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ABSTRACT

Task complexity in terms of symbolic mediation (inner thought) as a determinant of differential test performance and the prediction of dissimilar functioning were examined. Preschool children with moderate to profound speech and/or language handicaps were tested using: (1) a sound-in-words subtest of the Test of Articulation (TA); (2) Action Pictures (AP); (3) a Symbolic Mediation Test (SMT); and (4) the Schenectady Kindergarten Rating Scale of classroom behavior. Controls were included for test demands; the progression from low to high symbolic mediation tasks; the subject response mode; and examiner silence. Familiar and unfamiliar examiners certified and experienced in early childhood education administered the tests in instruct and no-instruct groups. The results among tests and variables are discussed in relation to examiners' backgrounds. Statistical tables illustrate the AP Tasks and the SMT which is included in the appendix. (CM)

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Research Report No. 54

THE IMPORTANCE OF SITUATIONAL FACTORS AND TASK DEMANDS TO HANDICAPPED CHILDREN'S TEST PERFORMANCE

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Abstract

The present investigation explored both a variety of possible determinants of children's differential test performance with familiar and unfamiliar examiners and the prediction of this dissimilar functioning. Methods included the testing of 79 speech and language handicapped preschool children within a repeated measures, cross-over design. Findings are discussed in terms of differences in the familiar and unfamiliar examiners' experiential backgrounds.

The Importance of Situational Factors and Task Demands to Handicapped Children's Test Performance

Educational psychologists recently have become interested in the role that situational factors play in affecting performance in assessment (cf. Sattler, 1974). As a result, a growing number of psychologists no longer view an assessment instrument's content validity as a sufficient pre-condition in deciding whether the test measures what it claims to test.

Of the various situational variables explored in the assessment setting, effects of examiner familiarity have been subjected to scrutiny most often. The decision to focus on this situational variable often has been based upon the long standing developmental notion that children derive much of their comprehension about and feelings toward a setting from the significant adult in that situation (cf. Freud, 1921/1922; Piaget, 1965).

Rosenthal (1980) suggested that the influence of prior contact is related to the task set for the child; that is, unfamiliar examiners strengthen children's performance on simple tasks and weaken their performance on more complex test items. On simple tasks, Rosenthal speculated that the examiner's strangeness engenders anxiety in the child, which contributes to the child's motivation to do well. This same anxiety, however, is presumed to interfere with a child's higher order thinking required by more complex tasks.

The notion that prior contact is negatively related to optimal performance on simple tasks is consonant with empirical evidence (Rosenkrantz & Van de Reit, 1972; Stevenson, Keen, & Knights, 1963).

The importance of examiner familiarity to performance on more challenging tasks, however, is less clear than Rosenthal suggests.

As a group, studies involving comparatively complex test items have suggested that differential performance depends in part upon the definition of examiner familiarity employed. When the familiarity of the examiner has been experimentally induced, subjects have not performed differentially (Jacobson, Berger, Bergman, Millham, & Greeson, 1971; Marine, 1929; Tyson, 1968). However, when familiarity has been defined in terms of a long-term acquaintanceship, subjects have exhibited stronger functioning with the familiar than with the unfamiliar examiner (Kinnie & Sternloff, 1971; Olswang & Carpenter, 1978; Stoneman & Gibson, 1978).

A study by Fuchs, Garwick, Featherstone, and Fuchs (1980), employing a long-term acquaintanceship definition of examiner familiarity, is the only investigation known to explore subjects' responses to familiar and unfamiliar examiners on both simple and complex tasks. Corroborating previous findings, Fuchs et al. discovered that test performance interacted with task complexity. On complex items, subjects' mean test performance was dramatically greater in the familiar than in the unfamiliar condition; there was no such differential functioning on simpler tasks.

In addition to examining relationships between examiner familiarity and children's performance on difficult and relatively simple tasks, Fuchs et al. asked teachers to complete an expanded version of the Schenectady Kindergarten Rating Scale on the subjects (cf. Fuchs, et al., 1980). This scale generated descriptions on a wide-range of behaviors demonstrated by subjects in their classrooms. The teachers' ratings were used to predict differential performance in the assessment situation. Six classroom behaviors contributed significantly to the variance of the difference

between subjects' performance in familiar and unfamiliar conditions. Four of these behaviors were related both to subjects' capacity to use language in the classroom and to subjects' feelings about their speech and/or language handicap. Cumulatively, the six behaviors explained 36% of the variance; all 17 variables constituting the rating scale accounted for 45% of the variance.

The present study continued to explore determinants and prediction of children's differential test performance.

Task Complexity and Mode of Response

The present study explored task complexity, defined in terms of symbolic mediation, as a determinant of differential test performance. The tasks were different from those used by Fuchs et al. (1980), where items differed in terms of the degree to which they directed pupils' performance and the amounts of examiner - examinee involvement, as well as in terms of symbolic mediation. By regulating the nature of the test materials and the format governing their presentation, the present study attempted to control for test demands, other than symbolic mediation, that might influence test performance. In addition, many more items were used to assess symbolic mediation so that the progression from low to high sy mediation tasks could be controlled more carefully.

Also controlled systematically was the mode, or manner, in which subjects were required to respond to the experimental tasks. At each level of task complexity, certain items required verbal responses while other test items necessitated gestural responses. Selection of the verbal and gestural modes was influenced by the fact that the study sample demonstrated moderate to profound speech or language handicaps.

By sharpening and extending previous conceptualizations of task

demands, this study attempted (a) to clarify characteristics of difficult tasks that help to explain differential test performance, and (b) to build upon the knowledge base that would permit one, ultimately, to identify tasks that promote differential test performance. Such knowledge, in certain instances, may call for modifications of the testing procedure that enhance the validity of assessment results.

Prediction of Differential Test Performance

This study also extended efforts by Fuchs et al. (1980) to predict differential test performance on the basis of teachers' ratings of pupils' classroom behavior. This extension of earlier work was accomplished by cross-validating the behavior rating scale employed by Fuchs et al. on a population that was larger than, but similar to, subjects in the former study. This effort was undertaken because of the need to predict which pupils may require special attention from the examiner before assessment to promote optimal performance. The importance of such a procedure was suggested by two findings of Fuchs et al.: (a) clinicians who worked regularly with the subjects predicted dramatically fewer students to perform differentially than the number of pupils who actually did so, and (b) familiar and unfamiliar examiners appeared insensitive to differential performers as revealed by their responses to a posttest questionnaire. If students who perform differentially in assessment represent a small proportion of a classroom population, and these pupils can be identified prior to assessment, it may be possible for the classroom teachers of these students, rather than clinicians, to function as examiners for this

special group of pupils. Appropriate training in test administration would be a necessary prerequisite to such a strategy.

Examiner Behavior and Differential Test Performance

The vast majority of previous investigations of differential test performance imply that examinee characteristics, alone (Seitz, 1980), or in combination with task characteristics (cf. Sattler, 1974), determine similar or dissimilar performance with familiar and unfamiliar adults. The importance of examiner behaviors rarely has been studied. Nevertheless, their salience is suggested by Rosenthal's (1980) work, a large corpus of investigations that demonstrates the profound impact others' expectations may exert on subjects' performance. Rosenthal (1973) cited four ways in which expectations may be communicated. Teachers who expect good things from their students (a) create a warmer social-emotional mood around their "special" students, (b) give more feedback to these students about their performance, (c) teach more material to them, and (d) give their "special" students more opportunity to respond.

Fuchs et al. (1980) obtained results in support of the last of these phenomena and, by so doing, indirectly corroborated the importance of examiners' expectations to examinees' test performance. Fuchs et al. found a significant and dramatic association between both the amount and variation of silence exhibited by familiar and unfamiliar examiners and handicapped pupils' differential test performance. Familiar examiners allowed very long silences with some children and granted scant silence to other pupils; unfamiliar examiners uniformly permitted brief periods of silence. Further analyses are required to "locate" more precisely these instances of silence in the communicative flow between examiners and

examinees before one may posit confidently any possible effects they may exercise on pupils' test performance. However, at this point, it seems that familiar examiners permit subjects adequate opportunity to respond while unfamiliar examiners, by prematurely terminating the test session, frequently do not offer the same chance.

Moreover, one may speculate that the unfamiliar examiners' proneness to terminate the testing in an untimely manner was related to their ignorance and comparatively low estimates of subjects' skill level and knowledge base. Confronted by subjects' discomfort in response to some test requirement, unfamiliar examiners had to decide whether to ignore this unease and encourage continued effort or to withdraw the test demand and assuage manifest anxiety. Presumably, this decision normally requires grounding in what the examiner understands about an examinee's capabilities. Because unfamiliar examiners in this study had limited information about subjects' ability levels, were presumably perceptive about and empathic towards children's feelings, and were no doubt aware of their need for subjects' cooperativeness, they may have experienced no alternative but to behave conservatively and employ subjects' discomfort as a primary cue in determining when to conclude testing.

In contradistinction, familiar examiners, by definition, had a more accurate notion of which subjects were capable and incapable of performing. When faced by subjects who were reticent and uncomfortable, yet known to be capable, familiar examiners appeared comparatively unresponsive to their silence and insensitive to their display of discomfort, supositively as a means of communicating an expectation that subjects function in accordance with their potential. Furthermore, because their

relationship to the subjects rested upon a relatively long prior acquaintanceship, it is suggested the familiar examiners were less concerned than unfamiliar examiners about subjects' discontinued cooperation during assessment.

No additional research in the general assessment literature is known that pertains to these findings and speculations. However, investigations in the area of classroom teaching and counseling demonstrate the powerful effects that silence may exercise on human behavior. Rowe (1974), for example, systematically varied the amount of silence permitted by teachers following both teacher questioning and pupils' responses. She discovered that by increasing the amount of permissable time to respond, the length and quality of students' utterances and the frequency of pupil-initiated speech increased.

Similarly, in counseling research individuals consistently reported a preference for therapists who spoke less frequently (Kleinke & Tully, 1979). This remained the case even when the content of therapists' talk was controlled. Moreover, several sources suggest that clients perform better in therapy when there is an opportunity for silence (e.g., Rogers, 1951).

To gauge the effects of examiners' behavior on examinees' differential test performance, familiar and unfamiliar examiners' use of silence was manipulated experimentally in the present study. It was anticipated that subjects' presumed differential test performance would be less strong when familiar and unfamiliar examiners were required to extend equal amounts of response time than when the amount of response time was left to the discretion of the examiners.

The importance of this endeavor was predicated upon the fact that differential test performance with familiar and unfamiliar examiners represents a source of error variance in the way tests currently are administered. If this differential performance may be attentuated by modifying select procedures in the test setting (e.g., requiring unfamiliar examiners to offer examinees adequate response time), more valid performances may result. The importance of this line of inquiry is underscored by the fact that virtually all test manuals presently used by clinicians are insensitive to the possible negative effects of unfamiliar examiners on children's test performance.

In summary, the purpose of the present investigation was to examine the effects of three variables (levels of symbolic mediation, response mode, and examiner silence) on children's differential test performance and the prediction of this dissimilar functioning with familiar and unfamiliar examiners. Efforts to predict differential test performance consisted of cross-validating a prediction instrument used in a previous study by Fuchs et al. (1980).

Method

Subjects

Subjects were 79 preschool children whose speech and/or language functioning constituted a moderate to profound handicap. They were enrolled in one of three special education programs located in Minneapolis or St. Paul, Minnesota. Sixteen subjects attended Program A, 28 subjects came from Program B, and 35 pupils were enrolled in Program C. Children who were mentally retarded as well as speech or language impaired were excluded from the study. When data were available, mental retardation

was defined in accordance with AAMD Guidelines (cf. Grossman, 1973). In several cases IQ data were not available and exclusion from the study was based upon teachers' evaluations of general classroom functioning. Also eliminated from the investigation were subjects who had been in their classrooms less than 6 weeks prior to the date on which the study began.

Measures

Test of Articulation (TA). The Sound-in-Words subtest of the TA (Goldman & Fristoe, 1972) was administered to replicate Fuchs et al. (1980). This subtest consists of 35 illustrations depicting objects and activities that are familiar to young children. Examiners were instructed to elicit both a spontaneous and imitative response from the subjects. To facilitate a spontaneous response, examiners presented all of the pictures and for each one inquired, "What is this?" Regardless of whether the subject responded correctly, incorrectly, or failed to provide any answer, the examiner then instructed the subject to "Say_____," modeling the correct name for the depicted object. This second direction yielded an imitative response. Neither the subjects' imitative nor spontaneous performance was scored since previous findings (Fuchs et al., 1980) failed to indicate differential responses to familiar and unfamiliar examiners on this measure. Also, in an effort to limit the duration of the total testing session, only the first two-thirds of the Sounds-in-Words subtest was administered.

Action Pictures (AP). Two black and white pictures, one 14.0 cm x 10.8 cm and the other 15.0 cm x 13.3 cm, were selected first for their unambiguous depiction of actors, emotions, activities, props, and settings and, second, for the interest they promised to hold for the study sample.

They were administered in two different experimental conditions that are described below. Subjects' verbal descriptions of the AP were recorded on audio tape during testing and scored later by a certified speech clinician who was unaware of the experimental questions and who knew neither the subjects nor the examiners. Subjects' responses were evaluated in terms of the total number of intelligible words and syllables employed to describe the illustrations.

Symbolic Mediation Test (SMT). Developed for the present study, this measure consists of 18 items that are organized along two dimensions, complexity of symbolic mediation and mode of response. Subjects' capacity to employ symbolic mediation (SM), or inner-thought, was assessed by six items at each of three increasingly complex levels, low (LSM), mid (MSM), and high (HSM). At each of these levels, three items required a verbal response (VR) and three required a gestural response (GR).

LSM/GR tasks asked subjects to select from an array an object that matches a standard. LSM/VR test items required subjects to provide a one-word label for an illustration of a commonplace object. MSM tasks assessed subjects' ability to perform in-class matching. For example, one MSM/GR item presents one page with pictures of a taxi and airplane and another with a stop sign, boat, cup, and lightening. The subject is instructed to point to the object on this second page (i.e., boat) that shares an essential functional similarity with the objects shown on the first page (i.e., types of travel). One of three MSM/VR tasks presents the subject with illustrations of a wolf, pig, and zebra; the subject is informed that the pictures are all of animals. Next, a picture is presented that displays a hamburger, sliced loaf of bread, and sandwich;

pointing to each in turn, the examiner inquires, "This, this and this are all_____?" HSM tasks evaluated subjects' capacity to analyze and integrate segments of visual information, of relatively high symbolic value, in order to tell a story. HSM/GR items required (a) an arrangement of cut-up representational drawings so that they relate a meaningful temporal sequence, and (b) an identification of a geometric form that correctly completes an abstract pattern. Two HSM/VR tasks each call on subjects to tell a story about three interrelated illustrations. The third test item presents only two related pictures and requires the subject to extrapolate to finish the story.

Examiners scored subjects' performance on the LSM, MSM, and HSM/GR tasks. Subjects' responses to the HSM/VR items were recorded on audio tape, transcribed by a certified speech clinician who was unaware of the experimental questions, and evaluated by three of the investigators who worked as a group to score each response. Subjects' responses to familiar and unfamiliar examiners were evaluated on the basis of seven scores: LSM/GR, LSM/VR, MSM/GR, MSM/VR, HSM/GR, HSM/VR, and Total Score. For the first six of these 0 to 3 points were awarded; 1 point was given for each correct response. The maximum number of points awarded for the total score was 18 points.

Schenectady Kindergarten Rating Scale. Constructed by Conrad and Tobiessen (1967), this instrument examines pupils' classroom behavior. In its expanded form (cf. Fuchs et al., 1980), it is comprised of 17 items that are rated along a 3 to 7 point scale. This expanded version was completed by classroom teachers on each of the subjects following the conclusion of all testing.

Procedure

Examiners. There was a total of 17 examiners. Eleven of these, as classroom teachers of the subjects, were familiar examiners; six examiners were unfamiliar to the subjects. All testers were female, certified in early childhood education, and had at least several years of experience working with preschool children in educational settings. Familiar and unfamiliar examiners were trained separately in the administration of the experimental tasks by three certified speech clinicians who were unaware of the study's purposes.

Design. At each study site, subjects were randomly assigned to Group 1 or Group 2. The two groups differed only in terms of the presentation of the AP task (see No Instruct and Instruct conditions described below); the TA and SMT tasks were identical for the two groups. (The TA task for both groups and the AP task for Group 1 replicated those used by Fuchs et al., 1980.) The three tasks were presented to all subjects in the same order: TA first, then AP, and SMT last. Within each group, subjects initially were assigned randomly to either the Familiar Examiner (teacher) or Unfamiliar Examiner (stranger) condition. All subjects were assessed twice, within a crossover design, so that all were tested by both types of examiners. The Schenectady Kindergarten Rating Scale was completed by classroom teachers for Group 1 subjects since they constituted the cross-validation population.

No Instruct condition. The AP task was presented to Group 1 subjects following the procedures of Fuchs et al. (1980). Action pictures were presented by examiners who began with, "Tell me about this picture." If the subject refused to respond, the examiner provided additional

encouragement by stating, "Tell me what's happening?" If the child remained silent, the task was discontinued. If, on the other hand, the subject provided information about the picture after the initial instruction, the examiner gave adequate time for the child to complete the response and then said, "Can you tell me more?" After the subject was permitted an opportunity to do so, the task was terminated.

Although the examiners were required to administer the experimental tasks according to the aforementioned instructions, guidelines were purposefully withheld concerning aspects of the assessment situation infrequently controlled by the examiner manuals of published tests. Examiners were instructed to exercise their own judgment concerning such factors as the frequency and qualitative nature of feedback to be given, the use of open-ended questions in the test setting prior to the test proper, and the amount of response time permitted.

Instruct condition. The AP task was presented to Group 2 subjects using the same verbal instructions as examiners used with Group 1 subjects. However, examiners for this group were not directed to use their discretion in determining response time; rather, they were required to follow a procedure that allotted a constant amount of response time. This was accomplished by controlling both when examiners used silence and how much silence examiners employed. Figure 1 diagrams the experimental procedure that governed communication in the Instruct Condition.

Insert Figure 1 about here

Analyses

Number of words and syllables used to describe the action pictures

was analyzed separately in both (a) one within factor (Familiar - Unfamiliar Examiner) and one between factor (Instruct - No Instruct) analysis of variance and (b) one within factor (Familiar - Unfamiliar Examiner) and two between factor (Instruct - No Instruct and Site) analysis of variance. Raw score performance on the SMT was analyzed in three within (Familiar - Unfamiliar Examiner and Task Complexity and Mode of Response) and one between (Site) analysis of variance. Also, total raw score performance on the SMT was analyzed in one within (Familiar - Unfamiliar Examiner) analysis of variance. The 17 behavioral categories constituting the modified Schenectady Kindergarten Rating Scale were entered in a forward step-wise multiple regression to predict differences between performance in Familiar and Unfamiliar testing conditions.

Results

Examiner Behavior (No Instruct vs Instruct)

Subjects' syllabic production on the AP task with familiar and unfamiliar examiners in the No Instruct and Instruct conditions is displayed in Table 1. Subjects' syllabic productions were significantly greater in the Instruct than No Instruct condition. This remained the case with the site factor, $F(1,73) = 9.28$, $p = .003$, and without the site factor, $F(1,77) = 10.01$, $p = .002$, included. No significant interactions were found between the Familiar/Unfamiliar Examiner and Instruct/No Instruct conditions.

Insert Table 1 about here

Comparable results were obtained when the dependent variable was

words spoken (see Table 2). Subjects in both the Familiar and Unfamiliar Examiner conditions employed a significantly greater number of words in the Instruct than in the No Instruct condition. This remained true both when program site was excluded, $F(1,77) = 10.20$, $p = .002$, and included, $F(1,73) = 10.46$, $p = .002$, as a blocking factor. As is evident in the table, subjects' raw score performance in the No Instruct condition generally was higher when tested by familiar than by unfamiliar examiners. The only exception to this was subjects' performance at site A, where an equal mean number of words was produced with the two types of examiners. Again, the interaction between Examiner conditions and Instruct/No Instruct conditions was not significant.

Insert Table 2 about here

Examiner Familiarity

Subjects' performance on the SMT, analyzed as a sum of their responses to the 18-item measure, revealed a main effect for the examiner condition, $F(1,76) = 4.09$, $p = .047$ (see Table 3). Totaled across levels of task complexity and modes of response, subjects' performance was greater in the Familiar ($\bar{X} = 2.24$) than in the Unfamiliar ($\bar{X} = 2.19$) condition.

Insert Table 3 about here

Task Complexity

Table 4 portrays differences between performance in Familiar and Unfamiliar conditions by task complexity, mode of response, and study site. A statistically significant main effect was obtained for task complexity, $F(2,152) = 263.46$, $p < .000$. Subjects' performance was strongest on the

first (simplest) level of the SMT ($\bar{X}$ = 2.95) and weakest on the third (most challenging) level ($\bar{X}$ = 1.38) of this measure (middle level $\bar{X}$ = 2.31). A contrast of the third vs the first and second levels was significant, $t(1,152) = 10.93$, $p < .01$, as was a comparison of the first and second levels, $t(1,152) = 4.83$, $p < .01$. Despite the findings of significant main effects for Examiner Familiarity and Task Complexity, and the significant decrement in performance on the SMT at each successively higher-order level, there was no significant interaction between Examiner Familiarity and Task Complexity.

Insert Table 4 about here

Mode of Response

A significant main effect was found for mode of response, $F(1,76) = 33.94$, $p < .000$. Marginal means for tasks demanding gestural and verbal responses were 2.39 and 2.04, respectively. Also, a significant interaction was found between mode of response and task difficulty, $F(2,152) = 13.96$, $p < .000$. Performance on gestural response tasks minus verbal response tasks for the first, second, and third levels of task complexity were .006, .715, and .304, respectively. A comparison of these differences between first level and second and third levels of task difficulty yielded significant results, $t(1,152) = 4.78$, $p < .01$. Also significant was a contrast of gestural minus verbal differences between the first and second levels, $t(1,152) = 3.38$, $p < .01$.

Prediction of Differential Performance with Familiar and Unfamiliar Examiners

None of the categories constituting the modified Schenectady Kindergarten Rating Scale contributed significantly to the explained variance in

the difference between performance on the AP in Familiar and Unfamiliar testing conditions, the dependent variable. There was, however, a lack of differentiated performance on this dependent variable as a function of examiner familiarity.

Discussion

In contrast to findings from a previous study by Fuchs et al. (1980), subjects did not perform differentially when tested by familiar and unfamiliar examiners on the AP task. Possible explanations for the discrepant results include variations between the two studies in experimental procedures and in subject or examiner characteristics. However, because the experimental procedures were relatively straightforward and care was taken in the second investigation to replicate the manner in which the AP task was administered, it is unlikely that changes in the experimental procedures explain the different results.

At first glance, variation between the studies in subject and examiner characteristics also appears to be an improbable explanatory factor. Subjects in the previous and present investigations were all speech and language handicapped pupils who attended special education preschool programs. Also, in both studies examiners were matched for several presumably important professional and personal characteristics. All were female caucasians, certified in early childhood education, and all had at least several years of experience with preschool children in educational settings.

However, an aspect of the examiners' experiential background over which no control was exercised was the extent of their previous contact with handicapped pupils. In the first study, none of the four unfamiliar

examiners had previous experience with handicapped children; in this study more than half (four out of six) of the unfamiliar examiners were currently or had been employed previously as teachers of handicapped preschoolers. Thus, the absence of differential functioning on the AP task in the second study may have been associated with the deployment of examiners who were unfamiliar to the examinees in a personal sense, but, for the most part, had professional familiarity with the type of child constituting the study sample. This raises the hypothesis that the examiner's specialized professional training and experience may vitiate the adverse effects of his/her personal unfamiliarity with an examinee's performance.

DeStafano, Gesten, and Cowen (1977) produced evidence supportive of this speculation. Examining mental health professionals' and regular classroom teachers' attitudes about and expectations for handicapped children, DeStafano et al. discovered that the mental health professionals were more positive about handicapped pupils and held more optimistic prognoses for them. Similarly, special education teachers, in comparison to regular classroom teachers, may view handicapped children more positively and hold higher expectations for them in the assessment setting. And, in turn, this may encourage handicapped students to perform optimally in this situation, irrespective of their personal familiarity with the individual special educator (cf. Rosenthal, 1980). Whether an examiner's professional training and experience vitiates the adverse effects of his/her personal unfamiliarity with an examinee is an important question because the adult who tests handicapped children in schools and clinics, while often a stranger to the child, usually has at least some familiarity

with handicapped students.

While subjects performed similarly with familiar and unfamiliar examiners on the AP task, their performance on the SMT was significantly stronger in the familiar condition. Subjects' differential performance on the SMT appears to contradict the argument that examiners' professional familiarity with handicapped children may substitute for a lack of personal familiarity as a means of optimizing performance in assessment. The marginal level of significance ($p = .047$) of subjects' differential functioning on the SMT should be noted, however.

While there was no main effect for the examiner condition on the AP task and only a marginally significant main effect for the examiner condition on the SMT, as anticipated, there were strong main effects for the Instruct/No Instruct condition, Task Complexity, and Mode of Response.

By demonstrating a positive, direct relationship between amount of response time and extent of subjects' responses on the AP task, this investigation corroborated previous findings that indicated the importance of teachers' (Rowe, 1974) and therapists' (Kleinke & Tully, 1979) silence to students' and clients' performance, respectively. Because of its demonstrated powerful effect upon performance, and because it is used arbitrarily in assessment settings, examiner silence should be regarded as an important situational factor in test situations. Whether it represents a source of error variance in particular circumstances should be a focus of future research.

Main effects for task complexity and mode of response represent support for the construct validity of the SMT instrument developed for the present study. There is an additional possible implication for the obtained main

effect for mode of response. Subjects' weaker performance on tasks requiring verbal responses suggest that the many screening, diagnostic, achievement, and intelligence tests requiring numerous responses in the verbal mode may seriously underestimate optimal functioning among select groups of pupils, particularly children with speech and language handicaps. This suggestion, of course, partly depends upon the presumption that the test items requiring verbal and gestural responses at each level of complexity on the SMT share similar cognitive demands.

Finally, because of absent or marginal effects for the examiner condition, no interaction effects were obtained for Task Complexity, Mode of Response, or Instruct/No Instruct conditions, and the Examiner condition. Future research should investigate the importance of these conditions within an experimental paradigm that matches familiar and unfamiliar examiners more closely than was done in the present study. Assuming that such a paradigm will yield differential performance in favor of the familiar examiner, it will also facilitate a more reasonable test of our capacity to predict differential test performance on the basis of classroom behavior than was permitted by the present investigation.

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Footnotes

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Table 1

Syllabic Production on the Action Pictures (AP) Task[a]

Instruction Condition	Examiner Condition: Familiar	Unfamiliar
No Instruct[b]		
Site A	11.14 (9.77)	20.29 (26.70)
Site B	13.65 (7.44)	11.30 (7.62)
Site C	17.06 (8.66)	14.88 (9.79)
Average	14.57 (8.40)	14.11 (13.07)
Instruct[c]		
Site A	20.56 (19.94)	18.22 (14.81)
Site B	25.40 (23.59)	23.13 (29.17)
Site C	38.00 (31.10)	56.00 (68.13)
Average	28.11 (25.64)	32.20 (45.15)

[a]Entries are the means and standard deviations (in parentheses) of the numbers of syllables produced.

[b]N = 44 (Site A: N = 7; Site B: N = 20; Site C: N = 17).

[c]N = 35 (Site A: N = 9, Site B: N = 15; Site C: N = 11).

Table 2

Word Production on the Action Picture (AP) Task[a]

Instruction Condition[b]	Examiner Condition	
	Familiar	Unfamiliar
No Instruct		
Site A	7.00 (7.29)	7.00 (7.21)
Site B	10.40 (6.39)	8.25 (6.03)
Site C	13.59 (7.37)	11.24 (8.61)
Average	11.09 (7.22)	9.21 (7.33)
Instruct		
Site A	14.56 (16.74)	13.67 (12.56)
Site B	19.40 (20.27)	18.67 (25.21)
Site C	28.91 (25.76)	40.82 (47.24)
Average	21.14 (21.51)	24.34 (32.98)

[a]Entries are the means and standard deviations (in parentheses) of the numbers of words produced.

[b]Numbers of subjects in each condition and site are the same as in Table 1.

Table 3

Total Scores on Symbolic Mediation Test (SMT)[a]

Site[b]	Examiner Condition	
	Familiar	Unfamiliar
Site A	12.56 (2.06)	11.81 (3.25)
Site B	13.11 (2.35)	12.86 (2.18)
Site C	14.32 (1.77)	14.03 (2.19)

[a]Entries are means and standard deviations (in parentheses) of subjects' SMT scores.

[b]N = 79 (Site A: N = 16; Site B: N = 35; Site C: N = 28)

Table 4

Number Correct on Groups of Items of the Symbolic Mediation Test[a]

Task Complexity/ Mode of Response	Site A[b]		Site B[c]		Site C[d]	
	Familiar	Unfamiliar	Familiar	Unfamiliar	Familiar	Unfamiliar
High						
Verbal	1.00 (0.89)	1.13 (0.96)	1.14 (0.88)	1.09 (0.82)	1.54 (0.79)	1.39 (0.79)
Gestural	1.06 (1.12)	1.06 (0.93)	1.31 (1.08)	1.34 (1.16)	2.00 (0.90)	2.11 (0.92)
Middle						
Verbal	2.00 (0.63)	1.88 (0.89)	2.00 (0.91)	1.89 (0.87)	1.93 (0.66)	2.04 (0.84)
Gestural	2.56 (0.63)	2.13 (1.03)	2.69 (0.76)	2.74 (0.61)	2.86 (0.36)	2.75 (0.44)
Low						
Verbal	3.00 (0.00)	2.88 (0.34)	2.97 (0.17)	2.94 (0.24)	3.00 (0.00)	2.89 (0.42)
Gestural	2.94 (0.25)	2.75 (0.58)	3.00 (0.00)	2.97 (0.17)	3.00 (0.00)	2.96 (0.19)

[a]Entries are means and standard deviations (in parentheses) of subjects' scores on groups of SMT items.

[b]N = 16

[c]N = 35

[d]N = 28

SAY, "TELL ME ABOUT THIS PICTURE." (BEGIN COUNTING TO 10)

IF THERE IS A RESPONSE

1. Discontinue counting.
2. Wait for child to finish talking.
3. Count to 10.
4. If child is talking, wait til finished.
5. Ask, "Can you tell me more?"
6. Count to 10.

RESPONSE	NO RESPONSE
1. Discontinue counting.	
2. Wait for child to finish.	Terminate task.
3. Count to 10.	
4. Wait for child to finish.	
5. Terminate task.	

IF THERE IS NO RESPONSE

1. Say, "Tell me what's happening."
2. Count to 10.

RESPONSE	NO RESPONSE
1. Discontinue counting.	
2. Wait for child to finish.	Terminate task.
3. Count to 10.	
4. Wait for child to finish.	
5. Terminate task.	

Figure 1. Procedure in the Instruct Condition

Copies of the Symbolic Mediation Test are available from the Institute For Research on Learning Disabilities, University of Minnesota (Research Report #54).

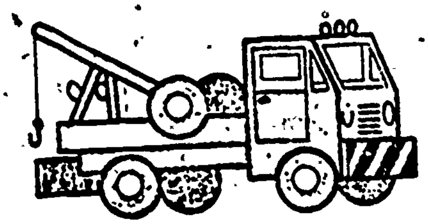
APPENDIX

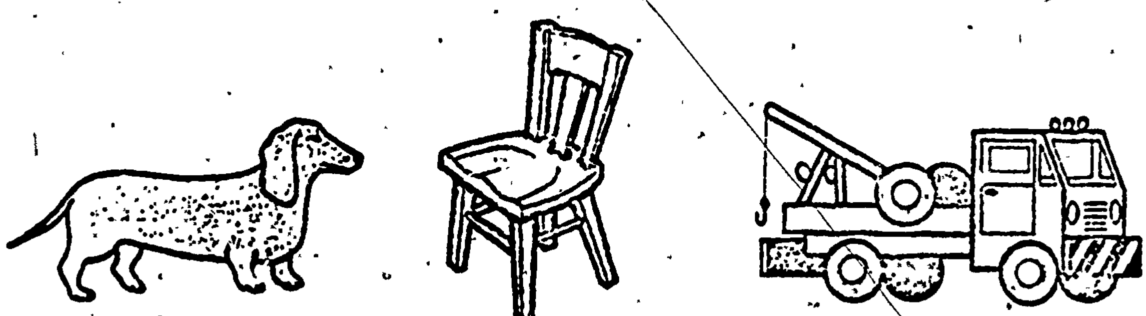
Symbolic Mediation Test*

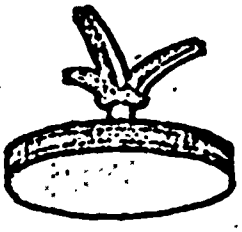
*The sequence cards used within this test are from Developmental Learning Materials, Niles, Illinois.

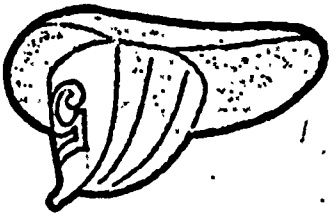
A1. SEE THIS ONE ? (POINT)

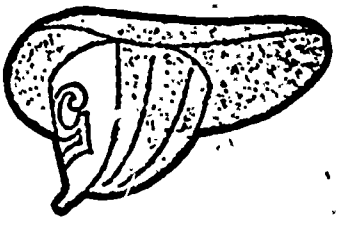
FIND ONE LIKE IT HERE, (INDICATE SET)





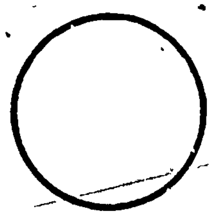


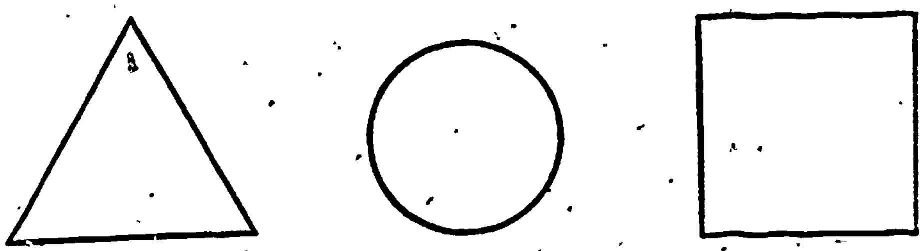




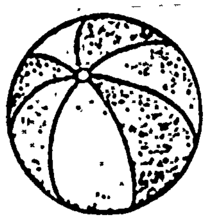
A2. SEE THIS ONE? (POINT)
FIND ONE LIKE IT HERE. (INDICATE SET)

A3. SEE THIS ONE? (POINT)
FIND ONE LIKE IT HERE. (INDICATE SET)





B1. WHAT IS THIS?



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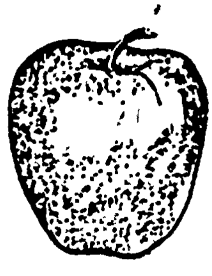
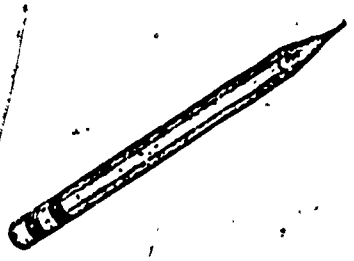
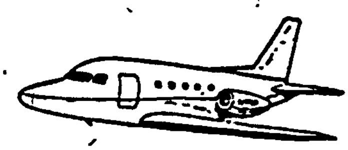


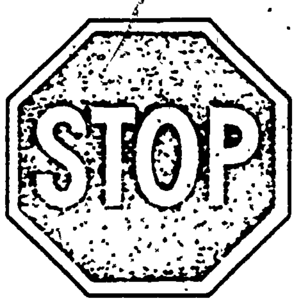


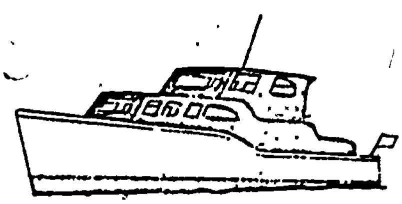
B3. WHAT IS THIS?

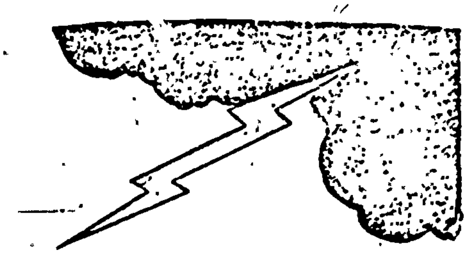
C1. (Gesture to pictures) See this and this?

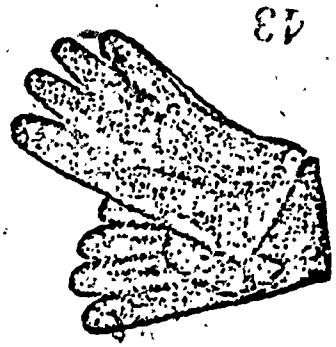
Find another most like them here (gesture to pictures).

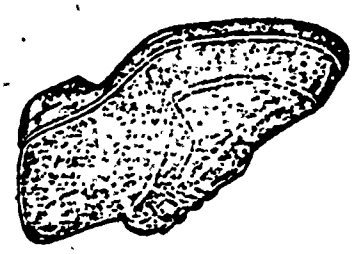


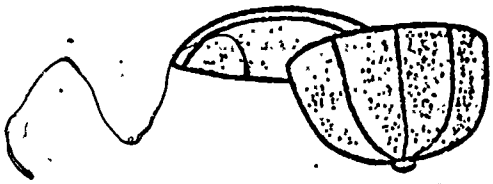


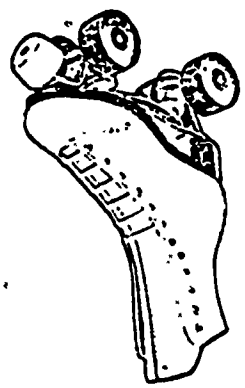


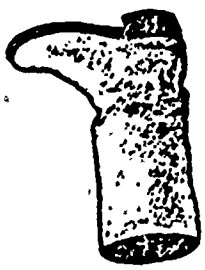










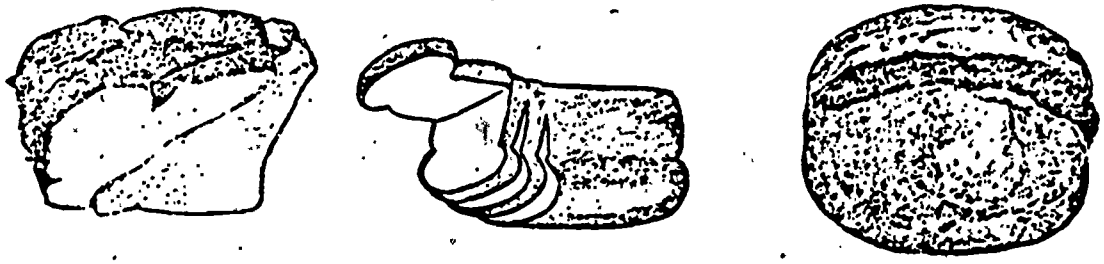


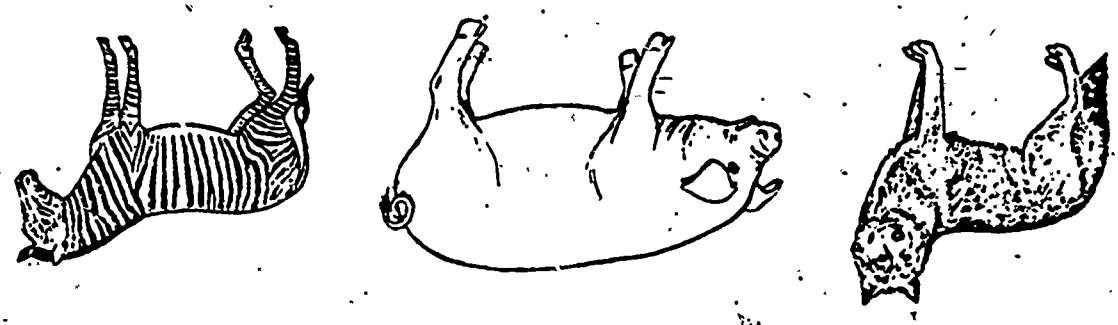
Q2: (Gesture to pictures) See this and this?

Find another most like them here (gesture to pictures).

C3. (Gesture to pictures) See this and this?

Find another nest like them here (gesture to pictures).

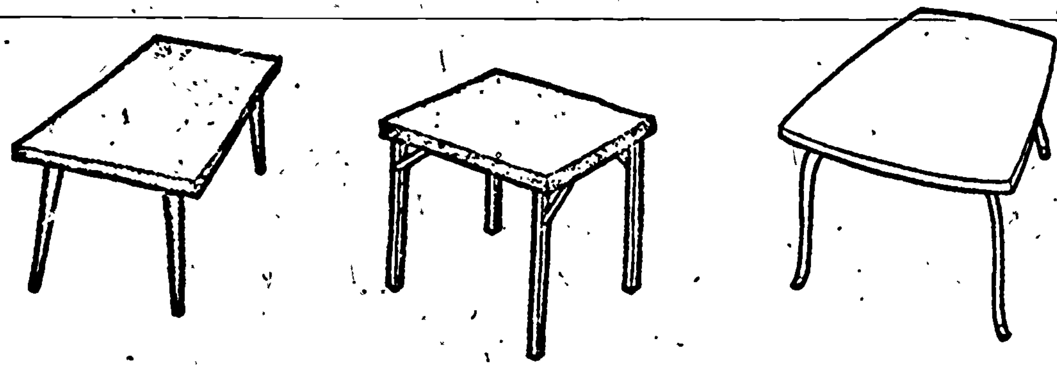


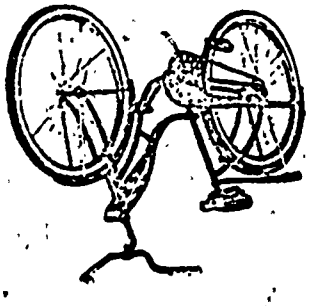


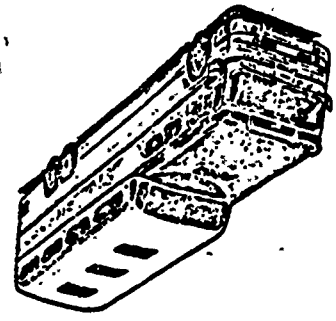
D1. THIS, THIS AND THIS ARE ALL ANIMALS. (POINT)

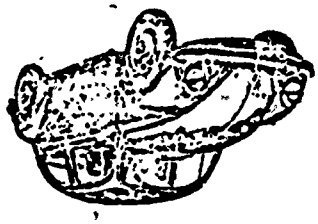
THIS, THIS AND THIS ARE ALL ____. (GESTURE TO CHILD FOR RESPONSE)

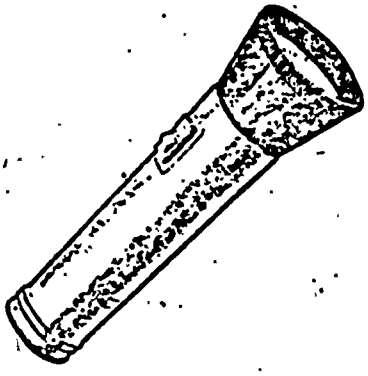
12. (GESTURE TO PICTURES) THIS, THIS, AND THIS ARE ALL THINGS YOU EAT AT.
(GESTURE TO PICTURES) THIS, THIS, AND THIS ARE ALL THINGS YOU ______ (GESTURE TO CHILD)

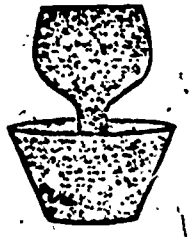






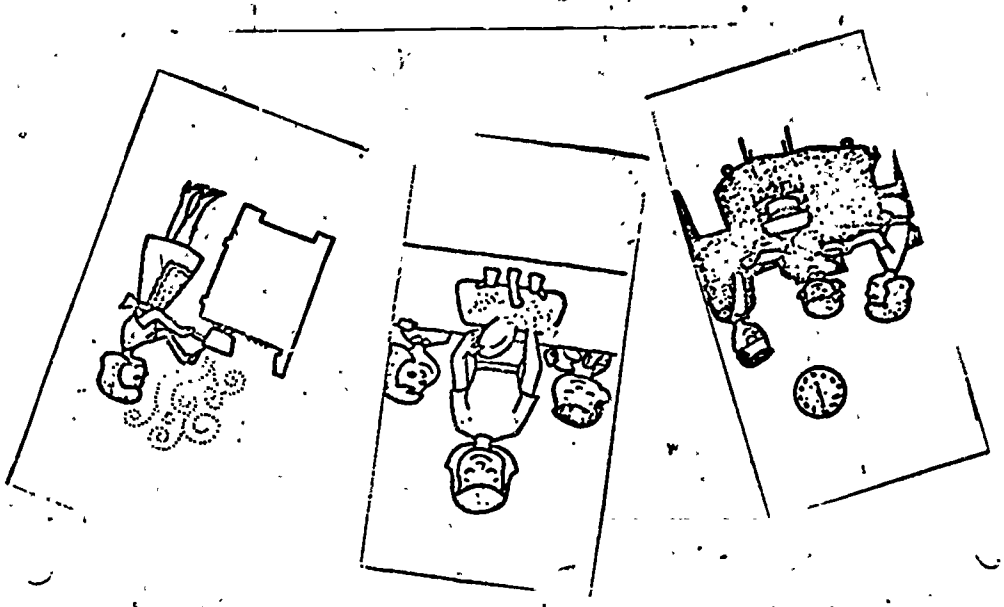






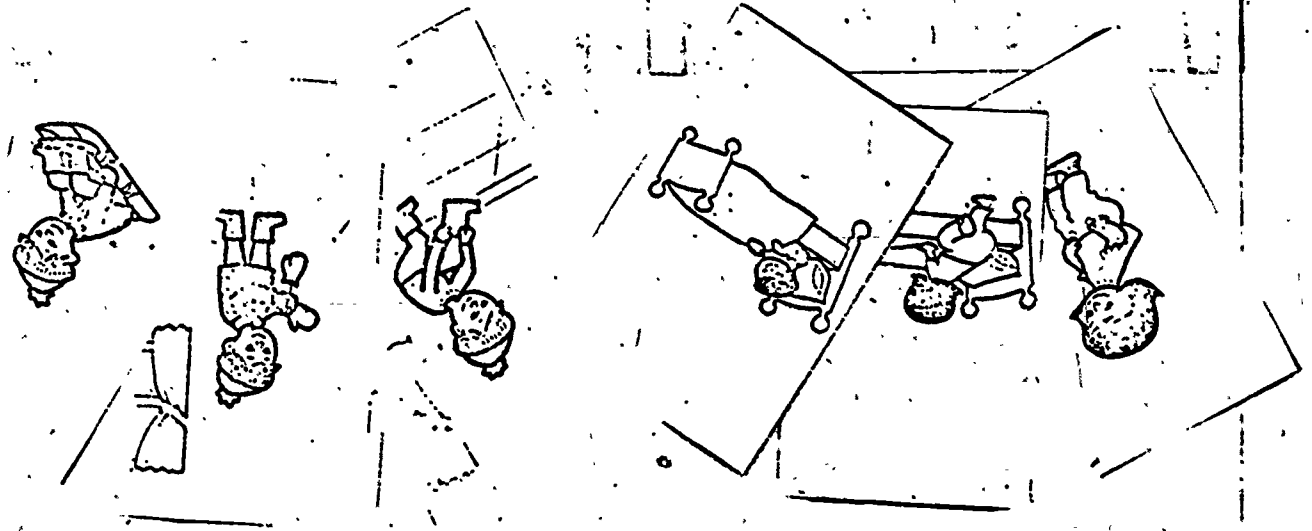
13.- (GESTURE TO PICTURES) THIS, THIS, AND THIS ARE ALL THINGS YOU USE TO SEE IN THE DARK.
(GESTURE TO PICTURES) THIS, THIS, AND THIS ARE ALL THINGS YOU _____ (GESTURE TO CHILD)

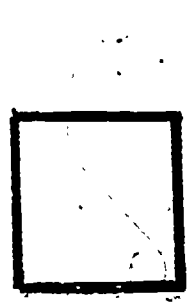
E1. (SPREAD CARDS OUT IN DISORDER)
CAN YOU MAKE A STORY.
SHOW ME HOW THE PICTURES GO.
WHICH ONE COMES FIRST?
WHICH ONE COMES NEXT?
WHICH ONE COMES NEXT?

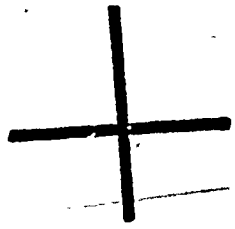


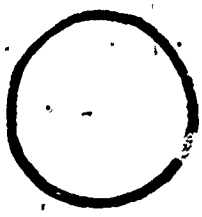
THESE CARDS TELL A STORY. SEE?
(PLACE CARD) FIRST, THE LITTLE BOY PUTS ON HIS BOOTS.
(PLACE CARD) THEN, THE LITTLE BOY PUTS ON HIS COAT AND MITTENS.
(PLACE CARD) THEN, LAST, THE LITTLE BOY GOES OUTSIDE TO PLAY.
SEE? (GESTURE TO CARDS) WE MADE A WHOLE STORY.

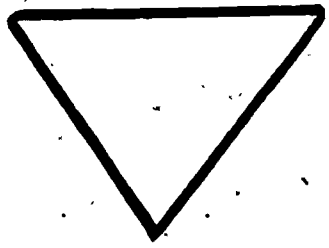
NOW LET'S MAKE ANOTHER STORY. SEE?
(PLACE CARD) FIRST, THE LITTLE GIRL GETS HER PAJAMAS ON.
(PLACE CARD) THEN, THE LITTLE GIRL CLIMBS INTO BED.
(PLACE CARD) THEN, LAST, THE LITTLE GIRL GOES TO SLEEP IN BED.
SEE? (GESTURE TO CARDS) WE MADE A WHOLE STORY.

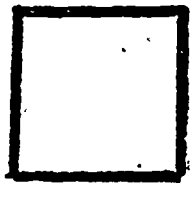


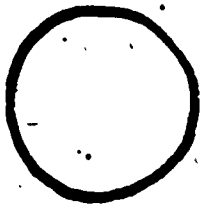


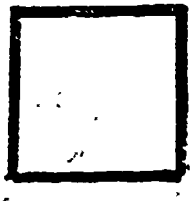


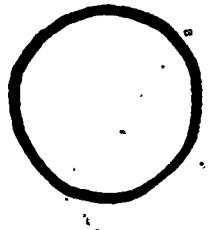










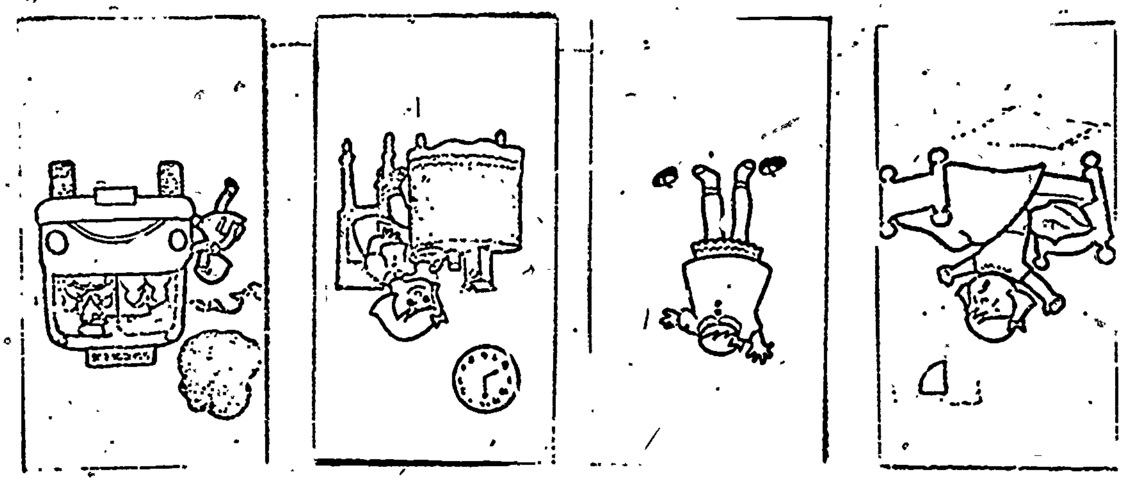


E2. (Point to each shape corresponding to your remarks.)

Look, here is a circle. Next comes a square.

Next comes a circle. Then a square.

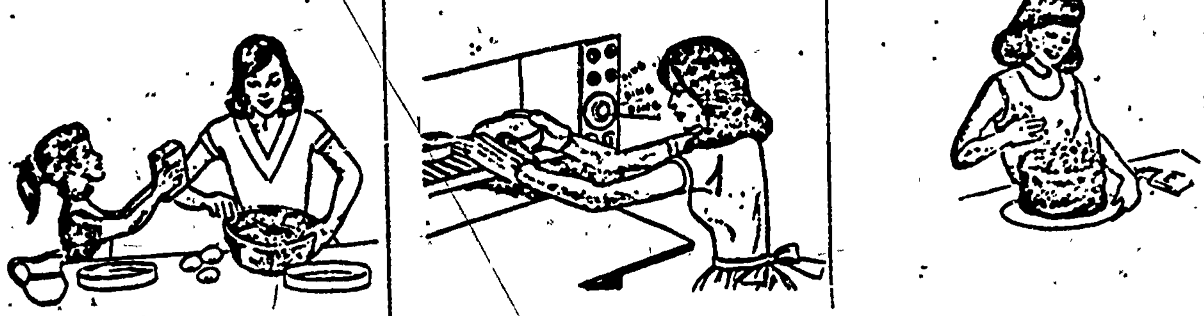
What comes next? What comes after the square? (Gesture to the set of alternatives). Find it here.



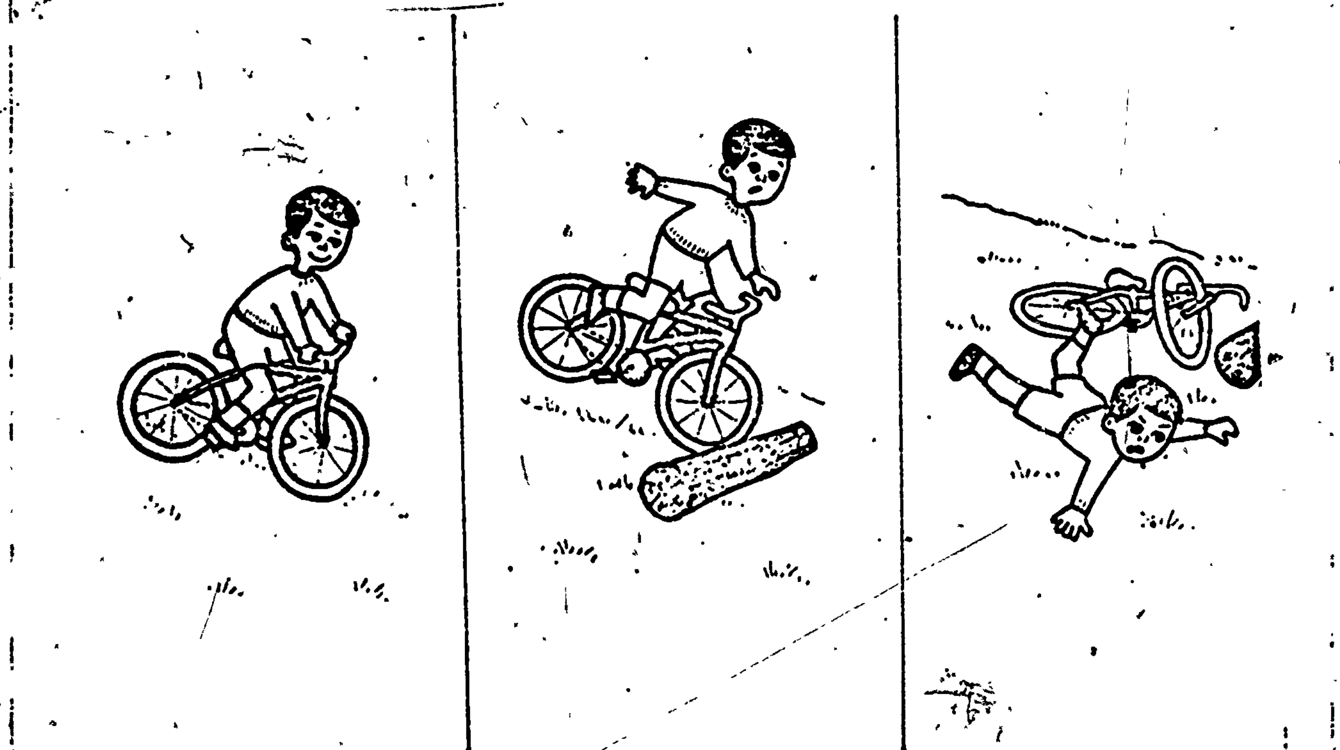
E3. REMEMBER HOW WE MADE A STORY WITH ALL THE CARDS?
WATCH ME MAKE ANOTHER.
(LAY CARDS OUT AS YOU DESCRIBE)
THIS CARD COMES FIRST, THEN THIS ONE, THEN THIS ONE, THEN THIS ONE. SEE?

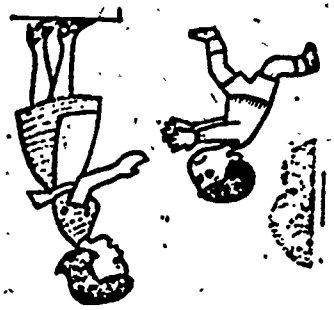
(RANDOMLY MIX UP THE CARDS)
NOW IT'S YOUR TURN TO DO THE STORY.
YOU DO THE PICTURES THE SAME WAY.

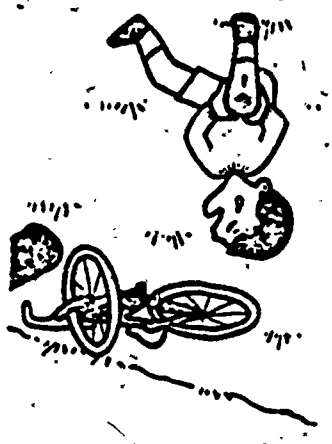
F1. HERE ARE SOME PICTURES THAT TELL A STORY.
WHAT STORY DO THE PICTURES TELL?



F2. HERE ARE SOME PICTURES THAT TELL A STORY.
WHAT STORY DO THE PICTURES TELL?







F3. HERE'S A STORY THAT'S NOT FINISHED. SEE? (POINT TO BLANK SPACE)
HERE (POINT TO FIRST PANEL) THE BOY FELL OFF HIS BIKE AND HURT HIS KNEE.
NEXT (POINT TO SECOND PANEL) HE RUNS TO HIS MOM.
YOU MAKE UP WHAT HAPPENS NEXT.

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