Interpreting Chains: The PBC, Anaphor and Frozen Scope

1. The Issue

Despite of their superficial differences, the constructions in (1)-(3) share one crucial property. That is, an element does not c-command a position with which it should or must be associated. In (1), the wh-phrase who fails to c-command its variable. In (2), the antecedent John does not c-command the co-indexed anaphor himself. In (3), the universal quantifier fails to c-command a position in which it can take scope over the existential quantifier, that is, the TP-adjoined position. This paper makes an attempt to provide a unified account for these phenomena.

2. The Proposal

We argue that the ungrammaticality of (1)-(2) and the frozen scope in (3) result from violation of the legibility condition imposed by the A-P system that lexical items must be assigned a unique linear position. We assume that the deletion of copies in (4) operates on non-trivial chains at PF so that a unique linear position can be assigned to lexical items.

As for (1), the derivation in (5) is transferred to the PF computation, assuming the copy theory of movement. In this derivation, the two occurrences of who are not in a c-command relation, that is, the one inside the fronted wh-phrase and the one in the Spec of the embedded CP. Since the deletion procedure in (4) does not apply to the non-trivial chain of who, it is not assigned a unique linear position. The resulting PF representation violates antisymmetry in (6), which is a defining property of a linear ordering, leading to the crash at PF (Note that Saito (2001) argues that the PBC effects cannot be reduced to a locality constraint on movement, contrary to Kitahara (1997)).

The same line of account can be possible for (2) if we assume Lidz and Idsardi’s (1998) and Hornstein’s (2001) approaches that an anaphor is a residue of overt A-movement. On their approaches, (7) is analyzed as (8) and the lowest copy of John turns into himself, ignoring irrelevant details. (2) would potentially be derivable via sideward movement of John (see Hornstein 2001 and Nunes 2001 for detailed discussions). However, it is ruled out in that the linear position of John is not uniquely determined since the head of the chain of John and its lower copy are not in a c-command relation.

Finally, we argue that the scope of the universal quantifier is frozen in (3) because the derivation in which it takes wide scope violates antisymmetry and crashes at PF. It is noticeable that the frozen scope in (3) is not caused by the computation at the LF side since Takano (1995) argues that the fronted VP must be reconstructed into its original position on the basis of binding facts. Thus, the LF representation of (3) is the same as that of the sentence without VP-fronting, in which an object quantifier can take scope over a subject quantifier. We argue that a covert phrasal movement approach to QR (Fox and Nissenbaum 1999 and Pesetsky 2000) provides an account along the lines pursued here. In this approach, quantifiers move at overt syntax and they are pronounced in situ as if they do not move. On this assumption, the VP-fronting in (3) can be analyzed as (9) in which everyone undergoes overt QR, adjoining to TP. In (9), the copy of the universal quantifier inside the fronted VP is not in a c-command relation with other copies. Thus, the phonological component cannot determine a unique linear position of the universal quantifier in this derivation. The universal quantifier must remain inside the fronted category so that the linear order can be properly determined, as shown in (10). However, the universal quantifier must fall under the scope of the existential quantifier in the derivation in (10), which is the reason for the frozen scope.

3. Further Evidence and Implications
The contrast between the parasitic gap (PG) constructions in (11) and (12) fits in with our theory. Hornstein (2001) and Nunes (2001) claim that PG constructions involve sideward movement of an element from a position of a PG in an adjunct to a theta position in a matrix clause. In (11), the PG and every book in the matrix clause are not in a c-command relation and a unique linear position cannot be assigned to it. On the other hand, the head of the chain of which book c-commands the gap in the matrix clause and the PG in (12). Thus, this produces a legitimate PF representation. This contrast is analogous to the one between (13) and (2). (13) is grammatical since the head of the chain of John c-commands the lower copies even though two instances of himself (copies of John) are not in a c-command relation (Note that the gap in the matrix clause and the PG are not in a c-command relation in (12), either). As implications, it is necessary that a head of a chain c-commands every lower copy for linearization. However, it does not matter whether lower chain members are in a c-command relation.

Data

(1) *[Which picture of t$_1$]$_2$ does John wonder who$_1$ Mary bought t$_2$?
(2) *John$_1$'s mother arrested himself$_1$.  
(3) [See everyone]$_1$, someone does t$_1$.  $\exists \forall$, $\forall \exists$
(4) Do not pronounce chain members asymmetrically c-commanded by a head of the chain.
(5) *[Which picture of who] does John wonder who Mary bought [which picture of who]
(6) If X precedes Y, Y does not precede X.
(7) John likes himself.
(8) [TP John$_1$ T$^0$ [v$_p$ John$_1$ v$^0$ [VP likes John$_1$]]]
(9) [TP [VP see everyone]$_1$]$_2$ [TP everyone$_1$ [TP someone does t$_2$]]
(10) [TP [VP see everyone]$_2$ [TP someone does t$_2$]]
(11) *You read every book before Fred reviewed PG.
(12) Which book did you read t before Fred reviewed PG?
(13) John$_1$ bought pictures of himself$_1$ for himself$_1$.

References