

## Group effects of instrumentality and name relation on action naming in bilingual anomic aphasia

Maria Kambanaros \*

Department of Speech and Language Therapy, Technological Educational Institute, Patras, Greece

### ARTICLE INFO

#### Article history:

Accepted 27 January 2009

Available online 18 March 2009

#### Keywords:

Action naming task

Anomic aphasia

English

Greek

Instrumentality

Late bilingualism

Serial model

Verb–noun name relation

Verb production

### ABSTRACT

Verb production in sentences was investigated in two groups of late bilingual Greek–English speakers: individuals with anomic aphasia and a control group. Verb retrieval in sentences was significantly impaired in both languages for the individuals with anomic aphasia. Additional results revealed no effect of instrumentality on action naming in sentences in either language. However, there was a negative effect of verb–noun name relation on instrumental verb production in English only. Results confirm intact verb lemma retrieval for this group of bilingual individuals with anomic aphasia, but a breakdown at the level of accessing the phonological or lexical form.

© 2009 Elsevier Inc. All rights reserved.

### 1. Introduction

The issue of how individuals with aphasia retrieve verbs during picture naming tasks and/or for sentence construction is extremely complex and there are many different views put forward in the literature as to the breakdown of the processes involved.

With regards to psycholinguistic explanations, the different nature of verb dissociations in aphasia is linked on the one hand to the verb's grammatical and/or morphological features (e.g. argument structure, transitivity) and on the other to non-grammatical features contained within the verb including semantic/conceptual and phonological/lexical information. In addition, any underlying verb deficit is placed at a different level of psycholinguistic processing according to aphasia type. For example, potential verb deficits in anomic aphasia are attributed to the difficulties these individuals have in retrieving the verbs' corresponding phonological form from the lexicon in light of intact grammatical knowledge or lemma retrieval (Bastiaanse, 1991; Jonkers, 1998; Jonkers & Bastiaanse, 1998, 2007; Kambanaros & van Steenbrugge, 2006).

The contradictory results of multiple studies investigating verb dissociations so far are complicated by findings that different semantic categories of verbs are also affected by aphasia in different ways. Studies have revealed that *instrumental verbs* (verbs describing actions that involve an instrument excluding a body part) and *name relation* (where verbs and nouns share the same

phonological word form) are differentially affected in aphasia as related to specific aphasia syndromes.

Instrumentality is considered a conceptual factor and has been shown to play a role in both action and object retrieval in aphasia. Studies investigating this conceptual feature of verbs have been conducted in only three languages: Dutch (Bastiaanse, 1991; Jonkers, 1998; Jonkers & Bastiaanse, 1998, 2007), English (Breedin, Boronat, Saffran, & Shipley, 1999; Breedin, Saffran, & Schwartz, 1998; Druks & Shallice, 2000; Kambanaros & van Steenbrugge, 2006; Kemmerer & Tranel, 2000) and Greek (Kambanaros & van Steenbrugge, 2006).

In Indo-European languages (such as English, Greek, or Dutch), instrumentality is expressed either by using a prepositional phrase including the instrument or by using an instrumental verb. Moreover, the instrumental verb is rarely used with the instrument in the same sentence (as in *the woman sweeps the floor with a broom*), since this is semantically (but not syntactically) odd (Jonkers, 1998).

Fig. 1 depicts a schematic diagram of an instrumental event/verb representing the assumption of an implied instrument (noun) in the semantic representation of an instrumental verb.

Instrumental verbs can be divided into two types: those with a name relation to the instrument and those with no name relation to the instrument. Instrumental verbs with a name relation to the noun used to carry out the action, such as *hammer* and *to hammer* or *mop* and *to mop*, are name related noun–verb pairs. Verb–noun name relation refers to such noun–verb pairs where the one (phonological) word form represents a noun as well as a verb.

\* Fax: +30 1132610369170.

E-mail address: [kambanarou@teipat.gr](mailto:kambanarou@teipat.gr)

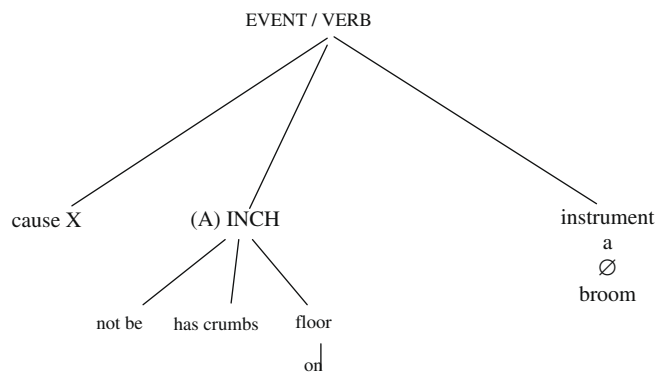


Fig. 1. A schematic diagram of the instrumental verb 'sweep'.

*Sweep* on the other hand is considered an instrumental verb without a name relation to the noun *broom* (see Fig. 2). In Greek name related verb–noun pairs are not represented by one word form but share the same stem and Greek speakers need to correctly inflect the stem with either a nominal or verbal inflection to produce the instrument/noun and instrumental verb, respectively. This information is illustrated in Fig. 2. For example, *skoup*—is the stem for either 'broom' or 'to sweep'. If inflected with the affix *-a*, it becomes the noun *skoupa* (translation 'broom'). If inflected with the affixes *-iz* + *-o*, it becomes the verb *skoupizo* ('I am sweeping').

A sizeable proportion of verbs and nouns in most languages has a 'homophonous' or name related relationship. However, the example "broom–sweeping" in English and the Greek translation "skoupa–skoupizo" highlights a further issue: namely, that name related noun–verb pairs are language-specific.

Of relevance to the current study are the results of studies exploring the specific influences of instrumentality and verb–noun name relation on verb retrieval in individuals with anomic aphasia at the single word and sentence levels using picture naming tasks. Two main groups of studies have been found in the literature. The first group involves studies carried out on monolingual Dutch anomic aphasic speakers spanning nearly two decades (Bastiaanse, 1991; Jonkers, 1998; Jonkers & Bastiaanse, 1998, 2007). The second

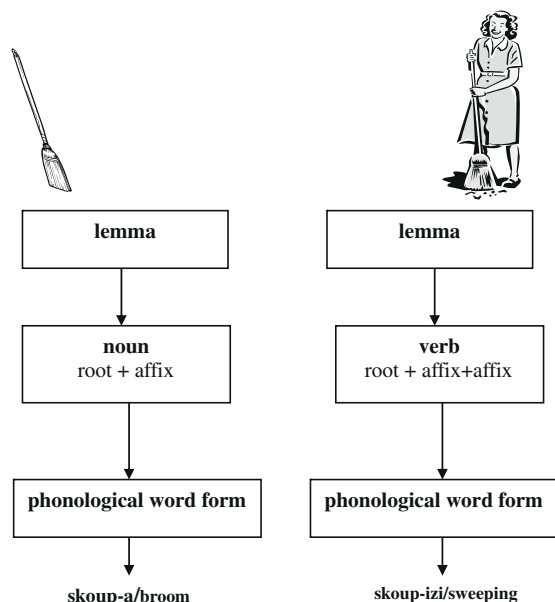


Fig. 2. An example of a name related noun-verb pair in Greek.

involves a first study focusing on the above-mentioned features in a group of late bilingual Greek (L1)–English (L2) anomic aphasic individuals (Kambanaros & van Steenbrugge, 2006). The overall finding in all of the above studies was a distinct verb–noun dichotomy in naming with selective verb impairments for the majority of individuals with anomic aphasia despite good word comprehension for nouns and verbs. Furthermore, instrumentality had a positive effect on verb retrieval at the word level for the different groups of anomic speakers in the above languages, whereas the effect of verb–noun name relation on (action) word retrieval revealed contradictory results with studies reporting no effect (Bastiaanse, 1991; Jonkers, 1998; Kambanaros & van Steenbrugge, 2006<sup>1</sup>), a negative effect (Bastiaanse, 1991<sup>2</sup>; Kambanaros & van Steenbrugge, 2006) or a positive effect of name relation on action naming (Jonkers & Bastiaanse, 2007).

Instrumentality is generally considered to be a conceptual and lemma feature, and name relation a phonological feature. Kambanaros and van Steenbrugge (2006), explained their results in terms of the processes operating at different levels of Levelt's serial model for word processing (Levelt, 1989; Levelt, Roelofs, & Meyer, 1999), namely, that (instrumental) lemma competition during retrieval may facilitate naming, whereas competition between a name related verb and noun during the selection of the phonological form could have a negative effect on the selection of the target verb.

The facilitatory effect of instrumentality might be due to the automatic co-activation of the instrumental noun lemma whenever an instrumental verb lemma is activated (Bastiaanse, 1991; Jonkers, 1998). In the case of verb–noun name relation, additional phonological information will only facilitate the retrieval of the instrumental verb if the phonological representation of the corresponding noun can be successfully activated.

Additional explanations for this phenomenon include the possibility that the findings are related to semantic complexity (Barde, Schwartz, & Boronat, 2006; Breedin et al., 1998, 1999). For some subjects the fact that instrumental verbs are semantically complex (i.e. the presence of an instrument, cf. Fig. 1) facilitates verb retrieval. In contrast for others there may be an opposite effect such that greater semantic complexity would interfere with verb retrieval.

An alternative account based on a distributed semantic model (Allport, 1985; Marshall, Pring, & Chiat, 1998) relates the meaning of a word to a network of features distributed over different domains that are specialized for certain types of information. Specifically, whether or not an instrument is part of the verb is processed by the perceptual domain. It is possible that subjects with better performance on instrumental verbs have easy access to their intact perceptual encoder.

Moreover, the effects of these two non-grammatical features (instrumentality and verb–noun name relation) on verb production in sentences have not been explored in depth. Only two studies (Bastiaanse, 1991; Jonkers, 1998) have been found in the literature, both involving monolingual anomic aphasic speakers of Dutch. In the group study by Jonkers (1998) involving 17 individuals with anomic aphasia no effect of instrumentality or verb–noun name relation was found for verb retrieval at the sentence level. A similar finding was reported by Bastiaanse (1991) for both anomic aphasic patients in her study with regards to instrumentality however for one patient the verb–noun name relation had a positive effect on verb production in sentences (the opposite to her naming performance) whereas

<sup>1</sup> In the study by Kambanaros and van Steenbrugge (2006), no effect of name relation was reported for verb retrieval in L1 (Greek) while a negative effect was reported in L2 (English).

<sup>2</sup> In the pilot study by Bastiaanse (1991) involving two anomic aphasic patients, one patient demonstrated a negative effect of name relation on action naming whereas the other patient showed no effect whatsoever.

Download English Version:

<https://daneshyari.com/en/article/925803>

Download Persian Version:

<https://daneshyari.com/article/925803>

[Daneshyari.com](https://daneshyari.com)