Handout 2: Theories of Argument Structure

Seminar *The syntax-semantics interface: Argument structure*, Andrew McIntyre

Aim: To describe approaches to the following questions:
(1) Alternation question: Why do so many verbs have more than one argument structure?
(2) Linking question: What determines how a verb's arguments are realised in syntax?

1 Lexical operations: Changing a verb's argument structure in the lexicon

- **Lexicalists** (e.g. Pinker 1989, Levin/Rappaport Hovav 1995) say the lexicon is not just a storage space for unpredictable sound-meaning correspondences, but is *active* in the sense that there are **lexical operations**/**rules** which can change the meaning, form and/or argument structure of an expression.
- This is one way of explaining how alternations come about. We will see examples of how some linguists use lexical operations to add and subtract arguments of verbs. Lexical operations are an answer to question (1) (but not to (2)).

1.1 Example of how lexical rules can add arguments

- **Benefactive alternation**: beneficiary NP added to verbs with *created or obtained objects*:

(3) a. John made a salad. b. John made **his daughter** a salad.
(4) a. Mary drew a picture. b. Mary drew **the children** a picture.
(5) a. She burnt a cd. b. She burnt **her friend** a cd.
(6) a. I got/fetched/obtained/bought a book.
b. I got/fetched/obtained/bought **her** a book.
(7) a. I opened the door. b. *I opened **them** the door. [no created/obtained object]

- How the (b) variants are derived from the (a) variants using a lexical operation:

(8) Lexical operation adding a beneficiary:
a. **Input**: A verb with two NP arguments, one of which is a created or fetched object.
b. **Output**: A verb with three NP arguments, the added argument being a person who benefits from the action named by the verb.

(9) Basic lexical entry for *make* (omitting information irrelevant here):
a. Semantics: 'X causes Y to come into existence'
b. Argument structure: $[_{NP}$ X$]$ $[_{NP}$ Y$]$

(10) Derived lexical entry for *make*:
a. Semantics: 'X causes Y to come into existence **for the benefit of Z**'
b. Argument structure: $[_{NP}$ X$]$ $[_{NP}$ Y$]$ **$[_{NP}$ Z$]$**

- **Basic** (or **permanent**) lexical entry: the information permanently associated with the verb in the lexicon. The idea is that the result of the lexical operations isn't memorised, so it doesn't need to be in the lexicon permanently.

- Some other cases where linguists might use lexical rules to add an argument:

(11) **Causativisation**: a. I worked hard. b. **The boss** worked me hard.
(12) **Adding location NP**: a. I surfed. b. I surfed **the waves**.
(13) **Adding PPs**: a. I walked. b. I walked **into the house**.

1.2 Example of how lexical operations can suppress arguments

- Implied reflexive object alternation (also *wash, bathe, exercise, shower, undress*):

(14) a. The barber shaved **someone**. b. The barber shaved. [=shaved himself]
(15) a. Lisa dressed **the child**. b. Lisa dressed. [=dressed herself]
(16) a. Ann criticised **herself**. b. *Ann criticised. [=criticised herself]

(17) Lexical operation creating verbs with implied reflexive objects:
a. **Input**: A verb with two NP arguments denoting an action which an agent commonly performs on itself.
b. **Output**: A verb with one NP argument, interpreted as both agent and patient.

(18) Basic lexical entry for *shave* (omitting information irrelevant here):
a. Semantics: 'X removes hair from Y using a razor or shaver'
b. Argument structure: $[_{NP}$ X$]$ $[_{NP}$ Y$]$

(19) Derived lexical entry for *shave*:
a. Semantics: 'X removes hair from **X** using a razor or shaver'
b. Argument structure: $[_{NP}$ X$]$

- Some other cases where linguists might use lexical rules to suppress an argument:

(20) **Object drop**: a. The lion killed an animal. b. The lion killed.
(21) **Passive**: a. Booth shot Lincoln. b. Lincoln was shot.
(22) **Middle**: a. You can read this book easily. b. This book reads easily.

- Suppressed arguments can sometimes be realised as obliques:

(23) Lincoln was shot by Booth.

- Lexical rules derive one variant of a verb from another, entailing that one variant of the alternation must be basic. But it is not always clear which variant of an alternation (if any) is more basic than the other(s). E.g. the causative alternation in (24) has been analysed in several ways: (i) derive (b) from (a) by causativisation; (ii) derive (a) from (b) by suppression of causer; (iii) deny that either variant is more basic than the other.

(24) a. The plate broke. b. Fritz broke the plate.

A. Say as much as you can about the input and output of the lexical operations needed to form the passive and object drop constructions just illustrated. The lexical operations described in (8) and (17) will help you.
B. Suggest a basic lexical entry for the verb *read* and derived lexical entries for its use in the object drop and passive forms.
C. Suggest a lexical rule and basic and derived lexical entries for *break* assuming that the transitive construction in (24)b) is derived from the intransitive construction in (24)a).

2 Thematic hierarchies

- As an answer to question (2) (but not (1)), many linguists use some kind of *thematic hierarchy*. We discuss a simplified version of this approach.
- To determine how the arguments are realised in syntax, follow the following steps.

Step 1: Deduce the thematic roles of NP/DP arguments of the verb from verb meaning.

Step 2: Determine their relative position of the following *thematic hierarchy*:

(25) Thematic hierarchy
AGENT/CAUSER
EXPERIENCER
INSTRUMENT
RECIPIENT / BENEFICIARY
PATIENT / THEME
LOCATION / SOURCE / GOAL

Step 3: Link the arguments to syntax as follows, starting with (a), then (if applicable) (b), then (if applicable) (c).

(26) a. The argument that is highest on the hierarchy is realised as subject.
b. The argument that is lowest on the hierarchy is realised as direct object.
c. The next lowest argument on the hierarchy is realised as indirect object.

- Illustrations of correct predictions of the theory. (Note the general prediction that if there is only one NP/DP argument it will always be the subject.)

	Subject		Direct object
(27) a.	[AGENT *Fred*]	*broke*	[PATIENT *the plate*]
b.	[PATIENT *The plate*]	*broke*.	
(28) a.	[THEME *Elvis*]	*left*	[SOURCE *the building*]
b.	[RECIPIENT *Anna*]	*received*	[THEME *a letter*]
c.	[AGENT *Mary*]	*used*	[INSTRUMENT *the computer*]

- Dative alternations and psych verbs are a challenge for thematic hierarchy theories, at least if one assumes that the same thematic roles are involved in both variants:

(29) a. Mavis sent Basil a letter. b. Mavis sent a letter to Basil.
(30) a. Jack feared the psycho. b. The psycho frightened Jack.

- One solution: assume that different thematic roles are involved (independent evidence for this will be given in class):

(31) a.	[AGENT *Mavis*]	*sent*	[RECIPIENT *Basil*]	[THEME *a letter*]
b.	[AGENT *Mavis*]	*sent*		[THEME *a letter*] [GOAL *to Basil*]
(32) a.	[EXPERIENCER *Jack*]	*feared*		[THEME *the psycho*]
b.	[CAUSER *The psycho*]	*frightened*		[EXPERIENCER *Jack*]

- Other solutions include movement operations too complex to discuss here.

D. The (un)acceptability of some of the following sentences is not predicted by the (simplified!) thematic hierarchy theory in (25)/(26). Which sentences suggest that the theory needs to be changed or improved? Can you think of suggestions for improving the theory?

1. The key opened the door	2. The door opened
3. *Egbert opened the key the door	4. Grandma entered the disco
5. Gertrude received the book	6. The book cost ten dollars
7. Ten dollars will buy you the book	8. Basil feared the psycho
9. The psycho frightened Basil	10. Ethel gave the librarian the book
l1. The bouncer denied Francine access	

2.1 Differences between theories using thematic hierarchies

- Different thematic hierarchies exist in the literature (see Levin/Rappaport 2005:162f):

(33) a. actor > patient/beneficiary > theme > location/source/goal (Jackendoff 1990:258)
b. agent > experiencer > goal/source/location > theme (Grimshaw 1990)
c. agent > theme > goal > oblique (=manner, location, time...) (Larson 1988)

- All hierarchies in the literature have agents highest on hierarchy.
- Many reasons for the differences, including:
  - Different phenomena/languages being addressed by the authors.
  - If something other than the procedure in (26) is adopted, this will affect one's decisions about which arguments are higher in hierarchy. E.g. Larson (1988:382) (whose hierarchy is in (33)c)) assumes (34) in lieu of (26):

(34) "The lowest role on the thematic hierarchy is assigned to the lowest argument in constituent structure [=the argument furthest to the right; A.M.], the next lowest role to the next lowest argument, and so on."

E. What differences do you notice between (34) and (26) concerning prepositional phrases?

2.2 Critique of thematic hierarchies

- We see later that there is no agreement on how many thematic roles there are, and which are relevant for argument structure. This makes it hard to know which hierarchy is correct.
- There don't seem to be any clear, convincing proposals saying why the hierarchy should exist and why it is the way it is.
  A: Grimshaw (1990) assumes that it follows from depth of embeddedness in semantic representation, but she doesn't test this claim with any explicit semantic representations.
  B: Larson (1988) assumes that the hierarchy reflects the order in which arguments combine semantically with verb, but this hasn't been demonstrated clearly either.
- Advanced point: The type of argument Larson advances is partly based on the assumption that subjects can't be fixed parts of idioms unless the object and other complements of the verb are fixed parts of the idiom as well as well. There are few, if any, idioms where the subject but not the object is fixed.

(35) the chickens came home to roost; the shit hit the fan
(36) x died a thousand deaths; x took y to the cleaners

But this is hard to reconcile with Larson's system because he treats modifiers as arguments of the verb. This makes it hard for him to explain cases like:

(37) Clive DIED A THOUSAND DEATHS before his concert on Friday night.

3 The constructional view of argument structure

- *Constructional* theories of argument structure (e.g. *Construction Grammar*, Goldberg 1995) says that grammatical constructions have meanings just like words and idioms do. Constructions are lexical items with empty slots into which words/phrases can be inserted. Examples (again using a version of the theory simplified for pedagogical reasons):

(38) Lexical entry for the transitive construction:
a. Form: $[_S\ [_{NP1}\ ]\ [_{VP}\ [_V\ ]\ [_{NP2}\ ]\ ]$
b. Meaning: 1. NP1 causes NP2 to change in the manner indicated by the verb.
2-n. (Other meanings for construction.)

(39) Example of the transitive construction with lexical items inserted in it:
a. Form: $[_S\ [_{NP1}$ John$]\ [_{VP}\ [_V$ broke$]\ [_{NP2}$ the vase$]\ ]$
b. Meaning: John caused the vase to change in a 'breaking' manner.

(40) Lexical entry for the intransitive construction:
a. Form: $[_S\ [_{NP1}\ ]\ [_{VP}\ [_V\ ]\ ]$
b. Meaning: 1. NP1 changes in the manner indicated by the verb.
2. 2-n. (Other meanings for construction.)

(41) The intransitive construction with lexical items inserted in it:
a. Form: $[_S\ [_{NP}$ The vase$]\ [_{VP}\ [_V$ broke$]\ ]$
b. Meaning: The vase changed in a 'breaking' manner.

- The approach answers question in (1) by saying that alternations exist because a verb can be inserted in more than one construction. E.g. the causative alternation exists because certain verbs can be inserted either in the transitive or the intransitive constructions (in their relevant senses, i.e. the senses involving state change and causation of state change).
- Answer to question in (2): The constructions determine which argument appears as subject and which as object, etc. No need for devices like thematic hierarchies for this.
- The constructional approach assumes that what other linguists call *arguments of the verb* are *arguments of the construction in which the verb appears*. In this theory, the verb has no arguments (and thus no information about argument structure in its lexical entry), and influences argument structure only indirectly (e.g. by having a semantics which is compatible with a particular construction which introduces particular arguments).
- In this theory, grammatical constructions are no different from normal phrasal idioms, except that the latter predetermine some of the morphemes in them, e.g.

(42) Fred couldn't {think/teach/play/research...} his way out of a paper bag.

(43) Lexical entry for the 'paper bag' construction:
a. Form: $[_S\ [_{NP1}\ ]_i\ [_{AUX}$ couldn't$]\ [_{VP}\ [_V\ ]\ [_{NP}$ $POSS_i$ way$]\ ]\ [_{PP}$ out of a paper bag$]]]$
b. Meaning: X cannot V very well.

- Critique:
  - Many linguists find this approach uninteresting because it does not try to reduce irregularity in grammar. Everything is basically an idiom, just memorised.
  - The theory is arguably **unconstrained** and **unpredictive**: It can describe anything. It doesn't exclude structures not found in human languages (say verbs with five arguments), which is part of the job of a linguist.

F. Suggest a constructional treatment of the dative alternation, using the examples below.
1. I sent/threw the man the book. 2. I sent/threw the book to the man.
G. Constructionalists talk of *constructional polysemy*. How might this apply to the examples in the previous question and to the benefactive construction seen in section 1?

4 Direct linking rules and the subject requirement

- Answers question (2) but not (1).
- **(Direct) linking rules** claim that a particular thematic role is directly associated with a particular grammatical relation. A simple example:

(44) a. Agents and causers are inserted in the subject position.
b. Patients and themes are inserted in the direct object position.

- A more complex concrete example of direct linking rules (Levin & Rappaport Hovav 1995:135,146,153f):

(45) a. The argument of a verb that denotes the immediate cause of the eventuality described by that verb is its external argument [=subject].
b. The argument of a verb that corresponds to the entity undergoing the directed change described by that verb is its direct internal argument [=object].
c. The argument of a verb whose existence is asserted is its direct internal argument.
d. An argument of a verb that does not fall under the scope of any of the other linking rules is its direct internal argument

H. As presented here, the linking system in (45) contains redundancies. What would be a more succinct statement?

- Problem: The linking rules don't predict the full range of data below:

(46) a. $[_{AGENT/SUBJECT}$ *She*$]$ *broke* $[_{PATIENT/OBJECT}$ *the plate*$]$.
b. $[_{PATIENT/SUBJECT}$ *The plate*$]$ *broke*.
c. **Broke* $[_{PATIENT/OBJECT}$ *the plate*$]$.

- Solution: Assume that the linking rules in (44) are correct, but that some syntactic principle changes the structure produced by the linking rule. E.g.:

(47) **Subject requirement** (also called the *Extended Projection Principle*): In languages like English, the subject position must be filled.

- One way of filling the empty subject position is by moving the object NP into that position, cf. (48) (*t* stands for 'trace', an unpronounced copy of the moved element).

(48) $[_S\ [_{NP}$ *The plate* $]_i\ [_{VP}$ *broke* $t_i\ ]]$

- The analysis correctly predicts that the theme will stay in object position after the verb if some other element (an expletive, a PP) occupies the subject position, and that this should only be possible with verbs whose only NP argument is a theme. Prediction borne out:

(49) a. %There died thousands of people. b. *There worked thousands of people.
(50) a. Into the room ran three people. b. *In the rooom sang three people.

- The idea that arguments can inserted in the object position and then move to the subject position is called the **Unaccusative Hypothesis**, and the verbs are called **unaccusative** verbs. We discuss these in detail later in the course.
- Similar derivations work in passive sentences: *The plate was broken (by an idiot).*
- Approaches like (48) endorse **the Uniformity of Theta Assignment Hypothesis (UTAH)**: If two expressions have the same thematic role in different sentences, then they must have originated in the same position in both sentences. More on this later in the course.

5 Dowty's protorole theory and problems with standard thematic roles

- David Dowty (1991, Thematic Proto-Roles and Argument Selection. *Language* 67:547-619), among other things, gives an answer to question (2) and a critique of approaches based on standard thematic roles we looked at earlier.

5.1 Problems with thematic roles

- How general or how specific should thematic roles be?
  A. Maximally specific roles, e.g. *hit* has arguments with roles HITTER, HIT-EE. Such verb-specific roles are useless because generalisations about which argument becomes subject and which becomes object could not be made: we would need separate rules for every verb.
  B. The more standard, less specific approach (*hit* has an agent and patient).
- Until now we have not noted that position B is problematic:
  - No consensus on how many thematic roles there are and on their definitions. (E.g. do we separate patient and theme?)
  - Often hard to define the thematic roles: many borderline cases where one isn't sure where the cutoff point is, e.g.:

(51) Is John an experiencer in all of the following? *John feared/saw dogs, John got a shock, John is having delusions, the music really knocked John out, the music set John's teeth on edge*

(52) People who possess or end up possessing something: *John had/took/received/was given a book; I denied John his book; John's book.* Does John have the same role in all these sentences (e.g. possessor)? If not, which are the relevant roles? (Goal/beneficiary/recipient/possessor)

(53) Sometimes a distinction is made between **agent and causer** to cover differences like a vs. b,c below. (the subject in b,c are causers, not agents, because they don't act deliberately.) Could we simply give up the notion agent in favour of causer when determining which argument becomes subject? Maybe, but the notion of agent is relevant for other things (cf. the tests for agentivity in Handout 1, which don't work for b,c, cf. d).
a. *John broke the vase*.
b. *the hammer broke the vase (when it fell on it)*
c. *the picture in the Bild-Zeitung ruined his life*
d. ??*what the picture did was ruin his life; ??what the hammer did was break the vase*

(54) Dowty (1991:554): do we introduce a new thematic role (call it EXTENT) to cover measurements like those below? Do we subdivide it into smaller roles to cover the differences in acceptability in b-e? If so, do the smaller roles all have to be treated differently in one's theory of argument linking (thematic hierarchy etc.), and if so, how do we explain the extent-as-subject structures in f?
a. *It weighs 2kg; it measures 1 metre; it cost $5*
b. *I paid {$5/this amount/*the $5 bill} for the book*
c. *the book cost me {$5/*this amount/*this $5 bill}*
d. *I bought the book for {$5/this amount/*this $5 bill}*
e. *I bought the book with {*$5/*this amount/this $5 bill}*
f. *{$5/this amount/the $5 bill} will buy you/pay for the book*

5.2 Dowty's solution

- In lieu of the standard thematic roles (agent, patient etc.), there are two highly general thematic roles, **proto-agent** and **proto-patient** (cf. **prototype** = a typical instance of something). They are *fuzzy* categories (i.e. their boundaries are not clear) with *graded membership* (there are degrees of proto-agentivity: the subject of *eat* is more proto-agentive than that of *hear*). Certain entailments of the verb meaning contribute to classification as proto-agent or proto-patient (see (55),(56)). The **argument selection principle** in (57) determines the choice of subject/object.

(55) Contributing properties for the Agent Proto-Role (=Dowty 1991:572):
a. volitional involvement in the event or state
b. sentience (and/or perception)
c. causing an event or change of state in another participant
d. movement (relative to the position of another participant)
e. exists independently of the event named by the verb

(56) Contributing properties for the Theme Proto-Role (=Dowty 1991:572):
a. undergoes change of state
b. being an incremental theme [the notion is defined in sect 5.5 below]
c. causally affected by another participant
d. stationary relative to movement of another participant
e. does not exist independently of the event named by the verb

(57) Argument Selection Principle: In predicates with grammatical subject and object, the argument for which the predicate entails the greatest number of Proto-Agent properties will be lexicalized as the subject of the predicate; the argument having the greatest number of Proto-Patient entailments will be lexicalized as the direct object.

- Dowty notes some corollaries to the argument selection principle:
  - If two arguments have roughly equal numbers of entailments for a particular role, then either may be subject by lexical stipulation.
  - Three-place predicates: Argument with greatest number of proto-patient properties will be direct object and the other non-subject argument will be obligque. If the non-subject arguments have roughly equal proto-patient properties, then either or both may be lexicalised as direct object.
- The claims to subjecthood is always relative to the claims of other arguments. This is a bit like thematic hierarchies in that an argument only becomes subject because it is more qualified to be that than some other argument.

5.3 Examples of the use of the theory

5.3.1 Psych Verbs (Dowty 1991:579)

(58) Experiencer object: x pleases/frightens/surprises/disturbs y
(59) Experiencer subject: y likes/fears/hates x

- Both classes approx. equal in proto-agent & proto-patient properties because experiencers must be sentient, but the theme/stimulus CAUSES an emotional reaction. Hence no surprise that we find that, in many languages, experiencers may either be subject or object depending on verb.
- Experiencer object verbs can be either states or events, while experiencer subject verbs are always states, cf. the examples below (this is true not just in English). Why should this be? Dowty: the eventive uses of psych verbs involve a change of state, so the experiencer acquires an additional proto-patient property.

(60)	John is frightening the child	(event)
(61)	John/the picture frightens the child	(state)
(62)	The child fears John	(state)
(63)	??The child is fearing John	(state)

5.3.2 Symmetrical Verbs (Dowty 1991:583f)

(64) x and y rhymed/intersected/differed/kissed/agreed
(65) x rhymed with y /intersected with y /differed from y /kissed y /agreed with y

- Both look equivalent until one notices things like:

(66) a. Mary embraced John b. The drunk embraced the lamppost

(67) a. Mary and John embraced b. *The drunk and the lamppost embraced

- (67)(b) sounds as if the lamppost acted deliberately, tempting one to hypothesise that the native speaker's grammar is forcing it to be (implausibly) interpreted as an agent. But this account won't work for (68)b), which is only good if the lamppost is moving.

(68) a. The truck collided with the lamppost b. #The truck and the lamppost collided

I. Look at the lists of proto-agent and proto-patient properties and try to work out how Dowty's theory might explain the facts about (68)b).

5.4 Critique of Dowty's theory

- Why do precisely the properties in (55)-(56)determine subject/object, and not others?
- Unclear why the properties in (55)d) and (56)d) (mobility w.r.t. another participant) should be included in the prototype of an agent/patient. Movement is a property of themes undergoing a change of position (*I put it in the box*), which is a proto-patient property. I suspect that the types of verbs motivating (55)d)/(56)d) (e.g. *I entered/left the house*) should be handled by some other mechanism in which they are not assimilated to the agent-patient scenario, though what this might be is unclear.
- If other proto-agent or proto-patient properties turned out to be necessary, then the calculation of which argument is more proto-agentive would be affected, perhaps leading to wrong predictions.
- Only for subjects and direct objects, indirect objects not yet addressed in the theory.

5.5 Postscript: A note on incremental themes

- **Incremental themes**: arguments which affect the **telicity** of a sentence. A sentence is telic if it has a finishing point arising from the meaning of VP. A test for telicity is compatibility with phrases like *in an hour* (non-telic sentences go with *for an hour*-type phrases). In (69)-(70) the objects are incremental themes, because the choice of object affects telicity. The event is over when the whole object has been affected. If the object has no article, we don't get this effect because, simplifying, we can't gauge the quantity/amount affected, and therefore impossible to tell when the event ends.

(69) They {mowed the lawn/drank the beer/wrote a letter} **{in/*for} an hour**.

(70) They {mowed (lawns)/drank (beer)/ wrote letters} **{for/*in} an hour**.

- Incremental themes are sometimes subjects of intransitive verbs (unaccusative verbs, which we will discuss later) or objects of transitive verbs. However, not all direct objects are incremental themes.

(71) Clive went to the station in an hour.

(72) I {played the piano/pushed the car} for five minutes. [no incremental theme]

- Some linguists argue for a direct linking rule which says that incremental themes must appear in direct object position (e.g. Tenny 1994), though Dowty disagrees (p.570f).

J. Look at the following sentences and decide which proto-agent and proto-patient properties apply to the respective arguments.

1. *Agatha read a book.* 2. *The soldier killed a civilian.*

3. *John caused a problem.* 4. *Rover entered the room.*

6 Abstract syntactic approaches

- Many linguists **decompose** verb meanings into smaller parts:

(73) *The meat froze* [the meat BECOME frozen]]

(74) *John froze the meat* [John CAUSE [the meat BECOME frozen]]

(75) *John gave Mary a vase* [John CAUSE [Mary HAVE a vase]]

(76) *John entered the house* [John MOVE [TO [IN the house]]]

- A language may express parts of the decomposition (called *primitives, decomposition predicates*) in the form of affixes on verbs or as independent verbs:

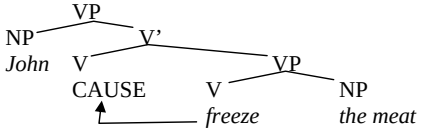
(77) a. Jussi jäädy-tti liha-n. [Finnish]
Jussi.NOM freeze-CAUSE.PAST meat-ACC
'Jussi froze the meat'

b. Taroo-ga niku-o koor-ase-ta [Japanese]
Taro-NOM meat-ACC freeze-CAUSE-PAST
'Taro froze the meat'

c. Ich **ließ** das Buch fallen. [German]
I **let** the book fall
'I dropped the book.'

- It is now fairly common in Chomskian theories to assume that such morphemes are present in the syntax even if they are not pronounced (e.g. Pylkkänen 2002, Harley 2004, Richards 2001, McIntyre 2005 and their references).

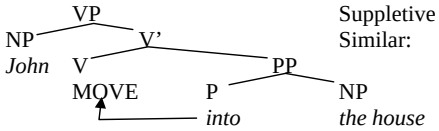
(78)



- Consequence: *John* is an argument not of *freeze*, but of CAUSE. (An overt expression of this is in *John caused the meat to freeze*.)
- In this type of theory, *freeze* moves to CAUSE (since CAUSE is a type of affix, & thus can't stand alone). This applies to the Japanese and Finnish cases, except affix is overt.
- Such analyses assume the VP-internal subject hypothesis (e.g. Radford 1997).
- A causative verb may have a completely different root from the causativised one, e.g *kill/die; feed/eat, raise/rise.* This is treated like **suppletion** in morphology (cf. *bad+er=worse*). This is not an argument against a syntactic approach. All one need do is assume that *die* is a morpheme inserted *after* syntax which replaces *die*+CAUSE.

Other examples

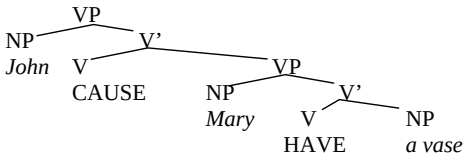
(79)



Suppletive variant for MOVE+into=*enter*
Similar: *cross*<MOVE+*across*
pass<MOVE+*past*
exit<MOVE+*out of*

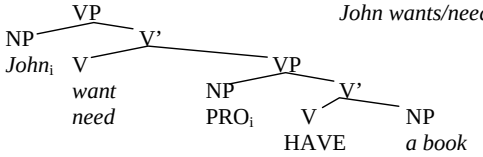
John entered the house

(80)



John gave Mary a vase

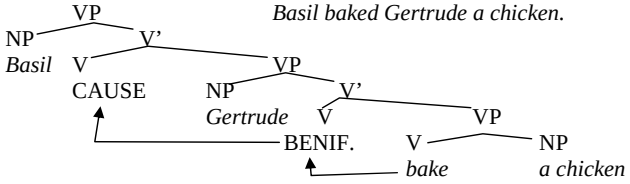
(81) *John wants/needs a book.*



- Assumption in (81) is that *want x*= 'want to have x', and that *I need x=I must have x*.
- PRO is a type of silent pronoun, also assumed in structures like:

(82) I_i promised her [PRO_i to leave] (cf. *I promised her that **I** would leave*)
He_i {wanted/needed/pretended/tried} [PRO_i to be president]

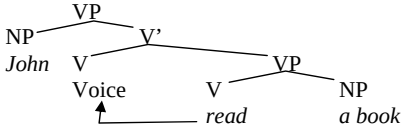
(83) *Basil baked Gertrude a chicken.*



- BENIF. is used here as a label for a morpheme that says that the event expressed in its complement (the event of the chicken baking) accrues to the benefit of Gertrude. (The normal term for BENIF is APPLICATIVE, e.g. Pylkkänen 2002.)

- Many Chomskyan linguists now assume that agent arguments are introduced by an unpronounced light verb, called *v* or Voice, as in (84) (Kratzer 1996, Pylkkänen 2002). Kratzer notes that there is an overt analogue of Voice in some languages.

(84)



- For linguists not using lexical operations, object drop cases like (20) might be handled by assuming that *eat* has a silent pronoun-like element in object position.

- Linguists who decompose verbs in syntax tend to be non-lexicalist. Lexical operations adding or subtracting arguments are replaced by the addition (or non-addition) of some morpheme which changes the verb meaning and introduces arguments.

- Defence of this type of theory:
  - Some arguments presuppose too much knowledge of syntactic & semantic theory to discuss in this course. (e.g. Pylkkänen 2002, Hale & Keyser 1993).
  - This system simplifies the description of differences between languages. The only difference between English and other languages in (77) is the pronunciation of the causative morpheme: in English, its pronunciation is zero.
  - There's no reason to reject unpronounced elements in principle. An invisible element in syntax is not inherently more objectionable than an invisible lexical operation.

- Critique: The indications for the silent elements in abstract syntactic theories are indirect and theory-internal.

7 References

Note: Most of these references will be quite difficult to read for students who haven't worked through textbooks on syntax and/or semantics.

Baker, M. 1997. Thematic roles and syntactic structure. L. Haegeman (ed.)*Elements of Grammar*. Dordrecht: Kluwer. 73-137

Dowty, D. 1991. Thematic Proto-Roles and Argument Selection. *Language* 67:547-619.

Goldberg, A. 1995. *Constructions*. University of Chicago Press.

Grimshaw, J. 1990. *Argument structure*. Cambridge (MA): MIT Press.

Hale, K. & Keyser, S. 1993. On Argument Structure and the Lexical Expression of Syntactic Relations'. In K. Hale & S. Keyser (eds.). *The View from Building 20*. MIT Press. Cambridge (Mass.). 53-110.

Harley, Heidi 2004. Wanting, having and getting. *Linguistic Inquiry* 35(2): 255-267.

Jackendoff, R. 1990. *Semantic structures*. Cambridge, MA: MIT Press.

Kratzer, Angelika 1996. Severing the External Argument from its Verb. In Johan Rooryck and Laurie Zaring (eds.), *Phrase Structure and the Lexicon*. Kluwer. Dordrecht. 109-137.

Larson, R., 1988. On the double object construction. *Linguistic Inquiry* 19: 335-391.

Levin, B. 1993. *English verb classes and alternations*. Chicago: University of Chicago Press.

Levin, B. & Rappaport Hovav, M. 1995. *Unaccusativity*. Cambridge, MA: MIT Press.

Levin, B. & Rappaport Hovav, M., 2005. *Argument Realization*. Cambridge.

Pinker, S. 1989. *Learnability and cognition*. Cambridge, MA: MIT Press.

Pylkkänen, L. 2002. *Introducing Arguments*. Dissertation: MIT.

Radford, A. 1997. *Syntactic theory and the structure of English*. Cambridge University Press.

Richards, Norvin 2001. An Idiomatic Argument for Lexical Decomposition. *Linguistic Inquiry* 32: 183-192.

Tenny, C., 1994. Aspectual roles and the syntax-semantics interface. Dordrecht: Kluwer.

Van Valin Jr., Robert D. / LaPolla, Randy J. (1997): Syntax. Structure, meaning and function. Cambridge University Press.