Listener Reactions to Personal Characteristics of Fluent and Nonfluent Aphasic Speakers

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In addition to assessing the characteristics and adequacy of a person's verbal output, another strategy for determining if a spoken language impairment is present is to assess the effects which a particular speaker may have on a listener. Listener reaction studies have been conducted frequently in the area of stuttering, and in articulation and voice disorders (Turnbaugh, Guitar, and Hoffman, 1979; Woods and Williams, 1976; Mowrer, Wahl and Doolan, 1978). In the area of aphasia, however, we find that we know a great deal more about the message sent by the aphasic patient than we know about what goes on at the other end of the communication exchange. That is, beyond knowing that listeners often have difficulty understanding the content of aphasic speech, we know very little about how they react to the speech of patients with aphasia, or how those reactions affect the listener's perception of the personal attributes of the aphasic individual. We know even less about how those reactions--transmitted back to the aphasic person--affect the aphasic person's perception of himself and his listeners.

There is a good deal of anecdotal and interview evidence that indicates that listeners react inappropriately, negatively, or at least differently to people with aphasia. For example, Malone (1969) and Porter and Dabul (1977) have reported that families of aphasic patients express feelings of irritability, shame, embarrassment, anxiety, and uncertainty about their relationship with the aphasic person, and Chester and Egolf (1974) report that some social workers admit to avoiding or limiting the amount of time they spend with aphasic patients.

From the patient's perspective, there are a number of published reports which indicate that they perceive negative or inappropriate reactions in the people they communicate with. Wulf (1973) and Hodgins (Eisenson, 1973), for example, have spoken of their fear of being thought stupid or boring or mad, and Ritchie (1961) reported that those fears had an important influence on the adequacy or inadequacy of his language production. Finally, consider one patient's definition of aphasia as "...the difficulty I had in getting along with people, with my wife and my kids, because they thought I had become feeble-minded" (Eisenson, 1973, p.195).

All of these observations suggest that listeners may react negatively to the communication deficits of aphasic patients and that such reactions may stigmatize patients beyond the specific linguistic impairment imposed by their aphasia. This study represents an initial attempt to specify more

precisely the reactions which listeners may have to aphasic patients on the basis of their speech. Specifically, we addressed the following questions:

1. Do listeners react differently to aphasic speech than to nonaphasic speech?
2. Do listener reactions to aphasic speech vary as a function of the fluency characteristics of speech?
3. Do listener reactions vary as a function of speaker age?

METHOD

Subjects. In this study, we examined listener reactions to four speakers: two aphasic males and two nonaphasic males who served as controls. The major characteristics of these speakers are summarized in Table 1. The first aphasic speaker was a 72 year old male with 11 years of education. His aphasia was moderate in severity, and he was judged to have a mild apraxia of speech. There were no symptoms of dysarthria. His spontaneous speech was characterized by nonfluency, as documented with the Boston test's (Goodglass and Kaplan, 1972) rating scale profile of speech characteristics (i.e., altered prosody, reduced phrase length, articulatory errors, reduced variety of grammatical constructions, relative absence of verbal paraphasias, and an overabundance of content words in connected speech). We will refer to this person as our "old nonfluent speaker."

Table 1. Summary of primary characteristics of the two aphasic and two control male subjects whose speech listeners reacted to.

	OLD NONFLUENT	YOUNG FLUENT	OLD CONTROL	YOUNG CONTROL
Age	72	54	77	50
Education (Yrs)	11	15	12	12
Aphasia Severity	Moderate	Moderate	-	-
Fluency Char.	Nonfluent	Fluent	-	-
Motor Speech Dist.	Mild apraxia	None	-	-
Etiology	Post.op.(sub-dural hematoma)	CVA	-	-
Localization	frontoparietal	temporoparietal	-	-

The second aphasic speaker was a 54 year old male with 15 years of education. Like the first patient, his aphasia was moderate in severity. There were no symptoms of dysarthria or apraxia of speech. Unlike the first patient, he had spontaneous speech characteristics which were quite fluent, as documented on the fluency scale of the Boston test (i.e., normal prosody, normal phrase length, relative absence of articulatory errors, relatively normal variety of grammatical constructions, approximately one verbal

paraphasic error per minute of conversation, and a paucity of content relative to the fluency of speech). We will refer to this patient as our "young fluent speaker."

While the two aphasic speakers differed markedly in the fluency characteristics of their speech, the severity of their aphasia--in quantitative terms-- was similar. For example, as part of another study, both patients were tested on a multimodality language battery of 24 subtests which were scored using the PICA's 15-point multidimensional scoring scale (Porch, 1971). Their performance on this battery is summarized in Table 2. Of particular interest are their nearly identical overall scores (11.36 and 11.39) and their highly similar scores on the elicited and imitative speech tasks. Based on those subtests (which were similar to some PICA subtests) we estimate that their overall PICA scores would fall between the 60th and 70th percentiles.

Table 2. Summary of aphasic speakers' performance on a 24-subtest language battery. Scores given represent means of the subtests used to measure performance. Numbers in parentheses represent the number of subtests on which ability was assessed.

	FLUENT SPEAKER	NONFLUENT SPEAKER
Overall (24)	11.36	11.39
Elicited Speech (4)	10.33	10.88
Imitative Speech (4)	10.00	10.48
Verbal Comprehension (5)	11.98	11.42
Reading Comprehension (5)	11.96	8.72
Reading Aloud (4)	10.40	12.45
Elicited Writing (2)	8.20	7.75
Imitative Writing (2)	14.60	12.70
Matching Tasks (2)	15.00	14.90

Note: BDAE severity rating of both speakers = 2

The first control subject was selected because he was close to the first aphasic subject in age. He was 77 years old and had 12 years of education. We will refer to him as our "old control subject." The second control subject approximated the age of our second aphasic subject. He was 50 years old and had 12 years of education. We'll call him our "young control subject."

Spoken Language Sample. Each of our speakers was asked to "tell me everything you can" about each of ten common objects. Responses 30 seconds in length were elicited to each of the ten objects, for a total five-minute language sample. The sample was audiotaped and used as the

stimulus to elicit listener reactions. Table 3 contains a description of one 30-second response from each speaker. These responses were considered to be representative of their overall sample. The transcriptions illustrate the differences in fluency characteristics of our aphasic speakers, as well as some differences between our two control speakers.

Table 3. One speech sample of 30 seconds duration from each of the four speakers taken from language sample used as stimuli for listeners' reactions.

OLD NONFLUENT SPEAKER (stimulus item = matches) - "Matches..uh..uh.. burn..uh..paper and..cigarettes..uh....."

YOUNG FLUENT SPEAKER (stimulus item = comb) - "This would be for my hair..which I need something, and this is called a comb and then I would..uh..clean my..my tooth..my..uh..coo..comb, with my comb... and then I would clean my hair up a little bit..uh this'll look a little better..."

OLD CONTROL SPEAKER (stimulus item = comb) - "This is a pocket comb... uh approximately four or five inches in length. It has the uh fine teeth on half of it and the..coarse on the other half..It's made of plastic. Color..brown."

YOUNG CONTROL SPEAKER (stimulus item = matches) - "This is something that is very seldom around any more but it's a regular box of matches.. They're small matches; they're wood with a small tip on the end that is treated with a chemical which struck against the side of the matchbox it will light the wood, so that you might start a fire. The box is made of two sections so that it can be closed so that the matches will not drop out..."

After our listeners completed the experimental task we asked them to listen to the language samples a second time and simply identify the name of the object they felt the speaker was talking about. This served as a gross measure of the amount of information communicated. Listeners identified the objects correctly 99 and 100% of the time for the young and old control speakers, respectively, and 77% of the time for each of the aphasic speakers. The percentage for the aphasic speakers illustrates further their reduction of communication ability and the similarity of their quantitative deficits.

Listeners. Listeners were 88 undergraduate students, many with an interest in communication disorders, but with no knowledge, or only some introductory information about aphasia. They were randomly divided into four equal groups, each of which listened to one of the four language samples.

Listener Reaction Task. After listening to the language sample, the listeners were asked to react to the speaker by completing 13 seven-point interval, bipolar semantic differential scales, and four Likert statements. These were selected to measure seven dimensions: Character, Social Attractiveness, Composure, Clarity, Enigma, Competence, and Extroversion. These

dimensions, together with the scales and Likert statements used to measure them are summarized in Table 4. On the semantic differential scales, the listener had to check one of the seven intervals between, for example, intelligent and unintelligent. On the Likert statements, the listeners had to check one of the seven intervals between "agree" and "disagree" in response to a statement like "I wouldn't know what to say to this person." A speaker's rating on a particular dimension was the average rating he received on the scales or Likert statements used to assess that dimension.

Table 4. Dimensions, semantic differential scales, and Likert statements on which listeners recorded their reactions to each of the four speakers.

DIMENSION	SCALES OR LIKERT STATEMENTS
Character	trustworthy.....untrustworthy safe.....unsafe
Social Attractiveness	"I think he could be a friend of mine." "I would like to have a friendly chat with him."
Composure	calm.....anxious poised.....nervous relaxed.....tense
Clarity	clear.....unclear organized.....disorganized
Enigma	"I wouldn't know what to say to this person." "If he spoke to me, I'd know just how to respond."
Competence	competent.....incompetent intelligent.....unintelligent expert.....inexpert
Extroversion	extroverted.....introverted bold.....timid aggressive.....meek

RESULTS

Statistical analysis consisted of analysis of variance for each dimension and, when appropriate, Student-Newman-Keuls tests to determine where differences lay among the four speakers. The results are summarized in Table 5 (for the mean ratings, the higher the number, the more positive the rating).

There were two dimensions on which listener reactions did not differ among the four speakers: Character and Social Attractiveness. For Character, this means that the four speakers were rated as equally safe and equally trustworthy. This suggests that the speech of moderately impaired fluent and nonfluent aphasic speakers does not lead to negative judgments about their trustworthiness or safeness. It implies that, if such patients

Table 5. Summary of reactions to each speaker on each of the seven dimensions examined (22 listeners per speaker).

	YOUNG CONTROL	OLD CONTROL	YOUNG FLUENT	OLD NONFLUENT
		CHARACTER		
$\bar{X}$	4.88_a	5.50_a	5.07_a	4.84_a
S.D.	1.07	1.11	1.13	1.02
		SOCIAL ATTRACTIVENESS		
$\bar{X}$	5.57_a	4.86_a	5.45_a	4.70_a
S.D.	1.33	1.39	1.10	1.48
		COMPOSURE		
$\bar{X}$	6.26_a	5.36_b	3.77_c	3.29_c
S.D.	0.95	1.43	1.65	1.30
		CLARITY		
$\bar{X}$	6.45_a	4.50_b	3.14_c	2.57_c
S.D.	0.82	1.35	1.41	1.29
		ENIGMA		
$\bar{X}$	5.43_a	5.34_a	4.55_{ab}	4.27_b
S.D.	1.23	1.30	1.41	1.78
		COMPETENCE		
$\bar{X}$	5.97_a	4.60_b	4.38_b	3.77_c
S.D.	0.77	1.02	0.82	1.04
		EXTROVERSION		
$\bar{X}$	5.21_a	3.91_c	4.58_b	3.38_c
S.D.	0.79	1.02	1.27	0.90

Note: for each dimension, means with different subscripts are significantly different from one another ($p < .05$).

are viewed as unsafe or not trustworthy, that judgment is based on something other than their speech output.

The findings for Social Attractiveness indicate that all four speakers were perceived as equally attractive (although it is of interest that the two older speakers received the lowest ratings). The absence of differences between the aphasic and control speakers on this dimension is somewhat at odds with Chester and Egolf's (1974) report that social workers tend to avoid aphasic patients, and with stated perceptions of aphasic patients that people avoid them or think them crazy or demented. However, we think a partial explanation for this avoidance behavior may be found under the ratings of Enigma, which will be discussed shortly.

For the dimensions of Composure and Clarity, both aphasic speakers were perceived less positively than both control speakers. The fact that there were no differences between the ratings of the fluent and the nonfluent aphasic speaker on these dimensions makes us suspect that the negative reactions were the result of the listeners' perception of general difficulty with communication, rather than to the fluency of their speech.

For the dimension of Composure, therefore, both aphasic speakers were perceived as less calm, poised, and relaxed. These reactions are not inconsistent with the common observation that aphasic verbal errors are comparable to those made by nonaphasic individuals under conditions of stress, fatigue, and distraction.

For the dimension of Clarity, the results indicate that both aphasic speakers were perceived as less clear and less organized. These reactions seem to be a fairly logical consequence of perceived word finding difficulty, paraphasias, pauses, and general reduction of information transmitted in a given unit of time.

A final observation about the dimensions of Composure and Clarity is that the old control speaker was rated less positively than the young control speaker. This suggests the possibility that listener perception of speech characteristics associated with normal aging lead to a reduction of positive reactions to speaker clarity and composure, at least when the listeners are young adults.

On the dimension of Enigma, the nonfluent speaker was rated lower than any other subject, and the two control speakers were rated most positively. The fluent aphasic speaker fell between the controls and the nonfluent aphasic speaker, but was more similar to the nonfluent speaker. This means that listeners were relatively unsure of how they would speak to or respond to the aphasic speakers, especially the nonfluent one. This result is consistent with Malone's (1969) finding that family members report uncertainty about how to respond to the aphasic patient; it also may explain reports in the literature of avoidance behavior discussed earlier, but which were not reflected under the dimension of Social Attractiveness. Finally, the greater uncertainty about the nonfluent speaker may have occurred because his restricted, telegraphic speech made listeners uncertain about his ability to comprehend longer, more complex utterances, while at the same time raising the probably undesirable possibility of having to speak to the aphasic person in a "childlike" manner. This dilemma could lead to considerable listener uncertainty.

On the dimension of Competence, the old control and young fluent aphasic speaker were rated similarly but less positively than the young control speaker, and the old nonfluent speaker was rated as least competent. This suggests that the presence of moderate aphasia or agedness may lead to

less positive reactions to speaker competence. Because of the limited nature of this study, it is not possible to determine if the rating of the nonfluent speaker as the least competent was the result of his aphasia plus his age, or his aphasia plus its nonfluent characteristics, or a combination of both of those factors. In general, however, the lower rating of the two aphasic speakers confirms the reported perceptions of aphasic patients that people treat them as if they are stupid, incompetent, or feeble-minded.

Finally, on the dimension of Extroversion, age seemed to be the predominant factor. The young control speaker was rated highest and was followed by the young fluent aphasic speaker. The old control and the old nonfluent aphasic speakers were rated similarly and lower than the two younger speakers. This ranking of the speakers may be due to something as simple as amount of verbal output, because the listener reaction rankings of the speakers on this dimension matched the rankings of the speakers according to amount of verbal output. This finding is in agreement with Bowers (1965), who found that listeners perceive introversion in normal speakers who speak with slow rate, pauses, and dysfluency. Relative to aphasic speakers, then, it seems that the fluency characteristics of their speech, rather than the presence of a general communication deficit, is what determined listeners' perceptions of introversion or extroversion.

SUMMARY

Before summarizing, we feel it is important to briefly list some of the characteristics of the study which support the caution that this was only a preliminary attempt to examine listener reactions to aphasic speech. These characteristics also identify some obvious directions for future studies in this area.

First, and obviously, the number of speakers examined was small. Second, we only examined aphasia of moderate severity. Third, our listener sample was limited to college-age individuals who had some interest in communication disorders. Fourth, listeners' reactions were based on a limited five-minute sample of speech. Finally, and perhaps most importantly, the language samples did not represent natural communicative interaction, a much more typical data base for forming reactions to an individual.

In spite of these limitations, this study supports and quantifies a number of anecdotal and interview reports in the literature about how people react to aphasia. The results suggest that moderately impaired aphasic speakers may be stigmatized beyond the specific linguistic impairments imposed by their aphasia. That is, listeners may react to them as less composed, clear, and competent than nonaphasic persons, and may be relatively unsure of how to respond to or speak to them. It seems that these reactions may be more pronounced to patients with nonfluent than to patients with fluent speech. The results should also heighten our awareness that, for some personal characteristics, the age of the aphasic patient may have an important bearing on listener reactions.

In conclusion, as clinical aphasiologists, it seems particularly important for us to recognize the possible existence of these reactions in patients' families, in professional staff, and very possibly in ourselves. We have long been aware of the importance of the individuals who are in the aphasic patient's environment. This awareness, it seems, also should be reflected in an attempt to better understand how those individuals react to and deal with the personal characteristics of the patients they are confronted with.

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DISCUSSION

Q: Do you know if the listeners were able to recognize that the young and old speakers were young and old?

A: We did not ask the listeners in this study if they could do that, but after the fact we had another small group listen to the tapes and they were either able to get the right decade of the speaker or were at least able to identify the fact that our old speakers were older than our young speakers. So I feel confident that the listeners in the formal study could also make that distinction.

Q: Were these graduate students who were listeners?

A: No. They were undergraduates ranging from sophomore to senior level who had no clinical experience with aphasia but did have some didactic information about aphasia.

Q: Did they recognize the fact that the patients were aphasic speakers?

A: They were not told that there was anything right or wrong with the individuals they listened to. I'm not at all sure they identified them as aphasic, but I'm relatively sure they identified them as people with a communication problem.

Q: Did the students respond while they were listening to the sample or did you play the sample and then have them respond?

A: The sample was played and then they responded.

Q: I would think that the listeners would be more sensitized to being more sympathetic to someone with a communication disorder.

A: That's a good point. In any listener reaction study, there's what people call "the good guy effect." That is probably heightened in our listeners because you would presume they would have a greater amount of empathy with any person who communicated with them.

Q: What does the literature say about the effects of age on the semantic differential rating, and how do your results compare if age were the only variable in your study?

A: I'm not sure there's anything in the literature on the effects of aging on the specific reactions we evaluated in this study. We do know from the literature that there are changes in speech associated with aging, and we know that listeners can perceive age differences on the basis of speech. We also know that in our society, people generally react negatively to aging. But I don't think we know much about the connection between those negative reactions and the speech of older individuals.

Comment from audience: There is one study that shows that listeners perceive old people as being more rigid and less flexible, and that older male speakers are perceived as having more authority; and there's a difference in people's perceptions of older women and older men.

Q: That particular response raises some questions about the dimensions you used. Could you review again how you came up with those dimensions?

A: The first step was some pilot work in which we played the tapes to several groups of listeners and asked them simply to write down all descriptors which they felt would fit the speakers. We then sat down with an expert in our Department of Communication Studies and asked for some of Osgood's dimensions and scales which would encompass those descriptors for a more formal study of listener reactions.

Comment from audience: Osgood usually recommends starting out with a pretty large array of bipolar scales and then factoring it out if you really want to go after this seriously. Because, as I pointed out, the things the previous comment referred to (authority, flexibility, etc.) aren't included there. I think the research has a great deal of merit and it may merit a larger number of scales.

A: We were strongly influenced by the pilot study responses which did not generate some of those other factors.