Nominal composition and the demarcation between morphology and syntax

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Why does a language have **morphology**?

Why do we need **compounds**?

- Classical answers refer to the **naming function** of compounds, which somehow represent a **category** / a **lexicalized** concept.
- In contrast, **syntactic phrases** are often claimed to provide **descriptions**.

**Problem:**

- Many compounds are not established names: *Freitagsentscheidung, Nacktprotest, Terroropa*
- Many phrases are established names: *Grüner Tee, Kleiner Tümmler, Deutsch als Fremdsprache*

Can we perhaps say that novel compounds are "**suggestions for lexicalizations**", cf. Lipka (1977); Motsch (2004)?
What is the **cognitive status** of morphological products like compounds?

Are they **lexicalized differently**? Are they more **salient in discourse**?

> We will argue that compounds indeed deserve a special **status as names** and have as such, possibly because they are morphological products, a distinct **cognitive** status.

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1. **Linguistic differences between compounds and phrases**
   - Grammatical differences
   - Semantic-pragmatic differences

2. **Learning study: adjective-noun compounds**

3. **Questionnaire study: discourse salience**

4. **Conclusion**
Grammatical differences

Compounds display **lexical integrity**:

(1) a. *Mia ist Fahrerin eines Audis.*
   \[\underline{\text{Der}} \text{ hat nun einen Motorschaden.}\]

   b. Mia ist Audifahrerin.
   \[\ast \underline{\text{Der}} \text{ hat nun einen Motorschaden.}\]

The internal structure of (synthetic) compounds is not accessible to **syntactic operations**:

(2) a. *a drunk driver and a melancholic one*
   b. *a truck driver and an Audi one*

Compounds often denote kinds:

(1)  
   a. Eine Flasche mit Bier hat einen Kronkorken.  
   b. Eine Bierflasche hat einen Kronkorken.

Novel compounds are linguistically marked expressions. As such, they are compatible with sogenannte-contexts:

(2)  
   a. Das ist ein sogenanntes langes Messer.  
   b. Das ist ein sogenanntes Langmesser.

(3)  
   a. Das ist ein sogenannter Henkel der Vase.  
   b. Das ist ein sogenannter Vasenhenkel.

cf. Bücking (2009); Carlson (1977); Krifka et al. (1995); Schlücker & Hünning (2009)
Compounds often have a specialized meaning.
For example, an **intersective reading** is dispreferred with A-N compounds:

(1)  *Max ist ein schöner Raucher.*

→ Max is a smoker and beautiful  (intersective)
→ Max is somebody who smokes beautifully  (non-intersective)

(2)  *Max ist ein Schönraucher.*

→ Max is somebody who smokes beautifully  (non-intersective)

Are compounds cognitively different?

Compounds are different from phrases.

Does this give us reason to believe that they are treated differently from a cognitive point of view?

- Morphology as an economic way of producing and memorizing complex linguistic structures, see Wunderlich (2008)

- Williams syndrome: selective impairment for lexical computation/access with grammatical computation left intact, see Clahsen & Almazan (2000)

- Aphasic data: selective impairment for syntactic phrases like strange fever with compound retrieval left intact, see Mondini et al. (2002)

Are novel compounds memorized differently than the corresponding phrases?
**Learning** phase: subjects were asked to **memorize** unknown picture labels

- Compound: eine Kurzsäge
  - N = 6
- Phrase: ein breiter Kamm
  - N = 6

see Schöpperle & Härtl (2011)
Recall phase: subjects were asked to decide on correct / incorrect labels

- Compound: learned
  - eine Kurzsäge
  - N = 6

- Compound: not learned
  - eine Flachsäge
  - N = 6

Response variable: reaction times to decide
Recall phase: subjects were asked to decide on correct / incorrect labels

Phrase: learned

ein breiter Kamm

N = 6

Phrase: not learned

ein tiefer Kamm

N = 6

Response variable: reaction times to decide
Entire procedure was repeated over three days:

Day 1  Day 4  Day 8

H1: Compounds are memorized differently than phrases over time.
Results: main effects

- Learned items are decided faster ($p < .001$)
- Phrases are decided faster ($p < .01$)
- You get better over time ($p < .001$)
ITEM TYPE × DAY interaction (not significant)

- neither type is memorized better over time ($p < .26$)
LEARNED × ITEM TYPE interaction ($p < .09$)

- **not learned compounds** take longer to decide than phrases ($p < .001$)
- this difference disappears when the compounds are **learned** ($p < .67$)
- stronger effect of memorization for **compounds** ($p < .001$)
Error rates: LEARNED × ITEM TYPE interaction ($p < .001$)

- compounds profit from learning, phrases don’t ($p < .75$)
- compounds are decided as correctly as phrases when learned ($p < .99$)
Main findings

(1)

(2)
Are novel compounds more salient in discourse?

Environment: Verbs of **implicit causality** create a strong bias for pronouns to be resolved as STIMULUS.

(1) **STIM-EXP:**  *Das Lexikon begeistert den Studenten, weil *es* / *er* …
   - weil *es* viele Abbildungen enthält.
   - weil *er* gerne neue Fakten lernt.

(2) **EXP-STIM:**  *Der Student schätzt das Lexikon, weil *es* / *er* …
   - weil *es* viele Abbildungen enthält.
   - weil *er* gerne neue Fakten lernt.

Testing discourse salience

Questionnaire study

Factors:  ▪ STIM as compound vs. phrase
           ▪ STIM-EXP vs. EXP-STIM verb

Sentence completion task

(1)   a. Die flache Säge begeistert Christoph, weil [sie | er] …
   b. Die Flachsäge begeistert Christoph, weil [sie | er] …
   N = 6 x 2

(2)   a. Johanna schätzt das schmale Messer [sie | es] …
   b. Johanna schätzt das Schmalmesser, weil [sie | es] …
   N = 6 x 2

H1: Novel compounds produce a stronger bias towards STIMULUS explication
Testing discourse salience

Results:
Highly significant main effect for *implicit verb causality* ($p < .0001$)
STIMULUS is explicated more often than the EXPERIENCER.
Results:
Tendency for **verb type** *(not significant)*
S-E verbs attract slightly more STIMULUS explications.
Results:

Significant compound effect ($p < .02$)

Compound STIMULI are explicated more often than phrase STIMULI.
Novel compounds of the A-N type are linguistically marked and have a pronounced cognitive status.

This is reflected in the **memorization procedures** employed for the two types of expressions.

- Unlearned novel compounds are harder to **process** than phrases.
- For compounds a **stronger memorization effect** was detected.

Novel compounds raise the **discourse salience** of the corresponding referents.

- In the context of implicit verb causality, **pronouns** are resolved more often as STIMULUS if it is a novel compound.

The data are compatible with a lexicalist view, which implies a **separation between syntax** and **morphology**.
Thank you.

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References


Mondini, Sara; Gonia Jarema; Claudio Luzzatti; Cristina Burani, and Carlo Semenzai (2002) Why is red cross different from yellow cross? A neuropsychological study of noun-adjective agreement within Italian compounds. Brain and Language, 81, 621-634.


