

## Edges, heads, and truth value

Anna Maria Di Sciullo

The purpose of this paper is to show that asymmetric relations contribute to make incremental truth value evaluation possible in the domain of the discourse, understood as an asymmetric conjunction of sentences/propositions (Chierchia 1995, Groenendijk and Stokhof 1990, Poesio and Zucchi 1992, Di Sciullo 2005a, b). This paper also aims to show that propositional conjunctions also include asymmetric relations enabling the incremental truth value evaluation.

1. The first question raised is why does a *wh*-element occupy the edge of a phase, see (1)-(4)? I argue that this follows from the assumption that the edge and the head of a phase are the only positions accessible from outside (Chomsky 2001, 2005 (PIC)). Thus, the edge and the head of a propositional phase are accessible to the domain of the discourse for incremental truth value evaluation.

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| <p>(1) <b>Che</b> ha comperato Maria <del>ehe</del>? (It)<br/>         What have bought Mary what<br/>         ‘What did Mary buy?’</p>             | <p>(2) Gianni sa <b>che</b> ha comperato Maria (It)<br/>         Gianni knows what has bought Mary<br/>         ‘Gianni knows what Mary bought.’</p> |
| <p>(3) Mary-ga <b>nani-o</b> kaimasita <b>ka</b>? (Ja)<br/>         Mary-Nom <i>what-Acc</i> bought-polite QP<br/>         ‘What did Mary buy?’</p> | <p>(4) Eki desu <b>ka</b>? (Ja)<br/>         Station is QP<br/>         ‘Is it the station?’</p>   |

The position of an expression in the functional projection will determine the interpretation of the proposition of which it is part. Thus, in Italian, without the *wh*-expression at the left periphery, a proposition cannot be interpreted as a direct information question, (5). In Japanese, without a question particle with rising intonation at the right periphery, a proposition cannot be interpreted as a question, (4).

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| <p>(5) Non so <b>che</b> ha comperato Maria <del>ehe</del>? (It)<br/>         Not know what have bought Mary<br/>         ‘I do not know what Mary bought.’</p> | <p>(6) Mary-ga <b>nanika-o</b> kaimasita (Ja)<br/>         Mary-Nom <i>what-Acc</i> bought-polite<br/>         ‘Mary bought something’</p> |
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I argue that the edge and the head of a phase are prominently accessible to the participants of the discourse, which incrementally evaluate the truth value of propositions and true answers for questions. Edges and heads are prominently accessible to the discourse participants because they are at the borders of the asymmetrically related domains of interpretation (phases), and they asymmetrically c-commands elements/copies with which they Agree. One prediction of this hypothesis is that the position of a question marker will contribute to determine the true answer to a question, and the truth value of a proposition including an indirect question.

2. The second question raised by this paper is the following: what is the role of the adverbs *si*, *no* with rising intonation in yes/no questions, (7), (8). We argue that these adverbs occupy the head of an Evaluative phrase, and take CPs as their complements. Movement of the TP to the edge of CP and subsequently to the specifier of EvP must take place to check/value the uninterpretable features of C and EvP, see (9), (10).

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| <p>(7) Maria ha comperato un libro, <i>nò</i>? (It)<br/>         Maria has bought a book no<br/>         ‘Maria bought a book?’</p> | <p>(8) Gianni è tornato, <i>si</i>? (It)<br/>         Gianni is back yes<br/>         ‘Gianni came back?’</p> |
| <p>(9) Gakkoo-ni ik-imas-u <b>ka</b>? (Ja)<br/>         school-to go-polite QM<br/>         ‘Are you going to school?’</p>          | <p>(10) kaimasu <b>ka</b> (Ja)<br/>         buy-polite QM<br/>         ‘Do you buy it?’</p>                   |

(11) [<sub>EvP</sub> Maria ha comperato un libro [<sub>Ev</sub> *nò* [+DUB]] [<sub>CP</sub> ~~Maria ha comperato un libro~~ [<sub>C</sub> [+Q]] [<sub>TP</sub> ~~Maria ha comperato un libro~~ ]]]]

(12) [<sub>EvP</sub> Gianni è tornato [<sub>Ev</sub> *sí* [+DUB]] [<sub>CP</sub> ~~Gianni è tornato~~ [<sub>C</sub> [+Q]] [<sub>TP</sub> ~~Gianni è tornato~~ ]]]]

I argue that the edge and the head of a phase are prominently accessible to the discourse participants, who may or not have the knowledge to evaluate the truth value of the proposition at the point where it is expressed in the discourse. This allows to identify *sí* and *no* as being prominently

accessible in the discourse, since they asymmetrically c-command the copy of the moved TP, the truth value of which is under evaluation in languages such as Italian, whereas they asymmetrically c-command the TP under evaluation in languages such as Japanese, a head final language.

I provide evidence that *si/ka* may be the spell-out of different forces, including exclamative, confirmative, and request for information, and that, in the case of yes/no questions it has a dubitative force [DUB], see (13), (14).

- (13) kaimasu **ka**, kaimasen **ka**? (Ja)                      (14) Maria è uscita, **si o no**? (It)  
 buy-polite , buy-polite-neg                      Mary is out, yes or no  
 ‘Do you buy it or not?’                      ‘Mary went out, yes or no?’

3. The third question raised by this paper is the following: what is the role of *sí* and *no* in Italian complex subordinating conjunctions such as the ones in (15) and (16). I argue that they occupy the head of the morphological evaluative projection. In the morpho-logical representations in (17) and (18), *si* and *no* asymmetrically c-command the preceding proposition  $p_1$  and *co*, *se* heading the conjunction projection relating  $p_1$  to  $p_2$ . Given Asymmetry Theory, (17) and (18) are interpretable at LF, and linearization is derived in PF.

- (15) Maria compero un libro, **cosi** lesse tutt il pomeriggio. (It)  
 Maria bought a book and so read all the afternoon  
 ‘Maria bought a book, thus she read all afternoon.’  
 (16) Gianni si trova in giardino, **seno** è uschito. (It)  
 Gianni SELF found in garden, if not is out  
 ‘Gianni is in the garden, if not he went out.’

- (17) [ <sub>Ev</sub> si [ <sub>Conj</sub>  $p_1$  [ <sub>co</sub>  $p_2$  ] ] ]  
 (18) [ <sub>Ev</sub> no [ <sub>Conj</sub>  $P_1$  [ <sub>se</sub>  $P_2$  ] ] ]

The presence of the truth conditional evaluative adverbs within complex subordinating conjunctions brings about the speaker’s evaluation of the truth value of the preceding proposition. Thus, (19) is a contradiction, and (20) is the negation of the truth value of the first proposition.

- (19) #Maria compero un libro, **cosi** non compero un libro. (It)  
 Maria bought a book, and so not bought a book  
 ‘Maria bought a book, thus she did not buy a book.’  
 (20) Gianni si trova is giardino, **seno** non si trova in giardino. (It)  
 Gianni SELF found in garden, if not not SELF found in garden  
 ‘Maria believed that Gianni had left, but he had left.’

The notion of prominently accessible in the discourse also makes the right predictions for morphological phases (Di Sciullo 2004, 2005). The Evaluative head asymmetrically c-commands the proposition evaluated by the speaker. Thus, a second prediction of our hypothesis is that edges and heads of morphological phases are also predicted to contribute to the incremental truth value evaluation that occurs in a discourse.

4. The last question I address is what makes edges and heads salient to the discourse. I argue that there is a configurational basis to this saliency. The edge and the head are part of the minimal domain of the computation (phase) consisting of two layers of asymmetric relations. The minimal shell [ $\alpha$  x [ $\beta$  [y  $\delta$  ]]] is closed under asymmetry. That is, it satisfies the Strict Asymmetry condition (Di Sciullo 2005) according to which every element of a shell must be in asymmetric relation with another element of the same type. Moreover the edge and the head of a domain of interpretation are the closest elements accessible to operations from outside. Thus, they are the closest elements interfacing the other phases of which the discourse is asymmetrically composed. Independent results, including work of Speas and Tenny (2003), bring support to the elemental configurational asymmetry of the domains of interpretation structuring the syntax-semantic-pragmatic interface.