

EFFECTS OF DIAGNOSTIC-ETIOLOGICAL LABELS)
ON LISTENERS' PERCEPTION OF SPEECH SEVERITY

by

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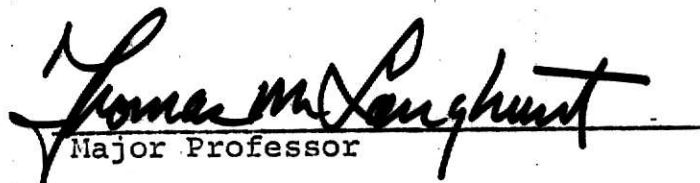
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INTRODUCTION

A common practice in the field of speech pathology is assigning an individual with a communicative disorder to a particular diagnostic category. In other words, individuals with communicative disorders are typically "labelled". It is possible that some of these "labels" bias judgments of problem severity (Johnson et al., 1963) and may be neither accurate nor valid descriptions of the disorder.

Recent studies in education have demonstrated the effect of labelling, maintaining that labelled individuals are judged by different criteria than nonlabelled persons. Reasons for these differing criteria have been related to such factors as the subjects' age and sex (Rosenthal & Jacobson, 1968; Nalven et al., 1969), race (Jacobs & DeGraaf, 1973; Nalven et al., 1969), intellectual label attached (Gottlieb, 1974; Blatt, 1972; Dunn, 1968; Haywood, 1971; Johnson, 1969; Jones, 1972; Mercer, 1971; Potter, 1971), socioeconomic status (Rosenthal & Jacobson, 1968; Neer et al., 1973; Nalven et al., 1969) and academic grades (Rosenthal & Jacobson, 1968).

MacMillan et al. (1974), in their critical review of literature pertaining to the effect of the label of "mental retardation", assert that previous studies failed to provide conclusive support for the notion that labelling has long-lasting

and devastating effects on those individuals labelled. They concluded that (a) there may or may not be detrimental effects of labelling, and (b) research to date does not reflect sufficient appreciation for the complexity of how the label operates.

Specific empirical studies, relating directly to the biasing effects of diagnostic categories and labels typically used by speech and language clinicians, are lacking. Bloodstein and Smith (1952) attempted to determine whether there are higher standards of fluency for males than for females on the hypothesis that fluency standards are a contributing factor in the sex ratio in stuttering. The test stimuli used were two series of samples of the recorded speech of 30 normal speaking young children. Both series were composed of speech previously determined by the experimenters to be relatively ambiguous as to the sex of the child. Sixty-eight college students were divided into two groups for use as subjects. Both groups were instructed to indicate the numbers of any samples which they regarded as belonging to stutterers. Group I was told that Series A belonged to boys and Series B to girls. Group II was told that Series A belonged to girls and Series B to boys. The results of Bloodstein and Smith's investigation demonstrated that the subjects diagnosed slightly, but not significantly, more "males" as stutterers than "females".

Berlin (1960) presented samples of disfluent speech to 67 parents of stutterers, 86 parents of articulation defectives, and 57 parents of normals. In Condition 1 the parent was asked if each speech sample caused concern, and if so, what did the

child do that caused concern; in Condition 2 the parent was asked if the child stuttered. The results demonstrated that mothers of normal speaking children did not change their diagnoses significantly from Condition 1 to Condition 2, but all other parents diagnosed significantly more stuttering in Condition 2 than in Condition 1. Berlin concluded that one factor which exerted a great deal of influence on the amount of stuttering diagnosed by the listeners in this study was the wording of the instructions (i.e. whether or not the listeners were instructed to listen specifically for stuttering).

Sander (1965) attempted to assess the effects of three different randomly assigned pre-listening instructions upon listener judgments. One-hundred and twenty mothers listened to a recorded speech sample and were instructed to either (a) listen to the tape, (b) listen to the tape and pay close attention to what the boy is saying, or (c) listen to the tape, pay close attention to how the boy is talking, and listen especially for any signs of stuttering in his speech. The results showed that mothers in the last condition, or "stuttering" condition, made approximately twice as many "stuttering" and "stutterer" judgments as those mothers in the other two conditions.

Another study dealing with the suggestibility of listeners was carried out by Williams and Kent (1958). Seventy college students, in two experimental groups, were told that they would hear a recorded speech sample of a stutterer. Group I was instructed to mark the (a) stuttered interruptions, (b) all interruptions, and then (c) normal interruptions. For

Group II the order of instructions was reversed. The subjects were instructed first to mark normal interruptions, second to mark all interruptions and third to mark stuttered interruptions. The results of Williams and Kent's investigation showed that the students tended to "hear" or mark more of whatever they were instructed to mark first.

Currently there is insufficient data available to adequately assess the effect of many common diagnostic/etiological labels upon a listener's perception of speech severity. Winitz (1969) commented that expectancies or biases are created by the label and warrant further attention and research. It was the purpose of the current study to determine if labels used by speech and language clinicians do bias their evaluative judgments. Specifically, the present investigation attempted to answer the question: Do public school speech and language clinicians judge the speech problem or disorder of labelled individuals as being more severe than the speech problem or disorder of non-labelled individuals? The answer to this question will help determine whether various diagnostic/etiological labels bias listener's perceptions of speech severity or are, in fact, valid descriptions of communicative disorders.

METHOD

Stimulus Material

The stimulus material consisted of seven tape-recorded samples of (a) counting from one to ten, (b) "Jack and Jill" nursery rhyme, and (c) the following 122-word passage:

One day Jim was looking out the living room window.

"Mary," he called, "Father is coming in the front door. He has a big white box".

"I have something to show you," said Mr. Jones.

"Is the box for us?" they both cried.

He took the paper off. They saw it was a red doll house.

Jim said, "There are some people in it. The man is reading. The woman is washing a baby".

"She looks like Mrs. Green," Mary said.

"Do you see the girl in the play room?"

Mary saw the girl was sitting on a large ball.

Then Mother came in. Mary and Jim said, "Look at the pretty toy Father gave us. Thank you very much for it".

This passage was selected since (a) most phonemes of American English were included, (b) many repetitions of frequently occurring error sounds were included, and (c) the passage was judged appropriate in vocabulary for children reading at the second grade level (Wheeler & Smith, 1954). Large, primary type and double spacing were used in the preparation of the oral reading passage to reduce the influence of possible visual problems during reading.

Seven speech samples were elicited from primary school-age children exhibiting a "deviancy" in speech or voice production, as judged by the experimenter, which typically affects communication ability. These "deviances" were as follows: a) one sample of "deaf speech"; b) one sample of "cleft palate speech"; c) one sample of a "voice quality deviation"; d) one sample of "disfluent speech"; e) one sample of a "resonance disorder"; f) one sample of an "articulation disorder"; and g) one sample of a "voice and articulation disorder". Criterion judgments regarding various parameters of each speech sample

were obtained from 30 public school speech and language clinicians.

Subjects

Thirty public school speech and language clinicians, all possessing graduate degrees in speech pathology and currently employed in various school districts within East-Central Kansas, served as subjects. The mean years of public school experience for Group I, the "naive group", was 4.91 years (range=1.5 months - 20 years). For Group II, the "biased group", the mean years of public school experience was 5.10 years (range=7 months - 11 years).

Procedure

In order to test the assumption that diagnostic-etiological labels affect listeners' perceptions of speech severity, the subjects were divided into two groups. Group I, or the "naive group", consisted of 15 clinicians who listened to and rated each speech sample, the only prior knowledge of the speech sample being the age and sex of the child. Group II, or the "biased group", consisted of 15 clinicians who listened to and rated each speech sample after being informed of the age, sex, and diagnostic-etiological label associated with the speech sample.

Prior to the listening session, each judge was provided with seven numbered evaluation sheets (Appendix A) and the following instructions were read:

You are about to listen to seven brief samples of oral reading. On the evaluation sheets which you have been given, there is a number in the upper right

hand corner, corresponding to the speaker's identification number. Each sheet has nine differential rating scales. After each sample, you are to rate the speaker on each of these parameters: articulation, (1) inadequate to (7) adequate; fluency, (1) completely disfluent to (7) completely fluent; pitch, (1) inappropriate for sex and/or age to (7) appropriate for sex and/or age; resonance, (1) hypernasal to (4) appropriate balance to (7) hyponasal; hoarseness, (1) severe to (7) none; breathiness, (1) severe or aphonia to (7) none; harshness, (1) severe to (7) none; rate, (1) excessively fast to (4) normal to (7) excessively slow; and overall speech efficiency, (1) inadequate to (7) adequate. Rate the speaker on each scale, placing a check mark above your numerical rating.

Those judges in the "naive group" then listened to the following instructions prior to the presentation of each speech sample:

Find speaker identification number _____. The tape will begin now, and you will hear speaker number _____, a _____ year-old (sex).

The judges in the "biased group" listened to identical instructions with the addition of the diagnostic-etiological label associated with the sample. Directions to the "biased group" were as follows:

Find speaker identification number _____. The tape will begin now, and you will hear speaker number _____, a _____ year-old (sex), with (diagnostic-etiological label).

Two minutes were provided following each sample for the judges to rate each speaker.

Recording Equipment

Speech samples were recorded on a Tandberg Model 9241XD 4-track tape deck, using an AKG D1000E Professional Microphone. A Scotch Classic CL-7R90 magnetic tape was used. Attempts were made to record each sample in an environment free from significant extraneous noise. Samples were dubbed from an

Ampex Model AG500 tape deck, instructions to judges were added, and a master tape was constructed for each listening group.

Statistical Analysis

The raw data (Appendix B) were analyzed by a split plot analysis of variance. The main effects were listener group and input type; the interaction effect was listener group by input type. It was the examination of these interaction effects that was pertinent to the hypothesis being investigated. Significant F ratios were further analyzed using a least significant difference procedure (Fryer, 1966). All means were tested at the .05 level of confidence.

RESULTS AND DISCUSSION

Analysis of the data revealed that, with the exception of the parameter of rate, there were no significant differences between the groups' perceptions of the speech severity of a given input type, regardless of the presence or absence of a diagnostic-etiological label (Table 1). Analysis of the one significant group by input type interaction on the parameter of rate ($F=2.38$, $df=6/168$, $p<.05$) using the least significant difference revealed the following: The "biased group" perceived the parameter of rate as being significantly less severe ($p<.05$) in the "articulation disorder"-labelled input type than did the "naive group" (Table 2).

The investigator does not regard the significant interaction effect on perception of rate as being meaningful for

Table 1
Mean Squares of the Analysis of Variance
for the Interaction between Listener
Group and Input Type

Source	df	Parameters						Overall Speech Efficiency	
		Articulation	Fluency	Pitch	Resonance	Hoarseness	Breathiness	Rate	
Listener Group X Input Type	6	0.81	0.18	2.97	3.01	1.83	2.09	3.01	1.31
Error	168	1.63	1.01	1.77	1.60	1.52	1.89	1.46	0.48
Total	174								0.82

Table 2
Mean Ratings of Rate for the Biased
and Naive Groups by Input Type

Input Type	Biased Group	Naive Group	Difference
Resonance Disorder	3.80	3.80	0
Voice and Articulation Disorder	4.33	4.20	+.13
Repaired Cleft Palate	4.40	3.80	+.60*
Stuttering Problem	1.53	1.33	+.20
Voice Disorder	4.00	4.33	-.33
Articulation Disorder	4.40	5.06	-.66*
Deaf	4.00	4.27	-.27

*Least significant difference $\geq .535$ ($p < .05$)

two reasons. First, the significant interaction effect could be a result of chance variation due to the large number of statistical computations. Second, the bulk of each speech sample consisted of oral reading rather than spontaneous speech. Hence, these perceptions might more accurately reflect oral reading rate rather than speaking rate.

The principle finding of this investigation was that public school speech and language clinicians do not perceive the speech of labelled individuals as being more severe, or even different, than the speech of non-labelled individuals. There are two possible explanations for this finding: 1) diagnostic-etiological labels are accurate portraits or valid descriptions of speech severity; and/or 2) clinicians apparently tend to rely more upon the characteristics of the speech sample rather than the possible biasing effects of its diagnostic-etiological label.

The methodologies employed in the current investigation and those used in the investigations of Bloodstein and Smith (1952), Berlin (1960), Williams and Kent (1958), and Sander (1965) are not comparable. To begin with, the current investigation included public school clinicians as subjects, whereas the previous investigations utilized parents and college students as subjects. Also, an attempt was made by the current investigator to control the diagnostic/etiological labels used; with the exception of the Sander (1965) study, the label was not controlled in the previous studies cited. Finally, the statements of Winitz (1969) and Johnson et al. (1963) appear

to be subjective and were not reinforced with a presentation of empirical data.

The findings of the previous investigators are unanimous; diagnostic/etiological labels bias listener perceptions of speech severity. Despite the methodological differences between the current and previous investigation, the results of the current investigation do not support the contentions of the previous investigators. According to the current findings, diagnostic/etiological labels do not bias listener perceptions of speech severity.

SUMMARY AND CONCLUSIONS

The purpose of this investigation was to assess the effect of diagnostic-etiological labels upon listener judgments of speech severity. Thirty public school speech and language clinicians served as subjects and were divided into two listener groups. Group I, or the "naive group", listened to and rated seven speech samples, the only prior knowledge of the speech sample being the age and sex of the child. Group II, or the "biased group", listened to and rated each speech sample after being informed of the age, sex, and diagnostic-etiological label associated with the speech sample. The interaction of listener group by input type was analyzed.

The principle finding of this investigation was as follows: Those diagnostic-etiological labels employed do not bias speech and language clinicians' perceptions of speech severity. Either (1) clinicians rely more upon the perceived speech characteristics

rather than labels, and/or (2) diagnostic-etiological labels are valid descriptions of speech severity.

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APPENDIX A

SPEAKER IDENTIFICATION NO. _____

Rate this child on each of the below parameters by placing a check mark above the numerical rating you decide upon.

1. Articulation

INADEQUATE 1 2 3 4 5 6 7 ADEQUATE

2. Fluency

COMPLETELY 1 2 3 4 5 6 7 COMPLETELY
DISFLUENT FLUENT

3. Pitch

INAPPROPRIATE FOR 1 2 3 4 5 6 7 APPROPRIATE FOR
SEX AND/OR AGE SEX AND/OR AGE

4. Resonance

HYPERNASAL 1 2 3 4 5 6 7 HYPONASAL
APPROPRIATE

5. Hoarseness

SEVERE 1 2 3 4 5 6 7 NONE

6. Breathiness

SEVERE 1 2 3 4 5 6 7 NONE
(APHONIA)

7. Harshness

SEVERE 1 2 3 4 5 6 7 NONE

8. Rate

EXCESSIVELY 1 2 3 4 5 6 7 EXCESSIVELY
FAST SLOW

9. Overall Speech Efficiency

INADEQUATE 1 2 3 4 5 6 7 ADEQUATE

KEY

Appendix B and C

1=Resonance disorder

2=Voice and articulation disorder

3=Repaired cleft palate

4=Stuttering problem

5=Voice disorder

6=Articulation disorder

7=Deaf

A=Articulation

B=Fluency

C=Pitch

D=Resonance

E=Hoarseness

F=Breathiness

G=Harshness

H=Rate

I=Overall speech efficiency

APPENDIX B

Mean Ratings of Group I for the
Parameters Rated on Each
Input Type

Input Type	Parameter Rated								
	A	B	C	D	E	F	G	H	I
1	6.2	6.4	5.7	3.1	6.6	5.7	6.6	3.8	3.7
2	2.9	5.5	5.9	3.9	5.3	4.7	6.3	4.3	3.5
3	3.7	6.5	6.1	3.3	5.7	5.9	6.3	4.4	4.0
4	6.1	5.3	6.2	4.0	6.6	6.3	6.5	1.5	4.5
5	5.4	6.4	4.9	3.7	2.1	3.1	3.3	4.0	2.5
6	4.9	6.7	6.0	3.9	5.4	5.9	6.0	4.4	4.9
7	2.2	5.9	5.1	4.2	6.7	5.5	6.5	4.0	2.3

APPENDIX C

Mean Ratings of Group II for the
Parameters Rated on Each
Input Type

Input Type	Parameter Rated								
	A	B	C	D	E	F	G	H	I
1	6.2	6.0	6.5	2.3	6.5	5.7	6.7	3.8	3.7
2	2.3	4.8	5.9	4.2	4.9	4.7	6.1	4.2	3.1
3	3.0	6.0	5.9	3.6	4.6	4.7	5.1	3.8	3.3
4	5.5	5.0	5.3	3.9	5.7	5.1	6.3	1.3	4.3
5	4.5	6.1	4.2	4.0	2.3	2.7	2.0	4.3	1.8
6	4.5	6.3	5.0	4.1	4.4	4.7	4.5	5.1	4.5
7	1.2	5.3	4.7	2.9	6.1	4.9	6.1	4.2	1.3

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ABSTRACT

The purpose of this investigation was to examine the effects of seven diagnostic-etiological labels upon public school speech and language clinicians' ratings of speech severity.

Thirty public school speech and language clinicians, all possessing graduate degrees in speech pathology and employed within East-Central Kansas, served as subjects. The subjects were divided into two groups. Group I, the "naive group", consisted of 15 clinicians who listened to and rated seven speech samples, the only prior knowledge of each sample being the age and sex of the child. Group II, the "biased group", consisted of 15 clinicians who listened to and rated the same seven speech samples after being informed of the age, sex, and diagnostic-etiological label associated with each speech sample. Numerical ratings of various speech parameters were obtained from all clinicians for each sample.

Analysis of the data revealed that, with two exceptions, there were no significant differences between the two group's perceptions of the speech severity of a given input type, regardless of the presence or absence of labelling. One exception to this statement was the finding that the "biased group" rated the parameter of rate as less severe than did the "naive group"

for the "repaired cleft palate"-labelled input type. The other exception was the finding that the "biased group" rated the parameter of rate as less severe than did the "naive group" for the "articulation disorder"-labelled input type.