Linguistics Flash-Mob IV
Syntax/Semantic Interface: Event Structure
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A

A1 Insertion frames (subcategorization): Chomsky 1965, 1970

1. a. VP → V (NP) (S)
   b. V → *think, head, read*

2. *read*: [+V, +[____ {NP,∅}], +*READ*, +/ ríd/]

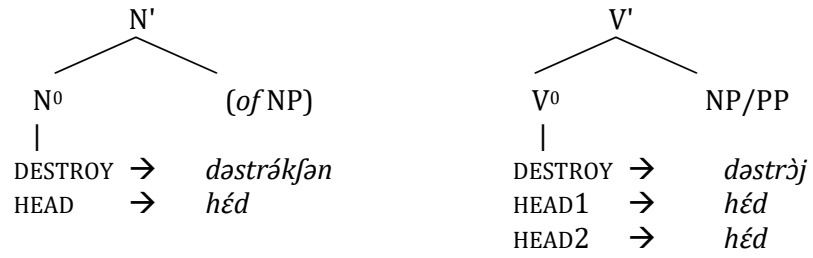
3. a. Kim headed the team
   b. Kim headed home
   c. Kim's head (is covered in red hair)

4. a. *head1*: [+V, +[_____ NP], +*LEAD*, +/hɛ́d/]
   b. *head2*: [+V, +[_____ DIR], +*ADVANCE*, +/hɛ́d/]
   c. *head3*: [+N, +count, +*BODY PART* , +/hɛ́d/]
   …..

> The lexicon consists of an unordered set of lexical entries and certain redundancy rules. Each lexical entry is a set of features…Some of these are phonological features, drawn from a particular universal set of phonological features….. Some of the set are semantic features. These, too, are presumably drawn from a universal "alphabet", but little is known about this today, and nothing has been said about it here. *We call a feature 'semantic' it if is not mentioned in any syntactic rule, thus begging the question of whether semantics is involved in syntax*.[15] The redundancy rules of the lexicon add and specify features wherever this can be predicted by general rule. *Thus the lexical entries constitute the full set of irregularities in the language*. (Chomsky, 1965: 142, emphasis added)

A2. Chomsky 1970:

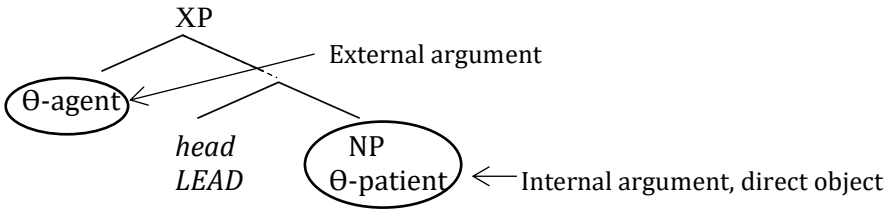
5.



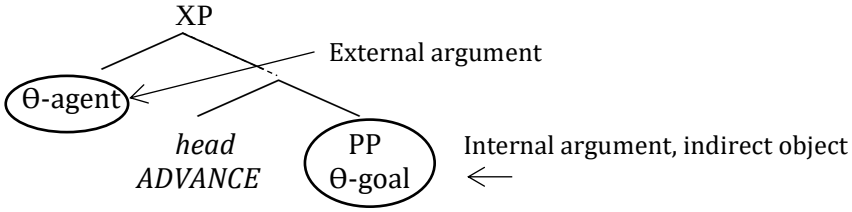
6. DESTROY effectively an a-categorial root, with an insertion frame/selected complement

A3. S-Selection, C-Selection (Grimshaw's 1979, Pesetsky 1982, much subsequent)

7. a. *head*: Θ-agent, Θ-patient:



b. *head*: θ-agent, θ-goal:



> The primitives of θ-theory – notions like "agent", "patient", "goal" etc. probably meet the criterion of epistemological priority […]. On the other hand, the primitives of c-selection – syntactic categories like NP, S', Small Clause etc. – do not meet the conditions of epistemological priority. They are not, in Chomsky's words, "concepts that can … provide the primary linguistic data that are mapped by the language faculty to a grammar. "……If this discussion is correct, it follows that *we want to derive the theory of c-selection from some other theory, whose primitives are epistemologically prior. Such a theory would be a semantic theory – specifically a theory of lexical semantics.* (180-181, emphasis added)

8. ***C-selection without S-selection:***
   We agreed on a time (American English)
   We agreed a time (British English)

9. a. load the hay on the wagon/load the wagon with hay *(transitivity alternation)*
   b. the garden swarmed with bees/bees swarmed in the garden *(locative alternation)*
   c. water the tulips flat *(transitive resultative)*
   d. the river froze solid *(intransitive resultative)*
   e. in the forest lies a hidden treasure *(locative inversion)*

10. ***Uniformity of Theta-Assignment Hypothesis*** (Baker, 1988): *identical thematic relationships between items* are represented by identical structural relationships between these items at the level of D-structure [in actuality, also at any level of representation, given the Projection Principle or the Inclusiveness Condition. Emphasis added].

The results of the lexical semantics research agenda establish dependencies between some syntactic structure and some semantic effects.

But are these mediated through *the lexical semantics of listed terminals*?

Alternatively, they could be correspondences between structure and interpretation (with Hale and Keyser, 1993, and by much subsequent research.

11. a. (As determined by some lexical head), *patient (theme, affected object, subject of quantifiable change; undergoer* etc.) → structural fragment P (e.g. sister of V, specifier of VP etc.)

Or –

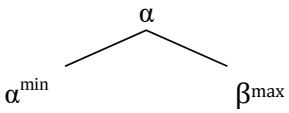
b. Structural fragment P is interpreted as *patient (theme, affected object, subject of quantifiable change; undergoer* etc.). Mediation through a selecting (lexical) head is neither necessary nor attested.

A4. Query 1

(11a) or (11b)? The question is by no means 'obsolete' – a lexical head need not be categorially specified to select (cf. Chomsky 1970, adopted as such e.g. in Marantz 1997).

The assumption that a-categorial roots select arguments is both contemporary and prevalent (see in particular Harley 2014, as well as much contemporary work within DM).

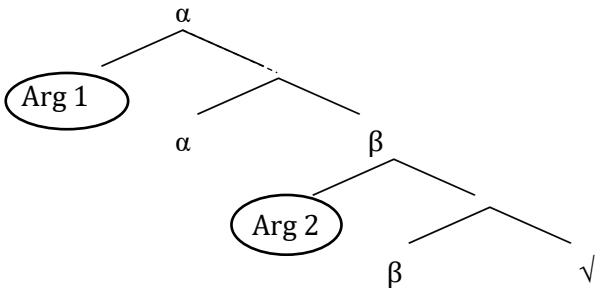
12. ***Extension of Query 1*** – what, if any, is the relationship between any head and its complement?



Where α is functional? Where α is 'lexical'? Where α is a root?

If there is <u>functional selection</u>, but no 'lexical' or 'root' selection, then:
a. The root, by definition, must be the most deeply embedded element in any projection
b. The root, by definition, does not project (i.e. it is $\alpha^{min/max}$)

13. The grammatical computation (narrow syntax) manipulates, exclusively, grammatical features
14. Roots do not have grammatical features (and I will let Gillian talk to you, if she would like, on whether there are such things as roots in the structure altogether, see Borer 2013 for my perspective).
15.



A5. Query 2 –

Assume (11b)/(15), with α and β grammatical formatives/features with particular interpretation, and Arg 1 and Arg 2, which are predicated of α and β respectively, are entailments from these features/structures.

But what are α and β? What are Arg1 and Arg2? And are they the exhaustive set relevant to argument structure?

A The answer could be quite conservative, e.g. consist of something like the theta hierarchy, as long as it is independent of selecting lexical heads: Arg1>Arg2 → Agent>Theme

B α and β are event-structure related features/formatives – particularly attractive, given the existence of event-related semantics, that of Davidson (and in particular as developed by Parsons' and others, under the label Neo-Davidsonian approach) which explicitly argues that all grammatical 'roles' are relations with an event, and that the lexical head itself (e.g. the verb, the root) is itself a relationship with the event and not its determinant.

16. a. Kim headed the team
    b. Kim headed home

17. a. ∃e [*head* (e) & *Agent* (*Kim, e*) & *Patient* (*the team,* e)]
    Arg 1 *Arg 2*
    b. ∃e [*head* (e) & *Agent* (*Kim, e*) & *Goal* (*home,* e)]
    Arg 1 *Arg 3*

18. (B) is, generally, the approach adopted by proponents of (11b) (sometimes known as *constructivists*). All constructivist approaches are consequently decompositional to some degree or another, and all are related to some mapping between events, in their semantic sense, and syntax. However, proponents of (11b) do not necessarily agree on what α and β are, on whether all arguments are specifiers of functional event structure, and what the interpretation of these arguments might be, which brings us to the decomposition question.

A6 Against head selection (see Borer 2017)

A6.1 Morphological Argument

19. State an objection
    a. $[_{VP}\ V^{min}\ NP]$
    b. $[_{\sqrt{P}}\ \sqrt{}\ NP]$ (Harley 2014 i.a.)

20. Verbalize an objection
    a. $[_{V}\ [_{A}\ [_{=N}\ \sqrt{}verb]\ al]\ ize]$ (Borer, 2013)
    b. $[_{V}\ [_{A}\ [\sqrt{}verb]\ al]\ ize]$ (Harley 2014, assumed); or
    c. $[_{V}\ [_{A}\ [_{N}\ [\sqrt{}verb]]\ al]\ ize]$
    (note that *objection* is definitely not an argument of *verb*).

Under the assumption that *objection* gets the same argumental interpretation in (19) and (20) regardless of what it is, note that it is in two very distinct structural positions. As an appropriate interpretation *is* available in a position which is not head-selected, and as that position is available for both variants, by Occam's' Razor that is the general location for that role (or alternatively, morphology is not syntactic).

21. A syntactic approach to complex words per force entails rejection of a lexical head/root-selection model for arguments.

A6.2 Syntactic Argument

22. a. *(The army) destroyed *(the bridge)
    b. The army's destruction of the bridge
    b. the destruction was complete (following Chomsky, 1970)

23. Severing the root/verb from the arguments:
    a. $[_N [_{=v}\sqrt{}$ destroy] tion]
    b. $[_N [_\alpha$ Arg 1 (α) $[_\beta$ Arg 2 (β) $[_{=v}\sqrt{}$ destroy]]] tion]

A6.3 Lexical Argument

24. a. The fire stations sirened throughout the raid
    b. The factory sirened midday and everyone stopped for lunch
    c. The police sirened the Porsche to a stop
    d. The police car sirened up to the accident
    e. The police car sirened the daylights out of me

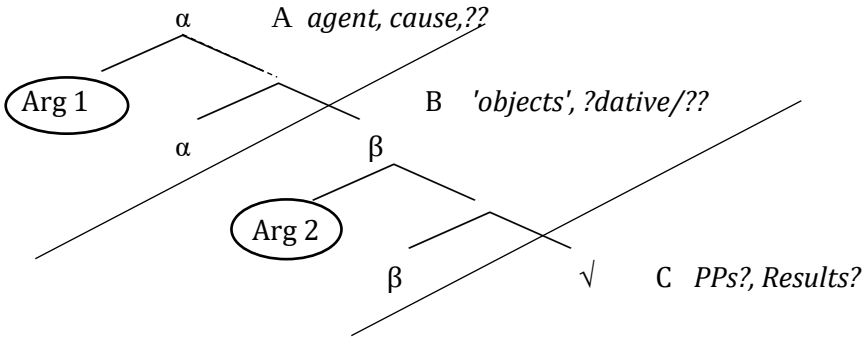
If the syntax of (24a-e) were determined by listed insertion frames, we would need five different insertion frames for *siren*, of which at least four would convey interpretational information that cannot be deduced from sounding sirens alone. The interpretations of (24a-e) clearly pattern with those of the syntactic configurations in (25a-e):

25. a. The bells rang throughout the raid
    b. The factory signaled midday and everyone stopped for lunch (*e.g. by sirening*)
    c. The police forced the Porsche to a stop (*e.g. through sirening*)
    d. The police car rushed up to the accident (*e.g. while sirening*)
    e. The police car scared the daylights out of me (*e.g. with its sirening*)

B

B1 Argument structure – the scheme

26.



27. a. ∃e [*head* (e) & *Agent* (*Kim, e*) & *Patient* (*the team,* e)]
    Arg 1 *Arg 2*
    b. ∃e [*head* (e) & *Agent* (*Kim, e*) & *Goal* (*home,* e)] (??)
    Arg 1 *Arg 3*

The Neo-Davidsonian representations above encode only argumental relationship, and these are encoded as a conjunction. Event types, as well as the specific nature of the arguments involved are not, as such, represented. E.g. that agents typically c-command patients, or that two agents are barred etc. cannot be deduced from the formalism as it stands, nor can we deduce from it the type of event involved (e.g. accomplishment vs. activity), to the extent that we assume these to be grammatically represented.

(26) is a scheme straightforwardly generated by merge, but as such, contains very little information about the ways in which it is to be distinguished from other such schemes.

B2 In need of elaboration (at the very least):

28. a. What are α and β semantically, i.e. if both are connected to event structure in some (Neo)-Davidsonian sense, what is their nature such that it give us both a proper interpretation for the event under consideration, and a refinement of the type of role that is predicated of them?
    b. What are α and β syntactically? Neo-Davidsonian representations are conjunctions. How can a structure be constructed, then, in which Arg1, interpreted as *agent/causer* or equivalent, c-commands Arg2, an object of some sort?
    c. What is the relationship between the scheme in (26) and other relatively well-established syntactic properties? For instance, structural case is typically restricted to 2 or possibly 3 types (nominative, accusative, possibly dative/ergative, absolutive), in turn corresponding to 2-3 'direct' arguments. Does that fact bear on the elaboration of the scheme in (26)?
    d. The scheme is very minimal, as it stands – does domain A include more structure (e.g. distinct structure for *agent* and *cause*, possibly for some quirky cases, some subjects of psychological predicates)? Does domain B (e.g. for *applicatives* and *benefactives* of various sorts)? Does domain C (e.g. for result clauses or some types of complements)?
    e. Should the emerging scheme be accountable to morphological structures (i.e. the syntactic structures of what are otherwise complex phonological words)?
    f. What are roots?

29. a. Telic Intransitive (unaccusative):
    ∃e [*subject-of-quantity* (*Kim*, *e*) & *arrive* (e)]
    b. Atelic Intransitive (unergative)
    ∃e [*originator* (*Kim,* e) & *run* (e)]
    c. Telic Transitive:
    ∃e [*originator* (*cat,* e) & *subject-of-quantity* (*the tree*, e) & (*climb*, e)]
    d. Atelic Transitive:
    ∃e [*originator* (*cat,* e) & *default participant* (*the tree*, e) & (*climb*, e)]

30. However, reference to arguments does not suffice to draw the correct syntactic distinctions:

    a. The army took over. (no *subject-of-quantity*, unergative, accomplishment)
    b. It rained (no *originator*, activity)

31. a. ∃e [*originator* (*the army,* e) & *take over* (e)] (or, possibly, *take* (e) & *over* (e))
    b. ∃e [*rain* (e)]

32. a. ∃e [*quantity* (e) & take over (e)]
    b. ∃e [*activity* (e) & *rain* (e)]

The answer I gave in 2005 is that α is e (in the Davidsonian sense), and that Arg 1, what I label *Originator* is the reading emerging for Arg 1 (when present) in conjunction with α and some nominal. The relationship between e and Arg 2 I believe is less direct, and is mediated through the relationship between α and β^{max}, with β^{max} functioning as a quantity modifier of the event, and with Arg 2, Subject of Quantity (SoQ) as its subject (when present) (this is a departure from Borer 2005):

33. ∃e [*originator* (*Jane*, e) & *quantity*(e) & *SoQ* (*the dog*, *quantity*) & *feed* (e)]

The scheme here consists of two argumental positions, corresponding, I suggest, to two primary structural cases (in both acc and erg systems). While dative may be argued to be a structural case,

in this system, it is not integrated into the primary building blocks for event structure computation, which, I continue to believe, consist of the presence vs. absence of the quantity distinction (and setting states altogether aside). While event flavors can certainly be augmented and elaborated, I suggest that that is exactly what they are – flavors and augmentations on what the basic system is, in which there are but two arguments (at most) and the primary construction engine is that of quantity event modification.[1]

B3 A few arguments against result state representation for transitive verbs

For an analysis of (telic) transitivity in terms of a result-state, see McCawley, 1968; Dowty, 1979; Pustejovsky, 1991, 1995; Levin and Rappaport Hovav, 1994, 1999, 2000; Higginbotham, 1999, 2000; Ramchand 1997, 2008; among many others.

34. a. Causative verb: [[*x* do-something] cause [*y* become *STATE*]]
    b. *break*: [[*x* do-something] cause [*y* become *BROKEN*]]
    (Levin and Rappaport-Hovav 1995)

35. ∃e [*break* (e) & *originator* (Robin, e) & *quantity* (door, e) & [∃e' *broken* (e') & *subject-of-state* (door, e') & CAUSE (e, e')]]

36. a. ∃e [(*hammer* (e) & *originator* (Kim, e) & *participant* (metal, e) & [∃e' *flat*(e') & *subject-of-state* (metal, e')] & CAUSE (e, e')]
    b. ∃e [*sing* (e) & *originator* (Robin, e) & [∃e' *asleep*(e') & *subject-of-state* (the baby, e') & CAUSE (e, e')]c.

37. *Problem A:* no obvious result state (no telos), but telicity interpretation nonetheless:
    a. The boat floated under the bridge/the car crossed the bridge/I ran around the corner
    b. I wrote a sequence of numbers/I filled the room with smoke

38. *Problem B*: no causal relations:
    a. On May 5 1945, the people of Amsterdam danced the Canadians to Dam Square.
    b. Reluctant to let him go, the audience clapped the singer off the stage
    c. At the opening of the new Parliament building, the crowd cheered the huge gates open.
    (Rothstein 2000)

39. *Problem C*: telicity reading remains crucially linked to the quantity of the direct object, and optional, at that:

    a. John hammered metal/cans flat (for an hour/*in an hour)
    b. Kim sang babies asleep (for an hour/*in an hour)

40. You can paint (these) walls white *for hours*, and they still won't become white (e.g., because something in the plaster oxidizes the paint)

    And compare:
    *You can paint these walls white *in a week* and they still won't become white
    Walls (that) were white
    I consider walls white

41. We yelled ourselves hoarse (for ten minutes) (Wechsler, 2001)

[1] Alternatively a sub-event, but I would like to avoid that if possible, and reserve sub-events to periphrastic configurations.

42. [$_A$hair white], a result state SC presumably present in (42a) and (42b) entails *white hair* (by some acceptable measure of *white*). But not so (42c), (42d). (42c) appears to be a cancelable implicature. (42d) not even that. Under the assumption that in (42a-b) we are dealing with [$_A$ hair white], clearly this could not be the case in (42c-d).

    a. Mary made her hair white ('for several hours' scopes over adjective only)
    b. Mary's hair was white

    c. Mary dyed her hair white (for several hours/in several hours)
    d. Mary whitened her hair (for several hours/in several hours) (note that true white may never have been intended, only, possibly, 'whiter')

43. a ∃e [*quantity* (e) & *originator* (Kim, e) & subject-of-quantity (the metal, quantity) & (*hammer-flat*, e)]
    b. ∃e [*quantity* (e) & *originator* (Robin, e) & *subject-of-quantity* (the baby, quantity) & (*sing-asleep*, e)]
    c. ∃e [*activity* (e) & *originator* (Kim, e) & *participant*(*the walls*, e) & (*paint-white*, e)]
    d. ∃e [*activity* (e) & *originator* (Robin, e) & *participant*(*babies*, e) & (*sing-asleep*, e)]

C

C1 Very rudimentary thoughts about agents and causers

44. There is sufficient empirical evidence to suggest that the distinction is real:
    a. Originally from Hale and Keyser (1993) – transitivizing activities/unergatives gives rise to an agentive reading, transitivizing accomplishments/unaccusatives can give rise to a causer reading. Examples from Reinhart (1996):

        i. ha-me'amen/ha-ra'av heric 'et ha-sus la-urva
        the-trainer/the-hunger made-run OM the-horse to-the-stable
        ha-me'amen/*ha-ra'av heric 'et ha-sus ba-urva
        the-trainer/*the-hunger made-run OM the-horse to-the-stable
        'the trainer/the hunger made the horse run to the stable/in the stable'

    b. Only agentive subjects can control PRO

    c. subjects of *–ing* nominals (sometimes called gerundive nominals) must be agentive
        i. the wall touched the fence/Mary touched the fence (agentive/stative)
        ii the touching of the fence (#by the wall)/(by Mary)
        #the wall's touching of the fence/Mary's touching of the fence

    d. Hebrew *by*-phrases appear restricted to agentive readings (Alexiadou and Doron 2011)

    At least one thought that is frequently floated relative to this distinction is that agents represent a higher event, potentially with a silent causer as the subject of the lower event. The idea, I think, is attractive, but faces at least one difficulty - it is actually the causer, not the agent, that is further away from the core event. First, a cause can be altogether unrelated, temporally or locally, as well as an incidental or even adversarial contributor (e.g. *the cancellation improved my mood; the virus created anti-bodies in the blood*). Intuitively, then, it is difficult to see why the causer is part of the core event, but not the agent. Second, to the best of my ability to tell, there are no locality conditions such that we can attribute them to a distinct position for the agent and the causer nor do they co-occur. Rather, these appear to be, for all

intents and purposes, in complementary distribution (and hence by common reasoning competing for the same position). Possibly, an account could be available – or some possibly already are - whereby agents are always causers (syntactically and semantically) but not the other way around, that would solve at least this particular problem.

However, I will leave it at that, having given the matter (definitely) insufficient thought during the years. While in my own work, *originators* referred to both categories, I also make it abundantly clear that more elaboration is required to do justice to that superset.

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