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**Couch, Charles G., Jr.**

**A TEST OF KOHLBERG'S THEORY: THE DEVELOPMENT OF MORAL  
REASONING IN DEAF AND HEARING INDIVIDUALS**

*The University of North Carolina at Greensboro*

PH.D. 1985

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A TEST OF KOHLBERG'S THEORY: THE DEVELOPMENT OF MORAL  
REASONING IN DEAF AND HEARING INDIVIDUALS

by

Charles G. Couch, Jr.

A Dissertation submitted to  
the Faculty of the Graduate School at  
The University of North Carolina at Greensboro  
in Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Philosophy

Greensboro  
1985

Approved by

  
Dissertation Adviser

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School at the University of North Carolina at Greensboro.

Dissertation Adviser *Arthur J. Delaney*

Committee Members *Rosemary O. Nelson*

*John H. Shryver*

*M. Maschak*

*R. Reed Hunt*

*8 - 7 - 85*  
Date of Acceptance by Committee

*3 - 1 - 85*  
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COUCH, CHARLES G., Jr., Ph.D. A Test of Kohlberg's Theory: The Development of Moral Reasoning in Deaf and Hearing Individuals. (1985) Directed by Dr. Anthony J. Decasper. Pp. 115.

Kohlberg's theory of moral development suggests that moral reasoning develops in stages. It argues that because moral reasoning clearly is reasoning, sophisticated moral reasoning must require sophisticated logical reasoning. It also proposes that advances in moral judgment are an outcome of social development, that is, the ability to put oneself in another's place. Kohlberg's theory hypothesizes that cognitive development is necessary but not sufficient for social development, and social development is necessary but not sufficient for moral development.

The present research tested Kohlberg's assumptions by examining cognitive, social, and moral development in deaf individuals. According to the literature, cognitive and social development of deaf persons is delayed compared to hearing individuals. According to Kohlberg's theory, such delays should lead to delays in the development of moral reasoning.

Previous assessments of the functioning of deaf individuals have typically been conducted in English, even though English is not the native tongue of deaf Americans. The present research modified typical assessment methods by employing both American Sign Language and English in order to minimize possible constraints on performance due to problems with English. The modified procedures were checked with hearing individuals.

Results were that deaf participants were delayed cognitively and morally when compared with hearing peers. Interestingly, one third of deaf participants showed moral reasoning at higher levels than Kohlberg's theory says their cognitive development should have allowed. The research also presents an alternative method for making group assessments of the moral development of both deaf and hearing individuals.

## ACKNOWLEDGMENTS

I want to thank committee members Reed Hunt, Marc Marshark, Rosemary Nelson, Kenneth Smith, and Ed Shroyer, and especially Tony DeCasper, who served as Chairman. And I particularly want to acknowledge the support, concern, and encouragement of my family, especially my wife, Linda Couch, without whom this journey would never have been made.

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## CHAPTER I

### INTRODUCTION

Historically, there have been three philosophical perspectives regarding the basic nature of children. The doctrine of original sin, as espoused by Hobbes (1651), has held that the basic goal of humans is to enhance the ego by attaining power and mastery over others. This desire in children is generally thwarted by adults who try to mold those tendencies toward socially approved outlets. This view is represented in current psychology by Freudian theory.

The doctrine of tabula rasa, as propounded by Locke (1690), has suggested that the child is inherently neither good nor bad, but rather is flexible and may develop socially desirable or undesirable habits depending upon life experience. This position is represented today by modern learning theory.

The third perspective, from Rousseau and Kant, is the doctrine of innate purity, which holds that there is a fundamental goodness in children which society may foster or corrupt. This viewpoint has been adopted by the cognitive-developmental approach.

In keeping with its philosophical underpinnings, each approach has its own definition of what constitutes morality, with each definition influencing areas of research. Freudians hold that moral values are the internalized standards which have been received from socializing agents.



Research has concentrated chiefly on feelings of guilt which arise when these standards are violated. Learning theory defines morality in terms of specific behaviors which are acquired and maintained through learning principles. Research has focused on determining which situations and which schedules of reinforcement influence behaviors that are judged by some shared standard of conduct. The cognitive-developmental approach defines morality in terms of conscious judgments of right and wrong. Research has centered on uncovering cognitive processes which are presumed to underlie moral reasoning.

The present paper looks at the development of moral reasoning in deaf individuals from a cognitive-developmental perspective.

There are a number of common attributes which the various cognitive developmental theories of morality share (e.g., Kohlberg, 1969; Piaget, 1932; Turiel, 1975). The most obvious of these is the assumption that moral development occurs in stages, i.e., levels of functioning which are qualitatively different, with stages organized hierarchically such that later stages incorporate earlier ones. A second shared characteristic is the belief that moral development has a cognitive component. Third is that the fundamental motivation for morality is generated internally, concurrent with general incentives to achieve and be competent, rather than for answering biological needs or reducing aversive stimuli such as fear. Fourth, major aspects of morality are universal; i.e., there are common sources of social interaction such as role taking and social conflict in all cultures. Fifth, basic moral principles come from social experience. And finally, the overall

quality and scope of cognitive and social stimulation are more influential than are specific experiences (Kohlberg, 1976).

The leading cognitive theory today is Kohlberg's (1969; 1976) revision and extension of Piaget's (1932) theory of the development of moral reasoning. Kohlberg's theory is based upon, and is best understood in relation to, Piaget's theory of cognitive development.

#### Piaget's Theory

Piaget (1970) believes that from the most elementary behavior of infants to the most sophisticated intellectual activity of adults, knowledge is linked with actions and mental operations. Knowledge does not come from objects, nor from subject, but from interactions between subject and objects. The subject must act upon objects and transform them, e.g., "displace, connect, combine, take apart, and reassemble them" (Piaget, 1970, p. 704). Piaget suggested that biological growth, and this includes cognitive development, does not occur by simply adding something to an organism from outside, but corresponds to the nature of the organism. When he speaks of an organism, he implies that there is some structure which is responsible to its environment, a structure which maintains itself and preserves its integrity by factors which are not entirely intrinsic. We may observe what appears to be spontaneous activity by an organism, but such activity is not arbitrary, not separate from lawful determination, because intrinsic spontaneity is constrained by the lawful structure of the organism. Therefore, a reaction is not solely a response to an external stimulus but reflects also the working of underlying structure.

To understand behavior, then, the underlying structures must be examined. Piaget inferred changes in structure by examining changes in behavior. By observing children's changing responses, he constructed his cognitive developmental theory.

### Key Concepts

Piaget's theory contains several key concepts which must be understood. Among them is the distinction between cognitive structure, cognitive content, and cognitive function.

Cognitive structure. By cognitive structure, Piaget means the pattern, shape, or form that cognitive activity takes during development. Each stage of cognitive development has its own unique set of structures which regulates cognitive activity. As Brainerd (1978) emphasized, Piaget views these structures as existing, not simply as constructs. In essence, cognitive structures are the common properties of intellectual activity at a given stage of development.

There are two forms of cognitive structure, called schemes and operations. A scheme involves similar action sequences and is more than simply the behavior. Rather, it is the underlying organization of similar action sequences. Schemes begin early, rather as sensory motor equivalents of concepts. For each motor activity, there is a scheme. As a child develops, schemes become interrelated so that increasingly complicated activity is possible.

When schemes become sufficiently sophisticated, they no longer need be expressed overtly. When that happens, they are classified as operations. For Piaget (1963), every thought was once an action. Operations are therefore internalized schemes. Just as operations form from schemes in childhood, higher-order operations form from operations in adolescence.

Cognitive content. Unlike structure, cognitive content may be measured directly. Content changes with experience and structural reorganization. Content is behavior.

Cognitive function. Structure and content change with experience. Cognitive functions are invariant. Piaget postulated two invariant functions, organization and adaptation, which are complementary. Organization refers to the tendency of cognitive structures to cohere into higher-order systems. To illustrate, in infancy there may be separate structures for looking at objects and for grasping objects. During development these two schemes combine into a higher-order structure which allows visually directed reaching. Presumably, organization is responsible for continuity of cognitive activity; intelligent behavior has a degree of sameness, with coherent, discernible patterns over time.

But there is also discontinuity, the result of adaptation. Piaget argued that as experience changes cognitive structure it also changes content because what is known cannot be separated from the underlying structures. The two facets of adaptation are assimilation and accommodation.

Assimilation refers to transformation of information to fit into existing cognitive structures. Stimuli are always interpreted in a manner which is congruent with current structures. A stimulus which cannot be assimilated does not exist. In essence, cognitive structures make sense out of incoming information; the sense that arises depends upon existing structures.

Accommodation, on the other hand, involves changes in structures to better fit incoming information. Piaget suggests that there are limits on how much information may be assimilated during each stage of development. When these limits are reached, structural change, accommodation, is required and cognitive development occurs.

Assimilation and accommodation are complementary processes. Assimilation ensures continuation of existing structures but permits no variations of structure and precludes development. Likewise, accommodation cannot exist alone; it can occur only within the limits which preserve assimilatory capacity of structure. For Piaget, cognitive development consists of increasingly sophisticated equilibrium or balance between assimilation and accommodation. Equilibrium is possible at each stage of development.

#### Stages of Development

Piaget does not see cognitive development as continuous and quantitative improvements in processes that remain invariant during the life span. Instead, he writes of development as qualitative changes in structures. These changes separate four stages of what Brainerd (1976)

called "natural groupings." To say that a child is at a particular stage of development is to say that a particular set of structures exists. By stages, Piaget refers to the lawful succession of relatively stable structures which characterize behavior. Successive structures incorporate, enrich, and extend earlier ones.

More formally, there are four criteria of Piagetian stages. First, each stage is comprised of two parts, a period of preparation when the structures are being formed and a period of achievement or consolidation when the structures are operating and assimilation and accommodation are in relative balance. Second, each structure is at the same time the achievement of one stage and the starting point of the succeeding stage.

Third, transition from one stage to the next involves the integration of preceding structures into the new structure. And fourth, the order of stages is invariant. Rate of progression may vary, depending upon such factors as environmental demands, motivation, and opportunity, but no stage may be skipped (Inhelder, 1981).

Piaget (e.g., 1976) proposed four global stages of cognitive development. They are, in order of appearance, sensory-motor, preoperations, concrete operations, and formal operations.

Sensory-motor stage. This first stage lasts from birth to approximately the advent of language, i.e., to about 18 to 24 months. The major characteristic of sensory-motor intelligence is profound egocentrism, a state wherein the infant and the external world are one. The structures do not separate the self from objects and events. Thus,

infants are not aware that objects have independent existence and have no sense of the self as an entity. Piaget argued that infants are intelligent but are not thoughtful because "thought is interiorized intelligence no longer based on direct action but on . . . symbolism" (1976, p. 11).

Preoperations. The hallmark of the advent of the second stage of development is symbolic functioning, the essence of which is that absent objects and events can be mentally represented. Preoperations lasts until approximately age seven. Piaget suggests that thought is the internalization of overt action schemes which characterized the previous stage. Thus, preoperational children can think, although it is rather unsophisticated thought by adult standards. While the child has thought, there are no operations, the defining characteristic of which is that they are reversible. Piaget argued that preoperational thought, i.e., interiorized action, is a necessary precursor for operations.

Concrete operations. Around the age of seven comes what Piaget sees as a fundamental turning point in development. The child now becomes capable of a certain logic as operations can be combined in reversible thought. Where the preoperational child has acquired intuitive thought, i.e., thought which lacks rigorous, logical, and deductive properties, concrete thinking has these properties. The major limitation of this stage is that operations are bound by tangible information. Piaget suggested that concrete logic is not based upon verbal statements but only on observable properties of manipulable objects. Thus, there will be logic based on classifications, relations,

and numbers, but not on propositions.

The concrete operational child has acquired an understanding of the principles of conservation and perspective-taking, i.e., that changes in systems can compensate for one another so long as nothing is added nor taken away and that seeing and understanding objects and events depends upon both physical and psychological points of view (Cowan, 1978).

Formal operations. The highest level of cognitive functioning begins about the age of 11 or 12 years, with a preparation phase of 2 to 4 years. Achievement may come as early as age 13 "in rich cultural environments" (Inhelder, 1981, p. 31). The formal thinker is no longer tied to the here and now; rather, the adolescent is able to form hypotheses and deduce possible consequences. He or she is able to transcend the present to handle complex problems of reasoning (Ginsburg & Opper, 1969). Reality is secondary to possibility. When facing a scientific problem, the formal thinker does not begin by observing empirical results, but by imagining the possibilities which are inherent in the situation: many things might occur, many interpretations might be feasible, there are many possibilities.

According to Piaget, a new logic is now possible. A whole set of specific operations is superimposed on previous ones, the result being a logic of propositions. As Flavell (1977) observed, to reason that one proposition logically implies another involves reasoning about propositions, not about any empirical phenomena to which the statements might refer. Indeed, propositions may or may not be factual, may not refer to real objects or events, may not refer to anything at all. Yet



the formal thinker can reason about propositions because formal operations are not limited to reality.

Thus, where concrete operations are "first degree" operations, dealing with reality, formal operations are "second degree" operations that handle propositions which are generated by first degree operations (Inhelder & Piaget, 1958). The formal thinker is able to think about thinking itself, rather than being limited to thinking about objects.

### Language and Thought

In conceptualizing logic, the distinction is frequently made between deduction and induction. Deduction involves reasoning from the general to the particular; induction is reasoning from the particular to the general. According to Piaget, a young child's reasoning is neither deductive nor inductive but is transductive, i.e., reasoning from particular to particular without considering the general. The young child seems unable to abstract salient features in making general classifications. Instead, classification involves the linking of events on the basis of common features which may not be held constant. For example, when a four-year-old is asked to classify large and small circles and squares which are red and blue the result is typically one class, the link being size, shape, and color. Transductive reasoning is thus responsible for a child's referring to all four-legged animals as, for example, dogs, because he or she is not able to abstract and hold constant the salient particulars which form the basis for the concept of dog.

Piaget believes that the ability to form concepts is a function of mental imagery and signification. The essential characteristic of signification is the recognition that the signifier is different from what it stands for (the significate) but still represents it. Signifiers do not refer to things but to one's knowledge of things. The two types of signifiers are signs and symbols. Signs derive their meaning from social agreement. Symbols, however, are idiosyncratic and generally resemble their significates. Piaget argued that symbols initially represent schemes. Symbol construction is thus an outgrowth of imitation, first external, then internal, and the internal symbol is a mental image. These images play an important role in a young child's thinking because they allow a child to deal with symbolic representations instead of real events. Images also allow a child to anticipate future events, ruminate on past events, and plan future activities.

The child also acquires signs, the most common of which are words. At first, a child employs words to represent current events, and these early signs are used much like symbols; i.e., there is personal meaning, as if there were no understanding as to the social nature of words. Piaget believes that language plays a relatively limited role in the formation of a child's thinking. Much preoperational thinking is non-verbal. Words are used primarily as a running commentary on ongoing behavior and thinking processes. Thus, a child's thought depends less on language than language does on thought.

The young child's speech is largely egocentric. Piaget suggested that egocentric speech diminishes as the child has more social contact with peers. Parents typically understand the young child's symbolic use of signs, but other children do not. In order to make himself understood, a child must begin to take into account the social nature of words. According to Piaget, this does not happen until late preoperations, and it is a function of increases in social interactions with peers.

### Moral Development

For Piaget (1932), morality involves respect for social rules and a sense of justice. Social rules are the laws, standards, and moral principles which regulate behavior; justice means a concern for reciprocity and equality among individuals. Piaget's theory of moral development proposes two stages plus a premoral period, to about age 4 or 5, during which there is little understanding of or concern for social rules. The first stage, known variously as moral realism, moral constraint, or heteronomous morality, is a time when children feel obliged to conform to rules because rules are believed to have arisen from divine, or at least parental inspiration, and are thus sacred and immutable. Behavior is seen as either right or wrong, and judgments are based upon the magnitude of consequences, the degree to which behavior conforms to known rules, and whether or not the behavior leads to punishment. The heteronomous child also believes in immanent justice, i.e., that transgressions will always be punished, by God or natural forces if not by parents.

By age 10 or 11, children enter the second stage, called autonomous morality or moral relativism. The child understands that rules are arbitrary. Moral judgments now reflect perceived intent. Duty involves less obedience to authority and more obedience to expectations of peers.

Piaget sees cognitive development and social interaction as causes of moral development. Cognitive development leads a child to overcome egocentrism and realism, i.e., difficulty in distinguishing between subjective and objective aspects of experience. Peer interaction provides opportunities for role taking and the sharing of decision making with peers and results in a lessening of heteronomous respect for adults.

#### Kohlberg's Theory

Perhaps the leading contemporary theory of moral development is that proposed by Lawrence Kohlberg (e.g., 1969; 1976). Like Piaget, Kohlberg argued that developmental change should be defined in terms of changes in underlying cognitive structures instead of overt behavior and that development occurs in stages. He is interested in the development of moral reasoning rather than moral behavior. His theory stresses a growing appreciation of the concept of justice, i.e., relations of liberty, equality, reciprocity, and contracts. Kohlberg argued that "one can act morally and question all rules, one may act morally and question the greater good, but one cannot act morally and question the need for justice" (1976, p. 40).

Kohlberg's research has revolved around the presentation of series of moral dilemmas for which there are no right or wrong answers. Each dilemma presents a hypothetical story which requires subjects to choose between obedience-serving acts, e.g., obeying a rule or command from authority, and need-serving behaviors, e.g., proposing actions which conflict with rules while fulfilling some human need (Hoffman, 1970). Kohlberg is not concerned with judgments per se but with the reasoning which underlies the judgments. Based upon results of these interviews, Kohlberg has proposed six stages of moral reasoning with each stage being more sophisticated and complicated than its predecessor and requiring increasingly refined distinctions. The trend is away from a morality of constraint and toward a morality of reciprocity, a process which is made possible by a developing capacity for assuming the roles of others.

Hogan and Emler (1978) suggested that the most distinctive feature of Kohlberg's theory is his assertion that each higher stage is the basis for the emergence of more comprehensive principles of justice. Development involves external and internal conflict. External conflict stems from competition with others for resources; internal conflict is the result of cognitive dissatisfaction due to contradictions of one's own reasoning. The solution to these conflicts "is found in principles that resolve competing claims and transcend contradictions, and this resolution means that a child moves to a higher stage of reasoning. Each successive stage is built upon moral principles capable of resolving an ever wider range of conflicts" (Hogan & Emler, 1978, p. 215).

The relationship between cognitive development and moral development is essential to Kohlberg's theory. He argued that because "moral reasoning clearly is reasoning, advanced moral reasoning depends upon advanced logical reasoning" (1976, p. 32). Therefore, if one assumes that there are stages in cognitive development, as Kohlberg does, then one is led to the conclusion that there must be stages in the development of moral reasoning.

Kohlberg asserted that there is a parallel relationship between cognitive and moral stages. For example, the concrete operational child will not have acquired abstract reasoning skills which are necessary for the highest stages of moral development. Yet, while logical development is viewed as a necessary condition for moral development, it is not sufficient. Kohlberg reported that many persons are at higher cognitive stages than the corresponding moral stages, but "essentially none . . . are at a higher moral stage than their logical stage" (1976, p. 32).

Kohlberg also suggested that there is a relationship between the evolution of social perspective or role-taking ability and moral judgment. He stressed the importance of social stimulation, which comes from social interaction, moral dialogue, moral decision-making, and moral interaction, and calls such experience role-taking opportunities. He prefers Mead's (1932) term, role taking, to the more typical term, empathy, because the former connotes cognition as well as affect, it implies an understanding of an organization among all societal roles, and it emphasizes that role taking occurs in all social interactions.

The level at which an individual is able to interpret the feelings and thoughts of others has direct bearing on reasoning about fairness or right and wrong. Social perception development follows cognitive development and precedes moral development. Kohlberg believes that there is a horizontal sequence of steps from equivalent levels of logic to social perspective to moral reasoning. For example, an individual who attains the preparation phase of formal operations presumably is able to see global systems at work. This ability will lead to the social perspective of being able to comprehend the mutual understanding of members of society regarding their roles in that society. Then, and only then, could come the stage of moral development where the order and well-being of the social system are focal points for decisions about right and wrong.

There is one final step to this sequence. Kohlberg sees moral behavior as following moral reasoning. He argues that an individual will have a difficult time following the highest moral standards without understanding them or believing in them. Thus, principled moral behavior seems to require principled moral reasoning. The reverse is not true, however, because Kohlberg wrote that it is easy to visualize individuals who can reason at high moral levels not behaving in keeping with those standards. There are many factors which influence whether someone will follow the dictates of conscience. Moral judgment level may allow moral behavior, but it does not guarantee it.

Kohlberg proposed that there are six stages in the development of moral reasoning, ordered into three major levels. The descriptions which follow are based upon Kohlberg (1969; 1976).

Level 1: Preconventional Morality

Kohlberg suggested that preconventional morality is the level of most children under age 9. Control of behavior is primarily external because the moral rules conformed to are in response to the power of rule-makers, e.g., parents, and the motivation to follow these rules stems from a desire to avoid sanctions for rule-breaking and to obtain externally administered rewards for compliance.

Stage 1: Heteronomous morality. There is an orientation toward obedience and punishment during this first stage. The physical consequences of actions and an objective interpretation of degree of divergence from established norms or adult commands determine whether the behavior is bad or good. What is right is not breaking rules; the reason for doing right is to avoid punishment. From a social perspective, there is egocentrism. The child does not consider intentions which underlie behaviors, cannot see others' points of view, and confuses authority's perspective with his or her own.

Stage 2: Individualism, instrumental purpose, and exchange. Here there is a naively egoistic orientation. What is right is what satisfies personal needs and, occasionally, the needs of others. Right is also what's fair, as in an exchange or agreement. The reason for doing right rests in serving one's own needs while recognizing that



others have their own needs. From a social point of view, right is relative because interests may differ and conflict.

Level II: Conventional Morality

Kohlberg considers this to be the level of most adolescents and adults in most societies. Morality is defined in terms of committing good acts, maintaining the social order, and meeting the expectations of others. Control is sometimes external because the standards adhered to are the rules or expectations of those in authority or those for whom there is personal attachment. Motivation to conform, however, is largely internal in that it is based upon anticipated praise or censure by significant others.

Stage 3: Mutual interpersonal expectations, relationships, and interpersonal conformity. This stage is sometimes referred to as the good boy or good girl stage because orientation is toward obtaining the approval of others and toward helping others. Intentions are considered when moral judgments are made. What is right is living up to what is expected of you in your various roles. The reasons for doing right include the need to think of yourself as a good person, caring for others, and belief in the Golden Rule. Socially, individual interests give way to an awareness of shared feelings, agreements, and expectations.

Stage 4: Social system and conscience. Maintenance of the existing social order is of prime concern in this stage. Doing one's duty, showing respect for authority, and contributing to society are

virtues. What is right is fulfilling your duties and obeying the law. The motivation for doing right comes from a desire to avoid breaking down the social order. From a social perspective, individual relations are considered in terms of roles and places within the system. The system defines roles and places.

Level III: Principled, or Postconventional, Morality

Kohlberg believes that the highest level of moral reasoning is achieved by only a minority of adults, and then only after age 20. The person at this level has differentiated self from rules and expectations of others and defines personal values in terms of self-chosen principles. The possibility of conflict between two socially accepted standards is understood. Control is internal because the standards followed come from personal criteria, and moral reasoning is based upon individual thought and judgment of right and wrong.

Stage 5: Social contract or utility and individual rights. The penultimate stage is the morality of contracts, individual rights, and democracy. The law is the criterion for what is right; it must be upheld, even if it is arbitrary or unjust, until it can be changed. But changes must come from within the system because the system must prevail to provide the greater good for the greater number. What is right is being aware that there are many rules and values, and they are relative to one's own group. These values are a social contract and should be upheld in the interest of impartiality. Some values, however, are nonrelative, such as liberty and justice: These should be upheld regardless of majority opinion. Reasons for doing right involve a sense

of obligation to law because laws exist for the general welfare. Socially, there is the perspective of a rational individual who is aware of values and rights prior to contracts or social attachments.

Stage 6: Universal ethical principles. Kohlberg's highest stage revolves around a morality of individual principles of conscience. There is an internalized ideal which exercises pressure toward behavior that seems right regardless of environmental reactions. What is right is following self-chosen ethical principles. Rules are usually valid because they are based upon such principles, but when they violate these principles the individual must follow the principles and not the laws. Motivation to obey these principles is based upon the rational belief in the validity of universal moral principles and a personal commitment to uphold them. Socially, the perspective is that of a rational person who recognizes the nature of morality, i.e., the fact that people are ends, not means, and must be treated as such.

Kohlberg (1969) suggested that it may be useful to view the three levels as comprising three different relationships between the self and society's rules and expectations. From this perspective, rules and social expectations are external to the self for the pre-conventional person, rules and expectations are internalized during the conventional level, and the principled moral thinker has differentiated self from the rules of others and defines values in keeping with self-chosen principles.

In a more recent analysis, Kohlberg (1976) argued that social perspective, i.e., a viewpoint which is shared by participants in a relationship or a group, defines and unifies the characteristics of the conventional level of morality because conventional level persons subordinate individual needs to the needs of the group or relationship. This is seen as being a qualitatively different social perspective from the egocentric viewpoint of preconventional morality. Another qualitative change takes place at the principled level, where the individual now believes that roles alone, i.e., the obligations and expectations of society, should not be the determining factor in moral decisions. While legal and social obligations are understood, moral obligations take precedence when moral and legal viewpoints differ.

Kohlberg is unequivocal in his claim that each successive stage of moral development represents a more adequate way of reasoning about and solving ethical issues. While critics argue that stage definitions may be incomplete or erroneous (e.g., Sullivan & Quarter, 1972; Turiel, 1975), Kohlberg asserted that the stages he has described are true from the standpoint of empirical observation and logical analysis. He argued that "anyone who interviewed children about moral dilemmas and who followed them longitudinally in time would come to our six stages and no others" (1976, p. 47). Thus, although any number of possible stages may be conceptualized, Kohlberg is convinced that only his six stages will manifest themselves in invariant sequence.

### Research on Kohlberg's Theory

Research has tended to support Kohlberg's cognitive-developmental view of moral development. In his major review, Hoffman (1970) cited scores of studies which conclude that there are developmental changes in moral reasoning. Keasy (1975) suggested that criteria for proposing moral stages have clearly been met and resolved.

Of more interest for the present research is the central role Kohlberg has assigned to cognitive and social development as necessary conditions for moral development. Curiously, this hypothesized relationship has not been subject to much empirical verification. A large body of research has reported substantial positive correlations between performance on standardized IQ tests and moral development (see Hoffman, 1970, for a summary) but such findings do not demonstrate that cognitive development is necessary for moral development. Moreover, it has been argued that mental operations are, at best, being assessed only indirectly by IQ tests (Keasey, 1975). Where IQ tests seem to be assessing quantitative differences in cognition, Piaget and Kohlberg stress that cognitive development is marked by qualitative changes. It is thus debatable whether IQ tests tap the qualitative changes in reasoning which Kohlberg has specified as being necessary for moral development.

Fortunately, a few studies which assess cognitive stage and moral stage do exist. Lee (1971) tested children ages 5 to 17 on six Piagetian cognitive measures and her own five-stage system of moral development. She reported significant correlations between Piagetian

measures and moral development, averaging .33 with age partialled out. Lee concluded that cognitive and moral development occur in parallel manner. She refrained from assuming any necessary relationship because chronological age was a major variable in her study and any number of variables associated with age may have contributed to the correlations.

Tomlinson-Keasey and Keasey (1974) attempted to avoid age confounds by investigating cognitive and moral functioning within two female age groups. Preadolescents (age 12) were chosen because Piaget would suggest that formal operations may be emerging but would not be established by that age. College students (age 19) presumably could have reached the achievement phase of formal thought. The authors sought not only to establish whether there was a relationship between formal operations and principled morality but also to determine whether formal thought is necessary for principled morality, as Kohlberg proposed. Each participant received six Kohlberg dilemmas and three Piagetian tasks of formal reasoning.

Correlations between domains were .60 for the younger group and .58 for the older. Tomlinson-Keasey and Keasey suggested that these results clearly indicate a strong relationship between cognitive and moral development which is independent of chronological age. Further, all principled moral reasoners showed evidence of formal operations. None of the younger participants showed principled morality but over half showed some formal ability. The authors concluded that their findings support two of Kohlberg's notions: (a) that formal operations are necessary but not sufficient for principled morality, and (b) that there

should be a lag between attainment of a cognitive stage and its corresponding moral level. This lag is anticipated because, from a Piagetian perspective, cognitive structures must consolidate before being applied to moral reasoning. Piaget has suggested that structural changes are reflected first in logical reasoning, then in social perspective, and finally in moral reasoning.

Kuhn, Langer, Kohlberg, and Haan (1977) assessed cognitive and moral levels of 340 individuals who ranged in age from 10 to 50. They found that only about 30% of the adults showed signs of having reached the achievement phase of formal operations. Most adults were in the preparation phase, and 15% displayed only concrete operations. Analyses of cognitive and moral stages were viewed as supporting Kohlberg's assertions that formal thought is necessary for principled morality: Only fully formal thinkers showed principled moral reasoning. Yet formal thought is not sufficient because Kuhn et al. found many formal thinkers who were assessed as engaging in conventional moral reasoning.

If consolidated formal thought is necessary for principled morality, then individuals who have achieved that level should be more easily stimulated toward higher moral functioning than those who are still in the early or transitional phase. This was the hypothesis of Walker and Richards (1979), who exposed achievement-formal and preparation-formal thinkers, all of whom showed stage 3 morality, to stage 5 moral reasoning. They found the achievement-formal group later showed evidence of higher moral reasoning while the transitional group did not. Walker and Richards suggested that the early formal thinkers

were constrained in their moral development by their cognitive stage.

Given the cognitive-developmental emphasis on social perspective development as being necessary for moral development, it is also curious that few studies have attempted to investigate the relationship. Piaget and Kohlberg both suggest that moral development may be precipitated by cognitive disequilibrium which arises out of interactions with peers. Kohlberg proposed that if moral development is conceptualized as being a process of restructuring modes of role taking, then the basic social inputs are role-taking opportunities. And at least some of these opportunities should be a function of the amount of social interaction a child experiences plus the quality of participation. The quality should vary depending upon how close a child comes to the power structure of social groups. Kohlberg argued that the extent of social involvement and the social responsibilities assumed are associated with accelerated moral development. For example, Kohlberg reported that popular children tend to progress morally at faster rates than unpopular children.

Keasey (1971) investigated social participation and its relationship to moral development. Subjects were boys and girls from fifth and sixth grades. Each child received five Kohlberg dilemmas. Later, Keasey sought data on social participation by having the children fill out rating sheets on themselves and their peers regarding such factors as who was most popular, who was the best leader, and what clubs the children belonged to. All told, Keasey collected data on eight social measures in each classroom. High and low criterion groups were then formed for the children who received the highest and lowest



rankings. Mean moral stage ratings for each group were then compared. In no case did mean moral stage of a low social criterion group equal or exceed any high criterion group.

Keasey viewed his results as supporting the hypothesis that greater degrees of social participation should lead to more role-taking opportunities which should enhance moral development. He concluded that popularity was related to moral development. On the other hand, it is possible that children with higher moral values tend to be more popular.

Flavell (1968) concurred with Kohlberg's position that role taking involves an ability to understand an interaction between self and another through the other's eyes. Development of the ability implies increasing accuracy in assessing attitudes and expectations of others, predicting behaviors of others in particular situations, and projecting how one's own actions affect attitudes of others toward oneself. Kohlberg is explicit in proposing that higher levels of morality are made possible by increasingly accurate role-taking abilities.

Flavell suggested that reorganization in role-taking skills takes place between the ages of 8 and 10. The shift he reported is from an egocentric view toward a more mature social perspective. And Kohlberg proposed that movement begins to be possible in those years from preconventional to conventional morality. Accordingly, Selman (1971) undertook two experiments to test the hypothesis that a middle childhood role-taking shift is necessary for moral development.

Selman's first study employed 20 children at each age 8, 9, and 10. Each child received two Flavell role-taking tests, Kohlberg dilemmas, and the Peabody Picture Vocabulary Test (to control for general intelligence). Selman did not suggest causality on the basis of this first study but did find that higher role-taking scores were significantly correlated with higher moral judgments and that higher mental age on the Peabody meant chronologically earlier advances in role-taking skills.

Selman's (1971) second experiment essentially replicated the first to see if social and moral development were simultaneous or if one preceded and perhaps could be viewed as being necessary for emergence of the other. Subjects were those children from the previous study, performed one year earlier, who had scored at low levels on role taking and moral measures. Results were that some children had advanced on both measures, more had advanced solely on the social domain, and none had advanced only morally. Selman concluded that these data support Kohlberg's notion that social development is necessary for moral development.

Ambron and Irwin (1975), working with 5- and 7-year-olds, presented role taking and moral judgment tasks (not specified) and found that the higher the role-taking skills the higher the moral reasoning abilities of even children this young.

These studies lend support to Kohlberg's theoretical assumptions. There is support for the proposed cognitive-moral relationship (Kuhn et al., 1977; Lee, 1971; Tomlinson-Keasey & Keasey, 1974; Walker & Richards, 1979) and for the social-moral relationship (Ambron & Irwin, 1975; Keasey, 1971; Selman, 1971). An alternative method of testing Kohlberg's assumptions about the interdependence of the three domains could come from experimental interventions into cognitive or social development, e.g., by constraining peer interactions to see the effects on moral development. Such manipulations are clearly unethical. There are, however, instances where development of one or both of the supposedly necessary domains has been nonexperimentally precluded or delayed. In such cases Kohlberg's theory would predict delays in moral development.

Perry and Krebs (1980) examined social and moral development of mentally retarded children and teenagers to determine whether social and moral stages were consistent with their subjects' chronological or mental ages. Mental ability was established by quantitative rather than Piagetian measures. Results were that social and moral levels were consistent with mental ages as measured by standardized IQ tests. The authors concluded that their findings support Kohlberg's theory.

The Perry and Krebs study is important in the present context because it is the first study to assess all three developmental domains in a single study, even though Piagetian cognitive functioning was not tested. However, Perry and Krebs investigated individuals whose cognitive functioning was arrested. A better test of Kohlberg's theory

might be an investigation of individuals who were delayed in their cognitive and social development to see the effects on moral development. Such a sample exists, comprised of persons who are deaf.

### Deaf Individuals

In the United States alone, as many as 40 million individuals may suffer from some degree of hearing loss (Sataloff, Sataloff, & Vasallo, 1980). Stewart (1978) reported that approximately 13 million American adults and children have clinically diagnosed hearing impairment, some 6 million of these have significant binaural loss of hearing, and roughly 2 million are profoundly deaf. There is a considerable body of research dealing with intellectual functioning of deaf people (e.g., Furth, 1966; Myklebust, 1964; Savage, Evans, & Savage, 1981) and a substantial literature which presents consensual subjective evaluations of deaf socialization (e.g., Meadow, 1976) and deaf morality (e.g., Nass, 1964), but there have been no attempts to investigate the relationship between cognitive, social, and moral development in deaf persons. A study which assesses functioning of the three domains in deaf persons could not only add to our understanding of the psychology of deafness but could also serve as an evaluation of the assumptions Kohlberg made regarding necessary conditions for moral development.

Development of deaf persons will now be considered. Following current convention, and to avoid consideration of complex audiological data, the discussion will follow Fraser's (1970) pragmatic consideration of deafness as being hearing loss which is sufficiently severe as to preclude spontaneous and unaided understanding of oral communication.

The discussion will also focus on individuals who were born deaf (congenital deafness) or who lost their hearing prior to the advent of spoken language (prelingual adventitious deafness). Liben (1978) reported that about 95% of all deaf individuals fall into these categories.

### Overview

Over 90% of prelingually deaf children in the United States have hearing parents. Since most parents have no cause to expect that their children may be deaf and because of the similarity of first-year vocalizations among deaf and hearing children (Fry, 1966), realization that there is a hearing problem may come slowly. Typically, deafness may not be diagnosed until well into the second or third year of life.

The diagnosis of deafness may create a trauma for the family. Many critical decisions must be made regarding special communication training and types of education. Advice from professionals who work with deaf people is often contradictory, particularly with regard to what types of communication should be taught, viz., should the child learn simultaneous communication, i.e., signs and speech, or be restricted to attempts to speechread and verbalize language (oralism). This controversy has a long history among those who argue in favor of oralism to the exclusion of sign language and those who argue that simultaneous communication permits early and effective communication which may direct training in speechreading and oral speech. Proponents of the latter position encourage getting messages across in any way possible, including use of signs, fingerspelling, oral language, mime, and

gesture.

Until the last decade, the oralists have dominated, arguing that children who are allowed to use sign language will not be motivated to learn oral language. Though not supported by research, these arguments were so powerful that as recently as the mid-1960's only about 11% of hearing parents employed any sign language to communicate with their deaf children (Stuckless & Birch, 1966). Yet it has been estimated that the skilled oral deaf child may have a useful vocabulary of roughly 200 words by age 5, compared with the useful vocabulary of a hearing child at that age of 2,000 to 4,000 words (Liben, 1978).

Until recently, then, the deaf American preschooler lived in an environment where there was little opportunity to communicate and transmit knowledge. Learning was possible but much learning must have been acquired first-hand. Similarly, an understanding of permissible and prohibited behaviors, i.e., the family's moral standards, was acquired through trial and error. Some behaviors were punished, others were not. And for deaf children of hearing parents, punishment is most typically physical (Mindel & Vernon, 1971). Schlesinger and Meadow (1972) surveyed hearing parents and found that 71% of mothers of deaf children used spanking as the primary method of punishment while only 25% of mothers of hearing children did so. Mindel and Vernon (1971) suggest that to compensate for the frequent spankings, parents of deaf children may sometimes allow behaviors which they do not tolerate in their hearing children. Such ambiguity may lead to confusion as to what the moral standards of the family are. Typically, the mother

demonstrates, and then punishes, because she has no means to communicate the whys involved in moral behavior (Harris, 1978).

Typically, deaf children of hearing parents have little or no contact with other deaf individuals, child or adult, and they have few or no role models. These children may think that they are the only person in the world who cannot hear, or that they may eventually outgrow their handicap (Liben, 1978). As a result of limited contact with others, the deaf child has a severely restricted choice of people from whom to learn. "What the mother regards as acceptable and unacceptable will be more firmly implanted as a permanent part of the deaf child's personality pattern" (Mindel & Vernon, 1971, p. 9).

The outgrowth of maternal sanctions may be safe behaviors which avoid punishment but which also limit activities and instances of testing. Furth (1966) observed that deaf children often seem rigid in their behavior as if unable, or very slow, to shift from one principle or viewpoint to another. He argued that this lack of flexibility is understandable inasmuch as deaf people learn quite early to repeat what they have learned, perhaps due to social training to remain in positions they have found secure to avoid punishment. The result, Furth continued, is a lack of initiative in thinking, with little sense of discovery and an unwillingness or inability to look for reasons why, rather than deficiencies in reasoning ability itself. Furth concluded that it rarely occurs to deaf persons to question what appears to them to be reality.

In view of these descriptions of deaf children, it is not surprising to find similar characterizations of deaf adults. Schlesinger and Meadow (1972) described deaf adults as being cognitively more rigid and socially less mature than hearing adults. Schlesinger (1978) noted that the most frequent generalization about deaf adults is that they seem to reflect a high degree of emotional immaturity. They seem to lack understanding of and regard for the feelings of others, along with a limited awareness of the impact of their own behavior and its consequences in relation to others, i.e., an egocentric view of the world (Ranier & Altshuler, 1966). Deaf adults are also described as tending to behave impulsively, making gross coercive demands to have their needs satisfied, with almost a complete absence of internal controls over their behavior (Altshuler, 1964). Yet deaf adults tend to judge behaviors in terms of rigid rulebooks of etiquette which have no provisions for extenuating circumstances (Schlesinger & Meadow, 1972).

Despite the long domination by oralists, an overwhelming majority of deaf Americans learn and employ sign language to communicate with each other (Bellugi & Klima, 1978). One of the major reasons for the prevalence of sign language is that it is practically impossible for deaf individuals to speechread each other with any degree of accuracy. English vowels are indistinguishable when speechread because they are made by changes within the mouth rather than on the lips. Only about 40% of English phonemes are detectable by lip movement (Liben, 1978). Thus, to communicate with each other, deaf people employ sign language, a visual language where meaning is conveyed by (a) shape of the hands, (b) movement of the hands, (c) position of the hands in relation to the



body, and (d) hand orientation.

The sign language deaf Americans employ with each other is not typically a signed version of English, but rather is American Sign Language (ASL, or Ameslan). There is a signed version of English, but it is employed primarily in educational settings. ASL is not a derivative or degenerate form of written or spoken English (Bellugi & Klima, 1978). Ameslan may have originated as a loose collection of pantomimes and gestures, but it has evolved into a language in its own right, with the syntax and hierarchical organization which are typical of human languages.

Bellugi and Klima (1978) suggested that ASL has three distinguishing characteristics. First, it has a lexicon which does not correspond to that of English, and the grammatical principles which govern the modification of signs are different, in form and content, from grammatical processes of English and other spoken languages. Second, Ameslan is not confined to concrete ideas. It is a full-grown language which contains possible expression of ideas at any level of abstraction, with a vocabulary to handle religion, politics, ethics, history, and other areas of abstract thought or fantasy. And third, ASL is not a universal system of pantomime. While there may be some shared signs which other manual languages employ, for all but the most elementary purposes the various sign systems of the world are as mutually incomprehensible as, say, English and Chinese.

In the use of signed versions of English, Furth (1966) suggested that deaf individuals may find it easier to learn the vocabulary of objects and events which are tangible, and to lack the means to express the nuances which are involved in abstract notions such as purpose, democracy, or justice. ASL has no such limits.

#### Cognitive Functioning of Deaf People

Pinter (e.g., Pinter & Reamer, 1920) was among the first to investigate intellectual functioning of deaf persons. He concluded that the general intellectual level of deaf children was below that of hearing children by an average of two years. Lane (1948) reviewed the literature from 1930 and observed that, although results were mixed, there seemed to be an average delay in cognitive development in deaf individuals of about a year. Myklebust (1964) reported delays of two to three years, and Savage, Evans, and Savage (1981) reported delays of at least one year.

There is, thus, agreement that deaf people are delayed in their cognitive development as compared with hearing people, but estimates of the degree of delay vary, partially as a function of instruments used and populations sampled. There is consensus, however, regarding proposed causes for the delay. Myklebust (1964) argued that reasoning in deaf persons is delayed because of restricted experiences and opportunities for learning. Because deaf children lack auditory information input, they presumably are restricted in acquiring verbal symbolism to aid their reasoning processes. Savage et al. (1981) suggested that deafness affects some psychological processes more than

others. For example, verbal and language skills seem to be retarded to the point where conceptual thinking is affected.

There is, of course, disagreement as to the degree to which verbal skills mediate thinking processes. Vernon (1967) argued that verbal language does not serve as a symbol system for thought. Piaget believes that symbolic functioning is a necessary prerequisite for language use. For Piaget, symbols are idiosyncratic cognitive representations of objects and events. There are five modes of representation, listed in order of developmental complexity: (a) deferred imitation, (b) symbolic play, (c) graphic representation, (d) mental imagery, and (e) language. Together, these five modes comprise the semiotic function. Piaget suggested that language is not necessary for symbolic development. Instead, language must be assimilated into a symbol system which has already begun to develop (Piaget & Inhelder, 1969). For Piaget, then, language is not the major organizing factor in cognitive development, although language may be necessary for formal operations (Cowan, 1978). Whorf (cited in Dale, 1976), Rosenstein (1960), and Kates, Yudin, and Tiffany (1962) agree that verbal skills are required for development of competence in abstract reasoning.

Regardless of theoretical disagreement, delays in cognitive functioning of deaf individuals appear primarily on tasks which require abstract reasoning (e.g., Heider & Heider, 1941; Oleron, 1953). Myklebust (1964) argued that "it is logical to conclude that at least to some degree this inferiority [in abstract reasoning skills] is a secondary, reciprocal condition to language limitation" (p. 89) rather

than being related to mental inferiority.

It is also possible that the reported inferiority in abstract reasoning of deaf persons reflects not inferior reasoning skills but inadequate means of conveying the products of reasoning. Recall Piaget's contention that hearing children initially employ signs as if they were symbols and only after repeated social exposure outside the home come to understand the constraints of social agreement regarding significates of the signs. Deaf children and adults may reason in a manner which is identical to that of hearing persons but be unable to convey the products of their reasoning because others do not understand the idiosyncratic nature of their use of signs. And it may be that this communication problem is more of a factor in dealing with abstract matters than with tangible ones.

Savage et al. (1981) reported that delays in abstract reasoning skills in deaf persons seem to increase with age and wonder if some ceiling effect might be coming into play. This view was not supported by Myklebust (1964), Furth (1966), nor results of over 50 independent studies which report that deaf and hearing adults have essentially the same distribution and mean of IQ scores (Mindel & Vernon, 1971).

As we have seen, however, Kohlberg specified that moral development is tied to Piagetian cognitive development rather than to amount of knowledge. Furth has been a pioneer in investigating performance of deaf individuals on Piagetian measures. In an effort to reduce, if not eliminate, possible constraints on performance due to language deficiencies, he has tried to adapt Piagetian tasks to make instructions

as language-free as possible. For example, Furth (1966) reported that there are differences between deaf and hearing children's conceptualization of the comparative "more." Where hearing children, on conservation tasks, seem to understand that "more" means which stimulus object contains more quantity, deaf children seem to regard the comparative as inquiring which stimulus needs more to make the objects equal. Furth has frequently trained deaf subjects to criterion on some task and then switched to another, related task to see if the concept training would transfer. When such procedures are employed, performance typically improves, although deaf people still lag behind hearing people.

On weight conservation problems, Furth (1964a) finds about a two-year difference: Deaf 8 year olds give answers which are similar to those of hearing 6-year-olds. On conservation of quantity, Furth (1966) reported deaf children achieve the concept about five years later than hearing children do. But Furth is convinced that these are lags, not ceilings. In an investigation of non-college adults, ages 20 to 50, Furth (1964b) assessed classification skills by training participants to sort a variety of objects according to their color, then switched to same-color objects of various shapes to see if sorting would be made on the basis of shape. There was similar performance by deaf and hearing participants. Furth (1966) also reported similarity of results for deaf and hearing adults on tasks of symbol discovery and symbol transfer. Findings such as these suggest to Furth that deaf individuals can overcome developmental lags and have the same potential for abstract reasoning as do hearing persons. He believes that the rigidity which is

so frequently observed in deaf cognition does not reflect an inability to reason but a lack of motivation to employ sophisticated reasoning.

Piaget presented a related argument by suggesting that individuals who achieve formal operations are in no way constrained to always employ formal thought. Instead, formal operations will be engaged only when necessary for problem-solving. Getz (1953) reported that deaf environments, e.g., jobs, rarely require abstract reasoning. The ability may be present, but it is seldom observed because it is not expected. Emerton, Layne, and Braverman (1977) reported that an extremely high proportion of deaf workers have occupations which place few demands on their cognitive capabilities.

#### Socialization of Deaf Persons

Socially, too, deaf people appear to be less mature than hearing peers (Meadow, 1976; Schuldt & Schuldt, 1972). McHugh (1975) reported that deaf adults are often fired from jobs for social reasons rather than for job performance. Emerton (1976) characterized deaf persons as having emotional instability, egocentricity, impulsiveness, and a lack of tact. Lack of social skills is so pervasive that the National Technical Institute for the Deaf has identified the need for enhanced social skills in deaf persons as basic to its mission (Emerton & Bishop, 1977).

As in the case of cognitive functioning, deficits in social development of deaf individuals may be related to language deficiencies as well as to restricted opportunities for social interaction in

preschool years. Schlesinger and Meadow (1972) suggested that language may be central in the development of the concept of self. Mead (1934) has argued that persons are human only insofar as they can see themselves as others see them and can thus act in accordance with expectations of what reactions of others might be. To describe this ability, Mead coined the term, "role taking." Schlesinger and Meadow suggested that individuals can become objects to themselves by means of the manipulation of symbols, i.e., through language. The self makes symbolic indications based upon experience and employs the symbols to forecast the future. In this view, a person who is deficient in language might have problems in representing expectations symbolically, to the detriment of how realistic such predictions might be.

Research on socialization and role taking in deaf persons is not extensive. Bradway (1937) was apparently the first to present the Vineland Social Maturity Scale to deaf children. She found that her deaf participants were "20 percent inferior" to hearing individuals on social competence at all ages investigated. More recent studies (e.g., Bolton, Cull, & Hardy, 1974; Emerton, Mangione, Marquis, & Garrison, 1978; Meadow, 1976) have supported the assertion that deaf people are developmentally delayed on measures of socialization.

#### Moral Reasoning in Deaf Persons

Similarly, deaf individuals appear to lag behind the hearing in the development of moral reasoning. Apparently, only three studies are available. Nass (1964) employed six deaf children at each age, 8 through 12, to compare their judgments on moral issues with those of

hearing children tested in another study. Scores from the Wechsler Intelligence Scale for Children were available for deaf and hearing subjects. IQ scores were rated as about average for the groups. Four stories involving moral dilemmas were presented to each child. Two of the stories were created to evaluate peer reciprocity versus dependence on adult authority. Two other stories, adapted from Piaget, were designed to assess ability to perceive intention of the actor versus magnitude of consequences. Interviews were conducted using Piaget's clinical method.

Nass found that the hearing children were significantly superior in ability to take intentions into account but the deaf children were equal or superior to the hearing on stories dealing with peer reciprocity versus authority dependence. Nass viewed these findings as suggesting that deaf children lag behind hearing children in ability to perceive intentions of others but are equal or superior to hearing children in being concerned more with peer relations than with pleasing or being dependent upon authority. He speculated that peer concern may be due to the common experiences of deaf children which might tend to bind them together.

Unfortunately, Nass (1964) was not clear as to how the stories were presented, i.e., whether they were written, spoken, or signed. Nor was he clear about how the interrogations were performed, although he did refer to problems with wording of the stories and said that the deaf children's responses were not "verbally complete". Because the research was conducted at the Lexington School for the Deaf in New York City,



which used the oral method in 1964 (E. Shroyer, personal communication, April, 1982), we may infer that signing was not used.

DeCaro and Emerton (1978) presented Kohlberg's moral dilemmas over a three-year period to entering freshmen (n = 253) at the National Technical Institute for the Deaf. Porter and Taylor's (1972) standardized scoring protocol was employed to assess moral stages. Simultaneous communication was used throughout. Students watched as each dilemma was signed and spoken and then read it in written English from test booklets. Results were that over 80% of these college freshmen scored at preconventional levels of moral reasoning. None showed principled morality.

DeCaro and Emerton concluded their report with some observations of interest for the present research. First, scores as a whole were lower than expected. Second, participants seemed to generally rely on authority figures or social systems as if they held a low opinion of their own moral reasoning ability. The authors concluded that perhaps role-taking abilities in these students were not fully developed as compared with those of hearing peers, perhaps as a result of restricted social interactions, limited experience in discussing feelings, and little communication about reasons and consequences of action. Since social measures were not taken in this study, such observations are speculations.

More recently, Peterson, Dow, and Savage (1979), in a preliminary study, investigated moral reasoning in 28 deaf children plus an equal number of hearing children. Ages ranged from 7 to 13. A dilemma based upon Piaget's "cup" story was employed to assess ability to judge intent as opposed to magnitude of consequences. Presentation was in the form of a "silent movie" on videotape. Questioning was by simultaneous communication. Questions probed for (a) comprehension of the story, (b) judgment, i.e., who was naughtier, (c) justification for the judgment, and (d) individual assessments of the actors, e.g., "Was this child good?", to overcome possible limitations of the younger children in the comparative question. Because the paper presents pilot data, it does not list ages of the children in relation to their moral judgments and it refrains from reaching conclusions except that the deaf children lagged behind the hearing in moral reasoning. Twelve of the deaf children made moral judgments based upon magnitude of consequences, but only three hearing children did so.

These three studies suggest that deaf individuals lag behind hearing persons in the development of moral reasoning. Nass (1964) tested deaf children of average intelligence who lagged in ability to infer motives, a finding which suggests that role-taking skills may also have been delayed. DeCaro and Emerton (1978) tested entering college freshmen and found moral levels were lower than expected. No cognitive measures were taken, but an inference that the subjects were of at least average intelligence seems warranted. Peterson, Dow, and Savage (1979) found less advanced moral development in deaf than in hearing children.

None of these studies assess relationships between cognitive functioning, social functioning, and moral judgment although they do make subjective observations. The present investigation seeks assessments in all three domains to test Kohlberg's assumptions as well as for adding to our understanding of the moral development of deaf individuals.

### Rationale

Research linking Piagetian-cognitive, social, and moral development has typically been correlational. Such studies have consistently shown significant correlations between measures of cognitive-moral and social-moral domains. The study which looked at all three domains (Perry & Krebs, 1980) employed standardized IQ tests, rather than Piagetian tasks, to assess cognitive functioning.

Research on Kohlberg's theory has shown that there are relationships among the three domains, that level of progress in one domain is followed regularly by progress in another, and that moral development is not greater than cognitive and social development should allow. Correlations, of course, do not necessarily imply causation. An experimental attempt to enhance moral development beyond the necessary cognitive stage (Walker & Richards, 1979) reported that moral development was not stimulated to exceed the proposed necessary cognitive condition, as Kohlberg would expect.

Another test of Kohlberg's theory would come from interventions in which development in one domain were constrained and progress in other domains was observed, but such manipulations are unethical. Given that experimentally induced constraints on development are not possible, an alternative might be to study moral functioning of deaf populations in which cognitive and social development have been delayed naturally. Numerous studies suggest that deaf individuals lag behind hearing peers by several years in reaching Piagetian cognitive milestones but have the potential for achieving formal operations. There is also evidence that restricted social contacts in preschool years, perhaps accompanied by deficiencies in language skills, have limited social development and role-taking opportunities. If Kohlberg's theory is correct, therefore, moral development of deaf individuals will be constrained by their cognitive and social development.

According to Piaget, Kohlberg, and contemporary cognitive developmental research, typical hearing 10-year-olds should be late concrete operational. They should also be transitional in acquiring social perspective and may be entering the stage of conventional moral judgment. Typical hearing 15-year-olds should be transitional formal operational, with full social perspective and conventional moral reasoning. And hearing adults have the potential for consolidated formal operations, prior-to-society perspective, and principled morality.

In the deaf population, however, 10-year-olds might be early concrete operational (or even late preoperational), with egocentric social perspective and preconventional moral reasoning, and 15-year-olds might be consolidated concrete operational, with the potential for emerging social perspective and conventional moral reasoning. Deaf adults should have the potential for full formal operations, the highest social perspective, and principled moral reasoning.

The present research investigated several implications of Kohlberg's theory by examining all three developmental domains. The research also provided normative data on moral development of deaf people. Recall that only one study has been found which investigates Kohlberg's moral stages in deaf populations, and it dealt with adults.

The first hypothesis that was tested follows from reports that deaf individuals' cognitive development lags behind that of hearing people by as much as three years. If the deaf participants in the present research were typical, they should be less cognitively developed than hearing individuals of comparable ages.

The second hypothesis tested derives from Kohlberg's assertion that cognitive development is necessary for the development of social role-taking skills. Specifically, consolidated concrete thinking is said to be necessary for development of social perspective taking. Therefore, it was expected that role-taking skills of those who had reached the stage of consolidated concrete operations would be greater than the scores of those who had not reached that cognitive stage.

The third hypothesis tested stems from Kohlberg's belief that the same moral reasoning processes are used to reason about all moral dilemmas, regardless of how familiar participants are with the events the dilemmas describe. For example, Kohlberg reports no differences in moral levels of hearing American children as assessed by the Camp story and a dilemma involving adults in Europe, one of whom is dying from a rare form of cancer. It seems reasonable to assume that American children should be able to identify more closely with a boy who has a paper route and who wants to go to summer camp than with an adult who steals a drug in an attempt to save his wife's life. Similarly, it seems likely that deaf individuals might identify more with other deaf persons than with hearing people, although Kohlberg would predict that there would still be no differences in moral reasoning.

The fourth hypothesis tested is based upon Kohlberg's assumption that moral reasoning requires logical reasoning. Kohlberg has argued that formal operations are necessary for principled moral reasoning and that consolidated concrete operations are necessary for conventional moral reasoning. Therefore, it was expected that higher stages of moral reasoning could follow higher stages of cognitive functioning.

The final hypothesis tested is a logical derivative of the above: If a given stage of cognitive development is necessary for a given level of moral reasoning, then a moral stage could not exceed its supposedly necessary cognitive stage. This means that individuals who have not reached consolidated concrete operations should not show Level II morality and that those who are not formal operational should not show

Level III morality. Recall that Kohlberg has reported that "essentially none . . . are at a higher moral stage than their logical stage" (1976, p. 32).

In summary, the following hypotheses were tested: (a) there should be delays in cognitive development of deaf participants as compared with the hearing population; (b) role-taking skills should increase as a function of cognitive development; (c) there should be no differences in deaf individuals' moral reasoning about situations involving either deaf or hearing people; (d) moral development should increase as a function of increases in cognitive development; and (e) moral reasoning should not exceed the cognitive stages which are presumed to be necessary conditions for moral development.

## CHAPTER II

### EXPERIMENT 1

#### Method

##### Subjects

Participants were 30 prelingually deaf individuals, 10 in each age group of 10-year-olds, 15-year-olds, and adults (ages 19 to 50). The two younger groups were students at the Central North Carolina School for the Deaf in Greensboro or the North Carolina School for the Deaf in Morganton. The adults live in Piedmont North Carolina and all attended special programs for deaf persons. The fact that all participants had attended or were attending special schools for deaf persons was taken as sufficient evidence of the severity of their hearing loss. Because the populations from which these samples were taken are relatively limited, it was not possible to select equal numbers of males and females at the age levels. Overall, 16 participants were female and 14 were male.

##### Procedure

Testing was performed in small groups in private rooms at the North Carolina Schools for the Deaf in Greensboro and Morganton, St. Paul's Episcopal Church in Winston-Salem, and Queens College in Charlotte. Group size was three or four for the students; one adult group numbered seven. Large conference tables were available in three locations; Morganton provided desk chairs. In all four locations it was possible



to spread out so that all participants had a clear view of the television monitor on which the videotape was run. Each room also had a rheostat so that lighting could be reduced to make the television picture sharp and clear yet still allow sufficient light for reading the test booklets. There were no outside interruptions during testing sessions.

Participants were escorted to the testing rooms where the male experimenter welcomed them. The opening remarks were an expression of thanks for participating and a reminder that if at any time someone had a question or wished to discontinue the testing please to signal so by raising a hand. No hands were raised. All remarks by the experimenter were interpreted by a certified interpreter for the deaf (Judy Apple, National Certification, in Greensboro; Linda Couch, North Carolina Level II Certification, in other locations).

Participants received Piagetian cognitive tasks, social role-taking measures, and moral dilemmas. Presentation involved simultaneous communication on videotape by Dr. Edgar Shroyer. Written English versions were available in the test booklets. A range of possible answers to each problem was provided in the booklets in an attempt to minimize restraints on performance due to expressive language deficiencies. The videotape was stopped after each problem and was not restarted until all participants had reported answering that problem.

## Materials

Piagetian cognitive tasks. Five tasks were employed (see Appendix). The first two tasks involve conservation of mass and conservation of weight. In hearing populations, mass conservation is achieved before weight conservation. The mass problem is achieved by early concrete operations, the weight by consolidated concrete operations (Ginsburg & Opper, 1969). The remaining cognitive exercises were two verbal seriations and one proposition. Such tasks require formal thinking because they involve reasoning in the abstract (Inhelder & Piaget, 1969). These tasks are typical of those employed in similar research (e.g., Krebs & Gilmore, 1982; Walker, 1980; 1982).

The Piagetian tasks were designed to assess stages of cognitive development. Participants were drawn from three age groups as a convenient way of sampling potentially different stages of cognitive development, which is age-related but not age-dependent.

Social measures. No instrument has been designed specifically to assess Kohlberg's social stages. Kohlberg designates social stage on the basis of answers to those same moral dilemmas which he uses to assess moral stage. With no independent instrument, there can be little discrepancy between social and moral stages.

There appear to be three aspects of social role taking and there are tasks to assess development of each (Kurdek, 1978). Perceptual perspective tasks, such as Piaget's three mountain problem, assess ability to view things from another's physical perspective. Cognitive

tasks are designed to measure ability to infer another's thoughts, intentions, or motives. Affective tasks assess ability to judge someone's emotions based upon facial expression. The affective tasks are less language dependent and are more objectively scored than are cognitive tasks (Kurdek, 1978). An affective task was selected for the present research because it was theoretically appropriate, it was less language dependent, and it seemed to have prima facie validity because it deals with people in social situations.

A typical affective role-taking task involves pictures of events which characteristically evoke particular emotions, e.g., a scene of a birthday party. In each scene is one clearly delineated character whose facial expression is either congruent or incongruent with the depicted situation. The task is to identify the emotion shown. Three typical emotions which are easily portrayed and which seem to have a universal meaning regardless of culture are happiness, sadness, and anger (Ekman, 1971). When such tasks are employed, Shantz (1975) reported a developmental shift from reliance on situational cues, e.g., the birthday party, to facial cues, e.g., the sadness of the designated character. Shantz suggests that only in middle or late childhood do children begin to disregard situational cues in making affective judgments.

For the present research, six cartoon-type pictures were created (see Appendix). The instrument can not test Kohlberg's highest stage of social development, viz., the prior-to-society perspective, but no independent instrument does. The affective task should, however,

measure social perspective development. In theory, more cognitively developed people should be less captured by situations and become increasingly able to detect emotional states based on facial expressions. Thus, there should be a correlation between cognitive level and affective task scores.

Moral measures. Four moral dilemmas were presented (see Appendix). Two are standard Kohlberg dilemmas and two are modified versions which preserve the essential ingredients of the standard versions but portray leading characters as being deaf. There is evidence that hearing persons can never be fully accepted into the deaf community (Jacobs, 1980) and that there is a cohesiveness among deaf individuals which fosters mutual support and consideration (Nass, 1964). The modified dilemmas manipulation was included to test whether reasoning on those dilemmas might differ from that shown on the standard versions. Order of presentation of the standard and modified versions was counterbalanced.

## Results

### Scoring

Piagetian tasks. From results of the five Piagetian tasks, three cognitive stages were identified. Participants who failed both conservation problems were assigned to Cognitive Level I, comprised of those who have not reached the level of consolidated concrete operations. Participants who passed both conservation problems but fewer than two propositional problems were assigned to Cognitive Level

II, consolidated concrete operations. Those who passed both conservation problems and at least two of the three propositional problems were assigned to Cognitive Level III, the stage of formal operations. Such criteria are typical of similar research (e.g., Krebs & Gilmore, 1982; Walker, 1980; 1982; Walker & Richards, 1979).

Social measure. For scoring, each correct answer was worth one point. Scores could thus range between 0 (none correct) and 6 (all correct).

Moral dilemmas. Scoring was done using Porter and Taylor's (1972) standardized scoring protocol. The protocol lists possible answers to the dilemmas with answers being typical of the reasoning which characterizes Kohlberg's moral stages. The protocol eliminates the need for interviews and thus minimizes possible constraints on performance due to language deficiencies.

Three questions were asked about each dilemma. Assigning moral reasoning to a stage was done by majority score or middle score of the three answers. For example, a participant whose three answers to a dilemma were rated as exemplifying characteristics of stages 2, 2, and 2(3) (i.e., predominately stage 2 with overtones of stage 3) would be scored as reflecting stage 2 reasoning (majority score) on that dilemma. Answers 1(2), 2, and 2(3) would also be rated as stage 2 for that dilemma (middle score).

Based upon the dilemma stages, Kohlberg assigns moral maturity scores by weighting each stage by its number (e.g., stage 2 has a weight of 2) and multiplying each stage weight by the percentage of scores at that stage (Porter & Taylor, 1972). To obtain percentages, each dilemma is assumed to be worth 3 points. A pure score receives all 3 points; a mixed score receives 2 points for the major stage and 1 point for the minor stage. Thus, with four dilemmas there are 12 points. To illustrate, assume that a person showed reasoning on the four dilemmas which was scored as reflecting stage 1 morality on the first dilemma, stage 2 on the second, stage 2 on the third, and stage 2(3) on the fourth. The percentages would be 3/12 stage 1 (all 3 points coming from the first dilemma) = 25%, 8/12 stage 2 (3 of those 8 points coming from the second dilemma, 3 from the third, and 2 from the fourth) = 67%, and 1/12 stage 3 (coming from the fourth dilemma) = 8%. The moral maturity score would be calculated as follows:  $100(.25 \times 1 + .67 \times 2 + .08 \times 3) = 25 + 134 + 24 = 183$ .

Moral maturity scores may range from 100 (pure stage 1) to 600 (pure stage 6).

Scoring results are shown in Tables 1 and 2.

### Analyses

Data from the social and moral procedures were used to assign individual's ranks on the dependent measures. Because ranks data are ordinal, nonparametric statistics were used to make comparisons.

Table 1

## Results of Piagetian Cognitive Tasks (Deaf Participants)

---

Subject	Mass	Wgt.	Ser I	Ser II	Prop	Cog. Level
10-1M	No	No	No	Yes	No	I
10-2F	Yes	No	Yes	Yes	No	I
10-3M	No	No	No	Yes	No	I
10-4F	No	Yes	Yes	Yes	No	I
10-5F	No	Yes	Yes	Yes	No	I
10-6M	No	Yes	No	Yes	No	I
10-7M	No	Yes	No	Yes	No	I
10-8M	No	Yes	No	Yes	No	I
10-9M	No	Yes	No	Yes	No	I
10-10M	No	Yes	Yes	Yes	No	I
15-1F	No	Yes	No	No	No	I
15-2F	No	Yes	No	Yes	No	I
15-3M	No	Yes	No	Yes	No	I
15-4F	No	Yes	No	Yes	No	I
15-5F	Yes	No	No	Yes	No	I
15-6F	No	Yes	No	Yes	No	I
15-7M	Yes	No	No	No	No	I
15-8F	Yes	Yes	No	No	No	II
15-9F	Yes	Yes	Yes	Yes	No	III
15-10F	Yes	Yes	Yes	Yes	No	III

Table 1 (continued)

## Results of Piagetian Cognitive Tasks (Deaf Participants)

---

A-1F	No	No	Yes	Yes	No	I
A-2F	Yes	Yes	No	No	No	II
A-3F	Yes	Yes	No	Yes	No	II
A-4F	Yes	Yes	No	Yes	Yes	III
A-5M	Yes	Yes	No	Yes	Yes	III
A-6M	Yes	Yes	Yes	Yes	Yes	III
A-7M	Yes	Yes	Yes	Yes	No	III
A-8M	Yes	Yes	Yes	Yes	Yes	III
A-9M	Yes	Yes	Yes	Yes	Yes	III
A-10F	Yes	Yes	No	Yes	Yes	III



Table 2

## Results of Social and Moral Tasks (Deaf Participants)

---

Subject	Social Tasks		Deaf Dilem.		Stnd. Dilem.		Moral
	Cong.	Incong.	Caro.	Pris.	Heinz	Bros.	Maturity
10-1M	3	3	2	1	2	3	200
10-2F	3	3	2	2	3	3	250
10-3M	1	1	3	5	1	2	275
10-4F	3	2	1	1(2)	2	2	158
10-5F	3	3	4	3	1	2(3)	258
10-6M	3	3	2	4	1	2(3)	233
10-7M	3	3	3	2	3	2	250
10-8M	3	2	4	2	4	2	300
10-9M	3	2	2	4	3	2(3)	283
10-10M	3	3	3	2	4	3(4)	308
15-1F	3	2	2	3	5	2	300
15-2F	3	0	3	1	6	3(4)	333
15-3M	3	1	5	4(3)	4(6)	3(4)	366
15-4F	3	2	5(6)	2(3)	1(2)	4	324
15-5F	3	2	3	4	4	3(4)	358
15-6F	3	3	2(3)	2	1(2)	1	166
15-7M	2	2	2(3)	2	4(6)	1(2)	257
15-8F	3	3	2	2(3)	4	2	258
15-9F	3	3	3	1	4	2	250
15-10F	3	3	3	1	6	2	300

Table 2 (continued)

## Results of Social and Moral Tasks (Deaf Participants)

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A-1F	3	3	5	3	3	2	325
A-2F	3	3	4	3	6	2	375
A-3F	3	3	2	4(3)	4	3(4)	325
A-4F	3	3	4	4	4	3	375
A-5M	3	2	2(3)	4(3)	4(6)	4	365
A-6M	3	3	3	4(6)	4	2	341
A-7M	3	2	4	4(3)	5	2(3)	378
A-8M	3	3	5	3	4	1(2)	333
A-9M	3	2	3	4	4(6)	2	341
A-10F	2	0	2	4(3)	4	4	342

It was expected that there would be delays in cognitive development of deaf participants. In hearing individuals, the stage of consolidated concrete operations is typically achieved by age 10 (Ginsburg & Opper, 1969). Thus, for the three age groups 10, 15, and adult, we would expect all hearing individuals to be at least Cognitive Level II. The observed frequencies for the deaf participants were none at age 10, 3 at age 15, and 9 at the adult level, which the chi square test showed is significantly fewer than would be expected from hearing persons,  $\chi^2(2) = 15, p < .001$ .

Kohlberg's theory predicts increases in role-taking scores as a function of cognitive development. However, contrary to expectations, the Kruskal-Wallis one-way analysis of variance by ranks showed that social perspective scores did not vary with cognitive development,  $H(2) = 3.7, p > .10$ . However, only 25 of the 180 items were answered incorrectly; 21 of these were on incongruous pictures and 11 were on the same picture, the boy being bitten by the dog.

As expected, there were no differences in moral reasoning revealed by type of dilemma. The Wilcoxon matched-pairs signed-ranks test comparing individual's moral maturity scores on the modified and standard dilemmas yielded  $z = -.342, p = .73$  for a two-tailed test. The median moral maturity scores were 298 for the modified dilemmas and 300 for the standard dilemmas.

Kohlberg's theory predicts that moral maturity could track cognitive development. The Kruskal-Wallis test revealed that moral maturity increased as a function of cognitive level (three cognitive levels),  $H(2) = 8.45, p < .02$ . However, unlike earlier studies which show moral maturity tracking social development, the present data show no relationship between social scores and moral maturity,  $H(4) = 4.64, p > .30$  (four degrees of freedom because there were five different social scores).

The final implication of Kohlberg's theory was that moral maturity can not surpass the supposedly necessary cognitive stages. Kohlberg has proposed that formal operations are required for Level III morality. Thus, the nine participants who showed formal operations could not show moral reasoning beyond their cognitive stage because they were functioning at the cognitive level which makes possible the highest level of moral reasoning. There were 18 participants who were assessed at cognitive level I, not consolidated concrete operations, and 3 who were assessed at cognitive level II, not formal operations. Theoretically, those who were not concrete operational could not show conventional level moral reasoning and those who were not formal operational could not show principled moral reasoning. A moral maturity score of 300 or above indicates predominately Level II morality because 300 is pure stage 3; a score of 500 indicates predominately Level III morality. Of the 21 individuals whose moral reasoning could have exceeded the supposed ceiling set by cognitive stage, the judgments of eight did exceed that ceiling. Is 8 of 21 more than "essentially none" of 21? Kohlberg did not identify how many violations may be considered

to be essentially none, but by convention it might be assumed he means that essentially none is 5 of 100 or, being generous, 10 of 100 or even 15 of 100. Is 8 of 21 more than 15 of 100? By the Chi square goodness of fit test, 8 of 21 is more than 15 of 100,  $\chi^2 = 7.2$   $p < .005$ , one-tailed test.

There were no sex differences in moral reasoning. Exactly half of the scores for each sex fell above the median score of 304.

#### Discussion of Experiment 1

The finding that participants in Experiment 1 showed cognitive development which is delayed as compared to norms for hearing individuals was expected and suggests that participants were a representative sample of the deaf population. Indeed, based upon the deaf developmental literature, any other findings would have been suspect. The literature suggests delays but no ceilings. The present data corroborate such assertions.

The finding that there were no differences in role-taking scores of those who have and have not reached the stage of consolidated concrete operations was surprising. There are a number of possible explanations of why role-taking scores were so high. First, the social instrument may not have been adequate to tap social perspective taking development. Recall that no independent instrument has been created to assess Kohlberg's stages of social development. While the present measure was a typical affective role-taking task, it might not have sampled those social skills which Kohlberg proposes as being an outcome of cognitive

development and necessary for moral development.

On the other hand, the high affective social scores may be related to characteristics of the deaf community. Participants were prelingually deaf and thus have a long history of relying solely on visual cues to acquire information about social situations. Nuances and subtleties of manual communication are typically derived not only from the signs but from facial expression and body posture of the signer. Deaf people are accustomed to studying facial expressions. In retrospect, it might have been surprising to have found other than very high scores on the social measure.

It is also plausible to speculate that the high social scores were a function of the fact that all but four participants were or had been resident students at schools for the deaf. Kohlberg and Piaget have both suggested that social development is accelerated as increasing amounts of time are spent in interactions with peers. Typical hearing children have not lived with peers; the children in Experiment 1 have.

The data substantiate Kohlberg's view that essentially the same moral reasoning processes are being tapped regardless of dilemma subject matter. Deaf participants seemingly make the same types of judgments of peers as they do of hearing people, with reasoning constrained by level of moral development. The manipulation of modifying some dilemmas to portray characters as being deaf did not uncover any differences in judgment.

The finding that moral maturity of over one-third of participants exceeded supposedly necessary cognitive stages was surprising. This finding suggests that either the research is not an accurate test of Kohlberg's theory, or perhaps the theory has some hitherto undetected weaknesses. It was therefore decided to repeat the research with hearing people to see if the assessment measures were a fair test.

## CHAPTER III

## EXPERIMENT 2

It was difficult to interpret the results from deaf participants because it was unclear whether the results were an outcome of the modified procedures which reduced dependence on language by providing possible answers. Therefore, the experiment was repeated with hearing participants. Predictions, of course, were the same as those for the deaf participants because Kohlberg is clear in stating the necessary conditions for moral development: that is, Kohlberg says that cognitive development makes possible social development which makes possible more sophisticated levels of moral reasoning.

MethodSubjects

Participants were 30 hearing individuals, 10 in each age group of 10-year-olds, 15-year-olds, and adults (ages 25 to 52). The two younger groups were students at Charlotte Latin School who were judged by their teachers to be "average" students for their age and grade. The adults were administrative and staff personnel (e.g., maintenance staff, public safety officers, and secretaries) at Queens College in Charlotte.



### Procedure

Testing was administered in groups of 3, 4, or 5 in private rooms at Charlotte Latin (students) or Queens College (adults). The procedure was the same as for deaf participants except that the signed videotape was not presented and no interpreter was present.

### Materials

Other than the videotape, the same materials were employed for hearing participants as had been used for deaf participants.

### Results

Scoring was the same as in Experiment 1. Results are shown in Tables 3 and 4.

### Analyses

Nine 10-year-olds, all 15-year-olds, and nine adults were scored as having achieved at least the stage of consolidated concrete operations. These observed results are consistent with expectations based on the literature (e.g., Ginsburg & Opper, 1969),  $(2) = .07, p > .05$ . Hearing participants showed levels of cognitive development which were significantly more advanced than the cognitive stages of deaf participants,  $(2) = 19.4, p < .001$ . This finding is consistent with the literature which indicates delays in cognitive development of deaf individuals as compared with hearing people.

Table 3

## Results of Piagetian Cognitive Tasks (Hearing Participants)

---

Subject	Mass	Wgt.	Ser I	Ser II	Prop	Cog. Level
CLF101	Yes	Yes	Yes	No	No	II
CLF102	Yes	Yes	No	No	Yes	II
CLF103	Yes	Yes	No	Yes	No	II
CLF104	Yes	Yes	Yes	Yes	No	III
CLF105	Yes	Yes	No	Yes	No	II
CLM101	Yes	No	No	No	No	I
CLM102	Yes	Yes	Yes	Yes	Yes	III
CLM103	Yes	Yes	Yes	Yes	No	III
CLM104	Yes	Yes	No	Yes	No	II
CLM105	Yes	Yes	No	Yes	No	II
CLF151	Yes	Yes	Yes	Yes	No	III
CLF152	Yes	Yes	Yes	Yes	Yes	III
CLF153	Yes	Yes	Yes	No	Yes	III
CLF154	Yes	Yes	Yes	Yes	No	III
CLF155	Yes	Yes	Yes	No	No	II
CLM151	Yes	Yes	Yes	Yes	No	III
CLM152	Yes	Yes	No	No	No	II
CLM153	Yes	Yes	No	Yes	Yes	III
CLM154	Yes	Yes	Yes	Yes	No	III
CLM155	Yes	Yes	Yes	Yes	No	III

Table 3 (continued)

## Results of Piagetian Cognitive Tasks (Hearing Participants)

---

QAF1	Yes	Yes	Yes	Yes	No	III
QAF2	Yes	Yes	No	Yes	No	II
QAF3	Yes	Yes	Yes	Yes	No	III
QAF4	Yes	Yes	Yes	Yes	No	III
QAF5	Yes	Yes	Yes	Yes	No	III
QAM1	Yes	Yes	Yes	Yes	No	III
QAM2	Yes	Yes	Yes	Yes	No	III
QAM3	Yes	Yes	Yes	Yes	Yes	III
QAM4	Yes	No	No	Yes	No	I
QAM5	Yes	Yes	Yes	Yes	Yes	III

Table 4

## Results of Social and Moral Tasks (Hearing Participants)

---

Subject	Social Tasks		Deaf Dilem.		Std. Dilem		Moral
	Cong.	Incong.	Caro.	Pris.	Heinz	Bros.	Maturity
CLF101	3	3	4	3	4	2	325
CLF102	3	3	4	4(3)	4	3	367
CLF103	3	2	4	3	4(6)	4(6)	409
CLF104	3	3	4	4(3)	5	4(6)	431
CLF105	3	2	3(4)	4(3)	4(6)	3	366
CLM101	3	2	2(3)	1	4	2	233
CLM102	2	3	4	4(3)	4	3	367
CLM103	3	1	4	4	4(6)	3(4)	399
CLM104	3	1	2(3)	4(6)	3	3(4)	332
CLM105	3	1	4	4	4(6)	3(4)	399
CLF151	3	1	4	4(6)	5	5	466
CLF152	3	1	2(3)	4	4	3	333
CLF153	3	3	4	4	6	5	475
CLF154	3	2	5(6)	5	4(6)	3(4)	463
CLF155	3	1	4	4(6)	4	5	441
CLM151	3	1	4	4	6	3(4)	433
CLM152	3	1	4	4	4	3	375
CLM153	3	1	4	4	4	3	375
CLM154	3	3	5	4(6)	5	5	491
CLM155	3	2	3(4)	1(2)	3	2	241

Table 4 (continued)

## Results of Social and Moral Tasks (Hearing Participants)

---

QAr1	3	3	6	4(6)	5	2	441
QAr2	2	0	5(6)	4	5	3	433
QAr3	3	0	2(3)	4	2	2	258
QAr4	3	1	5(6)	4(6)	4	2	405
QAr5	2	3	5(6)	4(6)	4	2	405
QAM1	3	3	5(6)	4	4	4(6)	455
QAM2	3	3	3(4)	4	5	3(4)	382
QAM3	3	3	5(6)	6	4(6)	1	430
QAM4	3	2	2(3)	3	4	2	283
QAM5	3	2	5(6)	6	4	3	458

Contrary to expectations, the Kruskal-Wallis statistic showed no differences in social perspective scores as a function of cognitive level,  $H(2) = 1.9, p > .30$ . There were only 35 incorrect answers on the social measure (out of 180 questions). Of the incorrect responses, 32 were on the incongruous pictures, and 16 of these were on the picture of the boy being bitten by the dog. This result is similar to that found for deaf individuals, who answered incorrectly 25 items, 21 of which were on the incongruous pictures. Mean social scores of deaf participants (5.1) did not differ from those of hearing individuals (4.8),  $t(58) = .968, p > .20$ .

The Wilcoxon test also revealed no differences in moral reasoning of hearing participants as shown by type of dilemma, i.e., standard vs. modified,  $Z = .597, p = .28$ . Median moral maturity scores were 400 for the modified dilemmas and 367 for the standard versions. Recall that for deaf participants, the median moral maturity scores were 300 for the standard versions and 298 for the modified dilemmas.

The median moral maturity of hearing participants was 402, of deaf participants was 304. The median test indicates that the median for hearing was greater than that for deaf participants,  $(1) = 15, p < .001$ .

As expected, the moral maturity of hearing participants increased as a function of cognitive level,  $H(2) = 7.3, p < .05$ . As with deaf participants, the social scores of hearing individuals were not related to their moral maturity,  $H(3) = 4.3, p > .10$ .

As predicted, the moral maturity of hearing participants did not exceed the supposedly necessary cognitive stages. The moral reasoning of the 19 cognitive level III individuals could not have exceeded their cognitive stage because they were functioning at the cognitive stage which makes possible principled moral reasoning. Of the 11 whose reasoning could have surpassed cognitive stage, none did.

When the data from both samples are combined, there are 8 moral maturity scores which exceed the ceilings set by supposedly necessary cognitive stages. All violations come from deaf individuals. The Fisher exact probability test shows that in this respect these groups are different,  $p = .019$ .

As with deaf participants, the median test revealed no sex differences in the moral reasoning of hearing individuals,  $t = 2.13$ ,  $p > .10$ , median = 402.

## CHAPTER IV

## GENERAL DISCUSSION

The research showed delays in the cognitive development of deaf individuals which are consistent with the deaf developmental literature, even though modified cognitive tasks which reduced the importance of language competence were used. No deaf 10-year-old participants showed evidence of having reached consolidated concrete operations. Three of the deaf 15-year-olds were at least concrete operational. Nine deaf participants gave evidence of formal reasoning abilities. Cognitive levels for hearing participants were also consistent with levels reported in the existing literature for similar ages, even though the modified Piagetian cognitive tasks were used. Together, data from these experiments suggest that modifying cognitive tasks to reduce expressive language requirements provided a fair assessment of levels of Piagetian cognitive development. This is the first study to compare cognitive functioning of deaf and hearing people on Piagetian tasks using a technique which minimizes the impact of language competence. It thus replicates and extends the literature in showing delays but not ceilings for deaf individuals.

Regarding the relationship between cognitive and moral development, Kohlberg has argued that moral reasoning is, after all, reasoning and more sophisticated cognitive reasoning abilities make possible but do not mandate more sophisticated levels of moral reasoning. The data from



these experiments support Kohlberg's view that increases in moral maturity are related to increases in cognitive development.

The moral reasoning of deaf individuals found in this project is considerably more advanced than moral levels reported in previous research (e.g., DeCaro & Emerton, 1978; Nass, 1964; Peterson, Dow, & Savage, 1979), although it still lagged behind that of hearing persons of comparable cognitive levels. Eighteen of the deaf participants were assessed as possessing Kohlberg's Conventional Level moral reasoning. The present findings indicate that characterizations of deaf individuals as being rigid and authority-oriented in their moral reasoning are unwarranted.

The results also substantiate Kohlberg's view that essentially the same moral reasoning processes are being tapped regardless of dilemma subject matter. Participants made the same types of judgments of people who seemed similar to themselves as they did of those who were not so similar. The manipulation of modifying some dilemmas to portray characters as being deaf did not uncover any differences in the levels of judgment for either sample, as Kohlberg would have predicted.

The finding that moral maturity of almost one-third of deaf participants (but none of the hearing participants) exceeded supposedly necessary cognitive stages was surprising. Kohlberg's theory does not allow the level of moral reasoning to exceed the necessary cognitive stage. Closer inspection of Table 2 shows that 7 of the 8 violations came from children who were residential students at schools for the deaf. It might be expected that residential students would have a

richer social life and have more experience in making moral judgments than children who live at home, yet this does not explain how, if Kohlberg's assumptions are correct, their reasoning exceeded the necessary cognitive stages. And because the cognitive levels shown here are consistent with the developmental literature, it can be assumed that the assessed cognitive stages are accurate.

It is almost as if deaf people's moral maturity were related more to experience than to cognitive development. Perhaps cognitive reasoning is logical reasoning while moral reasoning is pragmatic reasoning, reflecting experience. It is generally believed that Kohlberg's theory is a refinement and extension of Piaget's work, yet Kohlberg seems to have made some assumptions which Piaget did not. Where Kohlberg argued that there are three separate domains in development and the cognitive domain drives the social domain which drives the moral domain, Piaget (Piaget & Inhelder, 1969) was inclined to view the domains as being different aspects of general cognitive development. Piaget argued that in cognitive development there is functional unity which ties together logico-mathematical, playful, social, emotional, and moral components into a unified whole. It may be inferred from Piaget's position that while there should be reasonably parallel development of the various aspects which comprise cognitive development, one aspect does not drive another and there is no theoretical reason why one area might not develop at a somewhat faster rate than another, depending upon such factors as individual experience. Therefore, Piaget would not find the present results surprising.

In recent years, there has been growing concern (e.g., Rest, 1979) over developing some method of assessing moral development that could be administered to groups and which would make scoring more objective. The conventional procedure entails individual administration of Kohlberg's moral dilemmas. Examiners read the dilemmas and ask the questions aloud while writing down the answers as completely as possible. This procedure takes considerable time and scoring is necessarily somewhat subjective. Rest (1979) has created a Defining Issues Test which presents moral dilemmas in written form and asks participants to rate 12 statements about each dilemma on a four-point scale of importance. The test can be administered to groups and scoring is objective. However, the test requires considerable language proficiency. Perhaps for this reason Rest reported having used it successfully only with ninth graders (ages 13-14) and older (Rest, personal communication, February, 1982). The modification of Kohlberg's procedure used in the present research may serve to answer a need. It does sort people on Kohlberg's scales, it can be administered to groups, scoring is objective, it can be used with children, and language competence is minimized.

The finding that there were no differences in role-taking scores of those who had and had not reached the stage of consolidated concrete operations in either experiment was inconsistent with Kohlberg's theory but, in retrospect, is not surprising. It seems likely that the social instrument may not have been adequate to tap social perspective-taking development. Recall that no independent instrument has been created to assess Kohlberg's stages of social development. While the present measure was a typical affective role-taking task, it might not have

sampled those social skills which Kohlberg proposed as being an outcome of cognitive development and necessary for moral development. Participants showed ceiling effects which obscured attempts to differentiate social development. Participants of all ages and cognitive levels were quite adept at ignoring situations and focusing on facial expressions to make judgments about emotions. Had the number of social pictures been increased or had different pictures been used, differences in social scores might have appeared. One picture, the boy being bitten by the dog, is apparently ambiguous: 27 of the 60 total errors on social scores were on that one picture. Had a picture with a clearer emotion been used, social scores would have been even higher.

Instead of an affective task, a cognitive-social task which requires ability to infer intentions or motives might serve as a more useful indicator of social development if language requirements could be minimized. However, available cognitive-social tasks, such as Flavell's nickle-dime problem (Flavell, Botkin, Fry, Wright, & Jarvis, 1968), rely quite heavily on language for instructions and interpreting results. Reducing their language requirements would likely make the tasks incomprehensible to deaf people and thus be an unfair assessment of their social development. Devising a new social instrument is perhaps the most likely solution to this problem. Perhaps a replication of the present study with deaf persons which used a different social task might be useful in testing further Kohlberg's view of the separate domains.

In addition to testing Kohlberg's theory, the present research was designed to add to our understanding of the development of moral reasoning in deaf individuals. Previous studies have painted a picture of poorly developed moral judgments in both deaf children and adults. However, those studies required participants to express their reasoning in written or oral English, even though English was not their native tongue. Native speakers of English, when learning a foreign language, typically find it far easier to express concrete ideas than abstract ones (M. Kirby, personal communication, October, 1983). This does not mean that the English speaker is necessarily constrained from understanding and expressing nuances and subtleties, only that abstractions are initially difficult to handle in another language. The present manipulation of minimizing the effects of English language problems for deaf participants may have freed them to show more accurately their attained levels of moral reasoning, unconstrained by the necessity of formulating answers in a foreign tongue.

There is, of course, no guarantee that ability to reason at high moral levels means individuals will behave morally. Kohlberg (1969; 1976) argued that an individual would have a difficult time following high moral standards without understanding them or believing in them. Thus, for Kohlberg, principled moral behavior requires principled moral reasoning. Yet the reverse is not true: Principled moral reasoning does not require principled moral behavior any more than cognitive development requires moral reasoning development. It may be necessary, but it is not sufficient. And, of course, this study might have shown different results had behavioral rather than cognitive moral measures

been taken.

In summary, the experiments employed modified procedures to test Kohlberg's theory with atypical and typical populations. In some respects, the theory held up reasonably well. Cognitive and moral assessments confirmed Kohlberg's view that moral development tracks cognitive development, although there was some indication that moral development may be influenced by experience. Moral reasoning did not differ as a function of situations depicted by dilemmas. The role of social development could not be determined because the social instrument was inadequate. However, the data from the present experiments suggest that Kohlberg's theory seems valid for deaf individuals. The data also indicate that the modified procedures are a useful way of testing cognitive and moral development.

Further research is called for. Specifically, another experiment with deaf individuals should be conducted using the cognitive and moral tasks to see if the stage violations occurred by chance. Second, a different social measure should be found or created to test Kohlberg's view of a separate social domain.

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