

# ***The Roots of Adverb Classes***

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# Classification of Modifiers (i.e., adverbs derived from adjectives)

Apart from the classic distinction "sentence adverb / event adverb", different semantic classes of event adverbs have been proposed:

**a. Manner adverbs**

*Jones buttered his toast slowly / carefully*

**b. "Scope-taking manner adverbs"** (e.g. Parsons 1972; Piñón 2007):

*He painstakingly wrote illegibly.*

**c. Mental-attitude adverbs** (Landman 2000, Ernst 2002):

*Jones intentionally burnt his toast / reluctantly threw away the toast.*

**d. Mental-state adverbs** (Ernst 2002, Geuder 2004):

*Jones angrily threw away his toast*

**e. Agentive adverbs** (Ernst 2002, Geuder 2004) [e-relatedness is controversial]:

*Jones stupidly threw away his toast*

# Classification of Modifiers

## Relating adverb types to adjectival lexemes:

- The range of non-manner uses of an adjective is predictable from its lexical class, while the manner use is (more) generally available (Geuder 2002, cf. a. Ernst 2002, 2016).
- Event adverbs are typically ambiguous between
  - a "manner" use
  - and exactly one non-manner use, depending on lexical class.

a. Manner adverbs

b. Scope-taking manner

c. mental-attitude

d. mental-state

e. agentive

...

...

...

... adjectives

# Classification of Modifiers

a. Manner adverbs

b. Scope-taking manner adverbs

c. mental-attitude

d. mental-state

e. agentive

• **Hypothesis:** Alternations between {a} vs. {b,c,d,e} point to the existence of two basic strategies for using an adjectival lexeme as an adverbial modifier:

1) Recruit the concept expressed by an adjective to modify (i.e., alterate) the event concept expressed by the verb.

: Manner adverbs

2) Let the adjective have its usual denotation (state, property), and find a link that connects it to (the occurrence of) an event.

: Non-manner event adverbs – 'autonomous' adverbs?

# Three (interwoven) questions

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1

**What defines these classes,** and can we be sure they constitute event-related adverbs?

2

How does the behaviour of the **non-manner variants follow from the lexical meanings of the adjectives?**

3

**Can the classes be sharply separated? —**

As a consequence from the above: they can, to the extent that the lexical classes of adjectives are not blurred.

# Event adverbs

## a) Manner

"*fest schlagen* / *hit forcefully*"

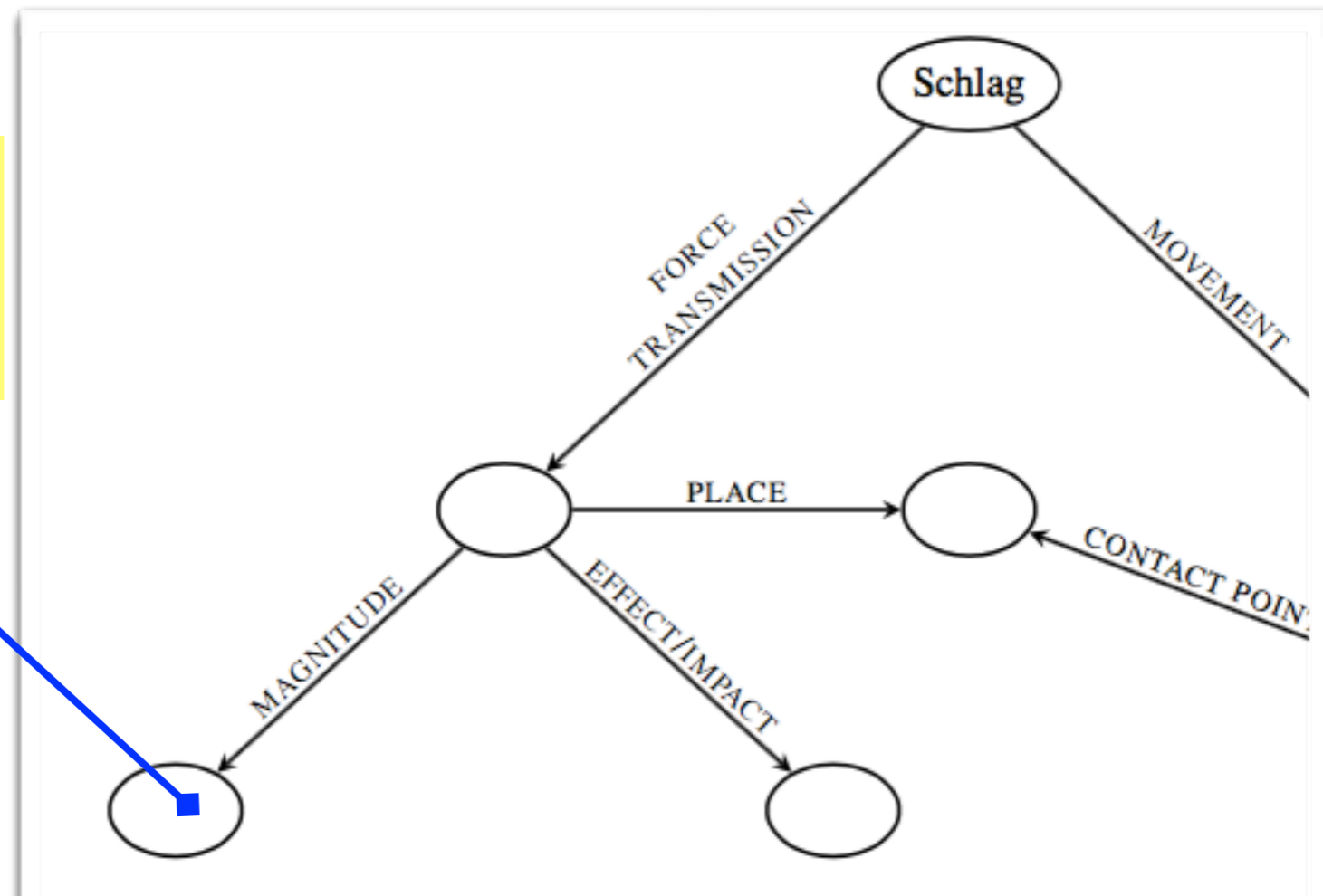
(Goldschmidt & al. 2015)

The analysis to be developed:

... Decompose verb meaning into a network of **functional attributes + values** ("Düsseldorf Frames", e.g. Löbner 2015, Petersen 2015),  
... and use the adjectival meaning to constrain the admissible values of such attributes.

Manner modification by "*fest*" constrains the values of a FORCE-MAGNITUDE attribute.

➤ A set of interpretation rules dealing with property values (not extensions).



# Event adverbs

## a) Manner

- An adjective may single out a subpart of a scale inherent in a verb meaning, and in this way restricts the admissible values:

*schlug ihn leicht, ?? aber fest / ...hit him lightly, ?? but forcefully*

- Or an adjective triggers such restrictions via a **correlation** (cf. Barsalou 1992, Geuder 2006).

In this case, the **adjective does not denote the scale** that is being modified. Rather, it creates inferences on its admissible values,

e.g.

- strict: based on laws of nature (e.g. *feuchter Glanz* "wet gleam")
- defeasible: based on stereotypical assumptions on correlations.

*schlug ihn spielerisch, ... aber hart*

*(hit him playfully ... but hard)*

↪ *hit him lightly ... [inference cancelled]*

# [ ] Event adverbs

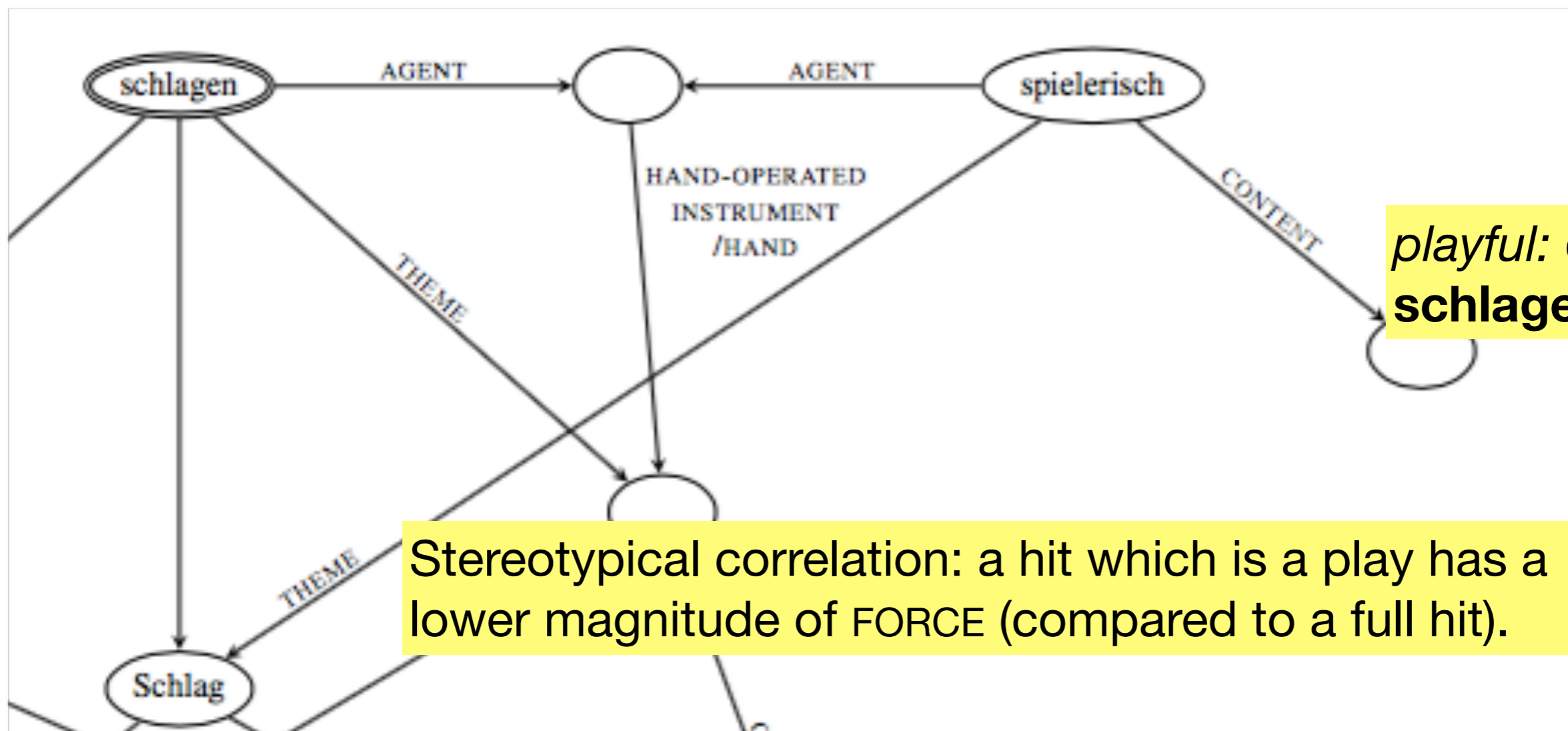
## a) Manner

"fest / spielerisch schlagen"

*hit*    *forcefully / playfully*

**direct**

**indirect**    **restriction of values**



Stereotypical correlation: a hit which is a play has a lower magnitude of FORCE (compared to a full hit).



## Manner adverbs: are they separate from the other classes?

The role of *defeasible* inferences may explain the feeling that boundaries between manner adverbs and e.g. mental-attitude or mental-state adverbs often appear to be blurred, e.g. Maienborn & Schäfer (2011):

(29) Claire reluctantly/gladly went to school.

The adverbial *reluctantly* in (29) does not primarily describe the manner of going to school, but Claire's attitude towards going to school. It is only secondarily that this attitude might also have an impact on Claire's manner of going to school. Mental-attitude

# Event adverbs

## b) Attitude

- **Attitude**-denoting adjectives yield scope-taking "mental-attitude" adverbs, but can also be used like manner adverbs in a syntactically low position (without strong meaning difference):

*Oedipus intentionally married his mother*

*Oedipus married his mother intentionally*

- Landman (2000): *intentionally* as a modifier with the arg.structure (e, x, C)
- However, the meaning is not "having the intention of (C)", rather, *intentionally* is about the agent's intention *in the event*.
- Instead of e-predication, we should say that **intentionality is an event attribute**, belonging to the "AGENT" branch of the decomposition.
- (– Still, pure intention is not felt to be a "manner"?)

# Attitude vs. scope-taking manner adverbs

- **Attitude**-denoting adjectives yield scope-taking "mental-attitude" adverbs, but can also be used like manner adverbs in a syntactically low position (without strong meaning difference):

*Oedipus unintentionally married his mother /  
Oedipus married his mother unintentionally*

- "**Scope-taking manner adverbs**" always have a scopeless use as well, but apparently may show meaning differences:

*Chris painstakingly wrote illegibly* ≠ *Chris wrote painstakingly*

- Here, intentionality seems combined with: degree of perfection, effort, etc.

All of these would count as event attributes (cf. Piñón 2007).

- As intentional adjectives, they have a hidden parameter, too, but it would be filled in different ways (t.b.c.).

# Event adverbs

## c) Mental state

- In contrast to manner adverbs, the state denoted by the adjective must literally hold (ex. from Ernst 2002):

*Though her emotions were in a turmoil...*

- a. *...she managed to leave the room calmly.* [manner]
- b. ?? *...she calmly had left the room.* [state]

- If the adjective refers to a state of its own, it would **not** be an **attribute of an event** (as opposed e.g. to attention in *carefully*).
- Semantics: A state that overlaps the event, plus an interpolated relation between **s** and **e** (Geuder 2004):

*He angrily forwarded the letter to his solicitor.* [anger = motive for e]  
*He angrily read the news.* [anger = effect of e]

not a scope-taking  
modifier

## [ ] b/c: State vs. attitude adverbs — Two separate types?

- The distinction of adverb types is entirely based on lexical classes:
  - Consider e.g. adverbs based on emotional states:  
*angrily, sadly, delightedly*
- Emotions by definition have an attitude component: an affective evaluation of a change perceived by a subject. Theories of emotion describe them as an aggregate of four components (for a synthesis of the literature, see Ben Ze'ev 2000):  
cognition - evaluation - (bodily) feeling - motivation

Attitude is actually a restricted possibility for interpreting emotional adverbs, too — if the object of evaluation is a perception.

# *He sadly had made a mistake* (intended: sad about having made...)

√ *He sadly discovered that he had made a mistake*  
(= *sad to have made a mistake*)

# Event adverbs (?)

## d) Agentive adverbs

*rudely* as a manner adv.

/

*rudely* as an agentive adv.

*She (had) departed rudely*

*She rudely (had) departed*

( = ...in a rude manner)

/

( = It was rude of her to depart)

### • What are agentive adverbs? Approaches in the literature:

a) A sentential modifier, targeting propositions (Maienborn & Schäfer 2010:1395) or "facts" (Parsons 1990).

### b) Event-based analyses:

b1) An event predicate, differing from a manner modifier (only) wrt. its "comparison class," and syntactic scope (cf. Morzycki 2014).

b2) Event predication, but wrt. a different predicate, e.g. "deciding" to do what the predicate of the clause asserts (Piñón 2010, inspired by McConnell-Ginet 1982).

c) A quasi-sentential, parenthetical modifier, targeting an **event** as a previously specified discourse referent (Geuder 2002).

# Agentive adverbs and "comparison classes"

*She (had) departed rudely*  
*rudely* as a **manner** adv.

/

*She rudely (had) departed*  
*rudely* as an **agentive** adv

Morzycki (2014, ms. p. 27f.):

$\lambda e. \text{depart}(e) \ \& \ \text{agent}(e) =$   
 $\text{Floyd} \ \& \ \text{rude}(e)(\text{depart})$

$\lambda e. \text{depart}(e) \ \& \ \text{agent}(e) = \text{Floyd}$   
 $\ \& \ \text{rude}(e) \ (\lambda e. \text{depart}(e) \ \& \ \text{agent}(e) = \text{Floyd})$

The result is a property of events of Floyd departing that are **rude** compared to (other) events of Floyd departing. So the difference between the two readings is that the manner reading compares against other departures ('**rude** as far as departures go'), whereas the subject-oriented reading compares against other departures the subject could have performed ('**rude** as far as **ways** Floyd could have departed'). This isn't precisely Ernst's initial

#  
occur-  
rences  
?

# Agentive adverbs and "comparison classes"

*rudely* as a manner adv.

/

*rudely* as an agentive adv.

$\lambda e. \text{depart}(e) \ \& \ \text{agent}(e) =$   
*Floyd* &  *rude(e)(depart)*

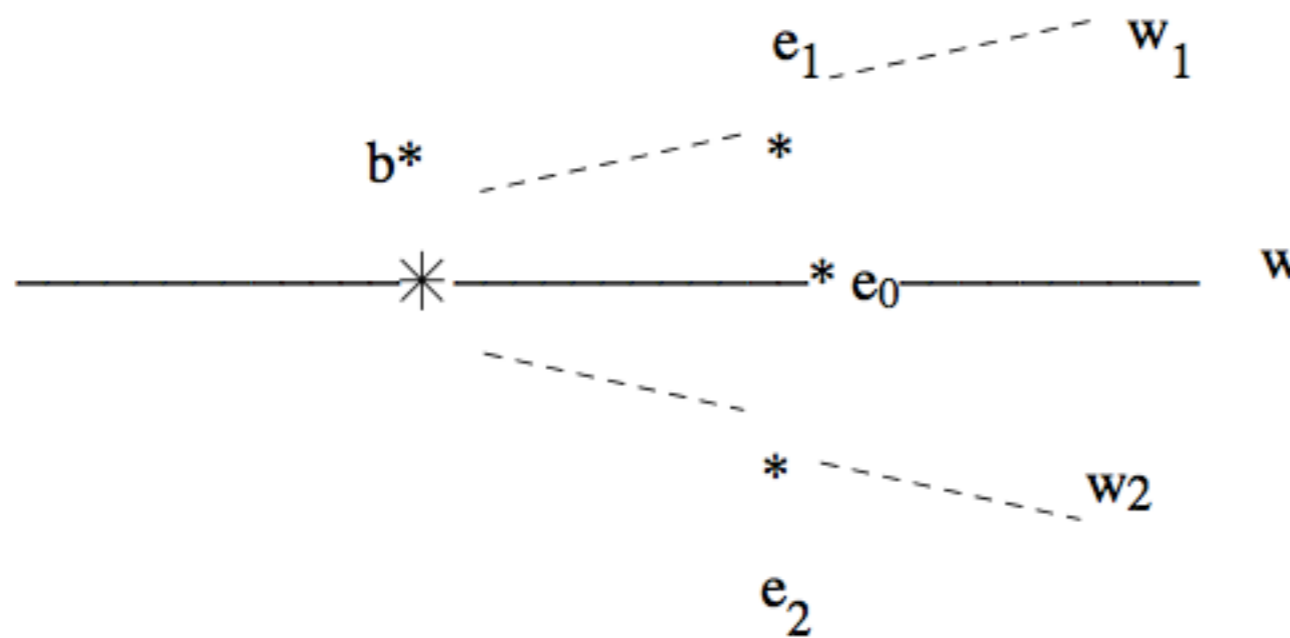
$\lambda e. \text{depart}(e) \ \& \ \text{agent}(e) = \text{Floyd}$   
&  *rude(e) (λe. depart(e) &*  
 *agent(e)=Floyd)*

- The formula does not sufficiently indicate the meaning difference:
  - Both involve "event predication".
  - The difference is simply: the "comparison class" for agentive adv. is more narrow than the one for manner adv.
  - What to do with cases in which only a manner use is unavailable?  
*I stupidly forgot my glasses* / ? *I forgot my glasses stupidly.*



# Agentive adverbs and "alternatives"

- Geuder (2002): retrieving an event in a specific course of events:



*He stupidly passed back*  
*/ It was stupid of him to pass back.*

Evaluates a contextualised event,  
retrieved

– as the **discourse referent**  
introduced by the main verb,  
or, sometimes,

– **deictically**: "Man, that was stupid!"

In the real world, after  $b^*$  the action  $e_0$  has occurred — this is the event described by the clausal subject of *stupid*. The alternatives are worlds in which other possible events  $e_n$  have happened (which are incompatible with the presence of  $e_0$  in that world) — these are the events described by the set of focus alternatives of the same clause. What the adjective now says is that the occurrence of  $e_0$  is characteristic for a world in which the agent has the mental property *stupidness* (a disposition). All alternative continuations

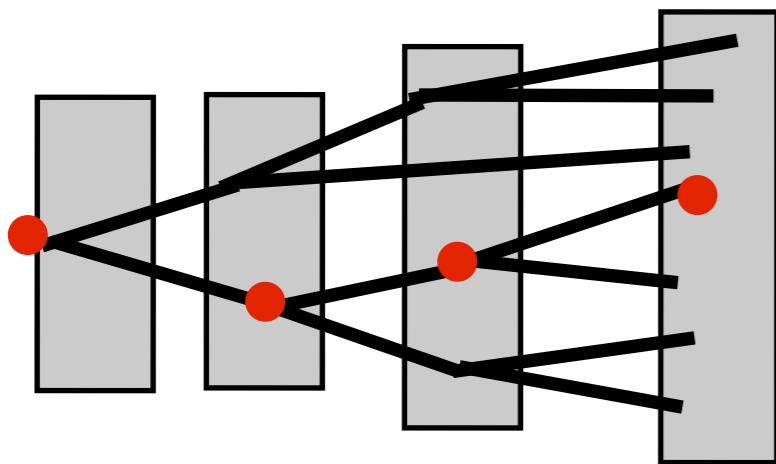
# Agentive / manner alternations in a Frame perspective

a) Agentive: *He stupidly passed back*

The adverb does not interact with the event Frame (it is non-restrictive; a "disjunct" / Quirk & al. 1985). It denotes an evaluation of the individual event wrt. a larger context.

b) Manner: *He played stupidly*

- Events like "playing" can be decomposed in a succession of "moves" (a decision tree).
- This attribute, "STAGES", is the target of the manner modifier.



- Interpretation via correlation:  
"The value of the STAGES attribute is such that proceeding like this would be a mistake = a stupid thing to do (in view of the stereotypical goals of the game)."

# Delineating the class of agentive adjectives

rudely as a manner adv.

/

rudely as an agentive adv.

$\lambda e. \text{depart}(e) \ \& \ \text{agent}(e) =$   
 $\text{Floyd} \ \& \ \text{rude}(e)(\text{depart})$

$\lambda e. \text{depart}(e) \ \& \ \text{agent}(e) = \text{Floyd}$   
 $\ \& \ \text{rude}(e)$  ( $\lambda e. \text{depart}(e) \ \&$   
 $\ \text{agent}(e) = \text{Floyd}$ )

– Adjectives differ in whether they invoke an event property as "C":

*He donated generously to charities*  
*He generously donated something.*  
*He generously donated 1000 €.*

Comparison in terms of:

- amount [= manner variant]
- *whether or not* (propositions)
- amount [= non-manner]

The C parameter (offered by Morzycki) may be used differently by different adjectives.

• *Rudely* (agentive): "An event with description "C" has occurred in the context – retrieve its focus alternatives – ...etc."

# Delineating the class of agentive adjectives

What is different with: "*Floyd carefully closed the door gently*" ?

$\lambda e. \text{close}(e) \ \& \ \text{agent}(e)=\text{Floyd} \ \& \ \underline{\text{careful}}(e)$  ( $\lambda e. \text{close}(e) \ \& \ \text{agent}(e)=\text{Floyd} \ \& \ \text{gentle}[\text{manner-of}](e)$ )

scope (another "C"-parameter)

- The expression in the scope of *carefully* (here: in the sense: taking care to avoid something) describes a "precautionary measure" — an attribute of *caution*.
- This adverb is less strongly dependent on the conversational background than is the "mistake" that has to be invoked in interpreting *stupidly*.

- Difference: The property expressed by the adjective {is / is not} an event attribute.
- Both careful and stupid depend on a second parameter,
- careful makes different use of its C parameter

# Agentive and other scope-taking adverbs

Commonality:

- In any case, the second parameter is also what **explains the manner use (i.e. specifies its construal)** — if it sets up a comparison class that varies event properties.

(If it sets up the alternative "occurrence - non-occurrence", we get a different effect).

*She carefully closed the door gently*

*She closed the door carefully<sub>C</sub> (i.e., by closing it gently)<sub>=C</sub>*

*He rudely left without good-bye.*

*He left rudely<sub>C</sub> (i.e., without good-bye)<sub>=C</sub>*

*White illegally moved a pawn diagonally*

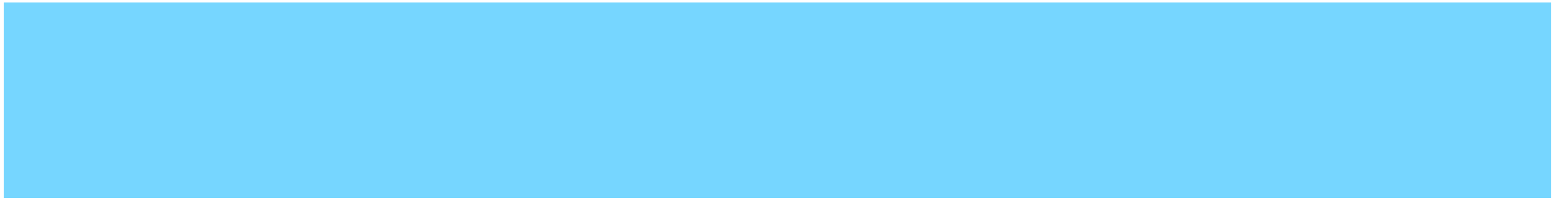
*White moved illegally<sub>C</sub> (i.e. moved the pawn diagonally)<sub>=C</sub>*

# Summary

Manner adverbs

Scope-taking manner adverbs /  
mental-attitude / mental-state /  
agentive

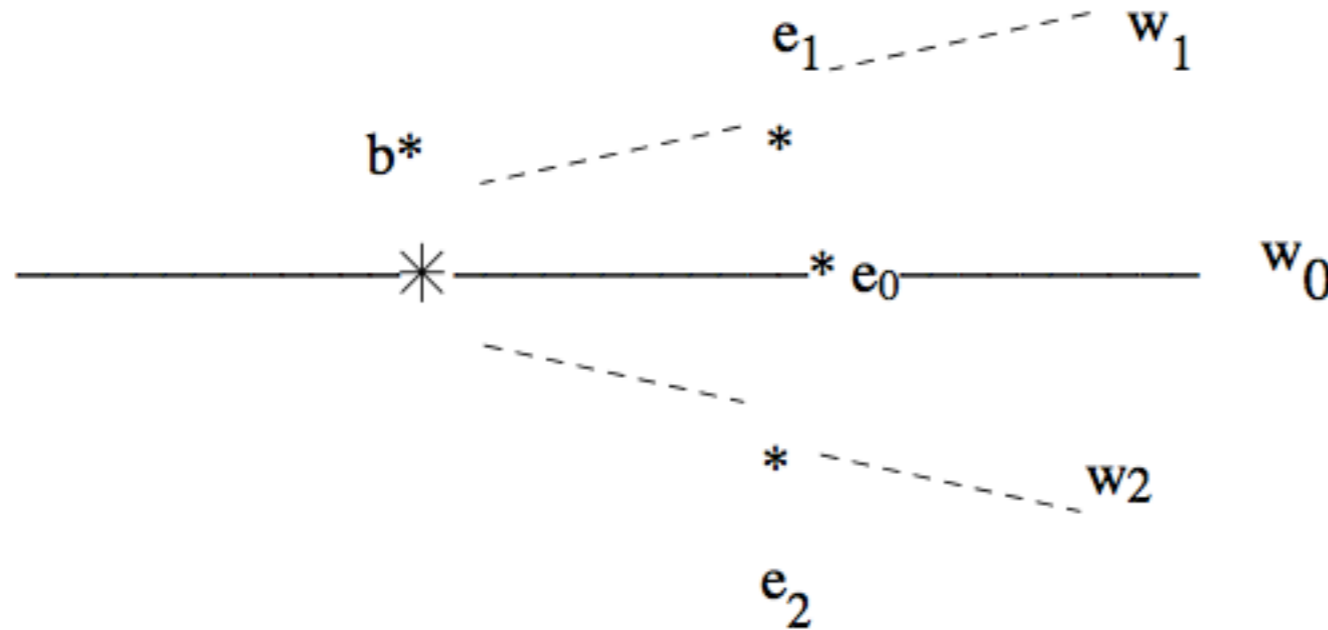
- **Two basic strategies** for using an adjectival lexeme as an adverbial modifier:
  - 1) Alterate the event concept expressed by the verb (manner rule).
  - 2) Define a link that relates the reference of the adjective to (the occurrence of) an event (i.e. the referential argument of the verb).
- **Ad 2): Lexical class effects**
  - "Agentive adverbs" are event-related construals of IL-adjectives.
  - "Mental-state adverbs" are event-related construals of emotional states (among others)
  - "Scope taking manner adverbs" are adverbs that restrict an INTENTION attribute and explicitly show its correlation with a "manner" attribute (while agentive adv. are not restrictive).



■

# Agentive adverbs "stupidly"

- Geuder (2002): retrieving an event in a specific course of events:



## *Stupidly passed back....:*

- The comparison involves the causal efficacy of a specific event in one specific context (i.e., what constitutes a mistake in C).
- "Inclusion of the agent" is inevitable here, because the complete e-description has to be accessed

In the real world, after  $b^*$  the action  $e_0$  has occurred — this is the event described by the clausal subject of *stupid*. The alternatives are worlds in which other possible events  $e_n$  have happened (which are incompatible with the presence of  $e_0$  in that world) — these are the events described by the set of focus alternatives of the same clause. What the adjective now says is that the occurrence of  $e_0$  is characteristic for a world in which the agent has the mental property *stupidness* (a disposition). All alternative continuations



# Could agentive adverbs be predicates of events?

$\lambda e. \text{depart}(e) \ \& \ \text{agent}(e)=\text{Floyd} \ \& \ \underline{\text{rude}}(e)(\lambda e. \text{depart}(e) \ \& \ \text{agent}(e)=\text{Floyd})$

- Can we test whether the agentive adverb is added before closing off the e-variable or afterwards (as in a "sentential" analysis) ?

: Unexplained in most event-based accounts: Why is sentential negation unable to gain scope over the assertion made by an agentive adverb? [Geuder (2002): The modifier is "parenthetical" ...]

? *John didn't stupidly leave* (# *it was not stupid*)

? *dass er nicht dummerweise weglief*

: Counting adverbs seem to work, however (but are frame adv.):  
... "*because twice I had stupidly left my front door open*" (Google)

# Variation with agent-oriented adverbs

- Evidence from the German affix *-weise*

*stolz* / *überheblich* (*proud - arrogant*)

? *stolzerweise* / √ *überheblicherweise*

/ √ *das war überheblich von ihm* (...of him)

*dankbar, neidisch* / *undankbar* (*ungrateful, envious*)

? (#) / √ *undankbarerweise*

as opposed to "dankbar", "undankbar" is not an emotional response! it is the absence of one; explanation assumed in terms of trait of character

*-weise* is possible if the adjective denotes a more permanent (IL) property, the affix cannot occur with emotional states.

Desideratum: the problem of agent-oriented adverbs has so far not been addressed from the perspective of lexical fields and lexical generalisations.

# Agentive Adverbs

- Piñón (2010): predication of a different event: a decision

(26) rudely<sup>a</sup>  $\rightsquigarrow$   
 $\lambda A \lambda x \lambda e. \exists e'' (\text{decide}(e'', x, [\lambda x' \lambda e'. A(e', x')](x)) \wedge \text{cause}(e'', e) \wedge A(e, x) \wedge \text{rude}(e''))$

- e-predication, but e'' is not introduced by the predicate of the clause! Indirect link to the clause in the syntactic scope.
- Hence, mimics aspects of a sentential adverb: an operator that combines with a potentially complex event property ( $\lambda A \dots$ ), which recurs in the scope of "decide".

# Manner modification

Proposals in the recent literature – Piñón (2007):

Rebecca painstakingly write-illegibly →  
 $\lambda e.\text{agent}(\text{Rebecca})(e) \wedge \text{write}(e) \wedge \text{illegible}(\text{form}(\lambda e'.\text{write}(e'))(e)) \wedge$   
 $\text{painstaking}(\text{effort}(\lambda e'.\text{write}(e') \wedge \text{illegible}(\text{form}(\lambda e''.\text{write}(e''))(e')))(e))$

Similarly, Morzycki (2013: 197), reinterpreting McConnell-Ginet (1982):

- (34) a. Floyd AUG-SPEED walked quickly.  
b.  $\llbracket \text{quickly} \rrbracket = \lambda r : \text{is-a-speed}(r) . \text{quick}(r)$   
c.  $\llbracket \text{Floyd AUG-SPEED walked quickly} \rrbracket$   
     $= \llbracket \text{AUG-SPEED} \rrbracket (\llbracket \text{walked} \rrbracket)(\llbracket \text{quickly} \rrbracket)(\llbracket \text{Floyd} \rrbracket)$   
     $= \lambda e . \text{walk}(\text{Floyd})(e) \wedge \text{quick}(\text{speed}(e))$

- Modifiers target "attributes" of the event, instead of the e-variable
- This leads to a "Frame" approach – what is still lacking above is a systematic account of the origin and availability of the attributes, i.e. a decomposition of the event property in a network of attributes.

# Attributes and Modification

## Examples: (2)

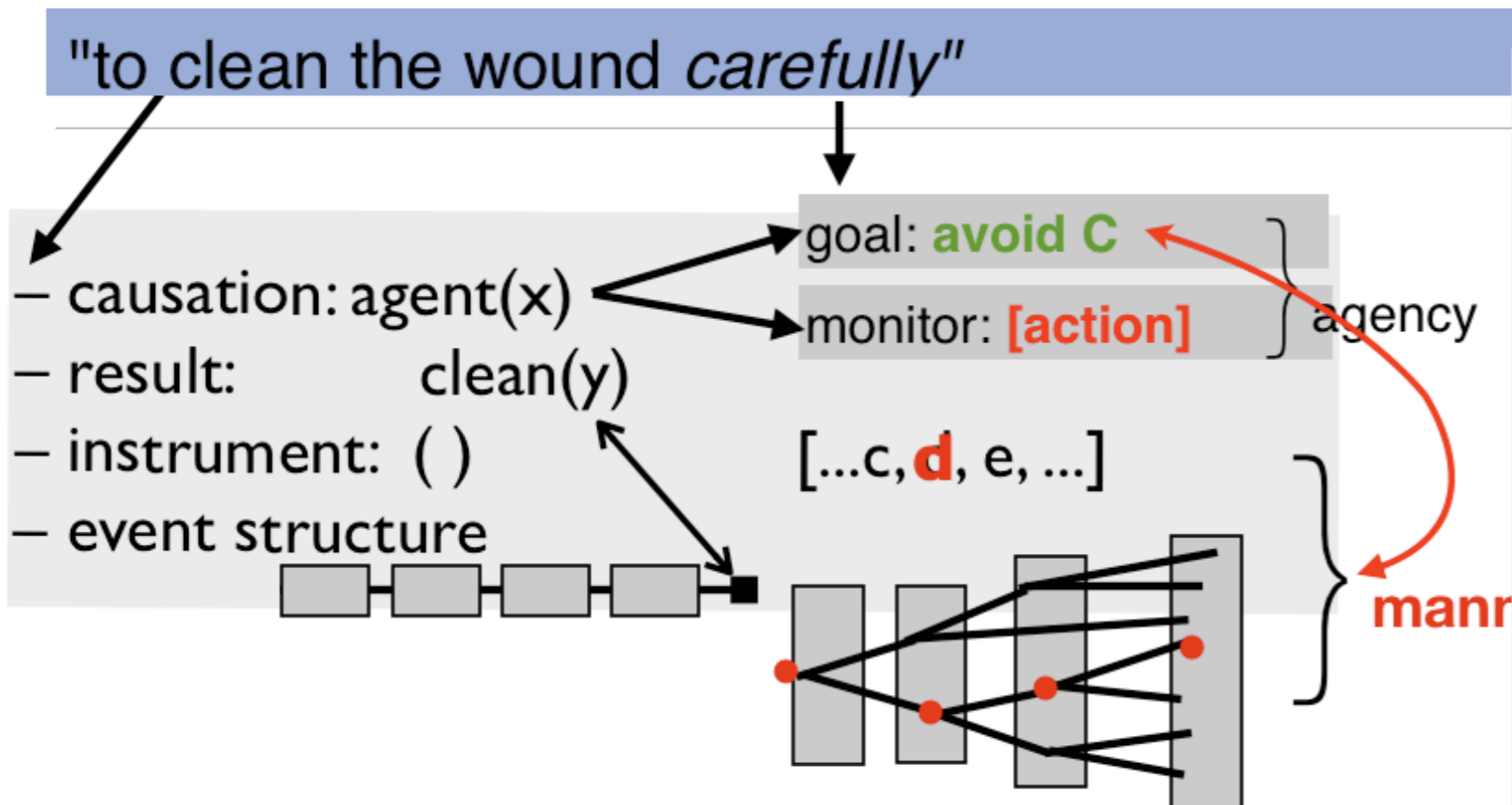
*He was carefully hiding the papers.*

*He was cleaning the wound carefully.*

Goals of the agent:

- nobody should read them
- not to cause pain

OR: remove every bit of dirt



Adverbs like *carefully* point to the existence of frame components that require:

- modelling of intentional attributes and scope,
- modelling of complex and dynamic attributes like decision paths through branching alternatives of a process, etc.

The adverb introduces attributes that expand the description of the agent role, and specifies a **correlation** between them and a particular **set of values in the manner component** (e.g. a path through the part structure of e depending on decisions of the agent).

- modelling of correlations.