

DO YOU SEE WHAT I MEAN? — THE GRAMMATICAL SEMANTICS  
OF THE VERBS OF PERCEPTION

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The verbs of perception in Danish are principally se and høre, but in authentic material the accusative + infinitive construction has been found in examples with fornemme, skimte, øjne, betragte, iagttage, overvære, bevidne, møde, læse, nyde, forudse, tænke sig, forestille sig, opleve, vise (Karker 1976).

The verbs of perception can be found in the following syntactic constructions:

- (1) Henrik så Lotte save brænde
- (2) Ebbe så at dronningen kom
- (3) Lotte så om Ebbe var der
- (4) Henrik så på at dronningen savede brænde

The four constructions are, respectively: (I) verbs of perception + accusative + infinitive, (II) verbs of perception + at-clause, (III) verbs of perception + om-clause, (IV) verbs of perception + på + at-clause.

In the deep structure these four surface structure constructions differ in at least five essential respects: (a) factivity, (b) semantic type of the complement, (c) semantic type of the predicate in the complement, (d) aspect (aktionsart) of the verb of perception, (e) deep case of the subject of the verb of perception in active voice.

1.1 Verbs of perception + acc. + inf. are IF-verbs in the sense of Karttunen (1971).

- (5) Henrik så dronningen save brænde
- (6) Henrik så ikke dronningen save brænde
- (7) Så Henrik dronningen save brænde?

(5) implies that the queen sawed firewood, but (6) and (7) don't.

1.2 Verbs of perception take a certain type of complement in the acc. + inf. construction. It is not possible to have sense, modals, negations or relational adverbials in the complement. Such a complement is what Renate Bertsch (1972) calls a process variable (Vorgang); it is not an event or a fact.

- (8) Lotte hørte Ebbe komme  
\*Ebbe være kommet  
\*Ebbe ville komme  
\*Ebbe ikke komme  
\*Ebbe før middag komme

1.3 The predicate in the acc. + inf. complement is always of a certain type; (9) - (11) are not acceptable:

- (9) \*Henrik så Lotte og Ebbe være  
midsundelige på hinanden
- (10) \*Ebbe mærkede tasken veje mindst  
70 kg
- (11) \*Lotte så/mærkede Ebbe elske  
revolutionen

In the infinitive we only find verbs denoting physical processes, not verbs denoting cognitive, emotive, or abstract processes or states.

1.4 Verbs of perception + acc. + inf. are in the imperfective aspect, not in the perfective. This can be seen from a couple of tests: is the time adverbial in the sentence ... i 2 timer (imperfective) or ... på 2 timer (perfective)? Is the question Hvor længe ... (imperfective) or Hvor lang tid tog det ... (perfective)?

- (12) hvor længe så du Ebbe male hus?
- (13) hvor længe så du Ebbe male huset?
- (14) \*hvor lang tid tog det dig at se  
Ebbe male hus?
- (15) \*hvor lang tid tog det dig at se  
Ebbe male huset?

(12) - (15) shows that the verbs of perception + acc. + inf. are imperfective independently of the aspect of the verb in the infinitive.

1.5 Finally verbs of perception + acc. + inf. take a Fillmore dative case as subject in the active voice.

- (16) \*Jeg ser åbenbart Lotte save brænde
- (17) (a) Hvad laver du?  
(b) \*Jeg ser Lotte save brænde.

2 It is now possible with the same tests to identify the five deep structure characteristics of the other three constructions.

2.1 Verbs of perception + at-clauses may be called information structure factives, that means the factivity of the predicate depends on the information structure of the utterance. If the informational focus falls on the verb of perception (the phrastic reading; see Otto Glismann 1976) it looks like a factive verb; if the informational focus falls on the complement (the neustic reading) it looks like an IF-verb. It can be seen from en that the informational focus in (18) falls on the verb of perception, according to the question test (Sgall et al. 1973).

(18) Henrik så ikke at dronningen havde  
en hund med

(18) can't be the negation of (19b), only of (21b).

(19) (a) Hvad havde dronningen med?  
(b) En hund.

On the other hand (20) can't be the negation of (21b), only of (19b):

(20) Henrik så ikke at dronningen havde  
nogen hund med

(21) (a) Dronningen havde en hund med.  
Så Henrik det?

(b) Ja.

The information structure factivity can be explained by the rule of expectation, which in the terms of information structure can be formulated:

RI. In a positive utterance, the alternatives to the focused part can be expected not to be the case.

RII. In negated utterances only the focused part is negated, the rest of the content can be expected to remain positive, and one of the alternatives to the focused part can be expected to be the case.

Several linguists have treated the rule of expectation under different names: context-dependent entailment (Lakoff 1974: 24), invited inferences (Karttunen 1971: 20), cancelled or actual expectation (Leech

1974: 318). RI can explain the curiosity of (22), in which it is expected that Peter didn't have two hands yesterday.

(22) Peter har to hænder i dag

RII explains why to most people (23) mean that the queen wasn't late, not that she didn't come.

(23) dronningen kom ikke for sent til  
åbningshøjtideligheden.

2.2 The at-clause after verbs of perception can contain relational adverbials and negations, and it has no restrictions with respect to tense.

(24) Lotte så at Ebbe var kommet  
ville komme  
ikke kom  
kom før middag

The complement can be called an event variable, not a process or a fact variable. It can be seen from the following:

(25) Henrik så at dronningen havde en hund  
med { hvilket var en sjælden begi-  
hvilket skete én gang om året

(26) Henrik vidste at dronningen havde en  
hund med { hvilket var en sjælden  
begivenhed  
hvilket skete en gang om året

In (25) hvilket refers to at dronningen havde en hund med, in (26) hvilket refers to Henrik vidste ... because dronningen havde en hund med here is a fact which is not true, not an event which happened.

2.3 In the at-clause after verbs of perception there are no restrictions with respect to the semantic type of the predicate:

(27) Henrik så at Lotte og Ebbe var  
misundelige på hinanden

(28) Lotte mærkede at Ebbe elskede  
revolutionen.

2.4 Verbs of perception + at-clause are in the perfective aspect:

(29) hvor lang tid tog det dig at se at  
toget var kørt?

(30) \*hvor længe så du at toget var kørt?

2.5 Verbs of perception take a dative subject in the active:

- (31) Hvad laver du?  
\*jeg ser at dronningen er kommet  
(32) \*jeg ser åbenbart at Henrik ikke har savet brænde

3.1 Verbs of perception + om-clause are neither factives nor IF-verbs:

- (33) Henrik så om Lotte var kommet  
(34) Lotte var kommet

(33) doesn't imply (34).

3.2 Om-clauses after verbs of perception are state of affair variables (Sachverhalt), that is, the description of an event with some propositional attitude other than 'fact'.

- (35) Henrik så om dronningen havde en hund  
med {hvilket var en sjælden begivenhed  
hvilket skete en gang om året

hvilket refers to Henrik så ... although (35) doesn't imply that the queen had a dog with her.

3.3 Verbs of perception + om-clause have no restrictions with respect to the semantic type of the predicate in the complement:

- (36) Lotte hørte om Henrik og Ebbe elskede hinanden

3.4 Verbs of perception + om-clause are in the perfective aspect:

- (37) Hvor lang tid tog det Henrik at se om dronningen var kommet?  
(38) \*hvor længe så Henrik om dronningen var kommet?

3.5 Verbs of perception + om-clause take an agentive subject in active:

- (39) (a) Hvad laver du?  
(b) Jeg ser om toget er kørt.

4 Verbs of perception + på + at-clause have the following characteristics: they (a) are factives, (b) take a fact as the complement, (c) have the restriction on the predicate in the complement that it can only denote a physical

process, and (d) have an agentive subject in the active.

- (40) Lotte så ikke på at Henrik og Ebbe sloges om hende  
(40) implies that they fought.  
(41) Henrik så på at dronningen kom ud på balkonen hvilket skete ofte hvilket var en sjælden begivenhed

hvilket refers to Henrik så ...

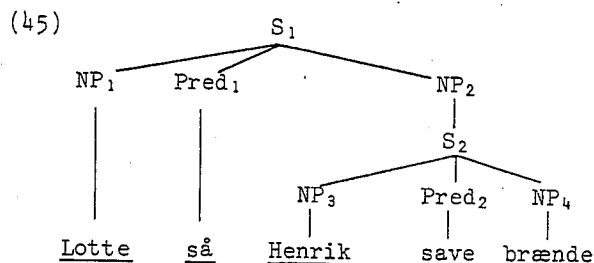
- (42) hvor længe så Henrik på at Lotte malede hus/huset?  
(43) (a) Hvad laver du?  
(b) Jeg ser på at dronningen støvsuger.

The five semantic differences between the four types of construction can be summarized in Table 1.

Which descriptions of the verbs of perception have been proposed within generative grammar? Have the semantic differences been part of the description?

The traditional way of describing the acc. + inf. is the following (Dahl 1971: 48, Stockwell et al. 1973: 557):

- (44) Lotte så Henrik save brænde



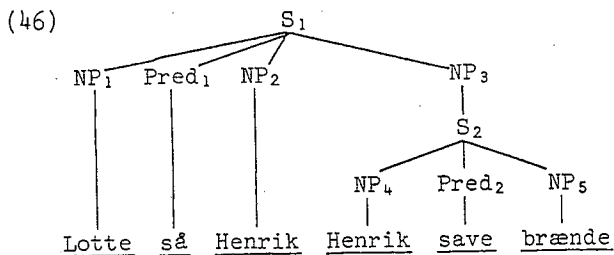
From the deep structure (45) the surface structure is derived by the generalized transformations Subject Raising and Pruning.

Sture Ureland (1973: 47) suggests the deep structure (46). He derives the surface structure by a transformation which raises the NP<sub>4</sub> to S<sub>1</sub>, where it is deleted because it is identical with NP<sub>2</sub>. These two transformations equals what is normally called Equi-NP Deletion.

Dahl argues that (45) is the right one because the embedded sentence S<sub>2</sub> can be passivized without any changes in the derivation (this means the same transformations can be used).

Table 1

		factivity	sentence variable	predicate	aspect	deep case
I	+ acc. + inf.	IF-verb	process	physical	imperfective	dative
II	+ <u>at</u> -clause	information structure factive	event	no restriction	perfective	dative
III	+ <u>om</u> -clause	neither IF-verb nor factive	sachverhalt	no restriction	perfective	agentive
IV	+ <u>på</u> + <u>at</u> -clause	factive	fact	physical	imperfective	agentive



(47) Lotte så brændet blive savet

For Dahl the deep structure (46) is the description of (48):

(48) Dronningen befalede Henrik at forlade slottet.

In (48) the embedded sentence can't be passivized.

Ureland argues that (46) is the right one because of the passive construction (49):

(49) Henrik sås af Lotte save brænde.

He then uses the deep structure like (45) for the generation of (50).

(50) Lotte så at Henrik savede brænde

I shall not decide the question here. I only want to point out that the argument for one of the deep structures doesn't take into account the semantic evidence mentioned in the previous section of this paper. Sture Ureland has noticed this fact about the aspect, for instance, but he describes it as a constraint on his Equi-NP Deletion

rule. This sort of description blocks the question about the relation between the aspect and the syntactic construction. It is not even possible to put the question (Brandt 1975).

In contrast to this I think that it is possible from the results in Table 1 to conclude the following:

It is not explanatorily adequate to describe factivity, aspect and deep cases as bound to the lexical unit. Factivity, aspect and deep case depend on the whole syntagmatic composition of semantic components.

Secondly, it is not sufficient to describe the complement as an embedded sentence. It is necessary to deal with several types of sentence variables: processes, events, states of affairs, and facts (Bartsch and Vennemann 1972).

Thirdly, the theory of selection rules seems inadequate to deal with the relation between the verb of perception and the verb in its complement, especially in the verb of perception + på + at-clause construction.

I shall now try to sketch how to formulate the problems from the first section of the paper in a more explanatorily adequate way.

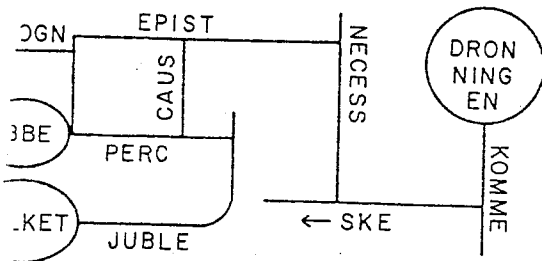
First, it is necessary to use more and other verification procedures than the acceptability test. Synonymy, implicature and tautology should be used much more.

Secondly, it demands a semantic representation. I have chosen the deep semantic

network introduced by G. Leech (1974: 280).  
 predicate in a predication is symbolized  
 by a line, and the argument (one or two)  
 by circles. Predications (with a predicate  
 and its arguments) can be arguments for  
 other predicates in other predications.  
 The verbs of perception + at-clauses are  
 complex predicates with [PERCEIVE  
 [SYNTACTICALLY] as one of its components and a  
 non-factive sort of 'realize' as the other.  
 In accordance with Lars Heltoft (1976), I  
 regard this second component as [EPIST  
 [NECESS]] (to take as an epistemic necessity).  
 This can be seen from the following:

- (50) Ebbe hørte på folkets jubel at  
 dronningen kom
- (51) Henrik så at dronningen var kommet  
 uden at se hende komme

(51) I will propose the deep semantic  
 structure (53).

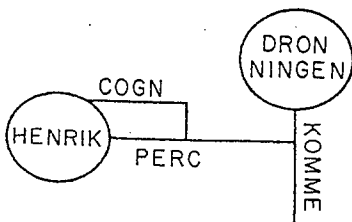


(53) I think it is intuitively acceptable  
 to assume the relation between [PERC] and  
 [EPIST] to be a causation. In the acc. + inf.  
 constructions only one visible process is  
 perceived, not necessarily taken as an  
 epistemic necessity:

- (54) Henrik så dronningen komme uden at se  
 at det var hende.

(55) can be described like (56):

Henrik så dronningen komme



For these descriptions it is easy to state  
 the selection rules: [EPIST [NECESS]] takes  
 an event variable as argument, [PERC]  
 takes only physical processes as arguments.

Dative case is marked by the predicate  
 [COGN], agentive by [VOL].

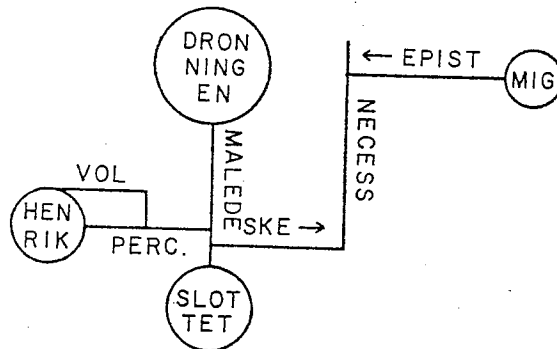
The aspect is not marked in the diagram,  
 but I might make a few suggestions: In the  
 same way as the aspect in (57) is imper-  
 fective and in (58) is perfective depending  
 on the definiteness of the object, (55) is  
 imperfective because the argument is a  
 process, which is indefinite with respect  
 to tense. (51) is perfective because the  
 event is definite in the same respect.

- (57) Henrik malede hus
- (58) Henrik malede huset

Finally (59) can be described like (60) and  
 the imperfective aspect is caused by på  
 in spite of the definite complement, like  
 in (61).

- (59) Henrik så på at dronningen malede  
 slottet

(60)



- (61) Henrik malede på huset i 14 dage

I have not solved the problem of factivity  
 but I think the question is put in a more  
 adequate way. Neither have I solved the  
 problems of how to derive the surface  
 sentences from the deep semantic base.  
 It is done by rules of lexicalization,  
 rules of structural compression, rules of  
 linearization, and rules of thematization  
 (in terms of the speakers model) (Leech  
 1974: 191). But it is not possible to do  
 that in this paper.

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