ECONOMY AND NONFINITE COMPLEMENTATION

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1. Introduction

This monograph, which is a revised version of Željko Bošković's Ph.D. dissertation submitted to the University of Connecticut in 1995, is a collection of interesting and ambitious case studies in minimalist syntax with special attention to infinitival and participial complement constructions. The wide variety of proposals made in this monograph have consequences that are of both empirical and theoretical importance. In the discussion that follows, I will concentrate on some selection of the proposals made by Bošković (mainly from Chapters 2–4) and discuss three topics: issues on categorial selection and the structure of clauses, correlations between thematic role assignment and syntactic structures and their consequences, and issues on *there*-constructions.

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2. Categorical Selection and the Minimal Structure Principle

2.1. Two Hypotheses

In Chapter 2, Bošković pursues two ideas that have also been explored by other authors in the Principles and Parameters approach and in the Minimalist Program.

- (1) Categorical selection (c-selection) can be dispensed with. What has been captured in terms of c-selection can be more adequately captured by semantic selection (s-selection) (or by lexical selection (l-selection)).
- (2) The computational system of human language does not allow superfluous steps/elements.

The first hypothesis is desirable for a conceptual reason. If individual predicates select particular categories, and if this selection does not follow from their semantic properties including s-selection, it will be extremely difficult for children to find evidence for it. The hypothesis is also of importance for the research in the Minimalist Program, because c-selection, if it is indispensable, cannot be reduced to requirements from LF or PF interface.¹

If one assumes that CPs and IPs are semantically equivalent (though it is not an innocuous assumption), then the hypothesis in (1) allows no predicate to select a CP without also allowing an IP as its complement. Bošković argues that the complement to *try*, which has been analyzed as a CP, can indeed be an IP. He then argues that the second hypothesis requires that it be an IP.

The second hypothesis is also intuitively appealing especially to researchers pursuing the working hypothesis of the Minimalist Program that a linguistic expression is nothing more than a pair of a PF representation and an LF representation meeting the condition of Full Inter-

¹ While it is an attempt to reduce syntactic requirements that do not follow from semantic requirements, the hypothesis itself is not necessarily a threat to the autonomy of syntax. If c-selection does not exist, the computational system of language can still produce syntactic objects without taking semantic information of their constituents into consideration. Violations of s-selection will then be checked at the level of LF. One would not strengthen the autonomy thesis by persisting in c-selection, which is, in any case, problematic for acquisition.

pretation at these levels. In a system of language with phrase structure rules, it could be possible to have a categorial node with no semantic or phonetic content. Empirical support for this hypothesis will then serve as an argument for the computational system of language without phrase structure rules.

It is, however, one thing to say that the basic idea of a hypothesis is plausible and another to find empirical support for it, or to explore its implementations and examine their implications. It should also be examined whether it is appropriate to characterize the second hypothesis as an economy condition (either on derivation or on representation) as Bošković does. I will discuss Bošković's analysis of infinitival complements and relative clauses in Sections 2.2 and 2.3, discuss its implications for Japanese relative clauses in Section 2.4, examine possible implementations of the second hypothesis that superfluous steps/elements are banned in Section 2.5, and discuss issues concerning phonetically null C and phonetically null Infl (=I) in Section 2.6.

2.2. Infinitival Complements and Relative Clauses

Under the analysis of control presented in Chomsky (1981), where the distribution of PRO is explained by the binding theory, control verbs take a CP complement, whereas ECM (=Exceptional Case Marking) verbs take an IP complement, as shown in (3).

- (3) a. John tried [_{CP} [_{IP} PRO to win]].
 b. John believes [_{IP} him to be crazy].

In the binding theoretic account of the distribution of PRO, PRO is allowed only in ungoverned positions, and hence PRO must be protected by a CP complement from government by a higher predicate. Bošković pursues a Case-theoretic account, which was originally proposed by Chomsky and Lasnik (1993). In this account, the PRO subject of an infinitive is licensed by null Case. Following Stowell's (1982) analysis of tense and Martin's (1992) extension of it, Bošković proposes that the infinitival complement of *try*-type verbs is specified as [+tense] and that of *believe*-type verbs as [-tense], and that only [+tense, -finite] Infl can assign null Case. Since the distribution of PRO follows from the nature of Infl, it is no longer necessary to assume the CP status for the infinitival complement of *try*-type verbs as opposed to the IP status for that of *believe*-type verbs.

Bošković argues that the complement to *try* can indeed be an IP. Consider the following examples.

- (4) a. It is believed [he is crazy].
 b. *It was believed at that time [you would fail her].
 c. *What the terrorists believe is [they will hijack an airplane].
- (5) a. It was tried at that time [PRO to fail her].
 b. What the terrorists tried was [PRO to hijack an airplane].

These examples indicate that while the finite complement to *believe* cannot be in a dislocated position, the infinitival complement to *try* can. Bošković (p. 29) proposes that all phonologically null heads must be properly governed, and that the Infl in finite clauses, being a set of features without lexical content, is subject to this requirement. The requirement is not satisfied in (4b, c). Since Infl in infinitives has phonological content (namely, /tu/), it is free from the requirement so that infinitives can appear in a displaced position as in (5). Given the hypothesis that phonologically null heads must be properly governed, (5) should be ruled out if the infinitives must contain an empty C. The contrast between (4) and (5) can only be captured, Bošković argues, if the infinitives in (5) can be IPs.

The above discussion is intended to show that the ([+tense]) infinitives without an overt complementizer can be IPs, and does not entail that they cannot be CPs. Bošković goes on to make this further step, and proposes that it follows from the second hypothesis discussed above, namely that no superfluous steps/elements are allowed in syntactic derivations/representations. This hypothesis subsumes not only the structures of complement clauses but also the structures of adjunct clauses, and in fact, his argument comes from the structure of relative clauses. Given the ban on superfluous steps/elements, and given the assumption that the complementizer in relative clauses does not have semantic content, the relative clause in (6a) must have the structure in (6b) rather than the structure in (6c).

- (6) a. the man John likes
 b. the man [_{IP} Op_i [_{IP} John likes *t_i*]]
 c. the man [_{CP} Op_i [_{C'} C [_{IP} John likes *t_i*]]]

Bošković calls relative clauses that are not introduced by an overt complementizer or an overt *wh*-phrase “zero null-operator relatives.” He claims, following Law (1991), that these relative clauses are indeed IPs. His arguments are based on comparison with other constructions involving IP adjunction. First, if zero null-operator relatives are IPs, (7)

involves adjunction of a subject to the IP immediately dominating it, and is expected to have the same status as the short subject topicalization illustrated in (8). (See Lasnik and Saito (1992) and Saito and Murasugi (1999).)

(7) *the man [_{IP} Op_i [_{IP} *t_i* likes Mary]]

(8) *I think that [_{IP} John_i, [_{IP} *t_i* likes Mary]].

Second, positing the IP status for zero null-operator relative clauses allows one to capture the similarities between relativization and other constructions involving adjunction with respect to resumptive pronouns. Saito (1985) observes that, as shown in (9), resumptive pronouns are prohibited in adjunction structures such as scrambling, embedded topicalization, and heavy NP shift. Bošković points out that resumptive pronouns are excluded in zero null-operator relatives as well, as shown in (10a).

(9) a. *Scrambling*

John_i-o, Mary-ga (*kare_i-o) mita (koto)

John-Acc Mary-Nom he-Acc saw (fact)

'John, Mary saw him.'

b. *Embedded topicalization*

That this solution_i, I proposed (*it_i) last year is widely known.

c. *Heavy NP shift*

John met [_{NP} a man that bought (*it_i) for his mother [_{NP} that painting by Rembrandt]_i].

(10) a. *the book I was wondering whether I would get it in the mail

b. the book [_{IP} Op [_{IP} I was wondering whether I would get it in the mail]]

c. the book [_{CP} Op [_C I was wondering whether I would get it in the mail]]

Between the two structures in (10b, c), the ban on superfluous steps/elements permits only (10b) for (10a). The ungrammaticality of (10b) follows from the assumption that IP-adjunction does not allow resumptive pronouns. Should the structure in (10c) be allowed, there should be no reason why the resumptive pronoun is not possible. Bošković claims that the ungrammaticality of (10a) provides further evidence for the IP status of zero null-operator relatives, and for the ban on superfluous steps/elements, which he claims forces it.

2.3. Infinitival Complementation in French

Bošković argues (in Chapter 3) that infinitival complementation in French presents empirical evidence for the Case-theoretic account of the distribution of PRO. Recall that, following Martin (1992), Bošković claims that only [+tense, –finite] Infl can check null Case, which in turn licenses the PRO subject of the infinitive. He does not discuss the issue of whether there is a deeper reason for why null Case is limited to [+tense, –finite] Infl or the correlation between tense and Case must be stipulated. In any case, Bošković assumes that the correlation between the possibility of PRO and the temporal properties of infinitival complements is mediated by null Case.

As shown below, *believe*-type verbs in French allow PRO in the subject position of the infinitival complement, in contrast to their English counterparts.

- (11) a. Pierre croit [PRO avoir convaincu son auditoire].
 Pierre believes to-have convinced his audience
 b. Pierre a constaté [PRO avoir convaincu son
 Pierre has noticed to-have convinced his
 auditoire].
 audience

Bošković proposes that the difference between English and French with respect to *believe*-type verbs is essentially semantic in nature. He claims that the infinitival complement to *croire* allows both [+tense] and [–tense] Infls, whereas its counterpart in English only allows [–tense] Infl. He points out that the infinitival complement of *croire*-type verbs allows eventive predicates with a nonhabitual interpretation, which is not possible with *believe* in English. The contrast is illustrated in the following examples.

- (12) a. Je crois rêver.
 I believe to-dream
 ‘I believe that I am dreaming.’
 b. Anna croyait arriver en retard hier alors
 Anna believed to-arrive late yesterday although
 qu’ en fait elle était à l’heure.
 in fact she was at the time
 ‘Anna believed that she arrived late yesterday although
 in fact she was on time.’
 c. Je crois réussir l’examen demain.
 I believe to-succeed the exam tomorrow

'I believe that I will pass the exam tomorrow.'

d. *John believed Peter to bring the beer.

Following Martin (1992), he assumes that (12d) is ungrammatical because the infinitival complement to *believe* does not contain Tense, which is necessary to license the temporal argument of the eventive predicate. He argues that the grammaticality of the eventive predicates in the French examples indicates that the infinitival complement to *croire* can be [+tense].

Given the assumptions that *croire* takes a [+tense] infinitive and that [+tense] Infl checks null Case, the subject position of the infinitival complement of *croire*-type verbs is expected to be a Case-checking position. This accounts for the ungrammaticality of ECM and passive raising in (13) with [+tense] Infl, because the movement of *Marie* to SpecAgr_oP in (13a) and the movement of *Pierre* to the matrix subject in (13b) violate the Last Resort Condition on movement.

- (13) a. *Pierre_i a cru Marie avoir acheté des
 Pierre has believed Marie to-have bought some
 fraises.
 strawberries

b. *Pierre_i a été cru [_{t_i} avoir acheté des fraises].

Bošković further claims that the grammaticality of (14) indicates that the embedded-clause subject can be Case-checked in an A'-position while undergoing *wh*-movement.

- (14) Qui_i Pierre croit-il [_{t_i} avoir acheté des fraises]?

This, in turn, indicates that the embedded Infl need not discharge null Case in French *croire*-type infinitivals. In order to rule in both (12a-c) and (14), Bošković assumes that the infinitival complement to *croire* can contain either a [+tense] or a [-tense] Infl.

If French infinitivals can be [-tense] as well, the embedded SpecIP in (13) will be a Caseless position, and the embedded subject should be allowed to undergo A-movement to the matrix SpecAgr_oP, an option that is in accordance with the Last Resort Condition. In order to deal with this problem, Bošković argues that the infinitival complement of *croire*-type verbs is a CP, so that movement of the embedded subject in (13) will violate the ban on A-movement across a CP boundary.² He

² Since the embedded SpecIP is a Caseless position, movement from the VP-internal subject position into this position would violate Greed if it is the final land-

claims that the CP-status of the complement to *croire* is independently supported by the distribution of dislocated infinitival complements. The claim that *croire* takes a CP apparently goes against the ban on superfluous steps/elements, however. I will come back to this in Section 2.6.

2.4. Relative Clauses in Japanese

Bošković's analysis of zero null-operator relatives, which we saw in Section 2.2, has an interesting implication for the analysis of relative clauses in Japanese. Japanese relative clauses are never introduced by an overt relative pronoun/complementizer. They take the form of what Bošković calls the zero null-operator relatives. Unless Japanese requires C for a syntactic reason as Bošković proposes for French, the ban on superfluous steps/elements predicts that Japanese relative clauses are always IPs.

This is in fact the analysis proposed by Murasugi (1991) on independent grounds. (See also Murasugi and Saito (1994) and references cited there.) One immediate consequence of the claim that Japanese relative clauses are IPs is that apparent relativization of the subject NP as illustrated below should not actually involve movement.

- (15) [soko-ni tatteiru] okoto
 there-in is standing man
 'the man who is standing there'

If this relative clause has the structure shown below, then whatever rules out (7) and (8) above will also rule out this structure.

- (16) [_{IP} Op_i [_{IP} t_i soko-ni tatteiru]] otoko

The fact that (15) is grammatical indicates that Japanese relativization does not involve movement at least in relativization of subject NPs.

ing site of the operation Form Chain. If so, no appeal to the CP boundary for the infinitival complement to *croire* is needed to rule out sentences like (13). As we will see in footnote 7, Bošković, noting a similar problem for the traditional ECM construction in English, suggests that object shift takes place overtly in ECM constructions. If the movement to the matrix SpecAgr₀P is to take place overtly in a single operation (followed/preceded by overt verb movement), there will be no violation of Greed. (13) will then have to be ruled out for the reason of improper movement to the matrix SpecAgr₀P crossing the CP boundary.

⁴ This is in fact the claim explicitly made in Hoshi (1995) and Murasugi (1997), among others, on independent grounds.

the following principle of economy of representation, which is a modified version of the principle originally proposed by Law (1991).

(19) *The Minimal Structure Principle (MSP)*

Provided that lexical requirements of relevant elements are satisfied, if two representations have the same lexical structure and serve the same function, then the representation that has fewer projections is to be chosen as the syntactic representation serving that function. (p. 25)

The MSP as a principle of representation is rather problematic for conceptual reasons. It compares two representations belonging to two different derivations, but the comparison would be meaningless if the two derivations are based on the same numeration. Since the comparison is intended to rule out the representation with a superfluous element, it is meaningful only if (two representations belonging to) two different derivations based on two different numerations are compared. This amounts to comparing two numerations or requiring that elements enter into the numeration only if it has an effect on output as Chomsky (1995) proposes. However, such a requirement regulates the numeration on the basis of LF and PF, so that the decision cannot be made locally. As an attempt to eliminate globality from the system, Bošković proposes that the numeration for a derivation contains only lexical elements, so that when a certain functional category becomes necessary in structure building, the lexicon will need to be accessed. Forming a numeration is costless, but access to the lexicon has cost and therefore should be a last resort. The MSP will then be replaced by a requirement that “the lexicon be accessed only when needed (i.e., when a certain functional category becomes necessary in structure building)” (p. 38). While the MSP is a restriction on superfluous elements in syntactic representation, this alternative is a ban on superfluous steps in derivation.

Unfortunately, the condition under which access to the lexicon can be authorized is still not very clear. In what sense is the complementizer *that* necessary in structure building if another well-formed representation could be constructed without it? In addition, the claim that the cost of the syntactic operation of merger is determined by the semantic/phonetic effect it has implies that syntax is not an autonomous system.

One cannot resort to the condition of Full Interpretation and rule out (derivations leading to) LF representations that contain an element

with no semantic content. This would incorrectly rule out finite complements with the overt complementizer *that*, if it does not have semantic content, as Bošković assumes.

A more natural way to implement the idea that no superfluous elements/steps are allowed in syntax seems to be to say that elements without semantic or phonetic content do not enter the numeration or enter the derivation simply because such elements do not exist in the lexicon. The ban on superfluous elements is then not an economy condition, but a consequence of the makeup of the system of language, where phrase structure rules do not exist and structures are built on elements drawn from the lexicon.⁵ There is one case in Bošković's analysis which does not fit this view. I will discuss the case in the following section.

2.6. Null C and Null Infl

As we have seen, Bošković claims that English has two types of Infl for infinitives, one for propositions as observed in the complement to *believe* and the other for irrealis (roughly corresponding to unrealized situations) as observed in the complement to *try*, and that both types of infinitives are IPs. In fact, Bošković (pp. 19f) suggests that there is another type of infinitive headed by *for-to* or *Ø-to*, which shows up as the complement of emotive predicates such as *want*. He proposes that these predicates lexically select (l-select), in the sense of Pesetsky (1991), the prepositional complementizer *for* and its null counterpart. Thus, English allows null C in a very limited context where it is l-selected by a limited set of predicates.

Following the line proposed in Watanabe (1993), Bošković assumes that the *for-to*/*Ø-to* complex is first generated under Infl, with *for*/*Ø* undergoing movement to C. In order for it to be l-selected, *Ø* must have some semantic or lexical content. As Bošković points out (p. 181), the *Ø-to* complex checks accusative Case rather than null Case, and therefore must be distinct from *to* in the infinitival complement of

⁵ See Safir (1993) for the IP/VP choice for bare infinitives, and Chomsky (1998: 55) for the DP/NP choice for noun phrases, which might be given a similar interpretation.

try. Also, C must have some feature prior to the movement of *for*/ $\emptyset$ in order for the movement to be triggered, though the nature of the feature is not clear. If it is the categorial feature of C, then an empty C must be merged with IP. This will force one to assume that the lexicon contains a complementizer with no lexical content, to go back to the derivational economy to ban the merger of an empty complementizer in other English infinitives, and to go back to its vague characterization. In order to avoid the vagueness, one can simply assume that *want* I-selects *for*/ $\emptyset$, which selects Infl that assigns accusative Case to the subject.

Bošković argues that a null complementizer is also required in the infinitival complement of *believe*-type verbs in French. He maintains that the infinitival complement to *croire* projects CP despite the fact that it has no overt complementizer. Bošković (p. 198) hints at two possibilities to account for this unexpected pattern. One is that *croire* I-selects a null complementizer. The other is to relate the observation to the fact that finite complements of *believe*-type verbs in French must be introduced by an overt complementizer. He suggests that “French propositional I has a feature that must be checked through adjunction to C” (p. 198, note 25). Again, the exact nature of this process and the content of C prior to the adjunction of Infl are not discussed, which is unfortunate since the answers to these questions seriously affect the status of the ban on superfluous steps/elements as an economy condition.

Bošković’s discussion is based on the assumption that the complementizers heading infinitives and finite propositions do not have semantic content and that IPs and CPs are of the same semantic type. As a result, languages like English, which allow finite complements and relative clauses without an overt complementizer as well as the ECM construction, are analyzed as the default cases. Languages like French, in which, according to Bošković, embedded clauses are always CPs, are analyzed as involving a special mechanism by which Infl requires the presence of C. It is questionable whether this is a desirable outcome. At least, it makes one wonder why complementizers exist at all.

The function of Infl also needs more careful consideration. As we have seen, Bošković proposes that phonologically null heads must be properly governed. The requirement itself can probably be reduced to the requirement that such heads must undergo head movement as pro-

posed by Pesetsky (1995). Extending the requirement to finite Infl, however, entails that modal auxiliaries are not directly generated under Infl, and that Infl counts as phonologically null even when an auxiliary is moved into it. The first point forces one to abandon the possibility that Infl is the locus of modality for both finite clauses and infinitives. Also, it is far from clear how the second point can be made compatible with the I-to-C movement in Subject-Auxiliary Inversion. Under the Split-Infl Hypothesis, modals and *to* can be generated under Tense with Agr_s above it left phonologically null. It must still be stipulated that *to* is allowed to move to Agr_s while auxiliaries are not except in matrix questions.

3. Agentivity and the Minimize Chain Links Principle

Bošković attempts to incorporate descriptive generalizations couched in semantic terms into his syntactic analysis. This is an example indicating that issues on syntax-semantics correspondence are becoming more and more important to hard syntacticians. In this section I will discuss one case that illustrates his approach.

There are verbs in English that do not pattern with either *believe* or *try* with respect to ECM and licensing of PRO in the subject position of their infinitival complement. These verbs are called *wager-class* verbs by Pesetsky (1991). They are exemplified by verbs like *admit*, *affirm*, *allege*, *announce*, *concede*, *maintain*, *scream*, *shout*, *wager*, and *whisper*. (20) summarizes important characteristics of *wager-class* verbs.

- (20) a. They do not allow PRO.
 e.g., *I wagered PRO to be foolish.
 b. They allow passive raising.
 e.g., John was wagered by the press to be crazy.
 c. They do not allow ECM.
 e.g., *John wagered Peter to have passed the exam.

The first two properties are shared with ECM verbs such as *believe*. Bošković argues that this is so because *wager-class* verbs take an infinitival complement that is [–tense]. Unlike ECM verbs, however, they do not check the accusative Case on the complement subject. Bošković proposes that this unexpected behavior is related to a semantic property of these verbs.

Pesetsky (1991) notes that *wager-class* verbs assign the agent role to their subject, and proposes that agentive verbs cannot assign Case via

ECM. Bošković claims that this condition should not be simply stipulated but should be derived from the mechanism of thematic role licensing and Case licensing. He appeals to Hale and Keyser's (1993) proposal that agentive verbs require (at least) two VP shells, with the higher VP shell being headed by a null "agentive" V. Bošković further proposes that both the agentive V and the main verb assign an external *theta*-role. Under this analysis, an agentive subject is *theta*-marked in the SpecVP of the main verb, moves into the SpecVP of the null agentive verb to be *theta*-marked again in that position.

Let us now consider how the ECM construction is ruled out and passive raising is ruled in under Bošković's analysis. The ECM construction has the following structure.

- (21) *[_{Agr_oP} [_{VP} John_i V_{ag} [_{VP} *t_i* wagered [_{IP} Peter_j to be *t_j* crazy]]]]]

In order to have its Case checked by the *wager*, the embedded subject must move to SpecAgr_oP in the matrix clause. Agr_o must be higher than *wager*, but it cannot be between *wager* and the agentive null V. If it were, *wager* would move through Agr_o to the agentive V, and this movement violates the condition Bošković adopts from Li (1990) that prohibits head movement between two *theta*-assigning positions through a non-*theta*-assigning position. Once Agr_o is projected above the agentive VP, the embedded subject must move to its Spec crossing the Spec positions of the two VPs. Bošković points out that this movement violates the Minimize Chain Links Principle proposed in Chomsky (1993). The example is thus ruled out either because the Case feature of the embedded subject remains unchecked or because the Minimize Chain Links Principle is violated.

The well-formedness of the passive raising construction is expected in the proposed analysis, where the matrix external argument with the agent role plays a crucial role in blocking the movement of the embedded subject. On the assumption that the licensing of the agent role in passive sentences does not require the position of SpecVP (either because the agent role is licensed exclusively by the preposition *by* or because the agent role is borne by an X⁰ element along the lines of Baker, Johnson and Roberts (1989)), the embedded subject can move to the matrix subject position without violating the Minimize Chain Links Principle.

Because Agr_o is not a *theta*-assigning position for *wager*, it cannot intervene between the two VP shells, for the movement of the verb not to go through a non-*theta* assigning position. Bošković points out that

if a *theta*-role is assigned from the Agr_o position, the Agr_oP projection should be allowed to be between the two VP shells. He proposes that sentences with *declare* as in (22) are possible because of this option.

(22) Congress declared March to be National Syntax Month.

Pesetsky (1991) notes that the event described by the matrix verb in this sentence affects the referent of the embedded subject: The act of declaring changes the property of March. Pesetsky concludes that the matrix verb *theta*-marks the embedded subject across the embedded-clause boundary. Bošković, on the basis of Lasnik's (1995a) argument that a V adjoined to Agr_o and an NP in SpecAgr_oP can be in a *theta*-licensing relation, proposes the following structure (where the raising of Agr_o+*declared* complex to V_{ag} is omitted) for (22).

(23) Congress_i [VP t_i V_{ag} [Agr_oP March_j Agr_o+declared_k [VP t_i t_k [IP t_j to be t_j National Syntax Month]]]].

Here the Agr_oP projection can be located between the two VP shells because a *theta*-role is assigned from the Agr_o position. Thus, the observation that agentive verbs can exceptionally Case-mark lexical NPs if they *theta*-mark them is shown to render support to his analysis.

I believe Bošković's analysis discussed in this section illustrates a very interesting case where an otherwise curious correlation of syntactic and semantic notions is given a systematic account. Here the semantic notion of "agentivity" is given a structural interpretation based on VP-shells, which serves as the basis of the account of the contrast between active and passive sentences. The ability of a verb to assign accusative Case is related to its ability to check an internal *theta*-role from the Agr_o position, which has been independently argued for by Lasnik (1995a). The latter ability is reflected in the affectedness observed on the subordinate subject. The analysis deserves special mention not only for its elegance but also for its concrete empirical claims and observations, and hence is the most successful part of this monograph.

4. Beyond Nonfinite Complementation: *There*-Constructions

Bošković successfully demonstrates that the consequences of his proposals extend beyond sentences with infinitival complementation. In this section, I will examine his extensive discussion on *there*-constructions in English.

Bošković's discussion on *there*-constructions is centered around the three issues listed in (24). Following Bošković, I will call the indefinite

post-verbal subject in *there*-constructions “the associate (NP).”

- (24) a. Does the associate NP have its Case checked by the verb *be* or by Infl?
 b. The agreement between the associate and the tensed verb suggests that some type of movement is involved. What moves for what reason? Is the movement driven by Greed or Enlightened Self-Interest?
 c. The associate NP in *there*-constructions shows “low behaviors.” It exhibits semantic properties that are not expected if it is in the position of *there* at LF.

I will discuss (24a) in Section 4.1 and (24b, c) in Section 4.2.

4.1. Case

Chomsky (1993) proposes that the associate NP is in a Caseless position, and therefore adjoins to *there* in the LF-component to have its Case checked by Infl. The movement is motivated by Greed: the associate NP moves for its own reason. Lasnik (1995a), on the other hand, proposes that the verb *be* assigns partitive Case to the associate NP. The associate NP therefore does not need to move for a Case reason. It moves, however, so that the morphological requirement of *there* that it be affixed in LF to an element bearing partitive Case. The movement of the associate in this case is driven by Enlightened Self-Interest.

Bošković shows that sentences with *wager*-class verbs provide a test for determining how the associate of *there* is Case-licensed.

- (25) a. *He alleged stolen documents to be in the drawer.
 b. *John wagered a stranger to have been in that haunted house.
 (26) a. He alleged there to be stolen documents in the drawer.
 b. John wagered there to have been a stranger in that haunted house.

(25a, b) are ungrammatical because the indefinite subject fails to have its Case checked, as discussed in Section 3 above. The indefinite NPs in (26) then cannot have their Case checked by the matrix verb either. The verb *be* is the only source of Case licensing for the associate NPs in (26a, b). Bošković interprets this as supporting evidence for Lasnik’s (1995a) argument that *be* has the ability to check Case and that *there* plays no role in the Case-checking of the associate.

If one follows Lasnik (1995a), as Bošković does, in assuming that

there has its own Case feature that needs to be checked by an appropriate licensing head, an interesting question arises with respect to checking of the Case feature of *there* in (26). *There* in (26) must have its Case feature checked in the Spec of the Agr_o that takes the agentive VP as complement. The question is why *there* can be in this position while the Minimize Chain Links Principle prevents indefinite NPs in (25) from moving into it. In order to solve this problem, I propose, following Safir (1993), that *there* originates in SpecIP or SpecAgrP. In (26) above, *there* can be base-generated in the SpecAgr_oP and hence does not violate the Minimize Chain Links Principle.

4.2. Driving Force for Movement and Low Behaviors of the Associate

While he follows Lasnik in assuming that *be* has the ability to check Case, Bošković presents an argument for Greed over Enlightened Self-Interest for the driving force for movement. His argument is based on facts concerning A-movement within infinitival complements of verbs like *conjecture*. Verbs of this class (which Bošković calls BELIEVE-class verbs) assign a subject *theta*-role, and s-select a propositional complement just like *believe*, as shown in (27a). Unlike *believe*, they do not check accusative Case, as shown in (27b). They do not allow ECM or control as shown in (28), but marginally allow passive raising as shown in (29).

(27) a. John has conjectured that Mary would arrive early.

b. *John has conjectured something/it.

(28) a. *John has conjectured [PRO to like Mary].

b. *John has conjectured [Mary to like Peter].

(29) ?Mary has been conjectured to like Peter.

Now the crucial example is given in (30).

(30) *John has conjectured [stolen documents_i to be *t_i* in the drawer].

Given the assumption that the verb *be* can check partitive Case to the associate NP, *stolen documents* in (30) can be Case-checked in the original position. If movement can be motivated by Enlightened Self-Interest, *stolen documents* should be allowed to move to the complement subject position so that the EPP(=Extended Projection Principle)-feature of the complement Infl will be checked. The ungrammaticality of this example, Bošković argues, indicates that Enlightened Self-Interest cannot serve as a driving force for movement, and that movement must be driven by Greed: elements can move only if they have their own

reason to move.⁶ Thus, Bošković adopts Greed and rejects Enlightened Self-Interest while still assuming that *be* is a Case-licenser.⁷

Now that Bošković chooses Greed over Enlightened Self-Interest, whatever movement is involved in *there*-constructions must be driven by Greed. Let us now consider what motivates what to move in *there*-constructions in Bošković's analysis. Since the associate NP has its

⁶ One of the anonymous reviewers has pointed out that if *be* checks partitive Case, the examples in (25) above violate Greed, so that they need not be ruled out by the Minimize Chain Links Principle as discussed in Section 3. In order to derive sentences like *Stolen documents are in the drawer*, however, one must assume that *be* checks partitive Case optionally. In cases where *be* does not license partitive Case, one still needs the Minimize Chain Links Principle to rule out sentences like (25).

⁷ The following examples are often claimed to be problematic for Greed.

- (i) a. John_i seems [_{IP} *t_i* to be *t_i* crazy].
- b. John believes the students to be crazy.

In order for the EPP to be satisfied in (ia), *John* must move through the embedded SpecIP on its way to the matrix SpecIP. Bošković assumes that movement through the embedded SpecIP is required by the Minimize Chain Links Principle. *John* undergoes the operation Form Chain and moves to the matrix SpecIP in order to satisfy its morphological requirements, in accordance with Greed. (ib), however, is more problematic if the surface position of *the students* is the embedded SpecIP. If the embedded SpecIP is the final landing site of the operation Form Chain before Spell-Out, then movement to it will not be motivated by Case checking of *the students*, contrary to Greed. Under Enlightened Self-Interest, movement to the embedded SpecIP would be motivated by satisfying the EPP (or checking the strong N feature of the infinitival Infl). Bošković proposes that overt object shift (along with overt verb movement) has applied in (ib) so that the embedded subject NP (*the students*) is located in the matrix SpecAgr_oP, a Case-checking position, at Spell-Out.

On the other hand, Bošković notes that the *wh*-movement in (ii) would violate the Subject Condition if overt object shift has applied.

- (ii) Who did you see [a picture of *t*]?

In fact, Lasnik (1999) proposes on independent grounds that object shift is optionally overt in English. If extraction out of an object NP is possible only when it stays in its base position, and if antecedent contained deletion (ACD) is possible only when the object NP is moved out of the VP overtly, then ACD and extraction out of an object NP are predicted not to cooccur. The prediction seems to be borne out, as the unacceptability of (iiib) suggests.

- (iii) a. John usually reads books that Mary does.
- b. *What does John usually read books about _____ that Mary does?

I am grateful to one of the anonymous reviewers for bringing this possibility to my attention. One of the native speakers I consulted reports that the sentence in (iiib) improves if the second *does* is changed into *reads* so that it does not involve ACD.

- (iv) ?What does John usually read books about _____ that Mary reads?

Case checked in its surface position under the assumption that *be* can check Case, the associate NP itself cannot raise to *there* in LF under Greed for a Case reason. To explain the agreement between the associate NP and Infl, Bošković follows Lasnik's (1995a) proposal that *there* is an "LF affix" that must be attached to an NP bearing partitive Case, but he takes the metaphor even more seriously: Rather than the associate NP moving and adjoining to *there* as Lasnik (1995a) proposes, *there* itself lowers (just like an affix does in affix hopping) and adjoins to the associate in LF. The movement of *there* is motivated by Greed: It moves to overcome its morphological inadequacy as a stranded affix.

Notice that this proposal maintains the gist of Lasnik's (1995a) proposal that the relevant movement is driven by the need to overcome a morphological inadequacy of the expletive rather than by Case-checking of the associate. It also captures the well-known fact (which has been problematic for any analysis where the associate is raised in LF) that the associate NP is interpreted at LF in its surface position and not in the position occupied by *there*. The following examples illustrate the point.

- (31) a. There is likely to be someone in the garden.
 b. Someone is likely to be in the garden.

While *someone* in (31b) can take either the wide scope or the narrow scope, *someone* in (31a) must take the narrow scope. The observation is unexpected for the analysis that raises the associate NP to the position of *there* in LF under the natural assumption that the configurations at LF rather than the surface configurations determine scope relations. Under Bošković's analysis where *there* is lowered in LF, the fact receives a straightforward account, since *someone* remains in the embedded clause at LF.

Bošković further defends the lowering analysis of *there*-constructions using examples with antecedent-contained deletion (ACD). He claims that the contrast between the following examples indicates that the associate NP is not in a VP-external position at LF.

- (32) a. John expected no one that I did [_{VP} *e*] to be electable.
 b. *John expected there to be no one that I did [_{VP} *e*] electable.

In (32a) the embedded subject moves to the matrix SpecAgr_oP (by LF) so that the matrix VP can be copied into the null VP without causing infinite regress. The sentence thus can mean "for no *x* that I did *e*, John expected *x* to be electable" where *e* can be replaced by "expect *x*

to be electable.” The ungrammaticality of (32b) indicates that *no one that I did* is not moved out of the matrix VP. The difference is expected under the lowering analysis, according to which the associate never raises and adjoins to *there*.

Another fact that Bošković argues favors his analysis concerns agreement in *there*-constructions with conjoined NPs as the associate. As illustrated by the following examples, the first conjunct participates in the agreement with the verb.

- (33) a. There is a man and a woman in the house.
 b. *There are a man and a woman in the house.
 c. There is a man and five women in the house.
 d. *There are a man and five women in the house.
 e. There are four men and a woman in the house.
 f. *There is four men and a woman in the house.

Bošković argues that under the analysis where *there* is adjoined to an NP bearing partitive Case, the “first conjunct agreement” can be accounted for by the requirement that the LF-affixal property of *there* be satisfied in the most economical way, i.e. through the shortest movement possible, combined with the well-known fact that the first conjunct in a coordinate structure behaves as if it is higher than the second conjunct.

Lasnik (1995b) pursues an alternative approach to account for the “low behaviors” of the associate NP. He proposes that formal features of the associate NP move to adjoin to Agr_S (=Infl), not to check off the nominative Case, which has been checked off by *there*, but to check off the agreement features of Agr. (*There* does not have agreement features in this analysis.) Lasnik (1995b) further proposes that feature-movement only moves formal features and does not affect referential and quantificational properties, so that it should not have any consequences in such phenomena as binding, control, and scope relations. The associate NP is thus expected to exhibit “low behaviors” even after its formal features have been raised.

Bošković’s lowering analysis and Lasnik’s feature movement analysis work equally well, as far as empirical coverage is concerned. This is expected because they both instantiate the basic idea that *there* and the associate NP must be related at LF with the associate NP staying in situ. The only difference between the two, as far as I can see, is a conceptual one. While Bošković’s lowering analysis can maintain Greed, Lasnik’s analysis must resort to Enlightened Self-Interest.

Thus, Greed can be maintained if *there* itself lowers as an “LF affix” to satisfy its own morphological requirement. However, this apparently elegant solution to the problem of Greed has actually been made possible in exchange for the poorly understood operation of “LF affix hopping.” Thus, before closing this section, I would like to compare PF affix hopping and LF affix hopping.⁸ Both types of affixes contain agreement features: affixes in PF affix hopping carry agreement features on V (as well as tense features) and hence attach to V, whereas *there* as an LF affix (as proposed by Bošković) carries agreement features on N (as well as Case features) and hence attaches to N. I believe analyzing *there* as an affix has conceptual motivation in this sense beyond technicality needed to relate *there* to the associate NP.

Bošković claims that the examples in (33) above show that *there* adjoins to the first conjunct, or to the closest partitive-Case-bearing NP. The locality for *there*, however, is somewhat looser than that for PF affixes. A PF affix can hop only to an adjacent element. Even a negative element blocks PF affix hopping. The LF affix clearly can “hop” to an element which is not strictly adjacent.

- (34) a. *John not left the room.
 cf. John did not leave the room.
 b. There is not a man in the room.

The question is whether this difference between lowering of a PF affix and lowering of an LF affix can be reduced to some independent factors, for example, to the nature of the relevant interface levels. One may argue that the notion of “closeness” has different meanings at PF and at LF. At PF, the notion of linearity plays an important role, and hence the “closest” element at PF is always an adjacent element. On the other hand, as pointed out by an anonymous reviewer, string adjacency does not play any role in LF, and *there* as an LF affix need not “hop” to an adjacent element as long as it “hops” to the closest NP that bears partitive Case, which is the only visible feature for the LF affix. Thus, the loose locality effect exhibited by *there* as an LF affix may be given a natural interpretation, as long as one can assume that partitive Case, which Lasnik (1995a) claims to be a structural Case, is

⁸ See Lasnik (1995c) on affix hopping as a PF process.

visible when the LF affix lowers, and that the affix with nominative Case can be safely attached to an NP with partitive Case.

I conclude at this point that Bošković's "LF affix hopping" analysis is conceptually superior to Lasnik's analysis to the extent that it is desirable to maintain Greed.

5. Concluding Remarks

I would like to close this article with one final remark on what I think is the most interesting and important aspect of this monograph. It is that the author is impressively successful in his attempts to factorize generalizations couched in semantic terms and to specify syntactic correlates to them, thereby giving explicit accounts to the interaction between syntactic principles and semantic notions. For example, we have seen how semantic notions such as agentivity, affectedness, and habituality interact with purely syntactic economy principles in his analysis. The book demonstrates that differences in meaning can be shown to lead to very different syntactic behaviors, a possibility that I believe must be explored further by collaboration between syntacticians and semanticists.

The book contains a wealth of interesting empirical and theoretical results in the domain of non-finite complementation and is valuable not only for those who work on minimalist syntax but also for those who are more interested in empirical research in the domain of non-finite complementation.

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