

moves to the right NP, that NP is automatically taken as the range argument of *other*. Children will then associate English complex reciprocal sentences with their proper interpretations.

References

- Bennett, Michael. 1974. Some extensions of a Montague fragment of English. Doctoral dissertation, UCLA, Los Angeles, California.
- Chien, Yu-Chin, and Kenneth Wexler. 1990. Children's knowledge of locality conditions in binding as evidence for the modularity of syntax and pragmatics. *Language Acquisition* 1:225–295.
- Crain, Stephen, and Cecile McKee. 1985. The acquisition of structural restrictions on anaphora. In *Proceedings of NELS 16*, 94–110. GLSA, University of Massachusetts, Amherst.
- Fiengo, Robert, and Howard Lasnik. 1973. The logical structure of reciprocal sentences in English. *Foundations of Language* 9: 447–468.
- Heim, Irene, Howard Lasnik, and Robert May. 1991. Reciprocity and plurality. *Linguistic Inquiry* 22:63–101.
- Langendoen, D. Terence. 1978. The logic of reciprocity. *Linguistic Inquiry* 9:177–197.
- MacWhinney, Brian, and Catherine Snow. 1990. The Child Language Data Exchange System: An update. *Journal of Child Language* 17:457–472.
- Matsuo, Ayumi. To appear. Children's acquisition of reciprocal sentences with active and stative predicates. *Language Acquisition*.
- Matthei, Edward. 1981. Children's interpretation of sentences containing reciprocals. In *Language acquisition and linguistic theory*, ed. Susan Tavakolian, 97–115. Cambridge, Mass.: MIT Press.
- McDaniel, Dana, Helen S. Cairns, and Jennifer R. Hsu. 1990. Binding principles in young children. *Language Acquisition* 1:121–139.
- Otsu, Yukio. 1981. Universal Grammar and syntactic development in children: Toward a theory of syntactic development. Doctoral dissertation, MIT, Cambridge, Mass.

RAISED OBJECTS AND SUPERIORITY
Hidekazu Tanaka
McGill University

Drawing on work by Postal (1974), Lasnik and Saito (1991) present a number of arguments for the raising-to-object (hereafter RTO) analysis of (1a–b).

- (1) a. John believes Mary to be intelligent.
b. John believes her to be intelligent.

I wish to thank Mark Baker and two anonymous *LJ* reviewers for comments, criticisms, and judgments, which led to various improvements. I also thank Lotus Goldberg for editorial assistance. The research reported here is supported in part by the FCAR grant 97-ER-0578 to Mark Baker, Lisa Travis, and Claire Lefebvre, for which I am grateful. Remaining errors are, of course, my own.

They argue that the sentences in (2) all point to the conclusion that the ‘‘raised object’’ c-commands an adjunct phrase in the matrix clause.

- (2) a. ?*Joan believes him_i to be a genius even more fervently than Bob’s_i mother does.
 b. ?The DA proved the defendants_i to be guilty during each other’s_i trials.
 c. The DA proved none of the defendants to be guilty during any of the trials.
 d. The students proved three formulas each to be theorems.

Chomsky (1995:272–273, 345–348) argues that some of these facts can be accounted for by assuming that the complement subject, such as *Mary* in (1a), raises to the embedded [Spec, TP] to check off the Extended Projection Principle (EPP) feature of the embedded T⁰, which is followed by covert raising of the formal feature of the complement subject to the matrix V⁰. In this squib I point out a piece of evidence for the overt RTO analysis, show that raising takes place before Spell-Out, and develop an analysis of the observed facts based on Larson 1988 and Travis 1992.

1 Superiority

(3a–b) each have two *wh*-phrases.

- (3) a. What did you give to whom?
 b. ??To whom did you give what?

These examples illustrate the familiar contrast resulting from the Superiority Condition, which requires that the higher of two *wh*-phrases that take the same scope move to [Spec, CP] in overt syntax. With Chomsky (1995), I assume that the Superiority Condition follows from the Minimal Link Condition (MLC) in (4).

- (4) *Minimal Link Condition*
 a. H(K) attracts α only if there is no β , β closer to H(K) than α , such that H(K) attracts β .
 b. β is closer to H(K) than α iff β asymmetrically c-commands α and H(K) c-commands β .¹

In (3a–b) the higher of the two *wh*-phrases must be attracted to [Spec, CP], since it is closer to the [+wh] C⁰ (cf. Larson 1988).

When a sentence contains both an accusative *wh*-phrase and a temporal *wh*-PP, a [+wh] C⁰ can attract only the former (i.e., *whom* in (5a–b)).

- (5) a. ?Whom did the DA accuse during which trial?
 b. ?*During which trial did the DA accuse whom?

¹Chomsky’s (1993) definition of closeness, stated in terms of equidistance and minimal domain, is more complicated than (4b), but for present purposes (4b) is sufficient.

I postpone a precise account of (5a–b) until section 4. Along the lines of (4), I will simply hypothesize that the object *wh*-phrase asymmetrically *c*-commands the temporal PP in (5a–b).

(6a–b) show that when a *wh*-phrase is extracted out of an embedded clause, the superiority effect fails to arise.

- (6) a. What charge_i did the DA prove [_{CP} that the defendant was guilty of t_i] during which trial?
 b. [_{PP} During which trial]_i did the DA prove [_{CP} that the defendant was guilty of what charge] t_i?

In (6a) the complement object is extracted. Even if the temporal *wh*-phrase, *during which trial*, is construed as modifying the matrix clause, the sentence is grammatical. Under the MLC, this means that the temporal adverbial in (6a) does not *c*-command *what charge*. The grammaticality of (6b), in which the *wh*-PP moves to [Spec, CP], shows that the complement object *wh*-phrase does not *c*-command the *wh*-PP.² Thus, in (6a–b) neither of the two *wh*-phrases *c*-commands the other.

(7a–b) show that a raised object behaves like the conventional objects in (5a–b).³

- (7) a. ?Whom_i did the DA prove t_i [_{TP} t_i to be innocent] during which trial?
 b. ?*[_{PP} During which trial]_i did the DA prove whom_j [_{TP} t_j to be innocent] t_i?

The contrast in (7) suggests that the raised object asymmetrically *c*-commands the matrix temporal adverbial. Note in particular that (7) patterns with (5) rather than with (6), indicating that raised objects behave like conventional objects with respect to superiority. Thus, (7) stands out as yet another piece of evidence for the RTO analysis, defended extensively by Postal (1974).

2 Chomsky's (1995) Analysis

Chomsky (1995) proposes that the complement subject in an exceptional-Case-marking (ECM) construction is base-generated within the

² (6b) is not perfectly grammatical for reasons independent of the MLC. Many speakers tend to avoid multiple *wh*-questions. Thus, (ia–b) are not perfect either.

- (i) a. (?)Who thought that Mary met who?
 b. ?Who thought that who met John?

³ The tensed counterparts of (7a–b) are given in (i).

- (i) a. ?Who_i did the DA prove [_{CP} t_i was innocent] during which trial?
 b. ??[_{PP} During which trial]_i did the DA prove [_{CP} who was innocent] t_i?

The MLC predicts that (ib) is grammatical. However, for reasons discussed by Kayne (1981), *wh*-in-situ in subject position does not result in full grammaticality. See also Lasnik and Saito 1992:126–127 for relevant discussion.

embedded clause's predicate and subsequently raised to the embedded clause's subject position, [Spec, TP], to check off the strong EPP (D-) feature of the embedded T^0 . For instance, (1a) has the structure shown in (8) at Spell-Out.

(8) John believes [_{TP} her_i T^0 to be t_i intelligent]

At LF the complement subject has its formal features raised to the matrix verb, as shown in (9).

(9) John [_{FF} Acc]_i-believe [_{TP}[her t_i]_i T^0 to be t_i intelligent]

According to this analysis, the facts reported by Lasnik and Saito (1991) in (2) are accounted for at LF. However, the contrast in (7) can only be accounted for if the raised accusative *wh*-phrase is in a position that asymmetrically *c*-commands the matrix temporal adverbial at the point of the derivation when the [+wh] C^0 attracts a *wh*-phrase—that is, before Spell-Out in the overt syntax. In other words, the complement subject in (1a–b) has the status of a matrix object before *wh*-movement takes place. Therefore, the facts in (7) undermine Chomsky's (1995) analysis.

3 Raising to [Spec, Agr_OP]

Given the discussion in the preceding sections, it is quite tempting to conclude that the raised object occupies the matrix [Spec, Agr_OP] at Spell-Out. (1b) would have the structure in (10) under this analysis.

(10) John [_{Agr_OP} Mary_i [_{VP} believes [_{TP} t_i to be t_i intelligent]]]

However, note that (10) does not correctly represent the word order of the sentence. In order for the matrix verb to precede the complement subject, the matrix verb must also raise past the raised object, presumably to the matrix T^0 ; but such an analysis contradicts the widely accepted assumption that English main verbs, unlike those in French, do not raise out of their projection (Pollock 1989).

There is yet another problem with the raising-to-[Spec, Agr_OP] analysis, which stems from (11).

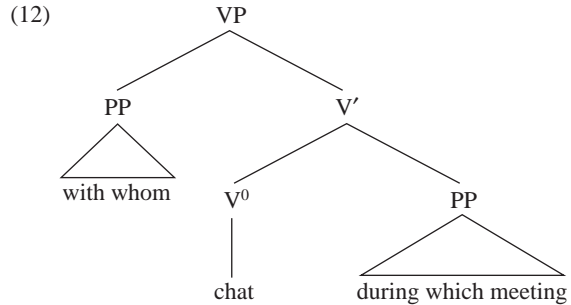
(11) a. ?[_{PP} With whom]_i did you chat t_i during which meeting?
 b. ?*[_{PP} During which meeting]_i did you chat with whom t_i ?

As shown by these examples, prepositional objects also display the MLC effect. However, under standard assumptions, prepositional objects do not raise to [Spec, Agr_OP] for Case checking, and therefore the contrast in (11) is unexpected.

4 VP Shells and Inner Functional Categories

The superiority facts in section 1 suggest that the complement subject is raised prior to Spell-Out. However, the discussion in section 3 suggests that the complement subject does not move out of the matrix

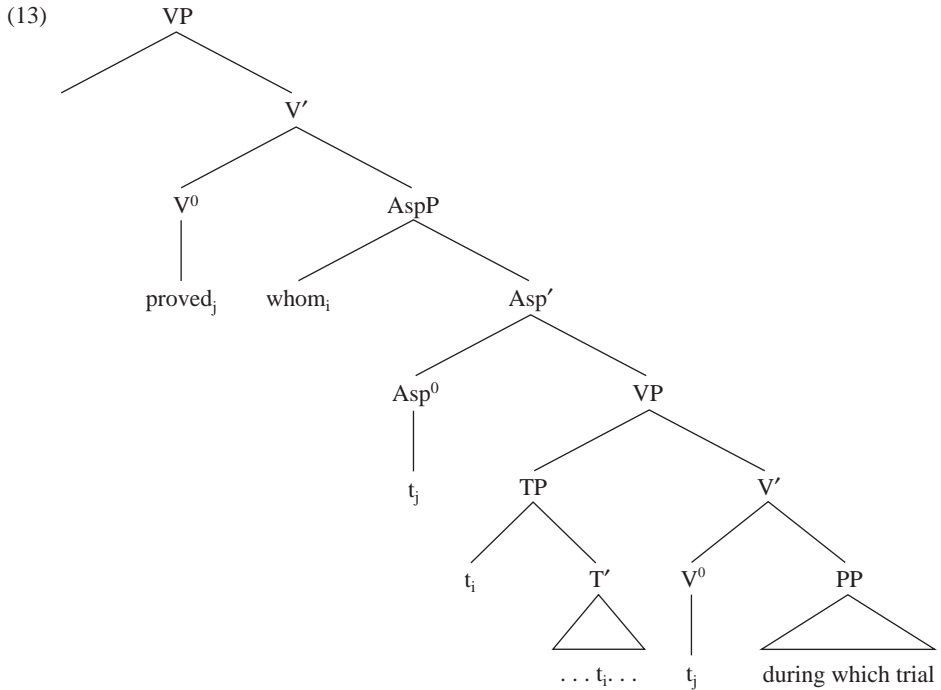
VP. In this section I develop an account of the observed facts. Let us begin with (11). If the MLC account of the superiority phenomena is right, then the contrast in (11) indicates that the temporal PP is asymmetrically *c*-commanded by the PP headed by *with*. Larson (1988, 1990) independently arrives at this conclusion (cf. Kayne 1994). According to Larson's analysis of the VP, the relevant portion of (11a–b) would look like (12).⁴



Since in (12) the *with*-PP asymmetrically *c*-commands the temporal PP, the contrast in (11) is expected: only the higher PP can be attracted by the [+wh] C⁰.

Let us now consider (7), that is, the superiority effect in RTO constructions. A number of authors (see Authier 1991, Johnson 1991, Koizumi 1995, Runner 1995, Travis 1992) have come to the same conclusion that the object NP occupies a position different from its original position, but still within its originating VP. To the best of my knowledge, Travis (1992) was the first to propose that there is a functional category, which she terms AspP, sandwiched between two layers of the VP. Accusative phrases raise to [Spec, AspP]; subsequently the lower V⁰ raises to the upper V⁰. Note that the discussion in section 3 suggests that the complement subject in an RTO construction raises to the matrix clause in the overt syntax, and that the matrix verb also raises past the raised object within the VP. If an object NP moves to [Spec, AspP] for Case checking, and, furthermore, if a verb moves past [Spec, AspP] to the higher V⁰, the problem raised in section 3 ceases to be an obstacle for the raising analysis. In particular, I would like to propose that the relevant part of the sentences in (7) has the structure shown in (13).

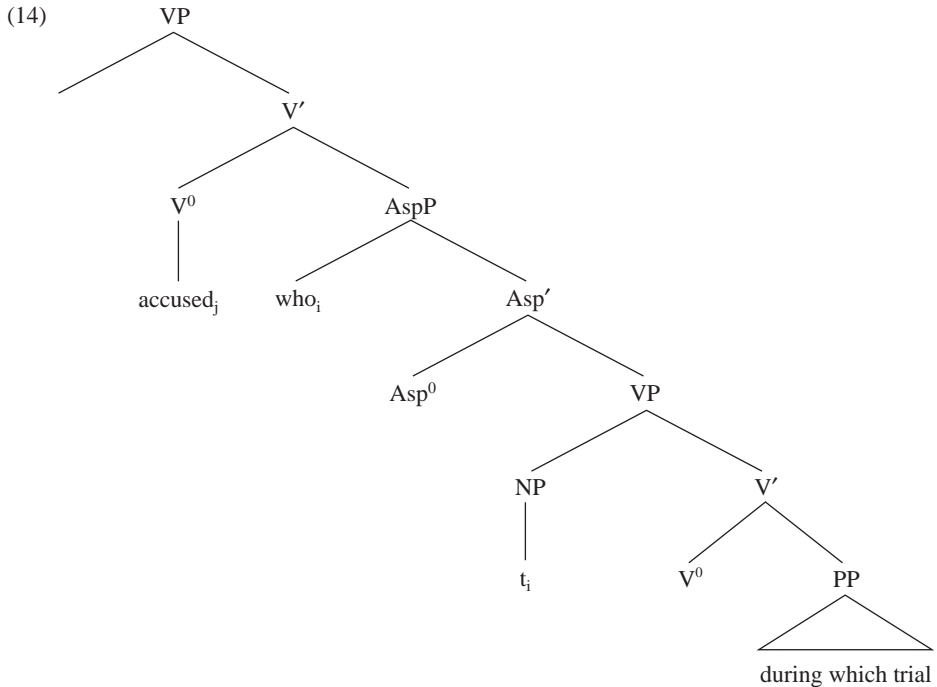
⁴ I assume that the adjunct PP is base-generated as a sister to the V⁰. Alternatively, it can be base-generated in a position adjoined to the V'. The choice between the two is largely irrelevant to the present discussion, since the *wh*-PP in [Spec, VP] *c*-commands the adjunct PP in either event.



The RTO verb raises to the upper V^0 through the Asp^0 . When it occupies the Asp^0 position, it can check the accusative Case feature of the *wh*-phrase in [Spec, AspP], which was raised from the complement clause. If the temporal PP is a constituent of the lower VP, as assumed for (11), we correctly derive the superiority facts observed above, since the phrase in [Spec, AspP] asymmetrically *c*-commands the temporal PP. Furthermore, since the RTO verb does not move out of the VP, the proposed analysis does not face the difficulty encountered by the raising-to-[Spec, Agr_{OP}] analysis, pointed out in section 3. That is, given the present interpretation of phrase structures, English main verbs move up only to the higher V^0 , but French main verbs move to a position higher than the higher V^0 .

The analysis presented above depends on the assumption that accusative Case in English is a strong feature, which must be checked prior to Spell-Out by having an accusative NP in the checking domain of the Asp^0 .

The proposed analysis also correctly captures the fact illustrated in (5), namely, that an accusative *wh*-phrase is superior to a temporal PP. (5) has the structure shown in (14). The accusative *wh*-phrase moves to [Spec, AspP] to check its accusative feature against the complex formed by the lower V^0 and the Asp^0 . From the raised position, as well as from its original position, the accusative *wh*-phrase

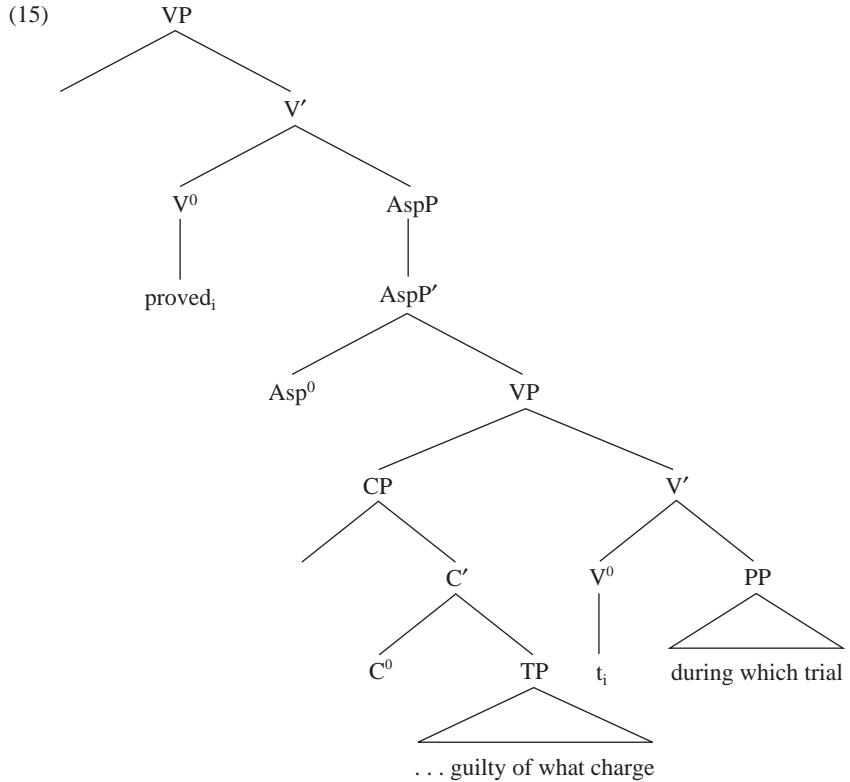


asymmetrically *c*-commands the temporal PP. The MLC requires that the accusative *wh*-phrase, but not the temporal PP, be attracted to [Spec, CP], as desired.

Importantly, this analysis correctly explains the grammaticality of (6a), as well as that of (6b). The relevant portion of the structure is shown in (15) on page 324. The *wh*-phrase in the complement clause, being contained in an embedded CP, cannot *c*-command the temporal adverbial. Nor does the temporal *wh*-PP, being generated in a lower position than the complement clause, *c*-command the *wh*-phrase in the complement clause. Since neither of the *wh*-phrases is superior to the other, the MLC dictates that either of the two *wh*-phrases can be attracted to the matrix [Spec, CP]. Thus, the proposed analysis satisfactorily accounts for the observed data.

5 Summary

In this squib I have argued that the superiority facts of ECM/RTO subjects call for an RTO analysis. A raised object moves to the specifier of an inner functional category, AspP, thereby entering into a checking relation with the lower V⁰. The analysis requires that (a) accusative Case in English is a strong feature, which is checked in the projection of the inner functional category; (b) the lower V⁰ adjoins to the higher V⁰ by Spell-Out; (c) temporal PPs are base-generated in the lower VP.



References

- Authier, J.-Marc. 1991. V-governed expletives, Case theory, and the Projection Principle. *Linguistic Inquiry* 22:721–740.
- Chomsky, Noam. 1993. A minimalist program for linguistic theory. In *The view from Building 20: Essays in linguistics in honor of Sylvain Bromberger*, ed. Kenneth Hale and Samuel Jay Keyser, 1–52. Cambridge, Mass.: MIT Press.
- Chomsky, Noam. 1995. Categories and transformations. In *The Minimalist Program*, 219–394. Cambridge, Mass.: MIT Press.
- Johnson, Kyle. 1991. Object positions. *Natural Language & Linguistic Theory* 9:577–636.
- Kayne, Richard S. 1981. ECP extensions. *Linguistic Inquiry* 12: 93–133.
- Kayne, Richard S. 1994. *The antisymmetry of syntax*. Cambridge, Mass.: MIT Press.
- Koizumi, Masatoshi. 1995. Phrase structure in minimalist syntax. Doctoral dissertation, MIT, Cambridge, Mass.
- Larson, Richard. 1988. On the double object construction. *Linguistic Inquiry* 19:335–392.
- Larson, Richard. 1990. Double objects revisited: Reply to Jackendoff. *Linguistic Inquiry* 21:589–632.

- Lasnik, Howard, and Mamoru Saito. 1991. On the subject of infinitives. In *CLS 27*. Vol. 1, *The General Session*, 324–343. Chicago Linguistic Society, University of Chicago, Chicago, Ill.
- Lasnik, Howard, and Mamoru Saito. 1992. *Move α : Conditions on its application and output*. Cambridge, Mass.: MIT Press.
- Pollock, Jean-Yves. 1989. Verb movement, Universal Grammar, and the structure of IP. *Linguistic Inquiry* 20:365–424.
- Postal, Paul M. 1974. *On raising*. Cambridge, Mass.: MIT Press.
- Runner, Jeffrey. 1995. Noun phrase licencing and interpretation. Doctoral dissertation, University of Massachusetts, Amherst.
- Travis, Lisa. 1992. Derived objects, inner aspect, and the structure of VP. Ms., McGill University, Montreal, Quebec. [Presented at NELS 22, University of Delaware]