Confrontation and Generative Naming Abilities of Dementia Patients

Kathryn A. Bayles and Cheryl K. Tomoeda
University of Arizona, Tucson, Arizona

INTRODUCTION

Anomia is a term that has been defined both as a linguistic phenomenon and the cause of the phenomenon. Phenomenologically, anomia is the absence of a word or words in oral or written language but more often than not, it is defined in terms of a presumed cause. The cause most commonly used as a definition of anomia is a word-finding problem. Defining the term anomia as a word-finding problem can be confusing because the linguistic phenomenon can have many causes, among them problems with word selection, retrieval, use, and generation. Additionally, the term anomia has been defined to imply a particular site of brain injury, another confusing use of the word because word omission in discourse is recognized as a common consequence of injury to many brain regions. Benson (1979) suggested that the phenomenon has different causes depending on the site of brain injury and emphasized that anomia is not a unitary disorder. Benson combined Geschwind's descriptions of anomia (1967) with those of Luria (1966) and his own, and developed a list of nine types. Five are associated with focal brain injury in the language dominant hemisphere, one with a psychological disorder, and three with other types of brain damage, including surgical separation of the two hemispheres, dementing illness, and acute confusional syndrome. The focus of this paper is on anomia associated with dementia.

Dementia is a syndrome secondary to diffuse brain damage characterized by chronic progressive deterioration of memory, intellect, personality, and communicative function. Benson (1979) described the anomia of dementia patients as near normal performance on confrontation naming tasks but below normal performance on generative naming. According to Benson, these characteristics separate it from the anomia exhibited by patients with focal brain injury and aphasia.

Although many agree with Benson's characterization of anomia associated with dementia (Allison, 1962; Miller & Hague, 1975; Gustafson, Hagberg, & Ingvar, 1978; Appell, Kertesz, & Fisman, 1982), there is evidence that Benson's characterization may not be representative of all dementia patients. Schwartz, Saffran, and Williamson (1981) reported the existence of a group of dementia patients of the Alzheimer's type who have marked confrontation naming problems, but otherwise remain linguistically competent. Findings regarding the incidence, prevalence, and nature of this disproportionately anomic dementia patient group have not been published, nor has the adequacy of Benson's description of the anomia of dementia been evaluated. The effects of dementia on confrontation and generative naming and the relation of naming to other linguistic measures have not been evaluated. The purposes of this study were (a) to compare dementia patients' performance on confrontation and generative naming tasks, with dementia severity controlled; (b) to investigate the degree to which performance on confrontation and generative naming tasks correlate with performance on other linguistic measures; (c) to determine the usefulness of confrontation and generative naming tasks for differentiating dementia patients from normals.

A fourth purpose became possible when Fuld (1982) published results of a study in which the frequency of intrusion errors (IE) was related to dementia of the Alzheimer's type. Fuld (1982, p. 156) defined an IE as "the inappropriate recurrence of a response (or type of response) from a preceding test item, test, or procedure," and reported IE's to be most likely to occur within the task of listing words rapidly in categories. Fuld explained the higher rate of IEs in Alzheimer's disease patients as resulting from abnormally low levels of choline acetyl-transferase in the cortex, because IEs have been observed in normals taking anti-cholinergic medication (Drachman & Leavitt, 1972). Because the research design of this study included dementia patients with different etiologies, among them Alzheimer's disease, it became possible to compare the frequency of IEs in etiologically different dementia patients.

METHOD

Subjects

Subject Selection and Characteristics

Forty testable dementia patients and twenty-one normal elderly individuals participated in the study. All subjects were part of a larger longitudinal study of the effects of dementing illness on language. To be considered for participation in the study, subjects had to read and write English and pass (with 80% accuracy) an auditory discrimination test for speech.

Three types of dementia patients were studied--those with Alzheimer's disease (N=18), Parkinson's disease (N=7), and individuals with Huntington's disease (N=15). Diagnosis of dementia etiology was made by one of two consulting neurologists on the basis of history, physical and neurological examinations, and CT scan. Subjects were judged to be mildly or moderately demented according to results of a neurologic examination, score on a 15-item neurobehavioral inventory (Table 1), and in some cases, results of neuropsychological evaluation.

Table 1. Neurobehavioral criteria.

1.	Is patient disoriented for time:
2.	Is patient disoriented for place?
3.	Is patient disoriented for self?
4.	Does patient need assistance to eat?
5.	Does patient need assistance to dress?
6.	Is patient incontinent?
7.	Does patient wander aimlessly?
8.	Is patient verbally perseverative?
9.	Is patient motorically perseverative?
10.	Is patient emotionally labile?
11.	Does patient respond inappropriately?
12.	Can patient manage personal finances?
13.	Does patient have memory loss for recent events?
14.	Does patient have memory loss for remote events?
15.	Does patient have difficulty communicating?

Patients for whom the answer "yes" could be given for five or more questions on the neurobehavioral inventory were designated as moderately impaired, others as mild. The severity ratings of the neurologist, and in some cases, the neuropsychologist, were compared to the patient's score on the neurobehavioral inventory. On those instances in which the severity designation given by the neurologist did not match the results of the inventory, the score on the inventory was used to designate severity. Of the 40 dementia patients in the study, there was such a disparity for two individuals.

When subjects were grouped according to severity of dementia three groups were formed--normal controls, mildly demented and moderately demented (Table 2).

Table 2. Subject characteristics according to severity of dementia.

Subject groups	N	$\bar{X}$ age	$\bar{X}$ I.Q.	$\bar{X}$ years of ed.	Male	Female
Normal	21	71.7	109.8	13.6	8	13
Mild	22	57.4	108.8	13.6	17	5
Moderate	18	68.2	106.7	12.3	8	10

Subjects also were grouped according to etiology (Table 3). A regression equation based on demographic information (Wilson, Rosenbaum, and Brown, 1979) was used to estimate premorbid intelligence:

I.Q. = 0.17(age) - 1.53(sex) - 11.33(race) + 2.4354(years of education) + 1.01(occupation) + 74.05.

Table 3. Subject characteristics according to etiology of dementia.

Subject groups	N	Mean age	Mean I.Q.	Mean years Educ.	Male	Female
Normal	21	71.7	109.8	13.6	8	13
Alzheimer's disease	18	73.1	108.3	12.6	9	9
Parkinson's disease	7	70.0	113.1	14.9	7	0
Huntington's disease	15	45.7	104.8	12.7	9	6

Materials and Procedures

Confrontation Naming Task

A set of colored 8-1/2 by 11 inch pictures of common items from the Peabody Language Development Kit was used as stimuli for the confrontation naming task. The order of stimulus picture presentation was randomized across subjects. Subjects were asked to name each picture. All naming responses were recorded. If, after 45 seconds, a subject had made no attempt to name a picture, "no response" was given for the item. A subject's score for the confrontation naming task was the total number of correctly named pictures.

Generative Naming Task

The generative naming task was patterned after the Word Fluency Measure (Borkowski, Benton, and Spreen; 1967). Subjects named as many words as possible beginning with the letters "F," "A" and "S" within a one-minute interval. Subjects were instructed that proper nouns, numbers, and variants of the same word were not acceptable. All responses were recorded, and a subject's score was the total number of acceptable words produced for all three letters combined.

RESULTS

Subjects' performance on confrontation and generative naming tasks

The mean scores and standard deviations for normal, mildly demented and moderately demented subjects on the confrontation and generative naming tasks are presented in Table 4.

Table 4. Mean scores and standard deviations of subjects on confrontation and generative naming tasks.

		Confrontation Naming			Generative Naming	
Group	N	$\bar{X}$	S.D.	t	$\bar{X}$	S.D.
Normal	21	19.9	.21		37.4	11.96
Mild	22	19.4	.79		27.5	14.15
Moderate	18	14.5	4.16	4.93*	10.8	10.95

* $p < .001$

Performance was more variable on the generative naming task, which had no ceiling, than on the confrontation naming task, for which only 20 points were possible. Almost no variation was present in the performance of normal subjects on the confrontation naming task. Of particular interest is the similarity between performance of mild dementia subjects and performance of normal subjects on the confrontation naming task, but the large intergroup differences in generative naming. The raw scores of subjects were plotted to identify whether a subgroup of mild dementia patients with prominent confrontation naming impairment existed, as suggested by Schwartz, Saffran, and Williamson (1981) (Figure 1). Subjects with four or more errors were considered to have prominent confrontation naming problems. Of the 11 individuals in this study who made four or more errors, all had been designated as moderately impaired and none fit Schwartz et al.'s description of patients with marked anomia--that is, confrontation naming impairment disproportionate to other types of linguistic impairment. In Table 5, the naming scores of these individuals are presented, as well as their scores on a verbal description task, the Peabody Picture Vocabulary Test (PPVT), and the Similarities subtest (a verbal associative reasoning test) of the Wechsler Adult Intelligence Scale (WAIS). The linguistic deficits of our group of subjects with prominent confrontation naming impairment are apparent, if comparison is made of scores on the linguistic measures with the average scores of normals (N=37) and the scores of moderate dementia patients (N=33) who participated in the larger study.

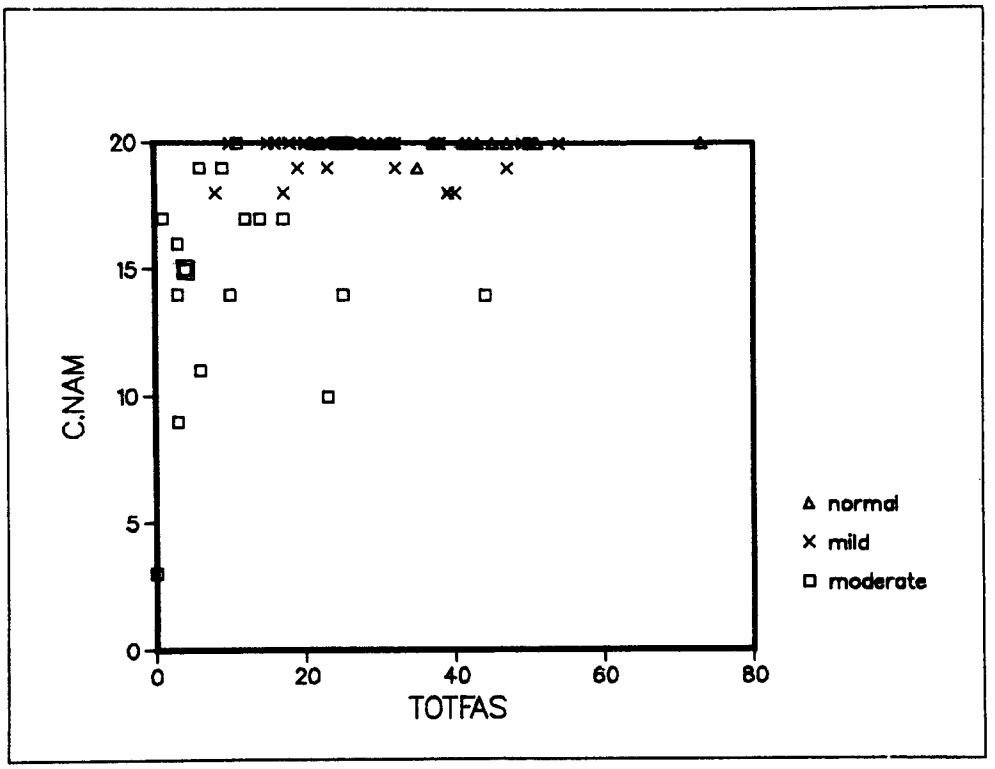

Figure 1. Raw scores of normal, mildly demented, and moderately demented subjects on the confrontation naming (CNAM) and generative naming (TOTFAS) tasks.

Correlation of naming with performance on other linguistic measures

Pearson product-moment correlations were calculated between each naming task and the following measures of language and cognition: Mental Status Questionnaire; Peabody Picture Vocabulary Test; Block Design, Similarities, and Vocabulary subtests of the WAIS; Disambiguation Task; Nonsense Syllable Learning Test; Verbal Description Task; Story Retelling Task; Written Formulation Task; and Pragmatics Task. The correlation coefficients and associated probabilities are presented in Table 6. Of the two naming tasks, generative naming was more highly correlated with linguistic measures. The two measures with which confrontation naming correlated best were Block Design, a visuospatial construction subtest from the WAIS, and the Mental Status Questionnaire, a test of orientation to time, place, and person.

Differentiating demented from normal subjects with confrontation and generative naming tasks

The performance of mild dementia subjects on the confrontation naming task was not significantly different from that of normal subjects. To determine the usefulness of the confrontation naming task for differentiating between mildly and moderately demented subjects, a t-test was calculated (Table 4). A t value of 4.93 was obtained ($df = 18$, $p < .001$). Thus, the confrontation naming task was not useful for differentiating normal subjects from mild dementia subjects but did differentiate between the dementia subject groups.

Table 5. Scores of prominently anomic dementia patients on selected linguistic tasks.

	Age	Severity	Confrontation Naming	Generative Naming	Verbal Description	PPVT	Similarities (WAIS)
Normal $\bar{X}$	72	-	19.9	37.4	37	136	17
Moderate $\bar{X}$	68	-	14.5	10.8	21	113	11
Subject							
1 122BDO	58	Mod.	3	0	2	0	0
2 116MKO	84	Mod.	9	3	13	105	10
3 80BMO	85	Mod.	10	23	28	77	5
4 97JSO	86	Mod.	11	6	5	96	1
5 104ATO	80	Mod.	14	3	13	104	0
6 108RWO	65	Mod.	14	44	14	126	10
7 120DOO	29	Mod.	14	10	21	83	15
8 98MSO	79	Mod.	14	25	18	111	10
9 85PLO	61	Mod.	15	4	16	0	0
10 137LCO	73	Mod.	15	4	16	127	3
11 125HBO	63	Mod.	16	3	14	103	2

Table 6. Correlation coefficients between confrontation and generative naming and selected measures of language and cognition. (For all cases, $p < .01$)

Measures	Confrontation Naming	Rank	Generative Naming	Rank
Mental Status Questionnaire	.7053	(1)	.5438	(15)
Written Formulation -type token ratio	.6158	(2)	.6441	(9)
Block Design subtest (WAIS)	.5930	(3)	.5732	(11)
Similarities subtest (WAIS)	.5880	(4)	.7304	(3)
Vocabulary subtest (WAIS)	.5550	(5)	.7722	(1)
Peabody Picture Vocabulary Test	.5414	(6)	.6329	(10)
Story Retelling Task -1st retelling	.5400	(7)	.6513	(8)
Pragmatics 1 -explain illocutionary act	.5368	(8)	.5558	(13)
Pragmatics 4B -explain speaker's intent	.5132	(9)	.6757	(5)
Verbal Description Task	.5130	(10)	.6708	(7)
Nonsense Syllable Learning Test	.5003	(11)	.5093	(17)
Disambiguation Task	.4942	(12)	.7585	(2)
Story Retelling Task -2nd retelling	.4898	(13)	.6723	(6)
Pragmatics 4A -judge literality	.4713	(14)	.5655	(12)
Written Formulation -quantity	.4398	(15)	.7045	(4)
Written Formulation -form	.3418	(16)	.5143	(16)
Written Formulation -grammaticality	.2710	(17)	.5517	(14)

Analysis of variance was calculated to evaluate the efficacy of the generative naming task for differentiating between subject groups. Using the Tukey contrast test, significant intergroup differences were found; $F(3,64) = 14.4$, $p < .001$ between all groups. Therefore, not only does the generative naming task correlate more strongly with other linguistic measures sensitive to dementia, it is more useful for distinguishing the normal elderly from mildly demented patients.

Evaluation of Fuld's hypothesized relation between Alzheimer's type dementia and frequency of intrusion errors (IEs)

To evaluate Fuld's hypothesis that patients with Alzheimer's disease who have cholinergic deficits can be distinguished from other dementia patients by the frequency of intrusion responses, subjects were grouped according to dementia etiology and the proportion of subjects with IEs was calculated. The percentage of subjects in each dementia group who made at least one IE is presented in Table 7.

Table 7. Percentage of subjects in each group making intrusion errors.

Subject groups		# of subjects with intrusions	% subjects with intrusions
Normal	N=13	9	69.2
Alzheimer's disease	N=18	5	27.7
Parkinson's disease	N=7	1	14.2
Huntington's disease	N=15	8	53.3

The data from this study failed to verify the reports of other researchers (Ernst, Dalby, & Dalby, 1970; Rochford, 1971; Schwartz et al., 1981) of prominent confrontation naming impairment in the early stages of dementing illness and the existence of a subgroup of anomic patients in whom confrontation naming is impaired disproportionately to other linguistic skills. The few individuals who had prominent confrontation naming problems were all moderately demented and linguistically impaired.

Using the data obtained in this study, one can look at similarities and differences between anomia associated with dementia and that associated with certain aphasic syndromes described by Goodglass (1980). Naming impairment patterns associated with Broca's and conduction aphasia are most different from the naming impairment patterns of dementia patients. Verbally fluent mild and moderate dementia patients have little, if any, difficulty with speech motor programming and few literal paraphasias. Semantic paraphasias common in Wernicke's aphasia are also common in dementia patients as is the "empty" speech associated with anomic aphasia. Dementia patients in this study produced few neologisms and circumlocutions, findings which agree with those of Benson (1973) and Appell et al. (1982).

Of the two types of naming tasks, generative naming was more sensitive for identifying mild dementia patients. One problem with the generative naming task,

however, was the extreme variation in the performance of normals. Such wide variation not only produced a large standard deviation, but made the interpretation of any individual's score difficult. The diagnostic efficiency of the test might be improved if a ceiling were established on the number of responses accepted, a possibility being explored by the authors. A ceiling would reduce variation due to extremely productive subjects and enable us to establish a more representative mean value for normals.

An analysis of the frequency of IEs by dementia etiology did not confirm Fuld's report that dementia patients of the Alzheimer's type can be differentiated by a greater frequency of IEs. However, although normals appeared more likely to make an IE, normal individuals made only a few, while many dementia patients had high IE rates.

Some researchers hypothesize that dementia patients have lost words from their mental lexicons (Irigaray, 1967; Constantinidis, Richard, & Ajuriaguerra, 1978; Schwartz, Marin, & Saffran, 1979; Obler, 1981) while others (Appell, Kertesz, & Fisman, 1982) suggest that the cause is not so much a loss of words as a problem accessing them. We believe another explanation should be considered; inability to generate the answers or ideas for which words are needed. This explanation is offered not because the loss-access hypotheses are implausible, but because deficits in the ability to generate logical ideas are so characteristic of dementia patients.

We would argue that if the primary problem were a loss of words, the speech of a dementia patient in the early stages would consist of a series of syntactic frames with gaps where content words should be, such as in the following response of a stroke patient who was asked to describe a button, "This is a ____, in the middle are ____, what do you call them?" Instead, the speech of the mild dementia patient is fluent and the individual rarely expresses frustration because of inability to think of the word, as in the following response of a patient asked to describe a button, "I don't see any place here you could get anything in through it."

If the primary problem were in the word accessing system, the individual would be mute or dysfluent. Further, inappropriate words relative to the rest of the sentence should be interspersed in the discourse, words which the individual should recognize as inappropriate. None of these descriptions apply to mild and moderate dementia patients. Rather, the poor performance of dementia patients on the generative naming and certain other linguistic measures seems to be better explained as difficulty in generating ideas. In the generative naming task or any other naming test, subjects need to generate examples. To do so, most individuals think of a strategy for generating words, such as putting each vowel after the letter "F" and adding consonants systematically (perhaps in the order they occur in the alphabet). It is this inability to think of strategies and words that seems to best explain the anomia of dementia.

Contrary to Fuld's hypothesis, normal subjects were more likely to make intrusions than dementia patients. Further, of the dementia patient groups, Huntington's disease patients had the highest IE rate followed by the Alzheimer's and Parkinson's groups. However, the number of individuals in each group making IEs may not be the whole story. That is, dementia patients who make IEs may make more of them. Therefore, the frequency of intrusions was calculated for each subject as a percentage of the total number of Responses (Table 8).

Table 8. Mean percentage of intrusion errors of individuals making intrusion errors.

Group	$\bar{X}$ percentage	S.D.
Normal	3.5	1.53
Alzheimer's disease	11.2	6.43
Parkinson's disease	2.0	0.00
Huntington's disease	11.2	7.87

What is notable about the performance of dementia patients is the great variability in the number of intrusions made. Proportionately more normals made IEs but normals were consistent in making only a few ($\bar{X}$ = 3.5, S.D. = 1.5), whereas the converse was true of many dementia patients (Alzheimer's disease group $\bar{X}$ = 11.2, S.D. = 1.53; Huntington's disease group $\bar{X}$ = 11.2, S.D. = 7.87).

DISCUSSION

The pattern of anomia exhibited by subjects in this study conformed to Benson's description of the anomia of dementia. The typical performance for the mild dementia patient was preserved confrontation naming and impaired generative naming. Impaired generative naming should not be construed to mean a problem with verbal fluency. Dementia patients, particularly those with mild or moderate dementia, are verbally fluent. In addition to impaired generative naming, many other subtle linguistic deficits were present in the mild dementia patients. They included deficits in receptive vocabulary, verbal associative reasoning, and language use. By the middle stages of dementia, confrontation naming, as well as generative naming, was significantly impaired compared to normal subjects.

REFERENCES

Allison, R.S., The Senile Brain. London: Edward Arnold, 1962.

Appell, J., Kertesz, A., and Fisman, M., A study of language functioning in Alzheimer's patients. Brain and Language, 17, 73-91, 1982.

Benson, D.F., Disorders of verbal expression. In D. Benson and D. Blume (Eds.), Psychiatric Aspects of Neurologic Disease. New York: Grune & Stratton, 1973.

Benson, D.F., Neurologic correlates of anomia. In H. Whitaker and H.A. Whitaker (Eds.), Studies in Neurolinguistics (Vol. 4). New York: Academic Press, 1979.

Borkowski, J.G., Benton, A.L., and Spreen, O. Word fluency and brain damage. Neuropsychologia, 5, 135-140, 1967.

Constantinidis, J., Richard, J., and Ajuriaguerra, J. de., Dementias with senile plaques and neurofibrillary changes. In A. Isaacs and F. Post (Eds.), Studies in Geriatric Psychiatry. Toronto: Wiley, 1978.

Drachman, D.A., and Leavitt, J., Memory impairment in the aged: Storage versus retrieval deficit. Journal of Experimental Psychology, 93, 302, 1972.

Ernst, B., Dalby, M.A., and Dalby, A., Aphasic disturbances in presenile dementia. Acta Neurologica Scandinavia Supplement, 43, 99-100, 1970.
Fuld, P.A., Katzman, R., Davies, P., and Terry, R.D. Intrusions as a sign of Alzheimer dementia: Chemical and pathological verification. Annals of Neurology, 11, 155-159, 1982.
Geschwind,N. The varieties of naming errors. Cortex, 3, 97-112, 1967.
Goodglass, H. Disorders of naming following brain injury. American Scientist, 68, 647-655, 1980.
Gustafson, L., Hagberg, B., and Ingvar, D.H., Speech disturbances in presenile dementia related to local cerebral blood flow abnormalities in the dominant hemisphere. Brain and Language, 5, 103-118, 1978.
Irigaray, L., Approche psycholinguistique du langage des déments. Neuropsychologia, 5, 25-52, 1967.
Luria, A.R., Higher Cortical Functions in Man. New York: Basic Books, 1966.
Miller, E., and Hague, F. Some characteristics of verbal behaviour in presenile dementia. Psychological Medicine, 5, 255-259, 1975.
Obler, L., Review of Le langage des déments, by L. Irigaray, 1973, The Hague: Mouton. Brain and Language, 12, 375-386, 1981.
Rochford, G., A study of naming errors in dysphasic and in demented patients. Neuropsychologia, 9, 437-443, 1971.
Schwartz, M.F., Marin, O.S.M., and Saffran, E.M. Dissociations of language function in dementia: A case study. Brain and Language, 7, 227-306, 1979.
Schwartz, M.F., Saffran, E.M., and Williamson, S. The breakdown of lexicon in Alzheimer's dementia. Paper presented at the annual meeting of the Linguistics Society of America, December 1981.

DISCUSSION

Q: I would like to ask you about the difficulties with generative naming and its correlation with some other linguistic tests. In our studies, which we did with elderly populations, especially very old people and some of the demented patients that we're running now, we noticed some correlation between poor performance on generative naming and reference problems in discourse. I wonder whether you could accomodate this particular problem?

A: I think there is evidence in the literature that there is a little bit of slowing down with age in the ability to abstract and process information. I don't know how difficult the task was that you asked these elderly people to do but if it involved synthesizing new information, sequencing it, and forming a response, then there is some evidence that it's a harder task for the elderly. That which is really difficult and learned later is that which will be first to go with dementia or advanced age. Tasks that require integration of a lot of different intelligences are the hardest.

Q: There is a lot of discrepancy between naming problems and confrontation naming.

A: But don't you think confrontation naming is easier? We learn so early to put labels on things, and we've found in our dementia patients, as I know I've shared with you at other times, that they also can define words for a long time, even when they can't communicate with you very meaningfully.

If we'd say, "Tell me what does it mean to deny?" or "What does it mean to prohibit?", they'll define these words. Somehow defining and assigning reference to objects seem to be low in the hierarchy of difficulty of language-semantic tasks and seem to have greater tenacity.

Q: Did you notice any differences in the times it took the patient groups to come up with a name they were searching for on either task?

A: Well, in terms of the generative task people would have an initial flurry of activity and produce their responses without much time lag between them, and then if they hadn't thought of a strategy to come up with more words, they ran dry and sat quietly the rest of the minute. In terms of confrontation naming, we're presenting the view that confrontation naming impairment is not a prominent characteristic of mild or moderate dementia patients. We have about 22 variables in the longitudinal study and of all of those, confrontation naming and forward digit span correlate least with neuropsychological measures sensitive to dementia. We haven't had a lot of experience watching people struggle to think of a name of the item in the picture. At least that's my perception.

Q: I think that the correlations you're referring to between confrontation naming ability and those other factors may be somewhat dependent on the scoring system that you used, and that if you're using a relatively insensitive system, such as plus-minus scoring, or one that is slightly more sensitive, perhaps a multidimensional system, that it might not show you what you might see if you were using reaction time as a variable.

A: I'll tell you the reason we didn't use reaction time and that is that we have Parkinson's patients and Huntington's patients who have speech production problems. We were more interested in whether our subjects could come up with the name than how fast they produced it.

Q: Did you find any support for Rochford's notion that demented patients make naming errors as a function of misperceiving the stimulus, calling for example, an anchor a hammer?

A: Generally, no. Some subjects might say the name of something that looks like the picture and you might think they misperceived what the thing was, but almost always, there was also a linguistic relationship that we could see. It's very difficult to tease these two apart but in general, the misnamings we observed were not primarily due to visual perceptual impairment. On the other hand, I believe, and I'm sure many of you do too, that dementia patients ultimately do have visual-perceptual problems, that it's the primary cause of misnamings early on? No. And the very orderly kind of response errors that we saw suggested that it really is like Schwartz, Marin and Saffran and others have said, that misnaming results primarily from the erosion of the semantic boundaries of words.

Comment: My comment, which is similar to one I made last year. I think we have to be very careful in giving tests for aphasia to demented patients and calling them aphasic based on their performance on a test for aphasia. It is probably as bad as giving a test of intelligence to aphasic patients and calling them demented.