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(Apparently) Competing Motivations in Morpho-Syntactic Variation

Structure

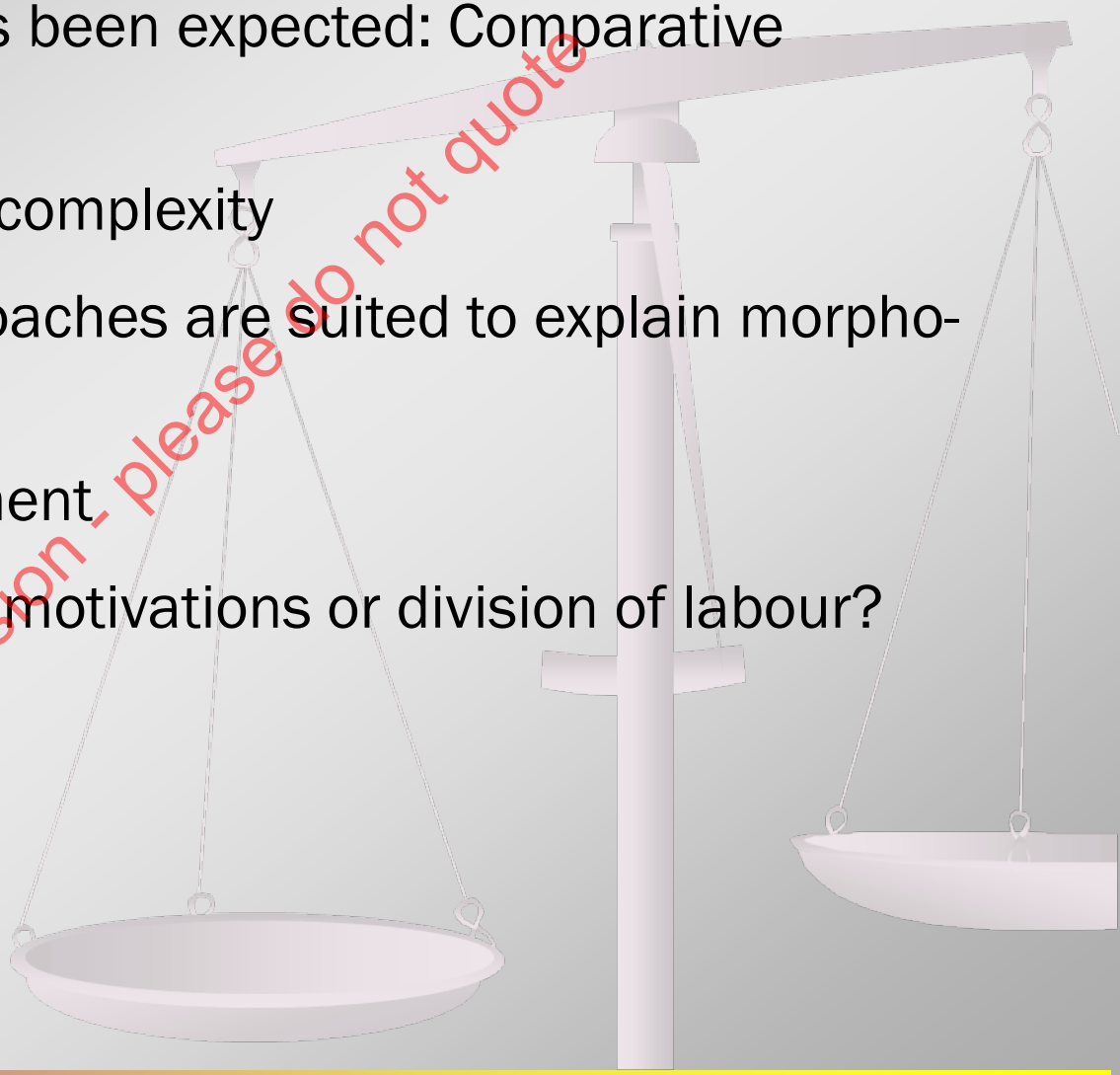
I. More variation than has been expected: Comparative alternation

II. The notion of cognitive complexity

III. Which theoretical approaches are suited to explain morpho-syntactic variation?

IV. The historical development

V. Conclusion: Competing motivations or division of labour?



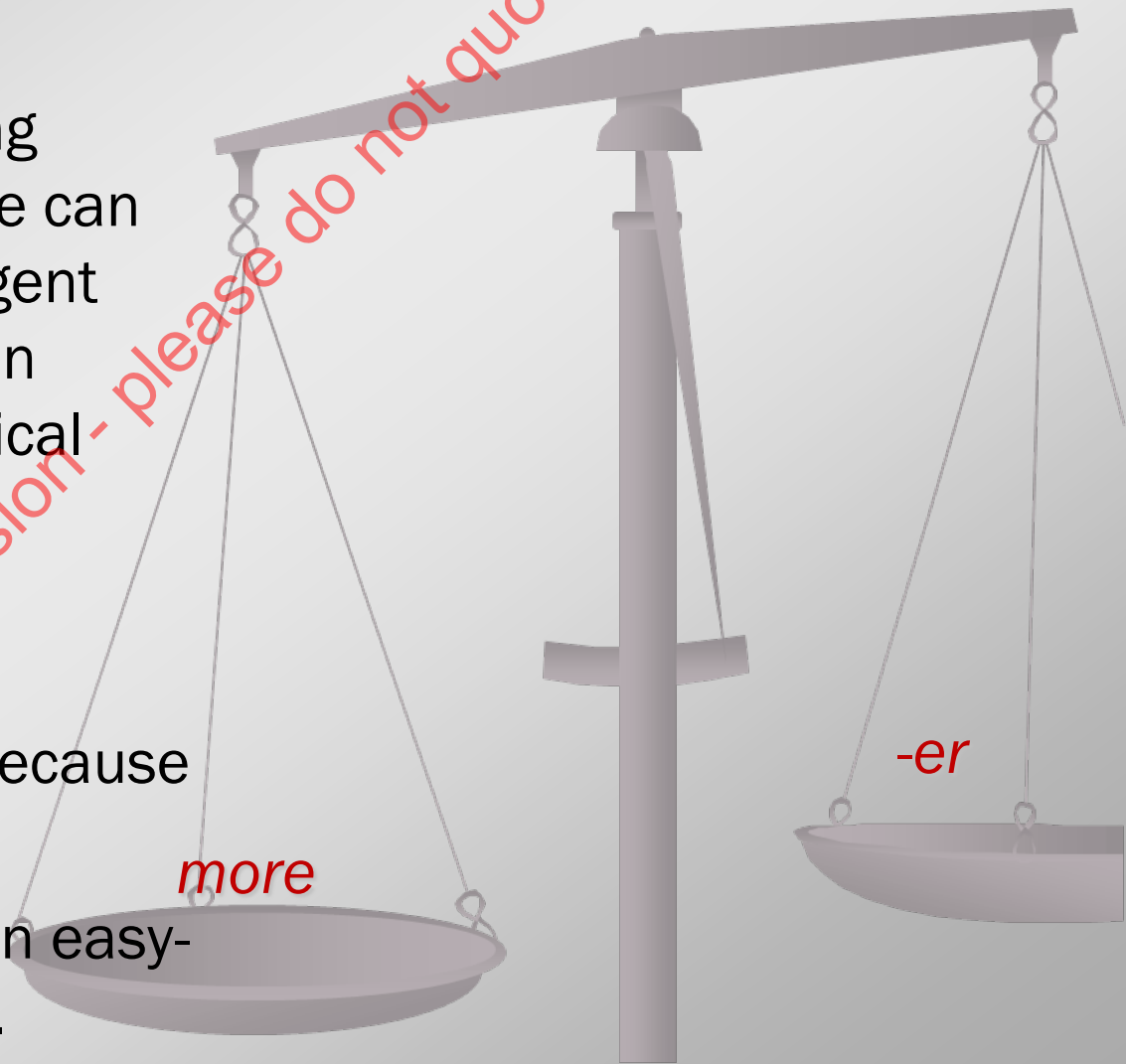
I More variation than has been expected

Comparative alternation

Synthetic: *full**er***

Analytic: ***more** full*

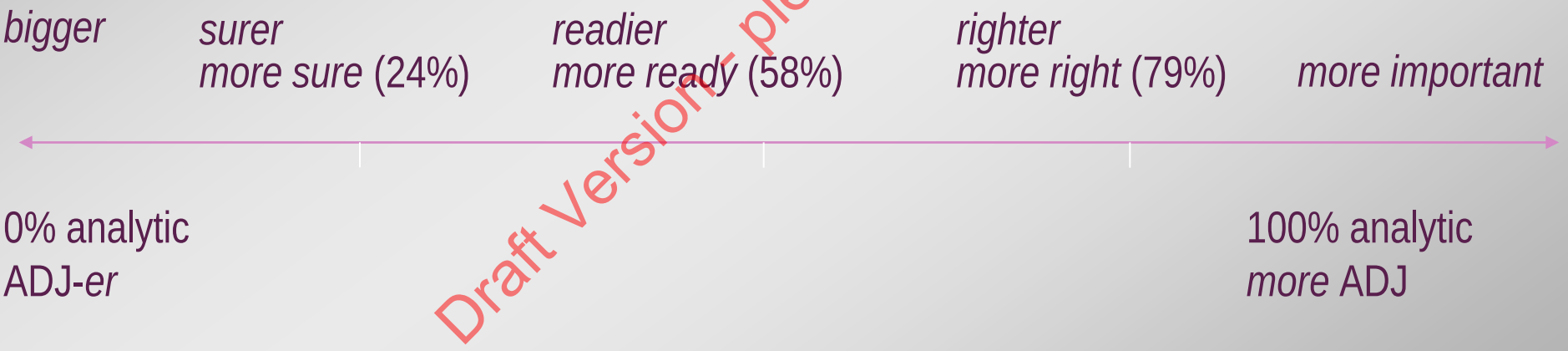
- What looks like competing motivations at first glance can be shown to be an emergent division of labour between syntactic and morphological means of expressing comparison.
- Syntax is resorted to if explicitness is required because of processing effort
- Morphology is preferred in easy-to-process environments.



Cline of comparative alternation

Wasow & Arnold [2003: 148]:

> "(…) at least some categorical constraints are simply the limiting cases of more general statistical tendencies".



⇒ high degree of variability

- due to competing motivations?

Traditional theory-building vs. recent conceptions of grammar

- Traditional theory-building often relegated grammatical variation to the area of performance.
- Even sociolinguists often underestimated the true extent of grammatical variation [cf. Mondorf 2004]:
  Hudson [1980:48]: "Syntactic Uniformity". Syntax and phonology have different societal functions. Syntax = "the marker of cohesion in society"
  $\Rightarrow$ little syntactic variation
- Recent conceptions of grammar emphasize the relevance of linguistic variation on all levels of language (eg OT, CxG).

II. Cognitive Complexity

- Cognitive complexity can arise on all levels of linguistic analysis: morphology, syntax, semantics, lexicon, phonology, etc.
- eg syntactic complexity often correlates with constituent structure – both viewed in terms of hierarchical ordering and length.
- Therefore, claims concerning *syntactic* complexity need to draw on constituent structure and dependency relations.
- By contrast, *phonological* complexity can arise from phonotactic principles, dispreferred rhythm, etc.
- *Semantic* complexity can arise from different accessibilities of eg concrete vs. abstract concepts.
- Therefore, the criteria measuring cognitive complexity need to be developed separately for each level.
- This does not mean that we cannot grasp the common denominator of complexity across language levels.
- It just means that our measures for complexity need to adapt to these levels.

III. Which theoretical approaches can explain morpho-syntactic variation?

4 Theoretical approaches explaining variation

1. Principle of Uniformity and Transparency (Wurzel 1987)
2. Competition Model (Bates & MacWhinney 1987)
3. Theories of processing efficiency (Hawkins 1994)
4. Complexity Principle (Rohdenburg 1996)

1. Principle of Uniformity and Transparency [cf. Wurzel 1987:92f.]

- a high degree of form-function mapping should favour the processing of a linguistic unit since fewer options need to be retained in working memory

2. Competition Model [Bates & Mac Whinney 1987]

A reliable cue that facilitates processing is closely associated with a certain function.

- *more* does not uniquely single out a DegP since it can also function as quantifier:

(1) The Americans have more heavy armour on the streets of Port-au-Prince than originally envisioned. [*Times* 1994]

- -er can also serve other functions, eg as an agentivity marker, though not on ADJs but on Ns:

(2) painter, writer

- Would –er be the better cue, because *if attached to ADJs* it is 100% reliable?
- Would more be the better cue, because its alternative use as quantifier is rarer than –er's use with agentive Ns?

3. Theory of Processing Efficiency [Hawkins 2003: 200]

"(...) language users have a choice between less form processing (...) but more dependent processing on the one hand, and more form processing (explicit marking) with less dependent processing on the other.

⇒ language users weigh the pros and cons of the explicit *more*-variant as opposed to the more dependent -*er* variant

4. Complexity Principle [cf. Rohdenburg 1996: 151]

In the case of more or less explicit grammatical option(s) the more explicit one(s) tend to be chosen in cognitively complex environments.

⇒ more as the more explicit variant is preferred in complex environments

Analytic Support

= in cognitively complex environments that require an increased processing load, language users tend to compensate for the increased processing load by resorting to the analytic (more) rather than the synthetic (-er) variant.

high processing load ⇒ higher ratio of *more*
low processing load ⇒ higher ratio of –*er*

Analytic support is not restricted to comparatives:

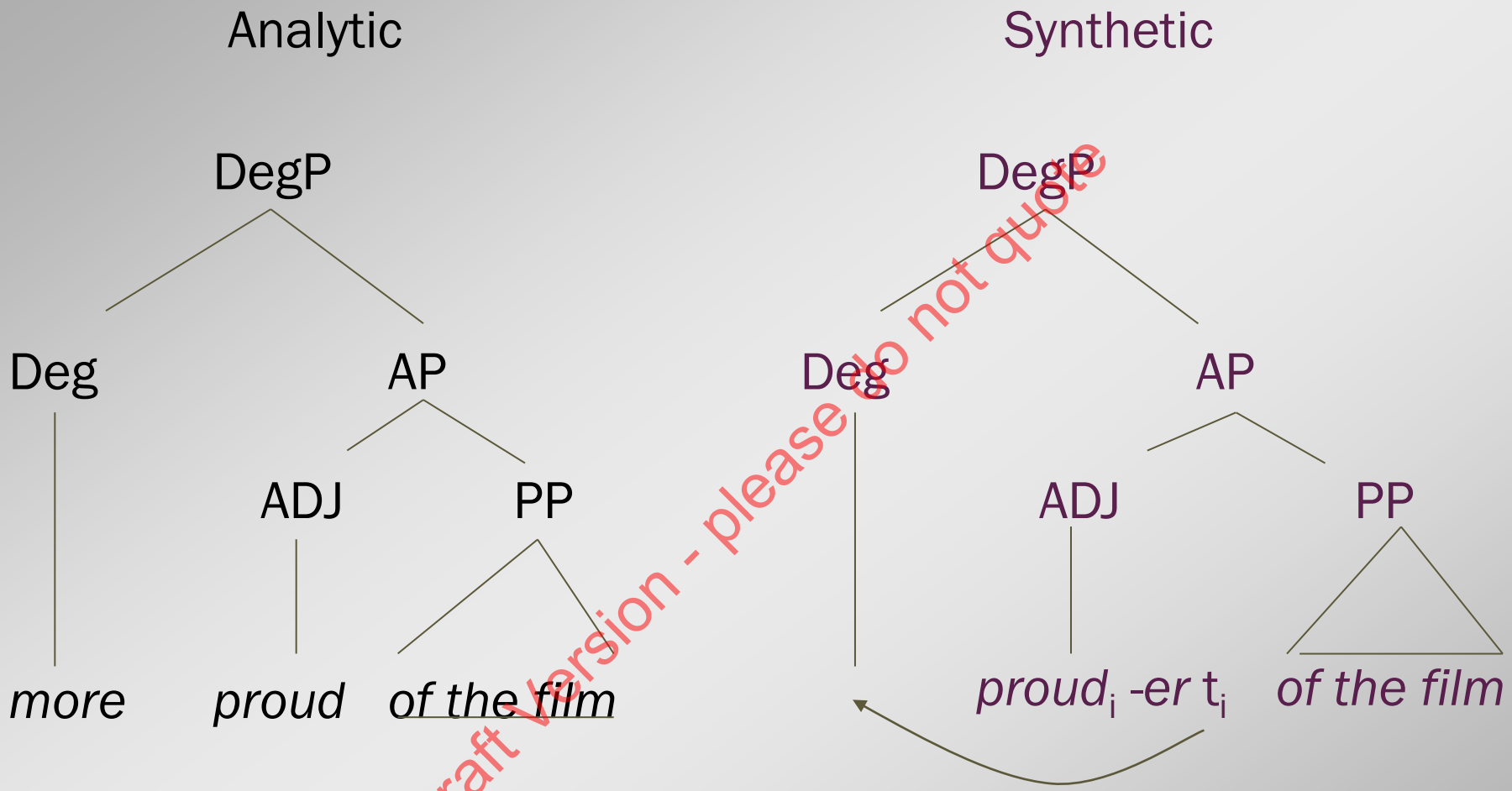
Genitive alternation:
high processing load ⇒ higher ratio of *of*
low processing load ⇒ higher ratio of –*'s*

- pragmatic complexity: *'s*-genitives are often preferred over *of*-genitives with given rather than new information.
- syntactically complex possessors trigger a higher share of the explicit analytic of-variant [cf. Rosenbach 2003:392–395].

Principle of Mother Node Construction

- Functional processing theories à la Hawkins [1994, 2000, 2003]: state that early recognition of phrase structure facilitates processing
- **Principle of Mother Node Construction** [Hawkins 1994: 60ff.] in the left to right parsing of a sentence a word that can uniquely determine or classify a phrase will immediately be used to construct a representation of that phrase.
- Extending this principle to comparatives, we find that an early occurrence of *more* is a relatively – though not completely – safe signal that a DegP follows.

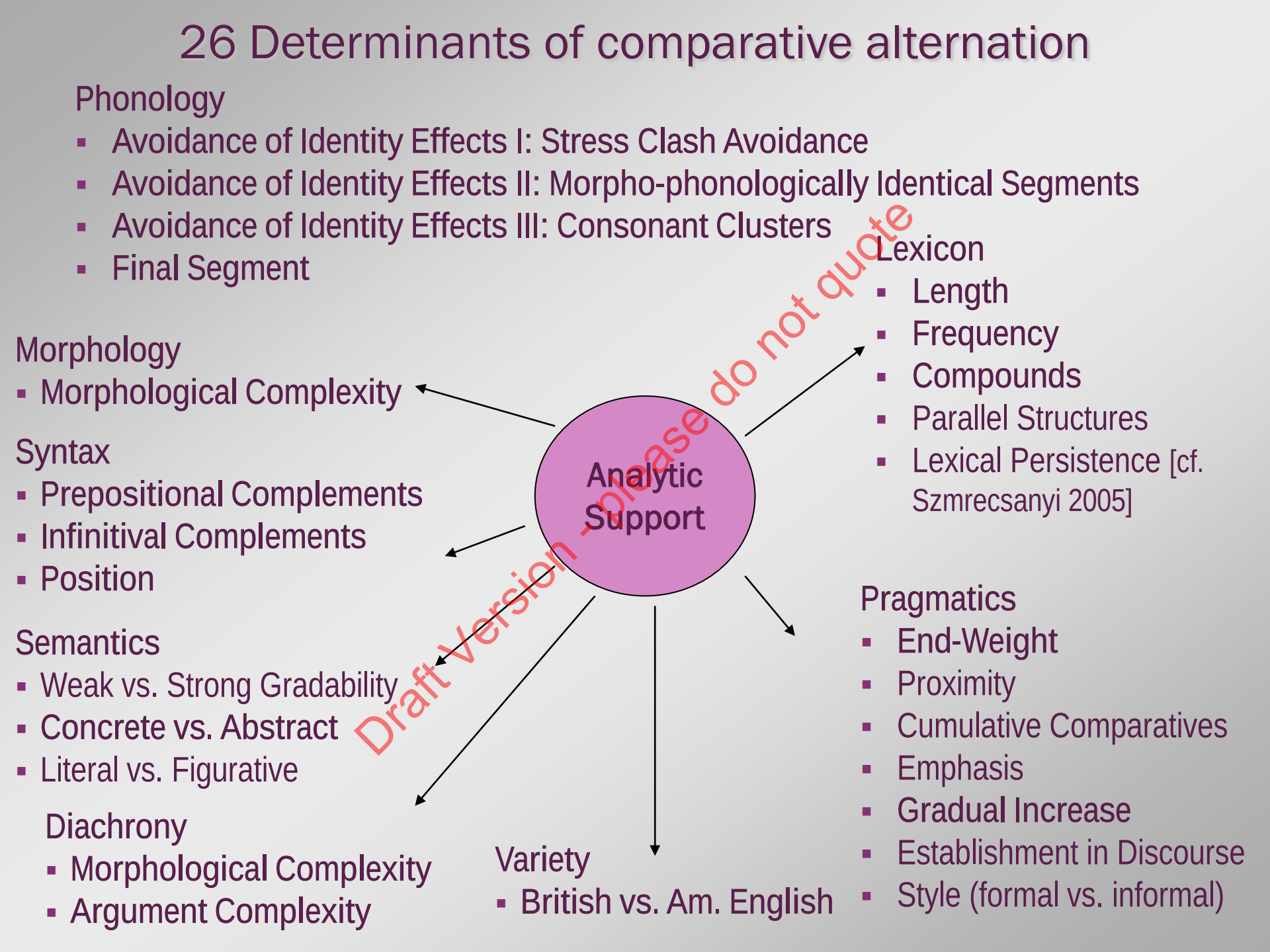
Structure DegP



Early recognition of phrase structure aids the working memory in eliminating options. It maximizes processing speed and minimizes processing effort.

⇒ *more* facilitates phrase structure recognition

26 Determinants of comparative alternation



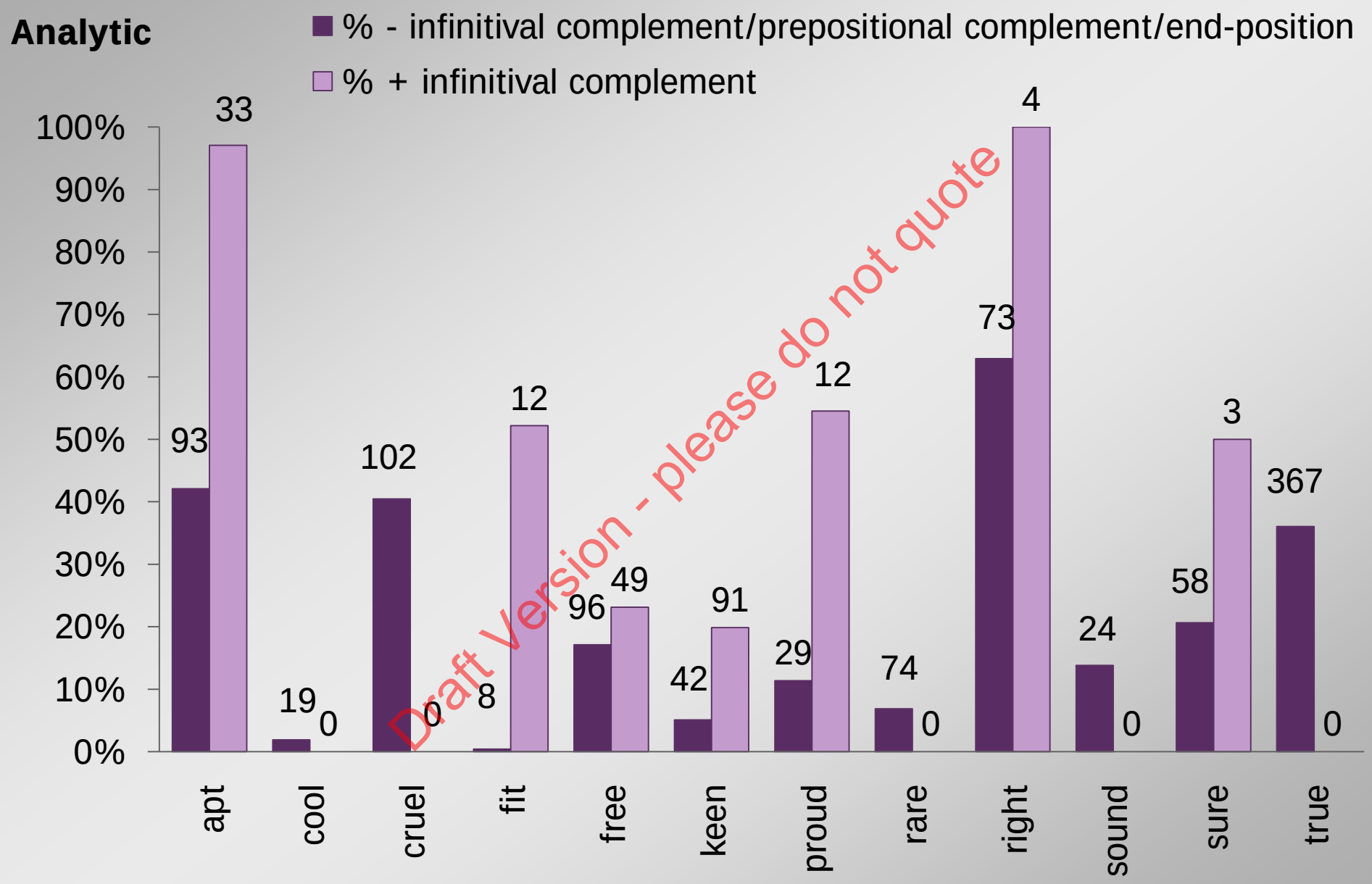
Analytic-support and syntactic complexity

(1) Never have I felt more proud to be a conservative. [Guardian 1994]

(2) I'd be even prouder if John Cleese were in it somewhere. [Guardian 1992]

Hypothesis: infinitival complements trigger a higher share of analytic comparatives.

Analytic comparative +/- infinitival complement [Based on Mondorf 2009: $]



⇒ syntactic complexity triggers a higher ratio of the *more*-variant.

Analytic support and semantic complexity

- Following Walker & Hulme [1999:1258] concreteness is conceived of "as an index of how directly the referent of a word can be experienced by the senses."
- There is considerable unanimity among people who are asked to rate words as concrete or abstract [cf. Gilhooly & Logie 1980].

(1) ball, ship — concrete

(2) logic, conscience — abstract

Psycholinguistic evidence: Abstract words are harder to process than concrete words

1. Shorter reaction times for concrete than for abstract words [Moss & Gaskell 1999]
2. EEG measurement [Weiss & Rappelsberger 1996: 17f.]: Concrete words are easier to memorise because they refer to objects that can be perceived via highly diverse channels: seeing, hearing, feeling, smelling or tasting. Neurophysiological evidence suggests that the processing of concrete words implies the simultaneous activation of more and more widely spread sensory-based features than that of abstract words.
3. Serial recall of word lists [Walker & Hulme 1999]: list of concrete Ns were recalled more accurately than abstract Ns.
   "[...] concrete words benefit from a stronger semantic representation than do abstract words and [...] the quality or strength of a word's semantic representation contributes directly to how well it can be recalled." [Walker & Hulme 1999: 1261]

Corpus study on semantic complexity effects

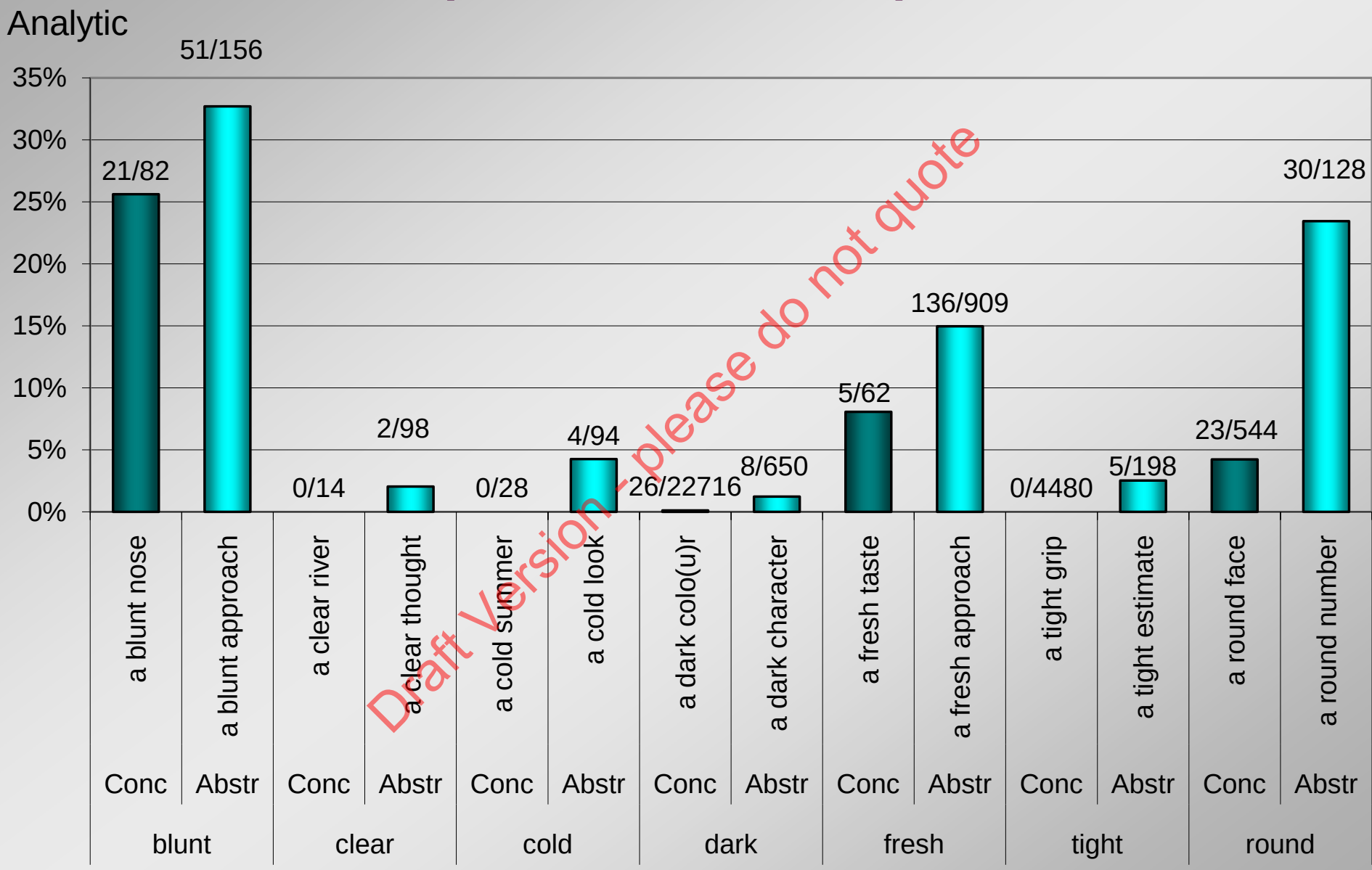
(1) the beer is bitterer — concrete

(2) the more bitter takeover battles of the past — abstract
[*Daily Telegraph* 1991]

⇒ **Hypothesis**: abstract uses trigger a higher ratio of analytic support than concrete uses.

Analyic comparatives of concrete vs. abstract uses in Google

[based on Mondorf 2007: 219]



⇒ semantic complexity triggers a higher ratio of the *more*-variant.

Answering Jack Hawkins‘ question …

1. We have seen that the presence of an infinitival complement triggers analytic support. This has been attributed to the higher processing demands effected by the strong dependency relations between an ADJ and its complement.
2. At a Symposium on Determinants of Grammatical Variation, Jack Hawkins asked the following question:

   It would be interesting to see if complements but not adjuncts raise the use of the *more*-variant. If the strength of dependency relations between an ADJ and its complement are responsible for analytic support, adjuncts should not trigger analytic support to the same extent.

- Today, finally, we are able to answer this question …

Than-phrases – a telling "counterexample"

Quirk et al. [1985:462] list *than*-phrases as adjectival complements. But several aspects cast considerable doubt on their complement status.

1. generative approaches [cf. Haumann 2004] portray *than*-phrases as licensed by the DEG marker rather than the ADJ. Hence they are not contained within the ADJP. This predicts that *than*-phrases should not be affected by analytic support, since they are semantically and syntactically not as dependent on the ADJ.
2. Mondorf [2006:593] finds that Quirk et al.'s claim that monosyllabic ADJs take the analytic form "more easily when they are predicative and are followed by a *than*-clause" [1985:462] must be attributed to their predicative use rather than to the presence of a *than-clause*.
3. After all, corpus evidence reveals that *than*-phrases do not significantly affect comparative alternation [cf. Lindquist 2000:129, Mondorf 2002:74, Leech & Culpeper 1997:367 and Hilpert 2008:407]

⇒ the strength of semantic and/or syntactic dependency relations determines whether analytic support takes place or not.

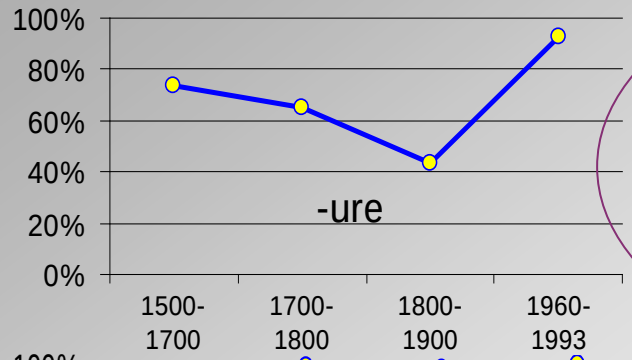
IV. The historical development

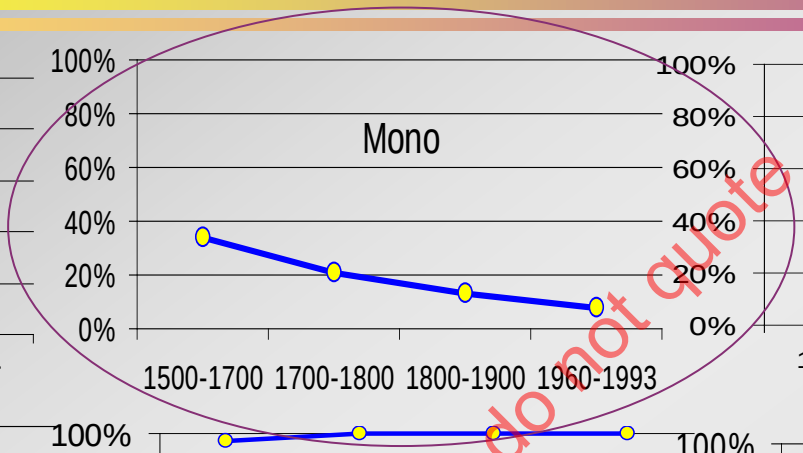
Diachronic development: Analytic support and morphological complexity

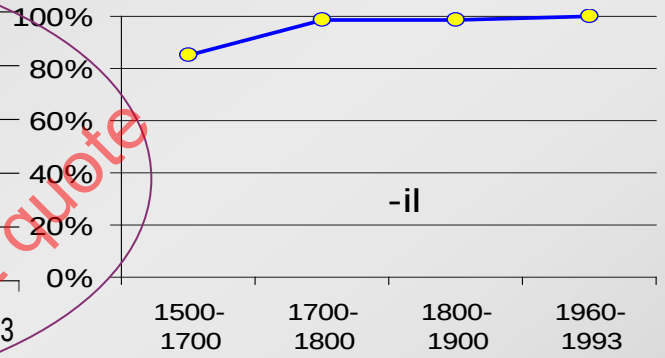
- Has Analytic Support always been around in the English language?
- In PDE monosyllabic ADJs and disyllabic ADJs in <-y> (*heavy, lucky, …*) do not require Analytic Support to the same extent as other ADJs (*awful, demure, nervous*, …).
- This distribution can be observed to have developed historically over the past centuries.

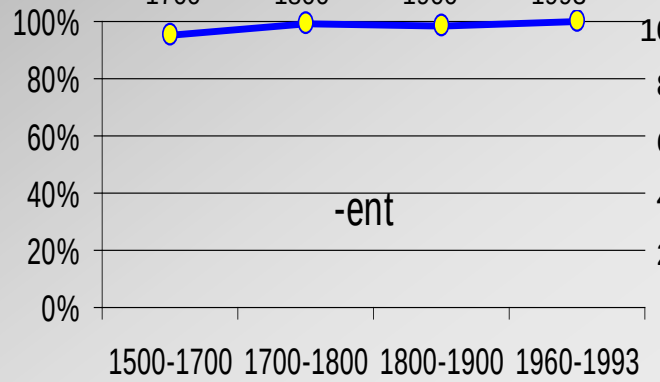
Diachronic development of comparative alternation

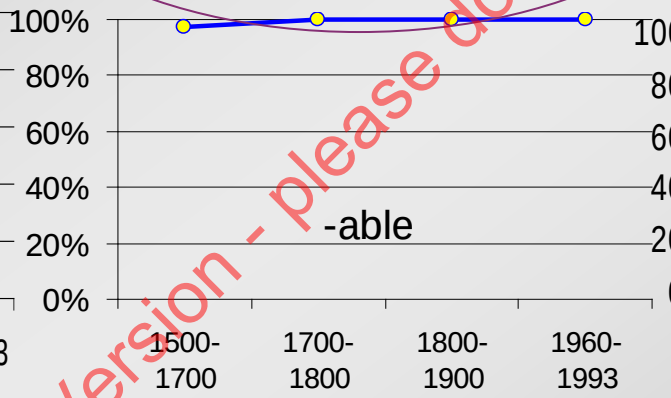
[Based on Mondorf 2009: 128f.]

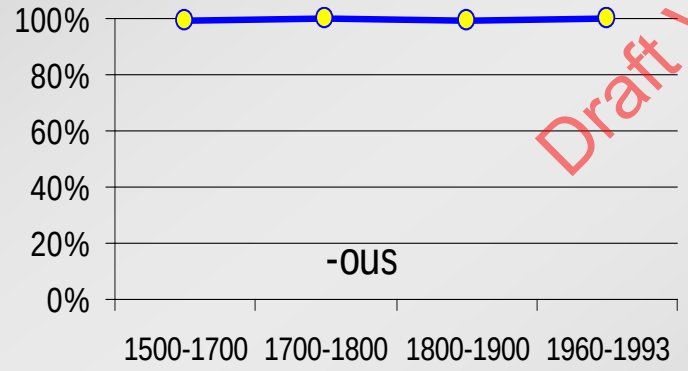


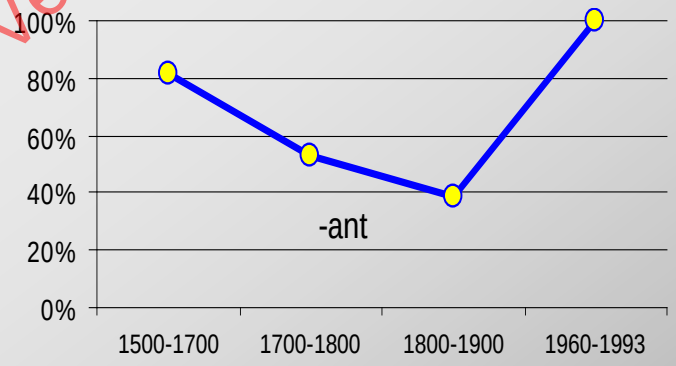




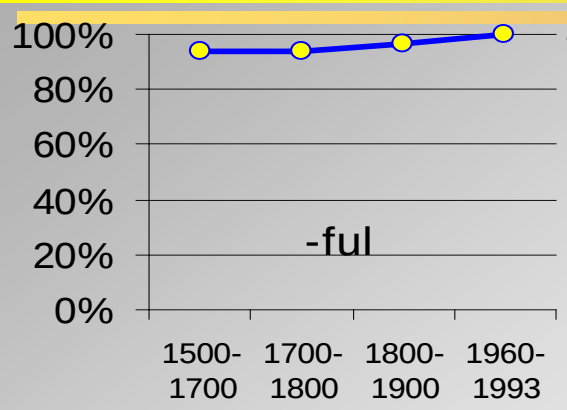


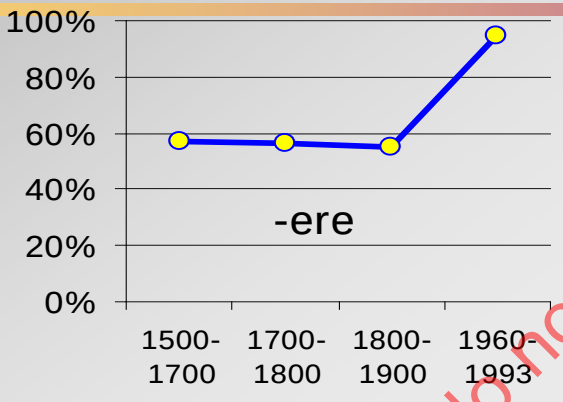


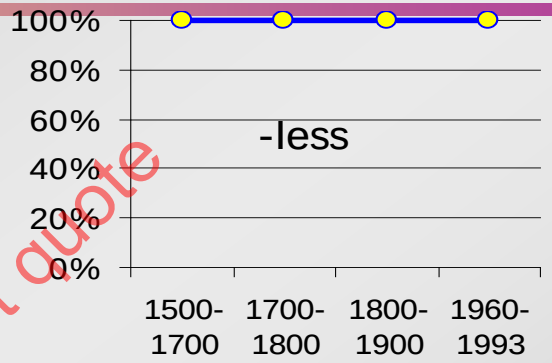


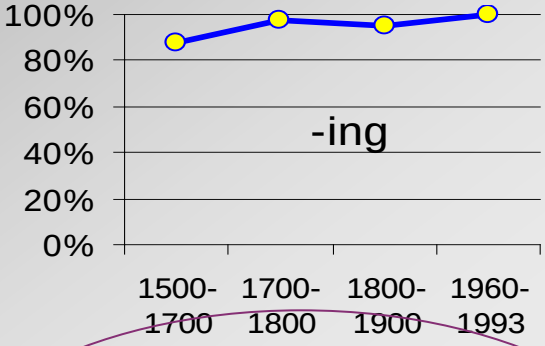


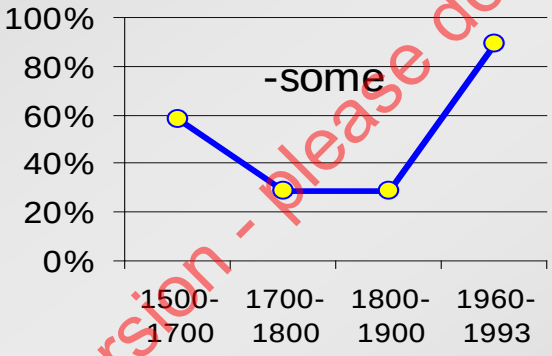
Diachrone Entwicklung der Komparativalternation II

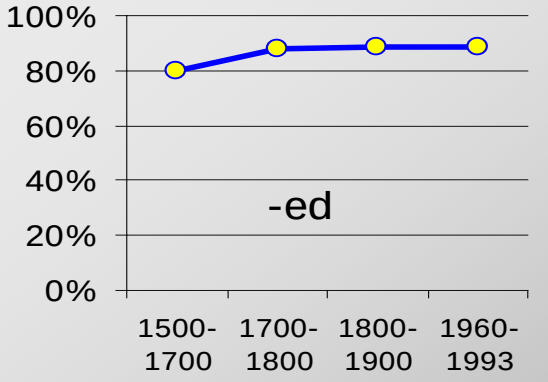


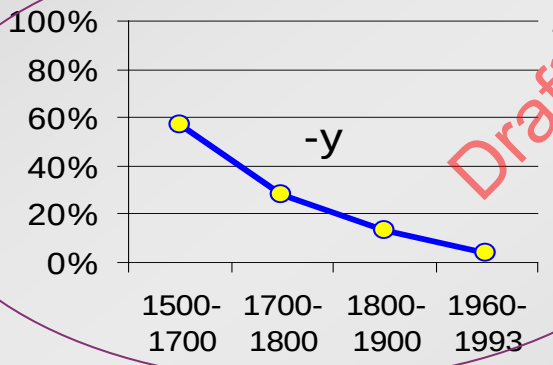


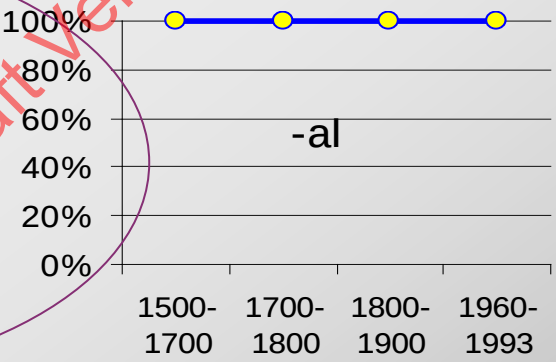


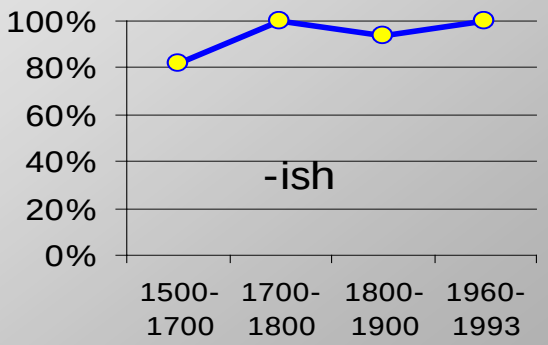




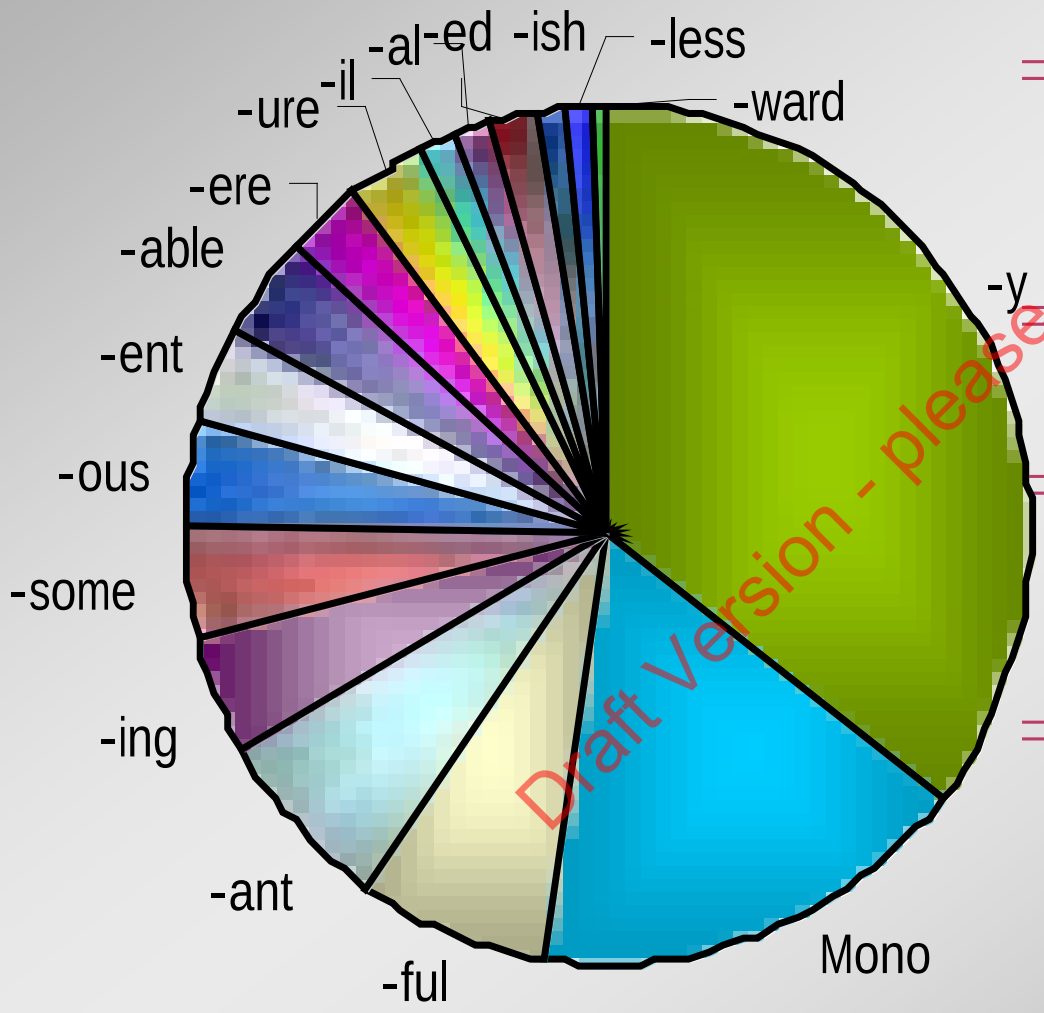








FREQ of comparatives with different groups of ADJs



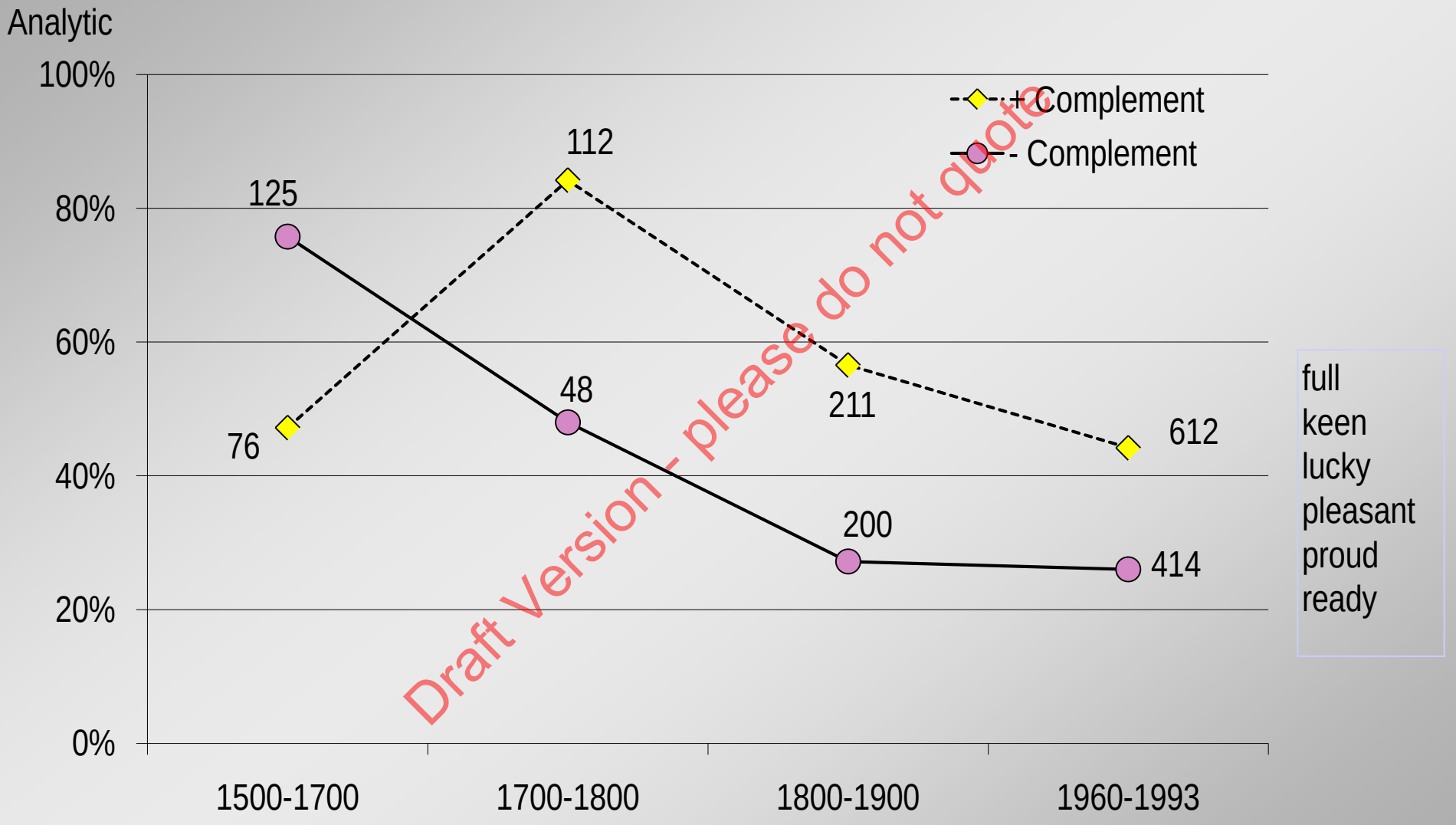
⇒ only mono- and disyllabic -y ADJ have increasing ratios for the –*er* variant.

⇒ These 2 groups are also the most frequent ones

⇒ they don't need *more*-support to the same extent as rarer ADJs

⇒ the remaining 15 ADJ groups have increased their share of the *more*-variant over time.

When did Analytic Support with syntactic complexity emerge?



⇒ Analytic support with complements seems to have emerged in the 18th cent.

Why hasn't the English language settled its century-old competition between syntactic vs. morphological marking?

- After all, in areas other than comparative formation, Engl has established purely syntactic rather than morphological marking, eg future tense. Why not in the area of comparatives, genitives, subjunctives, etc.?
- Suggestion: it *has* settled the conflict – in the form of an emergent division of labour.
- The outcome, ie that the *more*-variant is required with long, morphologically complex, lexically complex and less frequent words is hardly surprising, if we assume that analytic structures are easier to process.
- Languages retain morpho-syntactic variation in order to optimally exploit the system.

Conclusion

- What appears to be competing motivations at first glance turns out to be a systematic adaptation to processing demands reflected in an emergent division of labour:
  - Synthetic variants are favoured in comparatively easy-to-process contexts.
  - Analyticity is resorted to in cognitively more demanding environments to mitigate processing effort.
- Division of labour has developed some time after the 18th cent.
- Variation at different levels can be attributed to an underlying factor: the compensation for cognitive complexity by resorting to explicit/analytic forms.
- The *Principle of Analytic Support* provides the common denominator for a series of individual – at first sight unrelated - factors from the levels of morphology, syntax, semantics and pragmatics.

Thank you for your attention!

… I‘ll be glad to email the presentation: mondorf@uni-mainz.de

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