Irreversible binding

It has long been observed that A-moving one phrase over another can block a binding dependency between them (1a). Nevertheless, this is not always the case, as illustrated in (1b) (a translation of (1a)).

(1) a. *Jean, se, semble [à avoir du talent].
   b. John, seems to himself, [à avoir du talent].

Rizzi (1986) accounts for (1a) as a violation of the Chain Condition, but Pesetsky (1995) shows that examples such as (1b) are evidence against Rizzi’s analysis. In turn, McGinnis (2004) demonstrates that Pesetsky’s clitic-based analysis of (1a) fails to capture the full range of A-movement crossover effects, which also arise with non-clitic anaphors. She captures the contrast in (1) under a condition on trace identification, satisfied in (1b) but not in (1a). In this paper, I provide evidence against this analysis, and in favour of a new theory, which treats binding dependencies as irreversible.

In a nutshell, once an argument α is interpreted as the binder of another argument β, this binding dependency cannot be reversed, even if β can A-move over α. Such a reversal would yield an ambiguous binding relationship between α and β, which cannot be resolved by the interpretive mechanisms at the conceptual-intentional interface (C-I). I assume that binding dependencies are established, and the Binding Conditions apply, only when a syntactic phase is being interpreted at C-I. Moreover, I assume that C-I has access to a given phase whenever the root node of the derivation is a projection of the phase head. As a result, binding is in play both before and after any movement to a phase edge.

In (1a), a binding dependency is established before the embedded subject Jean moves, resulting in a Condition C violation. I propose that movement of Jean cannot reverse this dependency. Thus, the raised subject cannot bind the anaphor, even from its new c-commanding A-position. In (1b), by contrast, the experiencer himself does not occupy a phase edge (McGinnis 2004). Thus, I postulate that no binding dependency is established until the raised subject c-commands the anaphor. The resulting dependency is unambiguous and well-formed, and the derivation converges.

Compelling evidence for the proposed analysis comes from certain cases of object movement over a subject, such as object scrambling over the subject in Japanese and Korean. Such examples show an important asymmetry. An anaphoric object can scramble over its subject binder, as in the Japanese example (2a). An object scrambled over a subject can also bind a phrase contained therein (2b). However, it cannot bind the subject itself (2c).


Following Mahajan (1990), McGinnis assumes that examples like (2a) involve A-bar scrambling, while those like (2b) involve A-scrambling. An A-bar-scrambling derivation of (2c) is ungrammatical because the object cannot bind the subject from an A-bar position, while an A-scrambling analysis is ruled out by the constraint on trace-identification, as follows. In order to move over the subject without violating locality, the object must move into the same minimal domain (a specifier of the vP phase). According to McGinnis, the object then has both the same index and the same structural “address” as the subject; its trace therefore cannot unambiguously identify it as the antecedent, and the derivation crashes. By contrast, A-bar movement in (2a) would leave a Case-marked copy, not subject to the identification constraint. Moreover, if the scrambled anaphor occupies an A-bar position in (2a), it will not bind the coindexed subject, so no Condition C violation will arise.
However, Tagalog provides convincing evidence that the contrasts in (2) actually do not arise from the A/A-bar distinction. In Tagalog, the object can either A-move or A-bar-scramble over the subject. A-bar scrambling changes the word order but has no effect on morphology or binding (3a-b). By contrast, A-movement affects both morphology and binding (3c). The argument in the highest A-position is marked with $ang$, and the grammatical relation of the $ang$-marked argument is indicated by the verbal morphology (Rackowski 2002, Aldridge 2004). As with Japanese scrambling, an object in Tagalog $ang$-moved over the subject can then bind a pronoun contained therein, as in (3c).

(3) a. * Nagmamahal [ang kanyang i ama] [ng bawat anak].
   love.subj-ang ANG poss. father CASE every child
   ‘Her, father loves every child.’

b. * Nagmamahal [ng bawat anak] [ang kanyang i ama].
c. Minamahal [ng kanyang i ama] [ang bawat anak]$_i$
   love.obj-ang CASE poss. father ANG every child
   ‘Every child, her, father loves.’ (Rackowski 2002:36–37)

Also as in Japanese scrambling, an $ang$-moved object cannot bind the subject itself (4a), but an object anaphor can $ang$-move over its binder (4b).

(4) a. * Pinuna [ng kanyang sarili] [ang babae].
   criticize.obj-ang CASE poss. self ANG woman
   ‘The woman, herself, criticized.’

b. Pinuna [ng babae] [ang kanyang sarili].
   criticize.obj-ang CASE woman ANG poss. self
   ‘Herself, the woman, criticized.’ (Rackowski 2002:38)

Under McGinnis’ analysis, the ill-formedness of (4a) suggests that the $ang$-moved object leaves a trace subject to the identification constraint, while the well-formedness of (4b) suggests that instead it leaves a copy, not subject to this constraint. In (4), however, it would be highly implausible to suggest that the well-formed example involves A-bar movement, given the morphological distinction between A- and A-bar movement of the object over the subject in Tagalog. If (4b) involves A-movement, then it is predicted to violate the identification constraint, since, like (4a), its derivation involves a coindexed subject and object in multiple specifiers of vP.

By contrast, the analysis proposed here correctly predicts that movement can preserve the well-formed binding dependency in (4b), but cannot rescue the ill-formed one in (4a). Under this analysis, the binding dependencies in (4) are established before object movement. The dependency in (4a) violates Condition C, while the one in (4b) satisfies Condition A. After movement, these dependencies cannot be reversed, so the object cannot bind the anaphoric subject in (4a), and the anaphoric object does not bind the subject in (4b), so no Condition C violation is created.

Of course, the option in (4b) is not possible in English raising (*Himself seems to John to have talent). In this case, no binding dependency is established until after the embedded subject raises over the experiencer. The dependency created violates both Conditions A and C, and the derivation crashes.

In short, the Tagalog facts in (3)-(4) provide striking evidence against existing accounts of A-movement crossover effects, and in favour of the new account proposed here.

References