Richard Redux

(With Apologies to John Updike)

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Introduction

- Copy raising is a fascinating phenomenon that tests the limits of our current understanding of syntax and how it interacts with other parts of the language system (Rogers 1973, Postal 1974, Perlmutter & Soames 1979, Potsdam & Runner 2001, Asudeh 2002, 2004, 2012, Asudeh & Toivonen 2006, 2007, 2012, Landau 2009, 2011, Rett & Hyams 2014, Brook 2016).

1. **Thora** seems like/as if/as though **she** is on time for school.

2. **It** seems like/as if/as though Thora is on time for school.

3. * **Thora** seems like/as if/as though **Harry** is on time for school.

Overview

- Frameworks assumed: Lexical-Functional Grammar + Glue Semantics

- **Interleaved:**
  - Lay out this phenomenon, whose apparent simplicity belies an extremely rich set of complex, interacting factors

  - Briefly sketch the sorts of analyses I have pursued, in my own work and in collaboration with Ida Toivonen and students of ours

- **Lastly:** Conclude and consider some directions for future work

At the Limits of Syntax

Copy Pronouns and Expletives

- There is an obligatory (for most speakers) “copy” pronoun when the matrix subject is a non-expletive.

    - Yet, like other raising verbs, the subject *can* be an expletive, in which case the expletive *must* be the expletive *it* (in English):

    4. * There seems like/as if/as though Thora is on time for school.

- *Unless* an expletive *there* is copied in the subordinate finite clause:

    5. There seems like there is a party downstairs.

- This raises the question of whether a matrix *it* expletive is independently generated or “copied” when there is a subordinate *it* expletive (Horn 1981, Asudeh 2012):

    6. It seems like it is raining.

The Finite Subordinate Clause

- The finite subordinate clause is introduced by an obligatory *like* or *as if* or *as though*, not the standard finite *that* complementizer, and it also cannot be a bare finite clause:

7. * Thora seems **that** she is on time for school.

8. * Thora seems she is on time for school.

- Contrast:

9. It seems that Thora is on time for school.

10. It seems Thora is on time for school.

A Complementizer?

- Based largely on superficial similarities with the version of *seem* with a bare or *that* finite complement, the complement of copy raising has sometimes been assumed to be a finite clause introduced by a “comparative complementizer”, *like/as if/as though*. (Rooryck 2000, López-Couso & Méndez-Naya, 2012)

- However, this misses another obvious point of comparison, which is with predicative complements of *seem*, as in:

11. Kim seems sick.

12. Kim seems under the weather.

13. Kim seems like a nice person.

A Complementizer?

- An alternative, then, is that the complement of copy raising is in fact a predicative phrase of some kind (both PP and AP have been suggested in the literature), headed by a predicative head that takes a finite clause as a complement, which is independently possible:

14. Kim seems proud that Robin scored a goal.

The Nature of the Comparison

- The head of the complement in copy raising, *like* or *as*, is an element that is independently used in comparatives:

15. Kim is **as** tall as Robin.

16. Kim is **more like** Robin than like Sandy.

17. Kim greeted Robin **very much like/as if/as though** they had not seen each other in a very long time.

The Nature of the Comparison

- It would seem to miss a generalization to treat these occurrences of these comparative phrases substantially differently than the occurrences in copy raising, but what prospect is there for a unified syntactic treatment across the cases, especially as some are predicative arguments and others are adjuncts?

- Additionally, what is the semantic basis of the comparison?

  - In copy raising, the comparison seems to be between an individual and a clause, but this does not make much sense: What is the actual standard of comparison?

  - This could reveal something important about the syntax and semantics of comparatives and the relationship between syntax and semantics, more broadly.

The Argument Structure of Copy Raising

- It might be tempting to assume that the alternation between copy raising and its expletive-subject variant enjoys the same long-established semantic equivalence as between subject-to-subject raising and its finite variant:

18. **Thora seems to be tired.**

19. = **It seems that Thora is tired.**

Passive

20. The doctor seemed to examine the patient.

21. = The patient seemed to be examined by the doctor.

Rosenbaum (1967), Postal (1974)

22. The doctor seemed like she examined the patient.

23. ≠ The patient seemed like he was examined by the doctor.

Asudeh & Toivonen (2012)

The Puzzle of the Absent Cook

- **Context:** Kim and Robin walk into Tom's kitchen. Tom is at the stove doing something, but exactly what is unclear. Kim says:

24. `It seems that Tom is cooking.`

25. `Tom seems to be cooking.`

26. `It seems like Tom is cooking.`

27. `Tom seems like he is cooking.`

- **Context:** Kim and Robin walk into Tom's kitchen. There's no sign of Tom, but there are various things bubbling away on the stove and there are several ingredients on the counter, apparently waiting to be used. Kim says:

28. `It seems that Tom is cooking.`

29. `Tom seems to be cooking.`

30. `It seems like Tom is cooking.`

31. `# Tom seems like he is cooking.`

Asudeh & Toivonen (2012)

Control or Raising?

- The non-equivalence under passive and the puzzle of the absent cook indicate that perhaps the subject of copy raising is somehow thematic.

- This means that copy raising is in some sense like a control construction.

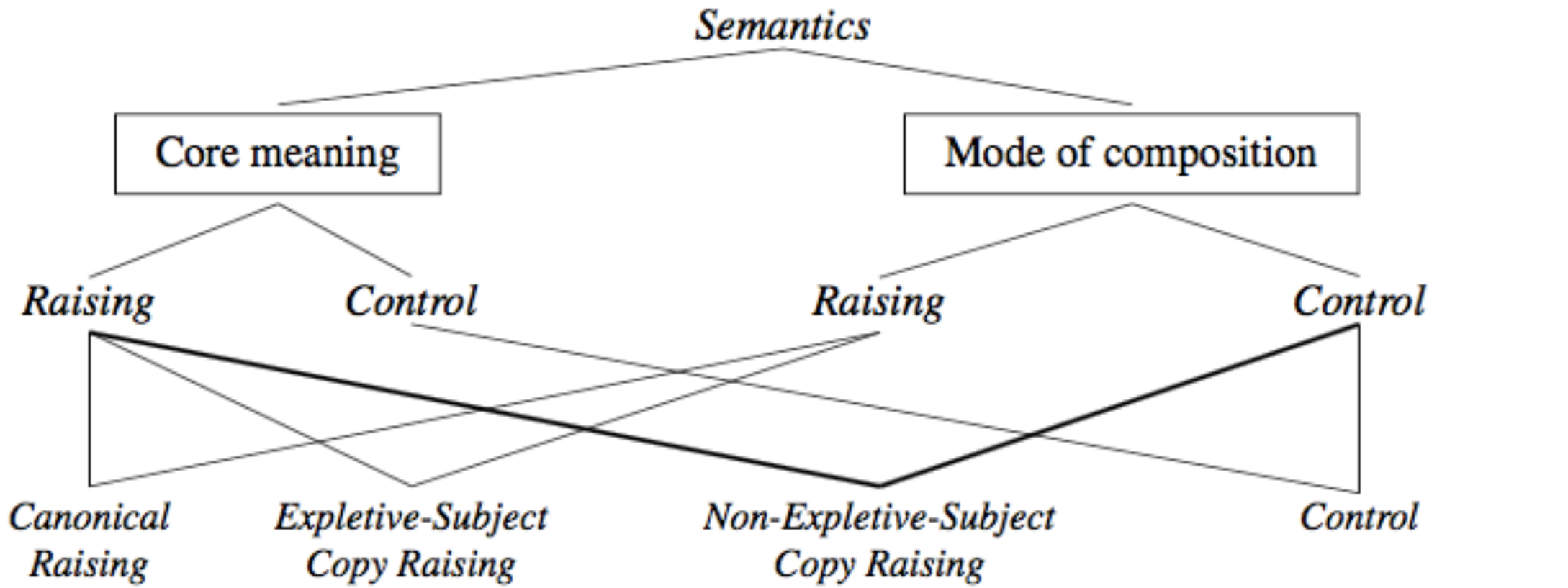
- Problems:

  - Why, then, do we see an alternation with an expletive subject?

  - What would *seem* mean as a control predicate?

  - What kind of role would the non-expletive subject play in argument structure, given that it is a subject, but neither an *agent* nor an *experiencer*?

Control *and* Raising



Core Raising Semantics
$\lambda p.seem(p)$

Hybrid Semantics
$\lambda P.\lambda x.seem(P(x))$

Core Control Semantics
$\lambda P.\lambda x.try(x, P(x))$

Adapted from Asudeh & Toivonen (2012: 357)

Copy Raising in Other Languages

- Swedish (Asudeh & Toivonen 2012)

32. Han verkar som om han är lugnare nu.
    he seems as if he is calmer now
    ‘He seems like he is calmer now.’

33. Det verkar på honom som om han är lugnare nu.
    it seems on him as if he is calmer now
    ‘He seems like he is calmer now.’

34. Det verkar som om han är lugnare nu.
    it seems as if he is calmer now
    ‘It seems like he is calmer now.’

Copy Raising in Other Languages

- Greek (Joseph 1976, Perlmutter & Soames 1979)

35. Fenete oti i kopeles θa fevgun.
    seem.3SG COMP the girls.NOM FUT leave
    'It seems that the girls will be leaving.'

36. I kopeles fenonde na fevgun.
    the girls.NOM seem.3PL SUBJUNC. leave
    'The girls seem to be leaving.'

- Persian (Darzi 1996)

37. Benæzær miad (ke) bæcheha khæste hæstænd.
    opinion PRES.come.3SG (COMP) children tired be.3PL
    'It seems that the children are tired.'

38. % Bæcheha benæzær miand (ke) khæste hæstænd.
    children opinion PRES.come.3PL (COMP) tired be.3PL
    'The children seem to be tired.'

Hyperraising

- Apparent raising from a finite clause:
  Bantu (Harford Perez 1985, Carstens 2011, Carstens & Diercks 2013), Brazilian Portuguese (Martins & Nunes 2005), …

39. Lubukusu (Carstens & Diercks 2013)

a. Ka-lolekhana (mbo) babaandu ba-kwa
   6SA-seem (that) 2people 2SA.PST-fall
   ‘It seems that the people fell.’

b. Babaandu ba-lolekhana (mbo) ba-kwa
   2people 2SA-seem (that) 2SA.PST-fall
   ‘The people seem like they fell/
   The people seem to have fallen.’

Hyperraising

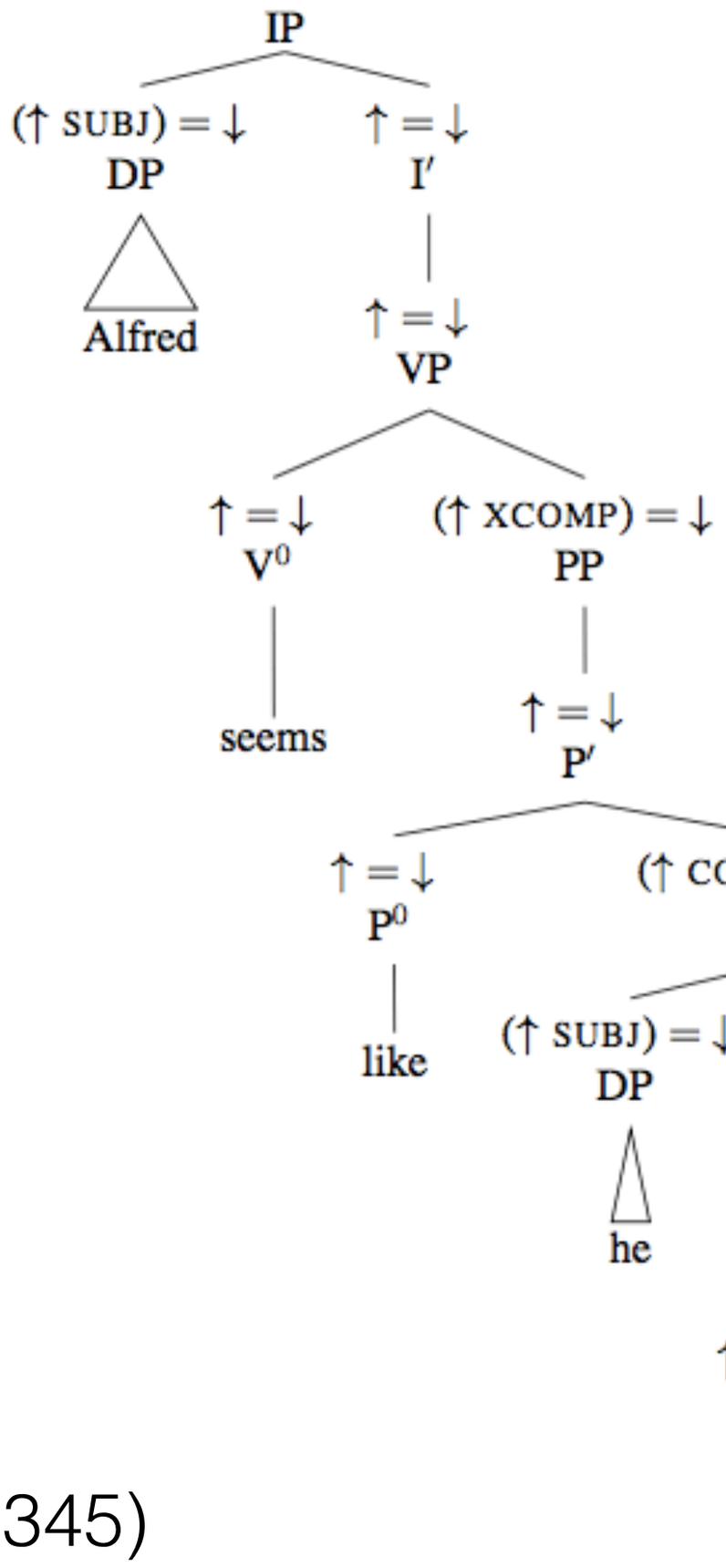
- Apparent raising from a finite clause:
  Brazilian Portuguese, Bantu, …

40. Lusaamia (Carstens & Diercks 2013)

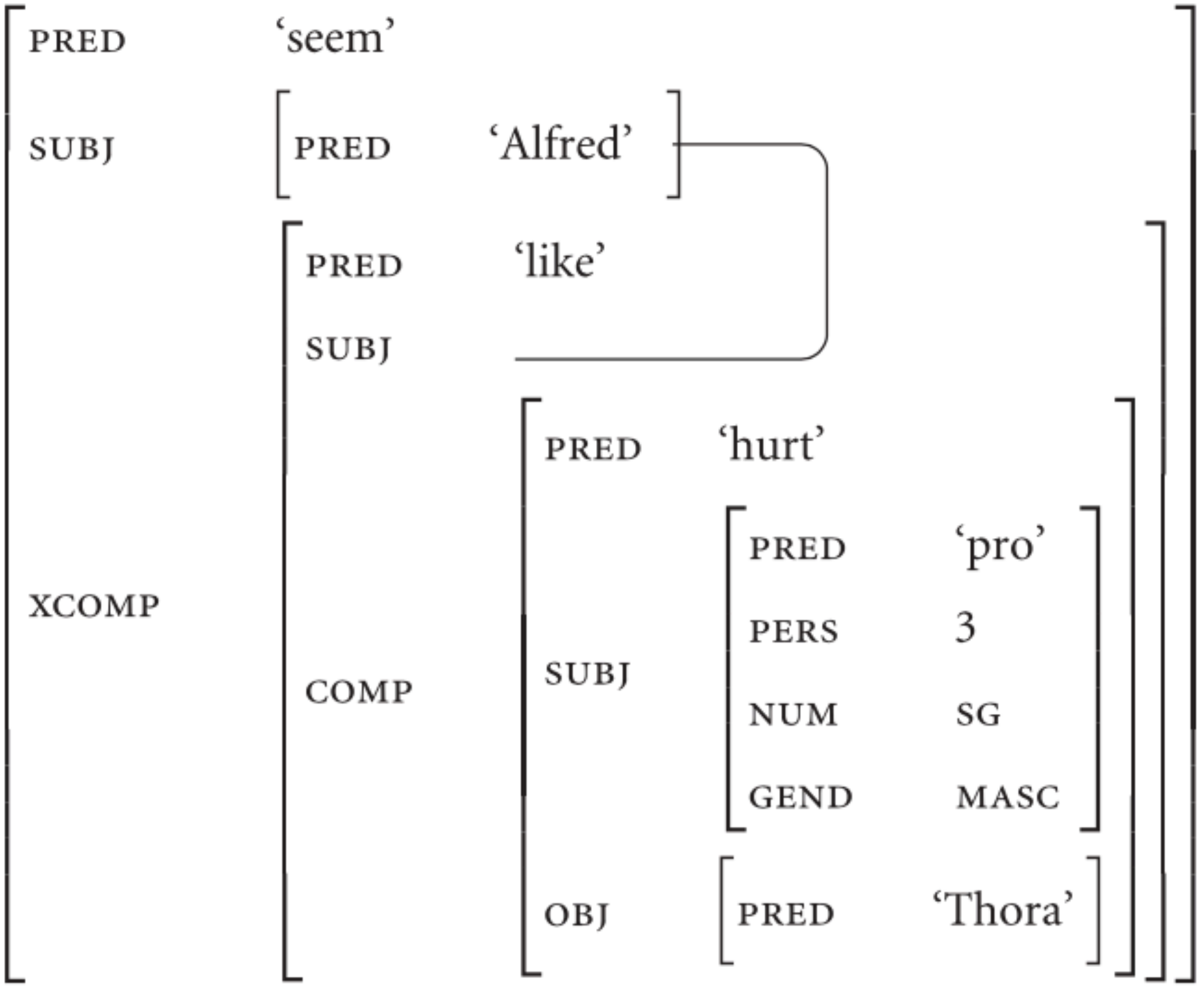
a. Bi-bonekhana koti Ouma a-kusa enyumba eyaye
   8SA-appear that O. 1SA-sell 9house 9POSS
   'It appears that Ouma is selling his house.'

b. Ouma a-bonekhana (koti) a-kusa enyumba eyaye
   O. 1SA-appear (that) 1SA-sell 9house 9POSS
   'Ouma appears as if he's selling his house/
   Ouma appears to be selling his house.'

Analysis



Asudeh (2012: 345)



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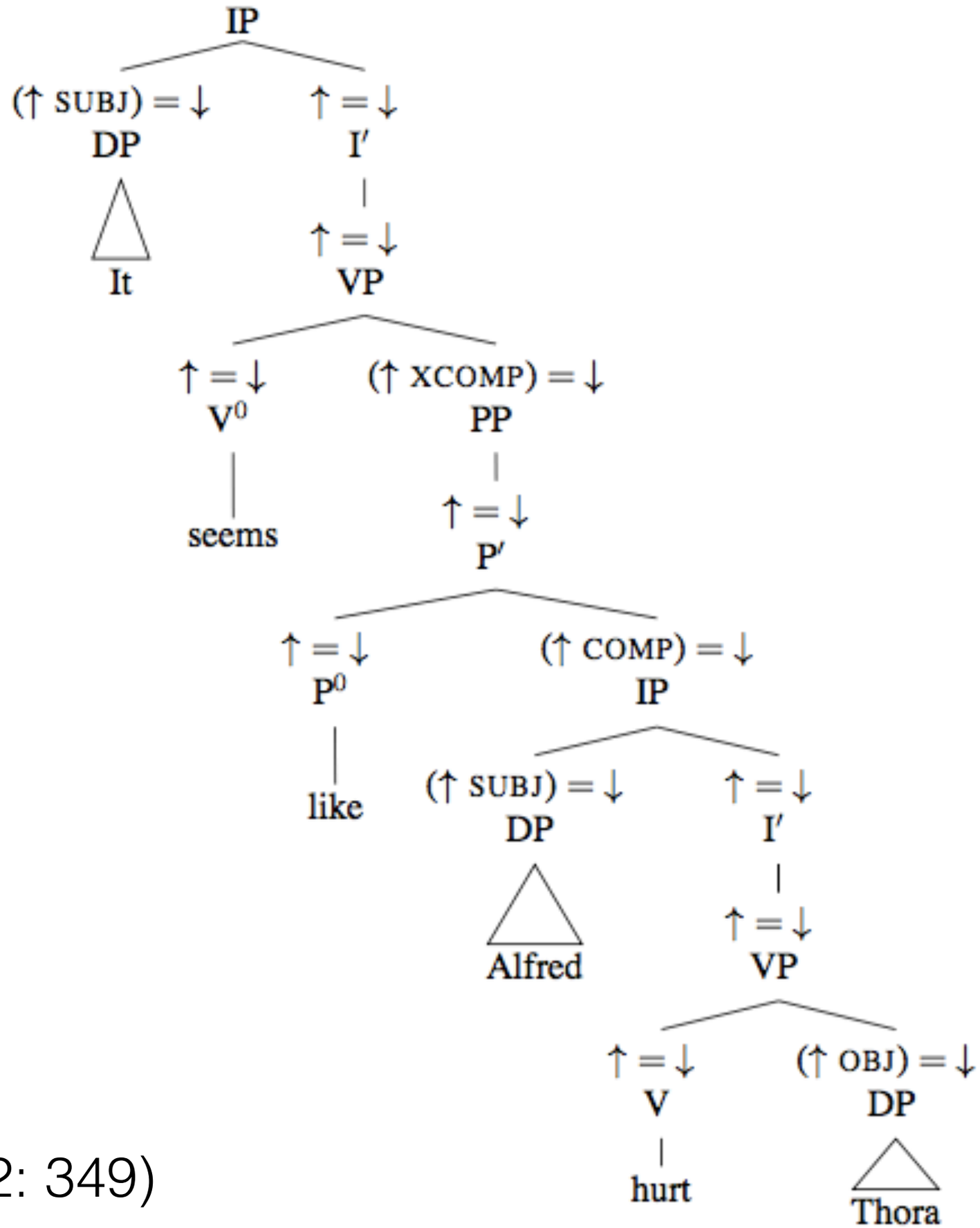
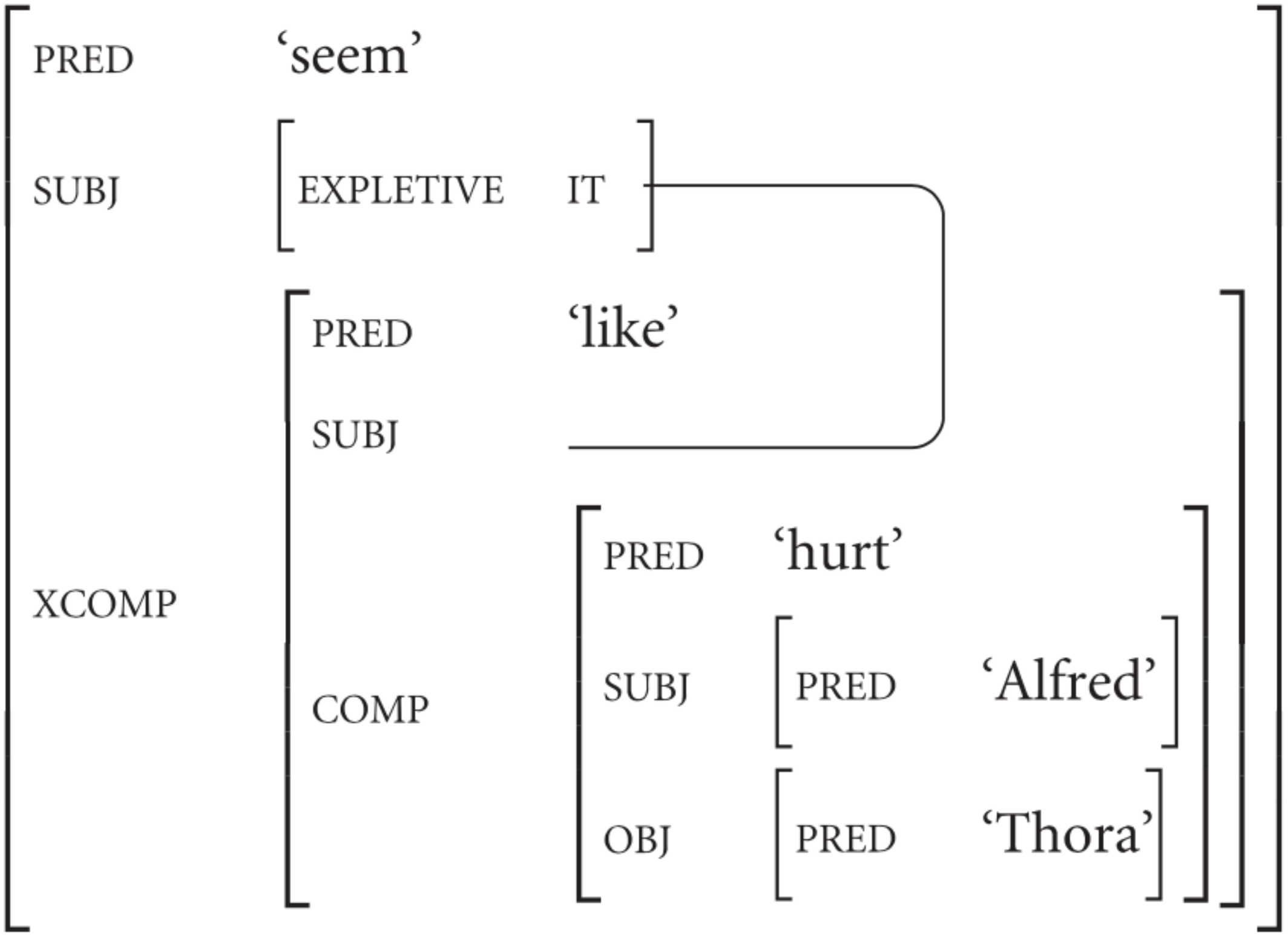
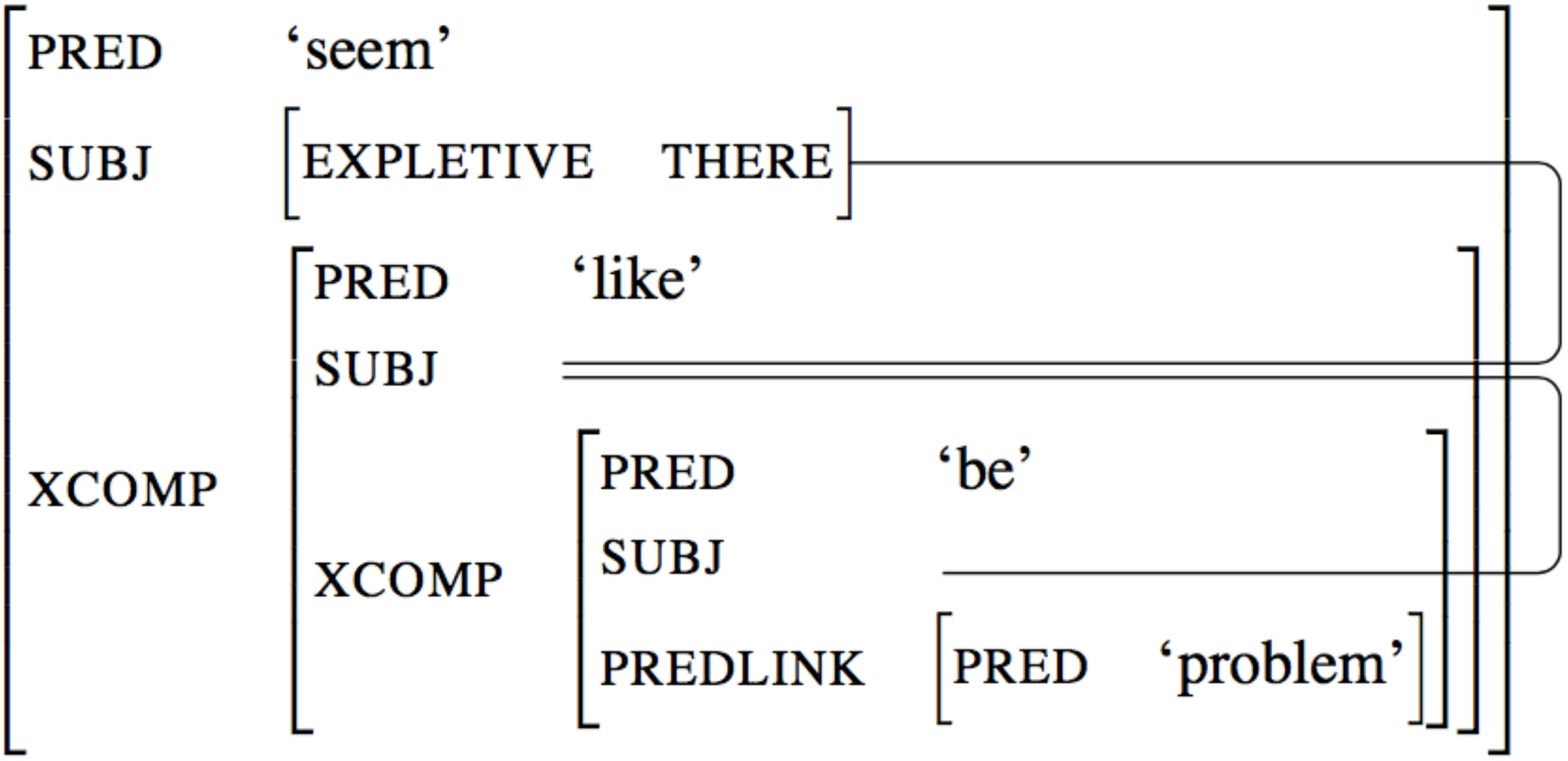


Asudeh (2012: 349)



Asudeh (2012: 349)



Asudeh (2012: 355)

Copy Pronouns:
The True Limits of Syntax

- Asudeh (2004,2012):
  Copy pronouns are to raising (a local dependency) as resumptive pronouns are to constituent questions and relative clauses (unbounded dependencies)

- *McCloskey's Generalization* (Asudeh 2011: 122):
  Resumptive pronouns are ordinary pronouns.

Copy Pronouns: The True Limits of Syntax

- Given McCloskey's Generalization and given that copy raising is a lexically controlled dependency, it follows that the copy pronoun must be a) a morphosyntactically ordinary pronoun that is b) licensed by the copy raising verb.

- Therefore the licensing mechanism must ultimately *not* be a special morphosyntactic mechanism (which would be contra McCloskey's Generalization), but rather a mechanism about the mapping from syntax to semantics (Asudeh 2004, 2011, 2012).

- The copy pronoun truly is at the limits of syntax:
  A morphosyntactically ordinary pronoun that behaves exceptionally at the syntax–semantics interface, due to a mechanism associated with a lexical predicate (*resource management*)

Microvariation: English

	% of speakers (n = 110)	Description
Dialect A	6.35%	No copy raising subcategorization with non-expletive matrix subject
Dialect B	45.1%	True copy raising I — copy pronoun must be highest subject in complement of *like/as*
Dialect C	42.2%	True copy raising II — copy pronoun not necessarily highest subject
Dialect D	6.35%	Copy raising subcategorization with non-expletive matrix subject and no copy pronoun in complement

Asudeh (2012: 328)

Microvariation: English

	Dialect			
Example	**A**	**B**	**C**	**D**
It seems like Harry fell.	✓	✓	✓	✓
Alfred seems like he hurt Thora.	*	✓	✓	✓
Alfred seems like Madeline claimed that he hurt Thora.	*	*	✓	✓
Alfred seems like Thora hurt him.	*	*	✓	✓
Alfred seems like Thora's hurt.	*	*	*	✓

Asudeh (2012: 328)

Analysis

Microvariation in the Lexicon

- A sensible approach to this kind of microvariation would seem to be a lexical approach in which we successively add suitable constraints to more permissive varieties to derive less permissive varieties.

- The beginning of such an approach is offered in Asudeh (2012) and is sketched on the handout in examples (41–44).

The Syntax of Perception

- There is a parallel paradigm of *perceptual resemblance verbs* (Asudeh 2004, 2012, Asudeh & Toivonen 2012):

45. **These fries** look/sound/smell/taste/feel like/as if/as though **they** have been quadruple deep-fried.

46. It looks/sounds/smells/tastes/feels like/as if/as though these fries have been quadruple deep-fried.

The Syntax of Perception

- These verbs systematically occur in a number of paradigms, though (Rogers 1973, Viberg 1983, 2001, Gisborne 2010):

Modality	Percept SUBJ (Descriptive)	Agentive SUBJ (Active)	Experiencer SUBJ (Cognitive)
Vision	*look*	*look (at)/watch*	*see*
Hearing	*sound*	*listen (to)*	*hear*
Smell	*smell*	*smell*	*smell*
Taste	*taste*	*taste*	*taste*
Touch	*feel*	*feel/touch*	*feel*

- Copy raising is therefore part of a larger enquiry into the syntax, and lexical semantics, of perception.

Perception verbs: A Typological Perspective

- Hausa
    - *ji* — All Experiencer SUBJ perception verbs except *sight*
- Malay
    - *rasa* — Experiencer SUBJ *touch* and *taste*
- Swahili
    - *ona* — Experiencer SUBJ *sight* and *taste*
    - *sikia* — Experiencer SUBJ *hearing*, *touch*, *smell*
- sight > hearing > touch > smell, taste

(Viberg 1983, Poortvliet 2017)

The Semantics of Perception: Perceptual Entailments

- Moreover, it is well-known that perception verbs have different entailments depending on the structure of their complements (Barwise 1981, Barwise & Perry 1983):

47. `Kim heard that Robin crashed the car.`
    ⊭ Kim heard the accident

48. `Kim heard Robin crash the car.`
    ⊨ Kim heard the accident
    ⊭ Kim heard Robin

49. `Kim heard Robin.`
    ⊨ Kim heard Robin

- There is therefore a very interesting relationship between the syntax and semantics of perception, which copy raising could shed further light on.

The Syntax and Semantics of Evidentiality

- Copy raising and perceptual resemblance seem to involve syntactic/constructional encoding of *evidentiality* (Aikhenvald 2004, Faller 2002, Garrett 2002, Murray 2010, 2017).

    - "Evidentiality is a linguistic category whose primary meaning is source of information." (Aikhenvald 2004)

- The evidentiality expressed by copy raising has sometimes been claimed to be *direct* evidentiality (Rett & Hyams 2014).

- However, perhaps it is in fact *indirect* evidentiality (Asudeh, Sullivan & Toivonen 2017).

- Asudeh & Toivonen (2017):

    - Argue *contra* Aikhenvald that evidentiality is necessarily morphosyntactically marked ('grammaticalized evidentiality')

    - Argue instead that we need a common semantic vocabulary for capturing grammaticalized evidentiality and non-grammaticalized evidentiality

Grammaticalized Evidentiality

- Languages such as Tariana (Aikhenvald, 2003, 2004), Cherokee (Aikhenvald, 2004), Cheyenne (Murray, 2010, 2017), Quechua (Faller, 2002), and Tuyuca (Barnes, 1984) have fully grammaticalized evidentiality marking: Regular declarative statements carry mandatory morphological marking that indicates the type of information source upon which the statement is based.

Tariana

(50) tʃinu niwahã-**ka** dina
dog bit-VISUAL him
'The dog bit him (we have seen it).'

(51) tʃinu niwahã-**mahka** dina
dog bit-NON.VISUAL.SENSORY him
'The dog bit him (we have heard the noise).'

(52) tʃinu niwahã-**sika** dina
dog bit-INFERENCE him
'The dog bit him (he has a scar and I can make an inference).'

(53) tʃinu niwahã-**pidaka** dina
dog bit-REPORTED him
'The dog bit him (someone told me).'

Cherokee

(54) a. wesa u-tlis-**ʌʔi**
cat it-run-FIRSTHAND.PAST
'A cat ran (I saw it running.)'

b. uyo ges-**ʌʔi**
spoiled be-FIRSTHAND.PAST
'It was spoiled (I smelled it)'

(55) a. u-wonis-**eʔi**
he-speak-NON.FIRSTHAND.PAST
'He spoke (someone told me)'

b. u-gahnan-**eʔi**
it-rain-NON.FIRSTHAND.PAST
'It rained (I woke up, looked out and saw puddles of water)'

Evidentiality at F-structure

- Grammaticalized evidentiality shows interactions with the rest of the morphosyntactic system.

- It therefore needs to be represented in the syntax, i.e. at f-structure in the case of LFG.

- An f-structural analysis of grammaticalized evidentiality is motivated by cross-linguistic evidence that evidentiality is an active morphosyntactic feature that interacts with other syntactic features represented at f-structure in LFG.

- Aikhenvald (2004, Chapter 4) provides a thorough overview of how evidentiality interrelates with other morphosyntactic categories.

    - For example, in Takelma, evidentiality is one of six tense/mood markers, and it is mutually exclusive with other markers.

    - Also, in both Qiang (LaPolla, 2003; Aikhenvald, 2004) and Cheyenne (Murray, 2017), the use of evidentials is restricted in subordinate clauses.

Evidentiality at F-structure

- Based on Aikhenvald's (2004) typological summary of grammaticalized evidentiality, we propose that evidential languages make use of (a subset of) the following grammatical evidentiality f-structure features: [DIRECT ±], [VISUAL ±], [REPORTED ±]

- These three binary features go a long way towards capturing evidentiality marking cross-linguistically, although more features may prove necessary in order to cover the full typology.

Tariana: F-structure Features

1.	Visual evidence	*-ka*	[DIRECT +] [VISUAL +]
2.	Non-visual sensory evidence	*-mahka*	[DIRECT +] [VISUAL −]
3.	Reportative evidence	*-pidaka*	[DIRECT −] [REPORTED +]
4.	Inferred evidence	*-sika*	[DIRECT −] [REPORTED −]

Cherokee: F-structure Features

1.	Firsthand evidence	ʌʔi	[DIRECT +]
2.	Non-firsthand evidence	eʔi	[DIRECT −]

Semantic Content

- In other for these features to be meaningful (pardon the pun), we need to provide them with semantic content.

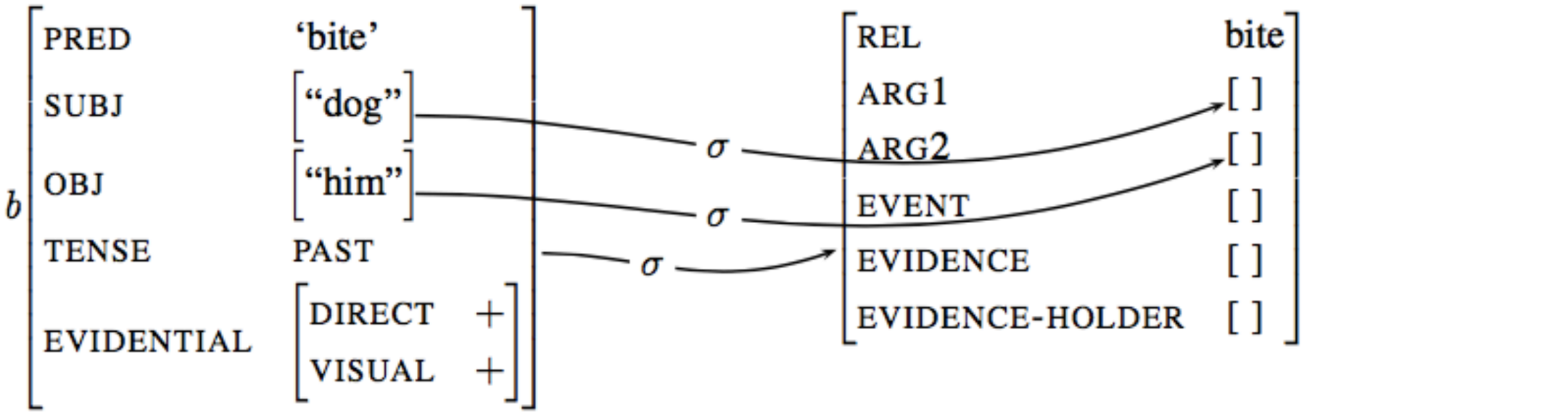
- In the context of LFG with Glue Semantics, this means specifying mappings to semantic structure in LFG and specifying Glue meaning constructors that are derived from these semantic structures.

- Please see the handout for the meaning constructors, in (56–58), and very small fragments of Tariana, in (59–66), and Cherokee, in (67–72).

Analysis

Tariana

tʃinu niwahãka dina
'The dog bit him (we have seen it).'



$$\exists e \exists e'.bite(e) \wedge \textsc{agent}(e) = dog \wedge \textsc{patient}(e) = \textbf{antecedent}(\overline{x}) \wedge$$
$$evidence(e', e) \wedge speaker \sqsubseteq \textsc{witness}(e) \wedge see(e') \wedge speaker \sqsubseteq \textsc{experiencer}(e') : b_\sigma$$

Cherokee

ugahnane?i
'It rained (I woke up, looked out and saw puddles of water)'

$$\begin{array}{l} r\left[\begin{array}{ll} \text{PRED} & \text{'rain'} \\ \text{SUBJ} & \left[\begin{array}{ll} \text{PERS} & 3 \\ \text{NUM} & \text{SG} \end{array}\right] \\ \text{TENSE} & \text{PAST} \\ \text{EVIDENTIAL} & \left[\text{DIRECT} \quad -\right] \end{array}\right] \\ \qquad\qquad \vdots \\ \exists e \exists e'.rain(e) \wedge evidence(e', e) \wedge i \not\sqsubseteq \text{WITNESS}(e) : r_\sigma \end{array}$$

$$\left[\begin{array}{ll} \text{REL} & \text{rain} \\ \text{ARG1} & [\,] \\ \text{EVENT} & [\,] \\ \text{EVIDENCE} & [\,] \\ \text{EVIDENCE-HOLDER} & [\,] \end{array}\right]$$

Non-grammaticalized Evidentiality

- Evidential information is not necessarily part of grammaticalized morphosyntax; evidential and non-evidential languages alike have at their disposal a variety of ways to express sources of information.

- Speakers mark sources through the use of phrases such as *I heard that...* and *According to Karim...*, and also adverbs such as *reportedly* and *seemingly*.

- Languages with grammaticalized evidentiality can use lexical means in addition to their morphosyntactic evidentials.

- Languages without grammaticalized evidentiality express evidentiality lexically, often in subtle and sophisticated ways (see, e.g., Patrick and Van Bogaert 2007; Faller 2017).

Non-grammaticalized Evidentiality

- Non-grammaticalized evidentiality partially overlaps with grammaticalized evidentiality, and it is not always obvious whether a marker is grammaticalized or not (see, e.g., Van Bogaert and Leuschner 2015 and the papers in Diewald and Smirnova 2010).

- We capture the commonalities between different types of evidentiality at semantic structure and with Glue proofs.

- English does not have true grammaticalized evidentiality as defined by Aikhenvald (2004).

- However, English copy-raising and perceptual resemblance verbs are examples of non-grammaticalized evidentiality.

Perception Verbs

- The evidentiality of verbs such as *seem like*, *look like*, etc., becomes apparent when they are contrasted with other verbs.

73. Sara saw Margaret laugh.

74. It looked to Sara like Margaret laughed.

75. Margaret looked to Sara like she laughed.

- These examples all convey that Sara has visual evidence that indicates that Margaret laughed.

Perception Verbs

73. Sara saw Margaret laugh.

74. It looked to Sara like Margaret laughed.

75. Margaret looked to Sara like she laughed.

- (73): Sara has *direct* evidence that Margaret laughed.
- (74–75): Sara has *indirect* evidence that Margaret laughed. (Sara saw something which led her to infer that Margaret laughed.)
- Continuation: *…but Margaret was in fact not laughing*
  - (73): contradiction
  - (74–75): ok

Source of Evidence (PSOURCE)

75. Margaret looked to Sara like she laughed.

- Example (75) further specifies that the visual indirect evidence that Margaret laughed came from Margaret.

- This kind of identification of the specific source of evidence is not common for true evidentials (Doran, 2015), but it does seem to occur sometimes.

- Makaa: Evidential markers can be attached to NPs, and the implication is that there is evidence from the NP that hosts the morpheme (Storch and Coly, 2014)

(76) làa nàmáa-**dìyà** sáy mìnè-póDí-ní gè-gòrkù-wà
child this-JOINT:VIS must 1pl-remove:TEL-OBJ-3sg:MASC LOC-village-DEF
'This child [whom we can both see], we must chase him from the village.'

- Storch and Coly (2014): ". . . the suffix *-dìyá* [. . .] indicates that both speakers and hearer know or see the participant in question."

Subject as PSOURCE

- We have interpreted these patterns as evidence that a non-expletive subject of verbs like *seem like*, *look like*, etc., is the source of perception (PSOURCE) (Asudeh & Toivonen, 2012), and therefore the source of evidence.

- Examples like the following led Heycock (1994) and Landau (2011) to reject the subject-as-PSOURCE hypothesis (or equivalent).
  - Context: In a long distance call, Y has just described to X the bizarre noises that Y's car is making.

77. Your car sounds like it needs tuning very badly.

- The sentence is acceptable because the speaker has received reported evidence about the engine of the car.

- Contrast (in same context):

78. # Your mechanic sounds like he needs to tune your car.

Some Empirical Results

- There is an important relationship between reliability/ trustworthiness and evidentiality: Information marked with direct evidentiality is considered more reliable than that marked with indirect evidentiality

- If *see/hear* signal direct evidence and *look/sound* signal indirect evidence, then the *see/hear* statements should convey that the evidence is more reliable, more certain than when *look/sound* is used.

- Asudeh, Sullivan & Toivonen (2017): We tested this hypothesis in a series of simple experiments with native English speakers

(Asudeh & Toivonen 2017; further references therein)

Experiment

- We wanted to test whether and how participants' truth value judgements of subordinate clauses differed depending on the matrix clause.

- For example, do participants judge it more likely that Sue decorated the office when presented with sentences of the A type than when presented with sentences of the other types?

- The Experiencer SUBJ examples (A) were coded in our results as *see, hear*, etc.

- Percept SUBJ (perceptual resemblance) examples with a non-expletive subject (B) were coded in our results as *cr-look*, etc., whereas expletive-subject alternants (C) were coded as *it-look*, etc.

A. Pete saw Sue decorate the office.

A. Pete heard Sue decorate the office.

B. Sue looked like she was decorating the office.

B. Sue sounded like she was decorating the office.

C. It looked like Sue was decorating the office.

C. It sounded like Sue was decorating the office.

Method and Participants

- We conducted offline psycholinguistic experiments using the methods of Lesage et al. (2015).
    - Anonymous web-based questionnaire (Acceptability Judgement Task)
    - 5-point Likert scale response
- Native speakers of English were asked to rate the likelihood that a sentence is true, given that another sentence is true.
- Sample instructions: “You will be asked to read pairs of sentences. Assume that the first sentence is true and judge the likelihood of the second sentence using a 5 point scale (where 1 = ”I have no idea” and 5 = ”It is true”).”
- 69 volunteer participants

Results

	Example	Mean	SD
see	"Ron saw the kids playing"	**4.59**	0.69
cr-look	"The kids looked like they were playing"	**3.54**	0.96
it-look	"It looked like the kids were playing"	**3.59**	0.85

An analysis of variance (ANOVA) on these scores yielded significant variation among conditions, ANOVA $F(2,206) = 34.3$, $p < 0.01$. A post hoc Tukey test showed that *see* differed significantly from both *it-look* and *cr-look* at $p < 0.01$. However, *it-look* and *cr-look* were not different from each other (Tukey HSD post hoc test: $p = 0.93$).

	Example	Mean	SD
hear	"Paul heard the dog barking"	**4.49**	0.74
cr-sound	"The dog sounded like it was barking"	**3.86**	0.94
it-sound	"It sounded like the dog was barking"	**3.84**	0.79

An analysis of variance (ANOVA) on these scores yielded significant variation among conditions, ANOVA $F(2,205) = 13.89$, $p < 0.01$. A post hoc Tukey test showed that *see* differed significantly from both *it-sound* and *cr-sound* at $p < 0.01$. However, *it-sound* and *cr-sound* were not different from each other (Tukey HSD post hoc test: $p = 0.996$).

Discussion

- *See/hear* examples were ranked higher than *look like/sound like* examples.
    - *Look like/sound like* (perceptual resemblance) examples with a non-expletive subject were ranked the same as expletive-subject alternants.
        - Our study replicated the study in Lesage et al. (2015), and further showed no difference between expletive-subject examples and non-expletive-subject examples.
- We interpret the results as being consistent with the hypothesis that perceptual resemblance verbs do not encode *direct* evidence.
- A non-expletive subject is interpreted as the *source* of the evidence (PSOURCE), but the claim in the *like*-complement is only *indirectly* inferred based on the PSOURCE.

Discussion

- Two remaining worries (possible confounds):

  i. Perhaps our stimuli were somehow problematic; and

  ii. Perhaps our method was not sensitive enough to detect a difference between expletive-subject examples and non-expletive-subject examples.

- We therefore conducted one additional study using the same method as the study above but different stimuli, as well as two additional studies using a forced-choice method.

- There was a total of 631 participants in the follow-up studies. The results of the follow-up studies were consistent with the study above.

Analysis

Non-grammaticalized Evidentiality in English

- Let's now turn to an analysis of non-grammaticalized evidentiality in English.

- In addition to the fact that the Tariana and Cherokee grammaticalized evidentials are associated with bound morphemes whereas English has non-grammaticized lexical evidentiality, there is another key difference:

- In English, the claim of indirect evidence, captured by the WITNESS predicate, concerns the event in the *like*-complement of the verb, not the matrix event.

- That is, in order to capture the fact that a matrix non-expletive subject in copy raising and perceptual resemblance is directly perceived while allowing the complement clause itself to constitute indirect evidence, we treat the subject as the PSOURCE but apply the WITNESS function to the complement event, rather than the matrix event.

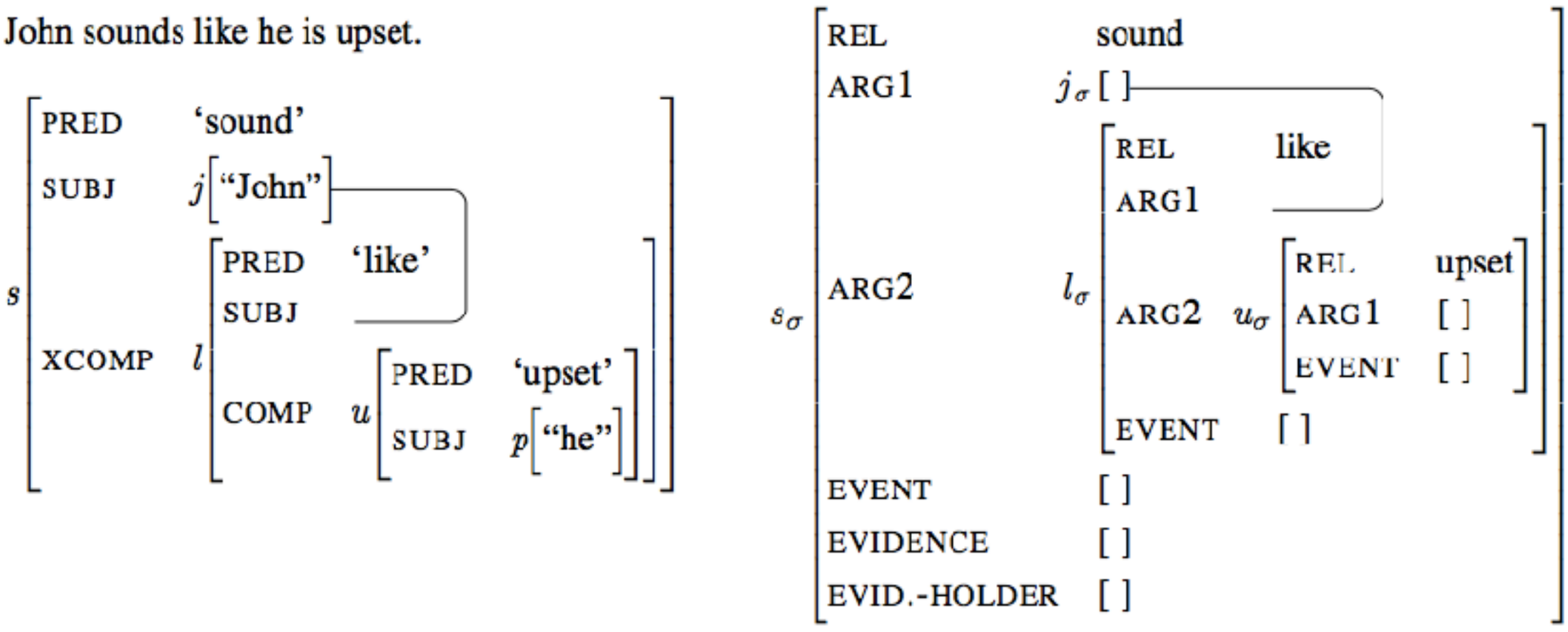
Non-grammaticalized Evidentiality in English

- Lastly, it should be noted that the evidentiary basis in English PSOURCE verbs is reversed in the evidence predicate, since it is the matrix event that serves as evidence for the claim in the complement clause.
    - For example, in the sentence *John sounds like he is upset*, it is the sound of John that serves as evidence of the fact that he is like he is upset.

- Please see the handout for a small fragment of English in (79–86), including a full Glue proof.

Non-grammaticalized Evidentiality in English

John sounds like he is upset.



$$\exists e \exists e'.sound(e) \wedge \textsc{Psource}(e) = aural(john) \wedge$$
$$\exists e''.[upset(e'') \wedge \textsc{exp}(e'') = \mathsf{ant}(\overline{x}) \wedge john \sqsubseteq \textsc{part}(e') \wedge e'' \sim e'] \wedge$$
$$evidence(e, e') \wedge speaker \not\sqsubseteq \textsc{witness}(e') : s$$

Please see handout for further details

Conclusion

- Copy raising is an apparently simple but actually complex phenomenon.

- It reveals much about the nature of the syntactic system.

- It reveals yet more about the limits of pursuing narrowly syntactocentric explanations.

- In order to solve the many puzzles of copy raising, we need to look carefully at the interactions between syntax and semantics, both compositional and lexical, between syntax and pragmatics, and between syntax and morphology.

Future Work

- A better typological understanding
- A better understanding of the relationship between copy raising and hyperraising
- The nature of the comparison in copy raising
- The meaning of *like/as if/as though*
- The syntax and semantics of evidentiality
- The linguistics relationship between evidentiality and epistemicity
- The syntax and semantics of perception

Thank you!

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