The Distinction Between True and Pseudo Denominals? It’s an Illusion!

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The current paper aims to show, based on various tasks (acceptability judgment, forced choice, subjective rating), that the distinction between true and pseudo nominal verbs does not hold, by revealing significant effects of the semantic similarity of the PPs to the denominal verb’s incorporated nominal. Thus, instead of arguing that only some denominals are root-derived (Kiparsky 1997), we argue these verbs are all derived from nominal roots expressing n-like concepts, which would explain their compatibility only with certain PP objects different from n (depending on whether one can more readily think of objects similar to the nominal root).

According to Kiparsky (1982, 1997), two types of denominal verbs can be distinguished depending on whether they can take a PP denoting a different ‘object’ from the one incorporated in the verb: true denominal verbs, and pseudo-denominal verbs. Whereas true instrument-incorporating verbs like tape imply the specific use of the incorporated instrument, pseudo-denominal instrumental verbs like hammer are more generic, they do not require any particular instrument, though they usually imply the most typical instrument used for the activity:

(1) a. #Lola taped the poster to the wall with pushpins.
   b. He hammered the desk with his shoe.

While this idea has also been embraced by Arad (2003, 2005) for Hebrew, according to Harley & Haugen (2007), no account of this distinction is necessary, as the distinction does not really exist, and tape-type verbs do not necessarily entail use of the conflated root (one can tape with band-aids / mailing labels). The reason why taping with pushpins is bad would be because the characteristic manner of use of pushpins is distinct from that of tape.

Starting from the observation that some of Kiparsky’s unacceptable sentences relied on PPs not similar to the object n, the first test we devised was an acceptability judgment task testing whether the similarity of the PP to the incorporated object affects acceptability for native speakers of English. In the test, 100 native speakers of English had to rate the acceptability of 56 sentences (28 test sentences and 28 fillers) on a Likert scale from 1 to 5. The 28 verbs consisted of 12 instrumentals, 8 location and 8 locatum verbs.

There were four types of test sentences based on those of Kiparsky (1997): sentences with true denominals considered unacceptable by Kiparsky, sentences with pseudo-nominails considered acceptable by Kiparsky, modified sentences with true denominals and modified sentences with pseudo-denominals. In the modified sentences, the PPs were modified such that, instead of the instrument/ location/ locatum used by the author, we picked an instrument/ location/ locatum that was semantically of greater or lesser similarity to the incorporated root object. For the denominals considered true by Kiparsky (1997), the PPs were made more semantically similar (2a), while, for those considered pseudo-denominals, the PPs were made less similar (not an object type n) (2b):

(2) a. He crowned her #with a hat / with a rose garland (true)
   b. Tom paddled the canoe with a board / # with a spoon. (pseudo)

The test sentences therefore vary in two ways: they can have PPs that have lesser or greater similarity to the incorporated object of denominal verb, and they can have pseudo or true denominal verbs (following Kiparsky’s classification). There were two versions of the test, in which each denominal verb was presented once, preventing the participants from seeing the same verb in both conditions. Each version was presented to 50 participants.

The similarity factor is non-trivial to operationalize without introducing our own biases. We therefore conducted two further experiments to obtain empirical similarity data, which can then be used in order to see whether our contextual acceptability ratings from the test can be derived from non-contextual semantic intuitions.

The first similarity experiment involved a forced choice task of comparative similarity (involving 28 test questions and 28 fillers questions), where 60 native speakers of English were asked to say which of the two items (i.e. the PP objects in the acceptability task) were more similar to the roots (present in the make-up of the denominal verbs). The exact same test items were used as in the sentences from the acceptability judgment tasks. For instance, speakers were asked “Which is more similar to paddle?” and had to pick between board and spoon (a forced choice question corresponding to the acceptability judgment question in 2b). Importantly, the forced choice provides a standard of comparison (e.g. paddle) against which participants can judge the similarity of the objects at stake. Also, the questions involved roots without an (in)definite article to avoid a DP interpretation.

The second similarity experiment involved a rating task of independent/non-comparative similarity (split in two parts, each involving 28 test questions and 28 fillers questions), where 103 native speakers of English had to rate on a scale how similar a PP object and the nominal root are on a scale from 1 to 5. For instance, some speakers were asked “How similar are paddle and board?”, and other speakers were asked “How similar are paddle and spoon?”. In their answers, speakers were expected to take into account the object’s shape, form,
material, use a.o., hence, given the lack of context and the wide array of aspects serving as grounds for similarity, more variance in answers was expected (see also Miller & Charles 1991).

<table>
<thead>
<tr>
<th>Factor</th>
<th>AIC</th>
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<tbody>
<tr>
<td>Kiparsky (1982, 1997)</td>
<td>6940.2</td>
</tr>
<tr>
<td>Comparative similarity</td>
<td>6599.4</td>
</tr>
<tr>
<td>Independent similarity</td>
<td>6625.2</td>
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Table 1: Anova comparison of models with different similarity predictors, showing information loss.

Now, we can compare our two notions of similarity to the Kiparsky classification as predictors of the previously obtained acceptability judgements. Table 1 shows the information loss of models with the three different predictors. Information loss is expressed as an Akaike Information Criterion (AIC) value. The model with the lowest AIC loses the least information, compared to the data it models. We thus see that a model that predicts the grammaticality ratings on the basis of our comparative similarity score accounts for more variance than a model that predicts on the basis of Kiparsky's classification ($\chi^2 = 340.81, p < 0.001$). The independent similarity score performs slightly worse than the comparative one ($\chi^2 = 25.84, p < 0.001$) but still better than the Kiparsky classification, an expected difference given the greater ease in assessing two items comparatively.

The models used in this comparison are linear mixed-effects models that model the ratings with the relevant similarity factor (see Table 1) as a fixed effect, while controlling for verb type (instrument, location or locatum) as a fixed effect. The factors participant and verb are controlled for as random effects with a random intercept and with random slopes for the similarity factor. Specifically, our comparative similarity-based model (without the verb random factor to generalize over verb-specific variation) estimates that for each 1 point increase in (comparative) similarity rating, acceptability goes up by 1.07 points (95% CI 0.90 .. 1.23 points) (Figure 1).

In accounting for the results, we reject the idea of a structural distinction between true and pseudo denominals, and adopt the view all denominals are derived from nominal roots with an n-like meaning, thus handling similarity effects. We go against Borer’s idea (2014) that denominals derive from acategorial roots, showing that, although Borer (2014) argues that there are no denominal verbs derived from nouns derived from verbs (for instance, *destruction), and this impossibility would, in her view, show that incorporation does not apply to nouns/nominal roots, but rather acategorial roots, there is, in fact, evidence to the contrary from verbs such as to proposition, to champion, to disillusion a.o.. Moreover, denominal verbs may be argued to be derived from something n-like (hammer-like, tape-like), and this would explain the need for semantic compatibility between the verb and the properties of the n-like object in the PP, and account for the results for similarity obtained in all the tests we conducted. For instance, pushpins cannot be used as tape because they have other properties (they are metal and rigid, unlike tape, a flexible material); for this reason, pushpins do not represent an object type tape, while hand-aids and mailing-labels do. Consequently, two possible solutions arise: (i) denominals are derived from something bigger than the noun, i.e. OBJECT TYPE n, a function returning all objects similar to n (including n itself), or (ii) denominals are derived from roots which are or become nominal. We consider the second option a better account, given that the first is uneconomical, relying on an additional silent noun projection, and nouns have been argued to have meaning, but no reference below the word-level (Acquaviva 2009). Thus, the alleged distinction between true and pseudo is given by the degree of compatibility/similarity of the PP with the n-like nominal root of the denominal. Drawing on Pustejovsky’s (1995) theory of concepts, we argue that a nominal root expresses a nominal concept, which conveys a function (telos) and mode of composition for the parts, i.e. qualia structure. In some cases, based on world knowledge, the nominal concept seems to be defined by function (e.g. hammer), whereas in others, form or mode of composition are more relevant (e.g. tape) (Dowd 2010). This creates the illusion of a structural distinction between true and pseudo denominals. In a full analysis of denominal verbs, however, while we do not distinguish structurally between true and pseudo denominals, we do assign different structures to location & locatum / instrument verbs. We follow Rissman’s (2010, 2011) semantic and syntactic argumentation that, unlike location and locatum PPs, instrument PPs are adjuncts, and, consequently, argue that, while location and locatum verbs are derived through lexico-syntactic decomposition and successive conflation (Hale & Keyser 2002) ([VP [V V [PP *[V P \[Root\]n]]]]), instruments cannot incorporate in a similar fashion (due to the Head Movement Constraint) and are actually derived through direct conflation of the manner onto the verb ([VP [V V [\[Root\]n]]) (Harley & Haugen 2007, Harley 2008). In contrast, the true /pseudo denominals distinction is gradient, and semantically and pragmatically motivated.

Figure 1: Predicted grammaticality ratings with comparative similarity model.