


Expletives and the syntax and semantics of copy raising



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Copy Raising

1. They seem like they've missed the bus.
2. John appears as if he is tired.

Cf. 'Standard' raising:

3. They seem to have missed the bus.
4. John appears to be tired.

Copy Raising (CR)

- Subject + appear/seem + like/as if/as though + finite clause containing a pronominal copy of the subject.

Mary seems like she hates me.

Raising and CR

- ‘Regular’ subject-to-subject raising has been studied extensively in the syntactic literature
- CR is relatively unexplored; but see Rogers (1974), Joseph (1976), Perlmutter & Soames (1979), Moore (1998), Ura (1998, 2000), Potsdam & Runner (2001), Asudeh (2002, 2004, 2005), Fujii (2005), Asudeh & Toivonen (2006a,b), Potsdam & Polinsky (2005), Polinsky & Potsdam (2006)

The subject and its pronominal copy

- In CR, (pre-theoretically) a single thematic role apparently corresponds to two different NPs: the CR subject and the copy pronoun
 1. John seems like he is sleeping
 2. It seems like John is sleeping (expletive *it*)

Cf. John seems to be sleeping

Athematic subject

- The matrix CR subject is not associated with a thematic role
 - The verbs *seem* and *appear* only take a single thematic argument, the complement clause
 - Standard tests (Potsdam & Runner 2001; cf. Perlmutter and Soames 1979 for standard raising)

Copy pronoun

✓ Jody seems like she's tired.

✓ Jody seems like her favorite show has been cancelled.

* Jody seems like it's raining.

➡ The copy pronoun is obligatory.

Swedish Copy Raising

Maria verkar som om hon har vunnit.

M seems as if she has won

‘Maria seems like she’s won.’

Swedish Copy Raising

Maria verkar som om hon har vunnit.

M seems as if she has won

‘Maria seems like she’s won.’

* Maria verkar som om Pelle har vunnit.

M seems as if P has won

The Swedish *på*-PP

Det verkar som om Maria har vunnit.

it seems as if M has won

The Swedish *på*-PP

Det verkar som om Maria har vunnit.

it seems as if M has won

Det verkar på Elin som om Maria har vunnit.

it seems on E as if M has won

~ 'Elin gives the impression that Maria has won.'

The Swedish *på*-PP

Det verkar som om Maria har vunnit.

it seems as if M has won

Det verkar **på Elin** som om Maria har vunnit.

it seems on E as if M has won

~ 'Elin gives the impression that Maria has won.'

The Swedish *på*-puzzle

Maria verkar som om hon har vunnit.

M seems as if she has won

The Swedish *på*-puzzle

Maria verkar som om hon har vunnit.

M seems as if she has won

* Maria verkar på Elin som om hon har vunnit.

M seems on E as if she has won

The Swedish *på*-puzzle

- Why is copy raising incompatible with a *på*-PP?

The puzzle of the absent cook

- Scenario: You and your friend walk into John's house. You see John busy cooking in his kitchen.
 - ✓ It seems like/that John is cooking
 - ✓ John seems to be cooking
 - ✓ John seems like he's cooking.

The puzzle of the absent cook

- Scenario: you and your friend walk into John's kitchen. There are pots and pans on the stove. It smells like food. It's obvious that someone is cooking. John is not in the kitchen.
- ✓ It seems like/that John is cooking.
- ✓ John seems to be cooking.
- * John seems like he's cooking.

A proposed solution to the two puzzles

- The CR subject is interpreted as the *perceptual source*.

The puzzle of the absent cook

John seems like he's cooking:

“It seems like John is cooking. This impression comes from John.”


The *på*-puzzle

Det verkar på Sara som om allt är över.

it seems on S as if all is over

- Like the CR subject, the *på*-PP expresses the perceptual source.
- A Psource PP is incompatible with a Psource subject
- (Note that this cannot be due to the theta-criterion or the equivalent.)

Analysis - an initial sketch



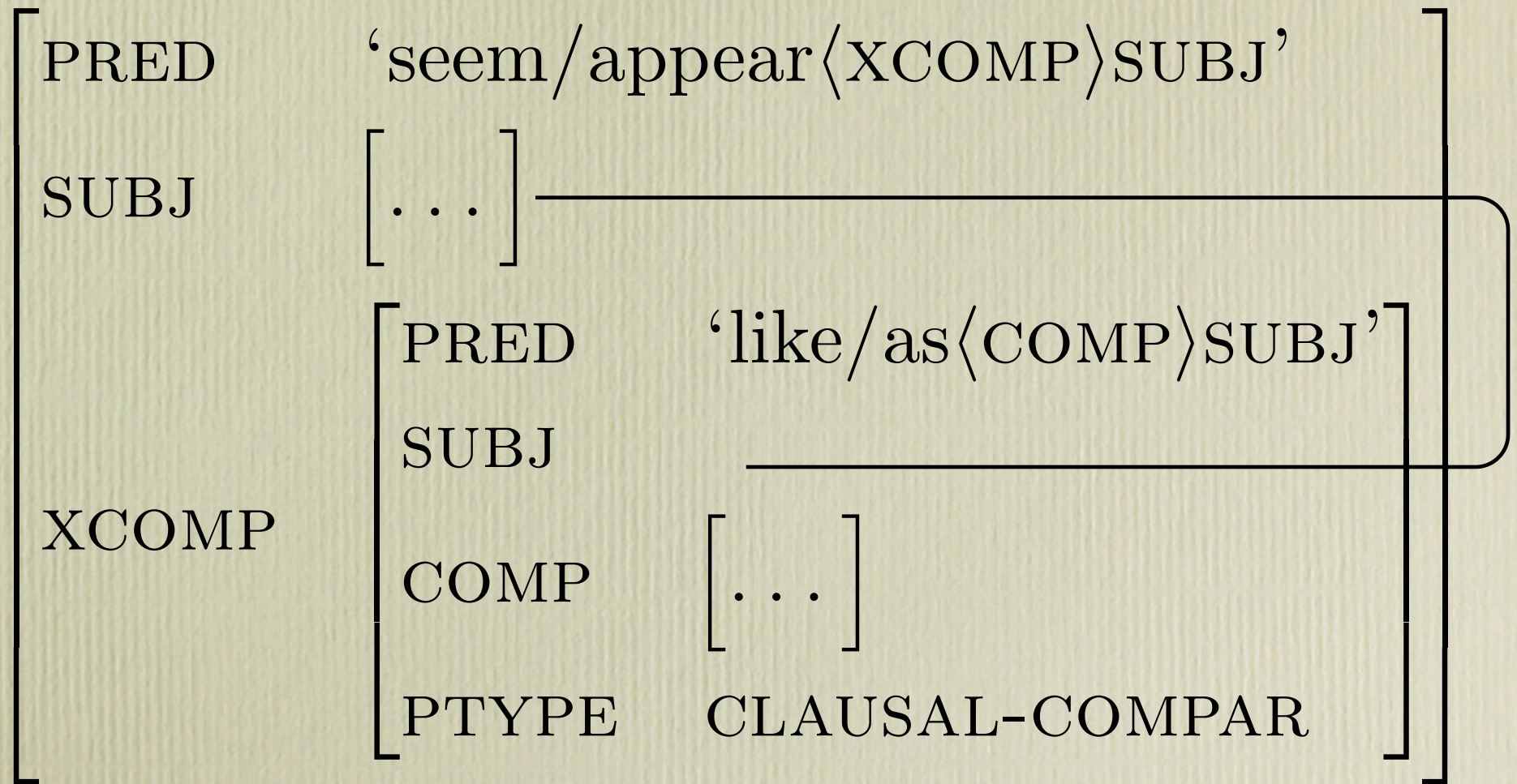
Asudeh (2004), Asudeh & Toivonen (2006a,b)

The 'complementizer'

- *like/as*: prepositions with clausal complement
- Subject of *like/as*-complement raised by copy raising verb
 - ➔ *like/as*-complement is a predicative complement

John seems/appears upset/out of his mind.

Syntax



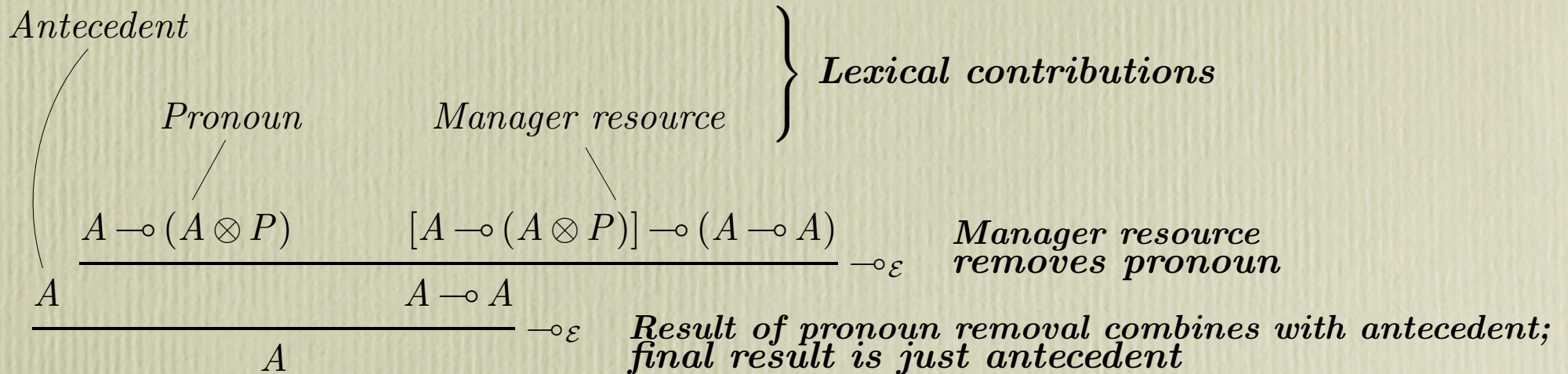
Syntax

- Normal raising (functional control) between matrix copy raising subject and subject of predicative *like/as*-complement
- Copy raising subject related to copy pronoun by separate, anaphoric binding relation

The copy pronoun

- The relationship between the CR subject and the copy pronoun is normal anaphoric binding
- The copy pronoun is removed from semantic composition by a *manager resource* (Asudeh 2004) which is lexically specified by the copy raising verb (*seem, appear*)

Manager resources



An event semantics analysis

Asudeh and Toivonen (2006a,b)

- Copy raising verbs lexically contribute a *Psource* semantic role:
- The *Psource* of an eventuality E is the source of perception of E (whatever gives the impression that E holds)
- Other subcategorizations of raising verbs involve existential closure of the *Psource*

The Psource

- The Psource is not a thematic role, but it is a semantic role (cf. Parson's thematic relation)
 - The CR subject is not a thematic argument
 - The *på*-PP is an adjunct
- Psource is a function from eventualities to individuals or eventualities

Unique Role Requirement

- If a thematic role is specified for an event, it is uniquely specified.
- Landman (2000): thematic roles as partial functions on eventualities
- Functional definition of Psource similarly captures this uniqueness requirement for Psource:
 - ➔ Each eventuality can only have one Psource

Existential closure of Psource

Maria seems to have wrecked the hotel room.

- Something gives the impression that Maria has wrecked the hotel room. (e.g. the state of the hotel room)
- It's not necessarily Maria who gives the impression.
- Cf. Out of context:
 - ? Maria seems like she's wrecked the hotel room.

Existential closure of Psource

* Maria verkar på Jonas vara glad.

M seems on J be happy

- Why can't this mean 'Jonas gives the impression that Maria seems to be happy'?

➔ Existential closure of Psource:

Psource = some state or individual

- Existentially closed Psource + *på*-PP Psource

➔ 2 Psources

➔ Violation of uniqueness requirement

Solution:

The puzzle of the absent cook

- Scenario: you and your friend walk into John's kitchen. There are pots and pans on the stove. It smells like food. It's obvious that someone is cooking. John is not in the kitchen.
- * John seems like he's cooking.
- Actual Psource = state of kitchen
- CR verb's lexically-specified Psource = John
- Presupposition failure: state =_p John
- * John doesn't seem like he's cooking.

Solution:

The *på*-puzzle

* Maria verkar på Elin som om hon har vunnit.

M seems on E as if she has won

- Copy raising verb: Psource = Maria

På-PP: Psource = Elin

➡₂ Psources

➡ Violation of uniqueness requirement

Examples

$$\frac{\frac{tom \quad \lambda x \lambda P \lambda s. seem(s, P(x)) \wedge \text{PSOURCE}(s) =_p x}{\lambda P \lambda s. seem(s, P(tom)) \wedge \text{PSOURCE}(s) =_p tom} \quad \begin{array}{c} \vdots \\ \lambda y. \exists e [laugh(e, y) \wedge \text{AGENT}(e) = y] \end{array}}{\lambda s. seem(s, \exists e [laugh(e, tom) \wedge \text{AGENT}(e) = tom]) \wedge \text{PSOURCE}(s) =_p tom} =_p tom$$

Tom seems like he is laughing.

Tom verkar som om han skrattar.

T. seems as if he laughs

‘Tom seems as if he is laughing.’

Presuppositional
equality

Examples

⋮

$$\frac{\lambda p \lambda s'. \text{seem}(s', p) \quad \exists e [\text{paint}(e, \text{tom}) \wedge \text{AGENT}(e) = \text{tom}]}{\lambda s'. \text{seem}(s', \exists e [\text{paint}(e, \text{tom}) \wedge \text{AGENT}(e) = \text{tom}])} \quad \lambda S \lambda s. \exists v_{\delta} [S(s) \wedge \text{PSOURCE}(s) =_p v_{\delta}]$$

$$\lambda s. \exists v_{\delta} [\text{seem}(s, \exists e [\text{paint}(e, \text{tom}) \wedge \text{AGENT}(e) = \text{tom}]) \wedge \text{PSOURCE}(s) =_p v_{\delta}]$$

$$\exists s \exists v_{\delta} [\text{seem}(s, \exists e [\text{paint}(e, \text{tom}) \wedge \text{AGENT}(e) = \text{tom}]) \wedge \text{PSOURCE}(s) =_p v_{\delta}]$$

Tom seems to paint.

Tom verkar måla.

T. seems paint.INF

‘Tom seems to paint.’

Variable over
individuals or
eventualities

Lexical specification of copy raising verb

$\lambda x \lambda P \lambda s. seem(s, P(x)) \wedge \text{PSOURCE} =_p x :$

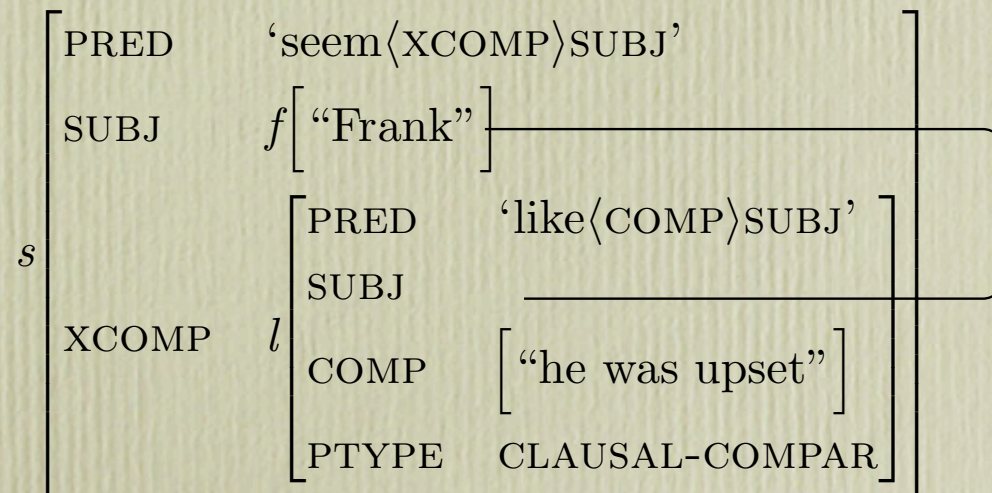
$f \multimap (f \multimap l) \multimap e \multimap s$

f = subject of copy raising verb
and *like*-complement

$f \multimap l$ = *like*-complement property

e = event variable

s = sentential resource



Problems

- Ideally we want to maintain a consistent semantics for copy raising verbs
- However, they also occur with expletives, including raised expletives.

Expletive raising

✓ It seems like there's trouble in paradise.

✓ There seems like there's trouble in paradise.

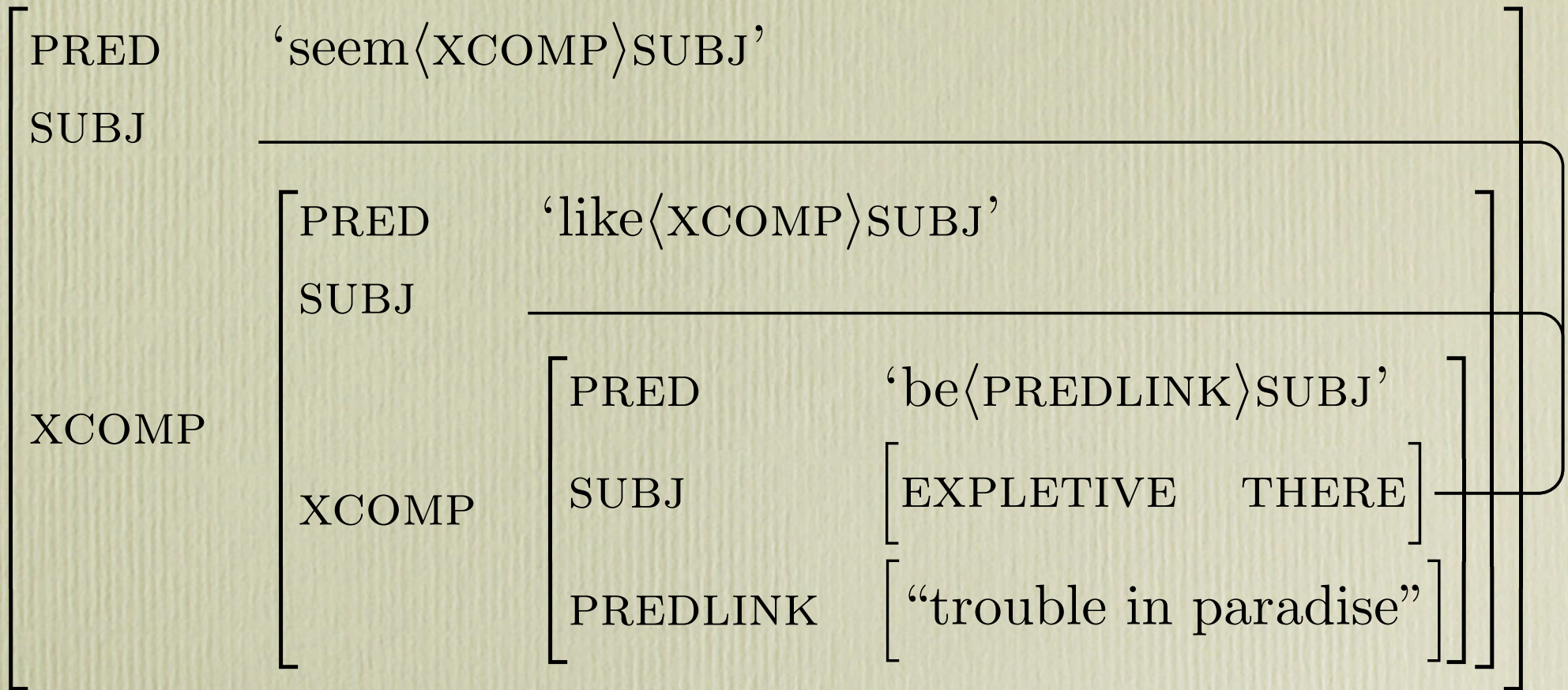
✓ It seems like it's raining.

* There seems like it's raining.

Attested examples of expletive raising

- there seems like there's no end to the innovation we come up with, you know. (from an interview with Queensrÿche)
- there seems like there's some connection with the car jacking that took place (CNN.com)
- there appears as though there are less balloons in the final shot (www.horrorking.com)

Syntax



There seems like there's trouble in paradise.

Semantics of expletives

- Normal assumption: expletives have no semantics
 - ➔ Lexical entries for expletives contribute no resources
- What satisfies the copy raising verb's dependency on its subject in the expletive examples?

$$\lambda x \lambda P \lambda s. seem(s, P(x)) \wedge \text{PSOURCE}(s) =_p x : \\ subj \multimap (subj \multimap l) \multimap e \multimap s$$

Example

$$\begin{array}{c}
 \frac{\lambda x \lambda P \lambda s. seem(s, P(x)) \wedge \text{PSOURCE}(s) =_p x : subj \multimap (subj \multimap l) \multimap e \multimap s}{\lambda P \lambda x \lambda s. seem(s, P(x)) \wedge \text{PSOURCE}(s) =_p x : (subj \multimap l) \multimap subj \multimap e \multimap s} \text{curry} \quad \begin{array}{c} \vdots \\ like : subj \multimap l \end{array} \\
 \hline
 \lambda x \lambda s. seem(s, like(x)) \wedge \text{PSOURCE}(s) =_p x : subj \multimap e \multimap s \quad [y : subj]^1 \\
 \hline
 \frac{\lambda s. seem(s, like(y)) \wedge \text{PSOURCE}(s) =_p y : e \multimap s}{\exists s [seem(s, like(y)) \wedge \text{PSOURCE}(s) =_p y] : s} \text{event closure} \\
 \hline
 \lambda y. \exists s [seem(s, like(y)) \wedge \text{PSOURCE}(s) =_p y] : subj \multimap s \quad \multimap_{\mathcal{I},1}
 \end{array}$$

Unconsumed
resource

A temptation

- The expletive *does* contribute a resource, an existential closure

$$\lambda P.\exists x[P(x)] : (\uparrow_\sigma \multimap (\text{SUBJ } \uparrow)_\sigma) \multimap (\text{SUBJ } \uparrow)_\sigma$$

A Problem

i. If the expletive contributes this kind of meaning, as far as the semantics is concerned we should be able to derive the following:

* There meowed.

$$\frac{\lambda P.\exists x[P(x)] : (s \multimap m) \multimap m \quad \lambda y.meow(y) : s \multimap m}{\exists x[meow(x)] : m}$$

- Independent syntactic constraints might block this, but is that the right approach?

A much worse problem

- The expletive raising case illustrates that more than one expletive can be inserted from the lexicon in this construction

There seems like there is a piece missing.

- Assuming a consistent semantics for both occurrences: too many subject consumers!

Solution

- Instead of associating the existential closure resource with the expletive, associate it with the head of the *like/as*-complement in its expletive raising subcategorization.

like: $(\uparrow \text{ PRED}) = \text{‘like}\langle \text{XCOMP} \rangle \text{SUBJ} \text{’}$

$(\uparrow \text{ PTYPE}) = \text{CLAUSAL-COMPARATIVE}$

$$\left(\begin{array}{l} (\uparrow \text{ SUBJ}) = (\uparrow \text{ XCOMP SUBJ}) \\ \lambda P. \exists x [P(x)] : ((\uparrow \text{ SUBJ})_{\sigma} \multimap X) \multimap X \end{array} \right)$$

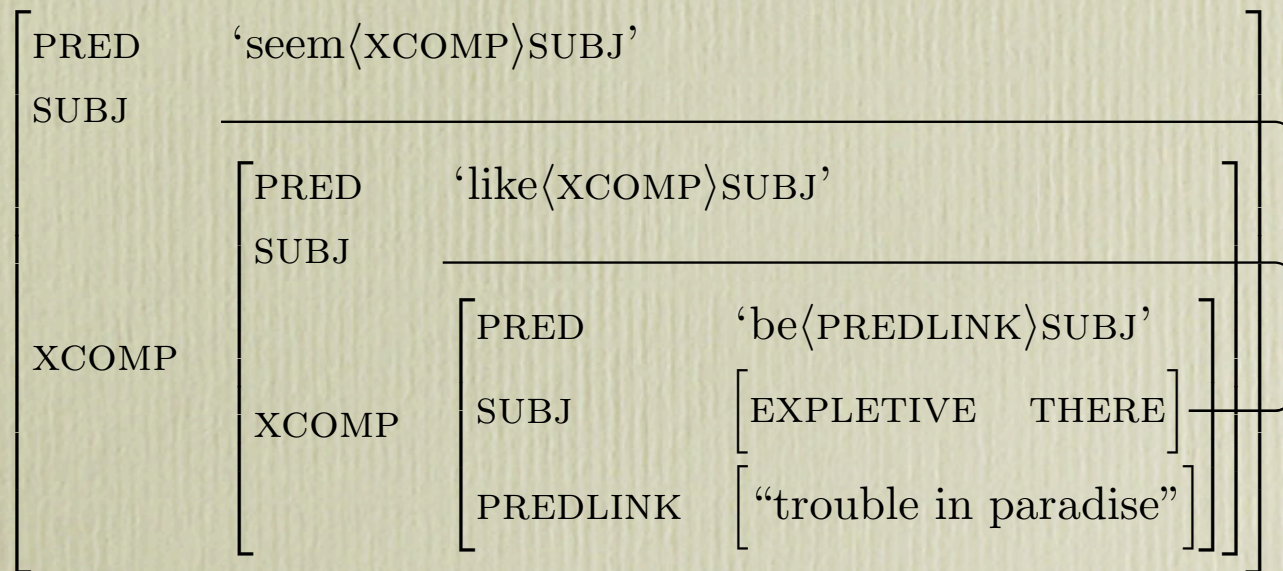
$\dots \lambda x. \textit{like}(\dots x \dots) : \dots (\uparrow \text{ SUBJ})_{\sigma} \multimap \uparrow_{\sigma}$

Example

$$\begin{array}{c}
 \frac{\lambda x \lambda P \lambda s. seem(s, P(x)) \wedge \text{PSOURCE}(s) =_p x : subj \multimap (subj \multimap l) \multimap e \multimap s}{\lambda P \lambda x \lambda s. seem(s, P(x)) \wedge \text{PSOURCE}(s) =_p x : (subj \multimap l) \multimap subj \multimap e \multimap s} \text{curry} \quad \vdots \\
 \frac{\lambda x \lambda s. seem(s, like(x)) \wedge \text{PSOURCE}(s) =_p x : subj \multimap e \multimap s}{\lambda s. seem(s, like(y)) \wedge \text{PSOURCE}(s) =_p y : e \multimap s} [y : subj]^1 \\
 \frac{\lambda s. seem(s, like(y)) \wedge \text{PSOURCE}(s) =_p y : e \multimap s}{\exists s [seem(s, like(y)) \wedge \text{PSOURCE}(s) =_p y] : s} \text{event closure} \\
 \frac{\lambda y. \exists s [seem(s, like(y)) \wedge \text{PSOURCE}(s) =_p y] : subj \multimap s}{\exists y [\exists s [seem(s, like(y)) \wedge \text{PSOURCE}(s) =_p y]] : s} \multimap_{\exists, 1} \quad \frac{\lambda P. \exists x [P(x)] : (subj \multimap X) \multimap X}{[s/X]}
 \end{array}$$

Subject Condition

- The Subject Condition is normally understood purely f-structurally: every predicator must have a SUBJ.
- Expletive raising indicates that this is insufficient.



Subject Condition

- Functional control by equality: the lowest expletive alone should satisfy all subject requirements.
 - * Today seems like there's a problem.
- Functional control by subsumption: the highest expletive alone should satisfy all subject requirements.
 - * Today there seems like is a problem.

Subject Condition

- There has to be a c-structural component to the subject condition: certain c-structural subject positions (specifiers) in English have to be filled.

Conclusions

- Copy raising presents an intricate set of puzzles for syntax, semantics, and the syntax-semantics interface.
- A particular challenge is providing a purely compositional semantics that adequately treats all the parts while properly capturing their denotations.

Future work

- What is the proper semantics for the predicative head *like/as*?

- John runs like Mary skips.

$$\exists s[\exists s'[\exists P[P(s) \wedge P(s')] \wedge \text{run}(s, j) \wedge \text{upset}(s', j)]]]$$

- John is like Mary.

$$\exists P[P(j) \wedge P(m)]$$

- John seems like Mary

$$\exists x[\exists s[\text{seem}(s, \exists s'[\exists P[P(j) \wedge P(m)])]] \wedge \text{PSOURCE} =_p x]]$$

- John seems like he is upset.

$$\exists s[\text{seem}(s, \exists s'[\exists P[P(s, j) \wedge P(s', j)] \wedge \text{upset}(s', j)]) \wedge \text{PSOURCE} =_p j]$$

Future Work

- How should this be captured compositionally?
- How does this semantics interact with the semantics of predication and comparatives (Matushansky 2002)?
- Why are clausal comparatives excluded from copular clauses?

John is/seems like Mary.

John seems like he is upset.

* John is like he is upset.

<http://www.carleton.ca/~asudeh/>