

# Event structure and argument-adjunct asymmetries

*Event semantics and adverbial  
modification*

Class IV

# Organization of the class

- Start from Koenig et al. – presenting and discussing the account of argument – adjunct asymmetries among event participants.
- Present more data and revise their view by making more use of event structure, as an independently motivated ‘handle’.
- Discuss some particular participants and modifiers, and revisit Koenig et al’s view.

# Two types of participants

- Expressions specifying event participants come in two flavors:

(1) \*(Joanna) sliced \*(the bread) (with the knife) (in the dining room).

- Must be overt: Joanna, the bread.
- May be unexpressed: the knife, the dining room.

# Arguments and adjuncts

- Traditionally captured by the notions of **arguments** (tend to be **overt**) and **adjuncts**.
- (2) a. Rada put \*(the vase) \*(on the shelf) (with her left hand) (up in the bedroom).
- b. Frank ate (a sandwich).
- Arguments optional if part of the verbal meaning: *eat* = consume food, takes a partly cognate object: *eat* \*(rice) (Chinese).

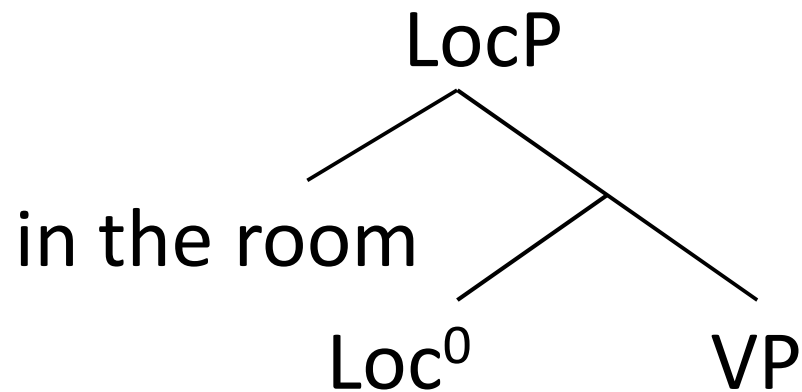
# Arguments and adjuncts - syntax

- A number of syntactic asymmetries.
- Islands, movement...

- (3) a.  $Who_i$  did Jenneke forget to say [<sub>arg</sub> **that she saw  $t_i$  in V&D**]?
- b. ?? $Who_i$  did Jenneke forget to call the man [<sub>adj</sub> **who met  $t_i$** ]?
- c.  $What_i/??why_i$  did you say [that you wanted [to eat  $t_i$ ]]?

# In syntax, adjuncts = arguments?

- Apparent adjuncts are specifiers, just like subjects (Kayne 1994).
- A functional projection for each syntactic class of ‘adjuncts’ (Cinque 1994).



# Adjuncts and participants

- Not all event-level adjuncts specify participants.
- Non-referential – adverbs (quantificational: *again, frequently*, focus-related: *just, even*, temporal: *still, already, for a minute*).
- Focus on the adjuncts specifying participants.
- Mostly PPs, and often with a certain ‘degree’ of argumenthood.

# Psycholinguistic evidence

- In addition to syntactic and semantic distinctions, argument-adjunct asymmetries are also experimentally confirmed.
- Arguments processed first, and faster (Speer&Clifton, Schütze&Gibson):
- PPs are read faster when they are arguments than when they are adjuncts.
- We first try to read them as an argument.

# Psycholinguistic evidence

- Implicit participant information specified on the verb (form) (Maurer et al).
- (4) a. The vase **was sold** to collect money for the charity.
- b. \*The vase **sold** to collect money for the charity.
- As soon as **was** is encountered, the reader includes an agent role in the representation.

# Modeling the differences

- A stipulatory strategy: postulate two different operations, fitting adjuncts and arguments (function application and function composition, set-merge and pair-merge).
- A more explanatory one: derive both from the same set of more primitive operations.
- In the latter case, empirical differences should match the theoretically specified ones.

# Semantic criteria

- Koenig et al (2003) try to define semantic criteria to distinguish between arguments and adjuncts.
- The point of departure:
  - which participants will be arguments and which will be adjuncts is a matter of the lexical (semantic!) specification of the verb.
- Two criteria:

# Obligatoriness

- Semantic Obligatoriness Criterion (SOC): If  $r$  is an argument participant role of predicate  $P$ , then any situation that  $P$  felicitously describes includes the referent of the filler of  $r$ .
  - A different sense of obligatoriness.
  - Necessary, not sufficient: obligatory adjuncts.
- (5) a. Franti sang **in the garden**.  
b. Aniko arrived **on Monday**.

# Specificity

- Not referential specificity, but wrt. the verb.
- The extent of specificity of a participant role is inversely proportional to the cardinality of the class of verbs that take this role.
- Semantic Specificity Criterion (SSC): If  $r$  is an argument participant role of predicate  $P$  denoted by verb  $V$ , then  $r$  is specific to  $V$  and a restricted class of verbs/events it belongs to.

# Empirical background of specificity

- No verb takes a recipient or a goal, which cannot take a location, time or a beneficiary.
- Specific roles are additionally ‘colored’ by the particular verb, unlike the non-specific ones.

(6) a. Hilke sang a song.

b. Nouredine wrote a song.

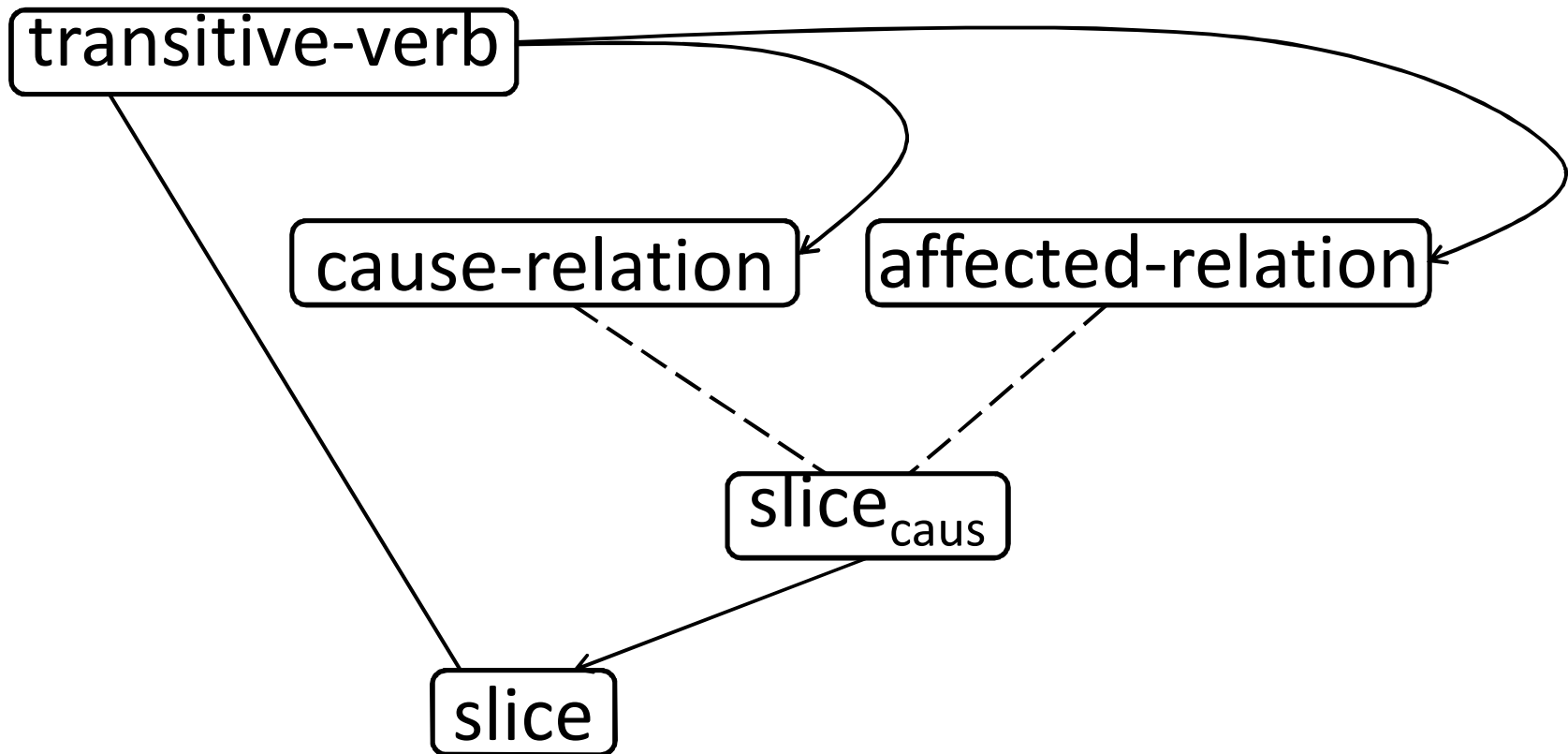
(vocal cords involved, one participant per event)

- Extreme proposals: each verb its own roles.

# In the lexicon

- Lexical Encoding Hypothesis (LEH): A participant role is a (semantic) argument of a verb iff it satisfies both the SOC and SSC, i.e., if it is required of all situations described by that verb and if it is required of the denotation of only a restricted set of verbs.
- Verbs are specified in the lexicon for the roles they take as arguments.

# The technical side



# Processing

- The material that is specified in the lexical entry of the verb is processed first:

(1) cause-rel. Joanna sliced affected rel. the bread  
with the knife in the dining room

- This material must be present, and overt unless subsequently elided.
- The rest is realized by adjuncts.

# Issues...

- SSC is a scalar value: where is the boundary?
- If  $V$  is the class of verbs taking the respective role,  $|V\text{-time-rel.}| > |V\text{-place-rel.}| >$   
 $> |V\text{-beneficiary-rel.}| > |V\text{-affected-rel.}| >$   
 $> |V\text{-cause-rel.}| > |V\text{-goal-rel.}| >$   
 $> |V\text{-experience-rel.}| > |V\text{-receive-rel.}| \dots$
- Is the beneficiary role more argument-like than the time role? Recipient than causer?

# More issues...

- SSC has two components: the cardinality of the set, and the coloring of the role by the meaning of the verb.
- They do not always go together.
- Goals, or experiencers, are taken by smaller sets of verbs than patients, but they are far less colored by the meaning of the verb.

(7) Martin poured **the wine** **into the barrel**.

# Semantic coloring

- Expressions involving an inherent case or a preposition are more 'immune' to the additional specification of their participant roles by the verb.
- Suggests that the verb which is specified for certain roles incorporates a P/inherent case component for these roles.
- Once the verb 'contains' P, what used to be an argument of P is an argument of the verb.

# What else in the verb?

- Is *slice* (factitive) a participant (Hale&Keyser)?
  - (1) Joanna sliced the bread with the knife in the dining room.
  - (8) Joanna cut the bread (in)to slices with the knife in the dining room.
- There seems to be more in the verb than just a specification of certain roles.

# Lexical specification

- Certain arguments and adjuncts, of different roles, may be specified for by ('give name' to) the verb (goal, manner, instrument, theme).

(9) *to tape, nest, saddle, nail, chair, enlighten*

- Only adjuncts higher than the level of events never do this (location, time, benefactor)

# Inside the verb (interim summary)

- In addition to the event structure (templates), the verb may be specified for certain roles (predicates of the type usually lexicalized by P-elements), and even for certain (generic) arguments or adjuncts.  
(*put*-verbs, *to please*, *inhabit*, *saddle*, *tape*...)
- In favor of a templatic or constructionist view (structure in the lexicon).

# Still issues: patients and manner

- Verbs are lexically specified for the argument roles they take (SSC).
- Some adjunct roles directly depend on the presence/possibility of some argument roles, e.g. manner and affected participant:  
(10) a. Erik **read the review** **worriedly**.  
b. \*Luis **had a flue** **worriedly**.
- Is manner lexically specified too?

# Agent-oriented manner

- Incorporated or adjoined agent-oriented manner modification (Hale&Keyser):

- (11) a. We **splashed** mud (**carelessly**) on the wall.  
b. Mud **splashed** (**\*carelessly**) on the wall.  
c. Mud **was splashed** (**carelessly**) on the wall.  
d. They **smear**ed mud on the wall.  
e. **\*Mud smear**ed on the wall.  
f. Mud **was smear**ed on the wall.

# Manner is not a participant role

- Manner does not involve reference to a participant: it is a property.
- Manner can be agent-, patient- and process-oriented; most other participant roles cannot be viewed in this way (but cf. Koenig et al).
- Manner can be part of the lexical specification of the verb without transparent incorporation (*smear, run, spread* vs. *saddle, tape, hammer*).

# SSC for beneficiary, time and place

- Each participant role can be an argument.

(12) a. Luis **flattered/helped** Stella.

b. Stephen **resides** \*(**in Manchester**).

c. **Proveo** sam \*(**3 meseca/odmor**)

spent<sub>time</sub> Aux.1Sg 3 months/vacation

\*(**u selu**). *Serbo-Croatian*

in village

'I spent 3 months/my vacation in a/the village.'

# Great expectations

- If even the most typical adjunct roles can be specific for certain verbs, we expect the inverse: that typical argument roles – agents and patients – may appear as adjuncts.

(11) a. The window was broken (**by Birgit**).  
b. Mika shot (**at the dean**).

- Expressed as PPs
- Not obligatorily overt.

# But...

- Agent role is still specific for *break* (passive is not like unaccusatives or the middle).

(13) a. The window **was broken** to rescue a kid from the fire.

b. \*The window **broke** to rescue a kid from the fire.

- Like *eat*, *shoot* has a (partly) cognate patient.

(14) Mika shot (**a bullet**) (**at the dean**).

# What's in the verb?

- The verb specifies for specific roles and possibly their manner (**to paint, to kill, to smear**), and generic arguments bearing them (**to shelve, to saddle, to hammer**).
- The verb also specifies event structure.
- We can use the event structure to simplify the system of participant roles and explain the argument-adjunct asymmetries.

# Event structure and roles

- Simple eventualities: **states** and **processes**.
- Event structure, subjects and properties.

(19) An **old** robot **moved around/slept sad/sad**.

S(subject)-properties=attributive modifiers

Subject=Agent/Theme  
S-properties=manner  
depictive, instrument  
E-properties=manner

Subject=Theme  
S-properties=predicate

# Telic eventualities

- Complex (telic) eventualities: 

process	state
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S-properties=attributive modifiers

S-properties=depictives,

E-properties=beneficiary, manner, time, place, ...

E-properties=manner...

S=Agent/Theme

S-properties=sources,  
instruments, manner...

E-properties=...

S=Theme

S-properties=goals,  
resultatives, manner...

# Examples

(20) a. The tall girl<sub>i</sub> ran t<sub>i</sub> into the room tired.

$S_a$

$S_a+E$

$S_t$

$S_a$

b. Noureddine opened the door with his leg.

$S_t$

$S_a$

c. Luis hammered my watch flat on Monday.

$S_a$

$S_t$

$E$

d. Frank slowly pushed the bicycle away.

$E$

$S_a, S_t$

$S_t$

# Subject-oriented *with*-phrase

- (21) a. Martin opened the can with a knife.  
b. The tree touched the wire with its top.  
c. Martin went to Leiden with a bag.

- *with*-phrase = partitive secondary predicate of a subevent subject.
- In the initiating subevent = instrument, the most immediate holder of the acting property.
- In the result subevent = specifying the part of the theme holding the result predicate.
- At the reference time level = depictive.

# Situation/event-oriented?

(22) a. The door opened with a lot of noise.

b. With Pepijn injured, we lost big time.

- Event-modifying *with*-phrase = a property of the relevant eventuality.
- If it is not actually still subject-oriented.
- Situation-modifying *with*-phrase = a property of the entire situation.
- If it is not actually still subject oriented.

# Arguments selecting *with*-phrase

(23) a. Blanka linked the computer with the network.

b. Blanka communicated with the aliens.

c. Blanka exchanged ideas with us.

- Reciprocal interpretation.
- Similar to conjunction. Agents control actions.

(24) a. Blanka linked the computer and the network.

b. Blanka and the aliens communicated.

# Comitative

- Comitative with: *x with y* = *x, y* make a bigger, plural unit, outside the scope of reference time, with information-structural asymmetry.

(25) a. Pepijn came with Martin.

a'. Pepijn and Martin came.

b. Pepin wrote the paper with Martin.

b'. Pepijn and Martin wrote the paper.

- The issue of control: both control the action.

# Russian instrumental predicates

- In Russian and some other Slavic languages, copula takes a predicate in instrumental if the predicate is bound by the reference time.

(26) Vanja byl javno pjanim uchit'el'em.  
V was obviously drunk.INSTteacher.INST  
'V was obviously drunk/a teacher.'

(27) Vanja byl uchit'el'.  
V was teacher.NOM  
'V was a teacher.' infers that V died

## *with*-summary

- Bound by a temporal interval: depictive, resultative or holder of result; the actual subject only appears outside the relevant temporal domain (i.e. as the subject of the sentence).
- Not bound by a temporal interval: comitative – the whole differs from the subject, as *with* gets more symmetric; asymmetric mainly in the information-structural properties.

## *from*-phrase

- (28) a. Nancy turned the light off from her chair.  
b. Nancy went from Leiden to London.  
c. Nancy went away from Leiden.

- *from* specifies a location (possibly abstract) of one of the subevent subjects in the process subevent of an accomplishment (process + *at*).
- Agent-oriented = depictive in the process subevent of an accomplishment.
- Theme-oriented = part of the negative of the result predicate.

# SSC and SOC revisited

- SSC is satisfied by a certain participant role and for a certain verb, when the role is part of the specification of the verb meaning.
- In addition, the verb may incorporate role-oriented manner of a subevent subject (Ag/Th).
- Two flavors of SOC, 1) universal E-properties (time, place) and 2) the one from SSC: bearers of incorporated roles are obligatory.

# Other factors of argumenthood

- Being a 'subject' of a subevent.
- Being referential rather than being generic or a property.
- Belonging to one subevent (process or state).
- Being at E-level, not within a participant.
- Agent, Theme > Goal, Source > Instrument > Time, Place, Beneficiary > Resultative, S-Manner, E-Manner, Depictive...

# Arguments-adjuncts in syntax

- In a transparent syntax-semantics mapping, no asymmetry needs to be stipulated, it comes from different structural properties of elements.
- Height of attachment, direct specifiers of subevents, referential categories, embedded within specifiers...

# Syntactic asymmetries

- Some syntactic asymmetries have a semantic background: incorporation of a thematic role and its modifier simplifies the respective constituent in terms of relativized minimality.

