PERGAMON

Journal of Neurolinguistics 14 (2001) 281–296

Journal of NEUROLINGUISTICS

www.elsevier.com/locate/jneuroling

Manifestations of morphological impairments in Greek aphasia: A case study

Kyrana Tsapkini*, Gonia Jarema*, Eva Kehayia°

*Université de Montréal, Montreal, Canada; and Centre de recherche, Institut universitaire de gériatrie de Montréal, Montreal, Canada, °McGill University, Montreal, Canada; and Jewish Rehabilitation Hospital, Laval, Canada

Abstract—The present study addresses the issue of morphological manifestations specific to non-fluent aphasia in Greek. The off-line performance of a Greek-speaking aphasic patient is investigated using Paradis'(1987) Bilingual Aphasia Test. His difficulties with inflectional morphology are further probed through a series of comprehension, production, repetition and reading tasks. Results obtained show a dissociation in the patient's processing of nouns and verbs related to language-specific morphological features of these grammatical categories. This study underscores the importance of taking the particularities of a given language into account when interpreting aphasic manifestations and sheds new light on the issue of syndrome variability.

Key words: aphasia, morphological impairment, grammatical categories, language-specific features, Greek.

Introduction

Inflectional errors are amongst the most prominent characteristics of aphasic non-fluent speech. They have been documented mainly in nouns and verbs. It has been found that non-fluent patients make more errors in inflection than in derivation and that they are more impaired in regular than irregular inflection (e.g., Miceli & Caramazza, 1988). Moreover, aphasic speech seems to be sensitive to the grammatical class of words, resulting in dissociations between nouns and verbs that have been interpreted in terms of their semantic (e.g., Gainotti, 1998), syntactic (e.g., Bastiaanse & Jonkers, 1998), morphological (e.g., Shapiro et al., in press) and neuronal (e.g., Ullman et al., 1997) representational differences. In the literature, the noun-verb distinction has been investigated mainly in terms of a categorial opposition. In most studies, it has been found that retrieving verbs is more difficult for aphasic patients than retrieving nouns in both sentence (Marshall et al., 1998) and single word (Berndt et al., 1997) elicitation tasks. However, the reverse dissociation has also been observed in patients impaired in naming, comprehension or retrieval of nouns (Danielle et al., 1994). These findings have been interpreted as evidence for differential processing of verbs and nouns, and in particular as an inability to access the phonological representations of verbs (Marshall et al., 1998). Another interpretation for the noun-verb distinction brings forth their morpho-syntactic differences (Bastiaanse & Jonkers, 1998). It has been shown that morphological processing of verbs can be impaired independently of that of nouns,

0911-6044/01/$ - see front matter
PII: S0911-6044(01)00018-5

resulting in grammatical class distinctions of morphological processing in aphasia (Shapiro et al., in press). Moreover, morphological impairment can be present without any syntactic impairment (Bates et al., 1991), and vice-versa, that is, grammatical class distinction may be manifested at the syntactic level (in sentences) but not at the single word level (Badecker, 1997). Furthermore, the particularities of each language stress the need to investigate aphasia in different languages (Jarema, 1998).

Modern Greek, a language where all stems need an inflection to surface to the word level, provides a case wherein both the verbal and nominal systems present a wide range of morphological and morpho-phonological operations, such as simple inflection, inflection involving stem allomorphy, and inflection with stem-final phonological change conditioned by the presence of the inflectional suffix. In this study, we investigate morphological impairment in verbs and nouns in Greek. The issue of rule application in aphasia has been investigated in verbs for the English past tense. It has been found that aphasic patients with frontal lesions, diagnosed as Broca's aphasics, are impaired in the application of the past-tense inflection but have no difficulty with irregular stored forms (Ullman et al., 1997). Given the particularities of the Greek language where both operations (rule application and stem allomorphy) can be at play in one and the same form, we investigate how this distinction manifests itself in the performance of Greek-speaking aphasics. The language also provides the opportunity to clarify whether the problems aphasics have with morphological structure are due to syntactic difficulties or morphological impairment *per se* and, more importantly, to reveal the effect of parametric variation in morphological impairments.

Description of the verbal and nominal systems in Modern Greek

In order to probe the effects of morphological and morphophonological operations in the processing of nouns and verbs, we adopted Ralli's (1988, 1997) linguistic analysis of the Greek verbal and nominal systems as a theoretical framework.

With respect to verbs, since all stems are bound in Greek, active verbs are formed by the addition of the inflectional suffix to the present tense stem, e.g., *pez-o* (I play). There are three different types of active past tense formation: 1) verbs with stem-internal change, e.g., *plen-o, e-plyn-a* (I wash, I washed), where the perfective stem *plyn-* is an allomorph of the imperfective stem *plen-*, 2) verbs with phonological change, e.g., *graf-o, e-grap-s-a* (I write, I wrote), and *lin-o, e-li-s-a* (I untie, I untied), where, in the presence of the perfective aspectual marker -s-, there is a phonological alternation and a stem-final consonant deletion, respectively, and 3) verbs with both a perfective allomorph and the addition of the aspectual marker *-s-*, e.g., *mil-o, mili-s-a* (I speak, I spoke), where *mili-* is the perfective allomorph of *mil-*. The second category can be seen as the equivalent of a rule-based paradigm, and the third category as the combination of rule-based (by virtue of the aspectual –s- marker) and stored-allomorph paradigms.

The nominal system in Greek also provides a range of morphological and morpho-phonological operations. Ralli (1988) describes Greek nominal forms in terms of feature representations and feature-passing operations. The main features characterizing Greek nouns are gender, case, number and inflectional class. There are three genders (masculine, feminine and neuter), four cases (nominative, genitive, accusative and vocative), and two numbers (singular and plural). The following three types of operations can be found in the formation of plural nouns: 1) allomorphic variation, *e.g., som-a, somat-a* (body, bodies), 2) stem-final phonological change conditioned by the presence of the plural marker, e.g., *pedi, pedi-a* (child, children) where the letter *i* in