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ABSTRACT

The Rosner Perceptual Survey (RPS) and the Rosner-Richman Perceptual Survey (RRPS) were developed for screening perceptual motor dysfunction. The RPS consisted of 17 subtests of visual motor and auditory motor functions, general motor skills, self awareness, and integrative function; the RRPS, intended for teacher or paraprofessional use, included the same items except optometric ones and ones requiring special equipment. Validation was conducted with 50 regular, 50 educable mentally handicapped, and 50 emotionally disturbed and socially maladjusted elementary school students; cross validation was accomplished with more children from each group. External validity was determined by a behavior rating scale based on correlates of learning disabilities. Variance between scores made by the regular and the other students was significant (p less than .005). Further findings were as follows: RPS items intercorrelated (for 28 of its 30 items p less than .005); the RPS and RRPS correlated for all three groups (p less than .005); the RPS and the behavior rating scale correlated (p less than .001). Appendixes provide the behavior rating scale and manuals and supplementary data analysis for the RPS and RRPS. (JD)

UNIVERSITY OF PITTSBURGH · LEARNING R & D CENTER

WORKING PAPER 47

THE IDENTIFICATION OF CHILDREN WITH PERCEPTUAL-MOTOR DYSFUNCTION

JEROME ROSNER, VIVIEN RICHMAN, AND RUSSELL H. SCOTT

THE IDENTIFICATION OF CHILDREN WITH PERCEPTUAL-MOTOR DYSFUNCTION

A Study of Perceptual-Motor Dysfunction among Emotionally Disturbed, Educable Mentally Retarded and Normal Children in the Pittsburgh Public Schools

and

The Manual for the Rosner Perceptual Survey (RPS) and the Rosner-Richman Perceptual Survey (RRPS)

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The development and refinement of the Rosner Perceptual Survey could not have been accomplished without the support and cooperation of many people to the Pittsburgh Public Schools. The Board of Public Education, the Superintendent of Schools, administrative personnel, principals, and teachers have all made important contributions to the successful completion of this work.

The project was begun under the creative direction of Dr. Stonewall B. Stickney, Director and George J. Wilson, Coordinator, of the Division of Mental Health Services, and facilitated by O. J. Schwarm, Associate Superintendent, School Services.

We owe a debt of gratitude to Phillip Hallen, President of the Maurice Falk Medical Fund, whose encouragement and financial support have made this work possible.

August, 1969

The Authors

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INTRODUCTION

Perceptual skills, those abilities which enable the human to process concrete information, are the foundation upon which one develops the capacity to manipulate abstracts. Implicit in this statement is an acknowledgment that efficient perceptual functioning is a prerequisite to meeting the demands of the typical academic curriculum. As such, it seems evident that those charged with the responsibility of educating children should be concerned with their students' perceptual development. This is certainly true with respect to the under-achieving student; it should be equally true for the achieving youngster as well. Man is an extremely adaptable organism. He has demonstrated that he is frequently capable of compensations and adaptations which, though essentially harmful to himself, enable him to meet the requirements of the culture in which he lives.

The study which follows this introduction presents an easily administered screening instrument which, when properly used, appears to be capable of differentiating among children manifesting varying degrees of perceptual skill. It is not an in-depth, extensive evaluation of the many aspects of perceptual function. Rather, it is a means of sampling behaviors within a critical range of sensory-motor processes which, in the clinical experience of the author, seem to be closely related to the customary school-oriented activities of reading, writing and arithmetic. It may be implemented by para-professionals who have received a minimum of training. The usual time required for completing a screening is fifteen minutes or less. Hence, if subsequent experience with this instrument confirms our initial conclusions, a relatively inexpensive method for assessing the perceptual development of a student population is available to a school that is willing to train and use the services of paid para-professionals or unpaid volunteers.

Visual-motor function, the capacity to analyze and synthesize information received through the eyes, is probed by items 6 (Gesell Copy Forms) and 17 (Rutgers Drawing Test) of the Survey. Auditory-motor function is probed by items 2 (Word Repetition) and 5 (Auditory Organization). General-motor skills are tapped by item 11 (Motor Skills). Self-awareness indications

are offered by items 1 (General Adjustment) and 12 (Identification of Body Parts). Integrative function, the ability to relate multi-sensory information, is probed by items 13 (Rhythmic hopping and tapping), 15 (Auditory-Visual) and 16 (Tactual-Visual). Those items not listed above belong primarily in the interest area of the professional vision specialist. They are pertinent but beyond the scope of the non-professional and not essential to effective screening.

This study devoted no attention to habilitative approaches other than to speculate, in its concluding remarks, about the possibility of altering inadequate processing skills. A subsequent publication (The Design of a Perceptual Development Curriculum), will focus on the subject as will a report, currently in press, to be published by the Mental Health Services Division of the Pittsburgh Public Schools.

A STUDY OF PERCEPTUAL-MOTOR DYSFUNCTION AMONG EMOTIONALLY DISTURBED, EDUCABLE MENTALLY RETARDED AND NORMAL CHILDREN IN THE PITTSBURGH PUBLIC SCHOOLS

Vivien Richman, Jerome Rosner, and Russell H. Scott

The problem of children who are not learning in school has received considerable attention in this country during the last decade (Havighurst, 1967; Kessler, 1966). There was a time when children with school problems were thought of as being "bad" and were punished accordingly. Others may have been regarded as being lazy or uncommitted to learning, and attention was given to increasing their motivation. Recent evidence collected by Vinter and Sarri (1967) demonstrated, however, that this was not the case. Non-achievers were not lacking in motivation, but in skills.

With the rise in age of compulsory school attendance, the school has been legally bound to contain and educate the children in the community, with a few legal exceptions, usually until they reach the age of sixteen or seventeen. Further, the school requires that all the children internalize and pursue the goal of academic success, and conform to some standards of conduct (Schafer, 1967).

Depending on the theoretical orientation from which the problem is viewed, the children who do not learn may be classified in a variety of ways: emotionally disturbed, disadvantaged or culturally deprived, socially maladjusted, neurologically handicapped, educationally handicapped, children with minimal brain damage, with perceptual-motor dysfunction, or with learning disabilities. If these children, as a result of their unsuccessful careers in learning develop other socially undesirable behavior, they may also be classified as truants, drop-outs, delinquents and unemployable.

How a problem is defined, by whom, and according to which theoretical orientation, then, will determine the treatment prescribed, and how and by whom it will be administered. The chart which follows will illustrate the range of different treatments available for dealing with the child who does not learn. It can be seen easily that the definition of the problem, the identifying category in which it is placed, and the underlying theoretical

orientation will determine, to a large degree, the nature of the treatment and the professional personnel required to administer it. Although the teacher is involved as a part of the treatment in most of the categories on the chart, his role and function are bound to be affected by the theoretical emphasis of the program.

Sometimes, by attaching a diagnostic classification to a group of non-learning children, the illusions are created that, by so labeling them, they are now homogeneous groups and that the problem has been adequately dealt with. In reality, it may be that a child who was diagnosed as being "emotionally disturbed" may possibly belong in the disadvantaged, neurologically handicapped, socially maladjusted, or any other of the groups named.

One of the contributing difficulties arises from the variety of disciplines and professions which have been concerned about the child who does not learn. Neurologists, pediatricians, child development theorists, ophthalmologists, optometrists, psychologists, speech and hearing therapists, psychiatrists, otologists, sociologists, as well as educators, have introduced terminology from their own fields into the literature to describe the disabled learner. Johnson and Myklebust (1967) provide an exhaustive review of the descriptive terms which have been used throughout this century to classify him.

An Operational Definition

Barsch (1968) has written: "Learning disability is a phenomenon of learning cutting across all ages and all populations. It is to be found at all levels where individuals must learn. It is a term to be applied to any learner who fails to benefit from an existing curriculum into which he has been placed (pp. 13-14)." In more specific terms, one or more of the following characteristics may be noted: hyperactivity, distractibility, impulsivity, poor motor coordination, perseveration, short attention span, and poor performance on psychological tests of perception (Capobianco, 1964). Some of the more commonly noted behavioral correlates are: reversal of letters or words in reading or writing, lack of hand preference, indistinct speech, difficulty in relating to time and series sequences, illegible

Table 1
Treatments Available for Non-Learning Children

Identifying Category	Theoretical Orientation	Treatment	Source of Treatment
Emotionally disturbed	Psychiatry, psychology, psychiatric social work	Psychoanalysis, psychotherapy, case work	Psychiatrist, psychologist, social worker, teacher
Disadvantaged, culturally deprived	Sociology, educational sociology, community organization, education	Social change, compensatory education, curriculum changes	Sociologist, community organizer, school personnel
Socially maladjusted	Social work, group dynamics	Group work, case work, counselling	Social worker, guidance counselor. teacher
Neurologically handicapped, minimal brain damage	Neurology, medicine, special education	Medication, physiotherapy, special teaching techniques	Neurologist, physician, psychiatrist, special teacher
Perceptual-motor dysfunction	Child development, perceptual development theories, optometry	Prescribed remedial techniques to improve perception	Optometrist, perceptual-motor development consultant, technician, teacher
Educationally handicapped	Education, learning theory	Remedial teaching techniques, equipment and material	Special remedial teacher
Learning disability	Multi-discipline approach: education, social work, preventive psychiatry, psychology, learning theory	Re-training or re-education, teaching the child to learn how to learn	Team: psychiatric and social work consultant, teacher, psychologist, school social worker, counselor, others
Truant, drop-out	School social work, law	Case work, counselling, legal sanctions	School social worker, counselor, court worker
Delinquent	Law, social work	Referral to correctional institution, probation, case work	Legal personnel, correctional personnel, social worker
Unemployable	Economics, social work	Welfare, re-training	Public assistance, teacher

handwriting, confused spatial orientation, problems of laterality and directionality, memory disorders, and impaired auditory and visual perception. These symptoms rarely appear in isolation (Myklebust & Johnson, 1962).

Children with learning disabilities, cognitive-motor deficits or perceptual-motor dysfunction have been described by Braun and others (1967) as being overly aggressive, or very withdrawn, with a low tolerance for frustration.

> Academically, these children frequently have difficulty in learning to read, write and do number work. They may have illegible handwriting, reverse letters, numbers and words. In addition, they may have difficulties in the following: transferring information from the chalkboard to seat work, shifting their eyes from left to right for reading, recognizing simple objects and their relationships to each other in space, differentiating sounds that are similar, following verbal directions in the classroom and expressing their thoughts in words (pp. 1-2).

The school frequently views these children as behavior or discipline problems. It has been estimated that the incidence of perceptual-motor dysfunction among school children ranges from 11 to 20 percent (Wunderlich, 1968).

Review of the Literature

The importance of perceptual-motor development and sensory training in relation to learning has long been recognized. In 1799, Jean Itard (1932) recorded his work with Victor, the "Wild Boy of Aveyron." He was followed in 1866 by Seguin (1907) who, similarly, developed and used a sequential program of sensory training with severely retarded, or possibly, brain injured subjects. The work of Maria Montessori (1939) further developed and refined the theories and techniques of her predecessors, as she worked, first, with retarded children and later, with the disadvantaged slum children of Rome. Contributions to the development of theories of perceptual development have come from the fields of neurology (Orton, 1937; Ozer, 1968) and optometry (Rosner, 1966; Coleman, 1968), as well as psychology, learning theory, and child development.

The development of cognitive and perceptual processes in the child has been examined and postulated by Gesell (1925), Piaget (1950, 1952), Kephart (1960), and Hull and Osgood (Weener, Barritt & Semmel, 1967). The work of Piaget (Flavell, 1963), in particular, suggests that the order or sequence of the development of cognitive functions is unvarying. He presents a rationale to demonstrate that the achievements of a particular period are dependent upon those which preceded them. It is suggested that if the experience of the child has been seriously restricted, the child's intellectual resources may be expected to be limited too.

The child's earliest observable responses to sensory experiences are motor and affective. He may respond visibly with various positive and negative feeling tones, which may not be explicitly identifiable, but are not bland and uniform. Beginning with unintentional or reflex actions, he rapidly learns to coordinate his activities with his sensations, preparing him for later purposeful action. It is through these early sensory-motor explorations that the child is first able to construct his reality. He learns to differentiate and integrate movements of his own body. For example, he differentiates elbow and wrist movements and one arm from the other, and, through an integrative processing of patterns, to control his fingers (Kephart, 1960). He learns that his environment is not part of him, although his world is still an egocentric one.

A child who does not progress normally through this period may feel himself as one with the space around him, rather than as a distinct entity (Jansky, 1961). Such a child lacks a true conception of his own body image. The foundation upon which laterality and directionality are built is faulty or missing. This has serious implications for reading, writing, following directions, coordination, and many other tasks which he will eventually be asked to perform (Bender, 1956).

There is a gradual transformation in the child from a direct-action approach, in the exploration of his world, to the development of "images" of action. During the early stages of development, the child must see an object in order to know that it exists. Gradually, he learns to recognize that it exists even when it is not in view. The manipulation of this imagery allows

the beginning of elementary problem-solving and simple conceptualization. Symbolic representation originates in the imaginal translation of action. The development of this ability provides the child with a broader scope in dealing with reality than through direct action alone, and provides the basis for more intelligent behavior. Language, as it develops, permits an even greater extension of the child's intellectual capacities and provides a symbolic medium for thought. Children who have problems in imagery may be unable to recall details of the sights and sounds of their every-day life, or to attach meaning to the expressions and gestures of others (Russell, 1956). They may also have difficulty in obtaining meanings from pictures. They may be thought of as having an incomplete data bank.

Piaget has illustrated that the child's response to reality is largely determined by his perceptual processes (Wohlwill, 1962). Generalization from one learning task to another is not possible until mastery at the earlier level is achieved. The process is described by Roach and Kephart (1966): "Two highly structured repositories of movement responses are developed: one resulting from patterned differentiation of specific elements out of a generalized mass; the other resulting from a patterned integration of specific elements into a structured whole (p. 6)." Perceptual knowledge is built upon this motor knowledge. The resultant skill is the ability to perform a perceptual-motor matching of data. A breakdown in the matching process takes place when these two modes do not fuse and the child lives, in a manner of speaking, in two worlds because the data he receives from one mode are not identical to those received from the other (Roach & Kephart, 1966).

Disabilities tend to compound themselves. When children are asked to build on undeveloped skills, on experiences which they never had, and on concepts they have yet to establish, failure is almost always assured (Harding & Ridgeway, 1967). It should be noted, parenthetically, that there may be children with perceptual-motor dysfunction who are able to make compensatory adaptations and, as a result, do not develop either learning disabilities or secondary emotional disturbances (Capobianco, 1964; Lowder, 1966; Potter, 1949; Strauss & Kephart, 1955).

Problems of symbolization are symptomatic of the inability to represent experience. "Observed most commonly are deficits in ability to learn and other . . . aspects of experience (Johnson & Myklebust, 1967, p. 35)." Spatial and temporal judgment may be impaired. Tasks requiring copying have been developed which reveal inefficiencies in non-verbal symbolization (Gesell & Armatruda, 1941). Symbolization deficiencies in language are sometimes demonstrated by echolalia and word-calling. Words can be repeated, or even translated from visual to spoken form, without the child being able to attach any meaning to the sound. Sometimes, the problem is one of selection, particularly in the auditory reception of language. The child may react non-differentially to all sounds in his environment, unable to discriminate between the important and the inconsequential or irrelevant. Because of the spatial and temporal aspects of the involvement, the child often has trouble carrying out directions that are presented in a series, yet he could perform each task if it is presented singly (Kephart, 1960).

Many educational objectives are defined by the concepts which the child must acquire. Concept formation is a function of the interaction of the previously described psycho-motor skills which permit the child to make abstractions. If the common denominator of a group of experiences is not recognized by the child, he is then incapable of the generalization, integration, and categorization necessary to concept formation.

It is believed that there may be an undetermined number of children in our schools who are disabled by perceptual-motor deficits. Some of these children may have been identified by school personnel as non-learners, slow learners, behavior problems, emotionally disturbed, or any of the other classifications described earlier. Studies of the incidence of perceptual-motor deficits among children who were diagnosed as "emotionally disturbed" (Rubin, Simson & Betwee, 1966) substantiate the need for further investigation. In reviewing the reasons for referral of children for placement in the adjustment class program of the Mental Health Services in the Pittsburgh Public Schools during the school year 1966-1967, it was found that 31 percent of them were suspected of perceptual-motor dysfunction or minimal brain damage (Richman, 1967).

Children who are maladjusted in school may be found to be classifiable in at least three sub-sets:

1. Those with primary emotional disturbances resulting from disturbed interpersonal relationship or adverse psycho-social influences;
2. Those with secondary emotional disturbances stemming from learning disabilities caused by perceptual-motor dysfunction;
3. Those with primary emotional disturbances, accompanied by perceptual-motor deficits.

Method of Research

Statement of the Problem

The research addressed itself to a study of three populations in the Pittsburgh Public Schools, one drawn from regular elementary school classes, children from special classes for educable mental retardates, and children from the adjustment class program for emotionally disturbed and socially maladjusted children.

The questions to be answered were:

1. Can a test battery or survey be developed and refined which is sufficiently valid, reliable and discriminating, so that it may be used to identify children with perceptual-motor dysfunction?
2. What is the rate of incidence of perceptual-motor dysfunction in each of these populations, as measured by this instrument?
3. What are the curricular and programmatic inplications of the findings?
4. Can an adapted form of this battery or survey be developed, which can be used by a classroom teacher for gross diagnosis of children with perceptual-motor dysfunction, without losing validity, reliability and discriminability?

Population

At the time of this study, there were 75 children assigned to the adjustment class program, 60 boys and 15 girls, a ratio of about four to one, in seven elementary schools and in Pressley House, a private residential psychiatric facility for children. Of the seven elementary schools, all but one are located in "poverty" areas, as defined by the Office of Economic Opportunity. The remaining school is in a predominantly middle-class district. The children range in age from six to twelve years. Although a potentially normal intelligence is a criterion for admission to the adjustment class program, IQ scores range from 58 to 113.

With the exception of Pressley House, the children in the adjustment class program were assigned there by the decision of a school conference group which consists of a Mental Health Services psychiatrist and social worker, the principal, school social worker, the adjustment class teacher, and other relevant school and social agency personnel. The process of evaluation and assignment is described in greater detail in the Evaluation Report of the Mental Health Services, published by the Pittsburgh Board of Public Education (Richman, 1967).

Initially, these children were referred to the Mental Health Services program because of school adjustment problems and/or learning difficulties. Their assignment to the adjustment class program was made to help the school to contain them and to provide them with special support and remedial education which would enable them to return to regular classes as soon as possible (Richman, Stickney & Wilson, 1967). Attendance in the adjustment class varied with the needs of the child and the school and ranged from five periods per week to temporary full-time participation. The part-time adjustment class students were maintained in regular classes for the balance of their school day.

Fifty children in regular classes and fifty educable mentally retarded children in Special Education classes, from five of the elementary schools which contained the adjustment class program were selected, as a stratified random sample, to be screened for perceptual-motor dysfunction.

They met the following selection criteria: (a) age matched closely with the adjustment class children; (b) IQ score not higher than 113; (c) ratio of approximately four boys to one girl; (d) no notation on the permanent school record of any relevant disability or handicap. Twenty-five of the adjustment class children were randomly selected from the total sample, constituting a hold-out sample, and an additional twenty-five educable mental retardates and twenty-five children from regular classes were screened, in an elementary school which does not contain an adjustment class program. This was done for the purpose of cross-validation, which will be discussed later.

Method

In the fall of 1967, the Mental Health Services acquired the services of a consultant[1], an optometrist with considerable experience in the area of perceptual-motor development in children. He had developed a battery of tests, which he had used for some time in his clinical practice and in other school consultation work, for the identification of children with perceptual-motor dysfunction. This battery consisted of some standardized subtests and some involving clinical judgment.

Using this as a starting point, the investigator, in collaboration with the consultant, arranged the subtests in sequence, re-defined and clarified the criteria for each, developed a scoring system, and titled the instrument the Rosner Perceptual Survey (RPS) to be described later. A second instrument was devised, the Rosner-Richman Perceptual Survey (RRPS), based on the first, which included all the subtests except the optometric items and those which required special equipment (i.e., the split-form board and the tactual-visual subtest). It was hoped that the RRPS, if validated, could be administered by a classroom teacher, or other school personnel, as a gross screening device.

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[1] Jerome Rosner, O. D.

Children were tested individually by the consultant, in an available room in each school, two mornings per week. During the testing of the children from regular classes and those from classes for the educable mentally retarded, the investigator was also present, as an observer, and rated the children at the same time, using the RRPS.

Instruments

The Rosner Perceptual Survey (RPS) consists of 17 subtests and takes about 30 minutes to administer. Identifying information includes the child's name, school, grade, birthdate and IQ score.

1. General Status: to determine the child's general orientation (i.e. knowing his age, which hand he uses, his birthday, etc.)
2. Word Repetition: to test the child's ability to hear and repeat several multi-syllabic words spoken by the tester (Slingerland, 1962; Rosner, 1966).
3. Near Visual Acuity: to determine the ability of the eye to discriminate standard size print at a standardized distance. A Snellen fraction is used to express the acuity. (Optometric).
4. Stereopsis: to determine the ability to demonstrate depth perception, using the Titmus Stereo Test. This is a subjective measure. (Optometric).
5. Auditory Organization: to determine the ability to analyze and synthesize auditory information (Rosner, 1966).
6. Developmental Drawing: to determine the child's level of form perception, his spatial judgment in response to visual stimuli, and to uncover inefficiencies in non-verbal symbolization (Gessel & Armatruda, 1941).

7. Cover: an objective test to determine the stability of binocularity at 16 inches and at optical infinity. (Optometric).
8. Near Point of Convergence: to determine the ability for both eyes to converge. The near point of convergence is that point at which both eyes can no longer maintain binocular fixation. (Optometric).
9. Ocular Pursuits: to determine the ability of one or both eyes to establish and maintain contact, and to track or follow a moving target in space. (Optometric).
10. Retinoscopy: an objective measure to determine the refractive status of the eyes. (Optometric).
    a. Static: conducted while the eye is fixated at optical infinity.
    b. Bell: near-point test using a non-specific target.
    c. Book: near-point test to evaluate integrative functioning, while reading.
11. Motor Skills: to determine the developmental level of gross motor skills, involving coordination, uni-laterality, bi-laterality and control (Roach & Kephart, 1966; Orton, 1937).
12. Body Image: to determine the child's level of spatial development, based on his sense of space localization (Piaget, 1952; Piaget & Inhelder, 1956; Roach & Kephart, 1966).
13. Rhythmic Hop and Rhythmic Tap: to determine the level of ability to make bi-lateral shifts, to establish and maintain rhythmic motor patterns, and gross muscular control (Roach & Kephart, 1966).
14. Split-Form Board: to determine the ability to synthesize visual information (Rosner, 1966; Getman, 1959, based on Seguin, 1907).

15. Auditory-Visual: to test inter-sensory integrative functions and inter-modality relationships (Birch & Belmont, 1965).

16. Tactual-Visual: to test the ability to integrate visual and tactile, kinesthetic information, using a form board (Rosner, 1966).

17. Rutgers Drawing Test: to test the non-verbal skills of motor coordination, figure-ground relationship, visual perception and analysis of design (Starr, 1961).

The Rosner-Richman Perceptual Survey (RRPS) is made up of all the RPS items except 3, 4, 7, 8, 9, 10, 14, and 16, and takes about fifteen minutes to administer. Each of the items in both instruments is rated on a three-point scale; 3 represents an adequate performance, 2 represents partial performance, or performance with difficulty, and 1 represents an inadequate performance. Because the tasks are developmental, scoring is done relative to the age of the child. The RPS has a possible total score of 90, a partial score of 57, corresponding to the total score of the RRPS, and an optometric sub-score of 33, representing the remaining items.

Behavior Rating Scale

In order to secure an index of external validity for the RPS and the RRPS, a summated rating scale was constructed[2] based on the behavioral correlates of learning disabilities described in the literature (Capobianco, 1964). The scale was distributed to the teachers of the fifty children from regular classes who had been tested with the RPS and the RRPS. The children from regular classes were chosen for this part of the investigation because the incidence rate of perceptual-motor dysfunction was expected to be lower than that of the other two groups. This instrument, therefore, would have to demonstrate a considerable ability to discriminate.

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[2]This work was done by Marion Karl, Graduate Assistant in Educational Research, University of Pittsburgh, under the direction and supervision of the University, Dr. Russell Scott, Assistant Director, Research Office, Pittsburgh Public Schools, and Vivien Richman, Research Associate, Mental Health Services, Pittsburgh Public Schools.

A five-point scale was used: 1- always; 2- frequently; 3- occasionally; 4- rarely; 5- never. The direction of the items was varied to control for response set. Before statistical procedures were applied to the scores, the items were restored to a one-directional scale and degrees reduced to three. One indicated frequent problem behavior; two indicated occasional problem behavior; and three indicated normal behavior. The scale is composed of 30 items and the maximum total score is 90.

Findings

The means and standard deviations of the Rosner Perceptual Survey (RPS) and the Rosner-Richman Perceptual Survey (RRPS) were computed for the children from regular classes, the emotionally disturbed, and the educable mentally retarded children. These are reported in Table 2.

Table 2

Means and Standard Deviations on RPS and RRPS of Children from Regular Classes, Emotionally Disturbed and Educable Mentally Retarded Children

Group	Number	RPS Mean	RPS S.D.	RRPS Mean	RRPS S.D.
Regular	50	76.88	5.66	48.94	4.32
Emotionally Disturbed	75	65.55	9.34	40.50	6.26
Mentally Retarded	50	65.20	6.19	39.45	3.67

N=175

No significant difference was found among the schools. A breakdown of means and standard deviations by schools will be found in Appendix A. No significant difference was found between the emotionally disturbed and the mentally retarded children's scores. There was, however, a significant difference between the regular class scores and the other two groups at the .005 level. The analyses of variance are reported in Tables 3, 4 and 5 for the RPS, the RRPS and the RPS by schools.

Table 3

Analysis of Variance

Source of Variance	df	MS	F	P
Between groups	2	2351.9	40.85	<.005
Within groups	172	57.6		

Table 4

Analysis of Variance: RRPS

Source of Variance	df	MS	F	p
Between groups	2	595.7	19.92	<005
Within groups	78	27.4		

Table 5

Analysis of Variance: RPS
by School

School	Source of Variance	df	MS	F	p
Arsenal	Between groups	2	399.93	7.98	<.005
	Within groups	28	50.13		
Holmes	Between groups	2	415.79	10.48	<.005
	Within groups	26	39.67		
Weil	Between groups	2	405.25	8.76	<.005
	Within groups	33	46.25		
Conroy	Between groups	2	732.76	14.85	<.005
	Within groups	30	49.35		
Friendship	Between groups	1	585.23	9.95	<.025
	Within groups	16			

The intercorrelation matrix shown in Table 6 indicates that those items which are sub-tests within a single test item have the highest correlation with each other, as could have been expected (e.g., 18 and 19 are

Table 6

Intercorrelations of RPS Items
(significant at .005 level)*

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Gen.status	1																														
Word repet.	2	34																													
Aud. org.	3																														
Dev. drawing	4	25	22																												
	5	35			42																										
	6	39	23		45	66																									
Motor skills	7																														
	8							53																							
	9							42	67																						
	10		19					44	49	49																					
	11								21		19																				
	12						20	35	27	19	24	47																			
Body image	13	44	32	24			25	20																							
Rhythmic	14	27	34	35	25	20	27		21		30		19	37																	
hop-tap	15	33	35	44	26	28	42						21	37	64																
Audit.-vis.	16	36	20	32	19	20	33							32	36	42															
Pencil grip	17							24		19																					
Visual anal.	18	30	19	21	43	58	53								32	36	29														
	19	42	31	26	40	56	61							31	32	46	43		81												
Near VA	20	20				22	21												22	25											
Stereopsis	21					33	28							19			20		20	19	27										
Cover-Far	22						22	21		28	21		21									39									
Near	23									24	22											31	70								
N. P. C.	24									22												33	63	57							
Pursuits	25							32	25	23	25			26						20	24		36	41	43	46					
Retinoscopy	26				21		20														22	44	26	33	28	26	23				
	27				21		20															35	29	42	32	36	34	78			
	28																					36									
Split Form	29	33				28	36										21	21		34	34										
Tactual-vis.	30	21				23								31							20	19									19
Total score	31	51	39	22	49	58	64	34	36	37	37		30	51	47	57	45	23	59	67	41	47	50	44	41	51	45	45	41	36	31

* Decimal points omitted for clarity.

sub-scores of the Rutgers Drawing Test.) Of the 30 items, all but one (item 11) correlated with the total score at the .005 level. Only two items, 11 and 17, have a correlation of less than .30 with the total score. The intercorrelation matrix yeilded three major groups of items which were further subdivided into sub-groups:

I. A. Visual analysis, form perception and motor coordination
   B. Auditory organization, inter-sensory integrative functions
   C. Spatial development and synthesis of visual information
II. Gross motor skills
III. A. Visual acuity and refractive status
   B. Depth perception, binocularity, convergence, and ocular pursuits.

Pearson Product-Moment correlations between the RPS and the RRPS were computed, by group, and are reported in Table 7. Inter-rate reliability

Table 7

Correlation of RPS with RRPS

Group	r	p
Regular	.76	< .005
Emotionally disturbed	.83	< .005
Mentally retarded	.75	< .005

was demonstrated by a Pearson Product-Moment correlation of .78 for the scores of the mentally retarded children and .91 for the scores of the children from regular classes. A measure of external validity was obtained from a Pearson Product-Moment correlation of .52 between the Behavior Rating Scale (see page 13) and the RPS, significant at the .001 level.

An inspection of the distribution of scores revealed the cut-off scores for each instrument. Applying these points to the data, the incidence rates described in Table 8 were found. A cross-validation sample of 50 children from regular classes and classes for the educable mentally retarded

Table 8

Incidence of Perceptual-Motor Dysfunction

Group	RPS	RRPS
Regular classes	.13	.13
Emotionally Disturbed	.70	.68
Mentally Retarded	.90	.97

was tested at Larimer School. It is interesting to note that the incidence rate for the mentally retarded sample was 89 percent, which approximates the other findings. Among the children in regular classes, however, the incidence rate was 30 percent, which is considerably higher than the 13 percent found in the study. Seventeen percent of the children from regular classes demonstrated optometric deficits, as compared with 60 percent of the emotionally disturbed children and 51 percent of the mentally retarded. Further analyses of the data are being planned for the future, including a factor analysis and a discriminate analysis, which will yield further information. A supplementary report will be issued when the analyses are completed.

Discussion and Conclusions

Based on the preceding analysis, it is believed that the two instruments, the Rosner Perceptual Survey (RPS) and the Rosner-Richman Perceptual Survey (RRPS) can be used with considerable confidence to identify children with perceptual-motor dysfunction. While the RPS requires the skills of an optometrist to administer it, it yields a more descriptive and detailed clinical profile. The RRPS can be administered by a classroom teacher or a para-professional. Inter-instrument and inter-rater reliability were established, as well as a measure of external validity.

The instruments in their present form can discriminate between children with adequate perceptual-motor development and those with disabilities. The RPS not only investigates the performance of specific, individual perceptual-motor skills, but also tests the performance of integrated multi-sensory skills.

The high rate of incidence of perceptual-motor dysfunction among the emotionally disturbed and mentally retarded children raises several interesting questions about the relationship between these conditions. Does the existence of emotional disturbance or mental retardation in a child contribute to distorted perceptual-motor functioning? Or does the existence of perceptual-motor dysfunction produce secondary symptoms of emotional disturbance or mental retardation? If the latter is so, then the children in special classes for the disturbed and the retarded may have been classified and assigned to those programs on the basis of what may be secondary symptoms.

What is the reason for the high rate of incidence of perceptual-motor dysfunction among children from regular classes at Larimer School? Larimer School is located in a poverty area. The study also took place in poverty districts, but included a middle-class school and a residential school. Could this account for the difference? Is the incidence rate higher in very low socio-economic areas than in middle-class areas? Does the poverty life-style, which may include early sensory deprivation, or undifferentiated sensory over-stimulation, absence of manipulatory materials, etc. have an effect on the perceptual-motor development of children? Does poor nutrition, poor pre- and post-natal care affect the child's perceptual-motor development?

Perhaps the most important questions to be raised are concerned with treatment. Is perceptual-motor dysfunction, as defined in this study, irreversible? Can a program be designed to habilitate or rehabilitate the children who are disabled? How early in the child's school life can perceptual-motor dysfunction be identified? How will a rehabilitation program affect school achievement, IQ, and school adjustment? What changes must be made in dealing with children who are not learning in school? What curricular changes should be made in classes for the emotionally disturbed and the mentally retarded?

Through the continued generosity of the Maurice Falk Medical Fund, and with the interest of the Pittsburgh Public Schools, these questions will be the focus of the research to be conducted by the Division of Mental Health Services during the 1968-1969 school year.

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APPENDIX A

Data and Behavior Rating Scale

Table 1.

Means and Standard Deviations of Children from Regular Classes on RPS and RRPS

		RPS		RRPS	
School	Number	Mean	S. D.	Mean	S. D.
Arsenal	10	78.60	6.41	50.90	4.16
Conroy	10	77.90	5.22	48.20	5.19
Holmes	10	77.30	5.02	48.80	2.86
Weil	10	75.50	5.77	47.80	4.81
Friendship	10	75.10	4.57	49.00	4.60
Total N = 50		M = 76.88	S. D. = 5.66		

Table 2.

Means and Standard Deviations of Educable Retarded Children on RPS and RRPS

		RPS		RRPS	
School	Number	Mean	S. D.	Mean	S. D.
Arsenal	12	66.50	5.58	40.58	3.62
Conroy	17	64.41	5.41	38.41	4.04
Holmes	9	66.89	5.99	41.00	4.24
Weil	12	63.75	7.08	37.83	2.79
Total N = 50		M = 65.20	S. D. = 6.19		

Table 3.

Means and Standard Deviations of Adjustment Class Children on RPS and RRPS

		RPS		RRPS	
School	Number	Mean	S. D.	Mean	S. D.
Arsenal	9	72.44	8.30	45.89	6.51
Conroy	6	61.33	10.87	39.50	7.59
Holmes	10	65.40	6.76	41.50	5.12
Weil	14	66.50	6.50	41.86	4.67
Friendship	8	63.63	9.56	38.12	6.58
Pressley House	15	65.47	8.20	39.93	6.16
Murray	6	64.67	8.48	39.83	4.26
Colfax	7	61.71	13.21	37.43	9.26
Total N = 75	M = 65.55	S. D. = 9.34			

Behavior Rating Scale

Name_____Age___Grade___School_____

Rated by_____Subject_____Home Room____

Directions: Please rate this student on the following items. Place a number in the blank to the left of the item which describes the degree to which the item is true of the student's classroom behavior.
1.- ALWAYS 2.- FREQUENTLY 3.- OCCASIONALLY 4.- RARELY 5.- NEVER

____ Hyperactive

____ Understands gestures or words of others

____ Easily distracted

____ Short attention span

____ Follows directions well

____ Poor auditory memory

____ Poor visual memory

____ Achieves your level of expectation for him/her

____ Awkward or clumsy

____ Ambidextrous

____ Illegible handwriting

____ Uses only one hand at a time with no assistance from the other

____ Shows transfer of learning from one situation to another

____ Poor organization of work space and work time

____ Pays too little attention to detail, misses the total picture

____ Has trouble working with numbers

____ Is able to interpret or manipulate symbols, such as maps, charts, graphs

____ Shows confusion about right, left, or other directional orientation

____ Reverses letters or words in reading

____ Reverses letters or words in writing

____ Unorthodox sentence structure

____ Halting or stumbling oral delivery

____ Clear, distinct speech

____ Stutters

____ Scrambled spelling

____ Long, rambling story telling

____ Distortion in repeating sounds

____ Adequate reading comprehension

____ Poor oral reading fluency

APPENDIX B

SUPPLEMENTARY DATA ANALYSIS

FOR THE

ROSNER PERCEPTUAL SURVEY

AND THE

ROSNER-RICHMAN PERCEPTUAL SURVEY

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SUPPLEMENTARY DATA ANALYSIS

An item analysis (A) of the RPS was performed and yielded the information which can be found in Table B1. Of the 29 sub-tests, six were not significant but contributed clinical information about the child's performance. Fourteen, or half the items, discriminated between the groups at the .01 level, and the remainder of the items significantly discriminated between the groups at the .05 level. The validity of the instrument is demonstrated by the fact that it effectively distinguishes between individuals who are high and low in perceptual ability (Kerlinger, 1964). The validity of the items is further supported by the inter-correlation of the RPS items, as shown in the original study (Guilford, 1954). The data from the cross-validation sample added support to the ability of the instrument to discriminate between groups.

In examining the item analysis, it is noted that the children from classes for the educable mentally retarded scored higher than the adjustment class children on the sub-tests involving optometric measurements. This confirmed the findings reported earlier that the adjustment class children demonstrated a higher incidence of optometric deficits (60 percent) than the children from classes for educable retardates (51 percent).

The children from the classes for educable retardates demonstrated somewhat better gross motor skills and a slightly better performance on the Gesell Copy Form Test than the children from the adjustment class program. The children from regular classes earned scores which were almost all higher than those of either of the two other groups.

Further item analysis (B) was conducted in order to determine which items differentiated between various pairings of the groups. Those findings are reported in Table B2. The children from regular classes demonstrated significant differences from those in the adjustment classes in the majority of the items (23 or 39 items). The exceptions were two items in the motor skills group, one aspect of the Rutgers, near visual acuity, near point of confergence, the Split Form Board, and the tactual-visual item. The findings suggest that whatever dimensions are being tapped by the RPS, the majority of items provide a basis for differentiating between these two groups.

The second set of differentiation to be examined involved the children from regular classes and those assigned to classes for the educable retarded. The most dramatic finding was that the set of items measuring motor skills did not differentiate between these two groups. With this exception and some in the area of optometric measurement, the same tests which differentiated between the children from regular classes and those from the adjustment classes also differentiated between the regular class children and those from classes for the retarded. Of the optometric items, the cover tests and two of the retinoscopic sub-tests differentiated between the first two groups but not between the second two groups.

The majority of items failed to differentiate between the children from the adjustment classes and those from the classes for the retarded. Word repetition and auditory organization discriminated between regular class children and both groups of special class children, but not among the two groups of special class children. Those items involving rhythm followed the same pattern. Of the optometric items, only the cover tests differentiated between these groups.

Nine items of the Survey differentiated between the children from adjustment classes and those from classes for the retarded. The general status item showed a significant difference. The children from classes for the retarded scored significantly lower than those from the adjustment classes. The second item to differentiate between the groups was the organizational aspect of the developmental drawing task. The difference was reversed with the children from classes for the retarded scoring higher than those from adjustment classes. Body image showed the same pattern as the general status item. The auditory-visual item differentiated between the three groups, as did the external configuration and internal detail aspects of the Rutgers. While the tactual-visual item did not differentiate between the regular class children and those in the adjustment classes, it discriminated among the two other pairings.

An examination of this item analysis suggests that those items dependent on the kinds of skills measured by intelligence tests tended to show lower scores for the children from classes for the retarded than those from adjustment classes.

The item analyses demonstrated that the RPS had considerable power to differentiate between children from regular classes and the other two groups. Differences between the adjustment class children and those from classes for the retarded were not as marked and may be explained by the assumption that these are heterogeneous groups. This suggests that the nine items which did discriminate between these two groups should be investigated further. The criteria for assignment to these programs should also be re-examined in the light of the data. Further investigation is indicated in the performance of gross motor tasks where the children from classes for the retarded scored higher than those from the adjustment classes. It would be interesting to determine if this resulted from more opportunity for practice, or from differences in the curriculum or from other factors.

In order to maximize the discrimination obtainable through the use of this instrument, the data was analyzed using multiple discriminant analysis (Cooley & Lohnes, 1962). This procedure yields the linear combinations of items which maximally discriminates among the groups involved. All 30 items of the RPS were used for the first analysis. Two discriminant functions were derived, the first of these discriminated between the normal group and the combined retarded and disturbed groups and accounted for approximately 62 percent of the among-groups variance. The second function isolated the retarded students from the emotionally disturbed and the children from regular classes. This function accounted for the remaining 38 percent of the among-group variance.

The ten items which contributed most to the discrimination among the groups were then selected for inclusion in further analysis. The discriminant analysis was run again using only those ten items previously identified. Again, the first function differentiated between the regular class children and the combined retarded and disturbed children, while the second function separated the retarded from the other two groups. The items and the weights are given in Table B3.

Using the functions derived from the discriminant analysis, a cross validation sample of 75 students were classified according to these functions. These 75 subjects consisted of three groups, one of which was a hold-out sample of adjustment class students randomly selected from the original sample of

adjustment class students. A second group consisted of 25 students from a mentally retarded class who were tested after the original sample was completed. Twenty-five regular class children, randomly selected from a school not involved in the original study constituted the third group.

In this cross-validation sample, 85 percent of the students were correctly classified, using the previously derived discriminant functions. A comparison between the classifications made on the basis of the discriminant functions. A comparison between the classifications made on the basis of the discriminant functions and the actual classifications of the students is given in Table B4.

In summary, this analysis demonstrates that the RPS and the RRPS can be used to classify a student correctly approximately 85 percent of the time, using only the clerical procedures involved in obtaining a discriminant score, or, as an alternate procedure, scores of the students on the Survey can be processed by computer with the expectation that 85 percent of the students so classified will be correctly assigned. Furthermore, the findings from the cross-validation sample further attest to the validity of the instruments.

TABLE B1.

ROSNER PERCEPTUAL SURVEY
ITEM ANALYSIS (A)
MEANS AND STANDARD DEVIATIONS*

Item	Reg. Class		Emot. Dist.		Mentally Retarded		F	P
Gen. Status	2.52	(.79)	2.03	(.85)	1.64	(.72)	15.15	.01
Word Repet.	2.72	(.54)	2.35	(.85)	2.22	(.71)	6.44	.05
Aud. Org.	2.48	(.58)	2.13	(.78)	1.88	(.72)	9.00	.01
Dev. Drawing:								
Org.	2.22	(.62)	1.72	(.65)	1.96	(.49)	10.49	.01
Ext. Con.	2.34	(.59)	1.71	(.67)	1.76	(.69)	15.58	.01
Int. Det.	2.48	(.61)	1.77	(.76)	1.92	(.70)	15.68	.01
Motor Skills								
1-ft. bal.	2.92	(.27)	2.81	(.43)	2.92	(.27)	2.01	NS
1-ft. hop	2.82	(.44)	2.55	(.64)	2.74	(.49)	4.13	.05
skip	2.90	(.36)	2.63	(.59)	2.80	(.40)	5.10	.05
throw	2.82	(.44)	2.47	(.78)	2.66	(.59)	4.61	.05
kick	2.82	(.44)	2.83	(.42)	2.84	(.37)	.03	NS
2-ft. hop	2.80	(.43)	2.57	(.64)	2.63	(.52)	4.23	.05
Body Image	2.72	(.64)	2.29	(.88)	1.90	(.93)	11.97	.01
Rhythmic hop	2.38	(.64)	1.95	(.73)	1.90	(.58)	8.27	.01
[illegible]ap	2.66	(.56)	1.85	(.87)	1.84	(.79)	19.87	.01
Audit. - visual	1.84	(.80)	1.23	(.54)	1.06	(.32)	25.11	.01
Rutgers								
Pencil grip	2.46	(.65)	2.41	(.68)	2.24	(.56)	1.69	NS
Ext. config.	2.12	(.63)	1.64	(.67)	1.34	(.59)	19.06	.01
Int. detail	2.28	(.64)	1.68	(.68)	1.30	(.51)	31.35	.01
Near VA	2.82	(.48)	2.59	(.76)	2.34	(.82)	5.68	.05
Stereopsis	2.62	(.53)	2.20	(.70)	2.34	(.69)	6.23	.05
Cover:								
Far	2.84	(.51)	2.31	(.84)	2.66	(.69)	8.98	.01
16"	2.54	(.61)	2.00	(.82)	2.34	(.72)	8.49	.01

TABLE B1. Continued

Item	Reg. Class		Emot. Dist.		Ment. Retarded		F	P
N. P. C.	2.76	(.48)	2.52	(.68)	2.70	(.61)	2.28	NS
Pursuits	2.66	(.63)	2.21	(.68)	2.28	(.61)	7.65	.01
Retinoscopy:								
Static	2.68	(.59)	2.27	(.79)	2.36	(.72)	5.10	.05
Bell	2.64	(.56)	2.28	(.75)	2.48	(.74)	4.11	.05
Book	2.62	(.53)	2.29	(.77)	2.46	(.65)	3.57	NS
Split Form	2.04	(.90)	1.77	(.78)	1.64	(.83)	3.02	NS
Tactual-vis.	2.26	(.80)	2.36	(.82)	1.84	(.77)	6.65	.05

* Standard deviations are written in parentheses.

TABLE B2.

ROSNER PERCEPTUAL SURVEY
ITEM ANALYSIS (B)

Item	Regular class-- Emot. disturbed		Regular class-- Mentally retarded		Emotionally dist.-- Mentally retarded	
	F	p	F	p	F	p
Gen. Status	10.55	.01	33.53	.01	6.89	.01
Word Repet.	7.61	.01	15.68	.01	.76	NS
Aud. Org.	7.19	.01	20.91	.01	3.36	NS
Dev. Drawing:						
Org.	18.41	.01	5.37	.05	4.90	.05
Ext. con.	28.92	.01	20.22	.01	.18	NS
Int. det.	29.66	.01	18.04	.01	1.18	NS
Motor Skills:						
1-ft. bal.	2.44	NS	.00	NS	2.44	NS
1-ft. hop	6.84	.01	.74	NS	3.24	NS
Skip	8.53	.01	1.67	NS	3.28	NS
Throw	8.45	.01	2.33	NS	2.21	NS
Kick	.00	NS	2.10	NS	2.15	NS
2-ft. hop	6.91	.01	2.54	NS	2.26	NS
Body Image	8.58	.01	26.06	.01	5.34	.05
Rhythmic hop	11.54	.01	15.40	.01	.07	NS
tap	33.45	.01	35.49	.01	.00	NS
Audit. vis.	25.17	.01	39.42	.01	3.93	.05
Rutgers:						
Pencil grip	.20	NS	3.30	NS	2.02	NS
Ext. config.	17.69	.01	40.42	.01	5.89	.05
Int. detail	26.18	.01	71.48	.01	10.51	.01
Near VA	2.64	NS	12.53	.01	3.38	NS
Stereopsis	9.95	.01	5.14	.05	.71	NS
Cover: Far	13.16	.01	2.19	NS	4.77	.05
16"	11.84	.01	2.22	NS	3.92	.05
N. P. C.	3.25	NS	.29	NS	1.56	NS
Pursuits	14.55	.01	9.39	.01	.45	NS
Retinoscopy						
Static	7.77	.01	5.86	.05	.21	NS
Bell	6.41	.05	1.48	NS	1.48	NS
Book	5.14	.05	1.82	NS	1.01	NS
Split Form	1.97	NS	5.28	.05	1.24	NS
Tactual-visual	.67	NS	7.09	.01	12.94	.01

TABLE B3.

DISCRIMINANT ANALYSIS: ITMES AND WEIGHTS

Item	Weight	Item	Weight
1	.17	16	.42
2	.13	17	.19
3	.16	18	.14
4	.10	19	.30
5	.24	20	.18
6	.19	21	.07
7	.41	22	.04
8	.06	23	.09
9	.09	24	.13
10	.02	25	.20
11	.26	26	.20
12	.18	27	.15
13	.13	28	.01
14	.07	29	.05
15	.15	30	.01

TABLE B4.

PREDICTED AND ACTUAL CLASSIFICATION OF THE CROSS-VALIDATION SUBJECTS

Pre-dicted	Actual 1	2	3
1	20		1
2	2	17	2
3	2	3	21

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APPENDIX C

The Manual for the Rosner Perceptual Survey (RPS) and the Rosner-Richman Perceptual Survey (RRPS)

Directions for Administration and Scoring Criteria

EXPERIMENTAL EDITION

TABLE OF CONTENTS

MANUAL FOR THE ROSNER PERCEPTUAL SURVEY

Directions for Administration and Scoring Criteria

1. General Adjustment Responses:

The following questions are to be directed to the child.
His responses are to be recorded.

a. "HOW OLD ARE YOU?"
b. "WHEN IS YOUR BIRTHDAY?"
c. "ARE YOU RIGHT OR LEFT HANDED?"
   1) Record his verbal response in space marked "Says".
d. "SHOW ME THAT HAND..."
   1) Record his motor response in space marked "Shows".
e. "TOUCH MY RIGHT HAND WITH YOUR RIGHT HAND."
   1) Examiner stands facing the child. Record child's ability to properly manipulate space under such conditions, i.e., <u>can</u> or <u>cannot</u> reverse space.

<u>SCORE</u>:

Below age 8.0 years:

four	(4)	correct responses or more	= 3
three	(3)	correct responses	= 2
two	(2)	correct responses or less	= 1

For age 8.0 and older:

five	(5)	correct responses	= 3
four	(4)	correct responses	= 2
three	(3)	correct responses or less	= 1

2. Word Repetition:

Examiner states: "I AM GOING TO SAY SOME WORDS. YOU LISTEN AND REPEAT THEM." (or "SAY WHAT I SAY")
Words are to be presented and responded to singly.
"ANIMAL - BREAKFAST - SPAGHETTI - PHILOSOPHY - ELEPHANT"

<u>SCORE</u>:

Through age 6.0 years:

five	(5)	correct responses	= 3
four	(4)	correct rssponses	= 2
three	(3)	correct responses or less	= 1

Beyond age 6.0 years:

five	(5)	correct responses	= 3
four	(4)	correct responses with error committed on "philosophy"	= 2
all else			= 1

Check each correct response and indicate an incorrect response with an "X".

3. Near Visual Acuity:

Use a standardized (A.O. or B & L) near-point visual acuity card held at the designated distance. Lenses are to be worn if they have been prescribed. Illiterate card to be used if necessary.

SCORE:

20/30 or better	(monocular and binocular)	= 3
20/30- to 20/40	(monocular and binocular)	= 2
20/40- or less	(monocular and binocular)	= 1

4. Stereopsis:

Use a Titmus Stereotest (polaroid). Child is to wear corrective lenses if they have been prescribed. Test booklet is to be held at a thirteen (13) inch viewing distance.

SCORE:

Through Row C and Box #7	(or better)	= 3
Through Row B and Box #5	(or better)	= 2
Less than above		= 1

5. Auditory Organization:

Examiner is to be positioned in child's view - for testing purposes. (It is clinically useful to determine whether visual reinforcement is of benefit or vice versa). Examiner states: "I AM GOING TO CLAP A PATTERN. YOU ARE TO REPEAT IT WHEN I HAVE FINISHED. LISTEN. I WILL TELL YOU WHEN YOU ARE TO START CLAPPING." Stop after two (2) errors and record last correct response.

Patterns are to be presented and responded to singly, in a rhythmic fashion, at a rate of two (2) counts per second. A "2-2" pattern, hence, indicates: "clap, clap - pause - clap, clap"; "1-2-3" indicates: "clap - pause - clap, clap - pause - clap, clap, clap". The pause is to be the same length as the claps.

No.	Pattern	No.	Pattern	No.	Pattern
1	1-1	7	2-2-1	13	3-2-2
2	2-2	8	1-1-2	14	1-2-3
3	1-2	9	2-2-2	15	1-3-1
4	2-1	10	1-3-2	16	3-1-2
5	2-1-2	11	2-1-3	17	1-2-1-2
6	1-2-1	12	2-3-1	18	2-1-2-1

SCORE:

through age 6.0 years:	through pattern number 4	= 3
	through pattern number 2	= 2
	less than above	= 1
from ages 6.1 through 8.0:	through pattern number 9	= 3
	through pattern number 4	= 2
	less than number 4	= 1
from ages 8.1 years:	through pattern number 16	= 3
	through pattern number 9	= 2
	less than number 9	= 1

6. Gesell Copy Forms:

Drawings of seven (7) geometric forms are to be presented in the following order: circle, cross, square, triangle, divided rectangle, horizontal diamond and vertical diamond. (Standardized patterns may be procured from Harper and Row, publishers) The standardized Gesell format is followed. The child is presented with a 8 1/2 x 11 inch sheet of green mimeograph paper. It is placed before him in a vertical orientation and a sharpened No. 2 pencil is placed upon the paper. The child is asked to write or print his name on the paper. It is placed anywhere he chooses on the sheet. The cards are then presented one at a time with the request: "MAKE ONE LIKE THIS ON YOUR PAPER." Again, it is placed anywhere on the paper that the child chooses. He is not directed as to placement or size of reproduction. He is permitted to use the other side of the paper if he requests it.

SCORE:

Organization:

through age 6.3 years:	
no overlapping of figures	= 3
one overlap	= 2
more than one overlap	= 1
from age 6.4 years through 8.0 years: No overlapping of figures and a left to right or vertical orientation of drawings.	
both above criteria met	= 3
only one of above criteria met	= 2
neither criteria met	= 1
from 8.1 years: No overlapping of figures and a left to right orientation of drawings.	
both above criteria met	= 3
only one of above criteria met	= 2
neither criteria met	= 1

External Configuration: (Be concerned with proper closure of corners, right angles, parallel lines, etc.)

from age 5.1 to 6.3 years:

forms properly reproduced through triangle	= 3
forms properly reproduced through square	= 2
less than above	= 1

from age 6.4 through 7.0 years:

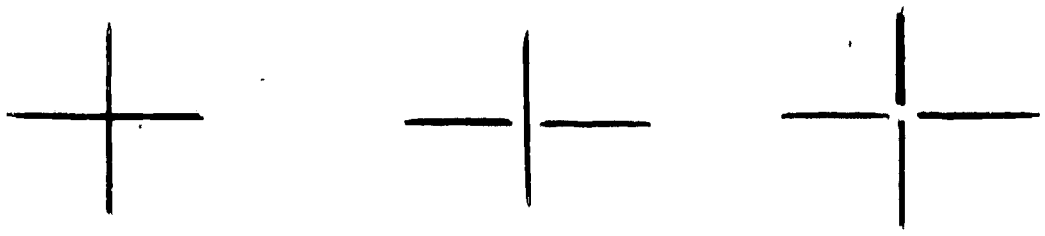
forms all properly reproduced	= 3
forms properly reproduced through divided rectangle	= 2
less than above	= 1

from ages 7.1 years:

forms all properly reproduced	= 3
all but one properly reproduced	= 2
less than above	= 1

Internal Detail:

Of primary concern in this sub-test is the subject's process in constructing the reproduction of the cross and the divided rectangle. The cross, ideally, should be constructed by drawing two lines, one vertical and one horizontal. (see example).



a b c

a = two pencil strokes. (one vertical, one horizontal)

b = three pencil strokes.

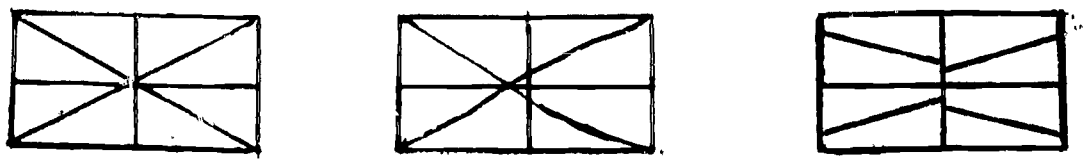
c = four or more pencil strokes.

from age 5.1 to 6.3 years:

a = 3
b = 2
c = 1

Internal Detail:

The divided rectangle, ideally, should be constructed by drawing a rectangle and placing within it a vertical line, a horizontal line and two diagonals which meet at the center (see example).



a b c

a = properly reproduced, using one vertical stroke, one horizontal stroke and two diagonal strokes.

b = as in "a" but with lack of a central crossing point.

c = final pattern does not resemble original form.

from age 6.4 years:

a = 3
b = 2
c = 1

7. Cover Test:

A. Far: Subject is to wear lenses if they have been prescribed. A fixation point situated twenty (20) feet from the subject is to be designated. Examiner places a hand-held occluder over one of the subject's eyes. He states: "LOOK AT THE TARGET". Examiner observes the eye that is under cover and notes any movement of the eye while under cover. Occluder is then placed over the other eye and similar observations are conducted.

no movement of eye under cover	= 3
slight movement of eye	= 2
marked movement of eye	= 1

B. Near: Same as "Far: utilizing a fixation point held sixteen inches from the subject's eyes.

no movement of eye under cover	= 3
slight movement of eye	= 2
marked movement of eye	= 1

8. Near Point of Convergence:

Subject is to wear his lenses if they have been prescribed. A non-specific target, such as a half-inch steel ball or the eraser end of a pencil, is to be used. Examiner directs the subject to view the object with both eyes while it is held at midline, above sixteen inches away. Subject is directed to "KEEP LOOKING AT THE TARGET", as it is brought closer to his eyes. Examiner watches subject's eyes and notes when binocular fixation is lost. Target is then moved away from subject's eyes as he is instructed to "LOOK AT THE TARGET". Recovery distance is also noted. Both the "break" and "recovery" distances are noted in inches. Hence, 2/4 indicates the binocularity was lost within a two inch distance from the subject's eyes and recovery within four inches.

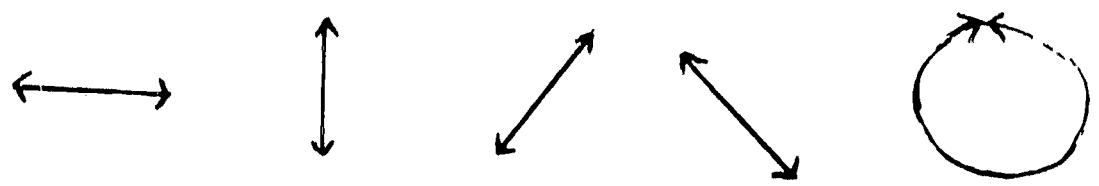
SCORE:

2/4	= 3
4/8	= 2
8"+	= 1

9. Pursuits:

Subject is to wear glasses if they have been prescribed. A non-specific target, such as a cat bell suspended from a nylon thread, is to be presented as fixation target. Examiner directs the subject to view the object with both eyes as it is moved, smoothly, in various directions. The target is kept at about sixteen inches from the subject's eyes.

Commencing with the target at midline, it is to be moved vertically, horizontally, diagonally and in a circular pattern:



At ages 4.0 years through 6.0 years: one excursion in each direction.
At ages 6.1 years through 8.0 years: two excursions in each direction.
At ages 8.1 years and beyond: three excursions in each direction.

SCORE: (Monocular and binocular)

Smooth, relatively effortless tracking movements = 3
Intermittent fixation losses; effort more evident = 2
Erratic tracking movements; frequent fixation losses = 1

10. Retinoscopy:

A. Static: Subject fixates at infinity. Loose lenses are held by the examiner. Scoring depends upon an approximation of the refractive status. Precise measurements are not necessary.

SCORE: (Monocular and binocular)

from +0.50 to -0.50 D. sph. (or strongest cylindrical component = 3

from +0.62 to +1.00 D. sph. and -0.62 to -1.00 D. sph. = 2

more than above = 1

B. Bell: Subject fixates at cat-bell, suspended from a nylon thread. Examiner is positioned twenty inches from subject's eyes. Subject fixates upon the bell as it is brought closer to his eyes. Subject wears his glasses, if they have been prescribed. Record that position (distance from subject's eyes) when scope reflex demonstrates an "against" motion. Then reverse movement of bell (away from subject) and record that distance (from subject's eyes) where scope reflex demonstrates a "with" motion. Hence 12/15 indicates that "against" motion was first observed when bell was twelve inches from subject's eyes; "with" motion was observed when bell was fifteen inches from subject's eyes.

SCORE: (Monocular and binocular)

11 to 15/12 to 16 inches	= 3
9 to 11/16 to 18 inches	= 2
beyond above limits	= 1

C. Book: Subject is given material at his reading level as retinoscope is utilized to determine dynamic refractive status under those conditions. He may hold it as he wishes. Loose lenses are used. Precise measurements are not required.

SCORE: (Monocular and binocular)

+0.50 to -0.50 D.	= 3
+1.00 to -1.00 D.	= 2
more than above	= 1

All retinoscopic measurements are taken through subject's lenses.

11. Motor Skills:

A. One foot balance: Subject is requested to "BALANCE ON ONE FOOT". He may choose either foot for his initial effort. This performance is then compared to his ability to balance on the other foot.

SCORE:

from 5.0 years to 6.0 years:

maintained balance at least 8 seconds on each foot	= 3
maintained more than 5 seconds; less than 8	= 2
maintained less than 5 seconds	= 1

beyond 6.1 years:

at least 10 seconds on each foot	= 3
more than 5; less than 10 seconds	= 2
less than 5 seconds	= 1

(Use the performance of the poorer side for designation of score)

B. One foot hop: Subject is requested to "HOP ACROSS THE ROOM", on one foot. He may choose either foot for his initial effort. This is then compared to his ability to hop on the other foot.

SCORE:

from 5.0 years to 6.0 years:

ten (10) or more hops without loss of pattern	= 3
four (4) through nine (9) hops	= 2
less than four (4) hops	= 1

Motor Skills (cont.):

beyond 6.1 years:

fifteen (15) or more hops without loss of pattern	= 3
nine through fifteen hops	= 2
less than nine hops	= 1

(Use the performance of the poorer side for designation of score)

Subtract one (1) point from the score if excessive compensatory movements and awkwardness is observed.

C. Two feet hop: Subject is requested to "HOP ACROSS THE ROOM, LIKE A BUNNY RABBIT, WITH YOUR FEET TOGETHER".

SCORE:

from 5.0 years to 6.0 years:

Five hops:	right and left sides stay in synchrony	= 3
	difficult and/or uneven synchrony	= 2
	heavy movements; marked disparity of sides	= 1

from 6.1 years:

Ten hops:	right and left sides stay in synchrony	= 3
	difficult and/or uneven synchrony	= 2
	heavy movements; marked disparity of sides	= 1

D. Skip: Subject is requested to "SKIP ACROSS THE ROOM". If there is hesitancy, determine whether it is a comprehension and/or communication problem. Demonstrate skipping pattern to the subject, if necessary.

SCORE:

from 5.0 years to 6.0 years:

can skip in relatively easy manner	= 3
skips on one foot only	= 2
cannot skip	= 1

from 6.1 years:

can skip - good quality	= 3
can skip - fair quality	= 2
can skip - very poor quality	= 1
cannot skip	= 1

E. Throw: Subject is given a piece of paper crumpled up to simulate a ball. He is asked to "THROW IT TO ME". He determines which hand shall be used. Three throws (overhand) are requested. Record (R - L) which hand(s) utilized.

SCORE:

Same hand used in all three trials:
good quality = 3
fair quality = 2
poor quality = 1

Same hand not used in all three trials:
subtract one (1) from quality score.

F. Kick: Subject is given a piece of paper crumpled up to simulate a ball. He is asked to "KICK IT TO ME". The "ball" is centered before him on the floor. He determines which foot shall be used. Three kicks are requested. Record (R - L) which foot is utilized.

SCORE:

Same foot used in all three trials:
good quality = 3
fair quality = 2
poor quality = 1

Same foot not used in all three trials:
subtract one (1) from quality score.

12. Identification of Body Parts :

Subject is requested to "TOUCH" the various designated body parts on his own body.

Age expected:

eyes	- three (3) years	ankles	- five + (5+) years
toes	- three (3) years	ears	- three (3) years
nose	- three (3) years	elbows	- five + (5+) years
knees	- four (4) years	mouth	- three (3) years
shoulders	- five (5) years	wrist	- five + (5+) years

SCORE:

through age 5.0 years:
no (0) errors (except those parts designated as 5+) = 3
one (1) error (except those parts designated as 5+) = 2
two (2) or more errors = 1

beyond age 6.0 years:
no (0) errors = 3
one (1) error = 2
two (2) errors or more = 1

Check each correct response and indicate an incorrect response with an "X".

13. Rhythmic Hopping:

Examiner demonstrates and simultaneously describes the action of each pattern, verbally. If the child pauses or stops between hops, he is asked to try to sustain a smooth, rhythmic performance. Examiner is to avoid "right" or "left" designations, pointing instead. The subject may choose either foot to initiate the action. Five complete cycles of each pattern are to be performed successfully.

Patterns:

1/1 = Examiner demonstrates and says, "WATCH ME, AND DO WHAT I DO. JUMP BACK AND FORTH, IN PLACE, FROM ONE FOOT TO THE OTHER." Tempo is to be kept even, similar to running in place.

2/2 = Examiner demonstrates and says, "JUMP TWO TIMES ON EACH FOOT ...TWO TIMES ON THIS FOOT AND TWO TIMES ON THE OTHER FOOT." This is to be done in a steady, rhythmic pace. All four "beats" of the cycle are to be synchronous. There is to be no delay in shifting between right to left, to right to left.

1/2 = Examiner demonstrates and says, "JUMP ONCE ON THIS FOOT AND TWO TIMES ON THAT. THEN, AGAIN, ONCE ON THIS FOOT AND TWO TIMES ON THE OTHER. DON'T PAUSE BETWEEN HOPS." This is to be done in a steady, rhythmic pace with no delay in shifting between right and left.

2/1 = This is the reverse of the preceding pattern. "NOW, JUMP ONCE ON THAT FOOT AND TWO TIMES ON THIS."

Testing is halted at the first unsuccessful performance level. Check each successful performance and indicate an unsuccessful performance with an "X".

SCORE:

from 5.0 years to 6.0 years:

1/1 pattern	
good quality	= 3
fair quality	= 2
poor quality	= 1

from 6.1 years to 7.11 years:

2/2 pattern	
good quality	= 3
poor quality	= 2
1/1 pattern only	= 1

from 8.0 years:

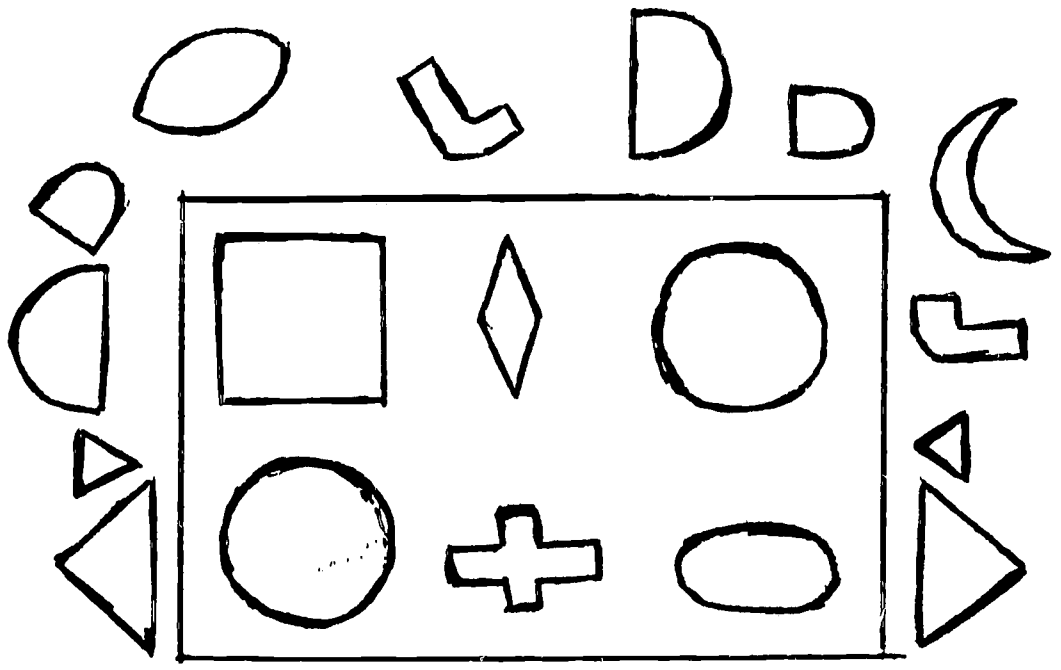
1/2 and 2/1 patterns; fair and good quality	= 3
1/2 or 2/1 pattern only	= 2
2/2 pattern	= 2
1/1 pattern only	= 1

Rhythmic Tapping:

Use same patterns and scoring criteria as are shown with "rhythmic hopping". Subject is told to "WATCH ME, AND TAP YOUR HANDS AS I HAVE DONE". Examiner taps hands on a table top in the same manner as with hopping patterns.

14. Split Form Board:

Obtained from Childcare Co., Loveland, Colorado. Pieces are removed from the board while it is out of sight of the subject. They are arranged on a table top, before the subject, in the following fashion:



(Note: The two sections of the cross (+) are situated so that one of the sections must be turned over in order to properly combine with the other.)

Subject is requested to "DO THE PUZZLE". If he cannot gain insight into the "split" concept of the task, the examiner may demonstrate it to him, after having allowed adequate time for the subject to ponder the situation. If a demonstration is required, the examiner is to grasp the two semi-circles, place them together in proper fashion and say to the subject: "DOES THIS GIVE YOU ANY IDEAS?" No further demonstration is allowed. Board to be removed if completion cannot be accomplished.

SCORE:

from age 6.1 years to 7.0 years:

requires demonstration; can complete, understands +	= 3
requires demonstration; can complete, does not understand +	= 2

from age 7.1 years:

no demonstration; completes; understands +	= 3
needs demonstration; completes; understands +	= 2
needs demonstration; does not understand +	= 1

15. Auditory - Visual:

This test uses the Birch-Belmont auditory-visual integration instrument. Cards can be made, using 5 x 8 index cards. (see diagram below) The first demonstration card is presented, on which are shown three different patterns. All but the first pattern is covered by the examiner's hand.

Auditory - Visual (cont.):

Examiner states: "HERE ARE TWO DOTS, CLOSE TOGETHER. LISTEN, I AM GOING TO TAP TWO TIMES, CLOSE TOGETHER". Examiner then taps twice (at a beat per 1/2 second tempo), using a pen, or similar device. His hand is hidden beneath the testing table, so that the tapping cannot be seen, merely heard. The second pattern on demonstration card A is then exposed. The examiner states: HERE ARE TWO DOTS, FARTHER APART. LISTEN, I AM GOING TO TAP TWO TIMES, FARTHER APART". Examiner then taps twice, at the same tempo, with a 1/2 second pause between the two taps. He then exposes the third pattern on demonstration card A (...) and asks: "HOW MANY TIMES DO YOU THINK I AM GOING TO TAP NOW?...CLOSE TOGETHER OR FAR APART?" If the subject demonstrates a comprehension of the task by replying, "three times, close together", demonstration card B is presented. The examiner then states, "HERE ARE THREE DIFFERENT DESIGNS. I WILL TAP ONLY ONE OF THEM. YOU LISTEN AND SHOW ME WHICH ONE I TAPPED". Examiner then taps the second (middle) pattern (as above) and awaits the subject's response. If comprehension is again demonstrated, the examiner states: "THIS TIME YOU HAVE TO LISTEN TO MY TAPPING FIRST, THEN I WILL SHOW YOU A CARD AND YOU"LL SHOW ME WHICH PATTERN I TAPPED. YOU HAVE TO REMEMBER WHICH ONE I TAPPED". He then taps the third (3) pattern on card C. After completion of the tapping, he exposes card C to the subject and asks: "WHICH ONE OF THESE DID I TAP". If comprehension is demonstrated, the test may be commenced. Errors are to be recorded on the recording sheet: e.g.:

1 2 X 4 5 X 7 8 9 10 indicates errors on cards 3 and 6.

Though not important to scoring, it is clinically valuable to note the quality of error. Does the subject respond in a fashion that is: random.....counts taps and disregards patterns....reverses patterns?

Patterns:

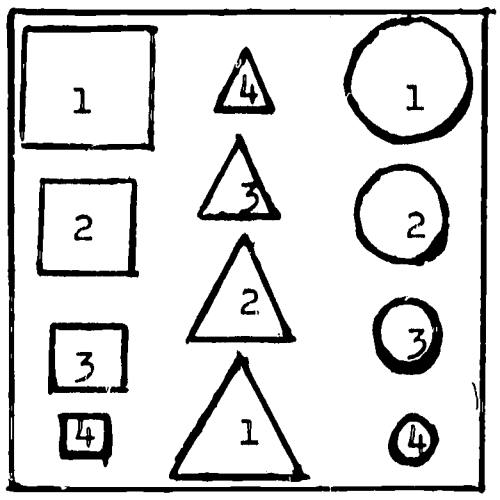
Card					
	A	**	* *	***	
	B	***	* **	** *	* **
	C	***	* **	** *	** *
	1	* ***	* ** *	** **	** **
	2	****	* ***	*** *	* ***
	3	*****	** ***	*** **	*** **
	4	* ** *	*****	** **	* ** *
	5	*** ** *	** *** *	* *** **	*** ** *
	6	*** **	** ***	**** *	** ***
	7	** ** **	**** **	*** * **	** ** **
	8	** *** **	*** ** **	*** *** *	*** *** *
	9	** ** **	** * ***	** *** *	** * ***
	10	* ** ***	* *** **	** * ***	* *** **

SCORE:

age:	over 6.0;	correct responses at least 5 = 3 4 = 2
	7.0;	7 = 3 5 = 2
	8.0;	8 = 3 6 = 2
	9.0;	8 = 3 7 = 2
	10.0;	9 = 3 8 = 2

16. Tactual - Visual Integration:

A form board procured from Creative Playthings, Childcraft entitled; N-100: Graded Circles, Squares and Triangles.



It is presented intact to the subject and the child is requested to "TAKE THE PIECES OUT". Once they have all been removed, they are collected together and placed at the far end of the board, away from the child. They are hidden from his view by placing the cover of the form board in front of the subject's eyes. The examiner then chooses the largest (#1) circle and taps the other side of the cover with it, stating: "I HAVE ONE OF THE PIECES HIDDEN BEHIND THE BOARD. YOU TAKE IT WITH YOUR HANDS AND FEEL IT.....CAN YOU TELL ITS SHAPE? CAN YOU SHOW ME WHERE IT WOULD FIT?" When satisfied, the examiner removes the cover from the child's eyes, making certain that the child does not see the selected form nor the other collected forms that are at the far end of the board. He states: "SHOW ME WHERE IT WOULD FIT." The subject need merely point to the correct location on the form board. He need not verbalize. Once he has chosen, he is given the form and asked to confirm his judgment. Again, his eyes are covered and another form is offered in the same manner. The original form is removed from the board so that, upon exposure the second time, the board will once again be vacant.

SCORE:

The examiner takes note of the subject's accuracy both in the judgment of shape as well as size. The forms are offered in the following order:

Order of presentation:

1 - Number 1 Circle
2 - 3 Square
3 - 3 Circle
4 - 2 Triangle
5 - 2 Square
6 - 3 Triangle

Six forms are offered. Score is indicated by a fraction. The numerator indicates the number correct: the denominator indicates the number offered. e.g. 4/6 - four correct of six.

SHAPE:

ages 5.0 to 6.0 years:	5/6 = 3 4/6 = 2 less = 1
6.1 and over	6/6 = 3 5/6 = 2 less = 1

SIZE:

ages 5.0 to 6.0 years:	4/6 = 3 3/6 = 2 less = 1
6.1 and over	6/6 = 3 5/6 = 2 4/6 = 1

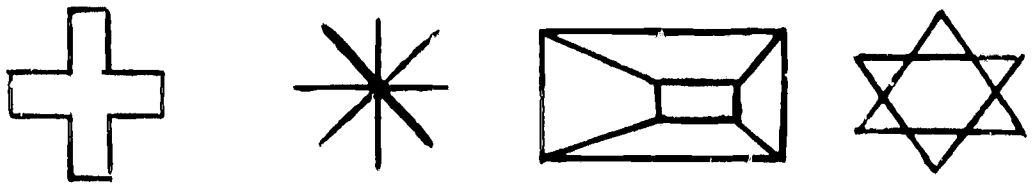
Total the two scores derived from categories of shape and size.

Total of 6 = 3 on RPS sheet
5 = 2
4 = 2
3 = 1

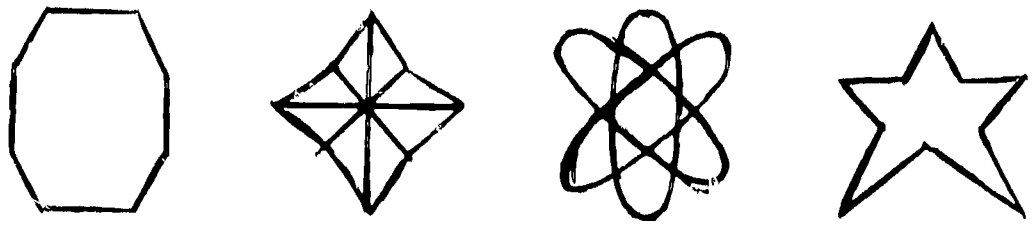
17. Rutgers Drawing Test:

Two forms of the Rutgers Test are available. Form A is to be used in this survey with children up to age 7.6 years. Beyond that age form B is to be used. For clinical purposes, the entire test should be offered and scored, using Starr's standardization. For the purposes of this Survey, four figures will be sufficient to derive a score.

The following figures from form A are to be presented:



The following figures from form B are to be presented:



A. Pencil grip:

1. Pencil grasped with thumb and index finger; pencil resting against second finger. Grip to be relatively loose so that easy manipulation of the pencil is possible. Fingers should be about one (1) inch above the point. = 3

2. Pencil grip very tense; fingers close to the point. Manipulation tight and inefficient. = 2

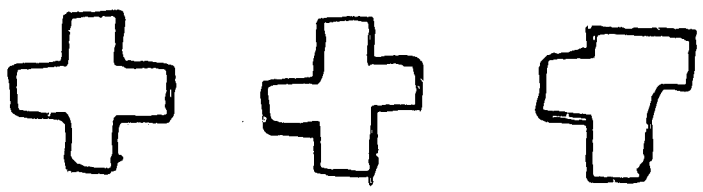
3. More than the thumb and index finger on the pencil. Manipulation of the pencil performed by three fingers or more. = 1

B. External Configuration: be concerned with proper closure of corners, right angles, parallel lines, etc.

1. Outer configuration of the forms accurately reproduced. Little, if any distortion in shape observed. = 3

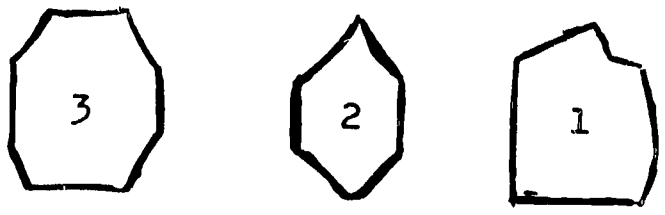
2. Some distortions observed, but general shape of figure properly reproduced. = 2

3. Distorted reproductions. = 1
e.g.



SCORE: 3 2 1

SCORE:

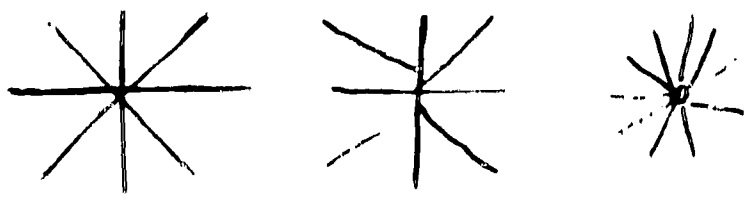


C. Internal Detail: be concerned with subject's ability to maintain the spatial relationships of the internal detail of the shape. Also, observation of the method of constructing the figure is needed. Although an accurate reproduction may be achieved, distorted spatial relationships can be demonstrated in the subject's approach to the analytical aspects of the task.

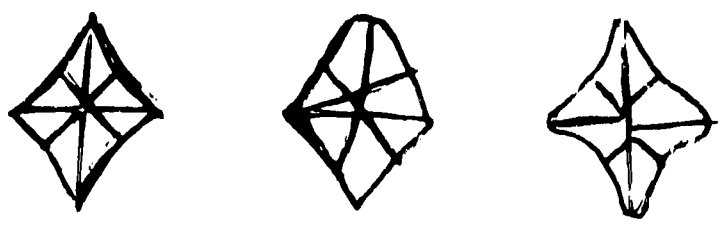
1. Accurate details. Efficient analysis of the relationships. = 3

2. Relative accuracy in reproduction of details. = 2

3. Distorted. = 1
   e.g.



SCORE: 3 2 1



NOTE: The figures shown above, both in the External Configuration and the Internal Detail sections, are to be used as the basis for scoring. In the event of uncertainty, the remaining figures are to be used for final determination of point score.

Total RPS Score = 90
Score indicating a perceptual-motor dysfunction: 72 or less.

MANUAL FOR THE ROSNER-RICHMAN PERCEPTUAL SURVEY

Directions for Administration and Scoring

Omit the following items:

3. Near Visual Acuity
4. Stereopsis
7. Cover Test
8. Near Point of Convergence
9. Pursuits
10. Retinoscopy
14. Split Form Board
16. Tactual - Visual Integration

Administer and score the remaining items, as directed in this manual.

Total RRPS Score = 57

Score indicating a perceptual-motor dysfunction: 45 or less

Pittsburgh Public Schools

Division of Mental Health Services

ROSNER PERCEPTUAL SURVEY
(RPS)

Name_____ School_____ Grade____

Birthdate_____ I. Q._____ Date_____

	Score (circle)
General Adjustment Responses: Age____ Birthdate_____ Right or left-handed? Says____ Shows____ Can reverse____ Cannot reverse____	1 2 3
Word Repetition: animal___ breakfast___ spaghetti___ philosophy___ elephant___	1 2 3
Near Visual Acuity: (With/without Rx) R: OD: L: OS: OU: DVA:	1 2 3
Stereopsis: Fly____ Row____ Box____	1 2 3
Auditory Organization: V: assists____ Random____ confuses____ Repeats number only____ Pattern____ Reverses____	1 2 3
Gesell Copy Form: Hand preference: R L Organization External configuration Internal detail	1 2 3 1 2 3 1 2 3
Cover: Far: No___ slight___ marked (eso or exo)____ 16": No___ slight___ marked (eso or exo)____	1 2 3 1 2 3
Near Point of Convergence: 2/4____ 4/8____ 8" or more____	1 2 3
Pursuits: Monocular Binocular (sig. poorer R L)	1 2 3

Retinoscopy: (with/without Rx)

Static: OD
OS 1 2 3

Bell: OD
OS Par. No._____ 1 2 3

Book: OD
OU 1 2 3

Motor Skills:

(Sig. poorer: R L)

1 foot balance 1 2 3
1 foot hop 1 2 3
2 foot hop 1 2 3
skip 1 2 3
throw R L 1 2 3
kick R L 1 2 3

Identification of Body Parts:

eyes___toes___nose___knees___shoulders___ankles___
ears___elbows___mouth___wrists___ 1 2 3

Rhythmic hop: 1/1_____ 2/2_____ 1/2_____ 2/1____ 1 2 3
tap: 1/1_____ 2/2_____ 1/2_____ 2/1____ 1 2 3

Split Form Board:

Hand preference: R L B

Process:

Reguires demonstration _____
Understands cross_____
Completes board_____ 1 2 3

Auditory-visual:

1 2 3 4 5 6 7 8 9 10

Not comprehended____
Repeats number only___
Reverses___ 1 2 3

Tactual-visual:

Shape_____
Size_____

Hand preference:
R L B 1 2 3

Rutgers Drawing Test:

Hand preference: R L

Pencil grip____ 1 2 3
External configuration 1 2 3
Internal detail 1 2 3

TOTAL SCORE _____

Pittsburgh Public Schools

Division of Mental Health Services

ROSNER-RICHMAN PERCEPTUAL SURVEY
(RRPS)

Name_____ School_____ Grade_____

Birthdate_____ I. Q._____ Date_____

Score (circle)

General Adjustment Responses: Age_____ Birthdate_____ Right or left-handed? _____ Says_____ Shows____ Can reverse_____ Cannot reverse_____	1	2	3
Word Repetition: animal___breakfast___spaghetti___philosophy___elephant___	1	2	3
Auditory organization: V: assists_____ Random_____ confuses_____ Repeats number only__ Pattern_____ Reverses_____	1	2	3
Gesell Copy Form: Organization	1	2	3
External configuration	1	2	3
Hand preference: R L Internal detail	1	2	3
Motor Skills:			
1 foot balance	1	2	3
1 foot hop	1	2	3
(Sig. poorer: R L) 2 foot hop	1	2	3
skip	1	2	3
throw R L	1	2	3
kick R L	1	2	3
Identification of Body Parts: eyes___toes___nose___knees___shoulders___ankles___ ears___elbows___mouth___wrists____	1	2	3
Rhythmic hop: 1/1_____ 2/2_____ 1/2_____ 2/1_____	1	2	3
tap: 1/1_____ 2/2_____ 1/2_____ 2/1_____	1	2	3

Auditory-visual: (X = error)

1 2 3 4 5 6 7 8 9 10

Not comprehended____
Repeats number only____ 1 2 3
Reverses____

Rutgers Drawing Test:

Hand preference: R L

Pencil grip____ 1 2 3
External Configuration 1 2 3
Internal detail 1 2 3

TOTAL SCORE: _____

MATERIALS

Gesell Copy Forms may be ordered from Harper and Row, publishers.

Split Form Board: Childcare Co., Loveland, Colorado.

Form Board for Tactual-Visual Integration: Creative Playthings, Childcrafts, N-100: Graded Circles, Squares and Triangles.

Rutgers Drawing Test forms may be ordered from:

Anna Starr, Ph. D.
126 Montgomery Street
Highland Park, New Jersey 08904

Permission is given by the authors to reproduce the RPS and RRPS score sheets in the back of the Manual.