
3.4 The Strong Thesis \([112-117]\)

a. Where does SMT fail? Research strategy: seek imperfections of \(L\) \([112]\)

(1) Given some apparent property \(P\) of \(L\)
   a. \(P\) is real, and an imperfection.
   b. \(P\) is not real, contrary to what had been supposed.
   c. \(P\) is real, but not an imperfection; it is part of a “best way” (perhaps not unique) to meet design specifications.

\(\Rightarrow\) Chomsky considers (c) the most interesting because novel question

b. “Conceptual ‘good design’ conditions” \([n. 60]\) derivable from the SMT \([112]\)

(2) a. The only linguistically significant levels are the interface levels.
   b. The Interpretability Condition: LIs have no features other than those interpreted at the interface, properties of sound and meaning. \([\text{false}]\)
   c. The Inclusiveness condition: No new features are introduced by \(C_{HL}\). \([\text{Uriagereka’s Conservation Law = Inclusiveness + Recoverability, preventing unrecoverable deletions}]\)
   d. Relations that enter into \(C_{HL}\) either (i) are imposed by legibility conditions or (ii) fall out in some natural way from the computational process. \([\text{Uriagereka: representational vs. derivational}]\)

c. Chains: \(\bullet\) Indices enrich LA, a subset of Lex, thus a set of lexical types, to Num, a set of lexical tokens constructed from Lex (weak departure from Inclusiveness); \(\bullet\) copy theory simplest version of transformational grammar (cf. Chomsky 1955) \([\neq \text{trace theory}]\)\([114]\)

\(\Rightarrow\) \([s\_\alpha \ [s \_\alpha \ ] \ ]\) (each \(\alpha\) is a ‘copy’ of the other) \(\rightarrow\) chain \(C_\alpha = <\alpha_1, \alpha_2>\) = “a sequence of occurrences of a single \(\alpha\)” \([\text{Chomsky 1955; Uriagereka: type > token > occurrence}]\)

\(\Rightarrow\) \(\text{Occ}(\alpha)\) in \(K\) is the full context of \(\alpha\) in \(K\) \(\rightarrow\) \(\text{Occ}(\alpha) = \text{sister}(\alpha)\) “simplify chains from sequences to sets”: \(C_\alpha = <\alpha_1, \alpha_2> \rightarrow \{\alpha_1, \alpha_2\}\) \([115]\) \([\text{Uriagereka: “A chain is a sort of stretching of a phrasal context beyond the normal limits imposed by the merge operation”, a quantum object}]\)

(3) who did you say [ t has [ t’ discovered the proof ] ] \([115]\)

\[\begin{align*}
A & \quad \uparrow \quad \uparrow \\
\bar{A} & \quad \text{\(\bar{A}\)-chain} \quad C_Q = \{\text{who}_{Q1}, t_{Q2}\} \\
A & \quad \text{A-chain} \quad C_R = \{t_{RL}, t’_{R2}\} \\
\text{Occ(who)} & \quad \{Q_1, Q_2=R_1, R_2\} \rightarrow \text{two 2-membered chains, sharing one Occ(who)}
\end{align*}\]

\(\Rightarrow\) \([n. 66]: \text{trace invisibility [MP]}\) is gone – what is the interpretation of traces of successive-cyclic movement? Uriagereka: Do intermediate reconstruction sites exist (for \(\bar{A}\)-movement, yes, unclear for \(A\)-movement)?

\(\Rightarrow\) Def. of chain = “set of occurrences of an object \(\alpha\) in a constructed syntactic object \(K\)” \([116]\)

\(\Rightarrow\) How can Fs delete in all copies? Given occurrences, this can happen under identity! \([116]\)
d. **Relations**: under (2dii), $\text{Merge}(\alpha, \beta) \rightarrow K(\alpha, \beta)$ provides directly the relations

1. **Sisterhood**$(\alpha, \beta)$, and
   [sisterhood extends to the *modified* LI$(\alpha)$, MLI$(\alpha)$, and to F$(\alpha)[1^{16f}])

2. **Immediate containment** $K \supseteq_{\text{immediate}} \{\alpha, \beta, K\}$

**Composition of relations** yields:

3. **Containment**: $K \supseteq \{\alpha\}$ if $K \supseteq_{\text{immediate}} \{\alpha\}$
   [transitive closure of immediate containment]

4. **Term**: $\alpha = \text{term}(K)$ if $K \supseteq \{\alpha\}$

5. **Identity** (= sister(sister) ) *[presupposing binarity of Merge, a sister of a sister is itself]*

6. **C-command** (= sister(contain) ): $\alpha$ c-commands $\beta$ if $\alpha = \text{sister}(K \supseteq \{\beta\})$ *[stipulated]*
   [n. 67: C-command is *symmetrical*]

   **Derivational-compositional C-command** (n. 61/67; Epstein 1999) $\rightarrow$ deduced from LCA
   $\alpha$ c-commands $\beta$ if $\text{Merge}(\alpha, K \supseteq \{\beta\})$

7. **L-marking** (a primitive government) $\rightarrow$ **barriers**$^{[117]}$

**Deep structure**: “[(2a)] requires that there is no Deep or Surface Structure” $\rightarrow$ Uriagereka, who makes a case for DS (cf. Uriagereka 2008), notes that Numerations, etc., are mere reformulations of DS in terms of properties of DS, which is why “many want to get rid of the Numeration”

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**3.2 Imperfections**$^{[117-126]}$

‘design flaw’$^{[117]}$

a. **Phonological component** (Phon): introduces prosodic structure and narrow phonetics (violates Inclusiveness), phonological properties of LIs and their phonetic instantiations of combinations thereof are discrepant (violates Interpretability)$^{[117]}$

   (4) **Inclusiveness/Interpretability revised**$^{[118]}$
   Inclusiveness holds of narrow syntax, and each feature is interpreted at the level LF or associated with phonetic features by the phonological component.

   $\supseteq$ Phon = **isolated component**: “true phonological features”, only visible to Phon, separate subsystem of FL *[this complies with the definition of a Fodorian module: encapsulation, autonomy, domain-specificity,..., thus not part of NS]*

b. **Spell-Out** (‘operation’!): “in the course of construction of LF, an operation Spell-Out delivers the structure already formed to the phonological component, which converts it to PF”
(5) Architecture of FL (so far, as I understand it...)

- **Uninterpretable features** of L1s \((uF \neq iF)\): includes Fs with no interpretation at LF/PF (violating Interpretability) \(\rightarrow\) **structural Case; agreement** Fs problematic \((iF\) on N, \(uF\) on V/A; phonetically optional)\(^{[117]}\)
  - \(\Rightarrow\) Occ\((F)\) cannot be distinguished (for \(u\varphi \neq iF\) \(\rightarrow\) F-chains don't exist \(\rightarrow\) Fs cannot move or be attracted!

- **Move** (the 'dislocation' property): surface phonetic relations \(\neq\) semantic relations\(^{[119f]}\)
  - \(\Rightarrow\) Move\((\alpha,\beta) \rightarrow C_{\alpha} = \{\alpha_1, \alpha_2\} \): subsequent operations might distort c-command \((\alpha_1\) c-commands \(\alpha_2\) and locality relations between \(\alpha_1\) and \(\alpha_2\)

(6) **Multiple head raising**\(^{[120]}\)
- \(\text{[CP} [TP [\text{[VP-\text{t}]} \text{-C}] [TP [...] [VP ...t_j...]] ]^{[120]}\)
  - \(\Rightarrow T_i \sim c\)-commands \(t_i; V_j \sim c\)-commands \(t_j\)

(7) **XP dislocation**\(^{[120]}\) [i.e. PrtP-fronting]
  - i. \([TP \text{[those books]}] \) couldn't possibly \([\text{VoiceP be [PrtP writ-en [vP-def t_writ-t_j for children]]}]\)
  - ii. \([\text{PrtP written t_j for children}], [TP \text{[those books]}] \) couldn't possibly \([\text{VoiceP be t_j}]\)
  - \(\Rightarrow\) Remnant PrtP-movement \(\rightarrow\) [those books]_j \(\sim c\)-commands \(t_j\)

(8) ‘NS’: whom_i did everyone talk to whom_j about whom_k
  \(\rightarrow\) Derivationally disambiguated *qua* initial Num\(^{[120]}\)??
  - a. PF_1: whom_i did everyone talk to t_i about whom_k \(i=j\)
  - b. PF_2: whom_i did everyone talk to whom about t_i \(i=k\)
  - [why no intervention effect/RM-violation: wh...wh...wh?]
  - \(\Rightarrow\) “uninterpretable features and the dislocation property [...] have to do with externally imposed legibility conditions”\(^{[120]}\) \(\rightarrow\) “‘surface properties’ appear to be specific to human language. [...]"
language design marks it in some systematic way”¹²¹ → “the dislocation property is required; it falls within design specifications”¹²¹ → “these devices [i.e. uninterpretable features] are used to yield the dislocation property”¹²¹

“for convergence, uninterpretable features must be deleted in the course of computation of LF”¹²⁰

(9) Relevant uFs¹²¹

a. T[φ] identifies T as a target for dislocation
b. T[EPP] requires (’second’) Merge in the position identified by [uφ]
c. DP[uCase] identifies a DP as a candidate for Merge, hence dislocation

(10) i. [TP T[φ, EPP][VoiceP be [PrtP elect-ed [vP-def t_elect [DP an unpopular candidate][u, uCase]]]]][¹²²]
   1. Agree([uφ], [φ])
   2. Erase([uCase])

[φ] (= probe) seeks a matching F (= goal) establishing agreement → Rel(probe, goal) = here: ‘T-associate relation’¹²²

Case is ancillary to agreement ([uφ]): “Taking structural Case to be a reflex of an uninterpretable φ-set, it [= Case] too erases under matching with the probes.”¹²² [Correlation goes back to George & Kornfilt (1981) in. 81] → given that Erase = Agree¹²², [φ] and [uCase] of a DP may be seen as two sides of the same coin...

ii. [TP [DP an unpopular candidate][φ, uCase] was-T[φ, EPP][VoiceP t_elect [PrtP elect-ed [vP-def t_elect tDP]]][¹²¹]
   1. Agree([EPP], [D])
   2. Merge(DP, SpecTP)
   (alternative: satisfy [EPP] with Expl¹²³)

Select P(G) → Agree([EPP], G) → Merge(P(G), [Spec, T]), P(G) = phrase det. for pied-piping

Def. Move = “The combination of selection of P(G), Merge of P(G), and feature deletion under matching (Agree) is the composite operation Move”¹²²

Case and Lcats don’t enter into Agree since they don’t have counterparts (cf. feature identity below); ACC Case?; OS is “invisible object agreement, with ancillary Case checking”¹²³

e. Match: “Matching is a relation that holds of a probe P and a goal G”¹²²

Match(P, G) → Agree(P, G) if c-command domain D(P) ⊆ G, under closest c-command

Closeness: G is closest to P if ∄ Match(P, G’), G’ ∈ D(P), G ∈ D(G’)

(11) a. Matching is feature identity.¹²²
   b. D(P) is the sister of P.
   c. Locality reduces to “closest c-command.”

f. Equidistance: “Terms of the same minimal domain are ‘equidistant’ to probes.”¹²²

g. Minimal domain: “The minimal domain of a head H is the set of terms immediately contained in projections of H.”¹²³
h. **Activeness:** undeleted *u*Fs render *G* active → “structural Case [...]” enables the closest *G* to select *P(G)* to satisfy the EPP by Merge” → if Case is deleted, *P(G)* is “frozen in place”\(^{[123]}\)

- “The operations Agree and Move require a goal that is both **local and active.**”
- **Defective intervention** constraint: in \(\alpha > \beta > \gamma\), Match(\(\alpha, \gamma\)) ok if \(\beta\) is inactive
- **MP:** Checking = deletion under Match, Attract = Agree + Move [checking domains obsolete\(^{[124]}\)]
- **Feature identity** (Match) = identity of the choice of feature (= attribute), not value!\(^{[124]}\)

i. **Deletion:** one fell swoop operation → deletes \(\varphi\)-set as a unit [bundle], only complete \(\varphi\) can deactivate matched goal\(^{[124]}\)

\[(12) \text{Participial agreement (a = Prt defective) [my example]}^{[124]}\]

Elles sont venues  
they.FEM.PL be.PL come.FEM.PL
'They have come.'

\[a. [\text{Prt}\text{ Prt}_\text{[u}\varphi\text{,def] } [\text{VP } \text{ven- elles}_{[\text{[3/FEM/PL, u}\text{Case;] } ]} ] \text{ Prt}_\text{[u}\varphi\text{,def] } = [\text{uNUM} \rightarrow \text{number agreement} ]\]

\[b. [\text{Prt}\text{ Prt}_\text{[u}\varphi\text{,def] } [\text{VP } \text{ven- ues}_{[\text{[3/FEM/PL, u}\text{Case;] } ]} ] \text{ Prt}_\text{[u}\varphi\text{,def] } = [\text{uNUM} \rightarrow \text{number agreement} ]\]

\[c. [\text{VP } \text{ven- ues}_{[\text{[3/FEM/PL, u}\text{Case;] } ]} ] \text{ Prt}_\text{[u}\varphi\text{,def] } = [\text{uNUM} \rightarrow \text{number agreement} ]\]

- **Defective heads** (\(\text{T}[\text{u}\varphi\text{,def}] = [\text{uPERS}; \text{Prt}/\text{A}\text{def} = [\text{uNUM}]\)) cannot deactivate \(\text{F} (= \text{uF}, \text{i.e. Case})\), hence a Goal may/must move on (successive-cyclic A-movement)\(^{[124]}\) [Uriagereka notes that it is odd to interpret \(\text{T}_{\text{def}}\) as containing [PERS] rather than, say, [NUM] (cf. participials), since [PERS] seems to be the (additional) \(\varphi\)-\(F\) licensing inflected infinitives incl. overt subject-Case-marking in languages like Portuguese...]

j. **Expletives** (weak Expl): Expl[\(G\), \(G = [u\varphi]\), doesn’t require \(F (= \text{Case})\) for activation; Expl can raise to [Spec, \(\text{T}_{\text{def}}\)], but cannot delete \(\text{T}[u\text{comp}] \rightarrow \text{Expl}[u\varphi] = [u\text{PERS}]^{[124]}\) [Expl containing [PERS] is a bizarre assumption, acc. to Uriagereka]

\[\text{TP there}_{[\text{uPERS 3}] } \text{were}_{[\text{[3/M/PL, u}\text{Case;} ]} ] \text{ Prt}_\text{[u}\varphi\text{,comp] } \text{[de} \text{clared} ] \text{[AP } \text{DP three men}_{[\text{[3/M/PL, u}\text{Case;NOM} ]} ] \text{ A guilty}_{\text{def}] } \text{[def]]}

- Agree \(\text{(Expl}[u\text{PERS}], \text{T}[u\varphi])]\)
- LDA \(\text{(T}[u\varphi], \text{DP}[\varphi])]\)

- **Successive-cyclic Expl-raising through \(\text{T}_{\text{def}}\)** is possible because deletion requires matching with a **complete** \(\text{T}[u\varphi]\)

\[(13) \text{a. Long-distance agreement is a T-associate (probe-goal) relation.} \]

b. the EPP can be satisfied by
   - i. Merge of expletive
   - ii. Merge of associate
   - iii. Merge of \(\alpha\) closer to \(T\) than the associate\(^{[126]}\) [Uriagereka: e.g. locative inversion]