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# Predication Theory and Epistemic Small Clauses

## 1. **Introduction**

Small clauses (henceforth SCs) are defined by Stowell (1995:271) as "the black holes of syntactic theory: most of the discussion about them has been devoted to the question whether they exist or not". Not only is their existence still under debate, but also those scholars that accept them as linguistic objects do not agree about their structure. The first problem concerns the domain of inquiry, whose range has enormouslyenlarged. In fact, originally the term SC was simply intended to refer to a particular analysis of certain patterns of sentences like the following:

(1) a. John considers Mary happy.
b. John saw Mary drunk.
c. John ate the meat raw.
d. John arrived tired.

They are all characterized by the presence of a so-called 'secondary predicate', or 'predicative complement' and the SC theory analyzes them as forming a syntactic constituent with its subject of predication (or with a controlled PRO, in the case of (1c,d)). The term 'small clause' is then motivated by the fact that these constructs resemble normal clauses, because they contain a subject-predicate relation (which also forms a syntactic unit), but at the same time they do not contain any inflectional element. This is basically the essence of the analysis in Stowell (1981). A natural extension of this idea, namely that there are syntactic constituents that contain a subject-predicate relationship, which is not mediated by inflection, has been used to describe the predicative complements of raising verbs, and of copular constructions as well (cf. Stowell (1978)):

(2) a. John seems [t drunk].
b. A man is [t drunk].

The reason for this was that *seem* allows an alternation with full-clause complements, and that *be* can also be found in *there*-sentences, that show the classical SC configuration.

Recently, the notion of SC has been actually applied to many different constructs, e.g. double objects constructions, VP shells, possessive DPs, etc. This is mainly due to the tendency to analyse every clause as containing a basic lexical nucleus (consist ing in a VP), where all the predicative relations (interpreted in terms of theta-roles) are realized, independently from the functional elements which dominate the VP. It has therefore been natural to define the lexical predicative nucleus of sentences as a kind of SC.

As the structure and analysis of SC are concerned, there are three main lines of research:

(i) *autonomist analyses* - SC are 'propositional' constituents whose nature and structure differ from that of normal clauses. This difference can amount to the nature of their syntactic category (not a CP or an AgrSP);

(ii) *downward reductionist analyses* - SC actually do not exist (or exist only at a certain level of representation). Secondary predicates are either independendent arguments of the matrix verb, without forming any constituent with their subjects, or they are part of complex predicate configurations with the matrix verb (cf. Williams 1980 , Williams 1983, Williams 1994, Stowell 1991, Rapoport 1993a, Rapoport 1995).

(iii) *upward reductionist analyses* - SC do not exist in a different sense, because SC complements are actually normal CPs, with the whole series of functional projections, altho ugh some of them are empty (cf. Kitagawa 1985, Starke 1995, Sportiche 1995).

The question of the nature and structure of SCs brings with itself another more general issue, i.e. *what predication is and how is implemented in natural language*. If we accept the original hypothesis of SCs we also accept the assumption that (i) predication corresponds to a

certain particular configuration and always gives rise to just one constituent; (ii) predication basically consists just in lexical saturationof theta-positions, independently of any functional element. The point (ii) derives from the fact that a SC is a predicational nucleus and supposedly they do not contain any functional element. On the other hand, if we accept the upward reductionist theory, we have to say that there is just one formal environment of predication, namely CP. Viceversa, the downward reductionist theory amounts to saying either that there is no fixed configuration for predication (even though predicational relations are subject to certain structural restrictions), or that secondary predication is actually different from main predication, because it works in terms of complex predicate configurations.

There is also a semantic problem connected with SCs. Full fledged clauses (CPs or IPs) are considered to denote a proposition, i.e. something that can be true or false. Since CPs and IPs contain a predication relation, the question is what the connectionis between subject-predicate relations and the semantic entity that they come to build. This question is highlighted in SCs, because there are SC complements of perception verbs, *want* -verbs, etc. that seem to denote not a proposition, but rather an individual entity like an event. Notwithstanding this fact, they are SCs, express a subject-predicate relation, and behave similarly to main predications, e.g. they license expletive subject s. This question is raised by Heycock (1994), although it remains unsolved in her model of predication.[1]: A possible solution is the one adopted by various authors, co nsisting in assuming that SCs come in different types, and that epistemic SCs (denoting propositions) and eventive SC (denoting events) are structurally different (see Raposo & Uriagereka 1995, Svenonius 1994). The structural difference would consist in th eir being projections of different types of functional heads, or otherwise in the fact that the head of the SC assigns different types of Case.

1.1. *Epistemic SCs*. In this paper, I will discuss some particular cases of SCs, namely epistemic SCs, which r ise some interesting questions concerning the mapping between syntax and semantcs. I will analyze the behavior of epistemic SCs as a consequence of the nature itself of predication: more specifically, I will propose a general approach to predication that will also allow me to derive the data that I am going to illustrate.

Since Williams (1983) it is well known that while (3a,b) have both a *de dicto* and *a de re* readings of the subject of the embedded clause, (3c), which contains a SC, only has a *de re* reading of the embedded subject, the *de dicto* one being completely excluded:

(3) a. John believes that someone is angry at him.
b. John believes someone to be angry at him.
c. John believes someone angry at him.

The two readings can be represented as in (4). Therefore, epistemic sentences containing a SC can only have an interpretation corresponding to (4a):

(4) a. ∃x [**person**(x) & **believe**(**John**) (^**angry**(x) (**John**))]
b. **believe**(**John**) (^∃x [**person**(x) & **angry**(x) (**John**)])

The same contrast is exhibited by raising constructions: in fact while in (5a) the raised subject can be interpreted in the lower original position (i.e. internally to the verb *seem*), this option is not available for (5b):

(5) a. Someone seems to be drunk.
b. Someone seems drunk.

The relevance of these data concerns the very nature of SCs: Williams used them as an argument against the idea itself of SC. Stowell (1991) deals with these data, suggesting that SC exist at D-Structure and S-Structure, but are subject to a restructuring operation whose result is the creation of a complex predicate structure, with the SC predicate incorporated into the matrix verb. Generally, the usual strategy to explain the data above is to state that the quantifier cannot

[1]Heycock adopts the following principle: "A constituent translates as a proposition iff it is a syntactic predication structure" (p. 26). But then she is forced to admit that perception SCs are a striking counterexample to it.

appear at LF lower than the matrix verb because the raising of the quantifier (QR) is obligatory and the SC is not a suitable landing site for this movement. Various solutions differ depending on the way this intuition has been implemented.

My proposal to deal with the particular behavior of epistemic-SC subjects is to solve the problem at the *interpretive level*, rather then in terms of movement. In other words, I will try to derive the fact that the subject of epistemic-SC has only a *de re* reading from independently motivated conditions on predication, without make any appeal to QR. This solution is in line with the suggestion in Hornstein (1995) that *de dicto* / *de re* ambiguities should not be expressed in terms of QR, like normal quantifier's scoping.

## 2. **Conditions on predication**

One of the topic of contemporary linguistic research has been to determine the nature of predication, i.e. whether it is necessary to adopt it as an independent condition on syntactic representations, and what are the constraints to which predication is subject. Within the Principles & Parameters framework, it is possible to distinguish three main approaches to predication:

(i) Williams (1980), Shein (1995) - predication is an independent relation which is interpreted in terms of theta-role assignment.

(ii) Rothstein (1983), Rothstein (1995), Heycock (1994) - predication cannot be reduced to theta-role assignment, but it is an independent formal relation between syntactic constituents, based on the notion of *syntactic function*(which is also actually identified with the notion of propositional function). This notion of predication has also the aim of subsuming the Projection principle, the Theta Criterion and the extended Projection Principle under an unique principle of *function saturation*, and therefore it is an attempt to explain the existence and the distribution of expletives.

(iii) Guéron & Hoekstra (1995) - predication consists in an inclusion relation which involves a node Agr, understood as an inclusion operator. Therefore, the subject and the predicate are formally connected via agreement. Verbs and adjectives would therefore be always predicates because of their inherent agreement features. Quoting Guéron & Hoekstra (1995: 78), "if a lexical projection has to be construed as a predicate, its head is checked by Agr, which itself is checked by the subject of predication."

Differently from this positions, I will assume that predication is determined by Tense, i.e. that *a subject-predicate relation only exists in the domain of a Tense Chain* in the sense of Guéron & Hoekstra (1995).

2.1. *Predicators and Tense Chains*. A Tense Chain (henceforth TC) consists of at least three coindexed positions, i.e. a Tense Operator, a Tense Position and a verb containing an e-argument. Therefore the structureof a minimal TC is as follows:

(6) *Tense Chain* (Guéron & Hoekstra 1995)
$TO_i \ldots t_i \ldots V(e)$

The Tense position provides a temporal variable which is bound by a temporal operator. I will actually adopt a slight variant of this definition, in which the tense-aspectual phrases of the functional part of sentences provide both a temporal variable and an operator to bind them (cf. Lenci & Bertinetto, forthcoming):

(7) *Tense Chain* (modified version)
TP + AspP [$TO_i$ … $t_i$] … V(e)

Guéron & Hoekstra(1995) claim that "predications are not complete linguistic objects by themselves, but need to be integrated into a structure which is complete.Completeness implies a referential object" (p. 103). TCs are referential objects. Nevertheless they still claim that the predication relation is realized in terms of Agr. I will push their idea a little bit forward and claim that it is true that predication is realized by means of a functional element, but that the essential ingredient is not agreement, but rather T ense itself. Therefore, according to this analysis, Tense does not simply complete predication, but indeed builds it.

I will therefore assume the following fact:

(8) *Predicates*
A predicate is whatever lexical or phrasal item with at least one argument position (thematic or eventive) to be saturated. Every lexical item of category V, A and N (with the possible exception of proper nouns) has an e-argument, in the sense of Higginbotham (1985), ranging over eventualities (states or events). The e-argument is part of the argument structure of the lexical item, besides the thematic arguments (cf. Rapoport (1993a), Rapoport (1993b)).

Therefore predication can be defined as follows:

(9) *Predication*
1. Predication is a binary relation between a Predicator and a Subject.
2. Predication must be definible for every Predicator.

(10) *Predicator*
A Predicator is a predicate whose e-argument is an element of a Tense Chain.

The following consequences can be derived by (8)-(10):

a) something is a Subject of predication only if it is construed together with a Tense Chain. This means that predication only exists in clausal environments;
b) every predicate is potentially a Predicator, because predicates all contains an e-argument. But nevertheless, predicates are Predicators only if they are part of a Tense Chain. This allow us to derive the well known fact that Subjects are obligatorily only in clauses, but not in nominals.

(11) a. The destruction of the city.
b. * Destroyed the city.

Clauses contain a Tense Chain, while DPs not. The e-argument in (11a) is theta-bound by the determiner, but it is not the foot of the tense chain. Notice that these facts were derived by Heycock on the base of the different nature of the denoted object, a proposition in one case and an event in the other. Now Predicators are technically independent from the notion of proposition and do not necessarily coincide with propositional functions. Rather, the ungrammaticality of (11b) derives from the fact that there is a Predicator, but since there is no Subject, there is no predication relation definible on it.
However, there is a difference between verbal and non verbal predicates. Since the former have tense features to be checked, then they *must* enter a TC, otherwise a syntactic crash would result. Therefore verbal predicates are *inherent Predicators*;
c) since every TC by definition has an e-argument as its foot, then the definition in (10) actually entails that every TC defines a Predicator. I assume that the contrary is no t true: a predicate with an e-argument does not necessarily defines an autonomous TC. As it will

be clear, more than e-argument can appear in the same TC. This is what implements the idea of secondary predication;[2]

d) the universal relation of predication should be a consequence of the fact that there is Tense. So predication is obligatory because sentences are anchored on time by means of Tense.

2.2. *Extended Tense Chains*. Guéron & Hoekstra (1995) claim that verbs have both an e-argument and tense featu res, so that they can freely enter into TCs. On the contrary, the other type of predicates, although they have the e-argument, do not possess the tense features in order for a TC to be built. Therefore they need the support of auxiliaries, like *be*: the role of the auxiliary is to extend the TC, so that the e-argument of the non-verbal predicate becomes part of it. Assuming that *be* is a raising verb and that its complement is a SC, we have the following structure:

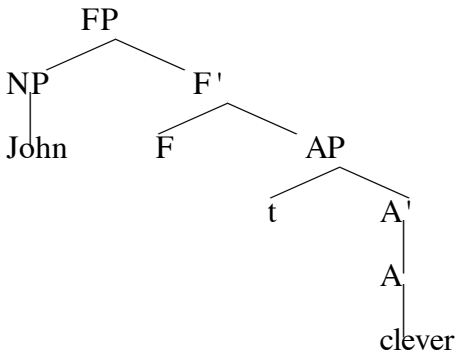
(12) a. John is clever.
b. $TO_i$ $Tense_i$ $be_i$ [John $clever_i$]

According to Guéron and Hoekstra, *be* Tense-marks the predicate inside the SC, and in this way it extends the TC.

I will adopt this interpretation of the role of *be*. Notice that since predication has been defined in terms of TCs, the role of *be*is actually that of bringing out the relation of predication with non verbal predicates. However, I will also make some modifications to the original view of Guéron & Hoekstra (1995).

I will assume that SCs are maximal projections of a functional projection, which I will call FP:[3]

(13)




I would like to suggest that the extension of a TC is actually carried out by the *Case-marking of the predicate* . The essential fact is that non-verbal predicates have Case features which are checked by some functional projection. A possibility is that F itself checks theCase features of the predicates, so that the latter has to head-move to F. Another possibility is the proposal in Koster (1994), according to which predicate Case is checked on a functional head PredP, dominating VP. Indipendently from its technical implementation, I assume that the role of predicate Case-checking is to extend a TC to it. This hypothesis can help explaning the fact that predicates are overtly Case-marked in many languages. Sometimes, they take the same Case as the subject (e.g. Latin), sometimes they have a special Case (e.g. Russian), and sometimes the Case on the predicate depends on the type of the matrix verb governing the SC (e.g. Hungarian and Finnish):

Latin

(14) a. Gnaeus bonus est.
Gnaeus-NOM good-NOM is
'Gnaeus is good'

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[2] In this approach, the dependent status of secondary predication is stressed. This in line with the original name of *dependent nexuses* given by Jespersen to these constructions. See also Svenonius (1994).

[3] Other functional projections, such as AgrP, PredP, etc., have been proposed in the current literature. For the sake of this paper, I will remain neutral about the precise nature of this functional projection.

b. Gnaeus putat filiam suam pulchram esse.
Gnaeus-NOM believes his daughter-ACC beautiful-ACC be
'Gnaeus thinks that her daughter is beautiful'

Russian

(15) a. On kazetsja bol'nym.
He seems ill-INSTR
'He seems ill'

b. Ivan scitaet ego bol'nym.
Ivan considers him-ACC ill-INSTR
'Ivan considers him ill'

Hungarian

(16) János okosnak tartja Marit.
John clever-DAT consider-DEF Mary-ACC
'John considers Mary clever'

The fact that in Hungarian different types of SC correspond to different types of Case on the predicate can be now seen as directly connected with the different subtypes of predication that they express. According to the present proposal, Case-marking allows a non-verbal predicate to become a Predicator, because the TC is extended to it.

## 3. **The semantics of Predication**

This section is devoted to sketch the lines of the semantic counterpart of the theory of predication introduced in the former section. The main idea is that predication is a Tense-dependent relation, which involves a Predicator, i.e. a predicate which ispart of a TC. If we focus on non-verbal predicates, the intuition behind this proposal is that *they do not directly combine with the Subject, but rather only indirectly, via the TC that forms the Predicator* . Since non-verbal predicates can enter a TC only by the medium of an auxiliary verb and by being Case-marked, this implies that predicates can connect to their Subject *indirectly* , via the mediation of the support verb that forms the Predicator. In fact, we have said that predication contains a predicate only at a second grade, because it is part of a Predicator.

The role of predication is to force certain restrictions concerning the way predicates can combine with Subjects, name ly only by the medium of Tense. Therefore, if predication is a relevant condition on interface representations, it is plausible to assume that it has some effect on the interpretation procedure, i.e. *in the derivation of semantic compositionality*. Therefore two problems arise: (i) how to represent the fact that predication depends on TCs; (ii) how to capture the fact that non-verbal predicates can enter into a TC only by the help of *be*.

Given the definition of predication I have proposed, the element whichcombines with the Subject is not the predicate itself, but rather a Predicator, i.e. a predicate with an index that is a member of a TC. What actually composes with the Subject of the SC, is not the predicate itself, but rather the indexed predicate, i.e.the predicate plus the information derived by its anchoring to time, as a consequence of its being being part of a TC. The semantic composition has to take into account the fact that predication is the application to a Subject of a predicate anchored in time. In other terms, the process of semantic composition must apply not to the configuration in (17), but to the one in (18), where the index *i* is a member of an extended TC:

(17) SC
ru
DP Pred

(18) SC
ru
DP $Pred_i$

Being the member of a TC, i.e. of an anchoring to time, the index *i*provides the predicate with the information concerning Tense and the relation of the event with time (this way indexes

and chains are not only a merely formal device, but are filled with semantic content, since they guide the compositional process itself).

I will then propose that non-verbal unary predicates like *intelligent*, have the following logical translation:

*Non verbal predicates*

(19) λxλe. **intelligent**(x) (e)

Verbs differ from other predicates because they are able to enter into TCs without the help of any support verb, because they have the necessary features. Conversely, *be*has only the function of extending a TC to a non-verbal predicates, but as Guéron and Hoekstra claim, it does not add any descriptive content to the predicate in the SC. In part following Gué ron & Hoekstra (1995) I will capture these differences in the following way:

(i) A verbal predicate like *buy* has the following representation:

*Verbal predicates*

(20) λxλy. ∃e [**buy**(x) (y) (e)]

I will assume that the fact that verbs are inerently Predicator, because they have Tense features to check, and therefore must enter a TC, is semantically represented by the fact that the e-argument is existentially closed. Tense information can then be added to the e-argument, maybe by means of a dynamic approach to quantification, in the line of Lenci & Bertinetto, forthcoming. We can assume that the fact the variable of non-verbal predicates is not existentially closedmake it impossible for them to add Tense information directly;

(ii) The fact that a lexical item is semantically contentful is equated to the idea that it expresses a predicate over (at least) an e-position. Since *be* has no other content than that of anchoring non-verbal predicates to Tense, than it must lack an e-argument. I will therefore assume the following translation:

*Copular be*

(21) λPλx. ∃e [P(x) (e)]

where P is of type <e, <e, t>>. Thus, the copula simply takes a non-verbal predicate, existentially closes its e-argument and changes into a verbal predicate that can be predicated of the subject. We can say that the copula 'verbalizes a non verbal predicate', and makes it suitable to enter into a TC.

Finally we adopt the type-shifting operation of argument raising, that turns an e-taking function into a generalized quantifier-taking one (cf. Partee & Rooth 1983):

(22) λxλy. R(x) (y) ⇒ λ*P*λy. *P*(λx. R(x) (y))

The derivation of a copular sentence is as follows:

(23) Mary is clever.

*Step 1*

(24)

```
            FP
        ru
        NP      F'
        1  ru
Mary    F       AP
                ru
    Mary        t       A'
                          1
                          A
                          1
                  clever      λxλe. clever(x) (e)
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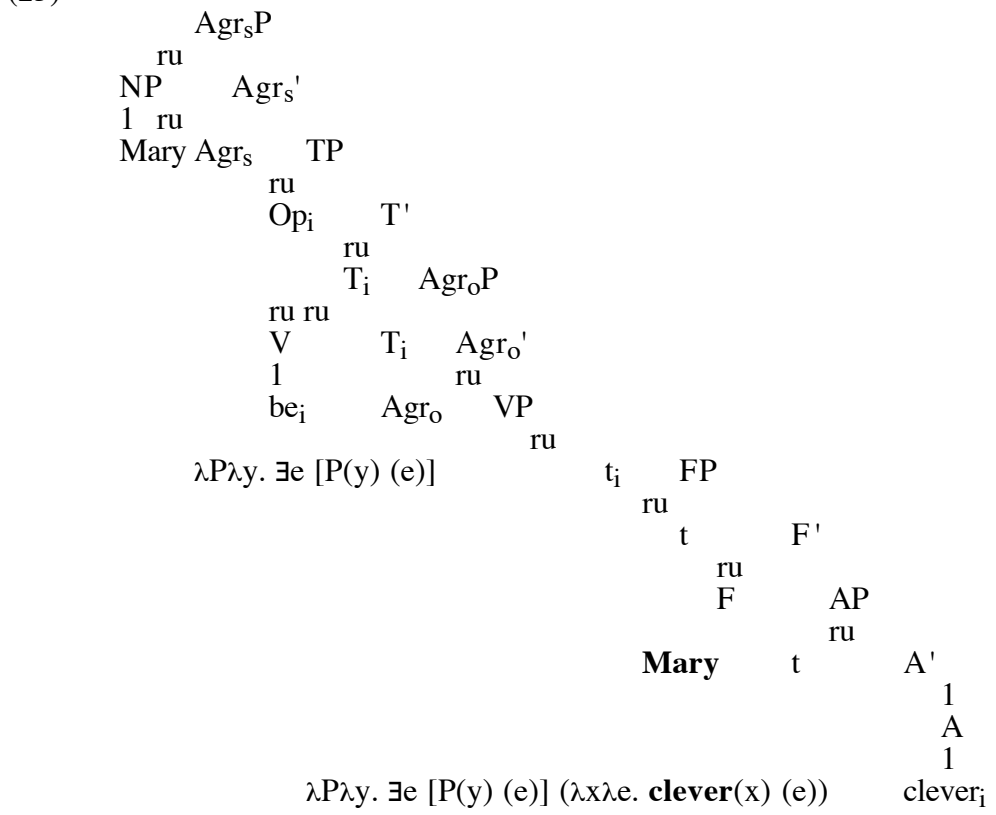
At this stage of the derivation, the SC is built, but at the level of FP there is no Predicator yet, in order to be applied to a Subject, because the predicate is not a member of any TC.

Step 2
(25)




In the following steps of the derivation the verb *be* is inserted, with its Tense features to be checked. This checking mechanism givesrise to a TC, which is also transmitted to the SC predicate via Case-marking. The Tense information carried by the copula are then combined with the original predicate to form a Predicator, i.e. a temporally anchored predicate. Note, therefore, the differ ent semantic translation of the predicate and of the Predicator, namely the indexed predicate:

(26) a. clever ⇒ λxλe. **clever**(x) (e)
b. clever$_i$ ⇒ λPλy. ∃e [P(y) (e)] (λxλe. **clever**(x) (e))

Furthermore, the subject of the SC has raised to [Spec, AgrsP] to check its case. At the same time, it can now compose with the Predicator:

(27) ∃e [**clever**(e) (**Mary**)]

## 4. Epistemic Small Clauses

I suggest that verbs that select epistemic SCs, i.e. of a propositional nature, actually behave like *copular verbs* . With this term I indend to identify a quite homogenous set of verbs whose characteristic is to be able to extend a TC to a non-verbal predicate, like the copula: however, differently from the copula they are also contentful, i.e. they have a descriptivecontent and therefore an e-argument on their own. Thus copular verbs are halfway between pure auxiliaries like *be* and real verbs. Some of these verbs are *seem*, *consider*, *believe*, *find*, etc.

The consequence of this approach is that the copular behavior of these verbs often alternate with a pure verbal usage, when they select for CP of IP complements. Therefore it seems that we are forced to duplicate their entries, losing somehow the advantage of having just a single entry. After all, this consideration abou t lexical parsimony and redundancy is one of the

sources of the idea itself of SC (cf. Chomsky 1981, Chomsky 1986). One answer to this problem is Williams' one: namely that the problem does not exist, since there is no empirical problem in assuming thate there are two *consider*, two *seem*, etc. (cf. Williams 1994, but this opinion is also shared by the supporters of the complex-predicate hypothesis).[4]

However I believe that there is way to maintain the idea of copular verbs, without postulating two unrelated entries. What I suggest is that actually copular verbs are the result of a process of *copula incorporation*which has occurred at some relevant linguistic level. It is plausible to assume that this level is one of lexical representation, perhaps the Lexical Relational Structure of Hale & Keyser (1992). We can therefore claim that the basic meaning of verbs sele cting SC is really a propositional one and that the canonical semantic realization is a CP or IP complement. However a process of lexical incorporation has carried a copular meaning into the original propositional one, changing these verbs in copular ones (leaving details aside), and therefore making for them to be possible to extend a TC. For instance we can assume that the basic argument structure of *seem* is as follows:

(28) $\lambda p.\ \exists e\ [\mathbf{seem}(p)\ (e)]$

where *p* ranges over propositions, i.e. objects of type <s, t>. The lexical entry corresponding to the copular occurence of this raising verb is actually the following:

(29) seem+be $\Rightarrow \lambda P \lambda x.\ \exists e\ [\mathbf{seem}(\hat{}\exists e'\ [P(x)\ (e')])\ (e)]$

It is easy to observe that the copular reading of *seem* exactly resembles the one of *be*: it takes a non-verbal predicate, closes its e-argument and changes it into a Predicator, which can then combine with its Subject. Again, syntactically this verb will select a SC containing some functional projection which is able to Case-mark the embedde d predicate extending the TC. The propositional reading is also maintained. The predicate *seem* in (29) has still a propositional complement, although the whole entry is now the one of a copular verb.

This solution allows us to explain the puzzling data about epistemic SC. Let us start with (9b), now (30):

(30) Someone seems drunk.

The result of the derivation is now exactly like the one with the verb *be*:

(31) $[_{\text{AgrsP}}$ Someone $[_{\text{Agr}}\ \text{seems}_i] \ldots [_{\text{VP}} [_{\text{V}}\ t_i] [_{\text{FP}}\ t' [_{\text{F'}}\ \text{F} [_{\text{AP}}\ \text{drunk}_i]]]]]$

*Seem* is a copular verb in this case and selects for a SC. A TC is built, which is extended up to the AP. The index of thePredicator now transmits all the information of the copular verb, which is the actual element of the Tense-Chain. Therefore, after being $\lambda$-reduced, the translation of the Predicator is the following one:

(32) $\text{drunk}_i \Rightarrow \lambda x.\ \exists e\ [\mathbf{seem}(\hat{}\exists e'\ [\mathbf{drunk}(x)\ (e')])\ (e)]$

The last step is the composition of the Subject, which translates like a generalized quantifier:

(33) $\lambda P.\ \exists y\ [\mathbf{person}(y)\ \&\ P(y)]\ (\lambda x.\ \exists e\ [\mathbf{seem}(\hat{}\exists e'\ [\mathbf{drunk}(x)\ (e')])\ (e)])$

(34) $\exists y\ [\mathbf{person}(y)\ \&\ \exists e\ [\mathbf{seem}(\hat{}\exists e'\ [\mathbf{drunk}(y)\ (e')])\ (e)]]$

Notice that, since this is the only possible process of composition for the sentence in (30) (i.e. the only possible derivation), the fact that only the *de re* reading is available now follows straightforward.

The case of non-raising SC can be dealt with in a parallel way. Assuming Chomsky (1995) analysis of ECM verbs, we can say that (35) corresponds to the following derivation:

(35) John believes someone stupid.

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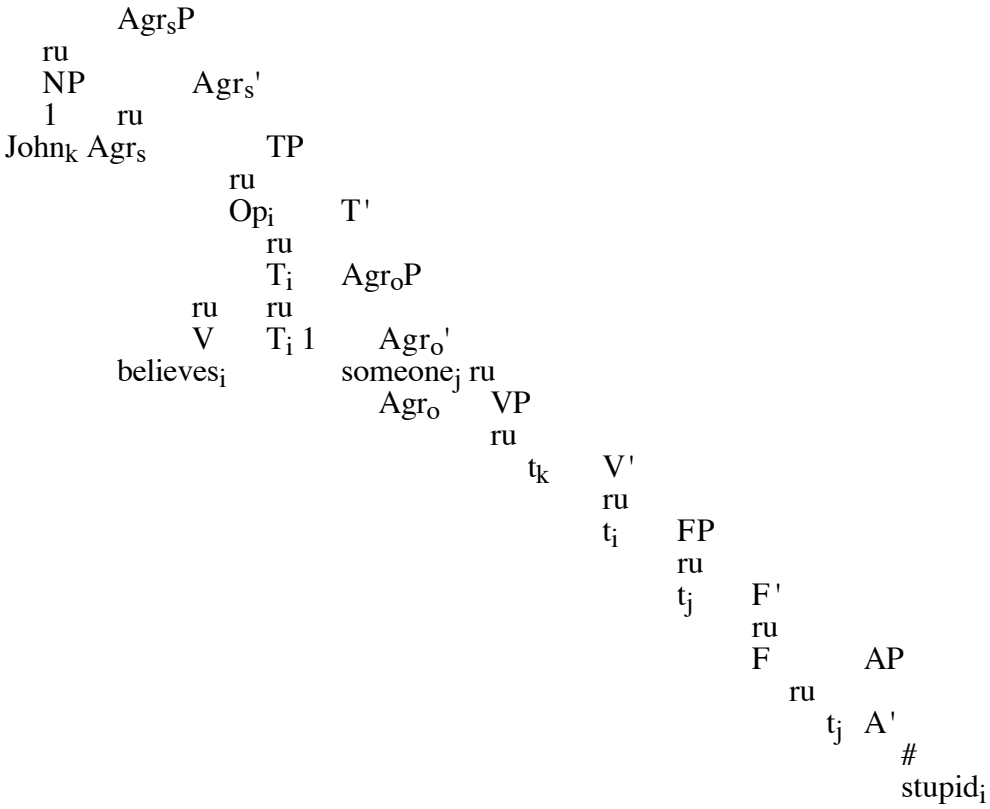
[4]Actually, this is also what is usually assumed for perception verbs, where two entries are created, one for epistemic perception (selecting a CP) and another for non-epistemic perception (selecting a SC).

(36)




Since *believe* is a copular verb, it can select a FP and extend the TC up to the embedded predicate via Case-marking. Similarly to *seem*, the translation of the copular *believe* is as follows:

(37) λPλxλy. ∃e [**believe**(^∃e' [P(x) (e')]) (y) (e)]

The only difference from *seem* is that now there is the external argument. The translation of the Predicator is now as follows:

(38) stupid$_i$ ⇒ λxλy. ∃e [**believe**(^∃e' [**stupid**(x) (e')]) (y) (e)]

At this point we have something that can compose with the Subject of the SC. Therefore, the semantic derivation can continue and compose *someone*with the Predicator that has been built (after the type-shifting operation of the argument raising has applied to allow the quantifier to be interpreted in situ):

(39) λy. ∃x [**person**(x) & ∃e [**believe**(^∃e' [**stupid**(x) (e')]) (y) (e)]]

Then the main subject is composed in the usual way, giving the following logical form:

(40) ∃x [**person**(x) & ∃e [**believe**(^∃e' [**stupid**(x) (e')]) (**John**) (e)]]

As in the case of raising verbs, there is no room for a *de dicto* reading. On the contrary, since in (41) there is a copula in the embedded IP, then the *de dicto* reading is possible:

(41) a. John believes [someone to be stupid]
b. ∃e [**believe**(^∃x [**person**(x) & ∃e' [**stupid**(x) (e')]]) (**John**) (e)]

## 5. **Conclusions**

The impossibility of *de dicto* readings of the Subjects of epistemic SC is derived from the fact there is no copula in the SC, and that the TC is extended via the matrix verb which actua lly acts like a copular one. This amounts to saying that in SC complements of epistemic verbs the Subject cannot combine with the predicate before the latter has combined with the matrix verb, because this is the only way for it to acquire Tense information and turn into a Predicator. On the contrary, in full clausal complements, the presence of the lower copula allows the predication relation to be satisfied entirely before the complements compose with the matrix verb.

This analysis of epistemic-SC resemb les the complex-predicate one, but it assumes the hypothesis of SC as syntactic constituents. Differently from the movement analysis in Stowell (1991), there is no need of restructuring operations. It also gets rid of QR as an explanation for the reading of the Subject of the SC. The obligatority of the *de re* reading follows now from a certain approach to predication, based on TC. No particular machinery is needed because TC are built by the movement of verbs to check their Tense features and by Case assign ment on predicates. Finally this approach differs from the standard one based on the idea of complex predicates also for a radical reason: in the standard approach the matrix verb is said to be completed by the SC predicate, which acts like a sort of modif ier. On the contrary in the view presented here, the matrix verb in a certain sense completes the nominal predicate, because it allows it to become a Predicator entering a TC. The SC predicate can become a Predicator only because it gets the temporal information via the matrix verb, which acts like a copular one.

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