

Diachronic Evidence for Extended Argument Structure Bender and Flickinger (1999)

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1

The clauses in question

The clauses in question are those headed by *as if*, *as though* and *like*, as illustrated in the following examples.

- (1) a. It appears as if Kim will be late.
b. It sounds as though Kim will be late.
c. It looks like Kim will be late.

3

Introduction

Goals

- to examine the historical development of a certain class of clauses from adjuncts into complements, and
- to argue that the nature of this change supports recent proposals (by Miller (1992), and others) within the HPSG framework which place certain adjuncts on the argument structure lists of words

Hypothesis

- These clauses started historically as adjuncts with meaning similar to that of a neighboring complement, and took advantage of their position on the ARG-ST list to supplant that complement.

2

Evidence of complementhood

A variant of Tesnière's (1959) functional criterion:

Complements are those things that are selected by the verb in its 'off the shelf' lexical entry; all other dependents are adjuncts.

4

Five relevant fundamental differences between complements and adjuncts:

- 1) complements can fill an argument role in the semantics of the selecting head, while adjuncts never do
- 2) the *do so* substitution
- 3) the direction of selection: heads select for their complements, while adjuncts select what they modify
- 4) extraction from complements is less constrained than extraction from adjuncts
- 5) how certain ambiguous sentences retain/lose readings in different syntactic, semantic, and pragmatic conditions

5

Test 1

Verbs of perception can appear with expletive subjects and can be used to show that *as if* phrases are complements by the first test. In (2), the *as if* phrase fills an argument position, and therefore is a selected complement.

(2) ..., it seem'd as if Art were no more, ...

7

Verbs that might take *as if* phrases as complements

| Verb class | Members |
|----------------------|--|
| Verbs of perception | look, seem, appear, sound, feel, strike |
| Verbs of deception | make, behave, act, go about, shew, feigh, pass off, make believe |
| Verbs of insinuation | hint, intimate, insinuate |
| Verbs of construal | understand, consider, construe |
| verbs of caring | think of, treat, love, feel for, bring up, look after |
| Verbs of expression | talk, write, speak |

Data source: a corpus search of North American newspapers and 18th to early 19th century English prose fiction

6

Test 2: *do so* substitution

Do so is said to be a pro-form that stands for a verb + all of its arguments + possibly some adjuncts.

- (3) a. Kim ate an apple and Sandy did so (*a pear) too.
b. Kim ate an apple quickly and Sandy did so slowly.

Parallel examples with *as if* phrases:

- (4) a. # Kim talked as if the Ice Age had ended in the tenth century, and Sandy did so as if it had ended in the sixth.
b. Kim ran as if the street were on fire and Sandy did so as if it were made of molasses.

8

Test 3: selectional restrictions

As adjuncts, *as if* phrases are relatively unselective.

- (5) a. Kim seems sad, as if something bad has happened.
- b. Kim appears to be happy, as though today were a holiday.
- c. Kim sounds angry, like we did something bad.
- d. Kim hinted that there would be a test tomorrow, as if there could be a test on a holiday.
- e. Kim strikes me strongly as likely to win, as if I had some premonition.
- f. Kim treats Bob like a brother, like the world would end if anything happened to him.

9

Test 4: possibility of extraction

Extraction from complements is quite generally possible, while extraction from certain adjuncts is highly restricted. In general, modifier phrases with an internal clausal complement do not permit ordinary extraction.

- (7) a. The president that he looked as if he was imitating was Ford.
- b. *The president that he fell as if he was imitating was Ford.

11

However, only a small class of verbs can take *as if* phrases as complements, suggesting that the direction of syntactic selection in those cases is from the verb to the *as if* phrase.

- (6) a. You seem to hint, as if you were to be in Town soon.
- b. ... you must not understand me as if I let my Friend the Quaker into any Part of the Secret History of my former life;
- c. It strikes me as if it would do exactly.

10

Test 5: ambiguous sentences involving *as if* phrases

Ambiguous sentences involving *as if* phrases may have two readings, as the *as if* phrase may serve as either a complement or a modifier. However, these sentences retain/lose readings due to syntactic effects (extraction to sentence initial position is unavailable to complement *as if* phrases), as illustrated in (8),

- (8) a. She behaved as though she expected to get a cookie.
- b. As though she expected to get a cookie, she behaved.

12

semantic effects (involving negative polarity items), as illustrated in (9),

- (9) a. She behaved as if anyone would notice.
 b. He continues to talk as if anyone was listening.

or pragmatic effects (pragmatic incompatibility of the *as if* phrases with the semantics of the intransitive variants of the verbs), as illustrated in (10).

- (10) a. He behaved as if he'd never been taught any manners.
 b. # As if he'd never been taught any manners, he behaved.

13

Historical Development

The historical development of these lexical items supports recent proposals (e.g. Miller (1992), Przepiórkowski (1999), and Bouma et al. (1998)) that put post-verbal adjunct together with complements on a single list in the feature structures for signs.

In particular, lexemes with 'off the shelf' argument structures are allowed to license instances with those argument structures extended to include post-verbal adjuncts.

Such a structure lends itself to an account of how certain clauses in English covertly from adjuncts to complements.

15

As if, as though and like as complementizers

The lexical heads of these phrases can be classified as complementizers, rather than clause-taking prepositions or subordinating conjunctions.

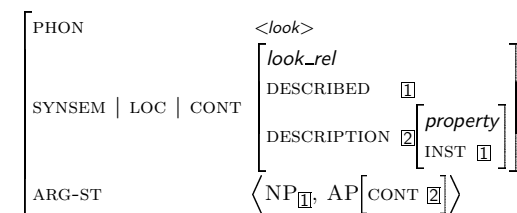
Prepositions and subordinating conjunctions both introduce a two-place predicate into the semantics, while the complement *as if* phrases do not have a second argument, just like complement phrases headed by the complementizers *if* and *whether*.

- (11) a. Kim left before Sandy arrived.
 b. Kim has been here since Sandy arrived.
 (12) a. It looks as if/as though/like Sandy will win.
 b. Kim wonders if/whether Sandy left.

14

Representations

A partial description of the lexeme *look* modified by *as if* phrases:



16

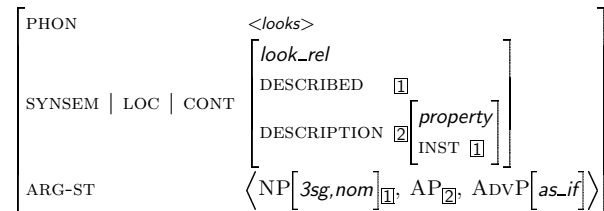
Textual evidence

The first uses of *as if* as a complementizer do not appear until the late 1600s, although the phrase *as if* shows up in other uses much earlier.

- (14) a. ... before they part that itt looks as if their sitting would yet bee of a month's continuance at least. (Helsinki Corpus, 1675)
- b. ... those who are nobly born of that country, are so delicately cut and raised all over the fore-part of the trunk of their bodies that it looks as if it were japan'd, ... (Helsinki Corpus, 1688)
- c. Stay, there's a Dance beginning, and she seems as if she wou'd make one. (OED, 1673)

19

A partial description of one possible instantiation of that lexeme:



The specifics of the adjuncts of any given instantiation of the lexeme are 'unified in' when the word appears in a sentence.

(13) Kim looks sad, as if something bad has happened.

17

A possible path of innovation

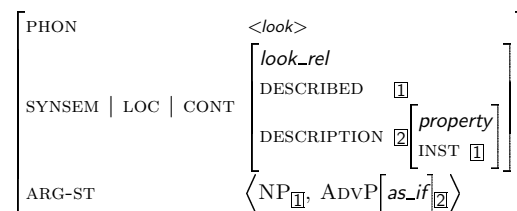
Look and *seem* were the first verbs to take *as if* clauses as complements. A possible path for this innovation is suggested by the example from the Helsinki Corpus below:

- (15) But methinks, the Seat of our Family looks like Noah's Ark, as if the chief part on't were design'd for the Fowls of the Air, and the Beasts of the Field. (1696)

In (15), the adjunct elaborates on the semantic content of the PP complement, and the two have a similar semantic type. Only the syntactic subcategorization constraints of *look* prevent the adjunct from serving as a complement.

20

A historical change took place sometime in the 17th century, where adjuncts introduced by *as if* were reanalyzed as complements for certain classes of verbs. This change took the form of speakers hearing one of these verbs in the right kind of context, and deducing from it a new lexeme.



18

Recent work in the treatment of post-verbal adjuncts within the HPSG framework provides motivation from several languages for placing certain adjuncts on the ARG-ST lists of words.

Following this approach, in (15), both the PP complement and the *as if* phrase will be on the ARG-ST list of *looks*. Further, both express similar semantic information and have similar semantic types, i.e. two-place relations with both an internal and an external argument.

Given this, it would be a simple step of lexical reanalysis for the *as if* phrase to usurp the position of the complement, giving rise to a new lexical entry for *look* which omits the old complement and links the *as if* phrase to the relevant position in the semantic structure.

21

Why extended argument structure

In this account, the lexeme specifies subcategorized-for complements, and the instance can extend the lexeme's argument structure to include VP adjuncts. The learner hearing (15) takes the PP to be an adjunct, and the *as if* phrase to be the complement. Both the old and the new lexemes for *look* can employ the same binary semantic relation.

Otherwise, the change would require the learner hypothesize an instance with two elements on the ARG-ST list (in addition to the subject), but the associated lexeme would also have to have both complements, introducing a three-place semantic predicate. This innovation is not motivated, since both the old and new entries are two-place.

23

More on the newly added lexical entry:

- The *as if* phrase is now selected by the verb as its complement.
- The semantic contribution of the *as if* phrase remained unchanged initially, since it was on the strength of its semantic similarity to the original predicative phrase that it began to serve a complement.
- The *as if* phrases became only a one-place relation semantically, since they also occur in sentences with expletive subjects. *As if* was reanalyzed as a complementizer like *that* and *whether*.

22

Future work

Lexical idiosyncrasies in the distribution of *as if* complementizer phrases are expected, but the nature of the constraints on selection in (16b,c) is unclear.

- (16) a. It seems as if/that Kim could win.
b. It sounds as if/*that Kim won.
c. It strikes me (as likely) that/*as if Kim could win.

In general the selection of CP complements appears to be semantic, suggesting that the *as if* CPs introduce a semantic type distinct from *that* CPs, yet with a common supertype distinct from, e.g., interrogative CPs. More work is needed to fit this distinction into a framework like that of Ginzburg and Sag (1998).

24

When there is a non-expletive subject of the higher verb, it tends to be coindexed with the subject of the CP. Examples like the following were analyzed earlier by means of a transformation called “Richard” (Rogers (1971)) which ensured the identity of the higher and lower subjects.

- (17) a. Sara seems as if she could win.
b. *Sara seems as if I could win.
- (18) a. Sara sounds like she's tired.
b. *Sara sounds like I'm tired.

25

These complementizers do appear in one construction which requires a raising analysis, with an expletive *there* subject in both the higher and lower clauses:

- (20) a. They look like someone just died.
b. You sound as if I never mentioned this to you.
c. He acts like the whole world is against him.

27

However, this coindexing with the subject is not obligatory, showing that there is not a simple control relation between the higher verb and the *as if* complement:

- (19) a. They look like someone just died.
b. You sound as if I never mentioned this to you.
c. He acts like the whole world is against him.

26

Three separate valence patterns for each of these verbs:

- The first pattern has expletive *it* as the subject and an *as if* clause complement, with no further constraints on the complement.
- The second pattern has a non-expletive subject and *as if* complement, and a constraint on the pragmatic relation between the subject and complement. Details of such a constraint calls for further research.
- The third pattern has expletive *there* as the subject and requires that the *as if* clause have the same subject. This matching can be carried out by means of the AGR feature. This supports the need for an AGR feature at the top phrasal node in a clause (Bender and Flickinger (1999)), carrying the agreement properties of the clause's subject.

28