The combinability of derivational suffixes in the mental lexicon: A psycholinguistic study

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• Our research is on suffix combinability or suffix ordering, i.e. why is it lead-er-ship and not *lead-ship-er?

• Restrictions on affix ordering exist in all languages of the world.
Outline

1. Theoretical background
   a. Approaches to affix order
   b. This study: Cognitive approach

2. Psycholinguistic study (to verify the followed approach)

3. Discussion of results
Affix ordering is a major issue in linguistics, there is much research on the topic and many theories (approaches) have been suggested to explain the way affixes combine in different languages, overviews in Manova & Aronoff 2010 and Rice 2011.
Approaches to affix order

• According to the type of information used in affix ordering, Manova & Aronoff (2010) differentiate eight approaches:
  1) phonological
  2) morphological
  3) syntactic
  4) semantic
  5) statistical
  6) psycholinguistic
  7) cognitive
  8) templatic
English -ist: A traditional analysis

<table>
<thead>
<tr>
<th>SUFF1</th>
<th>Word class of SUFF1</th>
<th>Followed by SUFF2</th>
</tr>
</thead>
<tbody>
<tr>
<td>-ist</td>
<td>N</td>
<td>-dom, -ic, -y, -ize</td>
</tr>
</tbody>
</table>

Data from Aronoff & Fuhrhop (2002), based on OED, CD 1994
English -ist: A cognitive analysis

<table>
<thead>
<tr>
<th>SUFF1</th>
<th>Syntactic category of SUFF1</th>
<th>SUFF2</th>
</tr>
</thead>
<tbody>
<tr>
<td>-ist</td>
<td>N</td>
<td>N: -dom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ADJ: -ic (631), -y (5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>V: -ize</td>
</tr>
</tbody>
</table>

Data from Aronoff & Fuhrhop (2002), based on OED, CD 1994

Nouns, adjectives and verbs are seen as being cognitive in nature (Langacker 1987).
Hypotheses

**H1**: If SUFF1 tends to combine with only one SUFF2 of a major lexical category (N, ADJ, V), SUFF1-SUFF2 combinations are unique pieces of structure and speakers should know them by heart.

**H2**: If speakers know suffix combinations by heart, existing combinations should be recognised with higher accuracy than non-existing ones.
EXPERIMENT
Participants

- 64 native speakers of Polish
- age: M=23.2 yo (SD=1.76)
- no history of developmental dyslexia or reading disabilities
- non-linguists
Stimuli

- 60 items
  - 30 existing suffix combinations from Polish (e.g. –*ar-nia* as in Pol. *kawiarnia* – *En. café*)
  - 30 non-existing suffix combinations from Polish created by changing order of legal ones or by manipulating phonemes (e.g. from the existing *-ar-nia* → *-ni-ar*)

- 2 lists
  - each with the suffixes of the other in reverse order
  - each participant saw all combinations
Procedure

• Participants were given a list of existing and non-existing suffix combinations

• the list started with examples of derivation of words with more than one suffix (also derivation of non-existing words)

• task: decide as quickly and as accurately as possible if a combination exists or not

• maximum time for decision: 10 minutes
Results: Accuracy

Acc. for existing:
M=81.72% (SD=0.29)

Acc. for non-existing:
M=75.99% (SD=0.22)

\[ t(63) = 2.34; \]
\[ p = 0.02 \]
Discussion of results

• accuracy for existing combinations higher than for non-existing (81.72% vs. 75.99%; \( t(63)=2.34; p=0.02 \))
• recognition of suffix combinations seems to resemble recognition of words, cf. word superiority effect
• If suffix combinations are represented in the mental lexicon, why is the accuracy of the existing combinations not (close to)100%?
  – existing combination with low accuracy – e.g. –acz-ostwo as in smarkaczostwo (En. bratness) are unproductive, infrequent
• suffix combinations are most probably stored in the mental lexicon
Further research

• visual-recognition with reaction-time measuring of the processing of existing and non-existing suffix combinations
• testing the roles of productivity and frequency in suffix combinability
• testing the processing of existing and non-existing suffix combinations in words with existing and non-existing bases (stems)
References


Thank you