Can verbal features affect nouns retrieval in aphasia?

Zanini C. a,*, De Pellegrin S. a, Semenza C. b

a Department of Neurosciences, University of Padua
b Department of Neurosciences, University of Padua IRCCS San Camillo - Ve

Introduction
A recent fMRI study (Romagno et al., 2012) found that the left pMTG is involved in processing those lexical and semantic properties of verbs that are relevant for syntax, e.g., telicity. Telicity is a lexical property distinguishing events that entail an endpoint (i.e., to reach) from events with no delimitation (i.e., to draw). In Italian, an atelic event can be turned into a telic one compositionally, by adding an endpoint at a semantic-syntactic interface level (i.e., to draw a circle) or morphologically, by selecting perfective tenses (i.e., he drew/she have drawn). Verbal perfectivity (i.e., telicity at a morphological level) has been shown to be problematic for agrammatics (i.a.: Yarabey Duman & Bastiaanse, 2009).

Derived nominals (DNs) are nouns that can describe events as verbs do (the arrival; the destruction; the raising). This study aims at verifying whether lexical telicity, semantic-syntactic telicity and morphological telicity affect nominal production as well.

Methods
Two Italian agrammatic aphasics (TO and CI) and one Wernicke’s aphasic (MU), showing a relative verb impairment (TO and CI: V 21/28, N 29/30; MU: V 13/28, N 22/30), participated to the study. 179 Italian DNs were selected. Familiarity, frequency, number of syllables, type of suffixes and kind of event were controlled. 29 of these DNs describe atelic state events (condition a), 30 DNs describe atelic activity events (condition b) and 30 DNs describe telic activity events (condition c). 30 DNs are telic at a semantic-syntactic level (condition d), 15 DNs are telic at a morphological level (condition e) by means of the suffix -(a)ta. Other 15 DNs ending in -(a)ta and not describing events were selected as a control (condition f).

Participants had to derive the target DNs starting from the root of the corresponding verb in a phrasal context.

Results
TO and CI performed well in all conditions excepting for telic DNs in -(a)ta. Condition (c) significantly differed from other conditions (a: z = 5.464, p < .0002; b: 4.551, p < .0002; c: z = 3.509, p < .0004; d: z = 4.111, p < .0002; f: z = 3.519, p < .0004).

MU performed well with atelic activity DNs and non event DNs. Condition (b) differed significantly from other conditions (a: z = 3.041, p < .002; c: z = 2.921, p < .003; d: z = 1.943, p < .03; e: z = 2.277, p < .02).

Conclusions
TO and CI showed problems with the morpheme -(a)ta when it was attached to event DNs, thus problems with telicity at a morphological level in the nominal domain.

MU showed problems with DNs describing telic and state events, that is, with the most linguistically marked kinds of event.

These results show that verbs and nouns share some grammatical and semantic features like telicity that cross the boundaries of the class distinction.

* Corresponding author.
E-mail address: chiara.zanini.2@unipd.it.
Reference

Table 1: results

<table>
<thead>
<tr>
<th>Subjects</th>
<th>V/N (BADA scores)</th>
<th>Lexically state DNs</th>
<th>Lexically activity DNs</th>
<th>Lexically telic DNs</th>
<th>Semant. telic DNs</th>
<th>Morph. telic DNs</th>
<th>Non DNs</th>
<th>event</th>
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<tbody>
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<td>MU</td>
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<td>24/30</td>
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<td>7/15</td>
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