & Greenberg, 1983). Recent studies have focused on comparing typical and atypical children in their perspective taking skills, and have suggested that language may play a role in the differences found between the two groups. Unfortunately, the studies have concentrated on deaf, autistic and down syndrome children, all of whom have more than just language delays or disorders. Thus they have not been able to isolate language as a variable and investigate its relationship to the development of perspective taking (Baron-Cohen et al., 1985; Kusche & Greenberg, 1983). However, what these three studies have done through their findings is show that these three groups who are delayed or disordered in their language also exhibit delays or disorders in their perspective taking skills when compared
to their normal peers. These findings then provide some support for future research into the role language development itself plays in the acquisition of solid perspective taking skills.

**Perspective Taking and the Exceptional Child**

Kusche and Greenberg (1983) evaluated the development of social-cognitive knowledge and assessed the relative importance of language in two domains of social cognition in deaf and hearing children. This investigation individually examined each child’s ability to take another person’s perspective. The subjects were thirty deaf and thirty hearing children, ages 4, 6, and 10 years of age, all reported to be functioning in the normal range of intelligence.

To examine the child’s perception of good and bad, each child was shown multiple-choice pictures (one good, bad or neutral picture beside three neutral pictures), given a description of each picture, and asked to "point to the picture of someone who is doing something very good (or very bad)". Conceptual perspective taking was evaluated through a hiding/guessing game. The results of the perception task indicated that deaf children at all three age levels evidence a developmental delay in the understanding of 'good
and bad*. In the conceptual perspective taking task there appeared to be a developmental delay with the deaf children under 6 years of age (significant differences in hiding strategies: the deaf children perseverated and the hearing children alternated), with no significant differences found in the older children.

The authors suggested the reason for the delay in evaluative understanding by the deaf children was due to their early language deprivation during primary socialization. They observed that there was a two-to-three year delay in the initial development of the deaf children’s communication system. Also, the authors believed that their findings indicated that deaf children were able to take another person’s perspective, except at the earliest age, four years, when the initial delay in their language development might have affected their development of perspective taking skills. They also suggested that although the older deaf children were able to take another’s perspective they were unable to evaluate or interpret correctly the linguistic information conveyed by or available to the other person in the specific social context. The authors reported that their results support the hypothesis that language is of varying importance in differing domains of social and personality development.
because they controlled for linguistic competence between tasks.

It would have been more beneficial in this study to have looked at more forms of perspective taking and then compared the differences between the groups and the tasks. In this way, a more complete picture of the role of language and its relative importance to the development of social-cognitive skills could have been obtained.

Baron-Cohen et al. (1985), investigated autistic children's ability to represent mental states, by assessing their conceptual perspective taking skills in comparison to down syndrome and normal children. The authors believed that to be able to impute beliefs to others and predict their behaviour, children must have a basic metarepresentational capacity which is called a 'theory of mind' (Astington, Harris & Olson, 1988). In this study they hypothesize that autistic children lack such a theory.

Before describing their study the authors first give an explanation of autism, which they use to establish a rationale for looking at an autistic population for the purpose of investigating perspective taking. For their purposes the main symptom in childhood autism is the extreme impairment in verbal and nonverbal communication. This impairment is part of a profound disorder in understanding
and coping with the social environment, regardless of intelligence.

The subjects in the study consisted of a clinical group of 20 relatively high functioning (mean IQ 82) autistic children, 14 down syndrome children (mean IQ 64) and 27 clinically normal preschool children. The authors assessed the children using Wimmer and Perner's (1983) puppet play paradigm (consisting of two puppets and a hidden marble). To succeed in the task children must be aware that other people can have different conceptual perspectives (think something different) from their own.

The results of the study indicated that the autistic children did not appreciate the difference between their own and another person's knowledge. The down syndrome children performed appropriately, revealing social competency relative to their mental age, which was lower than the other two groups, suggesting developmental delays and correlational significance between the development of social skills with mental age. As well, the normal children performed appropriately, which is in accordance with findings by Wimmer and Perner (1983) that children as young as 4 years of age appear to have developed a 'theory of mind'.
The authors believe that the failure of the autistic children to take another person's perspective indicates a specific deficit, possibly the inability to form 'second-order representations' to represent mental states, which results in a failure to develop a theory of mind. Since little research has been done in this area much more is required to determine why autistic children lack the ability to form second order representations and fail to develop perspective taking skills.

The results of the Baron-Cohen et al. (1985) and the Kusche and Greenberg (1983) studies taken together indicate that many processes are involved in the development of social cognition in children. They point to a probable link between verbal and nonverbal language development and social-cognitive skill development. Also, they suggest that delays or disorders in language may adversely affect the development of appropriate social behaviours. Further research examining the relationship of language to the development of social cognitive skills, specifically perspective taking in special needs children is definitely needed and strongly justified.
Conclusion

The literature which has been reviewed in this chapter on the development of perspective taking appears to provide support for further investigation of the development of perspective taking skills in both normal and special needs children, specifically examining the role of language in this development. However, None of the research examined actually used language as an independent variable, in order to indicate the role language was playing in the development of perspective taking. Without isolating language and strictly comparing children with normal language development to children with delayed language development (trying to control for as many other variables as possible) and their perspective taking abilities can we get a clearer picture of the role language might play in the development of these abilities.
CHAPTER THREE

METHOD

Design

In order to ascertain the role of language in the development of perspective taking skills in young children, language will be isolated as an independent variable. A variety of potentially confounding factors will be held constant and then investigated in relation to two perspective taking skills. This will be accomplished by comparing the perspective taking skills of a group of language delayed children, who are within normal range in their cognitive development and whose language delay is not caused by a hearing loss, with a control group of children with normal language development.

Both groups of children were administered two tasks which were chosen to test their conceptual and perceptual perspective taking abilities, as distinguished in the recent literature. The reason for examining both types of perspective taking abilities is that there appear to be differences in the abilities themselves, for example when and how the skills develop. Therefore, there may be differences in how language affects these skills. The tasks
have all been chosen for their simplicity, reported
reliability, age appropriateness, and the fact that they
basically require nonverbal responses.

**Procedures for Collecting the Data**

Permission was first obtained from each of the two
preschools involved to gather data from their four year old
population. A proposal was then submitted to the University
of British Columbia Ethics Committee for permission to
proceed with the study. Once granted, the search for
appropriate subjects began.

**Sample**

The subjects consisted of ten language delayed children
who exhibited both a receptive and an expressive delay in
their language development, with chronological ages ranging
from 3:11 to 5:3 with the mean age of 4:5, and ten children
with normal language development with chronological ages
ranging from 4:1 to 4:11, with a mean age of 4:2. Children
were included in the sample only if they were considered by
their teachers (as well as the speech therapist for the
language delayed group) to be functioning within the normal
range of intelligence (within one standard deviation below
the mean). The two groups of children were selected from
two preschools in Vancouver. The language delayed group were drawn from a preschool which specializes in working with children with language delays, while the control group was selected from an integrated preschool (a program which has both typical and atypical children together in each class) which had a similar program (play based). Both preschools have small class sizes (approximately 10 to 12 children), with the language delayed preschool having two teachers per classroom and the integrated program also had two teachers (and sometimes an additional child care worker). Staff personnel included in both preschools were a program coordinator, trained ECE Special Needs Teachers, and for the language delayed preschool a Speech Language Pathologist.

The language delayed children were chosen by the speech therapist according to age (in the 4 year age range with a mean age of 4:5), amount of time in preschool (at least one year), absence of physical or emotional reasons for their language delays, and normal cognitive functioning. Both their teachers and the speech therapist felt they were functioning within the "normal range" of intelligence (from standardized testing which had been done by the speech therapist and observations in the classroom). As well, the level of each child's language development was used in order
to define a group of children who exhibited similar receptive and expressive delays (approximately 8 months to 1 year delay in expressive development and 6 months delay in receptive development), which was determined by standardized testing (i.e. Preschool Language Scale, T.E.L.D. et cetera) and where English was their first language. Once all the criteria had been met there were ten children whose parents were approached for consent for their child to be a part of the study.

The children for the control group were then chosen according to their age, socio-economic status (both groups were from modest income families living in the same areas of the city), length of time in the preschool (both groups had attended preschool for at least 1 year), children were from mixed ethnic backgrounds but in all cases English was the primary language spoken at home to the children. As well, all the members of the control group were believed to be within the "normal range" of intelligence.

It was not possible to put an equal number of boys and girls in each group because there were more boys who fit the criteria for the language delayed group and more girls in the control group who fit the criteria. However, no difficulties were anticipated with this as there are no sex differences reported in the literature for the conceptual
tasks and only one sex difference (Kurdek & Rodgon, 1975) in the perceptual tasks, in which males were significantly better perceptual perspective takers than females.

Procedure

All subjects were seen twice by the investigator in their school setting. The first session consisted of getting acquainted with the children in their own environment, while the second session consisted of the administration of the tasks. This session involved finding a quiet corner just outside of the classroom, where the child and the investigator sat on the floor facing each other and played two games which were used to assess the child's perceptual and conceptual perspective taking skills. The two tasks together took approximately 10 minutes to complete.

The investigator approached the children individually and asked them if they would like to play some games with the investigator. When the children agreed, they were individually taken just outside the classroom door and shown the conceptual task first followed by the perceptual task. Each task was explained in detail (using both verbal and visual cues) with some feedback (either verbal or manipulation of the items) being required from the child.
before the actual task was administered. This was to ensure that each child had a full understanding of the directions to each task. This minimized the risk that the results could be attributable to a lack of comprehension regarding the task requirements. All responses by the child were then recorded on paper at the time of observation and analyzed after the assessment of both groups was completed.

**Measures**

**Conceptual Task**

The conceptual task is one which was designed by Wimmer and Perner (1983), adapted and used by Cohen et al. (1985) in their study of autistic children. Cohen et al. view the task as being an "ingenious and simple paradigm" that can be used with very young children to determine their conceptual perspective taking ability. In order to succeed on the task the child has to be aware that different people can have different beliefs about a situation. This task does not require verbal responses, instead gestural responses (i.e. pointing) may be used to answer the questions.

The task requires the child to be sitting directly across from the investigator, facing a basket on his or her left side and a box on his or her right side. In front of the basket is the bear and in front of the box is the dog
(two stuffed animals). Prior to the first trial, the investigator identified each stuffed toy to the child and had them name each of them, and then asked the child to name each animal again (naming question).

For the first trial, the bear placed a marble into her basket and then left the scene. The marble was then removed from the basket by the dog (marble placed by the investigator into the dog's mouth) and moved into the box. Then, when the bear returned the experimenter asked the child the critical belief question "point to where the bear will look for the marble." If the child points to the previous location of the marble, then they pass the belief question by appreciating the bear's now false belief. If however, they point to the marble's current location, then they fail the question by not taking account the doll's belief. These conclusions are warranted if two control items are answered correctly: "Point to where the marble is now" (reality question) and "Point to where the marble was first" (memory question). The responses for all three questions were recorded immediately.

According to Baron-Cohen et al. (1985) the control questions should be included to ensure that the child has both knowledge of the real current location of the object and an accurate memory of the previous location. There is
no reason to believe that the three questions differ from each other in terms of their psycholinguistic complexity, but Baron-Cohen et al. do hypothesize that they differ in terms of conceptual complexity, which may be important to think of in terms of analyzing the results of the language delayed group's responses.

In the second trial, the standard scenario is repeated utilizing an additional location, a pocket, for the marble so that now there are three locations that the child may point at: the basket, box, or pocket. Adding this third location adds a little complexity to the task, with the marble starting in the pocket and then being moved to either the basket or the box, requiring the child to choose from three locations, marble, pocket, or basket. Thus, the added complexity reduces the risk that the results are due to chance and provides stronger evidence that the child really does or does not understand that other people have different perspectives from their own.

In summary, the task consisted of two trials with three questions per trial: Trial 1 - marble from basket to box; and trial 2 - marble from pocket to box or basket. No feedback was provided to the child during either trial.

Scoring

Responses to all the questions were recorded
immediately by the experimenter. Correct responses to each question were given one point with a total out of six points (three per trial) for answering all the questions correctly.

**Perceptual Task**

The perceptual task which was used was a matching task originally designed by Fishbein, Lewis and Keiffer (1972) (Disney characters), and modified somewhat by Kurdek and Rodgon (1975). The task is simple, age appropriate and requires nonverbal responses (manipulation of the board). The task is designed to measure the child's ability to assume another's perceptual viewpoint, that is, to identify what another person is seeing, when that aspect of the display differs from what the subject sees.

The task began with a practice session where the child sat next to the investigator on the floor. He or she was shown two circular revolving trays on which were glued three brightly coloured animals (a duck, a dog and a bird), and told that both trays were exactly the "same". The child was then asked to turn the tray in front of him/her so that it looked the same as the other tray (giving the child a practice session, and enabling the experimenter to determine if the child had a developed a concept of sameness). The investigator then moved the child so that he/she was
directly across from the experimenter with both having a tray directly in front of them.

The investigator then turned her own tray so that the duck was directly facing her. The child was then instructed to "Turn your tray so that you see the duck, the dog and the bird the same way I see them." Following the child's response the experimenter then moved her tray 90, 270 and 180 degrees from the initial position. After each rotation, the experimenter repeated the instructions. To guard against the child's getting a correct response on the basis of calculating the degree on tray movement alone, the child's tray was initially placed midway between the 180- and 270 degree tray rotations and the experimenter always turned her tray with both clockwise and counterclockwise movements. No feedback was provided at any time during the task.

**Scoring.**

The child was given one point for each time he or she correctly replicates the experimenter's particular perceptual viewpoint. Since there are four viewpoints or rotations of the tray, scores range from 0 to 4 with a score of 4 indicating fully accurate perceptual perspective taking skills.
Hypotheses

1) The language delayed group will do significantly worse than the normal language group on the conceptual perspective taking task.

2) There will be little difference between the two groups in their ability to perform the perceptual perspective taking task.

Analysis of the Data

The null hypothesis was tested by exposing the means of each group on each task to a test of statistical significance, the t-test, in order to determine whether the null hypothesis could be rejected. Hypothesis 1 was tested by comparing the means for each group on the conceptual perspective taking task (total task means, and trial I and trial II means were also compared) with the significance level set at p<.05, to determine if there was a significant difference between the two groups. Also provided in chapter four are descriptive analysis of the results of the groups on each question.

Hypothesis 2 was tested by comparing the means of the two groups on the perspective taking task by use of a t-test with the significance level set at p<.05.
CHAPTER FOUR

RESULTS

The purpose of this study was to determine the role and relative importance of language in the development of conceptual and perceptual perspective taking skills. In order to investigate this question two tasks were taken from the literature, a conceptual and perceptual perspective taking task which were administered to two groups of children. The participant groups in the study included ten language delayed children aged four years and ten four year old children with normal language development from two similar preschools.

In this chapter the data from the overall group results for each task are presented, interpretations of results given, tables provided with the mean scores per task and limitations of the study addressed.

Conceptual Task

Statistical Analysis

To determine whether or not the null hypothesis could be rejected a test of statistical significance, in this case the t-test for correlated means (Borg & Gall, 1983) was used
because of the small sample size and small distribution of scores, and the fact that the groups were similar except for their language development. Three t-tests were done to test differences between group means on trial I (maximum score=3), trial II (max. score=3) and the trials combined (max. score=6).

Table 1

**Conceptual Task Means**

<table>
<thead>
<tr>
<th>QUESTION</th>
<th>NLG</th>
<th>LDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trial I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>.6</td>
<td>.4</td>
</tr>
<tr>
<td>2</td>
<td>1.0</td>
<td>.9</td>
</tr>
<tr>
<td>3</td>
<td>.8</td>
<td>.7</td>
</tr>
<tr>
<td>COMBINED TOTAL</td>
<td>2.4</td>
<td>2.0</td>
</tr>
<tr>
<td>Trial II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>.7</td>
<td>.3</td>
</tr>
<tr>
<td>2</td>
<td>1.0</td>
<td>.9</td>
</tr>
<tr>
<td>3</td>
<td>1.0</td>
<td>.5</td>
</tr>
<tr>
<td>COMBINED TOTAL</td>
<td>2.7</td>
<td>1.7 *</td>
</tr>
<tr>
<td>COMBINED TOTAL I+II</td>
<td>5.1</td>
<td>3.7 *</td>
</tr>
</tbody>
</table>

(*p<.05)

For the combined total trial I and II conceptual task score the normal language group (NLG) scored significantly higher than the language delayed group (LDG) (t=1.06, t=-2.47, 2-tailed p=.024; [significance set at p<.05]). This indicates that the NLG were able to perform the full task
significantly better than the LDG. All the language delayed children who failed the belief question pointed to where the marble really was rather than to any of the other possible locations.

To investigate further what made up the total mean differences, group means were examined separately for trial I and trial II. Means for trial I were not significantly different between the two groups (see table 1) ($t=1.60$, $t=-1.18$, 2-tailed $p=.255$), although there were differences in how LDG answered the three questions (see descriptive analysis and Table 2). The differences emerged in the means for each group on Trial II, with the NLG performing significantly better on the task than the LDG ($t=1.95$, $t=-3.81$, 2-tailed $p=.001$).

**Descriptive Analysis**

After completing the statistical analysis it appeared important to look at a breakdown by item and by group to determine whether or not there were differences on how many correct responses there were per group on each individual question. This gave us a better idea of what questions presented difficulties, so that these differences could be addressed in the conclusions.
All subjects passed the naming question (named the stuffed toys) without exception. For the reality question ("Point to where the marble is now") 9 out of 10 children with language delays answered the question correctly with the same child answering it incorrectly for both trials. However this same child answered the belief question correctly on both trials, while all 10 of the NLG answered the question correctly on both trials.

Table 2
Number of Four Year Olds Out of Each Group With Correct Responses on Individual Questions in the Conceptual Task

<table>
<thead>
<tr>
<th>GROUP</th>
<th>TRIAL I</th>
<th>TOTAL</th>
<th>TRIAL II</th>
<th>TOTAL</th>
<th>TRIAL I+II</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLG</td>
<td>6</td>
<td>10</td>
<td>8</td>
<td>6</td>
<td>3/3</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>7</td>
<td>6/6</td>
</tr>
<tr>
<td>LDG</td>
<td>4</td>
<td>9</td>
<td>7</td>
<td>3</td>
<td>3/3</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>9</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The memory question was answered correctly by 7 out of the 10 LDG on the first trial and 5 out of 10 children on the second trial (gave the present location even though they appeared to know there was a past location), with two of the children who got the answer incorrect answering the belief question correctly. Conversely, 8 out of 10 children from the NLG answered the memory question correctly in the first
trial and 10 out of 10 in the second trial.

The belief question was answered correctly by 4 out of 10 LDG on the first trial and 3 out of 10 on the second trial. More children in the NLG did better on this question with 6 out of 10 answering correctly on trial one and 7 out of 10 answering on trial two.

Discussion

If the null hypothesis was correct, we would expect to find no differences between the two groups of children. Since we did find a significant difference between the groups on trial II and the combined trial I and trial II total, it is probable that the null hypothesis is false. Therefore, we will reject the null hypothesis and conclude that the difference found between the group means reflects a true difference between groups in this sample population.

The results of the t-tests suggest that there is a significant difference between the two groups on their ability to perform the conceptual task, and judging from the descriptive analysis, the belief question in particular (13 NLG versus 7 LDG correct responses on the two belief questions). The LDG had trouble answering the belief question in both trial one and trial two. In trial one the majority of the children in the LDG could answer the two
control questions but could not answer the belief question. In trial two, the majority of the group could answer the reality question, only five could answer the memory question and only three could answer the belief question.

This difficulty in answering the memory question in trial two may have been due to the fact that there were three hiding places to chose from in trial II, as opposed to trial I with only two hiding places. Another explanation for this difference may be that these children were getting confused by the added complexity of the third hiding place on top of a poor understanding of verb tense, or what was really being asked of them. It probably is not the case that this was affecting their ability to answer the belief question because of their ability to answer the two control questions in the first trial coupled with their inability to answer the belief question pretty well equally in both trials (i.e. less in trial II).

Conversely, the NLG was able to answer all three questions consistently over the two trials, doing slightly better on the second trial with the belief and memory questions. This indicates that the adding of one extra hiding place to the task presented no problems for the NLG, in fact accuracy was higher in trial II.
Perceptual Task

Statistical Analysis

The analysis of the perceptual perspective taking task was fairly straightforward in that only one t-test was required to test for significant differences between mean scores for the two groups studied (see Table 2). The results of the t-test indicated that there was no significant difference between the two groups on the perceptual perspective taking task, where 0 indicated no perceptual perspective taking ability and 4 indicated accurate perceptual perspective taking abilities (see means table 3) (f=1.38, t=1.46, 2-tailed p=.650, with significance p<.05). Further analysis of the raw scores indicated that the distribution of the scores on the task of the two groups showed no substantial differences between the two groups.

Table 3

Perceptual Task Means (Standard Deviations)

<table>
<thead>
<tr>
<th>GROUP</th>
<th>MEANS</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLG</td>
<td>2.3</td>
<td>1.567</td>
</tr>
<tr>
<td>LDG</td>
<td>2.0</td>
<td>1.333</td>
</tr>
</tbody>
</table>

*p<.05

Note: The 2-tailed p=.650.
Discussion

There were no significant differences found between the two groups on the perceptual perspective taking task, with both groups responding correctly approximately 50% of the time (mean score NLG=2.3, LDG=2.0). The results may be attributable to the fact that perceptual perspective taking is not so much a cognitive or a language based task (although these factors may have some influence) as it is a visual spatial task, thus giving both groups an equal chance to answer correctly. Given that the only area in which the two groups differ is their language ability, the results suggest that language plays a much less significant role in the development of social-cognitive skills which require visual perception, such as perceptual perspective taking skills.

Summary

This study indicates that the LDG performed more poorly on the conceptual perspective taking task than the NLG but approximately equally as well as the NLG on the perceptual perspective taking task. It appears that the NLG have developed accurate conceptual perspective taking skills while the LDG have not, and that both groups have equally well-developed perceptual perspective taking skills. These
results indicate that these two perspective taking skills may develop separately, and at different stages. It appears that conceptual perspective taking emerges first if all prerequisites are met, such as the appropriate level of language development, around the age of 4. While perceptual perspective taking skills begin to emerge around age four but as yet are not accurately acquired. These same results are found in the literature (e.g. Marvin et al., 1976).

The results also suggest that language does not play a major role in the development of perspective taking skills as a whole but rather in specific types of perspective taking, such as conceptual perspective taking which appears to require an appropriate level of cognitive (Baron-Cohen et al., 1985) and language development in order to develop. They suggest that perceptual perspective taking and conceptual perspective taking skills are somewhat different types of skills requiring different prerequisites.

Perceptual perspective taking is a visually oriented skill which requires the development of visual perception skills and does not require the same level of language development as the conceptual perspective taking skills. However, conceptual perspective taking is a cognitive skill which appears to require a certain amount of language development before the skill is acquired. This then may
provide some support for Vygotskian theory which suggests that there is a relationship between the development of thought, language and social skills.
CHAPTER FIVE
SUMMARY AND CONCLUSIONS

Summary of Experiment

This experiment was undertaken in order to investigate the role of language in the development of perspective taking skills in young children. Previous research has suggested that the acquisition of perspective taking skills, especially conceptual perspective taking is important to the development of effective communication and social interaction.

Flavell (1985) has gone further to suggest that it may be through social interaction and the child's developing concepts about cognition that he or she begin to acquire the ability to restructure and develop the cognitive performance necessary for intellectual and social life. He suggests that it is knowledge about the appearance-reality distinction (of which perspective taking is thought to be a prerequisite skill) which is important in that it shows our more general knowledge that an object or event can be "represented" in different ways by the same person and by different people. He then goes on to suggest that both the
appearance-reality distinction and perspective taking skills are then areas worth studying because they appear to be necessary components (Cohen et al., 1985) of the larger development of our conscious knowledge about our own and other minds (i.e. metacognition) (Wellman, 1985) and of social cognition (Shantz, 1983).

From this research by Flavell (1985) and others (Cohen et al., 1985) we know that perspective taking skills may be necessary for the development of higher level skills such as the appearance-reality distinction and further for the development of metacognition. However, one of the things we do not know is what skills may be necessary for the development of perspective taking.

Theory, research and observation into the development of perspective taking skills in young children supports the view that there are several complex processes involved. Recently researchers have suggested that language may play a role in the development of perspective taking skills (Shantz, 1983; Shatz, 1983). This is not an entirely new idea as Vygotsky (1962) postulated that a delay in language development might cause social isolation, which in turn would delay the child’s ability to turn their thoughts to others. He believed that there was a strong interactive component between the development of language, thought and
social skills, suggesting that delays in one skill area may play a part in the delays of another skill area.

Unfortunately while many researchers have begun to study the development of perspective taking in young children they have not really begun to look exclusively at what role language may be playing in the development of these skills. The purpose of this experiment, was thus, to provide empirical research on the role of language in the development of these skills.

The experiment was designed with one independent variable and 2 dependent variables. The independent variable in this experiment was language development, and the dependent variables involved two perspective taking tasks. Statistical analyses, consisting of t-tests evaluated the significance of the results. The results shed some light on the role of language in the development of the perspective taking skills.

Language was isolated as the independent variable in order to determine its role in the development of perspective taking skills. By choosing two similar groups of four year old children whose only major difference was their language development (one normal, one delayed), we were able to isolate language as a variable. Both groups of children were administered two perspective taking tasks, one
a conceptual task and the other a perceptual task. The tasks were administered to each child individually by the researcher, the answers to each part of the task being recorded immediately.

Tests of significance, t-tests, were then administered to the mean scores for each task, allowing the researcher to accept or reject the experiment's null hypotheses. If the null hypotheses were rejected, then level of language development would be considered a necessary component to the development of conceptual and perceptual perspective taking skills.

**Answers to Research Questions**

There were two research questions, with two parts each being addressed by this study. They were:

1 a) Does the level of language competence play a role in the successful development of conceptual perspective taking?

Since the two groups were similar except for their level of language development the results suggest that the LDG has not yet reached the level of language development required to have acquired conceptual perspective taking skills. On the other hand the NLG has acquired the level of language skills needed to have developed conceptual
perspective taking skills well enough to have completed this task successfully. Therefore, the overall results appear to suggest that language is playing an important role in the development of conceptual perspective taking skills.

b) Does the level of language competence play a role in the successful development of perceptual perspective taking?

The data gathered from the two groups revealed that there was no significant difference between the two groups, with both groups responding correctly approximately 50% of the time. Since the null hypothesis could not be rejected, we conclude that language does not play a major role in the development of perceptual perspective taking.

2 a) How do children with normal language development compare to children with delayed language development in their development of conceptual perspective taking?

The results of t-tests comparing the two groups revealed that the LDG did significantly worse than the NLG on trial II, and on the combined trial I+II totals of the conceptual task. On further analysis we found that the NLG did better on every question compared to the LDG, indicating that the NLG had superior language skills and conceptual perspective skills to the LDG.
b) How do children with normal language development compare to children with delayed language in their development of perceptual perspective taking?

The results of t-tests comparing the two groups revealed that the DLG and the NLG performed equally as well on the perceptual perspective taking task (correct responses approximately 50% of the time), therefore there were no significant differences found between the two groups so the null hypothesis could not be rejected. These results then suggest that language is not playing a major role in the development of perceptual perspective taking.

Limitations of Study

1) Because the sample size is small it is very difficult to generalize the results found in this study to the general population.

2) The conceptual task should have included three or more trials, with at least two of the trials involving three hiding places to get a better sense of how the LDG would do over time with the added difficulty.

3) Two tasks should have been used to assess each type of perspective taking in order to lessen the likelihood of intervening effects of the task.
4) This was an exploratory task used to isolate out one of several potentially contributing factors to the development of conceptual and perceptual perspective taking. It might have given us a more complete picture of the development of these multifaceted skills if a multivariate study had been done looking at all the possible contributing factors, determining what role each plays in the development of these skills.

General Discussion and Educational Implications

The purpose of this experiment was to provide empirical research supporting Vygotsky's claim that there is an interaction between the development of language skills and the development of social cognition. The results of the experiment indicate that language does play an important role in the development of conceptual perspective taking skills, but apparently not in perceptual perspective taking skills. What this then tells us is that perspective taking itself is multifaceted. That while one perspective taking skill requires one level of language development in order to be acquired the other does not. Further, that neither group (NLG, LDG) have acquired the language skills necessary to be completely successful on the perceptual perspective taking task.
We can go further and say that the results support Vygotsky's view that there is an interactional relationship between the development of language and social cognition, and that the interaction varies according to the skills involved. For example, in the development of conceptual perspective taking, which is viewed here as a more cognitive skill the level of language development appears to play a very important role. In the development of perceptual perspective taking, which is viewed here as a more visual-spatial task, language development appears to be playing a minor role.

One possible reason for the relationship found between the development of language and conceptual perspective taking skills may be that conceptual perspective taking is a cognitive task, which appears to require not only a minimum threshold of language development but also a minimum threshold of cognitive development, as seen in previous research (Baron-Cohen et al., 1985). This then supports the view that there is an interactive relationship between the development of language, thought and social cognition.

An alternative explanation for the results may be although the LDG are within the "normal range" for intelligence they may be at the lower end of the normal scale, and may not have developed as well as the NLG certain
cognitive skills. Therefore, it may be a combination of
cognitive differences interacting with their language
differences which have lead to their inability to succeed on
the conceptual task. Another explanation for the results
may be that because of the language delay the LDG have not
had the same experiences in social situations as the NLG
which may be important for stimulating the development of
conceptual perspective taking skills. However, these
explanations still suggest language is playing an important
role in the development of these skills, it is just saying
that we cannot, given the nature of the skills rule out that
these factors are not playing a role along with language in
the inability of the LDG to do the conceptual perspective
taking task successfully.

One reason language is playing a minor role in the
development of perceptual perspective taking may be that
perceptual perspective taking is a more visual-spatial task
requiring the processing of visual cues, which may not
require a level of language development more sophisticated
than the skill level reached by the delayed language group.
A second explanation may be that children with language
delays are usually taught with lots of visual cueing by
their teachers in order to enhance their auditory learning,
giving them a comparable ability in the perceptual
What this research then provides is support for the view that there is an interactive relationship between the development of language and conceptual perspective taking skills. We have seen that if there is a delay in one area such as language, then there will be a performance difficulty in the conceptual perspective taking task. We could speculate further that this delay could also contribute to problems in other related areas (i.e. symbolic play skills, appearance-reality distinction, et cetera.).

In more specific terms this means that if there is a delay in the development of language skills, then we will need to look at the child’s social-cognitive development as well, and set up an intervention program which stimulates development of language and social cognition naturally through experience in different situations and with their peer groups. As well, we should concentrate on setting up play situations which will help the child communicate effectively with others, learning social skills, such as perspective taking which he/she will need as a prerequisite skill to learn symbolic play and later on reading and writing.
Suggestions for Further Research

Many possibilities for further research evolve from this study.

1) More research should be done collecting similar data, using more students for each group, and more trials on the cognitive task. More data may provide stronger results and more of an ability to generalize to the general population.

2) Data could also be collected on a wider range of similar tasks, to insure the findings are not results of the tasks.

3) The perceptual task should be given to older groups to see if there are any differences in the acquisition of perceptual perspective taking between the two groups.

4) Research could be done comparing not only the LDG and NLG on the perspective taking tasks, but also on their ability to interact effectively with others. This would then give us an idea of how delays in language and perspective taking affects social interaction.

5) A multivariate study should be done to look at other critical factors which may be involved (cognitive development, social experience, et cetera) along with the level of language development in the development of conceptual perspective taking.
6) Another line of study would involve comparing these two groups on the perspective taking tasks, and then looking at their symbolic play ability. These observations might provide us with more insight into perspective taking as prerequisite skills for symbolic play. This will give us specific intervention goals by encouraging us to incorporate language goals into structured, play situations which involve pretend play with objects and then role playing.

In summary, more empirical research needs to be done investigating the role of language in the development of social cognition and play skills. As well, we require the research to tell us how delays and deficits in language development will affect overall development in acquiring skills which are required to interact effectively with others, which is believed by many to be important for the development of higher level intellectual functioning (Flavell, 1985; Vygotsky, 1962).
REFERENCES


Child Development, 52, 611-617.


