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# The Developmental Sentence Scoring Procedure

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Kary M. Rheinhardt  
1972

Not-hand as student papers  
but must be cleaned up and greatly  
reduced in length before publication  
as a "note" or letter to the editor.

Title

The Developmental Sentence Scoring Procedure (DSS) was designed

at Northwestern University by Laura Lee (1966). It is a method of rating the syntactic performance of young children and is to be used as a clinical tool. The procedure is intended both as a therapy planning guide and as a means of assessing progress.

↓  
see back  
of p. 6  
JDM

The rating scale is divided into eight sections according to major syntactic divisions. They are as follows: 1) indefinite pronouns or noun modifiers 2) personal pronouns 3) main verbs 4) secondary verbs 5) negatives 6) conjunctions 7) questions or interrogative inversions 8) wh-questions. Syntactic units falling within each division are rated according to the order of their appearance in the developmental sequence. Those structures appearing earliest receive a low score; and the later-appearing structures receive higher scores. If the entire sentence is correct, an extra point is given.

Tape recorded speech samples are used as the source for the sentences to be scored. Lee and Canter (1971) emphasize the importance of a technique designed to elicit a conversational exchange. Such a sample, in their opinion, reflects how well the child has been able to incorporate syntactic rules and use them along with other structures.

The present study was designed to investigate the usefulness of the Developmental Sentence Scoring Procedure as a clinical tool. Methods of eliciting speech samples were developed because procedures were not discussed in detail by Lee and Canter (1971). Using these methods, the scores obtained from the children were informative enough that general comments concerning grammatical complexity and correctness could be made.

J P JDM

12 more have  
been tested & results  
will be added.

or 6 years - 6 mos and 10 years  
2001

## SUBJECTS

Twelve children between 6- $\frac{1}{2}$  and 10 years of age were interviewed. There were three girls and nine boys. All were enrolled in articulation and language classes. They were receiving highly structured language instruction. Most of the children had been in the program less than one year.

## PROCEDURES

The speech sample was taken in a conversational setting with a speech clinician. The clinician avoided structuring the child's speech as much as possible. This was accomplished by asking nondirective questions, such as "What do you think happens next?" or "What would happen if ... ?" Materials included toys, common objects, and pictures. It is advisable that the clinician be familiar with the child before she attempts to record a speech sample. The child will most likely be more responsive, and the clinician will have insight into which stimulus materials will most easily elicit speech. In general, pictures were found to be the least effective stimulus materials. Toys seemed to stimulate <sup>a greater</sup> larger quantities and a ~~greater~~ variety of speech. [An attempt was made to follow the general interview procedure used by Lee and Canter (1971) in the standardization study on normals. Special situations were designed to elicit negatives and interrogatives, since these structures otherwise might not appear in a 50 sentence spontaneous speech sample. These are described in detail below. The conversation covered the following topics in this general order:

known to  
Disc

1) Informal Discussion

- a) name and age
- b) family
- c) Christmas presents

2) Guessing Activity (designed to elicit questions)

- a) asking questions concerning location

Ex. Hide a spoon. Ask the child to guess where it is.

- b) asking questions about a specific object, which was first shown and then hidden.

Ex. Show child an egg. Talk about it. "It's round and white, and we can eat it." Then hide the egg and instruct the child to ask about it. For example, "Is it white?"

This type of activity is not appropriate for very young children, who probably will not understand the instructions. However, in this case, similar activities had been carried out in the classroom, and teachers were using the term question with the children. Therefore, the activity was included.

3) Toys

- a) doll play situation.

The child was given dolls representing members of a family along with doll furniture. The clinician turned her back to the child and instructed him to tell her what he was doing with the toys. Questions to the child included, "What might they (the dolls) be saying to each other?"

- b) a train (designed to elicit the negative)

Box cars were given to the child. Some cars fit; others did not. The child was asked how he was going to put the train together.

- c) cowboys and Indians.

The child was given toys and instructed to stage a battle between the cowboys and the Indians.

4) Pictures

Each child was shown three large pictures and instructed to tell about the pictures or about something the pictures reminded him of. Pictures were as follows:

- a) children playing on a beach
- b) firemen putting out a fire
- c) boy and father building a grill

5) Story

Each child was asked to tell the story of The Three Bears, using the pictures from What's Its Name? (Utley, 1950) as a guide.

TAPE TRANSCRIPTION

All intelligible sentences were transcribed and numbered. Fragments and unintelligible sentences were omitted. In cases where more than 50 sentences were obtained, the last 50 consecutive sentences were used. Depending on the child's articulation and sentence length, it may take two hours or more to make an accurate transcription.

## SCORING

Each sentence was scored individually. The points for each category were totaled for each sentence. Then the sentence scores were added to obtain a total score. This number was divided by 50 to get an average, or Developmental Sentence Score.

## RESULTS OF TESTING

Because of the small number of children involved in the project, no statistical analysis of the results has been made. Figure 1 shows the distribution of Developmental Sentences Scores according to their frequency of occurrence. Half of the scores fell between four and six points. Table 1 shows that all of the scores presented in Figure 1 were much below the scores for normal children obtained by Lee and Canter, (1971). Column four shows the age group of normal children having a median score equal to the score attained by the clinic child tested in the present study. All but two scores fell below the median score (6.30) for the youngest normal age group, 3-0 to 3-5 years of age.

Figure 2 shows the relationship between score obtained and subject's age. The older children did not consistently score higher than the younger. Four six and seven year olds scored higher than the nine year olds, but the highest score was obtained by the oldest child.

Preliminary examination of the sentences suggested that the children were not necessarily receiving low scores because of errors, but because their sentences were simple and stereotyped and fell largely into the subject-verb-object pattern. That is, it appeared that the subjects producing less correct but more complicated sentences were scoring higher than

Fig 1  
Fig 2  
DM  
?

those with very simple and correct sentences. Paula Menyuk (1964) in her work with normal children has made simpler observations.

JDM } what do you mean?

Figure 3 was designed to investigate whether the impression was correct. Since the sentence point was given only for an entirely correct sentence, this measure was used as an indicator of the number of sentences produced without a single grammatical error or omission. An adjusted total score was computed by subtracting the sentence points from the total score. The adjusted total score reveals grammatical complexity, because it is the sum of the points in the <sup>eight</sup> ~~light~~ categories; and the more structures used, the higher the adjusted total score, regardless of complete correctness. If high scorers, were forming simple but correct sentences, then there would be a negative relationship between sentence point and the adjusted total score. The results of this comparison as shown in Figure 3 do not support

(see over) JDM

~~the observation for the entire group.~~ There is <sup>neither</sup> a positive or a negative relationship between sentence points and adjusted total score for the entire group.) There are three children receiving both low numbers of sentence points and low scores. There are those receiving both higher sentence points and scores; and finally there is a group receiving average and high scores with consistently low numbers of sentence points. When these last two groups are compared with each other, three negative relationships between sentence points and adjusted total score emerge. Although these results invite speculations concerning the syntactic structures of language-impaired children, such speculations are not appropriate at this time because of the small sample and because of the questions <sup>which will be</sup> ~~one can~~ <sup>discussed</sup> receive concerning the methods for scoring.

This doesn't help JDM

Delete adds nothing JDM  
...with the adjusted score.  
...the hypothesis deviation. Therefore,  
...the two with highest overall score showed in the hypothesis deviation.  
...the

7

Further investigation with the Developmental Scoring Procedure might give useful information concerning the nature of the sentence structure of the language-impaired child. If the results of the present project are at all revealing, they would seem to indicate that the nature of the syntax of the language-impaired is diverse.

#### DISCUSSION

The scoring procedure is complex, especially the scoring of verbs. After one has a basic idea of the procedure, forms divided into the eight syntactic classifications can be used. However, there are many instances in which further clarification is needed, especially for the more complex structures. The secondary verb section is difficult to understand; the clinician must be able to distinguish between non-complementing infinitives and early infinitival complements in order to score correctly. Also, there are some arbitrary rules which must be remembered. For example, full credit is given for using got as a passive, as in I got hurt, but no credit is given for using got as indicating possession; e.g., I got new shoes. Grammatical classifications and terminology are used. The clinician who has trouble with grammar rules will find this procedure difficult.

Lee and Canter (1971) have chosen eight syntactic components to analyze. However, no rationale was given for how these components were selected and others omitted. Possessives, articles, plurals, prepositional phrases, adverbs, descriptive adjectives, and word order are some possible categories which were omitted. Therefore, no scored information is obtainable about these categories; and if, for example, one is working on prepositions and prepositional phrases in therapy, then the sentence scoring



will give no directly usable information. It is interesting to note that the background material, on the basis of which points are assigned, has come from many different studies of language development (Lee and Carter, 1971). For example, points for different structures within the category indefinite pronouns are assigned to material from one study and points for conjunctions from another. The conditions under which material was gathered may have been different within each study. One may have required that the structure appear in sentences; while another may have examined phrases. Or, perhaps, one used testing, while another recorded spontaneous speech.

There is not always an explanation of the method used for assigning points. For example there is no explanation of why if should receive four points and or five points. In addition, there is a warning against comparing across categories. The tables should be read vertically and not horizontally across categories. Thus, the structure worth two points in one category may not be equal to the structure worth the same number of points in other categories. However, to get the final Developmental Sentence Score (DSS), points from all categories are averaged. This averaging of all columns would seem to ignore the built-in inequality between columns. The DSS itself assigns a syntactic age and percentile according to the results (Lee and Carter, 1971) for non-clinic children. From the DSS itself the clinician obtains no information about particular structures. A clinician can with some effort analyze the categories for herself. She can, for example, observe that perhaps a child had no points in the secondary verb or question category. A second speech sample may reveal that the child now has some points in these categories. In such a way, the procedure would aid the clinician in noting and documenting change. Hopefully, speech

samples could be obtained over a long period of time, so that any general trends, such as constantly increasing numbers of points in particular categories could be noted.

The recording of spontaneous speech appears to have great value in assessing carry-over. It helps the clinician who may be using drill in therapy to determine whether or not the child is incorporating what he is learning in therapy into his spontaneous conversation. The procedure itself forces the clinician to make an objective and systematic evaluation of the child's sentence structure. This is in itself valuable. The DSS can be used to show general progress and will reflect gross levels of syntactic ability. For this reason it can be used in longitudinal testing.

In summary, the Developmental Sentence Scoring Procedure has certain limitations which appear to be large, especially when specific information is needed. The greatest drawbacks of the Developmental Sentence Scoring Procedure appear to be its <sup>complicated</sup> ~~complex~~ scoring procedure, the arbitrariness with which points are assigned, and its insensitivity to specific syntactic structures. However, the clinician who uses it wisely and carefully can certainly learn much about her client, and programs requiring an objective means of showing change over long periods of time could well take advantage of this instrument. Laura Lee (1966) has made the first attempt to help clinicians evaluate and assess syntax in a way that can be practically applied to therapy. The major advantages of her Developmental Sentence Scoring Procedure are it allows the clinician to evaluate objectively the child's spontaneous usage of language, to measure change over time, and to compare clinic and non-clinic children.

*specified above here*

*look-up and compare "complex" and "complicated"*

ACKNOWLEDGMENT

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#### REFERENCES

1. Lee, L., Developmental Sentence Types: A Method for Comparing Normal and Deviant Syntactic Development. J. Speech Hearing Dis., 31, 31, 311-330 (1966).
2. Lee, L. and Canter, S., Developmental Sentence Scoring: A Clinical Procedure for Estimating Syntactic Development in Children's Spontaneous Speech. J. Speech Hearing Dis., 36, 315-340 (1971).
3. Menyuk, P., Syntactic Rules Used by Children from Preschool through First Grade. Child Developm., 35, 533-546 (1964).
4. Utley, J., What's Its Name? Urbana, Univ. Ill. (1950).

## LEGENDS

Fig. 1 Frequency distribution of scores

Fig. 2 Relationship between age of child and score obtained

Fig. 3 Relationship between adjusted total score and sentence points