

Summary of *Two Types of Dependency*

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1. Anaphoric relations

Anaphoric relations have long been one of the main subjects in linguistics and philosophy, and various interesting paradigms have been discovered in the course of the research. My thesis discusses the following long-standing issues, on the basis of new sets of data mainly drawn from Japanese.

- (1) Is the availability of coreference regulated by Grammar? (section 2 below)
- (2) Is the so-called donkey anaphora to be represented in the same way as bound variable anaphora (BVA), as argued in Heim (1982) and others? (section 3 below)
- (3) How is an E-type link (such as in (4)) represented in Grammar? (section 5 below)
- (4) Most students came. They are diligent.

In this summary, I introduce my answers to (1)-(3) presented in the thesis sometimes using rather informal terms. In what follows, 'Ch.##' means the chapter in my thesis.

2. Coreference and dependency

Let us begin with (1). Evans (1980) and Reinhart (1983), among others, consider that "dependency coreference" (coreference in which one NP is referentially dependent on the other) should be distinguished from "non-dependency coreference" (coreference between two independently "referential" NPs), so to speak. Japanese provides perfect examples which empirically support this distinction. There are two series of demonstratives corresponding to 'that NP' in English, *so*-demonstratives and *a*-demonstratives, and both of them can be used in the absence of the target individual. Thus *it* in *Toyota recommended its subsidiaries* can be expressed by either demonstrative. The former, however, must have a linguistic antecedent, while the latter must be independently "referential." The use of the former therefore makes it possible to exclude the cases of "non-dependency coreference" altogether.

Ch.4 demonstrates that the syntactic behavior of "dependency coreference" is completely subsumed under the general theory of dependency. Thus, my conclusion regarding the issue in (1) can be phrased informally as in (5):

- (5) "Dependency coreference" is subject to syntactic constraints just like other dependencies, but the availability of "non-dependency coreference" is not constrained by Grammar.

(5) is not different from Reinhart's (1983) conclusion, which is based on the observation of sloppy identity readings in English. (But see the remark after (10) below.) My thesis provides further support for (5) by showing the same point with simple Japanese sentences, and by examining the so-called referentially circular sentences in Japanese (corresponding to *Her husband loves his wife*).

3. Two types of dependency

Let us turn to (2). While the interpretation of donkey anaphora may be analyzed in a similar way as that of BVA, their syntactic behaviors are clearly different: it is said that in BVA the so-called weak crossover (WCO) effects are observed, while in donkey anaphora as in (6) *it* can be dependent on *a donkey* despite the fact that the former is not c-commanded by the latter.

- (6) [Every farmer who owns a donkey] beats it.

Since the c-command requirement (responsible for the WCO effects among others) can no longer be regarded as a condition on the dependency in order to maintain the claim that BVA and donkey anaphora are instances of one and the same dependency, Heim (1982) stipulates that the c-command requirement applies to a QP like *every NP* but not to an indefinite NP, and that the latter has to precede the dependent term, instead, thus arguing that the relevant conditions are on QPs, rather than on dependencies. It is crucial for the assessment of such a claim to see if the availability of BVA can really be described without referring to the dependency.

Ch.3 shows that the availability of BVA depends not only on the QP type, but also on a certain property of the dependent term. Thus, the WCO effects may be absent in the case of a certain type of QPs;

- (7) a. ?Which student_i did that student's professor recommend t_1 for a lucrative project?
 b. ?*Even John_i, his professor recommended t_1 for a lucrative project.

and the reconstruction effects are absent when the semantic content of the dependent term is relatively large.

- (8) a. [Which evaluation of him]_i did every linguist insist that John had demanded t_1 ?
 b. ?*[Which evaluation of that linguist]_i did every linguist insist that John had demanded t_1 ?

In addition, a careful study of the so-called scrambling construction in Japanese reveals that every instance of BVA must satisfy either the LF c-command requirement or the PF precedence requirement. Under a theory which assumes that there is only one type of dependency, the statement of the relevant conditions would become quite complicated. In contrast, the entire paradigm can be captured elegantly by postulating two syntactic bases for BVA.

Ch.3 proposes that there are two types of dependency, *Formal Dependency (FD)* and *Indexical Dependency (ID)*, and that BVA is available if either FD or ID is established.

- (9) *FD(A,B) if A does not c-command B at LF.
 *FD(A,B) if B is a ^{large}NP (such as *that linguist* in (8b)).
- (10) *ID(A,B) if A does not precede B at PF.
 *ID(A,B) if A is an A-type QP (such as *even NP* in (7b)).

Ch.3 examines the sixteen combinations of these four conditions exhaustively, and illustrates that the predictions made by this proposal are completely borne out. (It is further demonstrated in Ch.4 that "dependency coreference" also has to be based on either FD or ID. Thus, although (5) itself is in accord with Reinhart (1983), the actual descriptions are different, since she in effect argues that FD is the only syntactic basis for BVA and "dependency coreference.")

Under this approach, donkey anaphora is characterized simply as an instance of ID. Thus, my conclusion regarding the issue in (2) can be phrased as follows.

- (11) Some instances of BVA are based on FD, while the others involve ID. Donkey anaphora is represented in the same way as the latter type, but not as the former.

4. Background discussion on scrambling constructions in Japanese

Before turning to (3), let us briefly review the main points of Ch.2, which discusses the so-called scrambling construction in Japanese.

I argue that there are two types of scrambling constructions as schematized in (12) and (13) on the basis of carefully examined paradigms including many which have not been reported in the literature.

- (12) PF: NP-ACC/DAT...NP-NOM...V

LF: NP-ACC/DAT...NP-NOM...V

- (13) PF: NP-ACC/DAT...NP-NOM...V
LF: NP-NOM...NP-ACC/DAT...V

(The hypothesis that the scrambling construction is in principle ambiguous between (12) and (13) has been put forth in Saito (1992) among others. I show in Ch.2, however, that some of his arguments are not valid, because they are based on inappropriate (factual or theoretical) assumptions. Some critical reviews of the previous observations and major analyses are also provided in the Appendices following Ch.2.)

The construction (13) plays a crucial role in illustrating the conditions on FD and ID, since, as far as I know, this is the only construction which can systematically manifest a configuration in which α does not c-command β at LF but precedes it at PF.

While it has been widely believed that a clause-internal scrambling construction can always be ambiguous between (12) and (13), I point out that there are at least two environments in which only the type (13) can occur. Although the relevant examples are rather complicated, the complications are necessary for the empirical verification of my claims.

5. Theory of anaphoric relations

Finally, let us consider (3). While it is quite convincingly argued in Evans (1980) that the semantics of E-type links should be distinguished from that of (typical) BVA, an explicit general picture of Grammar is not presented there. Ch.5 proposes that the semantics of ID cases can be assimilated to that of E-type links, thus claiming that the representation of an E-type link is similar to an ID case of BVA.

I consider that an ID must be established between two NPs if they share what I call an *I-index* and if they are in the same sentence. I assume that ID is a purely syntactic relation which has nothing to do with interpretation; it is in a sense a by-product of co-I-indexation, and it is the I-index that determines the interpretation of the dependent term. I claim that a so-called E-type pronoun is also an I-indexed dependent term. The interpretation of an E-type link may appear to be distinct from that of an ID case, but I propose that different interpretations can result from one interpretive rule since the rule reflects the structural relation of the dependent term with respect to the scope of the antecedent-quantifier. Thus, (14) is an informal answer regarding (3).

- (14) An E-type link is an instance of co-I-indexation (just like donkey anaphora and the ID cases of BVA/coreference).

A dependent term in an FD is interpreted in a different way. Following Hoji (1997), I assume that B in FD(A,B), is interpreted as being identical with A in FD(A,B). (For example, if A in FD(A,B) is a QR-trace, which is to be interpreted as a bound variable, the dependent term is also interpreted as a bound variable of the same type, thereby yielding BVA.)

While Chierchia (1992) in effect claims that Grammar should distinguish three types of dependent terms, my theory of anaphoric relations needs to distinguish only two. The aim of Ch.5 is to present an overall picture of Grammar in which the intricate patterns of the availability of BVA/coreference, and the interpretive variety of dependencies are accounted for in terms of a minimum number of theoretical postulates.

References

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