

EXPLETIVES AND THE SYNTAX AND SEMANTICS OF COPY RAISING

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Abstract

We present an event semantics account of copy raising in Swedish and English. The examination of copy raising gives rise to two puzzles. We demonstrate that our event semantics analysis solves the two puzzles. We examine some challenging copy raising data from expletives, propose a solution for handling the data, and discuss consequences of the solution for the theory of expletives.

1 Introduction

Copy raising (CR) in English is demonstrated in (1) and (2):

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

This can be compared to 'standard' raising as in:

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

Copy raising can be characterized schematically as follows:

- (5) They seem like they've missed the bus.
Subject + appear/seem + like/as if/as though + finite clause containing a pronominal copy of the subject

Subject-to-subject raising from an infinitival — as in (3) and (4) — has been studied extensively in the syntactic literature. In comparison, CR is relatively unexplored, although it has been discussed somewhat, and for a variety of languages (English: Rogers (1971, 1973), Postal (1974), Potsdam and Runner (2001), Asudeh (2002, 2004), Fujii (2005); Modern Greek: Joseph (1976), Perlmutter and Soames (1979); Samoan: Chung (1978); Hebrew: Lappin (1984); Irish: McCloskey and Sells (1988); Haitian Creole: Déprez (1992); Igbo: Ura (1998); Turkish: Moore (1998); Polinsky and Potsdam (2006) discuss further languages).

A key challenge presented by copy raising is that (pre-theoretically) a single thematic role apparently corresponds to two different NPs: the CR subject and the copy pronoun.

- (6) John seems like he is sleeping.

Examples such as (6) can alternate with expletive examples such as (7), just as in standard raising (8–9). These alternations are indicative of a lack of a subject thematic role.

- (7) It seems like John is sleeping.
- (8) John seems to be sleeping.
- (9) It seems that John is sleeping.

Potsdam and Runner (2001) present evidence for the athematic status of the copy raising subject; further discussion can be found in Asudeh and Toivonen (2006b).

A second key challenge of copy raising is the obligatory presence of the copy pronoun in the complement:

- (10) Jody seems like she's tired.
- (11) Jody seems like her favorite show has been cancelled.

(12) *Jody seems like it's raining.

Swedish copy raising largely parallels English copy raising:

(13) Maria verkar som om hon har vunnit.
M. seems as if she has won
Subject + verka ('seem') + som om (as if) + finite clause containing a pron. copy of the subject
Maria seems like she's won.

As indicated in the gloss, the general form of a basic copy raising sentence is essentially identical to the English. The similarity continues with the obligatoriness of the copy pronoun in Swedish:

(14) * Maria verkar som om Pelle har vunnit.
M seems as if P has won

Again as in English, there is an expletive alternant of (13):

(15) Det verkar som om Maria har vunnit.
it seems as if M has won
It seems as if Maria has won.

We show elsewhere that the copy raising subject in Swedish is likewise athematic (Asudeh and Toivonen 2006b).

However, unlike English, Swedish allows specification of the source of the impression (i.e., the perceiver) in a copy raising sentence in an adjunct PP headed by *på* ('on') (see Asudeh and Toivonen 2006b for arguments that the PP is an adjunct):

(16) 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.

Notice that there is no equivalent of the '*på*-PP' in English, although English has the capacity to express the other part of the perceptual relation, the perceiver, in a *to*-PP:

(17) Maria seemed to me like she had won.

Swedish only marginally allows expression of the perceiver (Asudeh and Toivonen 2006b). There is thus an asymmetry between English and Swedish with respect to expression of the arguments of the perceptual relation associated with copy raising.

The adjunct *på*-PP gives rise to a puzzle that we have elsewhere discussed as 'the *på* puzzle' (Asudeh and Toivonen 2006a). The puzzle is demonstrated by the following set of sentences, the first two of which are repeated from (13) and (16) above:

(18) Maria verkar som om hon har vunnit.
M seems as if she has won
Maria seems as if she has won.

(19) 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.

(20) * Maria verkar på Elin som om hon har vunnit.
M seems on E as if she has won

The *på* puzzle is this: Why is copy raising incompatible with a *på*-PP? In particular, why can't (20) mean that Elin gives the impression that Maria gives the impression that she (Maria) has won? This is a perfectly sensible proposition, but (20) can't mean this; it is instead ungrammatical.

In Asudeh and Toivonen (2006a) we discuss another puzzle, which arises equally in English and Swedish and which we call 'the puzzle of the absent cook'. In the following scenario, where the cook is present, we see the pattern of grammaticality demonstrated in (21–23):

Scenario: You and your friend walk into John's house. You see John busy cooking in his kitchen.

- (21) It seems like/that John is cooking
- (22) John seems to be cooking
- (23) John seems like he's cooking.

The puzzle arises when the cook is absent from the scenario:

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.

- (24) It seems like/that John is cooking.
- (25) John seems to be cooking.
- (26) */#John seems like he's cooking.

In this scenario, we see a shift in the pattern of grammaticality: the copy raising sentence (23)/(26) is now unacceptable (we leave aside for now whether this is true ungrammaticality, normally indicated by *, or semantic/pragmatic unacceptability, typically indicated with #).

The solution to both puzzles hinges on the following assumption:

- (27) The copy raising subject is interpreted as the *perceptual source* (*Psource*), what gives the impression that the complement to the copy raising verb is the case.

The subject in a sentence like (26) is thus the *Psource* and (26) means 'It seems like John is cooking and this impression comes from John'. Sentence (26) is therefore inappropriate in an absent cook scenario where John is unavailable to give such an impression (we treat this as presupposition failure).

The postulation of a *Psource* similarly explains the *på* puzzle. Like the copy raising subject, the *på*-PP expresses the perceptual source. A *Psource* PP is incompatible with a *Psource* subject, due to a generalized uniqueness condition on participants in eventualities.¹ We outline this uniqueness condition and other aspects of our analysis in the next section and show how it solves the two puzzles. Then, in section 3, we look at certain theoretical challenges from expletive data in copy raising and various consequences for the theory of expletives.

2 A sketch of the analysis

The analysis we present here is based on Asudeh (2004) and Asudeh and Toivonen (2006a); many aspects of the analysis are articulated more fully in Asudeh and Toivonen (2006b). Asudeh (2004) argues that *like* and *as* in copy raising sentences are not complementizers, but are rather prepositions with clausal complements (also see Heycock 1994 and Potsdam and Runner 2001). Asudeh (2004) further argues that the subject of the *like/as*-complement to the copy raising verb is raised as the subject of the copy raising verb, using the

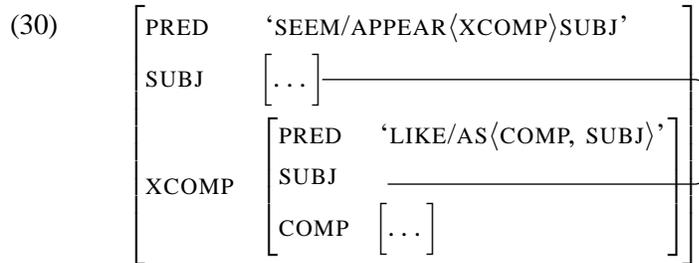
¹Note that this cannot be due to the theta-criterion or the equivalent, if the copy raising subject is athematic; see Asudeh and Toivonen (2006b) for extensive discussion of this issue.

usual raising mechanism of functional control in LFG. In other words, the *like/as*-complement is treated as a predicative complement on Asudeh’s analysis, which assimilates the copy raising complements to the general class of predicative raising complements:

(28) John seems/appears upset/out of his mind.

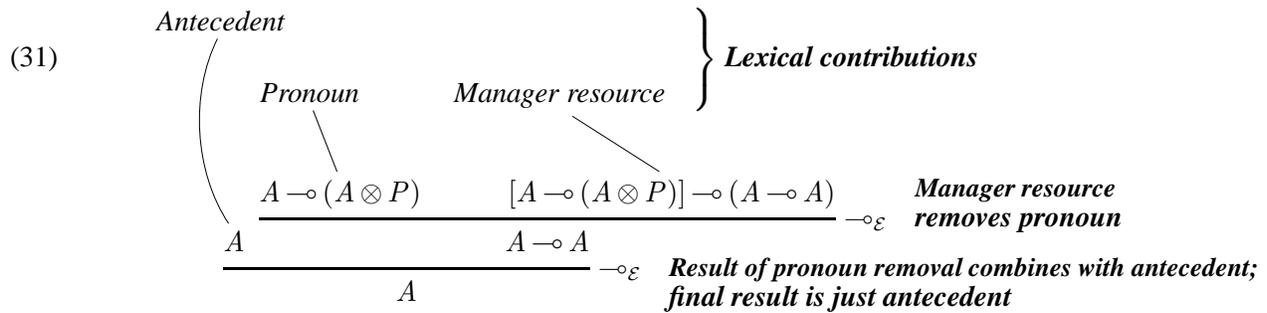
The f-structure for sentence copy raising, as in (29), is shown schematically in (30):

(29) John seems like he is upset.



Notice that the functionally controlled, raised subject is not the copy pronoun, but rather the subject of the predicative complement headed by the *like/as* preposition. The copy pronoun itself is somewhere inside the COMP of the predicative complement. The copy raising subject is related to the copy pronoun by a separate, anaphoric binding relation (Asudeh 2004).

In Asudeh’s theory — which treats copy raising as a kind of resource surplus, like resumption, in Glue Semantics (Dalrymple 1999) — the copy pronoun is removed from semantic composition by a *manager resource*. The manager resource is lexically specified by the copy raising verb (*seem, appear*). The following schematic Glue proof illustrates the analysis:



The manager resource’s removal of the pronoun ensures that the athematic copy raising subject has a place to compose with the semantics, since it is not a semantic argument of its matrix predicate. Kokkonidis (2006) presents an alternative resource management theory for Glue Semantics, but the differences do not affect the case at hand.

Asudeh and Toivonen (2006a,b) propose an event semantics for copy raising. Copy raising verbs lexically contribute a Psource semantic role (note that we follow Bach 1981 in using ‘eventuality’ as a cover term for events and states):

(32) The Psource of an eventuality E is the source of perception of E (whatever gives the impression that E holds).

We below argue that other subcategorizations of raising verbs involve existential closure of the Psource (see also Asudeh and Toivonen 2006a,b).

In Asudeh and Toivonen (2006b), we argue at length that Psource is not a thematic role in the usual narrow sense, but is a *semantic role* (roughly analogous to the *thematic relations* of Parsons 1990, 1995). We will not rehearse those arguments here, but note that they essentially depend on the demonstration that 1) the copy raising subject is not a thematic argument and 2) the *på*-PP is an adjunct; thus, the realizations of Psource are athematic and Psource therefore cannot be a thematic role. We treat Psource as a function from eventualities to individuals or eventualities. This is analogous to the thematic role STIMULUS in (33) and (34):

(33) Meg saw Jack.

(34) Meg saw Jack running.

In (33), STIMULUS is a function from the seeing eventuality to the individual Jack. In (34), STIMULUS is a function from the seeing eventuality to the eventuality of Jack running.

It has been noted in the semantics literature on thematic roles that each eventuality may have only one instance of a given thematic role (Carlson 1984, Chierchia 1984, Landman 2000). Landman (2000) formulates this as the ‘Unique Role Requirement’:

(35) **Unique Role Requirement**

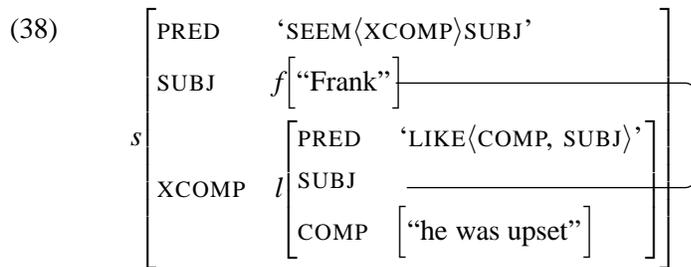
If a thematic role is specified for an event, it is uniquely specified.

Landman (2000) captures this formally by treating thematic roles as partial functions on eventualities, as anticipated above. If a thematic role is a function on its eventuality, it follows that each eventuality can have at most one instance of any thematic role. We generalize this functional definition to the Psource *semantic* role, which similarly captures this uniqueness requirement for Psource: each eventuality can only have one Psource.

We close this section with a presentation of the relevant semantic part of the lexical entry for copy raising verbs and a couple of examples of the semantics of copy raising (for more details see Asudeh and Toivonen 2006b). The Glue Semantics meaning term for a copy raising verb (leaving aside the manager resource discussed above) can be sketched in simplified form as shown in (36), where the linear logic terms are instantiated as per the f-structure (38) for sentence (37) (note that *e* is the event variable):

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

(37) Frank seemed like he was upset.



The special equality, $=_p$, is defined as returning true or false iff the terms being compared (PSOURCE(*s*) and *x*) are of the same semantic type; otherwise the equality returns no truth value. The equality is therefore a kind of presuppositional equality, as discussed further below.

The following copy raising examples in English and Swedish have the semantics in (41):

(39) Tom seems like he is laughing.

(40) Tom verkar som om han skrattar.
 T. seems as if he laughs
Tom seems as if he is laughing.

$$(41) \frac{\frac{tom \quad \lambda x \lambda P \lambda s. seem(s, P(x)) \wedge \text{PSOURCE}(s) =_p x \quad \vdots}{\lambda P \lambda s. seem(s, P(tom)) \wedge \text{PSOURCE}(s) =_p tom} \quad \lambda y. \exists e [laugh(e, y) \wedge \text{AGENT}(e) = y]}{\frac{\lambda s. seem(s, \exists e [laugh(e, tom) \wedge \text{AGENT}(e) = tom]) \wedge \text{PSOURCE}(s) =_p tom}{\exists s. seem(s, \exists e [laugh(e, tom) \wedge \text{AGENT}(e) = tom]) \wedge \text{PSOURCE}(s) =_p tom}}$$

Notice that the copy raising verb's lexical entry ensures that the copy raising subject is the PSOURCE of the copy raising verb's eventuality (a state).

In contrast, infinitival raising, exemplified by the following English and Swedish examples, has the semantics in (44):

(42) Tom seems to paint.

(43) Tom verkar måla.
 T. seems paint.INF
Tom seems to paint.

$$(44) \frac{\frac{\lambda p \lambda s'. seem(s', p) \quad \exists e [paint(e, tom) \wedge \text{AGENT}(e) = tom] \quad \vdots}{\lambda s'. seem(s', \exists e [paint(e, tom) \wedge \text{AGENT}(e) = tom])} \quad \lambda S \lambda s. \exists v_\delta [S(s) \wedge \text{PSOURCE}(s) =_p v_\delta]}{\frac{\lambda s. \exists v_\delta [seem(s, \exists e [paint(e, tom) \wedge \text{AGENT}(e) = tom]) \wedge \text{PSOURCE}(s) =_p v_\delta]}{\exists s \exists v_\delta [seem(s, \exists e [paint(e, tom) \wedge \text{AGENT}(e) = tom]) \wedge \text{PSOURCE}(s) =_p v_\delta]}}$$

Notice that (44) contrasts with (41) in having existential closure (binding) of a variable v_δ (the type we reserve for eventualities), since infinitival-complement raising verbs do not lexically specify that their subject is a perceptual source. We motivate this existential closure in the next section.

2.1 Existential closure of Psource

Consider a standard infinitival raising sentence like the following:

(45) Maria seems to have wrecked the hotel room.

In the situation described by this sentence, something gives the impression that Maria has wrecked the hotel room, probably the state of the hotel room. This indicates that even non-copy-raising subcategorizations of *seem* have a Psource, but the Psource is not necessarily the subject. It could be Maria herself who somehow gives the impression (e.g., if she's covered in plaster and carrying a smashed-up TV), but this is not the most natural reading of (45). Notice, for example, that the corresponding copy raising sentence (46), in which Maria is lexically specified by the verb as the Psource, is decidedly odd out of context:

(46) Maria seems like she wrecked the hotel room.

The oddness of this sentence stems from the difficulty in accommodating the proposition that Maria wrecked the hotel room based on Maria being the Psource. The contrast between (46) and (45) in the null context and the intuitive meaning for (45) point to existential closure of the Psource in propositions expressed by sentences like (45), without commitment to whether the existentially closed variable is an individual or an eventuality.

Further evidence for existential closure of Psource comes from Swedish, where *på*-PPs are not only ungrammatical with copy raising — as demonstrated by the *på* puzzle data itself — but are surprisingly also ungrammatical with infinitival raising verbs:

- (47) * Maria verkar på Jonas vara glad.
M. seems on J. be happy

The question is: why can't (47) mean that Jonas gives the impression that Maria seems to be happy, which is, again, a perfectly sensible proposition. If Psource is existentially bound in infinitival sentences, the ungrammaticality of (47) follows automatically from the uniqueness requirement on Psources. There are two Psources in (47) (the existentially bound Psource and the *på*-PP Psource), which violates the functional definition of Psource, as per the generalization of the Unique Role Requirement that was discussed following (35) above.

2.2 Solutions to the two puzzles

Recall that the puzzle of the absent cook concerned the ungrammaticality of copy raising sentences in scenarios like the following:

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.

- (48) #John seems like he's cooking.

Our analysis explains this puzzle as follows. The actual Psource in the scenario above is the state of the kitchen. However, the copy raising verb's lexically-specified Psource is John. The formal analysis of Asudeh and Toivonen (2006b) results in checking whether the Psource of (48) (the state of the kitchen) equals John, using a presuppositional equality that only returns true or false if the entities being compared have the same type. In this case, this is not true, because we are comparing a state, which has the type for eventualities, to an individual, which has the individual type. Therefore our analysis treats the unacceptability of (48) as presupposition failure (hence the use of the infelicity marker # rather than the ungrammaticality marker *). This also explains why the negation of (48) is equally odd in the given scenario:

- (49) #John doesn't seem like he's cooking.

In sum, the puzzle of the absent cook is explained as presupposition failure that arises from asserting that an individual is a Psource when the Psource role is actually filled by something else.

The solution to the *på* puzzle was anticipated in the discussion of the existential closure above. *På* puzzle cases are exemplified by sentence like:

- (50) * Maria verkar på Elin som om hon har vunnit.
M. seems on E. as if she has won

In such cases, there are two Psource contributors: the copy raising verb, which lexically specifies Maria as the Psource, and the *på*-PP, which specifies Elin as the Psource. Having two instances of Psource violates the uniqueness requirement.

3 The challenge of expletives

The semantics for copy raising that we have sketched thus far solves a couple of puzzles and arguably gets several aspects of the phenomenon right. Ideally, we want to maintain a consistent semantics for copy

raising verbs. However, copy raising verbs also occur with expletives, including raised expletives (illustrated below), which complicate matters considerably. Expletives present a challenge to any analysis of the syntax and semantics of copy raising. In this section, we attempt to meet this challenge and show that copy raising conversely reveals something about the syntax and semantics of expletives.

We have already noted that copy raising can occur with the standard *it*-expletive that we would generally expect with a raising verb like *seem* or *appear*:

(51) It seems like there's trouble in paradise.

(52) It seems like it's raining.

These examples illustrate that expletive choice in the lower clause is independent of the raising verb's expletive, as we would expect.

However, copy raising verbs also exhibit the expletive pattern shown here:

(53) There seems like there's trouble in paradise.

(54) *There seems like it's raining.

Many but not all speakers accept (53) as grammatical, but all speakers reject (54) as ungrammatical. This pattern of grammaticality indicates that the matrix expletive in copy raising can be dependent on the lower expletive in the copy raising verb's complement.

The pattern shown in (53) can also readily be found in attested examples:

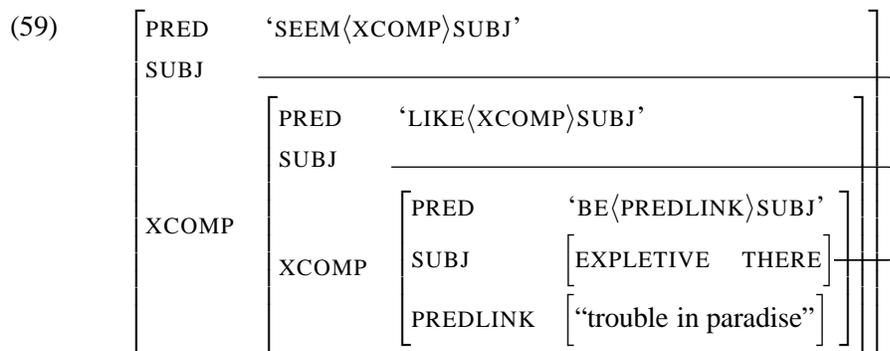
(55) God, there seems like there's no end to the innovation we come up with, you know.
(<http://www.mp3.com/features/stories/4189.html>; checked 10/2006)

(56) ... there seems like there's some connection with the car jacking that took place ...
(<http://transcripts.cnn.com/TRANSCRIPTS/0208/01/lo1.03.html>; checked 10/2006)

(57) Also, there appears as though there are less balloons in the final shot.
(www.horrorking.com/mviegoof.html; Google cached version checked 10/2006)

We follow Asudeh (2004) in analyzing copy raising with *there*-expletive subjects as an instance of double raising. The expletive is raised from the predicative *like/as*-complement's subject, as per (38) above, but it also raised, by *like* or *as*, from the sentential complement to *like/as*. This is sketched here:

(58) There seems like there's trouble in paradise.



Asudeh (2004) treats the capacity for *like* and *as* to raise from their finite complements as an exceptional, lexical property.

The normal assumption is that expletives have no semantics. In our Glue Semantics treatment, this means that lexical entries for expletives contribute no resources. This presents a serious challenge for copy raising. Recall that the Glue meaning term for copy raising is as follows:

$$(60) \quad \lambda x \lambda P \lambda s. seem(s, P(x)) \wedge \text{PSOURCE}(s) =_p x : \\ subj \multimap (subj \multimap l) \multimap e \multimap s$$

The copy raising verb contains a dependency on its subject, which it will satisfy by composing its subject with the property contributed by the predicative *like/as*-complement. However, if the expletive subject has no semantics, then this composition cannot be carried out, as shown by the following invalid Glue proof, which does not terminate in the right type for a proposition, due to the undischarged dependency on *subj*:

$$(61) \quad \frac{\lambda x \lambda P \lambda s. seem(s, P(x)) \wedge \text{PSOURCE}(s) =_p x : subj \multimap (subj \multimap l) \multimap e \multimap s \quad \vdots}{\lambda P \lambda x \lambda s. seem(s, P(x)) \wedge \text{PSOURCE}(s) =_p x : (subj \multimap l) \multimap subj \multimap e \multimap s} \text{curry} \quad \text{like} : subj \multimap l} \\ \frac{\lambda x \lambda s. seem(s, like(x)) \wedge \text{PSOURCE}(s) =_p x : subj \multimap e \multimap s}{\lambda s. seem(s, like(y)) \wedge \text{PSOURCE}(s) =_p y : e \multimap s} [y : subj]^1} \\ \frac{\exists s [seem(s, like(y)) \wedge \text{PSOURCE}(s) =_p y] : s}{\lambda y. \exists s [seem(s, like(y)) \wedge \text{PSOURCE}(s) =_p y] : subj \multimap s} \text{event closure} \quad \multimap_{x,1}$$

This problem is, however, more general than just a problem for Glue Semantics or our particular treatment. Any analysis that attempts to explain copy raising compositionally is potentially challenged by the ability of copy raising verbs to host both expletive subjects and apparently thematic subjects that are only licensed by virtue of being anaphorically tied to a copy pronoun.

It is initially tempting to backtrack and state that the expletive *does* actually contribute a resource, i.e. it does have a semantics. An appropriate semantics might be existential closure of the variable that corresponds to the subject in the semantics:

$$(62) \quad \lambda P. \exists x [P(x)] : (\uparrow_\sigma \multimap (\text{SUBJ } \uparrow)_\sigma) \multimap (\text{SUBJ } \uparrow)_\sigma$$

This Glue meaning term takes a dependency on a subject — a property — and returns an existentially closed proposition. The inside-out equation in (62) states this in terms of a dependency from \uparrow to the thing that \uparrow is a subject of. The inside-out specification is needed due to the fact that the equation is part of the lexical specification of the expletive itself; i.e. \uparrow refers to the expletive's f-structure, not the verb's.

If the expletive were to contribute this kind of meaning, then the conclusion of the proof in (61) would instead be:

$$(63) \quad \exists y [\exists s [seem(s, like(y)) \wedge \text{PSOURCE}(s) =_p y]] : subj \multimap s$$

This is a valid Glue proof and a reasonable semantics for both the copy raising verb and the expletive. It states that something gives the impression that the proposition expressed by the complement of the copy raising verb holds.

However, the solution just sketched leads to various problems. First, if the expletive contributes the existential meaning in (62), as far as the semantics is concerned we should be able to derive the following:

(64) *There meowed.

$$(65) \quad \frac{\lambda P. \exists x [P(x)] : (s \multimap m) \multimap m \quad \lambda y. meow(y) : s \multimap m}{\exists x [meow(x)] : m}$$

It is clear that ‘There meowed’ doesn’t mean that something meowed: it’s just ungrammatical. Independent syntactic constraints might block (64), but it is questionable whether that would be the right approach.

The question does not need to be settled, though, because the proposal suffers a much worse independent problem. The expletive raising cases illustrate that more than one *there*-expletive can be inserted from the lexicon in this construction:

(66) There seems like there is a piece missing.

If we assume a consistent semantics for both occurrences of the expletive, as would be theoretically desirable, then there would be too many subject consumers. In other words, the compositional requirements of both expletives, as per (62), could not be satisfied.

A solution suggests itself, however: instead of associating the existential closure resource with the expletive, as in (62), associate it with the head of the *like/as*-complement in its expletive raising subcategorization (notice that we have left underspecified the semantics of *like*; we return to this issue in the conclusion):

(67) *like*: (\uparrow PRED) = ‘like<XCOMP>SUBJ’
 (\uparrow PTYPE) = CLAUSAL-COMPARATIVE
 (\uparrow SUBJ) = (\uparrow XCOMP SUBJ)
 ($\lambda P.\exists x[P(x)] : ((\uparrow \text{SUBJ})_\sigma \multimap X) \multimap X$)
 ... $\lambda x.like(\dots x \dots) : \dots (\uparrow \text{SUBJ})_\sigma \multimap \uparrow_\sigma$

This instead associates the existential closure that (62) associated with the expletive itself with the predicator that governs the explicit raising (recall that *like/as* exceptionally raise the expletive from their complement). The two optional parts of the lexical entry for the preposition can be realized independently. This is due to the fact that the existential closure needs to be realized separately of the raising in sentences like (51), repeated here:

(68) It seems like there’s trouble in paradise.

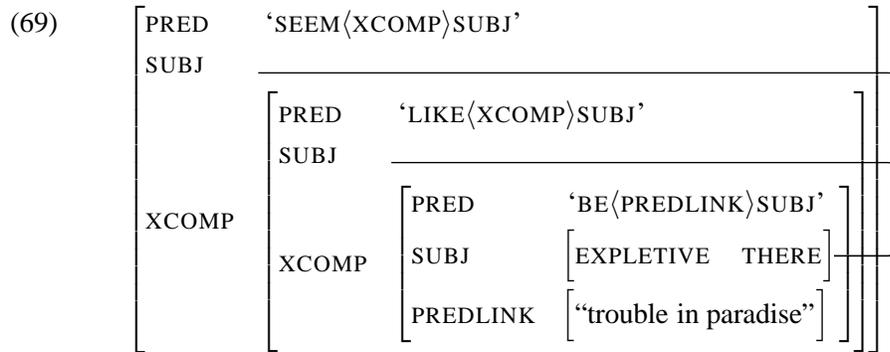
For an example like this, the existential closure is necessary to satisfy to the copy raising verb’s consistent dependency on its subject, but there the *it*-expletive must be independently generated, not raised, since the lower expletive is a non-matching *there*-expletive.

The proof in Figure 1 sketches the resulting well-formed semantics. The conclusion of the proof is an atomic sentential resource with all dependencies discharged, as show above in (64). The difference is that the existential closure is contributed by the *like/as*-head of the copy raising verb’s predicative complement, not by the expletive itself. This ensures successful semantic composition, because the individual expletives are not contributing multiple closures over the same variable. Furthermore, it maintains the standard semantics for expletives as contentless. Lastly, it places the exceptional semantic composition in the lexicon, where it arguably belongs, and, more particularly, in the lexical entry for *like/as*, which is exceptional for independent reasons.

Lastly, we would like to make some brief comments on LFG’s Subject Condition, building on Asudeh (2004). The Subject Condition is the requirement that every predicator has a subject (Bresnan 2001). It is normally understood purely f-structurally: every predicator must have a SUBJ grammatical function at f-structure. However, expletive raising indicates that this is insufficient. Recall the sort of f-structure that is relevant:

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

Figure 1: Semantics for copy raising with expletive subject



There are a couple of alternatives for how the functional control that handles the expletive raising could be handled.

The first option is classic LFG functional control (Kaplan and Bresnan 1982, Bresnan 1982). However, in that case the lower expletive alone should satisfy all subject requirements in the f-structure. This would overgenerate examples like the following:

(70) *Today seems like there’s a problem.

Alternatively, functional control could be realized through subsumption (Zaenen and Kaplan 2002, Kaplan and Zaenen 2003), but this would mean that either the lowest expletive could satisfy all requirements, again overgenerating (70), or else the highest expletive could satisfy all requirements, which equally overgenerates:

(71) *Today there seems like is a problem.

Thus, functional control at f-structure, whether through equality or subsumption, is problematic for satisfaction of the Subject Condition at f-structure in cases of expletive raising. This suggests that there has to be a c-structural component to the Subject Condition: certain c-structural subject positions in English (specifiers of finite IP) have to be filled.

4 Conclusion and future work

Copy raising presents an intricate set of puzzles for syntax, semantics, and the syntax-semantics interface. A particular challenge, brought to the fore by expletives, is how to provide a purely compositional semantics that adequately treats all the parts while properly capturing their denotations. The solution proposed here maintains the standard analysis of expletives as semantically contentless, having shown that an attempt to attribute reasonable content to expletives is problematic.

A number of challenges remain for future work. First, what is the proper semantics for the predicative head *like/as*? These predicates of similarity can appear in various usages and with various complements, as illustrated here for *like*:

(72) John runs like Mary skips.
 $\exists s[\exists s'[\exists P[P(s) \wedge P(s')] \wedge run(s, j) \wedge upset(s', j)]]$

(73) John is like Mary.
 $\exists P[P(j) \wedge P(m)]$

(74) John seems like Mary.
 $\exists x[\exists s[seem(s, \exists s'[\exists P[P(j) \wedge P(m)])] \wedge PSOURCE =_p x]]$

- (75) John seems like he is upset.
 $\exists s[\text{seem}(s, \exists s'[\exists P[P(s, j) \wedge P(s', j)] \wedge \text{upset}(s', j)]) \wedge \text{PSOURCE} =_p j]$

We have indicated target semantics for each case. The second challenge is how to derive the variety of semantics compositionally while maintaining a core meaning for *like/as*. A promising alternative would seem to be a polymorphic analysis in which a base semantic type for *like* is specified plus a procedure for deriving the other types. The third case is particularly problematic, because it seems similar to copy raising, but with a nominal complement to *like* which has no copy pronoun. Our analysis of copy raising does not extend to such cases, since there is in fact no copy. It could arguably be a different construction, but it is surely not purely coincidental that the matrix verb is *seem*. Thus, the relationship between (74) and (75), where the latter is true copy raising, presents a third challenge. A fourth challenge is the specification of how the semantics of *like/as* interacts with the semantics of predication and comparatives (Matushansky 2002). Lastly, a fifth challenge is to explain why clausal comparatives are excluded from copular clauses:

- (76) a. John seems like Mary.
 b. John seems like he is upset.
- (77) a. John is like Mary.
 b. *John is like he is upset.

Both *seem* and *be* can occur with the *like NP* complement, but only *seem* can occur with the *like CP* complement.

We hope to have shown in this paper that copy raising is both syntactically and semantically challenging and that it opens up many avenues for further enquiry.

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