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Is the EPP Feature Really Necessary? No!

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1. Introduction

Mysterious is the Extended Projection Principle (EPP)[1] feature, which has been an annoying problem ever since it was originally formulated by Chomsky (1981: 26, 1982: 10) to describe the obligatory presence of expletives in the subject position, namely SPEC-T, of English-type languages if nothing raises to that position, as in (1), as Chomsky (2005: 22) admits.

(1) There have arisen some problems.

Chomsky (2005: 22) adds that EPP problems are considerably more general, however. Thus, while *v* typically permits both long-distance agreement and raising, as seen in (2), *v** does not, as shown in (3).

(2) There have seemed to arise some problems.

(3) *there will [$_{v*P}$ a student [$_{v*'}$ *v** [solve some problems]]]
(Chomsky 2005: 22)

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1) [Spec, IP] is obligatory, perhaps as a morphological property of I …….. The specifier of IP is the subject of IP ……. The Extended Projection Principle (EPP) plausibly reduces to a strong D-feature of I ……. (Chomsky 1995: 55, 212)

Chomsky (2005: 22) argues that, for Exceptional Case Marking (ECM) infinitivals in (4), EPP may in part be reducible to the general step-by-step property of Internal Merge (IM); but only in part, because of the special role of SPEC-T in such operations, a residual EPP effect.

(4) The constituents expected the candidate to win the election.

Chomsky (2005: 7) says that no one has postulated an "EPP property" for EM or stipulated that it satisfies the No-Tampering Condition (NTC). Chomsky also says that the perennial problem of EPP is among the many questions which remain unanswered. Chomsky (2005: 22) adds that possibly reformulation of the EPP properties might open a way to resolving the problems they raise. If so, it would be a welcome development, another step towards the goals of the MP and the long tradition of inquiry from which it derives.

Consequently, based on Chomsky's several recent claims, this paper discusses the possibility of removing the EPP feature. To achieve this aim, this paper falls into 4 sections. Section 2 presents the so-called phase-based EPP-less derivational process. Section 3 accounts for the derivations of several well-known EPP-related constructions, without any reliance on the mysterious property EPP. Section 4 comes up with the concluding remarks of this paper.

2. A New Phase-based Derivational Process

Since it was introduced to reduce the computational burden or complexity by Chomsky (2000: 106), the notion of phase seems to me to have played the most important role in minimalism. The so-called phase-based EPP-less derivational process is outlined below.

(5) The Phase-based EPP-less Derivational Process

a. Lexical subarrays (LSAs) needed to form phases are extracted from a lexical array (LA) needed to derive a complete sentence. (Based on Chomsky 2000: 106)
b. When the LSA of a given phase is exhausted, the computation may proceed if possible; or it may return to the LA and extract another LSA needed to form the next higher phase, proceeding as before, until the LA is exhausted.
(Based on Chomsky (2000: 106))
c. All syntactic operations involve an Agree relation between a probe P and a local goal G which is sufficiently close to the probe (or, in the case of a multiple Agree, a relation between a probe and more than one local goal). (Based on Chomsky (2000: 122ff), Chomsky (2001b: 9, 13), and Radford (2004: 381))
d. Defective Intervention Constraints
α > β > ɣ, where > is c-command, β and ɣ match the probe α, but β is inactive so that the effects of matching are blocked. (Based on Chomsky (2000: 123))
e. Once all the syntactic operations needed to apply within a given phase have been completed, the internal domain of the phase is simultaneously transferred to the phonological and semantic components and then becomes impenetrable to further syntactic operations[2]. (Based on Chomsky (2000: 108, 2001a: 13))

Even more important than (5a-e) in eliminating the EPP feature are the following assumptions in (6).

(6) a. Phase heads (PHs), *v** and C, have ϕ-features[3] and edge-features (EF). IM will satisfy EF only for a phase head (PH)

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2) Phase Impenetrability Condition (PIC)
a. In phase α with head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations. (Chomsky 2000: 108)
b. The domain of H is not accessible to operations outside HP; only H and its edge are accessible to such operations. (Chomsky 2001a: 13)

3) PH C has a tense feature which is also inherited by T.

b. V and T inherit ϕ-features from *v** and C, respectively, and then they, serving as probes, peruse their internal domains in search of their active goals. Once they find their active matching goals, the uninterpretable, hence unvalued, features of the probes and the goals are checked/valued and deleted for Full Interpretation (FI).

c. EFs of *v** and C play two roles at the same time. Based on their own EFs, *v** and C themselves, on the one hand, probe their internal domains. Once finding their goals, their very EFs may raise their goals to SPECs of PHs. Based on the EFs inherited from *v** and C, respectively, on behalf of their PHs, V and T, on the other hand, probe for their active matching goals. Once finding their goals, the very EFs of V and T raise their goals to SPECs of V and T, respectively. (Based on Chomsky (2004: 15), Chomsky (2005: 6, 14, 27), and Richards (2007: 17))

3. EPP-Related Constructions

3.1. Expletive Constructions

Let's discuss the derivation of the expletive construction in (1), repeated in (7)[4].

(7) a. There have arisen some problems.

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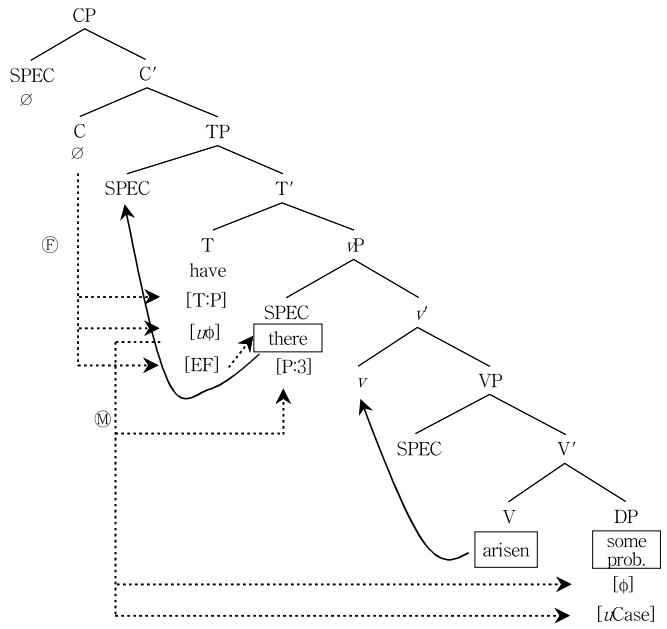
4) Abbreviations and Codes Used in This Paper
ϕ-features: Agree features {[person], [number], [gender]}; P: [person]: {1: [first], 2: [second], 3: [third]}; T: [tense] {[P]: [present], [P′]: [past], EF: [edge]; *u*: unvalued; Ⓕ: feature inheritance; ∅: null, Ⓐ: Agree, Ⓜ: multiple Agree

b.



Note that the light verb in (7b) is *v*, not *v**. In other words, *v* is not a PH whereas *v** is a PH. In (7b), therefore, there is only one phase, CP.

Once the computation builds the CP phase in (7b), T inherits Φ-features from C. T, serving as a probe, peruses its internal domain in search of any suitable goals, finding its two active matching goals, *there* and *some problems*: they are local and active, and they have both interpretable Φ-features and uninterpretable, hence unvalued, Case features to be valued. A kind of multiple Agree[5] relation holds between T, acting as a probe, and its two goals, *there* and *some problems*. The unvalued Φ-features of T and the unvalued Case features of *there* and *some problems* are checked/valued and deleted for Full Interpretation (FI).

T, on the other hand, inherits EF from C, finding and raising its closest

5) As for multiple Agree, see Radford (2004: 304). As for person features of expletive associates, see Sigurðsson (1996).

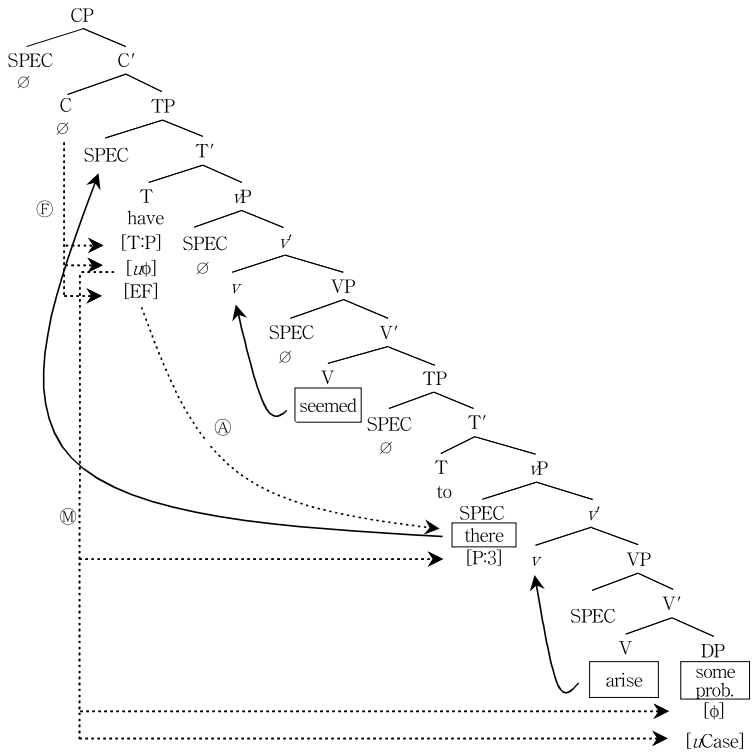
active goal, *there*, to SPEC-T. Finally (7a) is successfully derived without any reliance on the EPP feature.

3.2. Subject-to-Subject Raising Constructions

Let's discuss the derivation of the raising construction[6] in (2), repeated in (8).

(8) a. There have seemed to arise some problems.

b.



6) Only the so-called subject-to-subject raising construction containing the *seem* predicate will be dealt with in this subsection. The so-called subject-to-object raising construction, aka the Exceptional Case Marking (ECM) construction, will be dealt with in the next subsection.

Note that the two light verbs in (8b) are *v*s, not *v**s. In other words, *v* is not a PH whereas *v** is a PH. T in the embedded *to*-infinitival clause is not a PH, either[7]. In (8b), therefore, there is only one phase, CP.

Once the computation builds the CP phase in (8b), Only the finite T, not the non-finite T, inherits Φ-features from C. The very finite T in the matrix clause[8] probes its domain in search of any suitable goals, finding its two active matching goals, *there* and *some problems*: they are local and active, and they have both interpretable Φ-features and uninterpretable, hence unvalued, Case features to be valued. A kind of multiple Agree relation holds between T, serving as a probe, and its two goals, *there* and *some problems*. The unvalued Φ-features of T and the unvalued Case features of *there* and *some problems* are checked/valued and deleted for FI.

T in the matrix clause, not T in the embedded clause, on the other hand, inherits EF from C. It probes its internal domain, finding and raising its closest active goal, *there*, to SPEC-T. Finally (8a) is successfully derived without mentioning the EPP feature at all.

Let's discuss the ungrammaticality of the following example containing *v**, which is regarded as a PH, in (3), repeated in (9).

(9) a. *There will a student solve some problems.

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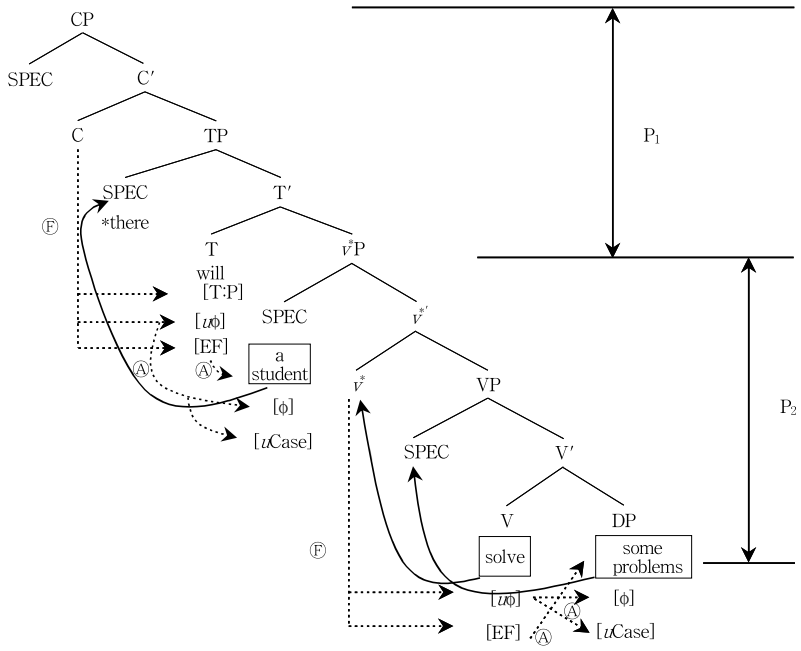
7) TP without C, shown in raising constructions, is called a defective clause and cannot become a phase on its own.

8) As is well known, non-finite Ts present in raising constructions can't inherit ϕ-features from C whereas non-finite Ts present in control constructions and finite Ts can.

b.



Note that the light verb in (9b) is *v**, not *v*. In other words, *v** is a PH whereas *v* is not a PH. In (9b), therefore, there are two phases, *v**P and CP.

Once the computation builds the first phase, *v**P, as shown in (9b), V inherits Φ-features from *v**. V, serving as a probe, peruses its internal domain in search of a suitable goal, finding its active matching goal, *some problems*: it is local and active, and it has both interpretable Φ-features and an uninterpretable, hence unvalued, Case feature to be valued. An Agree relation holds between V, serving as a probe, and its goal, *some problems*. The unvalued Φ-features of V and the unvalued Case feature of *some problems* are checked/valued and deleted for FI.

V, on the other hand, inherits EF from *v**, finding and raising its active goal, *some problems*, to SPEC-V. PIC prevents it from entering into any

further Agree relation. There is only one CP phase left.

At the CP level, T inherits Φ-features from C. T, serving as a probe, peruses its complement in search of a suitable goal, finding its active goal, *a student*: it is local and active, and it has both interpretable Φ-features and an uninterpretable, hence unvalued, Case feature to be valued. An Agree relation holds between T, serving as a probe, and its goal, *a student*. The unvalued Φ-features of T and the unvalued Case feature of *a student* are checked/valued and deleted for FI.

T, on the other hand, inherits EF from C. On behalf of C, T finds and raises its active goal, *a student*, to SPEC of T. As the unvalued Φ-features of T are valued at this point, the Case feature of *there* cannot be valued. (9), therefore, is ruled out, as desired.

In sum, we have no difficulty in accounting for the grammatical difference between (8) and (9), even though the EPP feature is dispensed with.

3.3. ECM Constructions

ECM constructions are well known to have posed the most serious challenge in eliminating the EPP feature. Let's discuss in some detail the derivation of the following ECM construction in (4), repeated in (10), based on the so-called phase-based EPP-less derivational process presented in section 2.

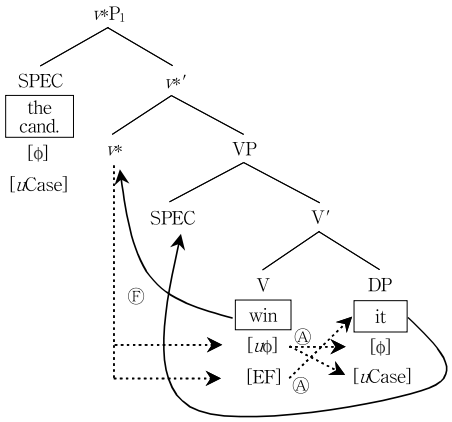
(10) The constituents expected the candidate to win it.

Note that the embedded *to*-infinitival clause in the ECM construction is a defective clause. As it does not have C, it cannot form a phase. In (10), therefore, there are three phases, embedded *v**P, matrix *v**P, and matrix CP. The phase-based derivation of (10) proceeds as follows:

LSA_1 is extracted from LA to form $Phase_1$, as shown in (11).

(11) a. LSA_1 of $Phase_1$, the embedded *v**P_1:
{the, candidate, *v**, win, it}

b. Phase$_1$



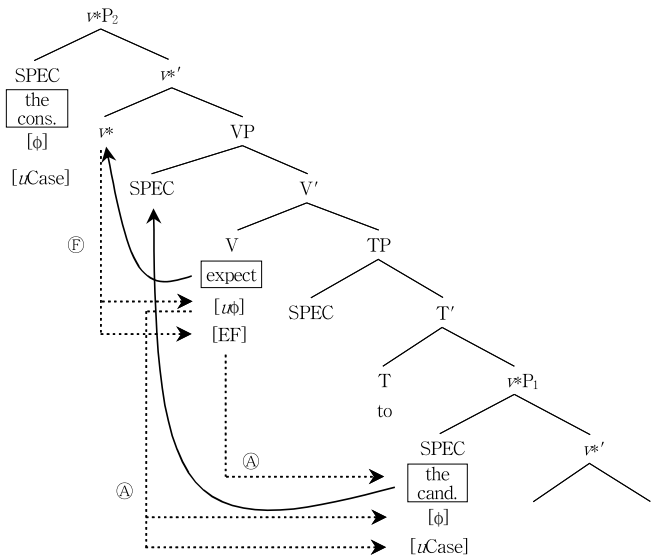
At the first phase level, that is, the embedded v*P$_1$ phase level, V inherits Φ-features from v*. V probes its internal domain in search of a suitable goal, finding its active matching goal, *it*: it is local and active, and it has both interpretable Φ-features and an uninterpretable, hence unvalued, Case feature to be valued. An Agree relation holds between V, serving as a probe, and its goal, *it*. The unvalued Φ-features of V and the unvalued Case feature of *it* are checked/valued and deleted for FI.

V, on the other hand, inherits EF from v*, finding and raising its active goal, *it*, to SPEC-V. PIC prevents *it* from entering into any further Agree relation. There are still two phases left before (10) is derived.

LSA$_2$ is extracted from LA to form Phase$_2$, as shown in (12).

(12) a. LSA$_2$ of Phase$_2$, the matrix v*P$_2$:
{the, constituents, v*. expect, to, v*P$_1$}

b.



At the second phase level, that is, the matrix v*P_2 phase level, V inherits Φ-features from v*. V, serving as a probe, peruses its domain in search of a suitable goal, finding its active matching goal, *the candidate*: it is local and active, and it has both interpretable Φ-features and an uninterpretable, hence unvalued, Case feature to be valued. An Agree relation holds between V, serving as a probe, and its goal, *the candidate*. The unvalued Φ-features of V and the unvalued Case feature of *the candidate* are checked/valued and deleted for FI.

V, on the other hand, inherits EF from v*, finding and raising its active goal, *the candidate*, to SPEC-V. Intriguing is the role *the candidate* plays at this second phase level. In other words, the position of the raised DP was argued to be SPEC-T in the so-called EPP-based analyses, whereas the position of the raised DP, as it turns out, is SPEC of the matrix V in what is called a new EPP-less analysis. As a matter of course, the clause-mate principles[9] of Postal (1974) and Lasnik and Saito (1991) fairly

9) By adopting Chomsky's (2005: 8, 11, 13) argument that Binding Condition (C) could be

well hold in our new EPP-less analysis. There is only one phase left before (10) is derived.

LSA_3 is extracted from LA to form $Phase_3$, as shown in (13).

(13) a. LSA_3 of $Phase_3$, the matrix CP_3:
{∅[10]C, T, *v*P$_2$}

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formulated as a probe-goal relation, taking the c-commanding pronoun X to be a probe, and that SPEC itself can be a probe. I propose in a paper to appear ("A New Phase-based Analysis of English Reflexives") that the clause-mate principle be reduced to the phase-mate principle. In other words, according to the so-called phase-mate principle, the external argument (EA) of *v**, namely SPEC-*v**, probes its internal domain in search of its active goal, namely DP, and determines the anaphoric or referential dependency. Let's discuss in brief the anaphoric dependency of the pronominal *him*. Indices are used only for expository purposes.

(i) a. The slave expected the picture of *him* to be somewhere else.
(Chomsky 2005: 14)
b. [$_{CP}$ [$_{C'}$ ∅ [$_{TP}$ [the slave]$_i$ [$_{T'}$ -ed [$_{v*P}$ t$_i$ [$_{v*'}$ ∅+expect$_j$ [$_{VP}$ [the picture of *him*$_m$]$_k$ [$_{V'}$ expect$_j$ t$_k$] to be somewhere else]]]]]]]

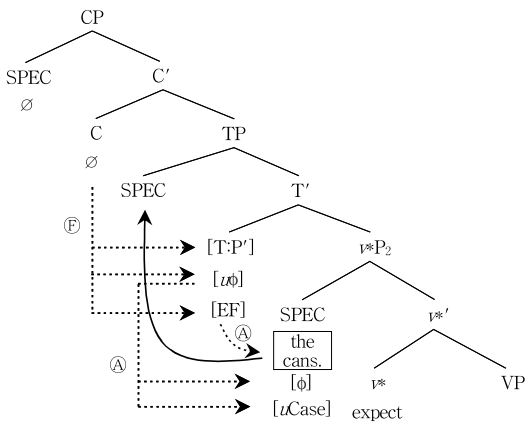
At the underlined matrix *v**P phase level, EA of *v** probes for and finds its goal, DP *him* contained in SPEC-V, and DP should be interpreted as disjoint from EA in the same phase. In other words, the DP should be free, as desired.

(ii) a. The slave expected the picture of *himself* to be somewhere else.
b. [$_{CP}$ [$_{C'}$ ∅ [$_{TP}$ [the slave]$_i$ [$_{T'}$ -ed [$_{v*P}$ t$_i$ [$_{v*'}$ ∅+expect$_j$ [$_{VP}$ [the picture of *himself*$_i$]$_k$ [$_{V'}$ expect$_j$ t$_k$] to be somewhere else]]]]]]]

At the underlined matrix *v**P phase level, EA of *v** probes for and finds its goal, *himself* contained in SPEC-V, and the anaphor should be interpreted as coreferential with EA in the same phase. In other words, the reflexive should be bound by its binder, as desired.

10) ∅ stands for null.

b.



At the terminal phase level, that is, the matrix CP phase level, T inherits Φ-features from C. T, serving as a probe, peruses its internal domain in search of a suitable goal, finding its active matching goal, *the constituents*: it is local and active, and it has both interpretable Φ-features and an uninterpretable, hence unvalued, Case feature to be valued. An Agree relation holds between T, serving as a probe, and its goal, *the constituents*. The unvalued Φ-features of T and the unvalued Case feature of *the constituents* are checked/valued and deleted for FI.

T, on the other hand, inherits EF from C. T, serving as a probe, peruses its internal domain in search of a suitable goal, finding and raising its active goal, *the constituents*, to SPEC-T. Finally (10) is successfully derived without any reliance on the EPP feature.

4. Concluding Remarks

In this paper, I discussed the possibility of eliminating the EPP feature, which has been taken to be conceptually unnecessary but just empirically necessary to account for various EPP-related constructions, such as expletive constructions, subject-to-subject raising constructions, and ECM

constructions. In this paper, by adopting several minimalist assumptions which comply with the Strong Minimalist Thesis (SMT), we showed that the above-mentioned constructions could be successfully accounted for without any reliance on the stipulative EPP feature or without any additional assumptions. If so, the correct answer to the question "Is the EPP feature really necessary?" is "No, at least in English."

References

Chomsky, N. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.

Chomsky, N. 1982. *Some Concepts and Consequences of the theory of Government and Binding*. Cambridge, MA.: MIT Press.

Chomsky, N. 1995. *The Minimalist Program*. Cambridge, MA.: MIT Press.

Chomsky, N. 2000. Minimalist Inquiries: the Framework. In Martin, R., D. Michaels, and J. Uriegeraka (eds.), *Step by Step: Essays on Minimalism in Honor of Howard Lasnik*. Cambridge, MA.: MIT Press. 89-105.

Chomsky, N. 2001a. Derivation by Phase. In Kenstowicz, M. (ed.), *Ken Hale: A Life in Language*. Cambridge, MA.: MIT Press. 1-52.

Chomsky, N. 2001b. Beyond Explanatory Adequacy. Ms., MIT.

Chomsky, N. 2004. Three Factors in Language Design. Talk at LSA, January, Boston (also reprinted in *Linguistic Inquiry* 36: 1-22)

Chomsky, N. 2005. On Phases. Ms., MIT.

Chomsky, N. 2006. Approaching UG from below. Ms., MIT.

Kim, S-B (to appear). A New Phase-based Analysis of English Reflexives. Ms.

Lasnik, H. and Saito, M. 1991. On the Subject of Infinitives. in Dobrin, L., L. Nichols, and R. Rodriguez (eds.), *Papers from the 27th Regional Meeting of the Chicago Linguistic Society*. Chicago, IL: Chicago Linguistics Society. 324-343

Postal, P. M. 1974. *On Raising: One Rule of English Grammar and its Theoretical Implications*. Cambridge, MA: MIT Press.

Radford, A. 2004. *Minimalist Syntax*. Cambridge: Cambridge University Press.

Richards, M. D. 2007. On Feature Inheritance: An Argument from the PIC.

Linguistic Inquiry 38(3), 563-572.
Sigurðsson, H. A. 1996. Icelandic Finite Verb Agreement, *Working Papers in Scandinavian Syntax* 57: 1-46.