A cross-sectional and social class comparison of the development of distributive justice between hearing and prelingually hearing deficient, communicatively impaired children

Pietrina Victoria Termini

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A CROSS-SECTIONAL AND SOCIAL CLASS COMPARISON OF THE
DEVELOPMENT OF DISTRIBUTIVE JUSTICE BETWEEN
HEARING AND PRELINGUALLY HEARING
DEFICIENT, COMMUNICATIVELY IMPAIRED CHILDREN

A Thesis
Presented to the
Faculty of
California State College
San Bernardino

In Partial Fulfillment of
the Requirements for the Degree
Master of Science
in
Psychology

Pietrina Victoria Termini
May 1983
A CROSS-SECTIONAL AND SOCIAL CLASS COMPARISON OF THE DEVELOPMENT OF DISTRIBUTIVE JUSTICE BETWEEN HEARING AND PRELINGUALLY HEARING DEFICIENT, COMMUNICATIVELY IMPAIRED CHILDREN

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Approved by:

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May 23, 1983
ABSTRACT

This study was undertaken to assess distributive justice development differences, as measured by Enright, Franklin, and Manheim's (1980) Distributive Justice Scale (DJS), between intellectually normal, hearing and prelingually non-hearing, communicatively impaired children from divergent social strata. Initially, 7, 9, and 11-year olds were to be compared but an adequate 7-year old, non-hearing subject pool was unavailable. The use of an Alternative scoring method based on traditional psychometric principles was explored and found to be comparable to Enright's et al. Piagetian based system. Because social status, measured by Hollingshead's Four-factor Index of Social Status, was found to positively correlate with DJS scores it was used as a covariate in these analyses. In contrast to Enright, et al. no significant differences were found between the 53 hearing 7, 9, and 11-year old subjects. A comparison of 35 non-hearing 9 and 11-year olds with 35 hearing 9 and 11-year olds produced two significant main effects: handicap and age. Hearing children received significantly higher DJS scores than did non-hearing children at both age levels, and 11-year olds received higher scores than 9-year olds regardless of handicap status. Explanations and implications for future research are outlined.
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I wish to acknowledge the monetary help given to me to defray extraordinary expenses incurred by the use of a special population. This help was arranged by Dr. Theron Pace, Director of Services to Students with Disabilities, and by Rebecca Warren, President of PSI CHI, the Honor Society of Psychology. Thank you for your support in a time when
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Last but not least, my sincerest and deepest appreciation goes to Dr. David J. Lutz whom I consider a friend as well as a mentor. Thank you Dave! You have been my compass and my ballast throughout the last two years. You "kept the faith" when mine grew weak, expressed more confidence in my abilities than I felt was deserved, and many a time you salvaged my sanity by holding a tight rein on my impatient nature.

Thank You All!

Patti

3-23-83
It is only proper that this work be dedicated to the loving memory of my father, Joseph John and to my mother, Antoinette Giordano for it is they who instilled in all their children the importance of education, and a striving for excellence in all of our endeavors.
INTRODUCTION

The study of the development of distributive reasoning is but ten years old and has descended directly from a blending of the epistemological work of Piaget and Kohlberg's cognitive approach to moral development (Damon, 1975). Piaget proposed a stage model of cognitive development combining elements of both genetic inheritance and environmental stimulation. His model describes the development of a child's reasoning about mathematical and physical concepts from birth to fourteen years of age. These concepts focus upon the acquisition and coordination of logical operations defined as reversible mental actions which allow the child to reason schematically about both the constant and transformational properties of reality. Piaget suggested, but never tested, the hypothesis that the development of moral reasoning parallels the development of logical operations (Damon, 1975).

During the late 1960's and early 1970's researchers Selman, Kohlberg, and Gilligan focused upon the ontogenetic relation of perspective-taking to moral judgement and reasoning (Selman & Damon, 1975). Kohlberg and Gilligan (1971) presented a model in which the attainment of certain Piagetian logical stages is necessary, but not sufficient, for the attainment of certain stages in Kohlberg's moral judgement system.
This was further enhanced by Damon's synthesis of his own work in distributive justice along with Selman's work in social perspective-taking.

"positive justice is that aspect of justice that is concerned with problems generated in prosocial interaction: for example, problems of how to distribute property fairly, of ownership and personal rights, of responsibility for another's welfare, and of what constitutes a good response to another's actions. Associated with activities like sharing, taking turns, helping, etc., concerns of positive justice have been observed to be central to the social and moral behavior of children as young as 2 or 3 years. Such concerns seem to arise out of day-to-day interpersonal contacts of a young child and evolve in the course of his ongoing establishment of friendship and affiliated types of social relations (Damon, 1975, p. 302).

They combined their efforts and in 1975 they presented a model which attempted a description of the logic and relationship between the two developmental systems (Selman & Damon, 1975). Damon proposed a model of positive justice in which the construct evolved through a series of six distinct phases, or substages, which were age related between 4 and 10 years of age. In an investigation of the relationship between his "justice stages" and Piaget's logical, mathematical, and physical tasks a strong association between the level of children's reasoning about positive justice and the level of their reasoning about logicomathematical and logicophysical conceptions was found (Damon, 1975).

Besides the relationship between positive justice and the Piagetian stages it also appears that there may be a
parallel progression in affect related to Damon's stages of positive justice and Piaget's logical operations model. Eisenberg-Berg (1979) found that when elementary and high school students were presented with prosocial dilemmas and asked to solve their inherent problems the younger children's reasoning reflected stereotyped images and approval-oriented responses. Empathic considerations and judgements reflecting internalized values increased as a function of age.

In an effort to advance the field by developing more comparable, standardized procedures, Enright, Franklin and Manheim (1980) developed a paired-comparisons measure of distributive justice development (DJS) based upon Damon's postulated six stages of positive justice. Each stage was pictorially depicted as an end to a given story. As an example, a child with tattered clothing was used to depict stage 2-A: psychological reciprocity, which is explained below.

The six stages are as follows:

0-A: The child believes that whoever wants the most money or goods should have it.

0-B: The child bases distributive decisions on external characteristics. The oldest one, for example, should get more than the others.

1-A: The child believes everyone should receive the same amount regardless of other characteristics.

1-B: The child bases distributive decisions on behavioral reciprocity. In other
words, the child believes that those who work harder or do more than the others should get more.

2-A: The child bases distributive decisions on psychological reciprocity. That is, the child believes that those who are most in need should receive more than the others.

2-B: Integration of 1-A, and 2-A; behavioral and psychological reciprocity are both part of the decision.

Enright, Franklin and Manheim (1980) validated their scale in three studies done on kindergarten through fifth grade school children. In two studies using American school children it was found that the DJS, age, and logical reasoning measures (Piagetian scales) were highly related. They all progressed along the same continuum. The DJS correlated with age but did not exhibit a significant relationship with verbal ability, which is often used as a measure of intellectual capacity. A third study done in Africa replicated the American results providing support that the DJS is not culturally specific but tests for a universal construct related to human development.

Piaget had strongly presented the case that both genetic and environmental influences affect children's learning patterns throughout the cognitive operational stages. It could also be expected that environment affects distributive justice development. Enright, Enright, Manheim, and Harris (1980) investigated the differences seen on the DJS due to social class affiliation. It was assumed that middle class
children are better socialized into the acceptable mores of American society than are lower class children. Along with the DJS, sociometric peer ratings were administered to assess the social interaction between the two classes of children within a socially integrated school system.

Their results indicate that distributive justice is indeed affected by the socialization process. Regardless of grade, the lower class children lagged behind the middle class children in distributive justice reasoning even when the effects of vocabulary were controlled.

If Piaget (1930) is correct in speculating that reciprocal peer relations are important or even necessary for the development of cognitive reciprocity, then social class integration is necessary for the lower class children to ensure their proper cognitive and moral development... however...it is evident that the lower class children in both grades (tested) did not experience reciprocal relationships with the middle class (measured by sociometric peer ratings). These nonreciprocal relationships may be one reason why the lower class in both grades did not show cognitive reciprocity and lagged behind in distributive justice development (Enright, Enright, Manheim, & Harris, 1980, p. 561).

Additionally, Benninga (1980) found a positive relationship between self-concept and moral judgement in children. This suggests that children with good self-images exhibit a higher level of sophistication in moral reasoning.

Contingent upon all of this evidence it could be hypothesized that if we were to find a group of children who were uninvolved in normal reciprocal social relationships (poorly socialized) and who exhibit qualities of self-degradation (poor
self-concept) we could predict that their distributive justice development would lag behind their more socialized, more confident peers. The handicapped child in American society would meet both of these requirements and there exists detailed research providing abundant evidence for both of these qualities.

Richardson (1969) emphasized that handicapped children require more attention and care from parents than do non-handicapped children, therefore, parental energy that could otherwise go into intellectual development and socialization activities is expended in the performance of menial, custodial chores. A perpetuating cycle of reduced stimulation is often evident between handicapped children and their parents because these children are often unresponsive to stimulation. This lack of reinforcement from the child for the parent's behavior reduces the parental interaction with the child and limits the amount and kinds of behavior to which the child is exposed narrowing its socialization experience.

Shaffer (1964) and Killilea (1952) studied families of disabled children and their adjustment to the surrounding community. The public embarrassment associated with displaying a handicapped or deformed child affected the amount of contact the child had outside its immediate family (Killilea, 1952). Many families admitted that they withdrew from community involvement after the birth of their afflicted child (Shaffer, 1964).
The lack of emotional and physical stimulation by parents along with limited involvement in their community has been found to have negative effects on these children as they develop. When Shaffer (1964) asked therapists to rate their cerebral palsied clients on a number of social maturity criteria they were designated as socially immature when compared to non-handicapped children of similar ages. They were described as helpless, emotionally dependent upon family, and reluctant to make extra-familial contacts. When observed in group play by these therapists they were labeled egocentric, uncooperative, and lacking in the social reciprocal play skills exhibited by the age-matched non-handicapped children.

As the handicapped children become old enough to attend school and broaden their social encounters they still have a narrower social experience than their non-handicapped counterparts. Face-to-face encounters between physically handicapped and non-handicapped individuals typically result in conversations of short duration which avoid the discussion of feelings and have a stereotypic quality to them (Kleck, Ono, & Hastorf, 1966).

It has been established that initial socializing experiences with family and friends are stilted when a child is disabled. Eventually this unnatural socialization process affects the self-concepts these children develop. A child with a disability has less experience in social relations than a non-handicapped child and this results in the child

The study conducted by Goodman, Richardson, Dornbusch, and Hastorf (1963) demonstrates such self-deprecation in 10 to 13 year old physically disabled children. These children were asked their preference among a set of pictures. They picked pictures of a non-handicapped child significantly more often than the same child portrayed with different physical handicaps.

Do these non-interactional patterns change over time? Richardson, Hastorf, and Dornbusch conducted another study published in 1964 which suggested that they do not. Having studied an integrated camp setting over three weeks time with children, aged 7 through 14, they found that none of these children's values toward disability changed. The handicapped children were no more involved in the social milieu at the end of the three week period than at the beginning; however, the normal children showed greater involvement with the group over the same period.

Research specifically dealing with the socialization of hearing and communicatively impaired children mirrors the findings concerning handicapped children in general. The literature refers to the hearing impaired and deaf as socially
inferior, dependent, egocentric, introverted, apathetic, and lacking in emotional maturity (Altshuler, 1974; Brunschig, 1936; Heider, 1948; Levine, 1956; Myklebust, 1960).

The Vineland Social Maturity Scale is often used to measure children's capacity to care for themselves and to engage in activities which foster independence. The abilities it measures are: self-help, self-direction, locomotion, occupation, communication, and social relations. Bradway (1937) and Burchard and Myklebust (1942) found discrepancies as large as 15 to 20 points between hearing and hearing impaired children when using this measure. They concluded that the handicapped group was 20% inferior to non-handicapped subjects in social competence throughout all age levels tested even when socio-economic status was held constant.

In early studies which controlled for age, sex, intelligence, social status, nationality, and item relevance it was found that hearing impaired children manifested more psycho-neurotic responses than hearing children on the Brown Personality Scale (Springer, 1938; Springer & Roslow, 1938). These impaired children fell into the "very poor adjustment" range in situations classified under general headings of physical symptoms, home situation, and general social adjustment.

Recently, Meadow and Trybus (1979) reviewed thirty years of research concerned with the behavioral and emotional problems of deaf and communicatively impaired children and
found such disorders to be at least three to six times as high among hearing impaired children as among hearing children. Reviewing the same body of literature within a psychosocial perspective Freeman (1979) suggested that the behavioral disorders associated with a hearing impaired childhood include a pattern of behavior tending to be of an "acting out" or "conduct disorder" type.

Freeman believes that most of this "acting out" is a direct result of the hearing impaired children's inability to comprehend the subtleties of their social environment. Schiff (1973) had previously found this lack of subtlety comprehension when he compared social perception between hearing impaired and hearing adolescents derived through non-verbal cues. He concluded that impaired adolescent subjects were poor at extracting subtle information and made significantly more errors in social perception than hearing adolescent subjects.

Besides a deficit in social perception the hearing impaired child incurs other difficulties in his socialization process. Meadow (1976) states that impaired children have a particular difficulty in developing the idea of causality in both the physical world and the social world. This may partially explain why Sisco & Anderson (1978) found their WISC-R performances on the picture arrangement subtest to be significantly below their hearing peers as it has been demonstrated that the picture arrangement subtest is a measure of
social interaction as well as a measure of the capacity to anticipate and plan within a social context (Sattler, 1982).

Both Damon (1975) and Enright, Enright and Manheim (1980) provided evidence suggesting that the distributive justice stages parallel Piaget's cognitive developmental stages. Therefore, the fact that hearing impaired children experience a 2 to 3 year lag behind their hearing peers in the acquisition of Piaget's cognitive tasks (Marchesi Ullastres, 1978), would suggest that their distributive justice reasoning will also be retarded. Since the progression through the distributive justice reasoning levels is positively correlated with higher self-esteem, social awareness, and emotional maturity, as well as cognitive development, it can be hypothesized that hearing and communicatively impaired children will lag behind their hearing peers on a measure of this construct.

Statement of the Problem

The proposed experiment was a cross-sectional study concerned with the comparison of distributive justice development between handicapped (prelingually hearing and communicatively impaired) and non-handicapped (hearing) children raised within different social strata. Based upon the research cited earlier there were several predicted hypotheses. The three main effects hypothesized were:

a. that non-handicapped children would score at a higher stage on the DJS than handicapped children,

b. higher social strata children would score
at a higher stage than lower social strata children,

c. and, that older children would score higher than younger children.

d. no interactions were expected between age, social strata, and handicap status.
METHOD

Subjects

The subject samples were drawn from two populations: non-hearing impaired and hearing impaired children in the school districts of San Bernardino, Riverside, Los Angeles, and Orange Counties. The hearing children's sample was composed of: twenty 7-year olds, eighteen 9-year olds, and seventeen 11-year olds drawn from both public and private schools. The hearing deficient, communicatively impaired children's sample was composed of: seven 7-year olds, fifteen 9-year olds, and twenty-one 11-year olds. This sample was provided through state operated public schools whose children are segregated and designated as hearing impaired, communicatively handicapped and therefore unable to function in a normal classroom setting. Each child was designated as being within normal intelligence standards by the teacher (see Appendix A).

Instrument

The Distributive Justice Scale (DJS: Enright, Franklin & Manheim, 1980) is a standardized and objectively scored paired-comparisons test. The DJS is based upon Damon's six stages of distributive justice. A story-dilemma is presented and 18 pairs of pictures are shown with the question, "which picture ends this story the best?" A statement along with a
given picture represents one of Damon's distinct stages. The representations are balanced for number of words, and drawings are controlled for sex role biases and racial connotation. As an example of a dilemma, a teacher lets four children in the same classroom make paintings to sell. The child being tested must decide how to split up the nickels earned by the sale among the children who possess the following characteristics: Sue wanted the nickels more than the others (Stage 0-A), Jim was the biggest (Stage 0-B), Mary made the most pictures (Stage 1-B), and Billy was poor (Stage 2-A). Each of the 18 sets of pictures had Jim in the upper left, Billy in the upper right, Mary in the lower left and Sue in the lower right. Each stage picture is distinguished by the number of nickels placed next to the child. For instance, for Level 0-A picture, Sue has five nickels, and the rest have one. For 1-A, all have 2 nickels. Written statements accompany each picture. For example, "all children get the same number of nickels so there won't be any fights about who get more" accompanies the portrayal of the 1-A level of the scale.

The order of picture pairs presented is randomized and within each pair the presentation of the stage representation is also randomized to control for order effects. Within the 18 pairings per dilemma 3 pairs are repeated to check for consistency. The repeated pairs are presented in reverse order of their original pairings to control for primacy and recency effects. If the child did not pass three of the six
repeats, with at least one being in each dilemma, his or her data were omitted from further analyses.

The Enright, Franklin, and Manheim (1980) procedure presented these consistency pairings at one time after 15 other randomized pairings were presented. To control for fatigue this study distributed the administration of these repeated pairings throughout the 18 pair presentations in such a way that the original presentation and its reversed repetition are consistently 5 questions apart. The data sheet was also altered to better facilitate blinding the experimenter and the subject about which stages were being presented and compared.

The DJS is scored by selecting the child's preferred stage via the picture comparisons for each dilemma. The stage assigned to a given dilemma is determined first by ascertaining if any stage was chosen 5 times; if so, that stage is assigned. If this has not occurred then stage assignment is made by determining which stage was chosen over stage 2.5, is numerically closest to 2.5, and has been chosen over all stages beneath it within Damon's hierarchy. The final score is obtained by converting the stages into numerical values (e.g. 0-A = 0, 0-B = .5, etc.) and taking a mean of the two dilemmas presented to each child.

There is adequate construct validity for the DJS. In three studies to date, it has shown strong developmental trends, a significant relationship with Piagetian reciprocity
tasks, a minimal relationship with verbal ability, and a replication in an African culture. The internal consistency reliability is generally about .60 to .70 (Enright, Enright, Manheim, & Harris, 1980). Enright's scoring system is based upon the Piagetian model and therefore heavy emphasis is given to the reliability of each individual item within a given testing encounter. Traditional psychometric scoring systems address reliability issues from a more conservative stance. Underlying this traditional approach is the belief that error of measurement is possible within a given score as a result of chance factors (Anastasi, 1976).

To distribute these effects of single score measurement error an Alternative scoring method was developed based upon the averaging of scores to distribute chance error across all scored comparisons. Each level of Damon's hierarchy was assigned a weight (the lower levels carrying less weight). Then each stage-weight assignment was multiplied by the number of times this given stage was chosen. The sum total of all multiplied stage weights was then divided by 15 (the total number of dilemmas minus the consistency checks) and this score was assigned to the given dilemma.

In order to insure that the hearing and deaf children were receiving equivalent instruments the story dilemmas and their accompanying statements were translated into, and decoded from, American Sign Language. Ms. Julie Fisher, a student of American Sign Language (AMSLAM) at Riverside City
College coded and videotaped the instrument into AMSLAM. Ms. Myra Dawn Ellis and her instructor Mr. G. Wayne Miller of Mount San Antonio College, deaf programs division, blindly decoded the videotape. A comparison of the original and the decoded version by the two previous individuals and this author determined that the two modes of transmission were identical in intent.

Procedure

In a room provided by their particular school each child was presented the two story dilemmas during their school day. The hearing children were read the stories and hearing impaired children received them signed. They were then asked to pick the best ending of the story by designating a picture and its accompanying statement. The experimenter presented 18 possible endings after each dilemma and recorded the child's choices. The presentation of story dilemma (school or camp) were counterbalanced by child. Total administration time was approximately twenty minutes per child (Note 2, see Appendix B).

Feedback to the Child. At the conclusion of the testing session the child's reactions were queried. It was made clear that the child's performance was acceptable and an effort was made to insure that each child had perceived the experience as a successful one.

Parental Feedback. A parental feedback letter was sent home through each subject's school. This letter contained the
development and purpose of the study, its findings, and a brief discussion of their meaning and implications (see Appendix A).
RESULTS

The first step in scoring the DJS was the establishment of consistency within a given protocol. If consistency was met the data were usable. When comparing the non-hearing impaired with the hearing impaired subjects a large discrepancy in consistency was found. Whereas only 4% of the non-handicapped subjects' data did not meet Enright's criteria (all from the 7-year old group) 19% were not consistent from the handicapped group (43% of the 7-year olds, 20% of the 9-year olds, and 10% of the 11-year olds). If 9 and 11-year olds from each sample were compared 100% of the data from the hearing children were usable whereas only 86% of the hearing impaired data met the consistency criteria.

After inconsistent data were eliminated further analyses were performed upon samples composed of 53 non-handicapped subjects and 35 handicapped subjects. Subsequent analyses utilized the measures from both scoring systems as dependent variables. As socioeconomic status (SES) has been found to affect scores on the DJS (Enright, Enright, Manheim & Harris, 1980) SES, as measured by the Hollingshead Four-factor Index of Social Status (Note 1, see Appendix B), was utilized as an independent variable in a 2 (age: 9, 11) X 2 (handicapped status: hearing, hearing impaired) X 2 (socioeconomic status: high, low) analyses of variance performed on the DJS scores.
Due to an insufficient number of hearing impaired 7-year old subjects, 7-year old children were excluded from this and all other analyses which compared handicapped status groups. These analyses yielded some of the expected main effects for SES as shown in the earlier work of Enright, Enright, Manheim, and Harris (1980). Using Enright's scoring system the camp variable showed a main effect for SES $F(1,58) = 4.30, p < .05$. This indicated that higher SES subjects had higher scores on the camp dilemma ($\bar{X} = 1.47$) than did lower SES subjects ($\bar{X} = 1.01$). A similar effect was found for the school variable using the alternative scoring procedure, $F(1,58) = 4.06, p < .05$. No other effects due to SES were found.

Significant main effects for age were found for the school and combination variables under both scoring systems and in each case older children had higher DJS scores than younger ones. Main effects for handicap status were found and in each case non-handicapped children had higher DJS scores. No interactions were found in any of the analyses. Since these analyses yielded main effects for SES, and because non-handicapped subjects showed a higher SES ($\bar{X} = 42.72$) than did the handicapped subjects ($\bar{X} = 38.11$), the analyses were repeated using SES as a covariate rather than an independent variable.

To evaluate if the data from our non-handicapped subjects were consistent with Enright's work a 2 (sex) $\times$ 3 (age) univariate analyses of covariance, SES adjusted, comparing the
7, 9, and 11-year old subjects on 3 dependent variables (camp, school, and combined scores) using Enright's scoring system was performed. These analyses failed to show the hypothesized significant differences due to age.

The same analyses using the Alternative scoring method produced one significant effect. Utilizing the school dilemma as a dependent variable a main effect for age was found, \( F(2,46) = 3.73, p < .04 \). A Tukey B post hoc comparison indicated that the 11-year olds (\( \bar{X} = 1.65 \)) were significantly higher on the DJS scores than the 9-year olds (\( \bar{X} = 1.55 \)), and the 7-year olds (\( \bar{X} = 1.56 \))(\( p < .01 \)). There were no significant differences between 7 and 9-year olds. Also no significant sex of subject effects were revealed.

The central issue of this thesis dealt with the comparisons of DJS scores between the handicapped and non-handicapped subjects. The hypothesis that non-handicapped children would perform significantly better on the instrument was verified. A 2 (age: 9, 11) X 2 (handicapped status) X 2 (sex) univariate analyses of covariance on three dependent variables (camp, school, and combination scores) for both Enright's scoring system and the Alternative scoring system produced a number of main effects (see Table 1).

Using Enright's scoring system on the camp dependent variable, a handicap main effect was found, \( F(1,57) = 6.52, p < .02 \). This indicated that handicapped children (\( \bar{X} = .99 \)) received lower DJS scores than non-handicapped children.
<table>
<thead>
<tr>
<th>Age</th>
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<th>Non-Hearing Impaired</th>
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Using the school dependent variable both an age main effect, $F(1,57) = 8.25, p < .01$, and a handicap status main effect, $F(1,57) = 14.15, p < .001$, were found. This indicated that 9-year olds ($\bar{X} = 1.02$) scored lower than 11-year olds ($\bar{X} = 1.33$), and that handicapped children ($\bar{X} = .88$) scored lower than non-handicapped children ($\bar{X} = 1.46$) on the DJS. The combination score variable also produced significant main effects on the age variable, $F(1,57) = 6.70, p < .02$, and the handicap status variable, $F(1,57) = 1.18, p < .001$. The 9-year olds ($\bar{X} = 1.09$) scored more poorly than the 11-year olds ($\bar{X} = 1.32$) as did handicapped children ($\bar{X} = .93$) compared to non-handicapped children ($\bar{X} = 1.47$).

Using the Alternative scoring system the camp dependent variable produced a main effect for age, $F(1,57) = 3.73, p < .06$, and one for handicap status, $F(1,57) = 53.01, p < .001$. On DJS scores the 9-year olds ($\bar{X} = 1.45$) did more poorly than the 11-year olds ($\bar{X} = 1.48$), and the handicapped children ($\bar{X} = 1.28$) scored significantly lower than non-handicapped children ($\bar{X} = 1.63$). This is compared to the Enright scoring system which produced only a handicap effect using the same data. The school variable resulted in a main effect on the handicap dimension, $F(1,57) = 50.79, p < .001$; the handicapped ($\bar{X} = 1.30$) scored significantly lower on the DJS measure than the non-handicapped ($\bar{X} = 1.59$). The Enright scoring system produced both a handicap and an age effect.
using the same data. The combination score produced two main effects: age, $F(1, 57) = 4.25, p < .05$, and handicap status, $F(1, 57) = 72.69, p < .001$. Again the 9-year olds ($\bar{X} = 1.44$) received lower scores on the DJS than 11-year olds ($\bar{X} = 1.47$), and handicapped children ($\bar{X} = 1.29$) produced significantly poorer scores than non-handicapped children ($\bar{X} = 1.61$). The combination variable produced the same main effects using the two scoring systems, Enright's and Alternative method.
DISCUSSION

The epistemological study of a child's social world, and its maturational changes is a relatively new endeavor within developmental psychology. The development of a child's social knowledge is...

complex, dynamic and subjective.
...In fact, learning the characteristics of persons and institutions contributes only marginally to the process of understanding the social world. More central and more difficult is understanding the nature of the relations between persons (or between persons and their institutions) and the transactions that serve to regulate, maintain, and transform these relations. A child experiences and makes sense out of society only by gaining knowledge of such social relations as authority, attachment, and friendship, and of such social transactions as punishment, sharing, kindness and hostility (Damon, 1977, p. 2)

This study is concerned in particular with the maturational trends involved in the transaction of sharing. Damon studied the phenomenon of childhood sharing through observations and interviews with children from 3 to 14 years of age. Soon after the publication of his book, The Social World of the Child, Enright, Franklin and Manheim (1980) systematized, developed, and validated an instrument, the Distributive Justice Scale (DJS), based upon the six stage theory that Damon had postulated. They found that children shared or distributed their property differently at ages 5, 7, 9, and 11.
The differences were determinable based upon two functions; maturational changes in their cognitive processing (Enright, Franklin, & Manheim, 1980), and the amount of enrichment available in their environment determined by the social status of the child's family (Enright, Enright, Manheim, & Harris, 1980).

A natural extension from this work is to examine what other variables besides social strata might affect a child's progression through Damon's six stages. The present study examined one of these variables in comparing handicapped children to their non-handicapped counterparts. As previous research has indicated that handicapped individuals experience a different socialization process than do non-handicapped (Richardson, 1969) this would appear to be a natural extension.

In analyzing the data two scoring methods were used. Along with scoring the obtained data by using Enright's Piagetian based system it was decided to subject the data to an Alternative scoring method which was traditionally psychometric in form. A comparison of results obtained by the two systems determined that there were negligible differences between the two methods. Given these few differences, Enright's procedure may be advisable as it is much less time consuming.

Our analyses of the effects of social status upon the DJS scores agreed somewhat with Enright, Enright, Manheim, and
Harris (1980). Both populations exhibited the expected direction although significant differences were only found in one of the two dilemmas. Children who come from higher status homes score higher on the DJS independent of their handicap status. Children from higher socioeconomic status homes are probably exposed to more esthetic stimulation fostering moral development which relates to higher DJS scores.

Initially this study was designed to compare handicapped and non-handicapped children across three age groups: seven, nine, and eleven year old children. Unfortunately, we were unable to obtain an adequate non-hearing seven year old sample. According to Dr. Robert Lennon at California School for the Deaf Riverside, since measles immunization has become mandatory for school aged children congenital deafness is being steadily eradicated. Therefore, analyses were conducted in two phases. In the first phase, non-handicapped were compared across the three age groups. Our results failed to replicate Enright, Franklin, and Manheim (1980). Using the Enright (1980) scoring system there were no significant differences due to age between our 7, 9, and 11-year old non-handicapped subjects. The Alternative scoring method did, however show a significant difference in the performance of the 11-year old sample when compared to the 7 and 9-year old sample on one of the two dilemmas.

A possible explanation for this occurrence comes from Piagetian cognitive theory. These children all belong to
"middle childhood," a stage called "concrete operations" beginning about age 7 and culminating at about age 11. At the upper age limit of this stage (10 or 11 years of age) children will generally exhibit more flexible, reversible, and quantitatively-oriented thought processes (Flavell, 1977).

Flavell speaks about children of "middle childhood" in *Cognitive Development*:

More generally, the older child seems to be more sensitive to the basic distinction between what seems to be and what really is, i.e. between the phenomenal or apparent and the real or true. Of course, this is not to suggest that young children never make inferences about unperceived states of affairs or that older children never base conclusions on superficial appearances. Stark and unqualified age contrasts of this sort are virtually never justified in developmental psychology. It is to suggest, however, that there does exist a definite age trend in this respect across the broad segment of childhood (Flavell, 1977, p. 80).

As Flavell suggests there is an age trend within this period and our results do indeed exhibit this age trend with 7-year olds producing the lowest scores on the DJS, 9-year olds scoring a bit higher, and with 11-year olds scoring the highest. However, in most cases the differences were not large enough to make them statistically significant. It is important to note that the one statistically significant finding due to age was exhibited by the 11-year old sample and that this occurrence is congruent with what Piagetian theory would predict based upon the progression in thought processes throughout "middle childhood" outlined by Flavell (1977).
Being more aware of the fact now that the youngest group (7-year olds) has cognitively the greatest amount of variability hence the least amount of consistency perhaps a better choice of ages to compare would have been 9, 11, and 14-year olds. These age groups would span the upper levels of "middle childhood" ("concrete operations") and include children exhibiting qualities of Piaget's last cognitive development stage ("formal operations") manifested in adolescence.

The second phase of analyses compared non-handicapped and handicapped children across two ages: nine and eleven. The hypothesized results predicting higher scores (advanced development) on the DJS by the hearing children was found to be an accurate one for both the 9-year old and 11-year old subjects. Distributive justice is a specific form of moral development which Damon believes is a "good place to look for organization in social knowledge since it represents a fairly systematic collection of rules, norms, and shared expectations" (Damon, 1977, p. X). It seems evident that social knowledge, at least about the "rules" tested within the DJS, is different for hearing and non-hearing children at comparable ages.

Kohlberg presents one possible explanation. He describes moral development in children as being a result of exposure to conflicting points of view. "Instead of participation in various groups causing conflicting developmental trends
in morality, it appears that participation in various groups converges in stimulating the development of basic moral values (Kohlberg, 1969). Basically, the availability of social stimulation is quite different within the two groups.

The hearing children are exposed to divergent groups fostering moral development. The non-hearing children are exposed to very few divergent groups or conflicting ideas. Rarely do they play or attend schools with children who are not also deaf. Research emphasizes that their families socialize in community settings much less frequently than do families with non-handicapped children (Shaffer, 1964; Killilea, 1952). In most cases these children are sheltered, protected, and socially stifled (Richardson, 1969). Consequently, if Kohlberg is correct in his assessment, their social isolation contributes to their lack in understanding of the prosocial behavioral rules upon which the DJS is based.

Combined with previous research these results suggest some interesting areas of further research concerning the acquisition of distributive justice in this population.

First, when the DJS was originally validated it was done so by testing children with both Piagetian developmental tasks and the newly formulated DJS. A positive correlation was demonstrated to exist between the Piagetian stages and the levels of distributive justice (Enright, Franklin, & Manheim, 1980). It might be enlightening to see if the same phenomenon holds for non-hearing children. An example of a
question which might be approached is "Do non-hearing children who have acquired conservation all test at the same level of distributive justice?" The use of Piagetian tasks could also provide a common denominator between hearing and non-hearing subjects for comparison on the DJS rather than age.

Secondly, a longitudinal study of a group of non-hearing children would provide data about their acquisition of this construct. Longitudinal research would provide an opportunity to observe these children and their environments over time. Hopefully, such a study would provide hypotheses about specific factors which foster or stagnate cognitive and moral development for these youngsters.

Third, both parents and teachers of these non-hearing children suggested that these children can be segregated into two distinct groups. One group comes from homes where sign language is used and the other group was not taught to sign or communicate systematically until they came to school. There are great differences in development between these two groups. The signing homes produce children who understand and communicate more effectively at an earlier age consequently they socialize more comfortably than do children from non-signing homes. I would hypothesize, therefore, that if a research project compared these two groups to hearing children on the DJS the results would find that hearing children would still maintain the highest scores but it would
also find that non-hearing children from signing families would perform better than those non-hearing children who come from non-signing families.

Fourth, we know that distributive justice knowledge is dependent upon the amount of socialization a child receives. Therefore, if different types of handicaps could be rated on an interval scale ascending from little exposure to divergent others to much exposure a comparison of their DJS scores could then be made. The prediction would be that the children with more socially acceptable handicaps (i.e. artificial limbs) would receive higher scores due to more exposure within the non-handicapped world than would those with less acceptable ones (i.e. cerebral palsy, facial disfigurement) (Goodman, et al., 1963).

The previous four suggestions concerning future research are based upon the assumption that our comparison groups are quantitatively different. If we assume that their differences are qualitative in nature another line of research can be proposed. Perhaps our non-hearing population has to be approached as virgin ground and Damon's original interview methodology, "la methode clinique" should be used to explore and build a stage theory of distributive justice for the non-hearing population (Damon, 1977). Then a comparison could be made between the two theoretical systems.

Damon has provided abundant interviews with hearing children which could then be compared to interviews with non-
hearing children using Damon's four areas of focus.

As in all our analyses of children's social knowledge, the discussion focuses on the organizing principles underlying each mode or level of reasoning. In the case of positive justice, organizing principles at each level function in four related ways: (1) to determine the type of justice conflict that the child recognizes and considers; (2) to determine by what means the child resolves the justice conflict; (3) to determine the collection of persons whom the child considers significant in his/her consideration of a "fair" resolution to the justice conflict; and (4) to determine the nature of the justification that the child invokes in support of his/her resolutions to the justice conflict (Damon, 1977, p. 77-78).

It would be an interesting as well as an enlightening endeavor to locate the similarities and the differences within the protocols. For example, we noticed one such difference between our groups during this study. Two of our non-hearing subjects aged 9 made a comment that none of our hearing subjects made. The figure used to depict the poor child shows a child with patches on his/her clothing along with what appears to be dirt spots on its clothing, hands, face and legs. The non-hearing children verbally commented, "Poor children aren't dirty." They seemed more aware of the depicted stereotyping due perhaps to the fact that they have personally experienced stereotyping as it applies to their handicap. It is perhaps differences in protocols exactly like this one which could be explored in depth through "la methode clinique."

The question remains, "Can these socially isolated
children gain in their lives what they need to grow cognitively and socially?" At least two factors are important. First, parents of hearing impaired children could be taught to develop their children's communication skills earlier than school entrance which is usually the case. Second, this study suggests that MAINSTREAMING the hearing impaired child may be likely to increase distributive justice development as the child would then be exposed to more and different opportunities. This program is certainly not new nor inexpensive to implement and, at times, it is opposed on moral grounds as well. However, in addition to the benefits for the hearing impaired child, it may also increase opportunities for the non-handicapped child to be exposed to divergent stimulation enhancing his moral development and distributive justice reasoning.
APPENDIX A

1) Parent Permission Letter
2) Demographic Information Sheet
3) Parent Debriefing Letter
Dear Parent(s):

We are asking your permission to allow your child to participate in an ongoing research study being conducted at California State College, San Bernardino. This project will study and compare the ideas that hearing and deaf children have about the world around them. This study will involve having two stories presented to your child. After this he or she will be asked a series of questions about how the story should end. It will take about twenty minutes of your child's time and, unless otherwise arranged, it will be administered at his or her school.

Your permission, and your child's participation is completely voluntary. You are free to withdraw your permission at anytime prior to administration and you can ask that your child's "story answers" not be used in our comparison after they are obtained. Be assured that your child's comfort and well-being is our first concern. If, for any reason, your child seems overly anxious or uncooperative he or she will be calmed and returned to his classroom. Neither your name nor the name of your child will ever be associated with these research findings. We will be happy to answer any questions about this study you may have. We can be reached through the Psychology Department office at California State College, San Bernardino; 887-7226.

If you wish your child to participate, please fill out the attached sheet and return it to your child's teacher. After the completion of this study a letter will be sent to you outlining our findings.

Thank you for your help.

Sincerely,

David Lutz, Ph.D.
Assistant Professor, Psychology

Pietrina Victoria Termini
MS Counseling Student
CONFIDENTIAL
PERMISSION AND INFORMATION SHEET

The following information will aid us in grouping and comparing your children as well as allowing us to send you the results of our study. All of the following information concerning this study and your child's results will be confidential.

I give permission for my child, __________________, to participate in the "Children's Story Study" conducted through California State College, San Bernardino.

______________________________  ______________________________
Signature  Relationship to child

Child's Information:  School Information:
name:  school's name:
date of birth:  grade level:
home address:  teacher's name:
home phone number:

Parental Information:  PLEASE CHECK ONE
Are this child's parents:
□ married  □ divorced  □ separated

Mother's Information:
How many years of education have you completed?
□ 6th gr.  □ 10th-11th gr.  □ some college  □ grad. school
□ 7th-9th gr.  □ 12th gr.  □ college grad.
If you are currently employed, please give your specific job title:

Father's Information:
How many years of education have you completed?
□ 6th gr.  □ 10th-11th gr.  □ some college  □ grad. school
□ 7th-9th gr.  □ 12th gr.  □ college grad.
If you are currently employed, please give your specific job title:

Thank you.
Dear Parents and Teachers,

We wish to extend our sincere thanks for your cooperation in the "Children's Story Study" conducted through California State College, San Bernardino. You may be interested to know that we had children involved from San Bernardino, Riverside, Los Angeles, and Orange Counties.

There is an area of study within developmental psychology, based upon the work of Piaget, which is concerned with the ways children develop their thinking abilities from birth to adolescence. As they learn more about the world, come into contact with other children, and physically mature their ideas change and develop as well.

In our study we presented two stories about a group of children who made and sold some paintings. The group received some nickels for their work. We were interested in how your children would divide the money among the painters and the reasons behind how they were distributed. Previous research has shown that reasoning about what is a "fair" distribution changes with age and circumstance.

As your permission letter informed you we were involved in comparing hearing and hearing impaired children. In this case we were comparing the differences between what these two groups consider "fair". It has been found that children who have problems seeing or hearing don't learn the social rules of our society as quickly as children without impairments. Therefore, as was expected, we also found that hearing impaired children don't show the same level of understanding about what is "fair" in distributing when compared to hearing children of the same age and intellectual level.

We believe that this is so because their opportunities for being with people besides family members and with children who are not impaired are few. Therefore, they show less sophistication when compared to children whose surroundings and activities have been more varied.

If you have any questions beyond this explanation, please feel free to contact us through the Psychology Department at 887-7226.

Sincerely,

David J. Lutz, Ph.D.
Assistant Professor, Psychology

Pietrina Victoria Termini
M.S. Counseling Student

DJL/PVT:jg
APPENDIX B

1) Administration Instructions

2) Hollingshead Four-factor Index of Social Status
Administering the DJS

The DJS is an individually-administered measure. As with any testing procedure with children it is best to take a few minutes to talk with the child for rapport-building—(If the child should ask why they were chosen to participate they will honestly be told that their parents gave us permission to allow them to participate in our study. If, for any reason, the child seems overly anxious or uncooperative he or she will be calmed and returned to his or her classroom.)

When ready to begin the examiner should say, "I am going to read you a story. Listen carefully to it because I am going to ask you some questions about the story when I finish reading it." Place the picture with the children's names on it directly in front of the subject and begin reading the dilemma slowly to the subject. When, in the dilemma, a child is introduced (e.g., "This is Betty..."), the examiner should point directly to Betty on the picture. Do not presume that the child can read the names. When finished reading the story, remove the picture from in front of the child. The examiner may leave the picture where the child can see it. In this way the examiner can refer back to it if he/she thinks the child has forgotten some of the necessary details of the story. We find that most children do not need such a review.

Next, the experimenter will be working with the six pictures (representing the stages). The first two pictures representing item 2 for the given dilemma should be placed at the same time in front of the child. In placing the pictures in front of the child, you should put on the child's left that picture which represents the first statement on the question sheet—.

When both pictures are placed in front of the child, read the statement corresponding to the picture on the left. Point to the picture in general, do NOT point to specific people on the picture. Then read the statement corresponding to the picture on the right. Again, you can point to the picture in general, but do not point to a specific place on the picture. (A notebook has been assembled for this study to make the 36 presentations more efficient and standardized.)

Please keep in mind the following points to avoid bias when reading the statements:
1) Intonation should be consistent. Do not stress some words or phrases over other words.

2) Placing a hand on one of the pictures causes some children to choose that picture.

3) Read the statement word-for-word. Do not deviate from the written instructions.

4) Establish eye contact with the child at times. Do not just read directly from the sheet at all times.

5) Once the child makes a choice between the two pictures, be careful what you say. Do not say "good", "fine", "OK" with an (enthusiastic intonation) or anything else that may reinforce the child for that particular choice. It is best to say nothing or to say "OK" in a matter-of-fact way---. If you prefer the noncommittal "OK", say it after each of the child's choices to avoid selective bias.

6) Some children after about the fifth item begin to point before you have finished the statements. Do not necessarily interpret this as the child getting bored. We have found that the child is not bored and losing attention. Instead, quick pointing by the child is a sign that he or she is beginning to clearly understand the demands of this task,---.

If the child's pointing persists (for more than 2 items) before you read a statement you should ask the child on the third item what the statement/concept is for the chosen picture and for the unchosen picture. If the child paraphrases the correct idea for at least four pictures (two items) the examiner can dispense with reading the statements as long as the child continues pointing quickly. If the latter stops occurring, presume for the sake of accuracy that the child again needs the statements read and begin reading them again.---

Some children, when observing the examiner's recording on the answer sheet, become inquisitive about how they are doing. It is best to tell the child that he/she is doing fine and that you can discuss it with the child after the procedure is finished (refrain from calling it a test). It is rare that a child, once the assessment is finished, asks how he/she did. If a child asks, it is best to tell him/her in a general way that you were interested in how the child thought about fairness and that the child performed as you expected him/her to perform. (Enright, Note 2, parentheses added).
This new index takes into consideration the fact that social status is a multi-dimensional concept. It is premised upon three basic assumptions: (1) A differentiated, unequal status structure exists in our society. (2) The primary factors indicative of status are the occupation an individual engages in and the years of schooling he or she has completed; other salient factors are sex and marital status. (3) These factors may be combined so that a researcher can quickly, reliably, and meaningfully estimate the status positions individuals and members of nuclear families occupy in our society.

The four factors used in the new index are: education, occupation, sex and marital status. Education --- the years of schooling are believed to be reflected in acquired knowledge and cultural tastes. Moreover, education is a prerequisite into occupations that carry higher prestige in the social system. Occupation --- is presumed to be indicative of the skill and power individuals possess as they perform the maintenance functions in society. Sex --- plays an important part in the roles individuals play in the performance of maintenance functions in the society. Marital Status --- is important in the calculation of social status because of differences in the ways adult family members participate in the economic system --- as the years pass, the proportion of intact nuclear families with both spouses gainfully employed increases. Other families may be headed by a single, widowed, separated, or divorced male or female who is now or in the past been gainfully employed. This index takes into consideration the several categories. --- It is assumed that the education and occupation of each spouse constitutes an equal proportion of the nuclear family's status. In the absence of theoretical and empirical evidence, a rule of thumb is followed, that is, education and occupation scores for the husband and wife are summed and divided by two. Research has indicated that the prestige of occupations is similar for males and females and that education is essentially the same for males and females in the same occupation. In accordance with this finding, the combined score for the two spouses is assigned as the status score of the family. --- The years of school a respondent has completed are scored on a seven-point scale, premised upon the assumption that men and women who possess different levels of education have different tastes and tend to exhibit different behavior patterns.
The occupation a person ordinarily pursues during gainful employment is graded on a nine-step scale. Wherever possible, the scale has been keyed to the occupational titles used by the United States Census in 1970.

The Estimation of Status

The status score of an individual or a nuclear family unit is estimated by combining information on sex, marital status, education, and occupation. The status of an individual is calculated by multiplying the scale value for occupation by a weight of five (5) and the scale value for education by a weight of three (3). Computed scores range from a high of 66 to a low of 8. This range remains constant whether the computed score is based on the occupation of one or two members of a nuclear family or household. It is assumed that the higher the score of a family or nuclear unit, the higher the status its members are accorded by other members of our society. This assumption is derived from the assignment of differential values to the amount and kind of education an adult has received and to the occupational functions individuals perform in society. Values assigned to the amount of education an adult has received are linked, in turn, to occupational functions. In a diffuse way, these values are social; in a specific sense, they are pecuniary. The pecuniary and social rewards associated with it are society's way of compensating the individual for the work he performs—the invidious value associated with the occupational function is associated with the individual who performs it. For the mass of individuals, the income earned on the job is translated into goods and services. This is expressed in economic terms as a level of living. The general relationship between occupational pursuits, pecuniary rewards, and level of living results in the socioeconomic divisions so vividly recognized in our society. (Hollingshead, pp. 2-6, 18-21).
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