

Adjective Order Restrictions – the Influence of Temporariness on Prenominal Word Order

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INTRO

Adjective Order Restrictions (AORs) of the kind in (a) / (b) are found in most languages that feature an open adjective class:

- a. *a little red hat* a.' ?/**a red little hat*
b. *a nice French dish* b.' ?/**a French nice dish*

Given the commutative property of set-intersection of one-place predicates there is no truth-conditional difference between the respective a.^(')/b.^(')-examples:

- $[[\text{little red hat}]]$
 - c. = $[[\text{little}]] \cap [[\text{red}]] \cap [[\text{hat}]]$
 - d. = $[[\text{red}]] \cap [[\text{little}]] \cap [[\text{hat}]]$
 - = $\lambda x [\text{LITTLE}(x) \wedge \text{RED}(x) \wedge \text{HAT}(x)]$

INTRO

A variety of factors have been argued to drive (or suspend) AORs in the literature, for example:

- semantic and/or grammatical classes (cf. e.g. Cinque 1994; 2010; Dixon 1982; Scott 2002; Svenonius 2008; Trost 2006; Truswell 2009)
- morphophonological weight (cf. e.g. Eichinger 1992; Trost 2006; Vendler 1968)
- subjectivity/objectivity and applicability (cf. e.g. Hetzron 1978; Seiler 1978)
- nouniness and semantic closeness (cf. e.g. Eichinger 1992; Rijkhoff 2002)
- comma/focus intonation, conjunctive elements (Sproat & Shih 1988)

INTRO

A further factor commonly stipulated – across various grammatical schools – is **temporariness** and/or the individual-level (IL) / stage-level-distinction (SL) (cf. e.g. Eichinger 1992; Cinque 2010; Halliday 2014; Larson 1998).

General “sentiment”:

Adjectives (and other adnominal modifiers) that encode temporary property concepts (SL-modifiers) are realized farther from the head noun than adjectives that encode permanent property concepts (IL)

INTRO

- a. *die geöffneten umrankten Fenster* (Eroms 2000: 271)
'the open entwined windows'
- a.' ?*die umrankten geöffneten Fenster*
- b. *auf einem leeren weiten Platz* (Eichinger 1992: 321)
'on an empty wide square'
- b.' ?*auf einem weiten leeren Platz*
- c. *The visible stars include Capella.* [ambiguous]
(i) intrinsically visible (possibly not now) → IL
(ii) visible right now → SL
- c.' *The visible_{ii} visible_i stars include Capella.* → SL >> IL
- c.'' **The visible_i visible_{ii} stars include Capella.* → IL >> SL

OUTLINE

We conducted 2 studies investigating into the positional preferences of “temporary” adjectives:

- I. Theoretical preliminaries
- II. Corpus study on German AAN-phrases with 10 “temporary” adjectives
- III. 100-split rating study for introduced contexts and follow-up sentences with two alternative A_1A_2N -/ A_2A_1N -phrases

See Kotowski (2016) for more details of the studies/theory

I. THEORETICAL PRELIMINARIES

Assumed notional bases of AORs (cf. e.g. Cinque 1994, Payne & Huddleston 2002, Ramaglia 2011, Scott 2002), as in (a) (adopted from Scott 2002), clearly undergenerates wrt attested structures; see (b) / (c):

- a. SUBJECTIVE >> SIZE >> LENGTH >> HEIGHT >> SPEED >>
?DEPTH >> WIDTH >> WEIGHT >> TEMP. >> ?WETNESS >>
AGE >> SHAPE >> COLOR >> NATIONALITY >> MATERIAL
- b. SUBJECTIVE >> SIZE?
*Wunsch 1: Ein grosser schöner Garten in einem sonnigen
Dauer- Frühsommer. 'Wish 1: A large nice garden during
an eternal early summer'*
- c. WEIGHT >> AGE?
*Eines Tages bekam ich für den Marsch ein altes schweres
Schießgewehr eingehändigt. 'One day, I was handed out an
old heavy gun'*

I. THEORETICAL PRELIMINARIES

Less problematic, because by far more coarse-grained, are approaches that implement the order “relative >> absolute” grammatically (cf. e.g. Svenonius 2008; Truswell 2009)

e.g. Truswell (2009: 528):

SUBJECTIVE PRECEDING INTERSECTIVE ADJ. (~relative >> absolute)

$[_{DP} D^0 [_{XP} AdjP^*_{\text{subjective}} X^0 [_{NP} AdjP^*_{\text{intersective}} N^0]]]$

- while not without counterexamples, either, this bipartition will be taken as the basic classification for the following corpus study

I. THEORETICAL PRELIMINARIES

Minimal assumptions as regards German adjective classes (disregarding, among others, modals, numerals, discourse ana-/cataphoric items) (cf. e.g. Motsch 2002):

Bipartition into

- **quality adjectives** – prototypical behavior: attributive and predicative (and often adverbial) uses, *un*-prefixation, typical interrogative contexts ~*How is X?*, better part gradable, ~descriptive and object-modifying
- **relational adjectives** – usually no predicative use, *nicht*-prefixation, typical interrogative context ~*What kind of X?*, ungradable, ~classifying and subkind-establishing

I. THEORETICAL PRELIMINARIES

Basic tripartition of **quality adjectives** along the lines of their scalar structures (cf. Kennedy & McNally 2005; Kennedy 2007):

- **non-gradables** – incompatible with degree-morphology / degree modifiers (**more / most carnivorous; *very married* etc.)
- **relative gradables** – vague in the positive (comparison class dependent), grammatical comparison, incompatible with degree modifiers that are endpoint-oriented (*larger / largest; very (*half / *completely) large*)
- **absolute gradables** – endpoint-oriented in the positive, grammatical comparison; compatible with a variety of endpoint-oriented degree modifiers (*full / fuller; very / half / completely full*)

I. THEORETICAL PRELIMINARIES

While the IL-SL-divide (cf. e.g. Kratzer 1995) is far from watertight as a core grammatical distinction (cf. e.g. Maienborn 2003), it:

- is fair to say that the stage-level ~ temporary / individual-level ~ permanent equation holds as a heuristic rule of thumb
- all SL-adjectives are absolute gradables in the sense of Kennedy & McNally (2005) (cf. also Toledo & Sassoon 2011)
 - a. *Peter is completely / nearly naked.*
 - b. *Peter is completely / nearly drunk.*
 - c. *The floor is a little wet / completely dry.*

II. CORPUS STUDY

Research question:

Is there a clearly definable position for “typical SL-adjectives” in German AAN-phrases?

- corpus: Tagged-T archive of DeReKo (Cosmas II web)
- **10 input adjectives** that are grammatical in **various SL-contexts** (*betrunken* ‘drunk’, *dreckig* ‘dirty’, *hungrig* ‘hungry’, *leer* ‘empty’, *leise* ‘silent’, *müde* ‘tired’, *nackt* ‘naked’, *nass* ‘wet’, *wütend* ‘angry’, *zufrieden* ‘content’)
- two search syntagms per input adjective:
 - a. &nackt /+w1:1 MORPH(ADJ at) /+w1:1 MORPH(N nn)
 - b. MORPH(ADJ at) /+w1:1 &nackt /+w1:1 MORPH(N nn)

II. CORPUS STUDY

7 output categories

1. RELATIVE PERMANENT (evaluative, dimension adjectives, etc.)
2. ABSOLUTE PERMANENT (color, shape adjectives etc.)
3. NON-GRADABLE PERMANENT (mostly past participles that are “bad” in SL-contexts, e.g. *verheiratet* ‘married’)
4. RELATIONAL (all classic relationals including material, country, and city adjectives)

IL

SL

5. TEMPORARY (class of input adjectives, absolute gradable SLs)
6. NON-GRADABLE TEMPORARY (mostly past participles that are “good” in SL-contexts, e.g. *blutbefleckt* ‘bloodstained’)
7. PRESENT PARTICIPLE (present participles derived from activity verbs)

II. CORPUS STUDY

Hypotheses

- null hypothesis

No significant difference between the 7 output classes and the way they cluster with the input adjectives

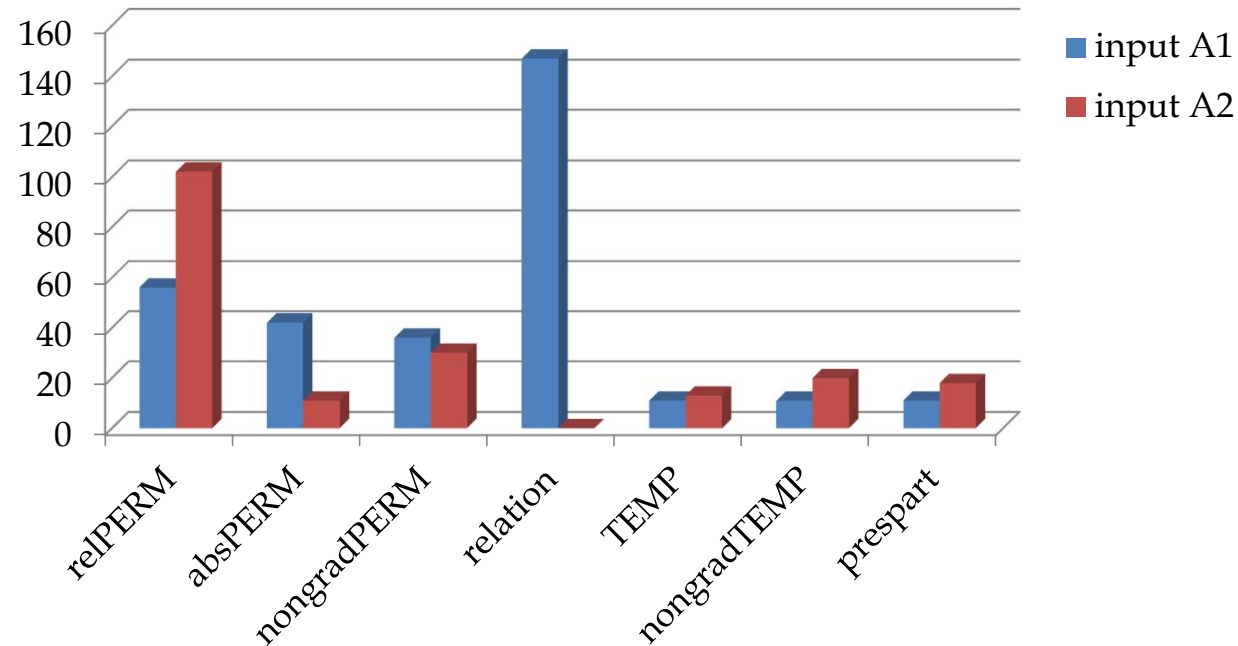
- hypothesis I

If there is a cline “SL >> IL”, output classes 1.-4. should be found in closer proximity to the head noun (no predictions as regards classes 5.-7.)

- hypothesis II

If there is a cline “relative >> absolute”, output class 1. should be found in closer proximity to the head noun (no predictions as regards classes 2.-7.)

II. CORPUS STUDY

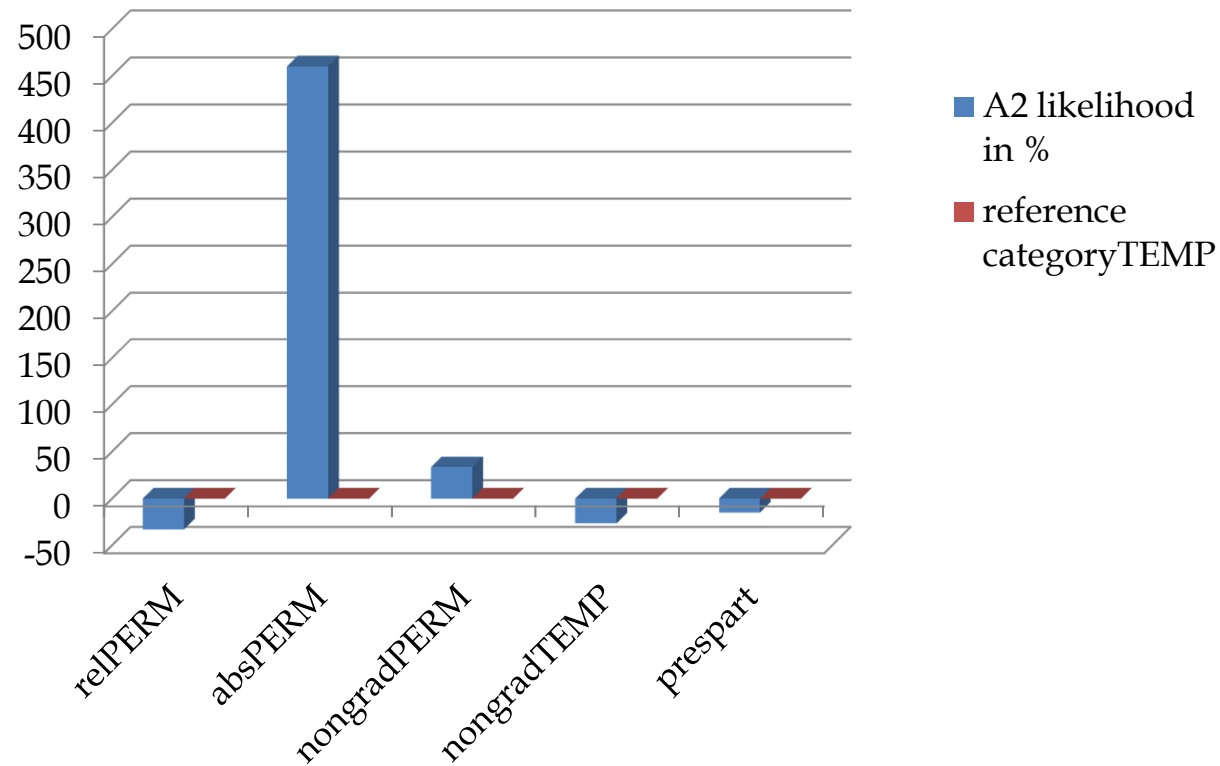


Absolute occurrences of output-classes for input-position A_1 (blue) and A_2 (red). Correlation position and output-class is significant: $\chi^2(6, N=508) = 164.36, p < .001$.

II. CORPUS STUDY

- being a constant, elimination of output-category RELATIONAL (no input A₂s)
- for a multinomial regression, TEMPORARY is set as the reference category (same as input adjectives and no tendency for the class), the remaining five classes are compared to the reference class
- predictor POSITION remains significant
 $\chi^2(5, N=361) = 37.03, p < .001$

II. CORPUS STUDY



Odds ratios for POSITION for the remaining output classes to feature as A_2 in comparison to the reference category TEMPORARY

II. CORPUS STUDY

Compared to the reference category, only ABSPERM ($p = .002$) is significant

Post-hoc observations:

- 42 out of 55 ABSPERM-adjectives are basic color terms
- 54 out of 158 RELPERM-adjectives are the age adjectives *alt* 'old' or *jung* 'young' modifying nouns that denote animate entities (mostly humans)
- 31 out of these 54 are A₂s

Upon elimination of all cases of these two age adjectives:

- ABSPERM and RELPERM both significant ($p = .005$ and $p = .036$, resp.)

II. CORPUS STUDY

Null hypothesis:

- discarded – relationals are a constant as A_2 , ABSPERM is realized significantly closer to the noun than the input and RELPERM significantly farther from it (upon elimination of age adjectives)

Hypothesis I (SL >> IL):

- consequently, also discarded – input-adjectives cluster in relatively central positions (RELPERM >> input >> ABSPERM)

Hypothesis II (relative >> absolute):

- by transitive reasoning, it can be inferred that this hypothesis is borne out

III. RATING TASK

Two-versions rating task on AORs

- **12 IL-SL-ambiguous/polysemous adjectives** clustered with one further IL-adjective as critical items in AAN-phrases
- e.g. *krank* 'sick' → 1. ~having a cold / 2. ~mentally ill

Items:

- context paragraphs introduce background stories, explicating the intended readings of the ambiguous adjectives
- these are followed by 2 possible follow-up sentences – identical except for adjective order
- following a 100-split task, participants distribute 100 points over the possible follow-ups – the more natural one of the two follow-ups appears as a discourse continuation relatively to the other one, the higher the respective score should be
- the sum of the awarded scores per item has to be 100

III. RATING TASK

SL-/TEMPORARY CONTEXT

ruhig (SL) 'quiet/~not talking' + dick (IL) 'fat'

On his way to school last week, Peter saw a boy sitting on a bench by the lake. The boy was so fat that there was hardly space for his knapsack next to him. Quietly he broke off pieces of his bread.

a) *That was because the **quiet fat** boy was feeding the ducks.*

b) *That was because the **fat quiet** boy was feeding the ducks.*

III. RATING TASK

12 benchmark items (general hierarchy)

- no IL/SL-polysemy, but following several general principle postulated in the literature and found in the corpus study
- e.g. quality >> relational, relative >> absolute, or notional clines (such as SHAPE >> COLOR)

24 fillers

III. RATING TASK

- null hypothesis

Neither the IL/SL-items nor the benchmark/GH-items show order preferences

- hypothesis I

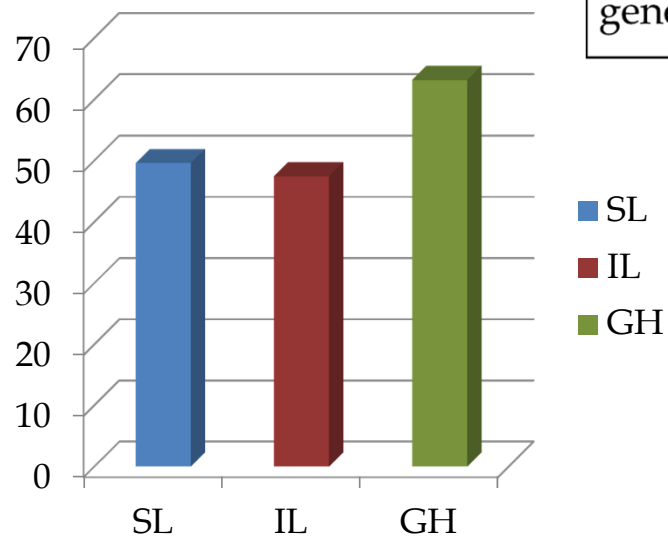
Temporary/SL-polysemes are preferred in positions farther from the noun compared to permanent/IL-polysemens. Their mean ratings in SL-contexts are higher than in IL-contexts

- hypothesis II

Benchmark/GH-items are preferred along the lines of the “quality >> relational” and “relative >> absolute”-hierarchies.

III. RATING TASK

mean ratings for the three classes IL/SL/GH



item class	mean score
SL-/temporary (SL)	~49.60
IL-/permanent (IL)	~47.45
general hierarchy (GH)	~63.15

III. RATING TASK

Independent t-tests for subject- and item-means comparing IL and SL is not significant:

statistics mean type	means and standard deviation	t-test
subject means	SL (M = 49.54, SD = 9.39) IL (M = 47.44, SD = 8.04)	t(56) = -.914, <i>p</i> = .365
item means	SL (M = 49.65, SD = 10.87) IL (M = 47.46, SD = 10.76)	t(22) = -.499, <i>p</i> = .623

III. RATING TASK

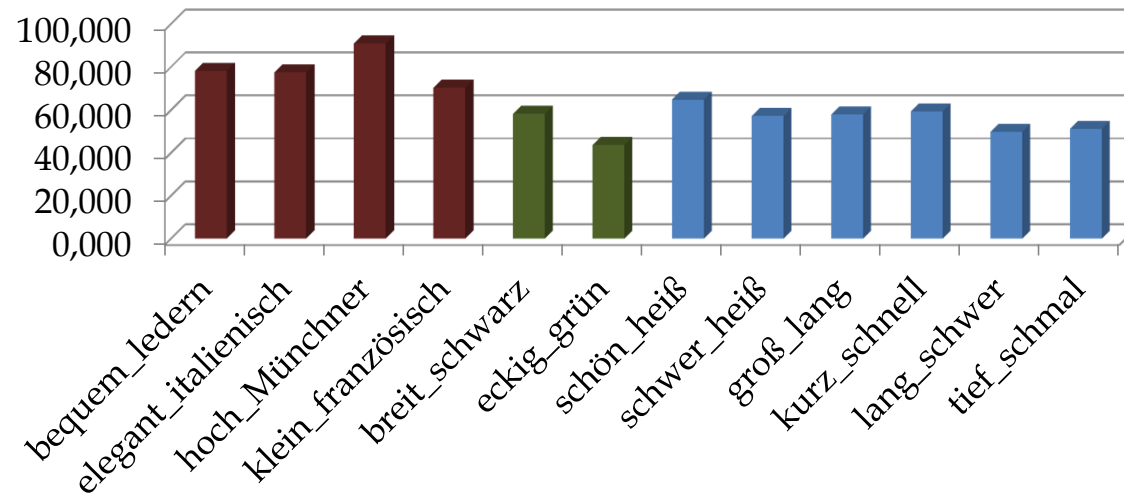
Anova for all 3 groups (IL, SL, GH): significant for subject- ($F(2, 84) = 29.58, p < .001$) as well as item-means ($F(2, 33) = 6.16, p = .005$)

- post-hoc tests (Tukey HSD) for multiple comparisons:

mean type	comparisons	mean diff. / significance
subject means	GH (M = 63.15, SD = 1.45)	
	GH-IL	diff. = 15.70, $p < .001$
	GH-SL	diff. = 13.61, $p < .001$
	IL-SL	diff. = -2.10, $p = .613$
item means	GH (M = 63.15, SD = 3.96)	
	GH-IL	diff. = 15.69, $p = .007$
	GH-SL	diff. = 13.49, $p = .023$
	IL-SL	diff. = -2.20, $p = .893$

III. RATING TASK

GH-items
means:



- significance primarily down to relational adjectives (red)
- neglecting items featuring relational adjectives, items with absolute (green) and relative (blue) adjectives no longer reach significance

III. RATING TASK

- null hypothesis

Discarded. Although no difference between IL/SL, the two classes differ significantly from GH-items

- hypothesis I (SL >> IL)

Therefore, hypothesis I is not corroborated, either – there is no correlation between context (permanent vs. temporary) and rating

- hypothesis II (GH-items)

Is only borne out with the items featuring relational adjectives included – no significant results for quality adjectives

CONCLUSION

- the only hard or core grammatical constraint found in our data is “quality >> relational”
- only preferential observations in the class of quality adjectives (“relative >> absolute”)
- by no means are typical “temporary” adjectives generally realized in positions farther from the noun than “permanent” ones
- our data, however, allow at least for their general preference to cluster in between relative adjectives and basic color terms (if we exclude age adjectives)



THANK YOU FOR YOUR ATTENTION!

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