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An Investigation of the Effects of a Day Activity Center on the Expressive Language Skills of Institutionalized Mentally Retarded Adult Females

Gerald W. Werven

AN INVESTIGATION OF THE EFFECTS OF A DAY ACTIVITY CENTER ON THE EXPRESSIVE LANGUAGE SKILLS OF INSTITUTIONALIZED MENTALLY RETARDED ADULT FEMALES

by
Gerald W. Werven

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This thesis submitted by Gerald W. Werven in partial fulfillment of the requirement for the Degree of Master of Science from the University of North Dakota is hereby approved by the Faculty Advisory Committee under whom the work has been done.

Dean C Eigel
(Chairperson)

George W Schubert

Bernard A. Brekke

This thesis meets the standards for appearance and conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

A. William Johnson 7/10/85
Dean of the Graduate School

Permission

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Signature Gerald W Weiren

Date July 2, 1985

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ABSTRACT

This study was designed to investigate the effects of a Day Activity Center on the expressive language skills of institutionalized mentally retarded adult females.

Subjects consisted of eighteen institutionalized mentally retarded adult females with a mean age of thirty-six years. Spontaneous language samples were collected from the participating residents following approximately twelve months' involvement in the Day Activity Center. Each subject's language samples were analyzed and scored according to the Developmental Sentence Scoring (DSS) Procedure (Lee, 1974). These were compared to language samples from each of the subjects which were in the speech-language pathologist's clinical records at the Grafton State School. These earlier samples had been obtained prior to the residents' involvement in the Day Activity Center.

The performance of the subjects on the DSS was analyzed using the t-test for two related samples. A significant difference ($p < .05$) was found between the performance by the subjects on the DSS before being assigned to the DAC and their performance following twelve months of DAC activity.

A significant difference ($p < .05$) was found on subjects' performance on the main verb and personal pronoun categories and the sentence point. No significant difference was found among the

performance by the subjects on the following categories: secondary verbs, indefinite pronouns, negatives, conjunctions, "wh" questions, and interrogative reversals.

Examination of the DSS transcripts for the subjects following their twelve-month involvement in the DAC indicated that 62 percent of the subjects' grammatical expressive language consisted of personal pronouns and main verbs while the remaining 38 percent was divided among the other six categories on the DSS.

It was concluded from the present study that the Day Activity Center yields measurable results in terms of improved expressive language performance.

CHAPTER I

INTRODUCTION AND REVIEW OF LITERATURE

Introduction

In 1983, Schumacher, Wisland, and Qvammen investigated the effects of massive and rapid change in living environment within a large institution for the mentally retarded. Two groups of mentally retarded residents were moved from old, relatively crowded buildings into newer, more spacious facilities. Independent observations were made in the ward environment of two classes of behaviors, (1) adaptive and maladaptive behaviors, and (2) communication behaviors. Data on communication behaviors were gathered on two groups of movers and a single group of stayers. Subjects from group one were drawn from a unit in which the primary habilitative goals were to reduce the frequency of behavioral excesses. Subjects from group two were drawn from a unit in which the primary needs were in self-help skills. Subjects from group three were drawn from five other programmatic units.

The realm of possible expressive communication behaviors were divided into six categories: resident alone, non-communicative, resident to resident gestural, resident to staff gestural, resident to resident verbal, and resident to staff verbal.

Observations of communication behaviors took place across a span of six months. Repeated measures analysis of variance indicated that

there was no significant change in resident initiated verbal or gestural communication.

The purpose of the present study was to examine the effects of a Day Activity Center on the expressive language skills of institutionalized mentally retarded adult females.

Review of Literature

Mental Retardation

In 1973, the American Association of Mental Deficiency (AAMD) Committee, headed by H. J. Grossman, defined mental retardation as "significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior, and manifested during the development period" (p. 11).

The mentally retarded have long been a population on which research has been done. What fascinates researchers so much about these people are the complexities by which they live.

Recent trends in mental retardation research have focused on speech and language. Carrow-Woolfolk and Lynch (1982) summarize language studies in the following manner:

> The study of the language of the mentally retarded has followed the trends of the psycholinguistic investigation of the normal language acquisition. Early studies explored the development of the syntactic system, and later research focused on semantics and analysis of semantic intentions. Currently, investigation of the pragmatic system and the use of language is popular (p. 344).

Language Behaviors of the Mentally Retarded

The mentally retarded individual exhibits speech and/or language deficits. Carrow-Woolfolk and Lynch (1982) state that, "impairment in

the language of the retarded ranges from mild deficits resulting in generally reduced vocabulary to profound impairment resulting in the total absence of any means of communication" (p. 352). In his study of speech and language problems of the mentally deficient, Karlin (1952) states, "It has long been recognized that speech defects are a characteristic sign of the mentally retarded" (p. 286). A characteristic sign would suggest a high prevalence of speech and language disorders in the mentally retarded population.

In Reynolds' and Reynolds' (1979) study of 518 retarded individuals, 51 percent were diagnosed as having accompanying speech and/or language deficits.

Why the mentally retarded experience deficits in speech and language skills may be related to their learning. Cole (1982) states that "language is learned in a social context as part of a system of communication acts" (p. 10). Many mentally retarded individuals have not learned to use language effectively or acceptably for communicating. Speech and language are viewed as a development and because not all retarded develop alike, some acquire more skills than others.

Blount (1968) studied the language of the more severely retarded and concluded that the more severely retarded are delayed in their language development, but follow the same sequence of development as normals.

Mahoney, Glover, and Finger (1981) compared the Ordinal Scales of Psychological Development and the Receptive and Expressive Emergent Language Scale (REEL) of 18 Down's Syndrome and 18 non-retarded children and found that the Down's Syndrome children were delayed in

their language development. This language delay appeared to be related to the deficiencies in vocal imitation skills.

Communication disorders of the mentally retarded can be divided into those problems associated with speech (voice, articulation, and fluency) and those problems associated with language (content, form, and use).

Speech disorders are common among the mentally retarded. Most research points to the retarded person's IQ as an indicator of speech performance. Generally, the lower the IQ, the greater the speech deficit. Articulation impairments are the most common, followed by voice and stuttering problems.

Carrow-Woolfolk and Lynch (1982) investigated the range of frequency of various speech defects among the mentally retarded. Carrow-Woolfolk and Lynch concluded that among the moderately retarded, the prevalence of phonological defects was estimated at 72 percent, while in the severely to profoundly impaired it ranged from 80 percent to 95 percent. Voice impairments in the moderately retarded was 22 percent, while in the severely to profoundly, it ranged from 58 percent to 62 percent. Among the moderately retarded, the prevalence of stuttering was estimated at 10 percent, while in the severely impaired, it was estimated at 45 percent.

The prevalence of language impairment among the mentally retarded is also high. Cole (1982) defines language as "a system of verbal symbols used by humans to codify ideas and experiences most often for the purpose of communicating with other people" (p. 5).

Carrow-Woolfolk and Lynch (1982) site reports by Schlanger (1973), Spreen (1965), and Gomez and Podhajski (1978), which suggest that 45 percent of the moderately retarded are language impaired, while 90 percent to 100 percent of the severely to profoundly retarded suffer language impairment.

As previously stated, language can be divided into content (semantics), form (syntax), and use (pragmatics).

Dewart (1979) compared strategy for sentence comprehension of 18 mentally retarded children and compared their results with those of a group of non-retarded children. Using toys, the children acted out a series of simple active voice and passive voice sentences. The subjects described events that were either probable, improbable, or neutral in respect to semantic expectations. Dewart concluded that the mentally retarded children tended to rely more on semantic expectations.

In a similar study, Beveridge and Tatham (1976) pre-tested six retarded adolescents for comprehension and production of items on a sentence comprehension test and then gave a referential communication task using these items as stimulus material. Each child in turn acted as both speaker and listener with each of the other five children. The items were presented in such a way that the target sentence differed from others of the set equally often in subject, verb, or object. The results indicated that the critical feature was less likely to be communicated when it was a verb.

Graham and Graham (1971) conducted a study involving language behaviors of the mentally retarded which focused on syntactic

characteristics. Language samples were collected from nine mentally retarded subjects with chronological ages ranging from 10 to 18 years and mental ages ranging from 3 years, 6 months to 10 years, and analyzed them syntactically. The results indicated that certain indices of linguistic sophistication and subjects' mental ages were correlated. Graham and Graham hypothesized that non-mongoloid retardates develop rules of their language at a different rate, but much the same way as intellectually average children.

Wiegel-Crump (1981) compared syntactic usage of institutionalized and home-reared Down's Syndrome children with that of normally developing children of equivalent mental age, using the Developmental Sentence Scoring (DSS) Procedure (Lee, 1974). Results demonstrated that the Down's Syndrome subject evidenced a more homogeneous pattern of syntactic usage and tended to acquire only low level syntactic structures, as identified by the DSS procedure. The study showed no significant differences in syntactic usage between male and female institutionalized and home-reared subjects.

Researchers have also investigated the language use of the mentally retarded. Owens and MacDonald (1982) investigated and compared the illocutionary acts for young language learning children with 12 Down's Syndrome and nondelayed children. With the exception of the practice illocutionary act, there were no significant differences among the children.

Research has also been done to assess those instruments designed to measure the receptive language skills among the mentally retarded. The Peabody Picture Vocabulary Test (PPVT) is one such instrument.

Carr, Brown, and Rice (1967) used the PPVT in their assessment of 90 educable mentally retarded subjects and failed to find the PPVT an adequate measure.

Kaufman and Ivanoff (1968) conducted similar studies and concluded that the PPVT is less than a desirable instrument in assessing the functional intellectual ability of the mentally retarded beyond the chronological age of 18.

Speech and Language Training for the Mentally Retarded

The mentally retarded individual must be trained to develop speech and language skills. Freeman and Lukens (1962), in their research involving speech and language programs for the educable mentally retarded, state that effective teaching of speech and language in the classroom can be implemented in two ways: (1) structuring daily routine activities to include the use of specific social speech patterns, and (2) teaching patterns which are appropriate in various life situations.

Wilson (1966) divided educable mentally retarded children into three groups: (1) an experimental group which received 2 1/2 hours of phoneme-oriented therapy, (2) a placebo group which received 2 1/2 hours of nonphoneme-oriented therapy, and (3) a control group which received no therapy. Initial analysis of the data involved a tabulation of the number of sounds, in error by the years 1962, 1963, and 1964. After three years, the experimental group had a decrease of errors of 5.9 (18.2 errors to 12.3), placeboes 4.6 (18.2 errors to 16.6), and controls 4.3 (15.7 errors to 11.4). Wilson concluded that the approach

to speech therapy commonly used in a public school setting is of little value for improvement of articulation with mentally retarded.

Assuming that speech-language pathologists employ similar techniques and training methods for instructing the mentally retarded as they do with normal intellectual individuals, the question of instructional setting arises: group versus individual training.

Schlanger (1958) concluded that advantages of group therapy when working with the mentally retarded children are: (1) it offers strong motivation for improved communication, and (2) it offers a spontaneous interaction which heightens each child's responsiveness.

Favell, Favell, and McGimsey (1978) studied the effectiveness and efficiency of group versus individual training of severely retarded persons. Subjects consisted of two groups of retarded persons who were trained on a word recognition task. One group was trained individually and four members of the other group were taught simultaneously by one teacher. Favell et al. (1978) concluded that the group teaching strategy resulted in rates of acquisition that were similar to those found with individual instruction.

It appears success is attainable in group training situations. The fine line between success and failure may lie deeper than technique or size. In all probability, it was for this reason that in 1959, the Subcommittee on Speech and Language Problems Associated with Mental Retardation and Delayed Speech and Language Development proposed the following question: "What are the interactions of culture, social, and other environmental factors with the speech and language behavior of the mentally retarded?"

The Institutional Environment

The large public institution has been the alternative for residential care for more than 100 years. Such institutions at present care for almost 200,000 retarded individuals: 3 percent of the estimated retarded population.

Zigler and Balla (1977) researched the impact of institutional experience on the behavior and development of retarded persons, and found that several of the characteristics of the institutions were associated with the behavior of the residents. The larger the size of the institution, the greater the motivation of the individual to receive adult attention. The larger the number of individuals in a living unit, the greater the wariness of the individual who lived in the unit. Finally, higher levels of imitation were found in individuals institutionalized a relatively long period of time.

Language Behavior of Institutionalized Mentally Retarded

The mentally retarded individual residing in an institutional setting demonstrates different and oftentimes more delayed language behavior than those exhibited by the non-institutionalized mentally retarded. Although explanations such as lower IQ of the institutionalized individual seem to account for these language differences, many researchers point to the institutional environment as a major contributor to these language deficits.

Schlanger (1953) researched the speech of 74 institutionalized mentally handicapped children and revealed the following distribution of speech defects: voice - 62 percent, articulation - 57 percent, and stuttering - 20 percent. Studies by Martyn, Sheehan, and Slutz (1969),

and Sheehan, Martyn, and Kilburn (1968) revealed similar distributions of speech defects.

Schlanger and Gottsteven (1957) analyzed the speech of 516 institutionalized mentally retarded individuals and concluded that 79 percent of the population demonstrated varying degrees of speech defectiveness in one or more areas.

Schlanger (1954) concluded that the institutionalized mentally retarded child is deprived of certain motivation factors affecting speech through the severance of significant familiar relationships, the lack of challenge offered in routinized living, and the constant companionship of peers which minimizes his speech experience and practice.

Balla, Butterfield, and Zigler (1974) examined 103 institutionalized mentally retarded children on measures of mental age, IQ, responsiveness to social reinforcement, verbal dependency, wariness of adults, imitativeness, and behavioral variability. Two and a half years later the same children were retested. Results indicated that the children became less verbally dependent, less imitative and more variable in their behaviors.

As a result of the institutional environment, research suggests that institutionalized mentally retarded individuals exhibit more language differences than the non-institutionalized mentally retarded persons.

King and Raynes (1968) reported that children in resident-oriented living units were more advanced in speech and feeding than those children in institution-oriented living units.

In a comparative computer content analysis of the verbal behavior of institutionalized and non-institutionalized retarded children, Montague, Hutchinson, and Matson (1975) used unstructured speech samples from 20 institutionalized and compared them to 20 non-institutionalized retarded children, " . . . perhaps institutionalized retarded children have structured language and vocabulary components whereby the content or referent area of their language patterns is essentially normal" (p. 54).

McNutt and Leri (1979) compared the linguistic performances of 15 institutionalized retarded and 15 non-institutionalized retarded children and found that the grammatical structure of language appeared less affected by environment than were the semantic and auditory elements.

These studies would appear to indicate the institutional environment effects on language are harmful.

Phillips and Balthazar (1979) investigated language deterioration in severely and profoundly retarded long term institutionalized residents and concluded that communication declines during prolonged institutionalization, when measured cross sectionally.

Effects on Environmental Change on Institutionalized Mentally Retarded

Depending on the new environment, changes can have detrimental effects on the retarded person. What effects do environmental change have on the institutionalized mentally retarded person?

Bjaanes and Butler (1974) concluded that the total environment of a facility can be conceptualized as being constituted of different

components, within which there are variations, and which in conjunction form overall types of environment.

Munro, Duncan, and Seymour (1983) studied the effects of front line staff turnover on the behavior of institutionalized mentally retarded adults and suggested that staff turnover had little effect on residents' behavior.

The changes in institutionalized residents' behavior seem to indicate environmental change as a cause.

Adams, Tallon, and Stangl (1980) observed four mentally retarded individuals with stereotypic behaviors under three conditions: quiet, music, and T.V. Results showed significantly lower levels of stereotypic behavior under the quiet and music conditions compared to the T.V. conditions: "Because residents who display stereotypic behavior interact less with their environment, it is important for institutions serving retarded persons to provide an environment that lessens the likelihood of the occurrence of self-stimulatory behaviors" (p. 171).

Conroy, Efthimiou, and Lemanowicz (1982) compared the developmental growth of institutionalized and deinstitutionalized mentally retarded clients and concluded that mentally retarded individuals previously residing in a large institution increased in maladaptive behavior.

Inter-institutional change can also affect the behavior of mentally retarded residents. Cohen, Conroy, Frazer, Snelbecker, and Spreat (1977) concluded that short term changes in adaptive behavior accompanied an inter-institutional relocation. Lower functioning clients, on the average, responded with an increased range and quantity

of behaviors while higher functioning clients showed a pattern of withdrawal and generally decreased behavior output.

Effects of Environmental Change on Language of Institutional Mentally Retarded

The expressive language skills of the institutionalized mentally retarded are also affected by environmental change.

Carsrud and Carsrud (1979) examined the effects of social and environmental change on institutionalized retarded individuals and concluded that both prolonged crowding and relocation affect the social interactions of residents.

Hemming, Lavender, and Pill (1981) studied the quality of life of the mentally retarded adults transferred from large institutions to new small units. It was found that higher ability residents accounted for most of the total samples' significant increases in language development.

Tizard (1964) compared the verbal mental age of 16 residents (experimental group) transferred from a mental deficiency hospital to a small experimental unit with the verbal mental age of 16 residents who remained (control group). After two years the verbal mental age of the experimental unit children had increased significantly more than those of the control group.

There is a need to complete this information by investigating the effects of a Day Activity Center on the expressive language skills of the mentally retarded.

This information will be used to answer the following questions:

1. What are the effects of the Day Activity Center on the subjects' Developmental Sentence Score?

2. What are the effects of the Day Activity Center on the eight categories and sentence point within the subjects' Developmental Sentence Score?
3. What are the expressive language skills of the subjects?

CHAPTER II

METHODOLOGY

The purpose of this study was to examine the effects of a Day Activity Center on the expressive language skills of institutionalized mentally retarded adult females.

Subjects

Twenty-nine institutionalized mentally retarded adult females residing on the pre-placement unit of the Grafton State School were selected on the basis of their involvement with the DAC. Two subjects were excluded from the data due to failure to complete the language sample as a result of non-compliant behavior. Two other subjects were excluded due to their reliance on augmentative communication systems. Seven subjects were placed into the community while the study was in progress. The remaining eighteen residents became the subjects for the study. The mean age of the subjects was 36.22 years with a standard deviation of 6.92. Subjects' ages ranged from twenty-three to forty-nine. The number of years subjects lived in the institutional setting ranged from six to forty-four years with a mean of 25.33 and a standard deviation of 9.11.

Spontaneous language samples were collected from the participating residents following approximately twelve months' involvement in the Day Activity Center. Each resident's language samples were analyzed and

scored according to the Developmental Sentence Scoring (DSS) Procedure (Lee, 1974). These were compared to language samples from each of the subjects which were in the speech-language pathologist's clinical records at the Grafton State School. These earlier samples had been obtained prior to the residents' involvement in the Day Activity Center.

The Day Activity Center (DAC)

On June 4, 1984, the female pre-placement unit of the Grafton State School for the mentally handicapped began a structured training program for its residents, known as the Day Activity Center or DAC.

The DAC program was designed to facilitate four primary training areas, all of which were pertinent to the residents' assimilation to the environment of a group home and a community. The four training stations were classified as self-help, academics, pre-vocational and language/speech--socialization. Each station provided training appropriate for the skill level of the resident.

In the self-help station, residents practiced skills in toothbrushing, hand and hair washing, dress for weather, nail care and make up application. Pre-vocational training included sorting colors, numbers and shapes, assembling and disassembling nut and bolt applications, collating, stapling, rubber stamping, and other fine motor skills. The academic station consisted of training in money skills, time-telling, math, name writing, colors, functional signs and numbers. The final station, language/speech--socialization, focused primarily on those skills needed for communication in social settings

such as conversation skills, sentence structuring, telephone usage and courtesy, current events and reality orientation.

Residents rotated between the four stations at half hour intervals. Eight programmers, two resident care technicians and an activity assistant comprised the training team. Residents were scheduled to attend the DAC Monday through Friday for four to six hours depending on the residents' individual activity schedules.

An important aspect of the DAC was the modeling of grammatical language by the trainers. In each of the four stations trainers were instructed to produce model sentences and stimulate language productions among the residents. It was anticipated that through modeling the residents would be exposed to grammatical language productions and carry these experiences into conversations of their own.

Without the DAC involvement many residents would have been spending the majority of their day on the living area with more restricted verbal interactions with other residents and staff.

Setting and Instruments

The spontaneous language samples were elicited by the experimenter in the speech therapy office of New Horizons, the pre-placement residential building on the campus of the Grafton State School. The room was equipped with a desk, file cabinet, and a table and two chairs from which the experimenter and subject conversed. The door was kept closed and the window curtains drawn to decrease subjects' distractability.

Developmental Sentence Scoring (DSS)

The reweighted DSS procedure (Lee, 1974) was used to analyze the syntactic structures of all the subjects' spontaneous oral language.

In the Developmental Sentence Scoring (DSS) procedure, each grammatical form is scored independently using a scoring system. The scores range from 1 to 8 points for most of the eight grammatical form categories. In addition, a "sentence point" score of 1 is added for each sentence that meets adult English standards. The final Developmental Sentence Score reflects the mean value or the sum of the individual sentence scores divided by the number of sentences analyzed.

According to instructions by Lee (1974), the following rules were established for each spontaneous language sample:

1. The language sample contained fifty complete sentences for analysis. A sentence was judged complete if it had a noun and verb in subject-predicate relationship.
2. The sample consisted of consecutive, complete, intelligible utterances. Utterances with a subject or a verb absent or which were unintelligible were omitted from the sample.
3. Only one occurrence of an utterance was allowed so that overused stereotypes were counted only once.
4. Sentences beginning with a conjunction were included in the sample, but the conjunction was not scored.
5. Question markers and imperative interjections were used to aid the clinician in evaluating the type of sentence spoken.

Instructions

Each subject was informed of the experimenter's wish to gain knowledge on her activities, family, hobbies, likes and dislikes. The subject was asked to give detailed accounts and descriptions.

Materials

In cases where subjects were extremely quiet or non-communicating, picture cards depicting subject-predicate situations were used to stimulate utterances.

Procedures

The experimenter met the subject at her living area and led her to the speech therapy office where she and the experimenter sat across from each other at a table. The subject was then told that the experimenter wanted to find out more about her daily activities, family, hobbies, likes and dislikes. The experimenter then proceeded to obtain a spontaneous language sample according to the revised Developmental Sentence Scoring (DSS) Procedure (Lee, 1974).

After the spontaneous language sample was obtained, the subject was led back to her living area.

Measures

Each subject's language sample was transcribed and analyzed using the Developmental Sentence Scoring Procedure (Lee, 1974).

Data and Data Analysis

The spontaneous language samples represent the dependent variable of this study. The independent variable is represented by participation in the Day Activity Center.

The analysis of the data will answer questions one, two, and three.

Consent

A consent form (see Appendix A) was sent to each subject's legal guardian prior to her involvement in the study.

Intrajudge Reliability

In order to establish reliability in experimenter judgment, nine of the subjects' language samples were re-scored. The Pearson Product Moment Correlation Coefficient was used to determine the correlation between the two scores. A correlation of .9818 was found.

CHAPTER III

RESULTS AND DISCUSSIONS

The purpose of this study was to investigate the effects of a Day Activity Center on the expressive language skills of institutionalized mentally retarded adult females.

Spontaneous language samples were collected from eighteen subjects following approximately twelve months' involvement in a Day Activity Center (DAC). The language samples were analyzed and scored according to the Developmental Sentence Scoring (DSS) Procedure (Lee, 1974) and compared to language samples of each of the subjects in the clinical records at the Grafton State School obtained prior to the subjects' involvement in the DAC. Table 1 represents the subjects' performance on the DSS.

The performance of the subjects on the Developmental Sentence Scoring was analyzed using the t-test for two related samples. As shown in Table 2, a significant difference ($p < .05$) was found between the performance by the subjects on the DSS before being assigned to the DAC and following twelve months of DAC activity.

Results revealed that the subjects performed significantly better on the DSS after their twelve-month involvement in the DAC.

TABLE 1

SUBJECTS' PERFORMANCE ON THE
DEVELOPMENTAL SENTENCE SCORE

Subject	1984	1985
1	1.76	3.70
2	4.16	4.98
3	2.60	4.96
4	4.00	4.02
5	5.20	7.40
6	6.90	6.94
7	2.70	4.58
8	4.18	5.56
9	8.04	6.80
10	4.52	6.08
11	.38	.12
12	.74	2.04
13	4.22	4.24
14	.62	.08
15	5.00	6.34
16	.26	.90
17	.30	.20
18	2.82	6.04

TABLE 2

THE T-TEST FOR TWO RELATED SAMPLES FOR DIFFERENCE BETWEEN THE OVERALL DEVELOPMENTAL SENTENCE SCORES

	Mean	S.D.	df	t-value
1984	3.24	8.35	17	2.55*
1985	4.16	7.23	17	

*$p < .05$

Performance of the subjects on the eight categories and sentence point within the DSS were analyzed using the t-test for two related samples. A significant difference ($p < .05$) was found on subjects' performance on the main verb and personal pronoun categories and the sentence point. These findings indicate that the subjects performed significantly better on these three categories following the twelve-month DAC involvement, as shown in Table 3.

No significant difference was found between the two performances by the subjects on the following categories: secondary verbs, indefinite pronouns, negatives, conjunctions, "wh" questions, and interrogative reversals. These findings indicate that performance of the subjects on these categories did not change significantly from their performance prior to their involvement in the DAC.

Examination of the DSS transcripts for the subjects following their twelve-month involvement in the DAC indicated that 62 percent of the subjects' grammatical expressive language consisted of personal

pronouns and main verbs while the remaining 38 percent was divided among the other six categories on the DSS.

TABLE 3

MEANS AND STANDARD DEVIATIONS OF SUBJECTS' PERFORMANCE ON THE EIGHT SUBTESTS AND SENTENCE POINT OF THE DSS

	1984		1985			
	Mean	S.D.	Mean	S.D.	df	t-value
Indef. Pro.	.40	.50	.47	.61	17	1.00
Pers. Pro.	.73	.92	.87	1.02	17	2.11*
Main Verb	.99	1.27	1.43	1.69	17	2.44*
Sec. Verb	.21	.35	.24	.40	17	.30
Neg.	.23	.34	.33	.46	17	1.43
Conj.	.21	.38	.26	.36	17	.62
Inter. Rev.	.02	.08	.02	.05	17	.27
Wh-Q	.12	.17	.08	.14	17	-1.35
Sent. Point	.24	.27	.39	.46	17	3.00*

*$p < .05$

These findings are similar to the subjects' DSS transcripts preceding involvement in the DAC where 59 percent of the subjects' grammatical expressive language consisted of personal pronouns and main verbs and the remaining 41 percent was divided among the other six categories.

This would suggest that the frequency at which the subjects used the syntactic components did not increase, however, their sentences

were more grammatical as evidenced by the significant improvement in the subjects' performance on the sentence point following involvement in the DAC, as shown in Table 3.

Of the eighteen subjects, only four did not demonstrate an increase in their Developmental Sentence Score following involvement in the DAC. Three of the four may be explained because of their extremely low DSS score preceding involvement in the DAC Program. It may be that because these three subjects are less verbal and less likely to communicate that oftentimes trainers may not have required as much of them in terms of verbalizations as was expected of more verbal residents. For these three subjects the DAC may not provide as much language stimulation because of the group training that is implemented. These residents may require more opportunity for direct and individual training to facilitate their spontaneous language skills.

No control group was used in the study due to the fact that virtually all of the residents residing on the pre-placement unit were involved in the DAC. This is also why the number of subjects was limited.

A language sample obtained months before the initial language sample used in the study probably would have helped reinforce the study's findings if it showed the language performance of the subjects to be stable before the DAC experience. However, the age of the subjects (M = 36.22 years) would not lead one to expect advancing language development. Research such as Schlanger (1954) and Phillips and Balthazar (1979) indicate that the language of the institutionalized mentally retarded oftentimes regresses when residents have no

opportunity to be exposed to language and communication. Therefore, it is probable that subjects' performance on the DSS would not have increased had they not been involved in the DAC.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The purpose of this study was to investigate the effects of a Day Activity Center on the expressive language skills of institutionalized mentally retarded adult females.

Spontaneous language samples were collected from eighteen subjects following approximately twelve months' involvement in a Day Activity Center. The samples were analyzed and scored according to the Developmental Sentence Scoring (DSS) Procedure (Lee, 1974) and compared to language samples in the clinical records at the Grafton State School obtained prior to the subjects' involvement in the DAC.

Based on an analysis of the data obtained, the following results were found:

1. A significant difference ($p < .05$) was found between performance by the subjects on the DSS. Results indicated that subjects received a higher score after being involved in the DAC for twelve months. These findings suggest that the Day Activity Center provides continuous language stimulation for the residents.
2. A significant difference ($p < .05$) was found on subjects' performance on the main verb and personal pronoun categories and the sentence point. These findings indicate that subjects' performance on the main verb and personal pronoun categories

and the sentence point was significantly better following involvement in the DAC.

3. No significant difference was found between the performance of the subjects on the remaining six categories of the DSS. Performance of the subjects on these categories was not significantly different from the performance of the subjects prior to their involvement in the DAC.
4. Sixty-two percent of the subjects' grammatical expressive language as described on the DSS transcripts, consisted of personal pronouns and main verbs. The remaining thirty-eight percent was divided among the other six categories.

From the results of the present study, it was concluded that the Day Activity Center yields measurable results in terms of improved expressive language performance.

The present investigation stimulated the following suggestions for further research:

1. An extension of the present study to include a larger number of subjects.
2. A study to investigate the effects of a DAC on receptive language skills of institutionalized mentally retarded residents.
3. A study to investigate the relationship between the performance of institutionalized mentally retarded male subjects and institutionalized mentally retarded female subjects on the DSS.

4. A study to investigate the relationship between length of institutionalization and language skills of mentally retarded residents.
5. A study to investigate the effects of community placement on language skills of mentally retarded.

APPENDIX A

CONSENT FORM

CONSENT FORM

Information About and Consent to
Participate in Research on Expressive Language

My name is Gerald Werven and I am currently working on my Master's degree in Speech Therapy at the University of North Dakota. Prior to graduate school, I was employed by the Grafton State School as a speech therapist in New Horizons. At that time, the Day Activity Center (DAC) was just getting underway. As a part of my degree requirements, I am proposing the following study:

To investigate the effects of a Day Activity Center on the expressive language skills of institutionalized mentally retarded adult females.

1. STATEMENT OF PURPOSE AND INVITATION TO PARTICIPATE

   The goal of this research is to discover what effects, if any, the Day Activity Center has had on the verbal language of the involved residents.

2. SELECTION PROCESS

   Residents were selected on the basis of their involvement with the Day Activity Center in New Horizons.

3. PROCEDURE TO BE FOLLOWED

   Spontaneous language samples will be collected from the resident and compared to language samples at the State School obtained prior to her involvement in the DAC.

4. DISCOMFORTS, INCONVENIENCES, AND RISKS

   There are no discomforts; inconveniences; or psychological, social, or behavioral risks in this study.

5. POTENTIAL BENEFITS

   This research will provide administrators, professional staff, and employees of the Grafton State School with valuable information regarding the effects of a Day Activity Center on residents' expressive language.

6. CONFIDENTIALITY

   Results will be held confidential and residents' identities will not be revealed.

7. FREEDOM TO WITHDRAW

If a resident decides not to participate, she is free to discontinue participation at any time. Her decision will have no impact on services provided by the Grafton State School.

8. OFFER TO ANSWER QUESTIONS

You are encouraged to ask any questions concerning this research that you may have in the future. Questions may be asked by calling Gerald Werven at 746-0506.

AGREEMENT AND SIGNATURE

I have read the attached information and ____ approve ____ disapprove of _____ participating in the research.

_____ _____

Parent or Legal Guardian Signature — Date

APPENDIX B

SUBJECT PROFILES OF

DEVELOPMENTAL SENTENCE SCORE (DSS)

KEY

Score = Developmental Sentence Score

Category = Eight Subtests and Sentence Point of the DSS

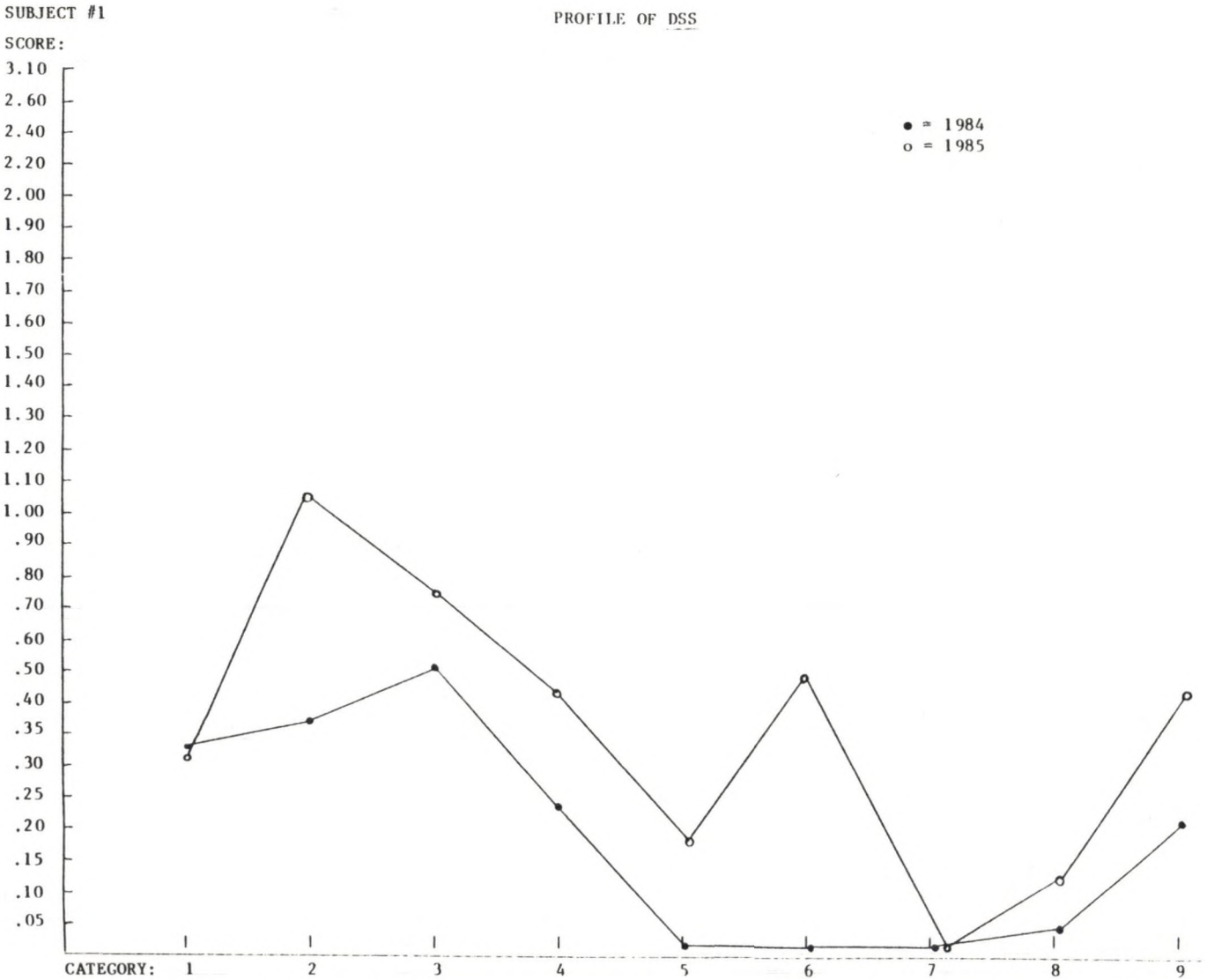


Fig. 1. Profile of DSS Subject #1.

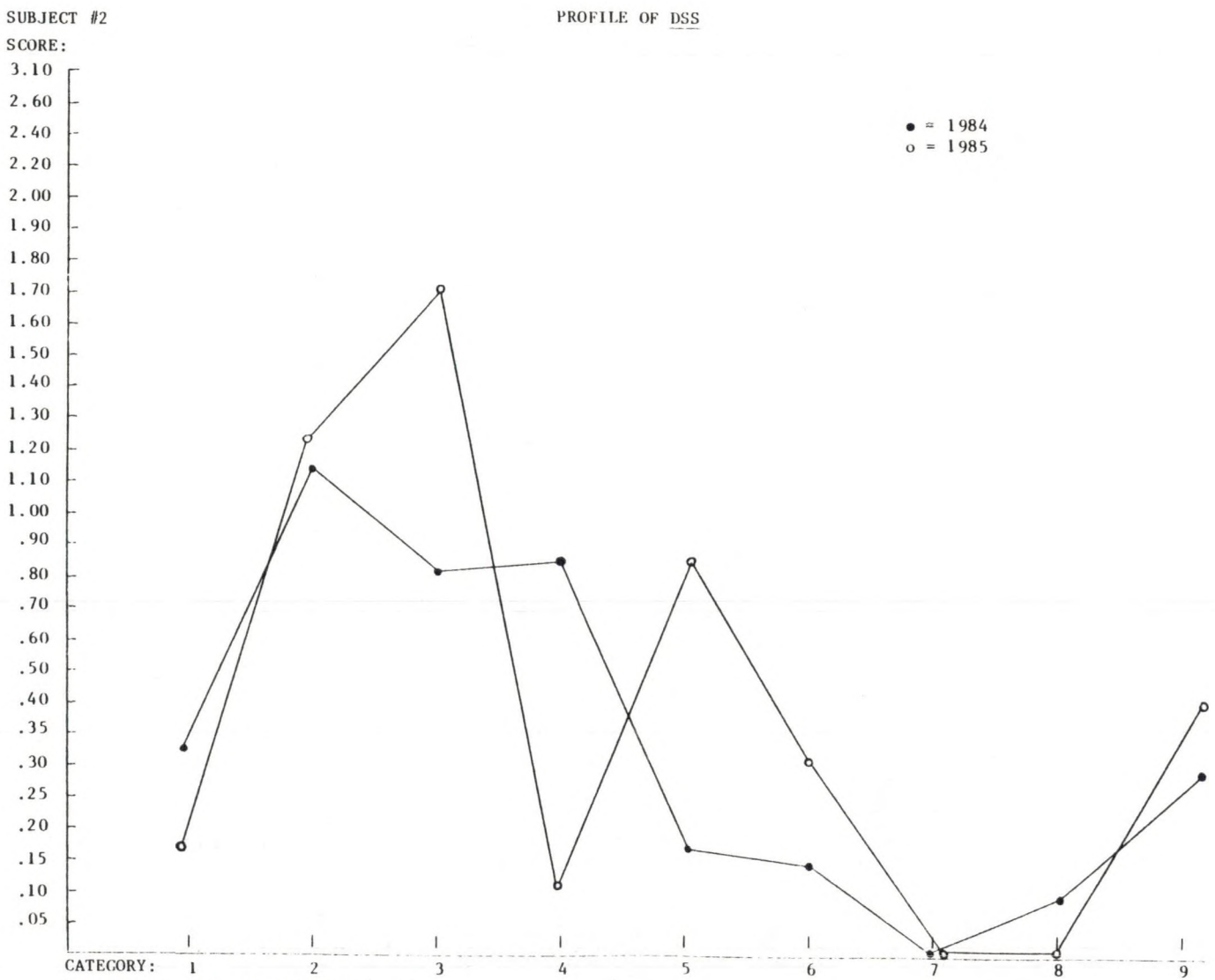


Fig. 2. Profile of DSS Subject #2.

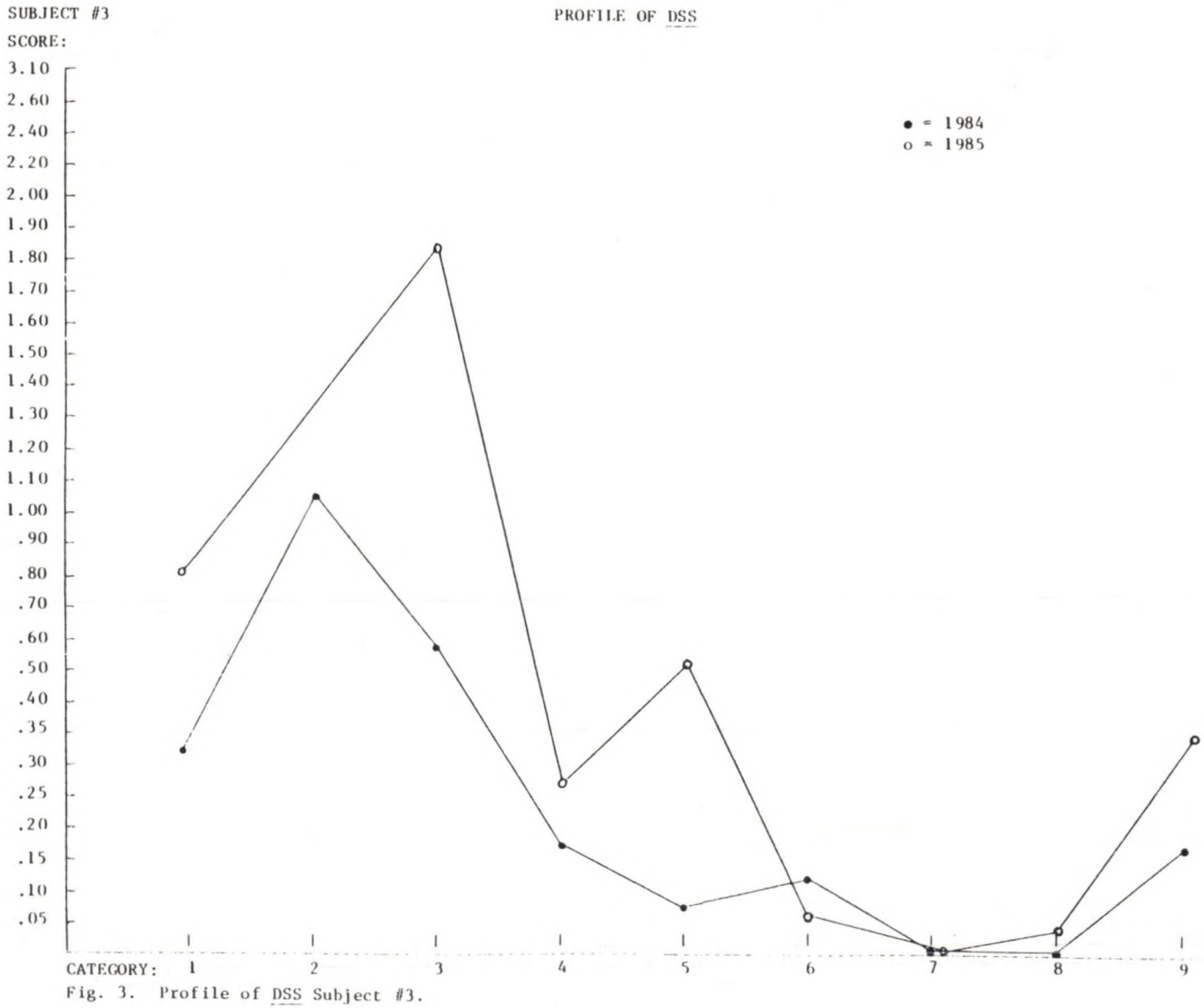


Fig. 3. Profile of DSS Subject #3.

SUBJECT #4

PROFILE OF DSS

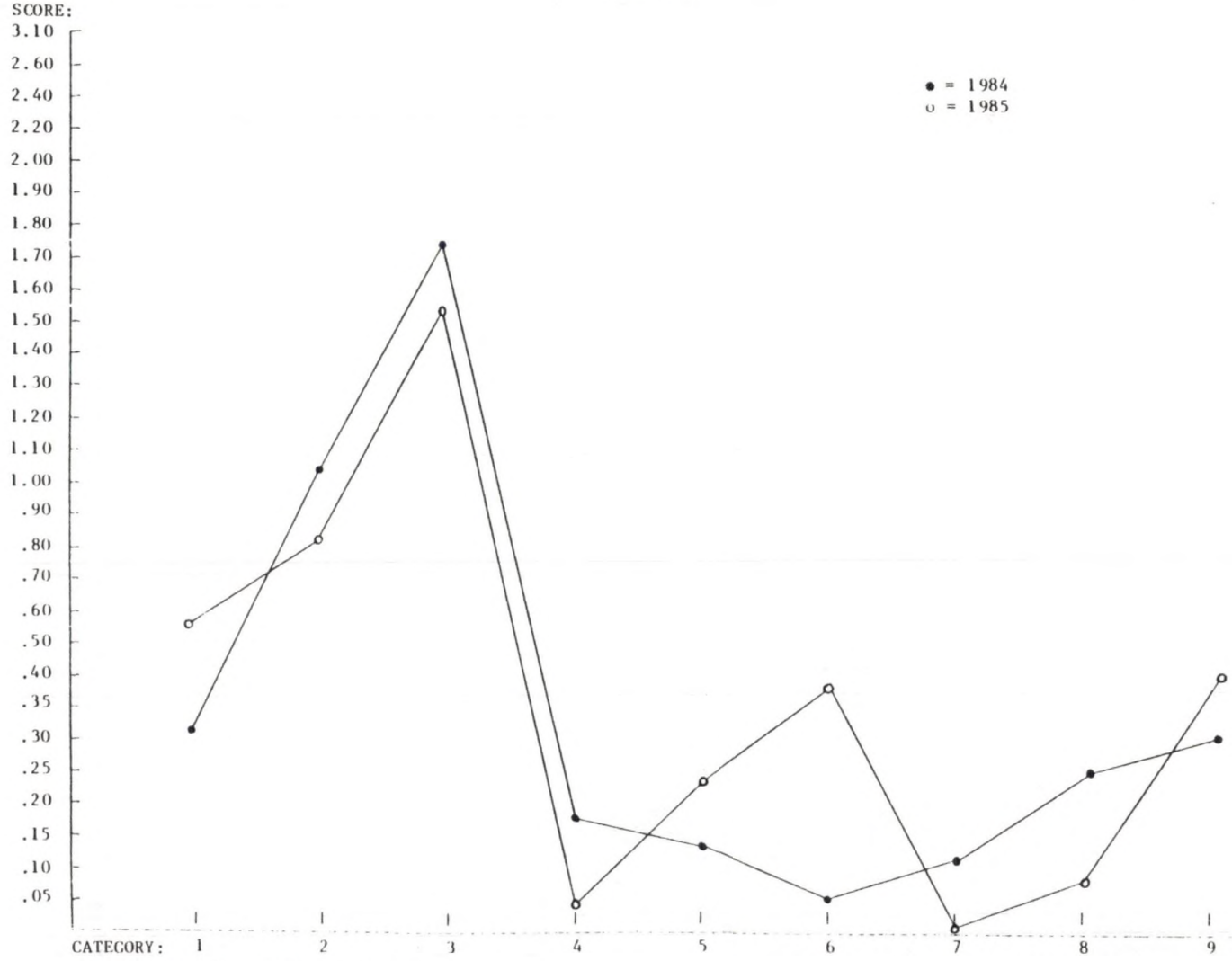


Fig. 4. Profile of DSS Subject #4.

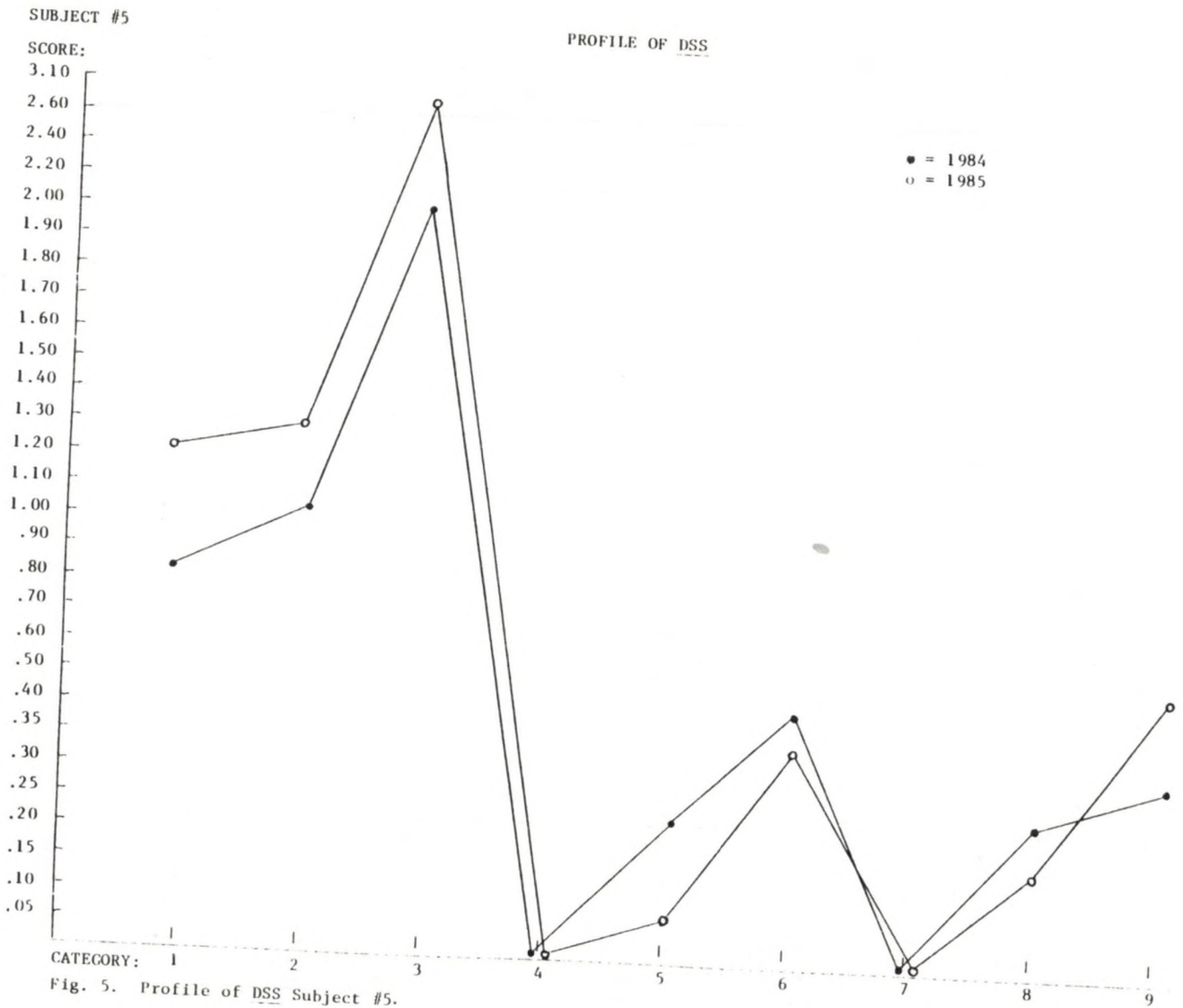


Fig. 5. Profile of DSS Subject #5.

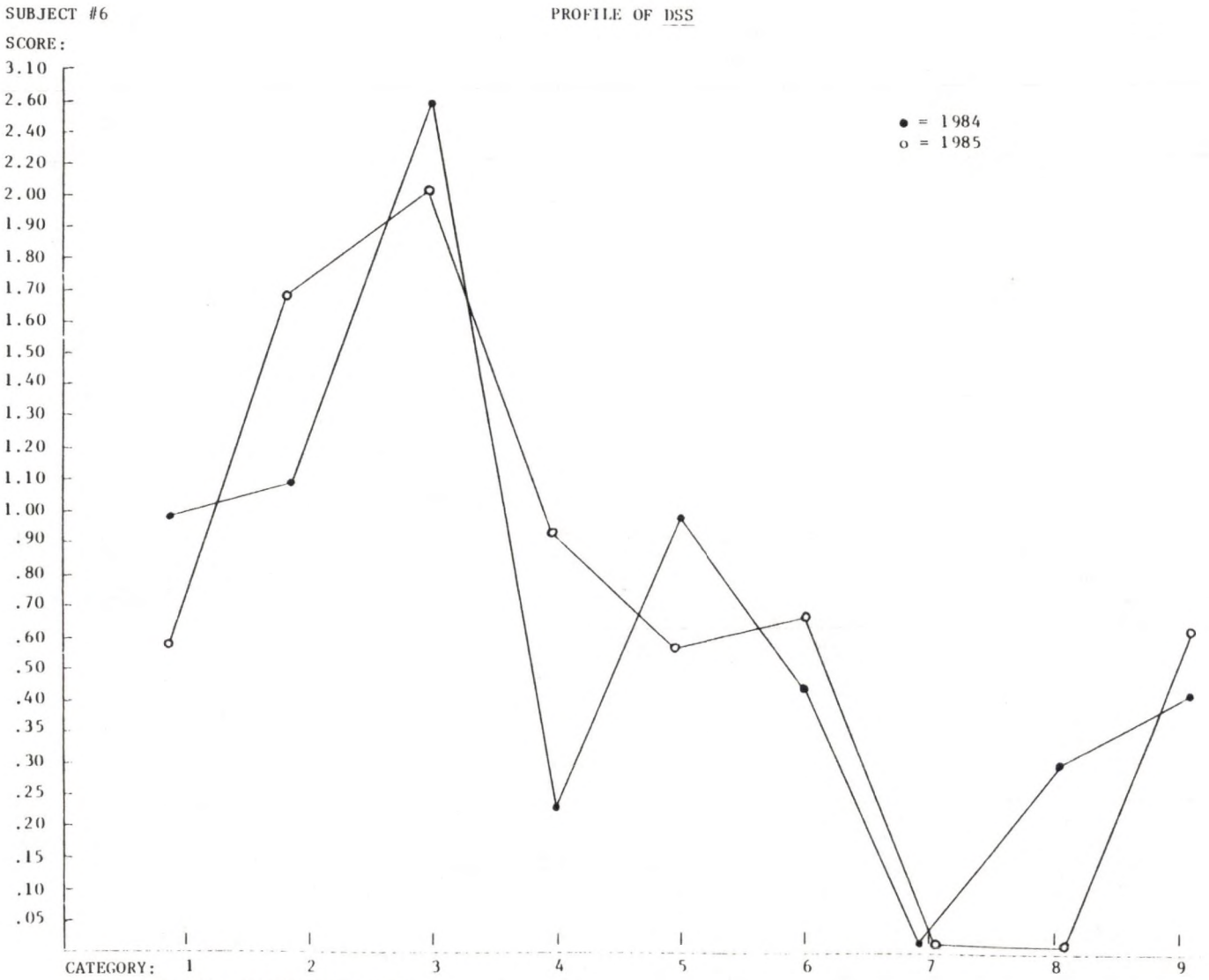


Fig. 6. Profile of DSS Subject #6.

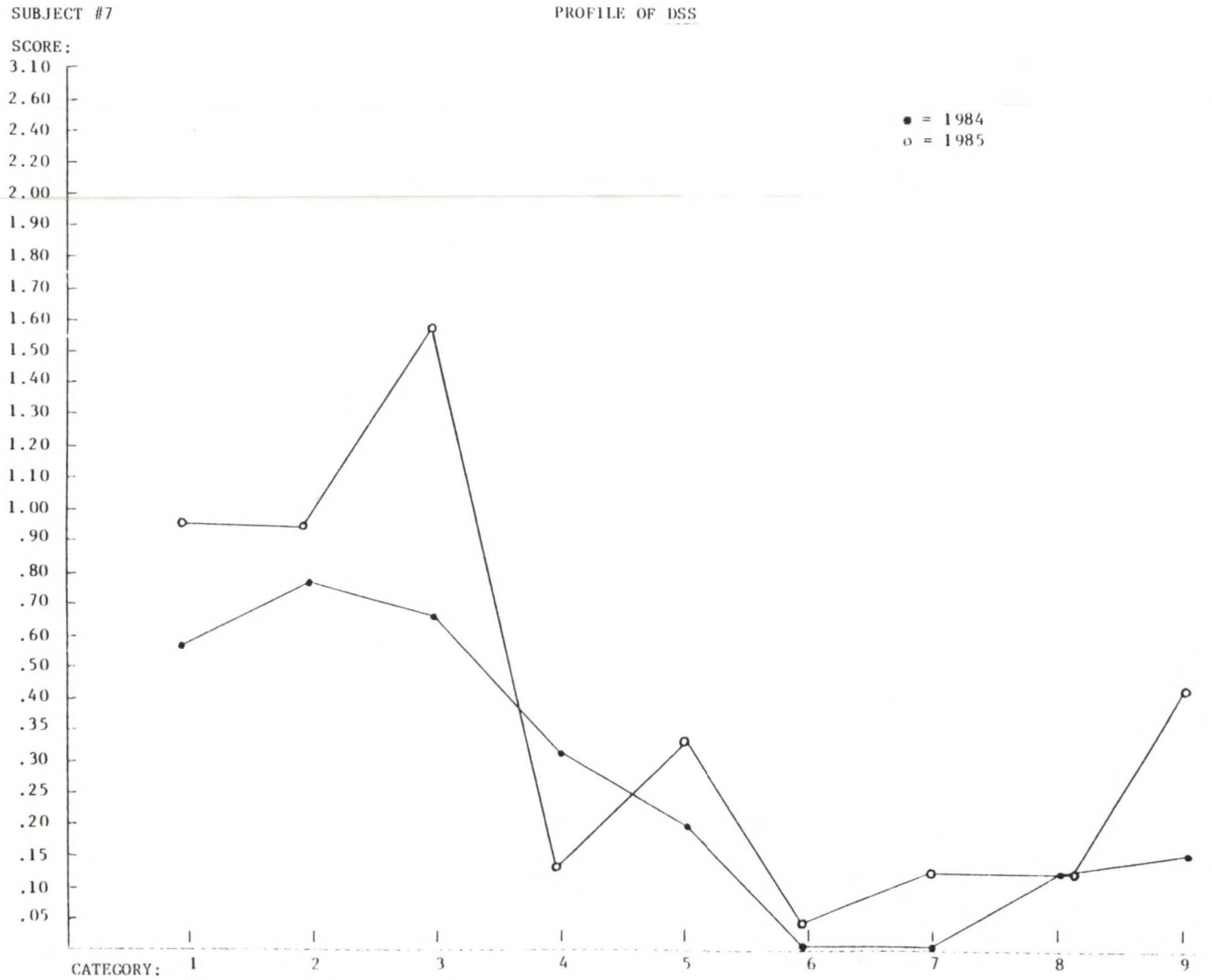


Fig. 7. Profile of DSS Subject #7.

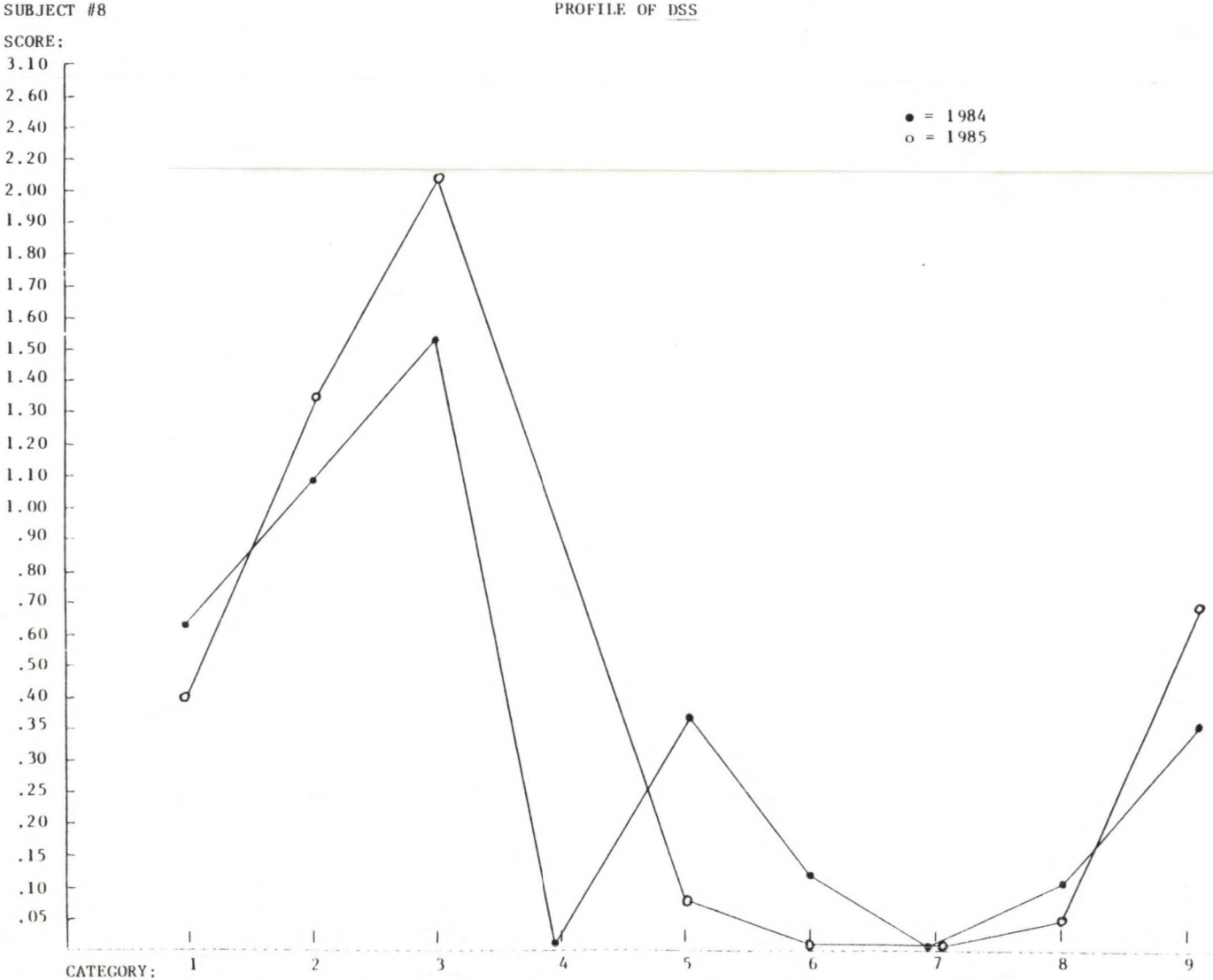


Fig. 8. Profile of DSS Subject #8.

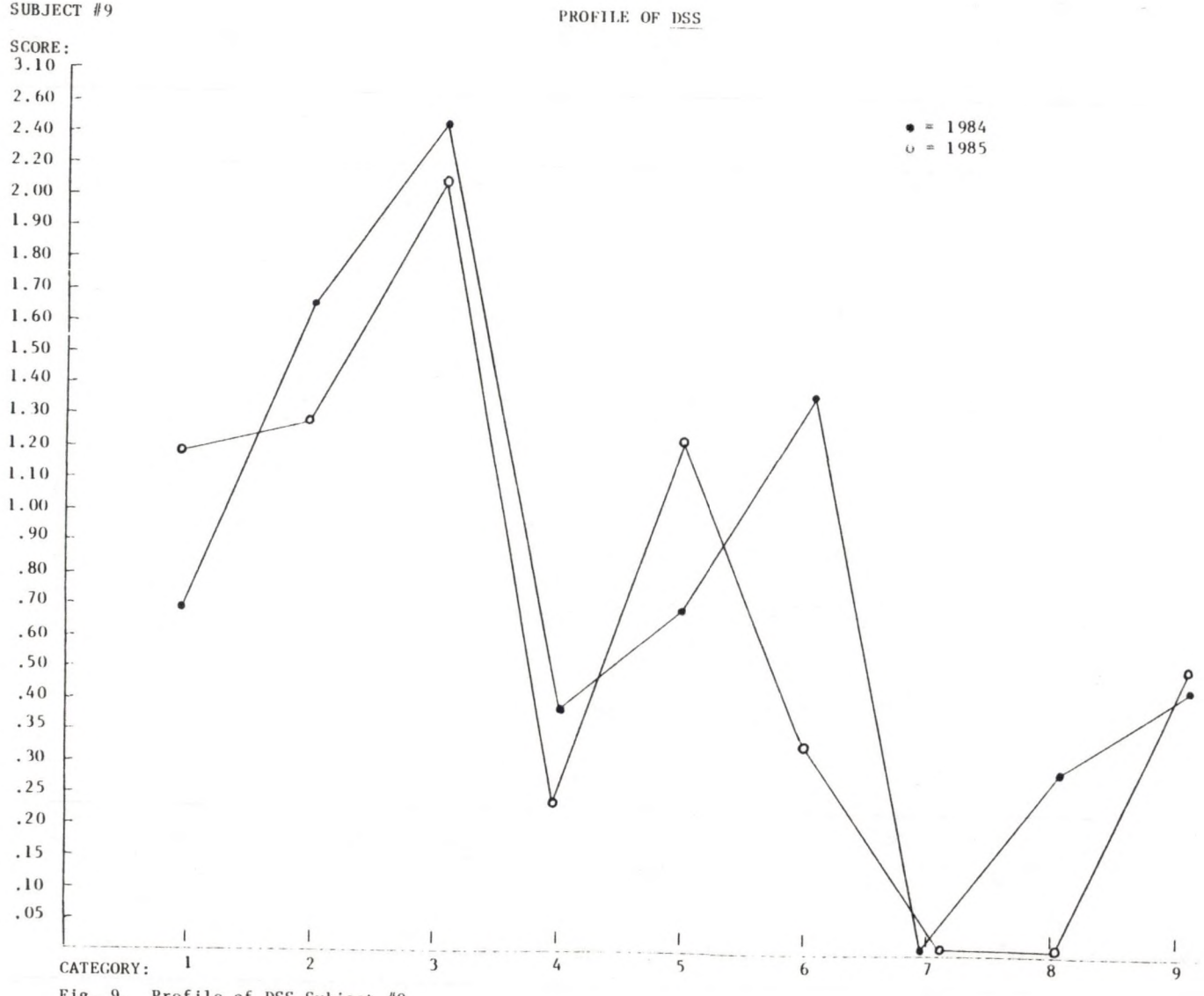


Fig. 9. Profile of DSS Subject #9.

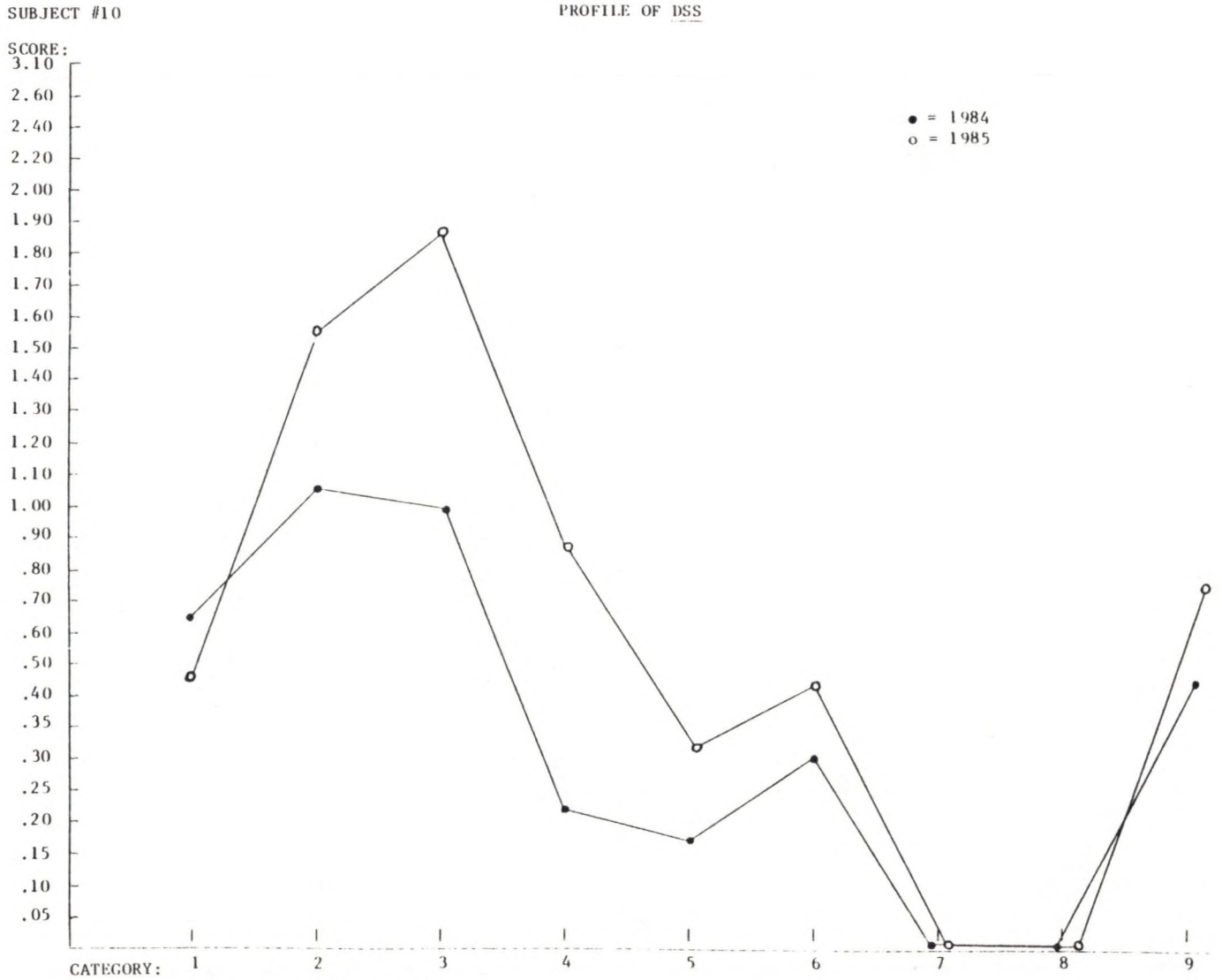


Fig. 10. Profile of DSS Subject #10.

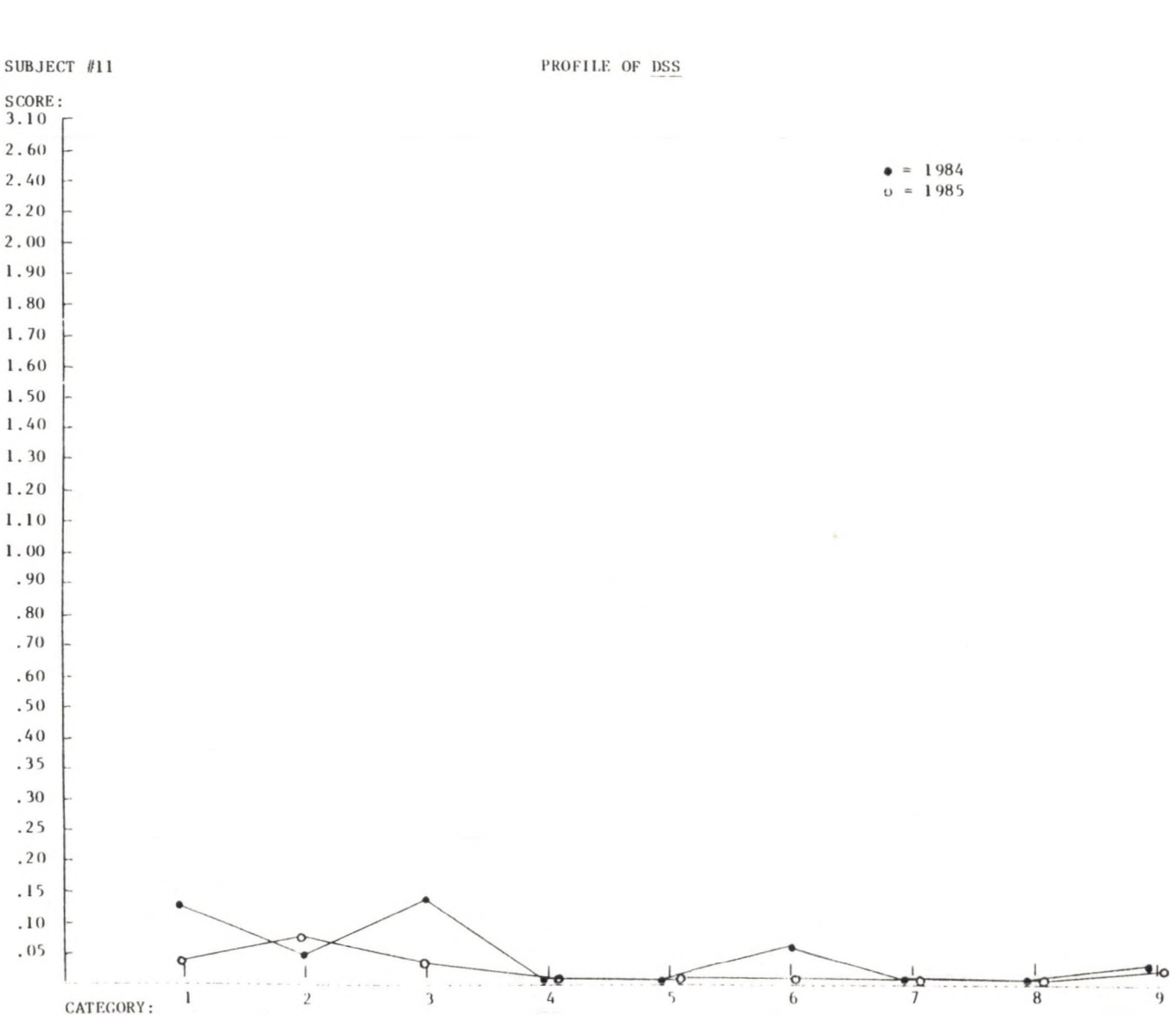


Fig. 11. Profile of DSS Subject #11.

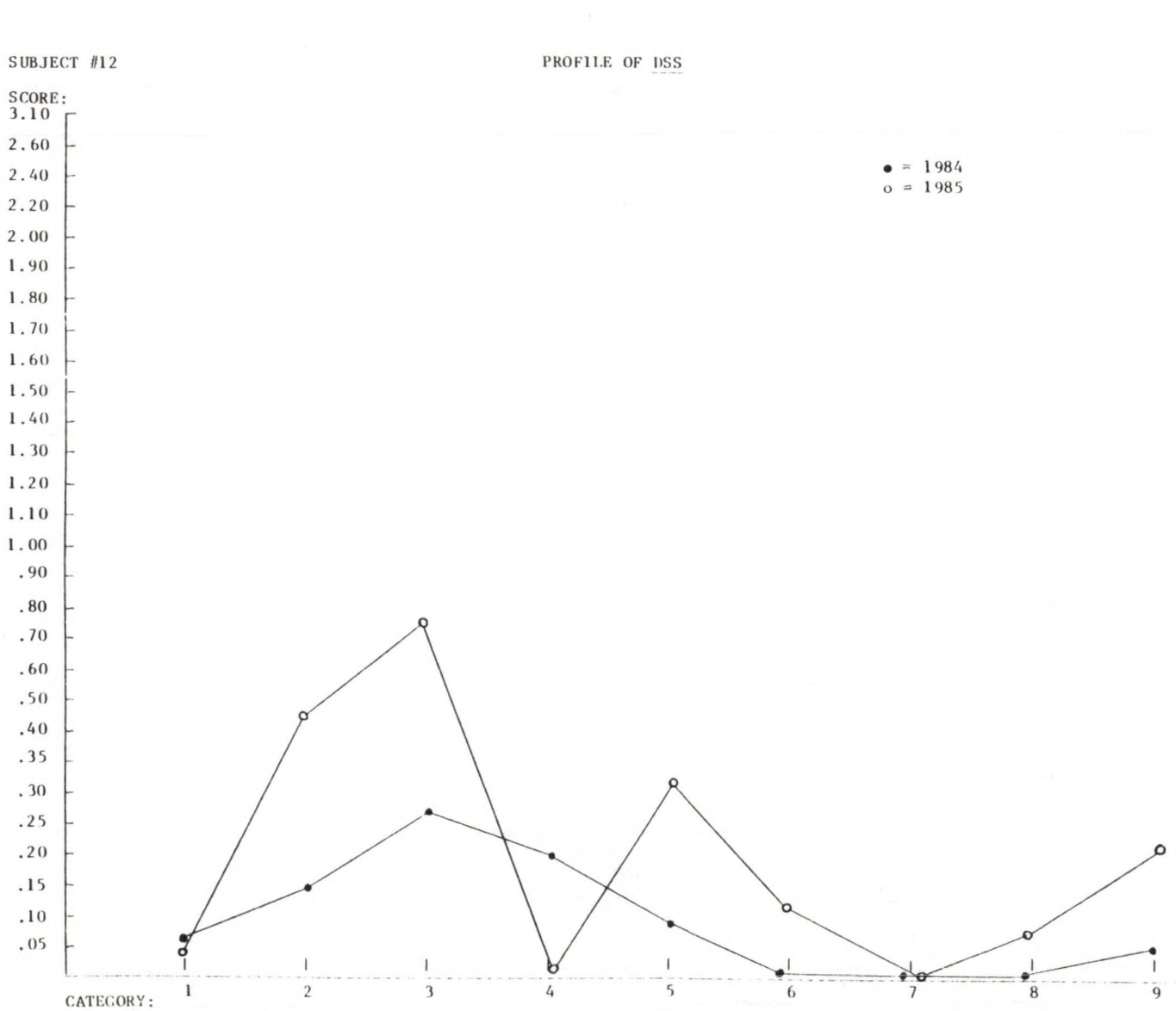


Fig. 12. Profile of DSS Subject #12.

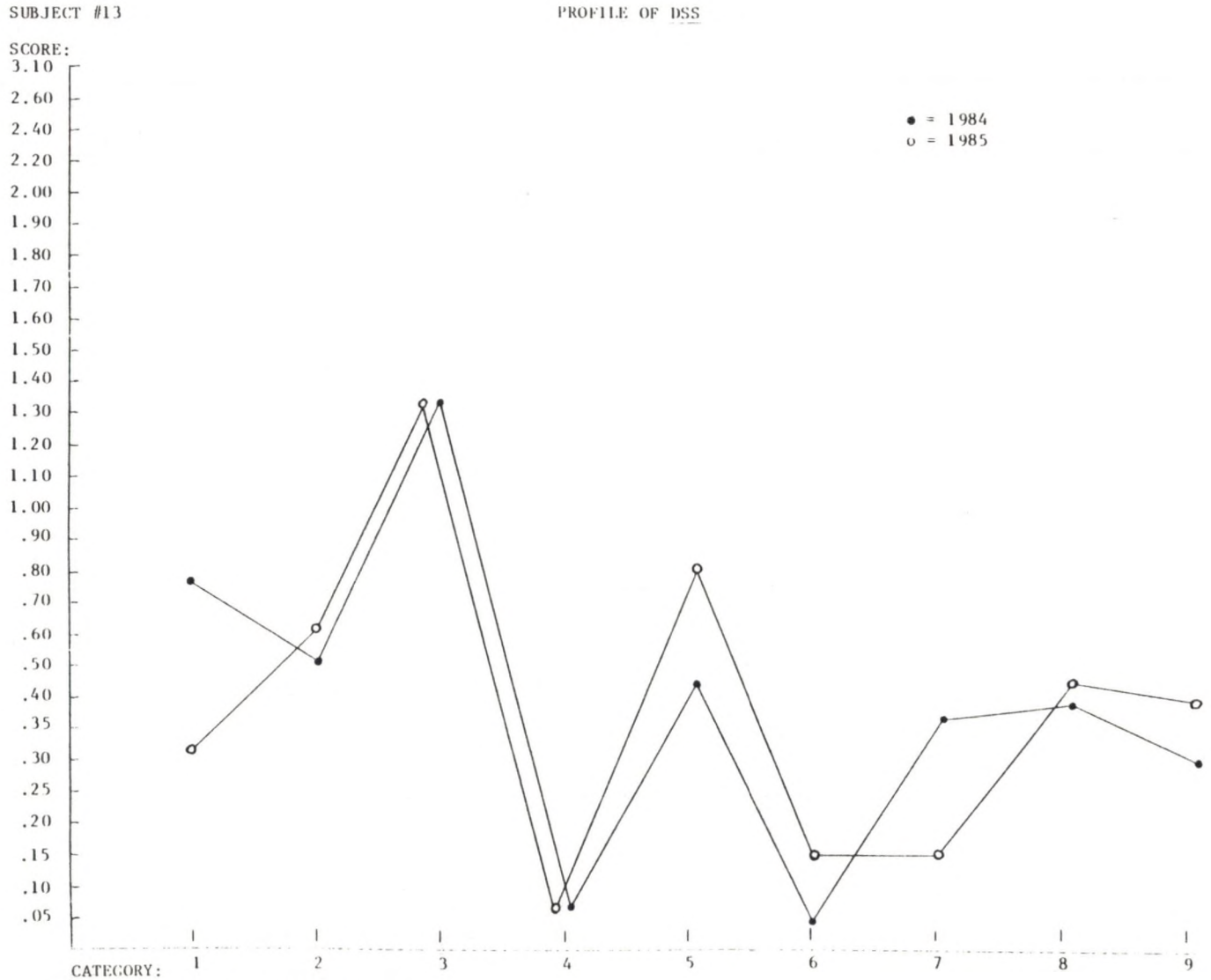


Fig. 13. Profile of DSS Subject #13.

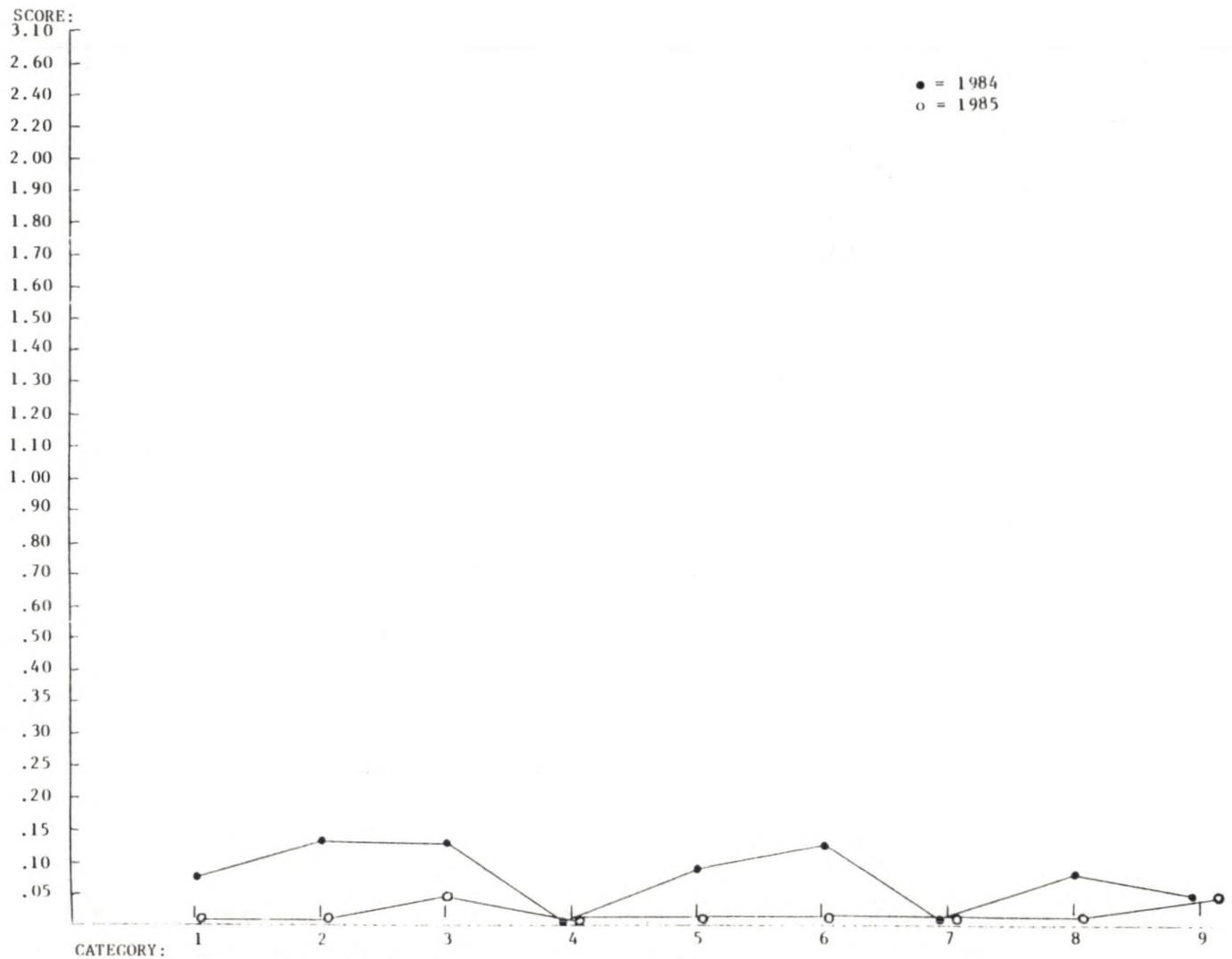


Fig. 14. Profile of DSS Subject #14.

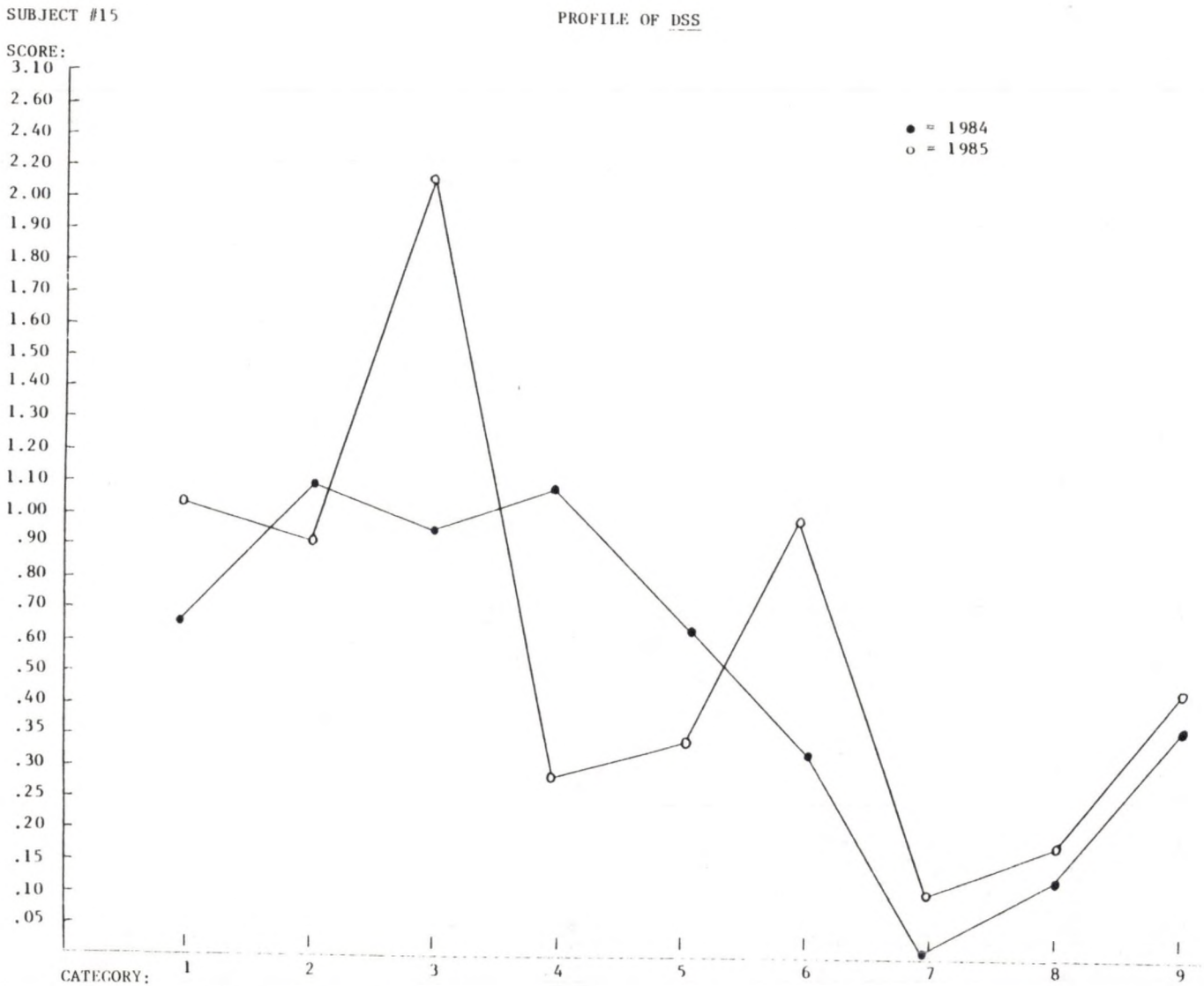


Fig. 15. Profile of DSS Subject #15.

SUBJECT #16

PROFILE OF DSS

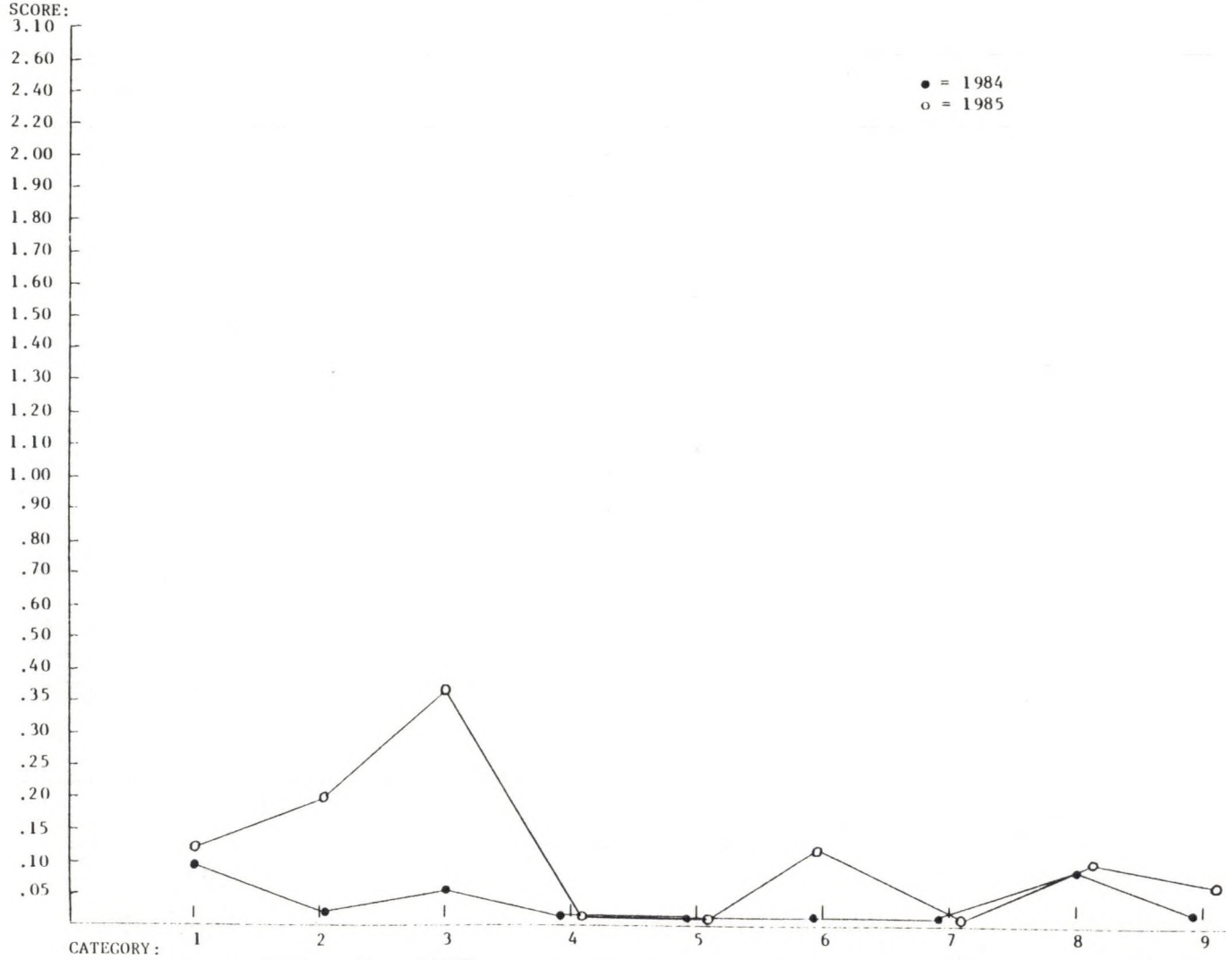
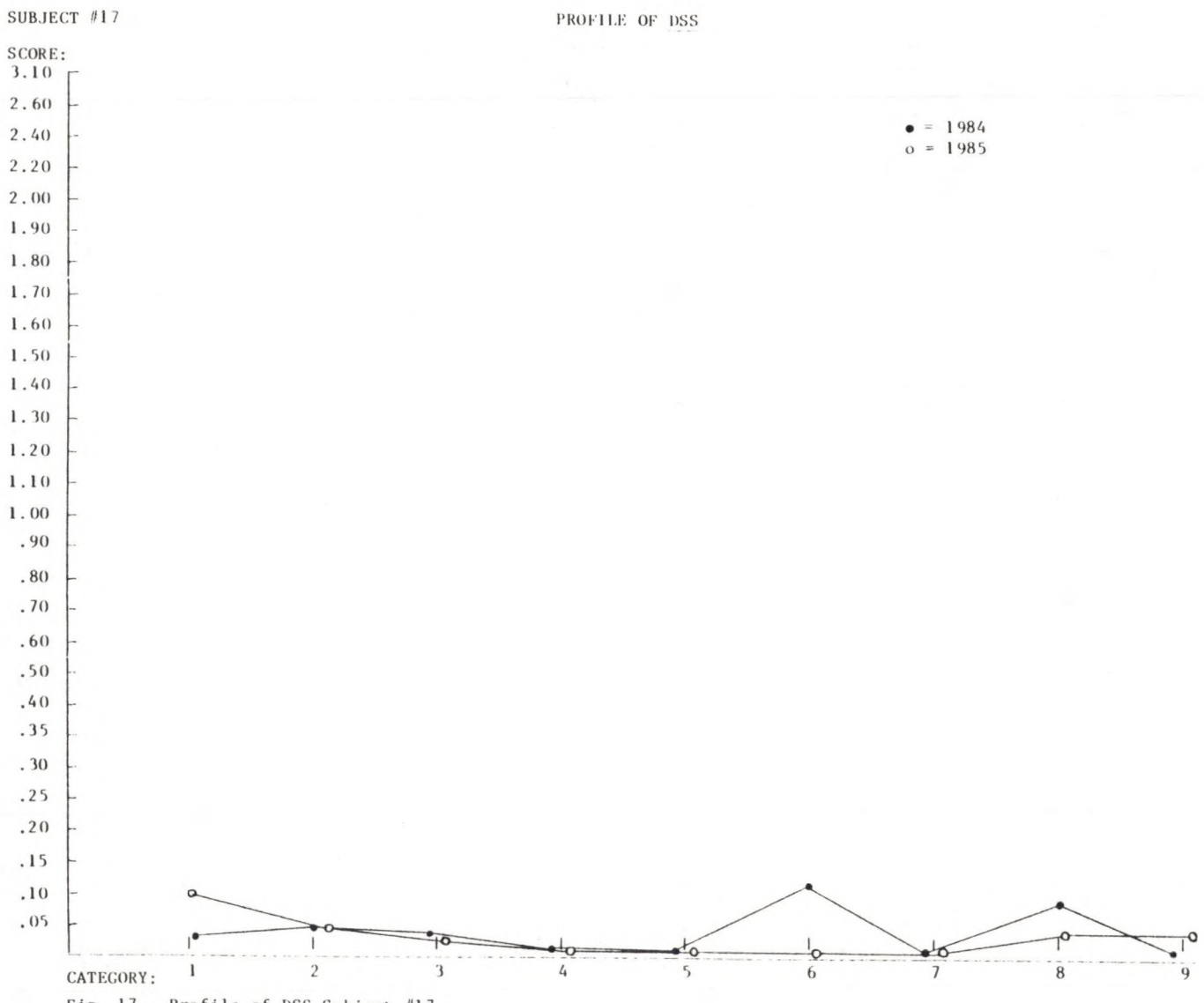


Fig. 16. Profile of DSS Subject #16.



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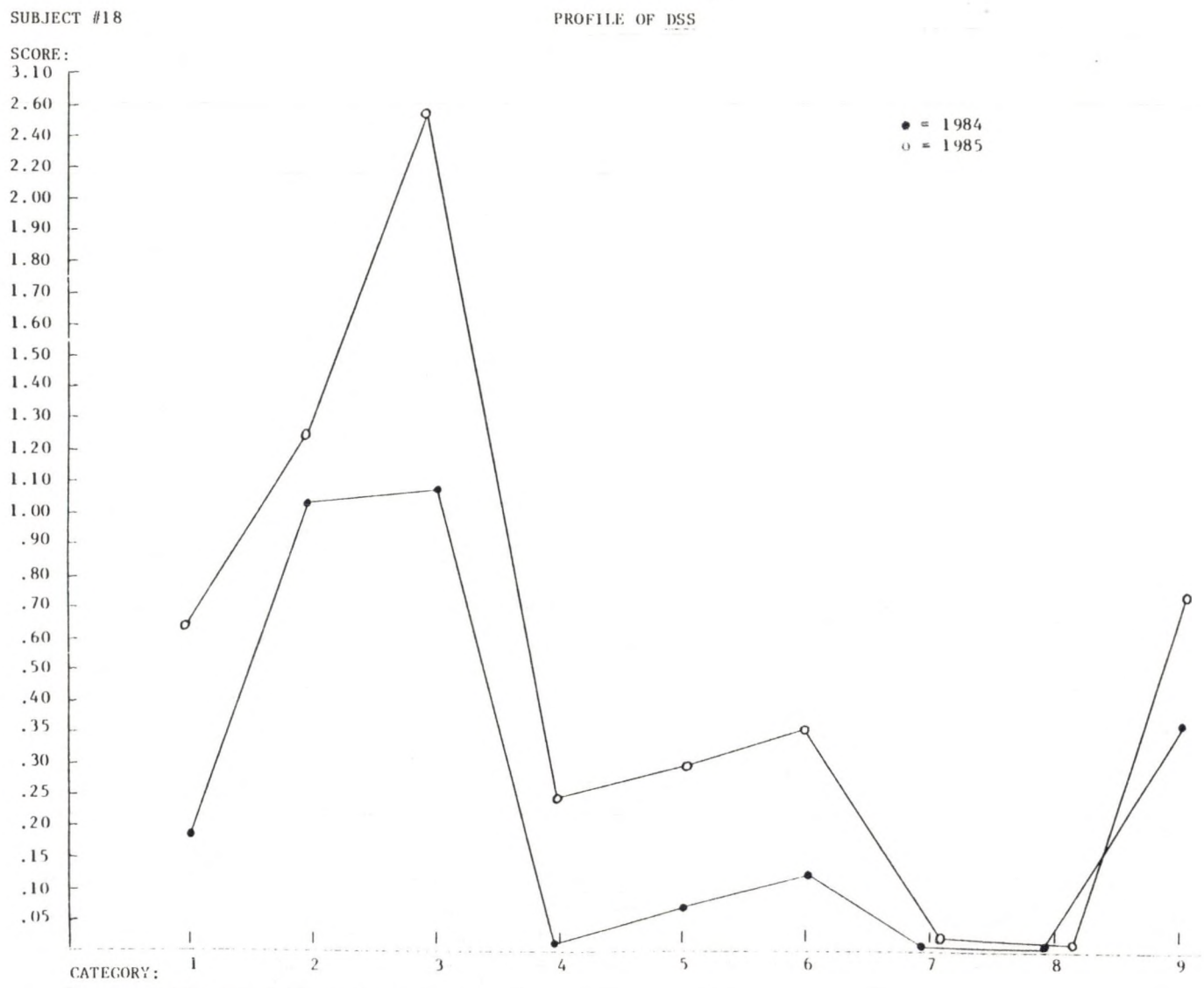

Fig. 18. Profile of DSS Subject #18.

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