Verb Adverb Modification: Why *lightly* isn’t *playfully*, yet *playfully* can be *lightly*

Anja Goldschmidt, UiL OTS & HHU

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16 Szklarska Poreba Workshop - February 2015
1 Introduction

2 My Data
   - Inferences
   - Two Types of Adverbs
   - Further Evidence
   - Adverb Classification

3 Frames
   - Frame Semantics
   - Explaining my Data

4 Conclusion
My PhD project: How do verb concepts and adverb concepts interact in modification of verbs of contact through (so-called) manner adverbs?

This talk: Adverbial modification of the force dimension of verbs, in Frame Semantics

→ mental representations of lexical vs pragmatic knowledge (if you want, you can download the slides from my website: anjagoldschmidt.wordpress.com/publications)

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The force meaning

My flagship examples:

a) Nancy hit Oliver playfully on the shoulder.
   → lightly, i.e. "with little pressure, force, or violence; not strongly or severely; gently" (Oxford English Dictionary)

a') Nancy hit Oliver playfully, but still rather lightly, on the shoulder.

And similarly:

b) Nancy hit Oliver angrily on the shoulder.
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NOTE: I’m working with data mainly from German and Dutch, but also English. This pattern is observable in all languages.
Two types of adverbs

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- The **multi-attribute** type, such as *playfully* and *angrily*. These adverbs (can) modify the verb’s force attribute/dimension via an inference (in addition to their lexical meaning).
- The **single-attribute** type, such as *lightly* and *hard*. These adverbs modify the verb’s force attribute/dimension in virtue of their lexical meaning.
Further Evidence

A questionnaire study with 36 native Dutch speakers, testing:
5 sentences of the type "playfully, but lightly" (establishing the force meaning of the multi-attribute adverb) and
6 sentences of the type "playfully, but hard" (cancelling the force inference of the multi-attribute adverbs)
shows that participants readily compute and cancel the force inference of multi-attribute adverbs.

We are also in the process of designing a self-paced reading experiment, hoping to find reading time delays due to the cancelling of the force inference.

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Adverb Classification

The distinction between multi-attribute adverbs and single-attribute adverbs cuts across traditional distinctions between adverbs. Not only manner adverbs can modify the manner of an event:

- **Super-classification**
  - Pure manner
    - leicht (lightly)
  - Agent-oriented manner
    - spielerisch (playfully)

- **Secondary predicates**
  - Resultatives
    - blutig (bloody)
  - Subject depictives
    - fröhlich (cheerfully)

- **Speaker-oriented**
  - Evaluatives
    - freundlich (friendly)
  - Other non-manner
    - ärgerlich (angrily)

Table: Classification of adverbs, based on Schäfer (2006)

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Tests developed by Schäfer are e.g. the “in an X manner” paraphrase:

Nancy hit Oliver playfully on the shoulder.
\[\rightarrow \sqrt{\text{Nancy hit Oliver in a playful manner.}}\]
Nancy hit Oliver hysterically on the shoulder.
\[\rightarrow \# \text{Nancy hit Oliver in a hysterical manner.}\]

Note: The English examples here are translations from my German data. If you feel that you get different intuitions, and are a (native) speaker of German, try the examples with the German adverbs hysterisch and spielerisch.
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Why Frame Semantics?

I think that the inferences observed before arise due to our background knowledge about hitting events, playfulness, anger, etc. In short: world knowledge.

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Frame Semantics offers a way to systematically capture the role of world knowledge in a formal framework.
Frames are recursive attribute-value structures (cf. Peterson & Gamerschlag, 2013). What does that mean?

attributes:
- material
- content
- shape
- colour
- taste
- effect

values: glass, wine
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An example frame for *hit*, based on Gamerschlag et. al. (2014)
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In the following, this frame will be presented in a reduced and simplified version.
The compositional mechanism in Frame Semantics is called frame unification, the joining of two frames (Petersen & Gamerschlag, 2013). Compositional processes that arise during frame unification are determined by the type hierarchy.

Nancy hit Oliver lightly on the arm.
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Modification - Agent-Oriented Manner
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Nancy **hit** Oliver **playfully** on the arm.
Nancy hit Oliver playfully on the arm.
Nancy hit Oliver angrily on the arm.
Nancy *hit* Oliver *angrily* on the arm.
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Summary and Conclusion

Main points:
- A verb's manner can not only be modified through manner adverbs.
- There is evidence for two types of adverbs wrt manner modification, cross-cutting traditional distinctions: multi-attribute adverbs (modification via pragmatic inference) and single-attribute adverbs ("direct" modification, due to the adverbs' lexical semantics).

Frame Semantics allows to formalise these two types of linguistic knowledge:

i) Lexical knowledge is coded in a word's frame, e.g. the manner of an event.

ii) Pragmatic knowledge is coded in a type hierarchy which governs concept composition in Frame Semantics.

While at times maybe seeming trivial, Frame Semantics formalises and makes explicit what we usually take for granted.

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Further Puzzles

Resultatives seem to be incompatible with locative prepositional phrases (at least in the domain of verbs of contact):

1. # Nancy schlug Oliver blutig auf den Arm.
   (Nancy hit Oliver bloody on the arm.)

It is not clear whether *lightly* is actually a manner adverb. It passes some of the tests developed in Schäfer (2006), but seems incompatible with the *in an X manner* paraphrase.

→ ? Nancy hit Oliver in a light manner.

It is unclear whether force is a special kind of manner, i.e. the "force manner", or whether force constitutes an independent ontological entity (for some discussion of that see e.g. Piñón, 2008). This was treated in an inconsistent way in my presentation (on purpose).
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MAY THE FORCE BE WITH YOU
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