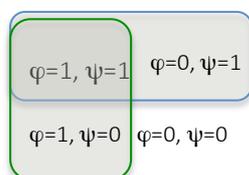


## *On the inquisitive potential of propositional attitude complements*

1. *Introduction.* In the compositional analysis of propositional attitude (PA) reports, a number of properties have been reduced to the way in which the embedded clause updates the derived context introduced by the attitude verb: presupposition projection (Heim 1992), choice of indicative vs. subjunctive mood in the embedded clause (Farkas 2003, Villalta 2008 a.o.), the possibility of embedded V2 in German (Truckenbrodt 2006), the interpretation of epistemic modals in the embedded clause (Anand & Hacquard 2008, 2013). In this talk we discuss the projection of inquisitive content in the sense of Groenendijk & Roelofsen (2009).

2. *Empirical evidence.* Groenendijk & Roelofsen (2009) propose that declarative clauses may carry inquisitive content in addition to informative content. Inquisitive content is introduced by operators like disjunction or existential quantifiers, and it is modeled by assuming that a declarative clause can denote a nonsingleton set of possibilities (maximal sets of indices).

(1) Denotation of  $\varphi \vee \psi$



The *informative potential* of (1) lies in the fact that it rules out indices of the type  $\varphi=0, \psi=0$ ; the *inquisitive potential* lies in the fact that it denotes two (non-disjoint) sets of indices. The inquisitive potential of a clause is diagnosed by the possibility for it to license sluicing (AnderBois 2010):

(2) Bill or Fred talked to Joe, but I don't remember which.

An existential quantifier contained in a propositional attitude complement can license sluicing in two ways. Under a long-distance construal (*not discussed here*), the sluiced wh-phrase has scope over the main clause. Under a short-distance construal, the sluiced wh-phrase has scope over the embedded clause; only a subset of non-negated attitude verbs allow for this construal:

- (3) a. John claims [that *somebody* criticized him]; it is not clear who (criticized him).  
 b. John thinks [that *somebody* has been fired]; it not is clear who (has been).  
 c. John doesn't think [that *somebody* has been fired]; # it not is clear who (has been).  
 d. John hopes [that *somebody* will get fired]; # it is not clear who (will get fired).  
 e. John regrets [that *somebody* criticized him]; # it is not clear who (criticized him).  
 f. John knows [that *somebody* criticized him]; % it is not clear who (criticized him).

3. *The informative potential of PA complements.* We argue that only with non-negated verbs of saying and opinion (3a-b) does the embedded clause have a *proper informative potential* w.r.t. the Context Set, i.e. one that is both non-vacuous and consistency-preserving.

- (i) With verbs of saying/opinion (3a-b), the informative content of the embedded clause  $\cup p$  – the union of the possibilities that it denotes – is asserted to be true in all the worlds of the derived context introduced by the attitude verb (Farkas 03):  $CS' = \{w \in CS \mid \text{Dox}_{\text{john}}(w) \subseteq \cup p\}$ . Suppose that after this first update, the interlocutors adopt a *compatibility presupposition* to the effect that the derived context does not contain any information that is inconsistent with  $CS'$ : for every  $w \in CS'$ ,  $\text{Dox}_{\text{john}}(w) \cap CS' \neq \emptyset$ ; it follows that  $\cup p \cap CS' \neq \emptyset$ : “exporting” the informative content of the embedded clause into  $CS'$  will not lead to an inconsistency.
- (ii) When the matrix verb of saying or opinion is negated (3c), the assertion of the whole clause yields  $CS'$  such that for every  $w \in CS'$ ,  $\text{Dox}_{\text{john}}(w)$  is *not* a subset of  $\cup p$  – or, under the ‘Neg-raising’ interpretation,  $\text{Dox}_{\text{john}}(w)$  is a subset of the *complement* of  $\cup p$ ; hence, even if the interlocutors assume the compatibility presupposition  $\text{Dox}_{\text{john}}(w) \cap CS' \neq \emptyset$ , it does not follow that  $\cup p \cap CS' \neq \emptyset$ . Since consistency is not guaranteed, the embedded clause does not have a proper informative potential w.r.t.  $CS'$ .
- (iii) With the ‘emotive doxastic’ verb in (3d), the assertion of the whole sentence yields  $CS'$  such that for every  $w \in CS'$ , for every  $w' \in \text{Dox}_{\text{john}}(w)$ , the maximally similar  $\cup p$ -worlds in

which the embedded clause is true are more desirable to John in  $w$  than the maximally similar  $(W-\cup p)$ -worlds in which the embedded clause is false (Heim 1992: 193 ff.). Again, the embedded clause is not true in all the worlds of  $\text{DoX}_{\text{john}}(w)$  (cf. also Anand & Hacquard 2012: (47)) and the compatibility presupposition is not sufficient to guarantee its consistency with  $\text{CS}'$ .

- (iv) With factive verbs (3e-f), the embedded clause is asserted to be true in all the worlds of the derived context  $\text{Epist}_{\text{john}}(w)$  and, being presupposed by the interlocutors, it is also true in all the worlds of the input  $\text{CS}$  and of the output  $\text{CS}'$  ( $\text{CS}' \subseteq \text{CS} \subseteq \cup p$ ). In this case, the embedded clause has a *vacuous* informative potential w.r.t.  $\text{CS}'$ .

This typology captures the insight (Hooper & Thompson 1973) that only certain complement clauses can address the Question Under Discussion and possibly update the Context Set.

4. *The inquisitive potential of PA complements.* In Groenendijk & Roelofsen (2009), a clause qualifies as a question iff it has inquisitive content but no informative content relative to a given information state. Then, the short-distance sluicing clauses in (3) can be interpreted as questions w.r.t. *the CS* only if  $\text{CS} \subseteq \cup p$  (i.e. the  $\text{CS}$  does not contain any world in which the ‘antecedent’ attitude complement is false). Therefore, the informative potential of the complement clause must apply to the  $\text{CS}$  *before* the sluicing clause is interpreted w.r.t. the  $\text{CS}$  itself. As discussed above, this preliminary informative update is possible in (3a-b), but it is impossible in (3c-d), whence the unacceptability of sluicing in the latter cases.

The tricky cases are the factive complements (3e-f): here, by presupposition  $\text{CS} \subseteq \cup p$ , yet sluicing is at best marginally acceptable. The generalization seems to be that when the embedded clause has no proper informative potential w.r.t. the  $\text{CS}$ , its inquisitive potential is neutralized as well. We will account for this dependency in the model of the discourse context proposed by Farkas & Bruce (2010), Roelofsen & Farkas (2015: 381-83): a propositional attitude complement addressing the QUD, as in (5B), updates the derived context introduced by the propositional attitude verb; then, it is pushed on top of the Table (similarly to an asserted sentence), thus becoming the current conversational goal; yet differently from an asserted sentence, it is *not* recorded in the speaker’s Set of Discourse Commitments.

- (5) A: Why is everyone in the office so upset?  
B: John says [that somebody has been fired].

We propose that a necessary condition for a declarative complement to be pushed on the Table is that it must have a proper informative potential w.r.t. the current Context Set. This condition is not satisfied by the factive clauses in (3e-f): this is why their inquisitive potential cannot be pushed on the Table either. The marginal acceptability of sluicing in (3f) is due to an interpretation whereby the complement clause is not presupposed by the interlocutors (see Beaver 2010). However, the complement clause always has a proper informative potential w.r.t. the derived context  $\text{Epist}_{\text{john}}(w)$ , and its inquisitive potential can license sluicing in (6):

- (6) John knows [that *somebody* criticized him], but he doesn’t know [who (criticized him)].

5. *What about compositionality?* In (3a-b) the informative potential of the complement clause, besides applying to the derived context, also applies to the Context Set (via the Table). This second update is non-compositional in that the complement clause is interpreted as if it were outside the scope of the matrix verb. On the other hand, the calculation of the informative potential itself and of its applicability to the Context Set complies with compositionality.

*Selected references:* Anand & Hacquard 2013, *Semantics & Pragmatics* 6. AnderBois 2010, *Proceed-ings of SALT* 20, 451-470. Farkas 2003, <https://people.ucsc.edu/~farkas/papers/mood.pdf>. Farkas & Bruce 2010, *Journal of Semantics* 27, 81-118. Groenendijk & Roelofsen 2009, *Language, Communication and Rational Agency*, Stanford, USA, May 2009. Heim 1992, *Journal of Semantics* 9, 183–221. Roelofsen & Farkas 2015, *Language* 91, 359-414.