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# **Syndromes of Aphasia in Persian**

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## **The Need for Awareness of Aphasia Symptoms in Different Languages**

*Possible aphasic symptoms are determined by the phonological and morphosyntactic structure of each language, the number of obligatory (as opposed to optional) contexts, the frequency of occurrence of items in the language and the semantic weight. The grammar (implicit linguistic competence) provides constraints (possible choices). Pragmatics selects among these available grammatical choices (languages, registers, indirect speech acts, figurative speech, syntactic constructions). Pathology limits the available choices, either in grammar (subsequent to a left-hemisphere lesion) or in pragmatics (subsequent to a right-hemisphere damage). Therefore, the same underlying deficits may cause different surface manifestations in different languages. External societal and geopolitical factors may have a specific impact: bilingual populations may give rise to local dialects, diglossia and/code-mixing. Awareness of the characteristic symptoms in different languages is essential for clinicians and researchers in the countries where English is not the national language, in countries with large number of immigrants, and in countries where bilingualism is inherent.*

*By comparing symptoms of different languages, we should eventually be able to ascertain whether some deficits are caused by what is encoded (e.g., causality, negation, etc.) or by its linguistic means of implementation (e.g., lexical vs. inflectional causation).*

**-Michel Paradis (2001, pp. 5&6)**

## By Way of Introduction

The aim of this collection of papers is to indicate some characteristic manifestations of aphasia symptoms in Persian. Two types of studies are provided; (1) small series of single case studies; (2) experimental case studies focusing on a particular salient aphasic feature of Persian.

The papers presented in this volume are original aphasiological research studies on Persian bilingual or monolingual aphasic patients published originally in different international journals. The papers aim to introduce some major issues in Persian aphasiology for the purpose of comparative aphasiology and cross-linguistic studies (Menn & Obler, 1990). They are also aimed at introducing and highlighting some major issues on aphasia to the clinicians and speech-language pathologists who are dealing with aphasia among Persian speaking populations.

Some features of the papers that may be of some interest to Persian aphasiologists and clinicians are as follows:

- *Some of the findings in neurolinguistic studies on Persian aphasiology which are relevant for clinical work with aphasic adults*
- *Some issues on the assessment and treatment of aphasia such as:*
  - *Test reliability and interpretations*
  - *Application of a formal aphasia test in the Persian language*
  - *Patterns of impairment and recovery of language(s) in the same brain after brain damage based on systematic assessment by equivalent versions of the same test*
- *A framework for detailed study and pathological data analysis of Persian aphasia for clinical and research purposes*
- *A brief overview of the key terminology, concepts and pathological evidence in aphasia based on first-hand studies on Persian aphasic patients.*

Furthermore, the need for the study of linguistically and culturally diverse populations has been stressed by researchers interested in the neuropsychology of language (Paradis, 2001). Some researchers have indicated that language and cultural background have an impact on performance on some neuropsychological tests, such as aphasia tests and on clinical process. It has also become clear that aphasia in languages other than English presented features not addressed in the English aphasiology literature (Chapey, 2001).

Accordingly, one final feature of the papers presented in this volume is that the clinical assessment in all of them is based on the same formal aphasia test (The BAT, Paradis et. al 1987) developed by Paradis and his colleagues designed both for bilinguals as well as monolinguals. The version of the test is available in over 60 different languages, including Persian, Azari and Kurdish. Each version of the **BAT** uses pictures and vocabulary which are culturally and linguistically modified. The test is aimed at assessing all language modalities. It has also a section on translation abilities between pairs of languages in the same person after brain damage.

The content of the test is designed to assess different features in different languages. The scoring and administration procedures have been designed to facilitate administration and provide data for qualitative as well as quantitative interpretation of the patient's aphasic deficits. Based on the results on the **BAT**, clinicians may derive either a syndromatic profile for clinical purposes, or a linguistic profile for research purposes.

Finally, many thanks are due to my colleagues and collaborators, Professor Michel Paradis for his deep devotion to neuropsychology of the human language, Professor Hassan Ashayeri for his keen insight in the neural basis of language and Dr. S. Raghibdoust for her collaboration in one paper in this volume.

*R. Nilipour*  
*January 2003, Tehran.*

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## *Preface*

The study of the neural basis of language has a special place in neurology, neuropsychology and overall in neuroscience. It was, after all, with the study of language that neurology and neuropsychology gained their individualities. Aphasia is a defect in the process of language due to a focal brain damage. The history of aphasia and the history of neuroscience share the same starting point: the original description, in 1861, of a patient who had lost the ability to communicate through the spoken word because of damage to the frontal operculum, outlined by Paul Broca. About a decade later, Carl Wernicke was to describe another lesion of the left hemisphere but this time in the posterior temporal region rather than in the frontal lobe.

The image of Broca's and Wernicke's areas, together with the bridging arcuate fasciculus, as the main set of brain structures and centers for language pervaded most text-books and monographs. Norman Geschwind, in the mid-1960's introduced a new functional perspective and disconnection syndrome in aphasia and enlarged the original set of language related areas. At about the same time detailed evaluation of aphasic patients was beginning to be performed by modern test batteries and classifications. The Past decade has brought fourth a number of new findings largely from three sources; electrophysiological studies, lesion studies and functional neuroimaging work. With the availability of fMRI imaging and in-vivo 3-dimensional reconstruction, the human lesion method has gained power and permitted a new wave of cognitive experiments. The new results have shown that language processing is not centered on Broca's and Wernicke's areas, but rather depends on the work of many neural sites linked as systems in the left cerebral cortex. Likewise, structures in the left basal ganglia, thalamus, insula, supplementary motor areas, and even right hemisphere are also involved in language processing.

There are several challenges facing investigators in this field and being an up-to-date and active researcher in aphasiology is not an easy task. Dr. Nilipour is a well-known Iranian active researcher in this field and this book is a collection of his published papers in well-respected international journals about Persian aphasic patients. This invaluable book gives us a good opportunity to get familiar with his line of research which, as far as I know, is unique in Iran.

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Neurologist and Neuroscientist

*Our brain is a democracy of ten thousand million  
nerve cells yet it provides us with a unified experience.*

*-Sir John Eccles*

\*\*\*\*\*

*To look into our hearts is not enough. ... One  
must look into the cerebral cortex*

*-T. S. Elliot*



# Manifestations of Aphasia in Persian

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**Abstract**—The general characteristics and specific language deficits of seven native speakers of Persian who became aphasic (with three different etiologies) are discussed. Three major linguistic deficits related to site and size of lesion and to individual differences emerge from the data: breakdown of the verb, deletion of free grammatical morphemes, and substitution of bound grammatical morphemes. Four types of language-specific agrammatic deficits are described: (a) substitution of a filler verb /*budan*/ 'to be' as a default for all kinds of verbs, including transitive active verbs; (b) substitution of the polymorphemic infinitive for the contextually proper inflected form of the verb; and (c) tendency to omit the *ezafe* linking morpheme /-*el*/ and the NP-internal conjunction /*va*/ 'and'.

**Keywords:** aphasia, Persian, agrammatism, inflection, substitution, typology.

## Introduction

Although aphasiological and neurolinguistic studies on Persian are in their infancy, a number of systematic case studies have been reported in the literature during the past decade or so, from which we can extract some major features of Persian agrammatic language for the purpose of cross-linguistic comparison. Apart from the case studies reported here, there has been no documented report in the neurolinguistic literature on Persian aphasiology, not even in the cross-language source book on agrammatic aphasia (Menn & Obler, 1990), until recently (Nilipour, 2000). The major aim of this paper is not to give a comprehensive description of Persian aphasiology, but rather to attempt to depict the general characteristics of agrammatic language in Persian. It is also an attempt to show the general trend of aphasic deficits in different types of aphasia in Persian. With these aims in mind, we first present a short description of three published aphasia cases (Nilipour, 1988, 1989; Nilipour & Ashayeri, 1989), then we describe two unpublished cases (Raghibdoust, 1999) and, in the final part, we present two newly published cases (Nilipour, 2000) of agrammatic aphasics and their grammatical violations, compared with subject control data.

All aphasic data reported here are based on systematic assessments with the same standard aphasia test, *The Bilingual Aphasia Test* (the BAT, Farsi Version). Based on these results, the cases have met the general clinical characteristics of four types of