[Review]

Control in Generative Grammar: A Research Companion


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1. Introduction

The book under review aims to compare previous research on control and comes to the conclusion that control is “a multidimensional phenomenon” (p. ix). There is no unified theory of control; rather, control should be captured as an intersection of “a multitude of (sub)theories and analyses” (p. 257).

Control is an interpretively dependent relation between an overt argument in the matrix clause and a covert subject in the infinitival complement clause. To make this definition precise, let us consider the following sentences:

(1) a. John has promised [that he will come to the party].
   b. John has promised [to come to the party].

(1a) has the same truth condition as (1b) does, so that these sentences share the same thematic relations. The matrix subject John is understood as the “promiser” and the bracketed clause is understood as the promised event in (1a, b). The same argument applies to the thematic relation within the bracketed clause as well. Thus, the “comer” must be interpreted as John in both sentences. This interpretation is easily captured in (1a), since the “comer” is overtly realized as he and this pronoun co-refers with John. By

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contrast, the “comer” is not realized in (1b). However, a certain null element has been assumed to exist in the position corresponding to he in (1a) from the viewpoint of the uniformity principle pursued by the generative grammarians. The question to be asked, then, is what mechanism is required in (1b) to ensure that the null subject in the infinitival clause is controlled by and interpreted as John. Control theory has sought to elucidate the mechanism and to specify what the null subject is in the first place, whether or not the null subject satisfies the Case requirement, and what grammatical components are involved to determine the interpretation of the null subject. In view of this, research on control has made a theoretically significant contribution to the advancement of θ-theory, Case theory, bounding theory, movement theory, and theories of the interfaces between syntax and other components, such as the lexicon, semantics, and pragmatics.

However, “not a single survey work solely dedicated to control has appeared that attempts to organize and synthesize all this knowledge, and present it in a systematic fashion” (p. vii). The main purpose of the book under review is to fill the gap and to review and systematize previous research of control by carefully scrutinizing a huge amount of empirical data.

It is important to bear in mind that no specific theory of control is presented in the book; this is just a review book. Since space limitations preclude a thorough discussion of all of the theories, this review article will endeavor to narrow the discussion down to the empirical arguments that every theory of control must address squarely.

2. Overview

Chapter 1 “Background” provides a clarification of the original issues for discussions over control citing Rosenbaum (1967, 1970) as the first researcher who seriously analyzed control in generative grammar. Rosenbaum (1967, 1970) proposed two constraints on control: the identity constraint and the locality constraint between a controller and a controlleree. Let us consider the following examples:

(2) a. Sally preferred to sleep on the couch.

b. Sally preferred for Denise to sleep on the couch. (p. 1)

The implicit “sleeper” in (2a) is interpreted as Sally while that in (2b) is interpreted as Denise. These interpretations are confirmed by the Identity Erasure Transformation (later renamed Equi-NP Deletion) formulated in (3):
The clause (3i) states that the erasure of the infinitival subject, 5, by the matrix element, 2, applies when they are identical. In addition, the clause (3ii) makes possible the erasure of the infinitival subject when there is no intervening candidate between the matrix element and the infinitival subject. The Principle of Minimal Distance in (3ii) is later renamed the MDP (Minimal Distance Principle), which is formulated in (4):

\[
\text{(4) Rosenbaum’s (1970) MDP} \\
\text{An NP}_j \text{ is erased by an identical NP}_i \text{ iff there is a clause S such that:} \\
\text{(i) NP}_j \text{ is dominated by S.} \\
\text{(ii) NP}_i \text{ neither dominates nor is dominated by S.} \\
\text{(iii) For all NP}_k \text{ neither dominating nor dominated by S, the distance between NP}_j \text{ and NP}_k \text{ is greater than the distance between NP}_j \text{ and NP}_i, where distance between two nodes is defined in terms of branches in the path connecting them.} \text{ (p. 2)}
\]

Since the identity and locality constraints are satisfied in (2a), the embedded infinitival subject is interpreted as Sally.

(5) [Sally] preferred for [Sally] to sleep on the couch. (p. 1)

In (2b), on the other hand, Sally fails to be understood as the “sleeper.” The reason is that Sally in the matrix subject has no local relation with the embedded infinitival null subject. Denise intervenes in-between. This violates the MDP in (4). Therefore, Sally is not the controller but Denise is. In this way, Rosenbaum’s (1967, 1970) Identity Erasure Transformation captures the two basic properties of control: the identity and the locality relation between the controller and the controllee.

However, the validity of Rosenbaum’s (1967, 1970) analysis has been challenged from the outset. First of all, the identity constraint imposed between the controller and the controllee was called into question on semantic grounds. Example (6) shows that the controllee (Ø) is interpreted as Harry and Joan, violating the condition on the identity constraint in (3i).
(6) Harry said that Joan knew that it was necessary \( \emptyset_{i+j} \) to report their own father to the authorities. (p. 6)

The locality principle has systematic exceptions as well. Let us consider the following subject-control example:

(7) I promised John to bring the money. (p. 3)

In (7), the embedded infinitival null subject is interpreted not as the local candidate *John* but as the distant candidate *I*. This violates the MDP in (4). Therefore, Rosenbaum’s (1967, 1970) analysis faces several problems. As we will see in the following chapters, the problems have prompted a great deal of studies on control ever since.

I believe this to be the core of chapter 1. The rest of this chapter is devoted to discussions about the following two points: (i) the difference between control and raising constructions; and (ii) the difference between obligatory control and non-obligatory control. This review will omit these topics. The reason for the omission of the former point is that the main aim of the book under review is to compare the previous analyses of control and not to survey the contrasts between control and raising constructions. For an elaboration, the reader is referred to the relevant section (section 1.2) and also to Davies and Dubinsky (2004) and Polinsky (2013). As for the latter point, discussions about the obligatory control and about the non-obligatory control will be presented in chapters 5 and 7, respectively. I will examine them in the relevant chapters under review.

Chapter 2 “Control theories: a typology” overviews five different theories of control and concludes that each of the theories encounters several empirical and theoretical problems. Space considerations prevent me from going into the analyses in detail, so I would like to confine myself to looking into the description of the five theories.

The first theory is a predicational theory of control, which contends that the predication holds between the controller and the entire infinitive. In (8), for example, the controller *Mary* has a predicational relation with the embedded infinitive, so that this sentence has the following meaning: “In all worlds/situations in which Mary’s attempt succeeds, she has the property of swimming” (p. 47).

(8) [Mary] tried [to swim]. (p. 47)

Although this predicational relation can be established either semantically (Bach (1979) and Chierchia (1984)) or syntactically (Williams (1980) and Lebeaux (1984)), the shared claim of the predicational theory is that the control relation is established between the controller and the entire infinitive (not its null subject part).
The second theory is a binding theory, in which the existence of PRO in the infinitival subject position is presupposed and the PRO is taken to be a null anaphor. Look at the following sentence:

(9) John hoped [PRO to impress his roommates]. (p. 54)

Here, the PRO is interpreted as John. This interpretation is accounted for by the mechanism of binding theory. Binding theory hypothesizes that an anaphor must be bound within a binding domain. In (9), the binding domain is the whole sentence, so that the null anaphor PRO in (9) is bound by and interpreted as John.

The third theory is a theory based on lexical-functional grammar proposed by Bresnan (1982). This theory asserts that control is established at the level in which grammatical functions are encoded. For example, the embedded infinitive subject in (10) is interpreted as John.

(10) John tried to swim. (p. 59)

The interpretation is ensured by the following mechanism:

(11) \[ PRED \text{ try '<<(Subj),(XCOMP)>>'} \]
    \[ SUBJ \text{ PRED 'John'} \]
    \[ XCOMP \text{ PRED 'swim '<<(SUBJ)>>'} \]
    \[ SUBJ \]  

The mechanism in (11) guarantees that the f-structure value of the PRED attribute in the matrix subject has the same value as that of the SUBJ in the embedded clause.

The fourth theory is a movement theory of control advocated by Bowers (1973) and recently by Hornstein (1999). Given that θ-role assignment is reduced to feature checking, the embedded subject moves from within the embedded infinitival clause to the matrix subject position to check the θ-role. Take the following sentence as an example:

(12) [[[IP Mary [vP Mary v+hopes [IP Mary to [vP Mary v+win]]]]]]

In (12), Mary firstly checks the θ-role in its base-generated [Spec, vP] position and then moves to the matrix [Spec, vP] position to check the other θ-role. This movement makes it possible for Mary to be interpreted as the embedded subject in addition to the matrix subject. The crucial point of this theory is to eliminate the existence of PRO and to reduce all of the effects of the PRO to the properties of movement.

The last and fifth theory is the Agree model of control put forward by Landau (2000). Given the existence of PRO in the embedded infinitival
subject position, this theory argues that the T in (13) firstly agrees with *Mary in the matrix [Spec, vP] position and then agrees with the PRO, which consequently causes coindexation between *Mary and the PRO.

(13) *Mary, T, [Mary hopes [PRO, to win].

This coindexation allows the matrix subject *Mary to create a bound-variable reading with the PRO in the embedded clause.

Each of the five theories tries to solve the problems with Rosenbaum’s (1967, 1970) analysis, but there remain issues associated with each theory. One of the issues is about the necessity of positing the null element PRO. For example, Hornstein (1999) and Hornstein and Nunes (2014) argue against the existence of PRO.

Chapter 3 “Empirical arguments for PRO” of the book under review provides empirical evidence for the existence of PRO in a control infinitival clause (see also Reed (2014) for the argument). The author classifies the arguments into two types: indirect arguments and direct arguments. The indirect type of argument is supported by the presence of CP-elements within the control infinitival clause. If the control infinitival clause includes the element of *wh-phrases, the infinitival clause constitutes CP, the reason being that the *wh-phrase occupies [Spec, CP]. CP dominates TP, whose specifier position is assumed to be a subject position.

(14) [CP *wh-phrase [C′ C [TP Subject [T′ [T to] …]]]]

That is, if the clause includes the *wh-phrase, the clause has the subject position that PRO occupies. Actually, the *wh-phrase *which way appears in the control infinitival clause:

(15) *Mary asked [which way to go].

This implies that the control clause provides the subject position that PRO occupies:

(16) *Mary asked [CP which way [C′ C [TP PRO [T′ [T to] go]]]].

Therefore, the existence of PRO in the control infinitival clause is indirectly supported.

One of the direct arguments is related to a split control phenomenon. The examples in (17) are a case in point:

(17) a. *John talked with *Mary about each other.

b. John, proposed to *Mary, [PRO, to help each other].

(17a) shows that the reciprocal each other cannot choose the split elements, John and *Mary, as its antecedents. However, such a control relation is possible in (17b). This is because there exists a null subject that is controlled simultaneously by the matrix subject as well as the matrix object, and this null subject helps the reciprocal accept the split antecedent. Ac-
cordingly, the existence of PRO in the control infinitival clause is confirmed by direct evidence as well.

Chapter 4 “Predicting the distribution of PRO” points out the indispensability of empirical studies and insists that control clauses may be finite, PRO may be Case-assigned, PRO may appear in non-subject position, and PRO may be realized overtly as a lexical item. First, the finiteness of control is verified by the following sentences:

(18) a. Yesterday, John hoped [to solve the problem tomorrow].

b. O Yanis kseri [na kolimbai].
   the John-Nom knows Prt swim-3sg
   ‘John knows how to swim.’

The author supposes that the finiteness is determined by semantic tense and morphological φ-agreement. With this determinant of the finiteness in mind, the English example of (18a) shows that the control infinitive has a tense independent of the matrix past tense; the Greek example of (18b) shows that the control predicate kolimbai ‘swim’ manifests inflectional φ-agreement. Hence, control clauses may be finite as well as non-finite.

Second, evidence for the Case-marking of PRO is provided by the following Greek example:

(19) Anangasan tin Eleni [PRO na milisi afti
   forces-3-pl the Eleni-Acc PRO-Nom Prt speak-3sg she
   i idhja].
   herself-Nom
   ‘They forced Helen to speak herself.’

Here, the PRO carries the nominative Case different from its controller Eleni ‘Eleni,’ which bears the accusative Case. We assume that the PRO in (19) has the nominative Case, because the reflexive pronoun i idhja ‘herself,’ which takes over the property of the PRO, bears the nominative Case. If the PRO had no Case, the reflexive could not bear the nominative Case. Thus, PRO may be Case-marked.

Third, the appearance of PRO in non-subject position is attested by a control construction in Tagalog. Tagalog has a unique voice system, which is used to demonstrate what the subject is in a clause. For example, the active voice marker on the verb requires the Agent argument to be a nominative subject; and the instrumental voice marker on the verb requires the Theme argument to be the nominative subject. On these grounds, let us consider the following sentence:
In (20), the verb *ibigay* ‘give’ in the control clause displays the instrumental voice marker, which requires the Theme argument *ang-pera* ‘money’ to be the nominative subject. In other words, the missing argument PRO cannot be the nominative subject in the control clause. Thus, we can see that PRO may serve as the non-subject.

Fourth, the overt lexical realization of PRO is given by the Japanese anaphor example. In general, it is acknowledged that the overt anaphor in Japanese accepts any c-commanding subject as its antecedent, local or distant. However, it must be bound by the local controller when it occurs in the obligatory control context as in (21).

In this review, I would like to point out five sorts of properties. Incidentally, one more property, control in DP, is discussed in the book (section 5.6), but I would like to omit it to maintain the consistency of the discus-
sion. Since this property is related to the internal structure of the nominal, its inclusion could cause a lack of consistency in this review.

The first property is that the choice of the controller involves semantic principles as well as syntactic principles. Postal (1970) observes that the controller of PRO in an infinitival clause has the same status as the antecedent for an embedded pronominal subject in a modal finite clause, as illustrated in (23):

(23) a. Harry\textsubscript{j} told Max\textsubscript{i} [PRO\textsubscript{i/*j} to enlist in the army].
    b. Harry\textsubscript{j} told Max\textsubscript{i} [that he\textsubscript{i/*j} ought to/should enlist in the army].
    c. Bill\textsubscript{j} asked Tom\textsubscript{i} [when PRO\textsubscript{i/*j} to fire the canon].
    d. Bill\textsubscript{j} asked Tom\textsubscript{i} [when he\textsubscript{i/*j} should fire the canon].

These facts strongly suggest that the choice of the controller is not determined solely by syntactic locality principles like (4) but semantic factors are also a crucial factor to select the controller.

The second property is so-called partial control examined by Wilkinson (1971). The example in (24) is a case in point:

(24) I\textsubscript{i} regretted [PRO\textsubscript{i+} killing Sam the way we did] because he was such a nice guy.

This sentence indicates that the PRO can be controlled by the people who include the main subject I.

The third property is concerned with the split control phenomenon. For example, the antecedents of the PRO in (25) are John and Mary.

(25) John\textsubscript{i} proposed to Mary\textsubscript{j} [PRO\textsubscript{i+} to meet each other at 6].

(26) It was nice to shave oneself. (p. 175)

Postal (1970) argues, based on examples of this type, that the null subject of the control infinitival clause is an unspecified implicit argument, which binds the object anaphor oneself.

The fifth property is PRO-gate. Higginbotham (1980) maintains that a weak crossover (WCO) effect arises when the subject includes the overt pronoun followed by variables as in (27a) but no WCO effect arises when the pronoun is replaced with PRO as in (27b):
This contrast remains a problem; the question is why the intervention of PRO between the quantifier and the pronoun in the subject obviates the WCO violation.

Chapter 6 “Adjunct control” examines the syntactic properties of adjunct control. The author emphasizes that the analysis of adjunct control depends crucially on where the adjunct clause is attached in the syntactic structure and how the adjunct clause is interpreted. Every syntactic and semantic analysis of the adjunct clause remains controversial. In this sense, a lot of problems are open ended with respect to the analysis of the adjunct control. That said, the author points out that adjunct control is basically subject to the same constraints as argument obligatory control discussed in chapter 5. In this review, I would only like to provide two types of evidence. First, the controller is a local argument of the clause immediately dominating the adjunct:

(28) a. Mary grew up [PRO to be a famous actress].
    b. We bought Mary the dog [PRO to play with].

Second, the adjunct control permits partial control as well:

(29) Fred preferred [PRO to meet after lunch].

Chapter 7 “Non-obligatory control” claims that non-obligatory control is a pragmatic phenomenon involving logophoric reference and topicality. Non-obligatory control is a kind of dependency relation, which is defined as in (30):

(30) The NOC signature
    In a control construction [... [s PRO [...] ...]]:
    a. The controller need not be a grammatical element or a co-dependent of S.
    b. PRO need not be interpreted as a bound variable (i.e., it may be a free variable).
    c. PRO is [+human].

As for the logophorcity of non-obligatory control, the author relies on Kuno’s (1975) analysis, which takes PRO in the non-obligatory control to be a logophor. In fact, the antecedents of logophoric pronouns and reflexives are determined on the basis of mental perspective. Consider the following sentences:
(31)  a. John said to Mary that it would be easy to prepare herself for the exam.
    b. *John said about Mary that it would be easy to prepare herself for the exam.

The null subject PRO of the infinitival clause can be controlled by Mary in (31a) but not in (31b). Exactly the same argument applies to picture-anaphors as in (32):

(32)  a. John said to Mary that there was a picture of herself with a Mafia figure in the newspaper.
    b. *John said about Mary that there was a picture of herself with a Mafia figure in the newspaper.

Therefore, the PRO in the non-obligatory control clause is a logophor similar to picture-anaphors.

As for the topicality of non-obligatory control, the antecedent of the PRO in the non-obligatory control is either the discourse or the sentence topic. Consider the following sentences:

(33)  a. [After PRO\textsubscript{i} collecting some money], a bank account was opened by the landlord\textsubscript{i}.
    b. *[After PRO\textsubscript{i} collecting some money], a bank account was opened by a businessman\textsubscript{i}.

The difference in grammaticality between (33a) and (33b) shows that the definite NP can be a controller of the PRO but the indefinite NP cannot. Since definite elements refer to old topicalized discourse referents, the antecedent of the PRO in the non-obligatory control must be the discourse or the sentence topic. Given these arguments with respect to logophoricity and topicality, the author argues that non-obligatory control is a pragmatic phenomenon.

Finally, chapter 8 “Conclusion” provides the view that control is an intricately structured knowledge, which consists of significant generalizations and principles about human language. Then, the author concludes the book with a vision of control: the next thing that we have to do is to decompose knowledge into theoretically useful parts and to explicate which component of the grammar should fill the part.

3. Concluding Remarks

I would like to conclude this summary with some remarks on the great significance of the book under review. Although this book provides no specific theory of control, a huge range of previously discussed phenomena
are taken up and an overall picture of control is given. Having said this, the book under review is a brilliant contribution to the present understanding of control and to the proper perspective toward an explanatory theory of control, so that I would like to recommend this book to all readers concerned with or interested in control.

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