

Case Report: Exploring Aphasia in Kalhori



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ABSTRACT

Objectives: Despite numerous studies conducted to explore the manifestations of aphasia in different languages of the world, language-specific patterns of aphasic patients in Kalhori as a southern dialect of Kurdish spoken in part of Kermanshah Province, Iran, remains largely unpacked. The present study aims at investigating language deficits of a forty-year-old Kurdish-Persian aphasic woman, here F. D., who was diagnosed with Broca's aphasia.

Methods: To assess her linguistic competence, and more particularly, her knowledge of syntax and semantics, we administered a modified version of the Bilingual Aphasia Test in Kalhori.

Results: Although she showed severe deficits in almost all modalities and levels examined, results indicated definiteness, prepositions and verb agreement with the subject as the most problematic areas.

Discussion: While impairments to do with prepositions and parts of speech are expected features of aphasic patients, as far as the assessment of verbal morphology of Kalhori is concerned, results seem to replicate the results achieved by Nilipour et al. (2001) researching Persian bilingual aphasics.

1. Introduction

Language-specific features and the lesion site are two influencing factors in the manifestation of aphasia. While a specific lesion site accompanies a series of language disorder patterns, the structure of different languages manifest different linguistic deficits which might be present in one language and absent in the other (e.g. vulnerability of verb morphology in inflecting

vs. non-inflecting languages). Thus, as [1] observes, the same underlying disorder may bring about different surface manifestations in different languages. To probe the issue, some researchers have dealt with manifestation of aphasia in different languages [2-4]. However, there are many other languages like different dialects of Kurdish which have not been studied in any serious way.

As one of the fewest studies on aphasia in Kurdish available in the literature one can refer to [5] where they

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focused on the recovery patterns of Kurdish and Persian languages of a forty-year old bilingual aphasic woman, MP, who acquired Kurdish as first language and used it for communicating with her family pre-stroke. She started learning Persian as second language in elementary school and studied Persian language and literature at university. She used to teach it for 18 years prior to stroke and as a teacher used it to communicate with her colleagues and students regularly.

The unexpected recovery of Persian (L2) led the authors to explore a number of influential variables like “aphasia syndrome type, linguistic diversity of languages, age and context of language acquisition pre-stroke, pre-morbid language proficiency, and manner of language acquisition”. Results indicated that the combination of these variables and a new one found in this case, namely, the impact of teaching Persian as the second language had affected the recovery pattern of MP’s languages in this study. It was concluded that a consciously learned and thought language and increased meta-linguistic knowledge of a language by means of teaching it had affected the better recovery and less impairment of L2 in this bilingual aphasic.

The main purpose of this study is to examine a forty-year old aphasic patient by focusing on language deficits she demonstrated in the use of Kalhori language. Although, we attempt at examining deficits related to various language levels, we will concentrate more particularly on grammatical competence and deficits that are often associated with agrammatic patients. As Kalhori language might not be familiar to English readers, in what follows, we will briefly introduce some parts of Kalhori grammar which are necessary in our understanding of the results presented toward the end of the research. This will be followed by introducing the case, the research methods, results and the final conclusions.

On Kalhori as a Dialect of Kurdish

Kurdish belongs to the Iranian branch of the Indo-Iranian languages. “The word “Kurd” is used to refer to almost all people living between Turks and Arabs on the west and Persians proper on the east” [6]. It is divided into different dialects. Each prominent dialect possesses its own unique syntactic, morphologic and phonologic properties. Haig [7] classifies Kurdish languages as Northern, Central, Southern and a group of residual languages. According to [8, 9] Kalhori is spoken by the members of one of the largest Kurdish tribes belonging to southern group, located in Kermanshah province of Iran. It is the home language of a large number of people in Kermanshah, but the language of educational, offi-

cial, judicial and political system of the province and the country is Persian. Due to the wide impact of Persian, most of Kalhori speakers are bilinguals or at the least use Persian as their second language.

From the typological point of view, Kalhori possesses an SOV word order in the unmarked form which also allows much freedom in the order of main constituents to be used in a variety of contexts for different pragmatic purposes. For example, examples 1 and 2 demonstrate two different ordering of one and the same sentence both of which are considered as well-formed sentences in kalhori,

Ali qæza-ge xward

Ali food-his ate

‘Ali ate his food.’

Qæza-ge xward Ali

food-his ate Ali

‘Ali ate his food.’

Similar to other Iranian languages, Kalhori is an inflectional language with grammatical categories of tense, aspect, mood, agreement. The rich inflectional system in which the features of person and number are morphologically marked in the verb’s inflection has made Kalhori a pro-drop language that allows the structural subject to be omitted from the sentence in unmarked forms. Kalhori has no writing system of its own but when it is needed to be written, it uses the Arabic directions and alphabets. Unlike Arabic, vowels are not represented in writing except for religious script and literature. Its phonetic inventory consists of 26 consonants, 7 simple vowel and 4 compound vowels [10]. In Kalhori, much like Persian, adjectives follow nouns in order and no adjective-noun agreement exists.

2. Methods

History of the case

The participant (F. D.) is a forty-year-old right-handed woman speaking both Kurdish (Kalhori) and Persian. The primary language to communicate with her parents was Kurdish which she had acquired along with Persian in early childhood. She used Kurdish as her first language to communicate with her family and used Persian as a formal language in her hometown for communicating with other people. Therefore, according to her husband, her competence and performance of Persian was good enough to be considered as a Kurdish-Persian bilingual. Her husband

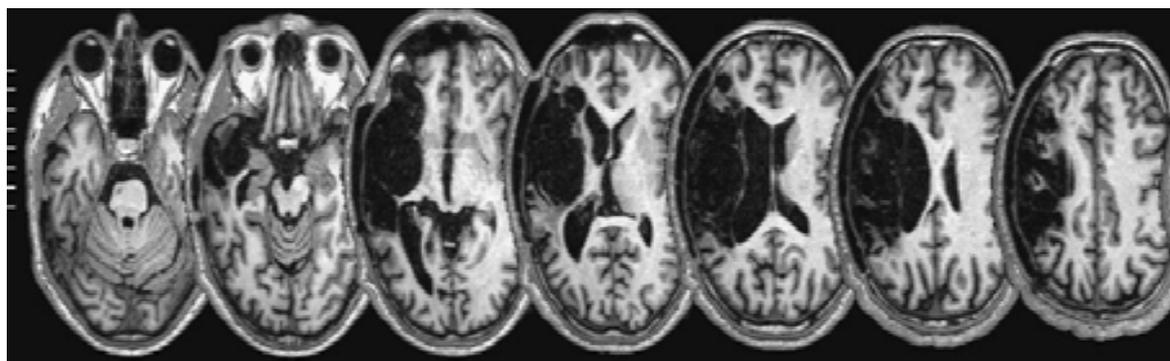


Figure 1. Patient's lesion and brain areas affected (axial slices, T1-weighted MRI scan, left=left)

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spoke Kurdish with her and prior to the stroke, both of them spoke Persian with their children as the prestigious language of the day. From social and economic point of view, the family belonged to the low-income class.

At the age of 38, 23 months before this study was carried out, her brain damage was limited to a cerebral hemorrhage in the left hemisphere. The MRI-scan showed the presence of an ischemic cerebrovascular stroke in the left middle cerebral artery. The damaged areas included medium parts of fronto-temporo-parietal lobes of the left hemisphere. The anterior portion of the middle and superior temporal lobe, the inferior frontal gyrus and rolandic operculum, pre- and post-central regions, and a small part of the superior and inferior parietal lobe were affected. She was diagnosed as non-fluent aphasic, suffering from right hemiplegia and with no history of other disorders that could have affected her ability to communicate. In addition, she did not show any auditory and visual complications before and after the stroke.

In the acute phase, F. D.'s language impairment was diagnosed as global aphasia. Her comprehension was restored for both languages over the next 5 months even without any formal teaching of Persian or Kurdish. Nine months post-stroke, F. D. was diagnosed with moderate Broca's aphasia following the bilingual aphasia test, the BAT.

Standard speech and language therapy 13 months following stroke included different treatment methods. Severe word-retrieval problems were observed, although she could utter phrases of three to five words. Unfortunately the long-term rehabilitation efforts were provided exclusively in Persian at an intensity of almost one hour per week. But, the patient's friends and relatives spoke to her merely in Kalhori according to the advice of the speech and language therapist. Figure 1 below shows the patient's lesion and the areas of the brain affected.

Procedure

According to Paradis, although BAT has been designed to assess the languages of the bilingual aphasics, any version of the test may be administered to assess the language functioning of the unilingual patients [11, 12]. Thus, we decided to administer a modified version of the test to assess her language skills at Kurdish. The assessment was conducted 23 months post stroke. The test was administered over two one-hour sessions. Prior to the tests, consent to conduct the tests was obtained from her husband. The assessments were conducted in a speech therapy center. In addition, to obtain more details, informal conversations about her favorite topics were conducted.

3. Results

As mentioned above, the patient was assessed by a modified version of BAT in Kalhori. Results of the spontaneous speech and informal interviews with the case indicated an extremely poor and effortful output. The words she could produce were 2-4 words on each given topic. For instance, she described a common Iranian food as follows:

e1...e bædæn guft bækæm haha
 e...e next meat I should do haha
 bækæm e..e xorəft bækæm bædæn
 I should do e..e food I should do next
 ay! xoda ubia (correct form: lubia) bækæm bəkolo
 O! God bean I should do it cooks

The structure of almost all her utterances was like the above. The words in bold indicate the place of new

1. A sound which she produced before starting to speak and during the time she tried to find the appropriate word.

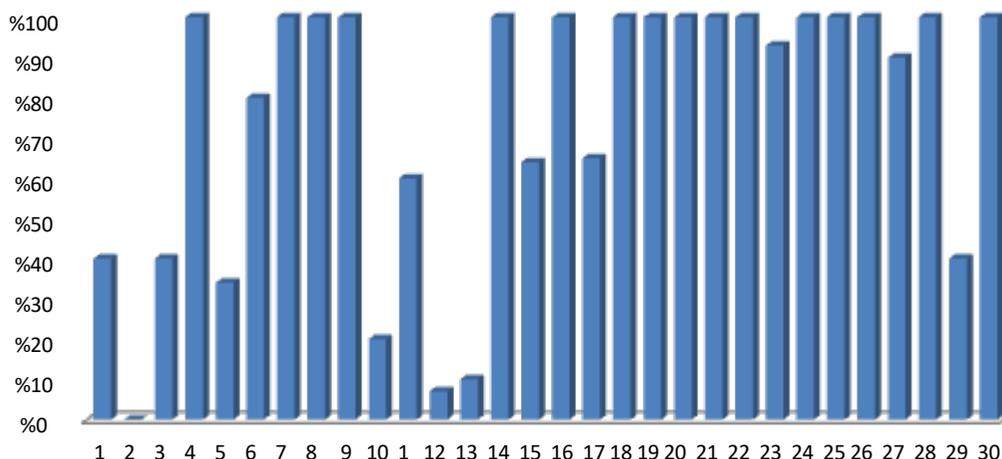


Figure 2. The error rate of F. D. on BAT

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words relevant to each new topic. F. D. used the utterance *haha* very often in her speech and according to observations conducted, by uttering it, she meant that she knew the words but could not produce them. *bædæn* 'next' here may refer to the procedure of making the food but in some other cases cannot be interpreted in this way. *bæk-æm* 'I should do' is another word which like *bædæn* was used frequently in her speech and the observation of her body language showed that she used the word in place of many other words she had in mind but could not utter. The swear word *cy! xoda* 'O! God' is one of her two emotional expressions which she used on occasions where she was completely frustrated and dissatisfied with her performance.

As indicated in Figure 2, she exhibited extreme deficits in complex commands, semantic categories, synonyms, antonyms, sentence repetition, verbal fluency, sentence construction, semantic opposites, derivational words, morphological opposites, description of a story, and listening comprehension. Of the rest simple commands were the only category on which she achieved full mark. As tasks became more difficult the deficits revealed themselves more clearly. The results of the remaining parts were as follow: In the semi-complex commands she performed 40% of the commands but in the complex task she was completely unable to perform. The result of the syntactic comprehension also was not satisfactory. The 80% error on this subtest is evident. In the verbal auditory discrimination which she enjoyed a lot, the answer rate was 66%. The results of judgments on semantic parts were better than syntax (respectively 80% vs. 40% correct responses).

F. D.'s hearing comprehension achieved the maximum score amongst the other modalities though her perfor-

mance in hearing comprehension in sentence level was relatively worse than in phoneme level (0% vs. 66%). Her speech was non-fluent, telegraphic and effortful with considerable omission of grammatical elements. Her language skills in terms of comprehension, repetition and lexical accessibility demonstrated a better semantic comprehension than syntactic comprehension, good repetition in word level and difficulty in lexical accessibility.

4. Discussion and Conclusions

The main goal of the present research was to study aphasia symptoms and its manifestation in a yet scarcely documented language in the literature, Kalhori. For this purpose BAT was used as a systematic battery for evaluating the language deficits of a forty-year-old aphasic woman. The lesion site and language deficits including non-fluent speech, telegraphic production and relatively good comprehension clearly revealed the significant signs of Broca's aphasia.

Based upon her spontaneous speech in the present research and other informal conversations, F. D.'s language broke down in terms of all word classes i.e. verbs, nouns, adjectives, adverbs and prepositions. The symptoms of agrammatism commonly found in Broca's aphasia [13] such as telegraphic speech, omission of functional morphemes and preservation of content words [14-16] were evident in our case. In addition, as reported by Menn and Obler [17, 18] regarding the significance of language-specific features in determining patterns of omission and substitution, along with the general patterns of agrammatism, our study revealed some sorts of language def-

icits specific to Kalhori which might be significant to research in aphasiology.

The present case showed disorders in the use of prepositions. Based on the analysis of her telegraphic speech, omission of free and bound prepositions was frequently found. Only in one instance when uttering the emotional expression *wæ xɔda qæsæm* 'swear to God' the free preposition *wæ* 'to' was used in its right place. This, however, may not be considered as a proper use of the prepositions but merely as the automatic use of swear words like what had been found in Broca's case, Leborgne, [19] or as what was argued by Jackson as the automatic use of language by aphasics [20].

The case also demonstrated a simplified syntax. The complex sentences or use of relative clauses were out of her reach. As an Iranian language Kalhori realizes a verb morphology which, much like Persian is inflected for tense, mood, aspect, and agreement. It is interesting that the results of the assessment of Kalhori verbal morphology might be considered to replicate the results achieved by Nilipour et al. [2] researching Persian bilingual aphasics who demonstrated disruption of verb forms. In F. D.'s output the tendency toward using the first person singular verbs was evident while other persons and numbers were absent in her speech except for a limited usage of third person singular that may be explained by the fact that Kalhori verbs do not appear in bare roots and need to be declined but F. D. had lost her ability to decline them. Among the first person singular usage of verbs, the frequency of the verb *bəkæm* 'I do' first person singular marker' was high in comparison with other verbs. She substituted this verb in almost every given topic for other verbs. A limited number of other verbs, not more than two, were produced in relation to other topics. Regarding agreement with subject, her brief output could not reveal the proper use of agreement as a verbal category. Therefore, related multiple choices tapping the relevant agreement were made which revealed her severe deficits in verb-subject agreement.

All nouns she used were only bare roots and no sign of using compounds or derivations was observed. Nouns were almost used in their singular forms without using plural markers, even though she had preserved the comprehension of the plural nouns.

Definiteness as a feature of nouns in Kalhori was not found in her bare roots. The use of nouns as content words like verbs was limited to related words in a specific linguistic context. In most cases, F. D.'s body language showed that she knew the words and their uses but had no ability to produce them, which brought about

stress and dissatisfaction and hence her use of emotional expressions like *ay! xɔda* (O! God!) and *wæ xɔda qæsæm* (swear to God). The remaining class of words, namely, adverbs and adjectives were entirely absent in her production.

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Conflict of Interest

The authors declared no conflicts of interest.

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