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UP TO DEBATE ON RAISING AND CONTROL, PART 1: PROPERTIES AND ANALYSES OF THE CONSTRUCTIONS

Abstract

This is the first part of a two-part article that reviews a number of the current debates regarding raising and control constructions. The issues addressed in this part include the syntactic attributes governing their distribution; the characterization of the relevant silent elements; the empirical properties which may distinguish/unify the two classes of constructions (on either syntactic or semantic grounds).

Introduction

The grammatical constructions referred to as raising (1) and control (2) (RandC) have been central concerns of generative syntax since the 1960s; as such, they must be factored into every comprehensive model.

(1)	a. Molly seems to be nice	Raising-to-subject (RtoS)
	b. Mark believes Molly to be nice	Raising-to-object (RtoO)
(2)	a. Molly promised to be nice	Subject control
	b. Mark persuaded Molly to be nice	Object control

Since Rosenbaum (1967) and Postal (1974), attention to RandC has continued through major shifts in the theoretical landscape, including the rise of the Minimalist Program (Chomsky 1995). Interest in these constructions has broadened to include a wide range of underexplored languages and cross-linguistic grammatical phenomena.

Because of its rich history, a detailed description of inquiry into RandC is beyond the scope of this article (but see Davies and Dubinsky 2004, 2006, 2007). Instead, this paper focuses on a number of recent lines of research on this topic, organized around the most heated current debates.

Empirical properties of raising and control

The empirical properties of RandC have long been a central issue in their study. Two major areas of focus have been (i) the properties of the moved, copied, or controlled argument (i.e. the semantic subject of the lower clause), and (ii) the syntactic attributes (including finiteness) of the embedded clause. For some analyses, these two issues are orthogonal, while in others, they interact.

(i) *Status of the raised or controlled argument*

One central debate in recent RandC inquiry has been whether the two constructions can be conflated, and resolving this issue may rely crucially on determining the status of the semantic subject of the lower clause: the moved, copied, or controlled argument.

Historically, this question has received different answers. The earliest analyses took clausal complements to be unitary in nature (i.e. akin to NPs), and focused on the derivation and properties of the embedded subject argument. Sentences like (1a) alternate with unraised counterparts (*It seems that Molly is nice*), which led intuitively to early analyses assuming that the subject in (1a) “raises” out of the lower clause (Rosenbaum 1967, Postal 1974). Likewise, parallels between RtoO and RtoS formed the initial motivation for proposing that the embedded subject actually moves to the matrix object position.

But this alternation does not obtain with control (**It promises that Molly is nice*). The traditional division between RandC was predicated on a number of data points, beginning with semantic distinctions. While the surface strings in RandC may appear identical, they involve unique thematic relations; for instance, in (2a) *Molly* is semantically related to both the matrix and embedded predicates, but in (1a) ~~she~~ is only linked with the lower predicate. Assignment of thematic roles thus differs in RtoO/object control constructions; in (3a), *Mark* is the *asker* only, while in (3b) he is also the *persuadee*. This is illustrated in the passives in (4), wherein (4a) does not differ in meaning from (3a) because *the doctor* has no matrix thematic role in (4a). But because it does have a matrix thematic role in (4b), the meanings of (3b) and (4b) are not equivalent.¹

- (3) a. Molly expected Mark to ask the doctor
 b. Molly persuaded Mark to ask the doctor
- (4) a. Molly expected the doctor to be asked by Mark = (3a)
 b. Molly persuaded the doctor to be asked by Mark ≠ (3b)

Unlike the standard analyses of that time which took RandC to be distinct structures, the analyses of Brame (1976), Bach (1977), and Bresnan (1978) blurred the lines between them, taking the position that the syntactic structures of the two were identical, and that apparent differences stemmed from semantic/interpretive rules. Since then, “structure-sharing” approaches continue to assume that a single NP occupies both a matrix and embedded position (even when there is overt displacement of that argument, as in RtoS

¹ As a result of this difference in thematic structure, raising (but not control) verbs may grammatically embed expletive constructions (*It seemed/*tried to be too foggy to drive*, *Molly expected/*persuaded it to be too foggy to drive*) and idioms (*The cat seemed/#tried to be out of the bag*; *Molly expected/#persuaded the cat to be out of the bag*), and are semantically felicitous with any embedded clause which is internally semantically felicitous (*The rock seemed/#tried to be granite*, *Molly expected/#persuaded the rock to be granite*; see Davies and Dubinsky 2004, chapter 1).

and subject control), and that thematic roles are assigned to these positions in the usual way; these approaches include LFG (Bresnan 1982), GPSG (Gazdar, Klein, Pullum, and Sag 1985), and HPSG (Pollard and Sag 1994; Runner 2006).

Relational Grammar (RG) approaches to RandC represent another class of “structure-sharing” analyses, but are distinguished from the previous group in that derivations are accomplished in the syntax (as in standard theory) rather than in the lexicon (e.g. Rosen 1981, Perlmutter 1982, Perlmutter and Postal 1983, Frantz 1980, Johnson and Postal 1980, Perlmutter and Postal 1984, Gibson and Raposo 1986, Bickford 1987, Davies and Rosen 1988).²

The approach to RandC, as first devised in the Standard Theory accounts, came to be articulated within the Government and Binding/Principles and Parameters (GB/P&P) frameworks through the invocation of the Extended Projection Principle (EPP) and Theta Theory, which precluded a conflated analysis of RandC. The EPP requires that all subcategorized positions be projected at all levels of the derivation, and that a subject be projected in all clauses, while (at least Chomsky’s) Theta Theory bars a NP from bearing more than one theta role (which will naturally occur if it occupies more than one thematic position). As a result, raising (5a) involves one moved NP (and its trace), while control (or “obligatory control” (OC)) (5b) involves a base-generated matrix object which “controls” a silent PRO subject in the embedded clause (a concept introduced in Chomsky 1973 limited to use in control). In short, RandC must be kept separate.

- (5) a. Molly expected Mark_i [_{t_i} to ask the doctor]
- b. Molly persuaded Mark_i [PRO_i to ask the doctor]

The GB/P&P analyses focused less on the status of the embedded semantic subject, and instead worked to define the attributes of the complement clause itself, focusing especially on the issue of finiteness.

(ii) Syntactic attributes of the complement clause

Finiteness and/or clausal “completeness” have long been cited as conditions which license or restrict the distribution of RandC. Nonfinite raising complements contrast with their tensed counterparts on both the possibility of applying passive to the subject of the

² These RG analyses propose that raising and control configurations both involve “multiattachment” (i.e. structure-sharing), but that two differences separate the constructions. First, as claimed in the structure-sharing approaches outlined above, control NPs are assigned thematic roles by both the matrix and embedded clauses, while raised NPs only carry the thematic role of the embedded predicate. And second, raising and control differ in the configuration and number of their representational strata. Raised NPs originate in a stratum in which they bear the subject relation to the embedded predicate, but raise in a post-initial stratum to bear the direct object relation to the matrix predicate. Meanwhile, control involves a single controller/controllee NP which bears grammatical relations in the initial stratum in both clauses.

complement clause (6) and the grammaticality of anaphors in subject position of the complement (7).

- (6) a. Mark believed Molly was famous / *Molly was believed was famous
b. Mark believed Molly to be famous / Molly was believed to be famous

- (7) Mark believed himself to be famous / *Mark believed himself was famous

For instance, Brame (1976), Bach (1977), and Bresnan (1978) took the syntactic structure of both types to include a matrix object and a subjectless VP. Proposals in this vein have continued to surface, such as Wurmbrand's (2001) analysis of "restructuring" infinitives (including raising and obligatory control constructions). Wurmbrand's account argues that such infinitival complements lack a vP: they are VPs which are embedded under the matrix VP. As support, she provides evidence from German long passives indicating that these infinitives lack a structural Case position/assigner: instead, the embedded object must raise to the matrix vP for Case. For instance, the complement clause in (8) is derived via passivization of the control verb *versuchen* 'try.'

- (8) dass der Traktor zu reparieren versucht wurde
that the tractor.NOM to repair tried was
'that they tried to repair the tractor'

An embedded (non-passivized) DP is usually assigned (accusative) Case by a lower vP, but here, the DP object of the embedded infinitive *reparieren* 'to repair' receives nominative case from the matrix auxiliary *wurde* 'was,' which agrees with it in number. The fact that the DP *der Traktor* is free to enter Case and agreement relations in the matrix indicates that there is no lower vP to assign structural Case.

Some other recent analyses that follow the line taken by Wurmbrand include Ghomeshi (2001) who analyzes Persian subject control constructions as containing an embedded clause which projects only to vP (although Darzi 2008 disagrees), and Kawai (2006) who argues that Japanese RtoO structures include an embedded PredP small clause.

The causal relation between the status of the embedded subject in RandC constructions and the non-finiteness of the complement clause has been a matter of debate. The earliest approaches to RtoO could readily accommodate finite or non-finite complements, since for both Rosenbaum and Postal, raising *resulted* in the complement being realized as an infinitival in particular languages such as English, rather than the other way around. With the publication of Chomsky 1973 and the adoption of "conditions on transformations," the finiteness of the complement was taken as determining the distribution of the complement's subject. Extended Standard theory (EST) thus attributed particular derivations to the properties (and concomitant transparency) of the embedded clause. For instance, the ungrammatical configurations in (6) and (7) were barred by the Tensed-S Condition, which banned extraction out of finite clauses.

Contrary to the usual assumption in traditional GB/P&P accounts that non-finiteness is a necessary precondition for RandC, some recent analyses have posited RandC in cases where the complement is finite and has an overt complementizer (e.g. Fujii 2006 for Japanese; Darzi 2006 for Persian; Kapetangianni and Seely 2007 for Greek; and Nunes 2008 for Brazilian Portuguese). However, even though the complement clauses in these cited cases are nominally non-finite, they are still claimed to be defective in some way that leaves the embedded subject active for movement. Thus, most current approaches to the syntax of RandC still causally tie the derivational possibilities of the embedded (moved/raised/controlled) argument to the properties of the embedded clause.

(iii) *Status of the raised or controlled argument with reference to finiteness*

Finiteness interacts with the issue of Case, as nonfinite clauses have been considered unable to value Case. As a result, the question of Case in delineating RandC has been a crucial one. GB/P&P analyses assume that a DP may raise to receive Case, which it shares with its trace. An overt controller must also be assigned Case, but that Case is not shared by the embedded PRO. In fact, Chomsky (1981) argued that PRO may not bear Case at all, while Chomsky and Lasnik (1993) propose that it bears a special “null” Case only available to PRO.

The EST (and subsequent GB/P&P) approach to RtoO verbs like *believe*, as opposed to RtoS verbs like *seem*, constituted a major departure from the previously posited raising analysis for sentences like (1b). Rather than posit Case-motivated movement, the GB account claimed that *believe* verbs are lexically marked to govern a rule of S'-deletion,³ and that this allows them to “exceptionally” case-mark (ECM) the subject of their complement clause (Chomsky 1981, 1986; Chomsky and Lasnik 1993). This is illustrated in (9).

- (9) a. Mark believed [_{S'} [_S [himself to be famous]]
 b. Mark believed [_S [himself to be famous]

Here, the embedded subject does *not* raise, but instead remains *in situ* and is marked as an object by the matrix verb. The ECM account, among other things, wound up obscuring the parallels between RtoO and RtoS (for which a raising analysis was fairly uncontroversial).

With the rise of Minimalism (Chomsky 1995, 1998, 1999), though, many GB/P&P assumptions were questioned, often taking steps—intentional or not—in the direction of unification of RandC. One critical step involved a resuscitation of the previously “discredited” RtoO analysis (Lasnik and Saito 1991; Ura 1993; Koizumi 1993, 1995; Runner 1995). These neo-RtoO analyses incorporated Case-motivated movement into their accounts, such that the embedded subject was once again assumed to raise out of the infinitive complement clause, in this instance to receive Accusative Case.

³ S' has since been reformulated as CP.

More recently, the movement theory of control (MTC; Hornstein 1999; Boeckx and Hornstein (B&H) 2003, 2004, 2005, 2006a, 2006b; Polinsky and Potsdam 2002, 2003, among many others) claims that Case motivates movement in both raising and control. Hornstein proposed treating theta roles as features that must be checked, and assuming that a NP may bear multiple theta roles, resulting in an analysis reminiscent of structure-sharing approaches. Given these assumptions, OC can be reduced to a kind of raising, and PRO reanalyzed as NP-trace. (These recent MTC analyses are anticipated in Bowers 1973[1986] and 1981. Bowers 2008 presents an alternative MTC that proceeds from the notion that Merge is driven by the need to satisfy subcategorization features.)

There has been a lively debate over whether the MTC can account for the wealth of cross-linguistic data without extensive modification and/or stipulations, and Rooryck (2007:281) voices a common sentiment when he notes that the theory may “sacrifice empirical adequacy to theoretical elegance.” While evidence from English initially looked promising, data on Case transmission and/or independence from Ancient Greek and Latin (Bobaljik and Landau 2009), Icelandic (Sigurdsson 2008, Bobaljik and Landau 2009), and Russian (Landau 2008) suggest that the MTC approach may not ultimately be tenable. In these languages, elements like reflexives and secondary predicates must agree in Case with their (overt or silent) subjects, and the data indicate not only that PRO bears normal structural case like any overt DP, but also that its Case may differ from that of its controller (suggesting thereby that an autonomous covert argument NP—i.e. PRO—does exist). For instance, in (10), the controller appears in the dative case, while PRO surfaces in the nominative (as evidenced on the secondary predicate *báDir* ‘both,’ which must agree with PRO).

- (10) BrQDrunum líkaDi illa [aD PRO vera ekki **báDir** kosnir].
 brothers.the liked ill to PRO be not both elected
 DAT.M.PL NOM NOM.PL
 ‘The brothers disliked not being both elected.’ (Sigurdsson 2008)

Such analyses seem to support Landau’s (2006) claim that attempts to link the distribution of PRO to Case are misguided. If so, the same may be true of attempts to differentiate RandC based on Case.

The MTC has other perceived shortcomings. For instance, it does not block certain configurations which are grammatical only in raising (e.g. movement/control across a passive verb: *John was expected/*hoped to win*; Landau 2003), nor some which are possible only in control (the interpolation of matrix material between the complement subject and predicate: *Mary asks/*believes John daily to sing* (seen in Postal 1974); the ban on extraction from a raised subject: **Who_i do you expect stories about t_i to scare John?* (presented in Chomsky 1971).

In contrast with the MTC, recent “base-generated” analyses for raising may not explicitly attempt unification, but still effectively blur the lines between raising and control. For instance, Potsdam and Runner (2001) propose that “Copy Raising” (in which both the matrix and embedded DPs are pronounced) actually involves directly merging a lexical

DP into a non-thematic position in the matrix clause, along with base-generating an A-chain linking this DP to its pronominal “copy” in the subject of the complement. In (11), this process would link *Richard* in the matrix clause with *he* in the embedded clause.

- (11) [TP Richard_i seems [XP like [TP he_i [VP is in trouble]]]]

The chain allows Full Interpretation of the lexical DP, which shares a theta role with its linked pronoun.

Similarly, Kotzoglou and Papangeli (2007) propose a “quasi-ECM” analysis of Greek embedded-subjunctive constructions, involving base-generation of the semantic subject of the complement in matrix object position, together with coindexation with an embedded *pro*. They suggest that quasi-ECM is a semantic subcase of object control.

- (12) perimena to jani *pro* na ine arostos/*arosto
 expected-1SG the John-ACC *pro* SUBJ be sick-NOM/*ACC
 ‘I expected John to be sick.’

For instance, in (12), the secondary predicate *arostos* ‘sick’ must obligatorily agree in case with its subject; however, it is ungrammatical for this predicate to appear in the accusative (the case carried by the DP *jani* ‘John’). Kotzoglou and Papangeli suggest that this predicate is agreeing with a nominative *pro* subject in the embedded clause.

In some recent work, finiteness/tense/agreement is no longer a unitary category where its interaction with Case (and hence movement) is concerned. For instance, Kapetangianni and Seely (2007) conclude that certain Greek control predicates select a phi-defective Agr in their subjunctive complement which only bears person/number (but not gender) features, and therefore cannot value Case. Assuming the MTC, the authors propose that the embedded DP subjects appearing with such phi-defective Agrs may ultimately move to have their Case feature checked in the matrix clause, as in (13).

- (13) o Yanis kseri na t_i horevi
 the John_i-NOM know-3SG/PRES SUBJ t_i dance-3SG/PRES
 ‘John knows (how) to dance.’

In (13), the matrix verb *kseri* ‘know’ selects a phi-defective Agr in the complement. This Agr cannot check the Case of the embedded subject *Yanis* ‘John,’ leaving this DP active for movement to the matrix subject position, where it has its Case checked.

Likewise, Fujii (2006) suggests that tensed but [-finite] (“pseudo-finite”) subordinate clauses under Japanese control verbs may not assign structural case to their subjects; similarly, Nunes (2008) claims that Brazilian Portuguese raising from finite clauses arose from learners having reanalyzed finite T heads as being ambiguous between having a full or an incomplete set of phi-features. In each of these accounts, the embedded DP subject, lacking Case, remains active for movement/Agree operations in the matrix clause. Landau (2006) proposes another sort of analysis along these lines, in which he takes the

distribution of PRO to be dependent upon specific configurations of the autonomous features of T and Agr. Specifically, the configuration of [+T, +Agr] licenses a referential subject (i.e. a lexical DP or *pro*), but any other configuration results in the licensing of PRO.

But Spyropoulos (2007) uses Greek data to argue against such “complement deficiency” approaches. He claims that a subjunctive control complement is fully inflected and able to check Nominative Case on an embedded subject, including PRO. Control derives when the matrix C head targets both the matrix and complement T heads. The [Agr] features on the embedded T acquire the reference of the overt DP which Agrees with the matrix [Agr], and the result is obligatory co-reference (14a).

For instance, in example (14b), the matrix verb *emaθe* agrees with the overt matrix subject DP *Zoi* ‘Zoe.’ These matrix Agr features are also acquired by the embedded verb *kolimbai* ‘swim,’ thus allowing its PRO subject to co-refer with the matrix DP *Zoi*.

- (14) a. ... DP_i F[Agr_i]... C... T/Agr_i Subject_i...
- b. I zoi_i emaθe na kolimbai [ec_i]
- the Zoe-NOM learned-3SG SUBJ swim-3SG PRO
- ‘Zoe learned PRO to swim.’

The various analyses make clear that there is little agreement on the specifics of the interactions between finiteness and the derivational status of the raised/controlled argument, although many (if not most) current approaches assume some basic level of causal connection. That said, we would expect that debate on the specific formalizations of this causal connection will continue to be an important issue in the future. In addition to the approaches outlined above, there is also a class of analyses that focus less on these syntactic properties, and more on the semantics of RandC. The following section will look at these.

Semantic approaches to RandC

Sag and Pollard (1991) provide a semantically-based view of control. They argue that controller assignment principles are linked not to lexical elements themselves, but rather the states of affairs that lexical elements describe: with *influence-type* lexical elements (e.g. *allow*, *persuade*), the controller is the “influenced”; with *commitment-type* elements (e.g. *promise*, *refuse*), the controller is the “committor”; and with *orientation-type* elements (e.g. *want*, *expect*), the controller is the “experiencer.” Sag and Pollard disagree with the characterization of the controlled element as PRO, and suggest that the unexpressed subjects in control configurations are anaphors, and that their distribution is governed by binding theory.

Culicover and Jackendoff (2001, 2006; Jackendoff and Culicover 2003) also argue against purely syntactic approaches to control, noting that these cannot distinguish between syntactically identical utterances that differ in controller choice (*Molly promised/ordered Mark to make dinner*). Their approach utilizes the insight that

Obligatory Control (OC) verbs, which they refer to as unique control verbs, fall into defined semantic classes, and that in each case, a particular thematic role serves as the chosen controller. For instance, with control verbs which express some type of obligation, the person under obligation serves as the controller, resulting in object control for verbs like *order*, *hire*, and *contract with* (15a), but subject control for *promise* and *guarantee* (15b).

- (15) a. Molly_i ordered/hired/contracted with Mark_j PRO_{*i/j} to lay the new tiles.
 b. Molly_i promised/guaranteed Mark_j PRO_{i/*j} to lay the new tiles.

Another class of control verbs express ability; here, the individual with the ability serves as the controller, resulting in subject control for verbs like *learn* (16a) and object control for verbs like *teach* (16b).

- (16) a. Molly_i learned from Mark_j PRO_{i/*j} to speak Spanish.
 b. Molly_i taught Mark_j PRO_{*i/j} to speak Spanish.

There are no movement operations or linked NP positions, and raising and control verbs both project their subject argument downward into the complement. Thus, as in other structure-sharing approaches, their analysis links the distinction between raising and control to the assignment of theta roles. They argue that both raising and control fall out as a result of the underlying Lexical Conceptual Structure (LCS) argument mappings and the lexically-governed grammatical function rules associated with particular predicates. Culicover and Jackendoff (2006) argue further that the only way to unite the various types of control under one uniform analysis is to assume that PRO as a syntactic element does not exist. In their view, the similarity among control types is better characterized as a semantic-thematic relationship between arguments at the level of LCS.

Another researcher bridging the gap between syntax and semantics is Rooryck (2007), who offers a semantically-based account of the control properties of variable control verbs. Control with these verbs, which allow multiple possible controllers, is derived via a mechanism of s-selection.

- (17) a. Kim_i offered Sue_j [PRO_{i/j/i+j} to leave]
 b. Kim_i promised Sue_j [PRO_{i/i+j} to leave]
 c. Kim_i asked Sue_j [PRO_{j/i+j} to leave]

For instance, in each of the examples in (17), PRO can refer to the matrix subject and object together (i.e. both *Kim* and *Sue*), or it can refer to one or the other of the two (depending on the particular verb).

Summary

In this section, we first considered three major empirical issues in syntactic analyses of raising and control: (1) the status of the semantic subject of the embedded clause (whether it be NP-trace, PRO, or neither), (2) the syntactic attributes of the embedded

clause (especially its finiteness and whether the embedded predicate corresponds to a full CP), (3) interactions between the semantic subject of the embedded clause and the tense of that clause (clausal finiteness, or some other clausal deficiency, may result in lack of Case assignment in the complement, and some have differentiated RandC on issues of Case), and (4) semantic approaches to these phenomena. We will next consider a wider range of cross-linguistic RandC phenomena.

(text: 4000 words)

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