



Some Notes on Directionality Parameters

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Abstract

In this article, I offer some empirical and conceptual arguments against two of Kayne's (2013) main arguments against directionality parameters in the generative grammar framework, and sketch some alternative directions for future research, with a special focus on adjuncts. I will first show that the SONegV order in Korean observed by Whitman (2005) is not a valid argument against directionality parameters, because his analysis fails to account for certain scopal facts; and even if the scopal facts are not an issue, alternative analyses can be found without resorting to movement. Next I will show that facts about serial verb constructions do not constitute valid arguments against directionality parameters either. Contra Carstens (2002) and Kayne, I show that SVCs are not cross-linguistically constant with respect to the relative order of the verbs, and that an approach that allows right-adjunction can better capture the facts. In addition, I show that adjuncts have some unique syntactic properties with respect to directions that further corroborate the need for directionality parameters in grammar.

Keywords

adjunction, serial verb constructions, directionality parameters, lexicon, syntactic derivations

A dilemma in linguistic theory is that while linguists work on the assumption that languages have some common properties that make first language acquisition quite easy and effortless, they also have to acknowledge the fact that some aspects of language appear quite different cross-linguistically. To resolve this dilemma, much research effort has been devoted to show that apparent differences between languages can be attributed to mere *parametric* differences of certain otherwise uniform derivational or representational properties. One of these approaches goes one step further: it aims to show that the number of the apparent parameters that have been proposed can be reduced. This is Kayne's (1994) *antisymmetry hypothesis*, which argues that all directionality parameters can be reduced to parameters that concern movement possibilities. Kayne (2013) provides additional empirical arguments for the absence of directionality parameters, as well as some tentative answers to the question why they are absent. Though the approach has gained wide currency, it is still highly controversial, due to its lack of theoretical-external motivations and its theoretical-internal complications (see, e.g., Ernst 2002, Boeckx 2003, and Chomsky 2004, 2007 for some remarks). In this paper, I will offer further empirical and conceptual arguments against this approach, and sketch out some directions for future research for directionality parameters.

1. The SOXV Order

One of Kayne's (2013) major arguments against directionality parameters is the existence of OV order involving movement of O where OV order is "canonical" or "natural". The idea is that if it can be shown that some cases of canonical OV order is motivated by movement, then we are justified to explore the possibility that all cases of OV order are derived by movement. His evidence comes from SONegV and SOAuxV order in Korean, Nweh, Nupe, Lokaa, and German. Assuming Whitman's (2005) and Kandybowicz and Baker's (2003) analyses, he reasons that these word order patterns can only be derived from moving the object or the verbless remnant VP to a preverbal position. Therefore, we have reason to believe that all instances of OV order involve movement.

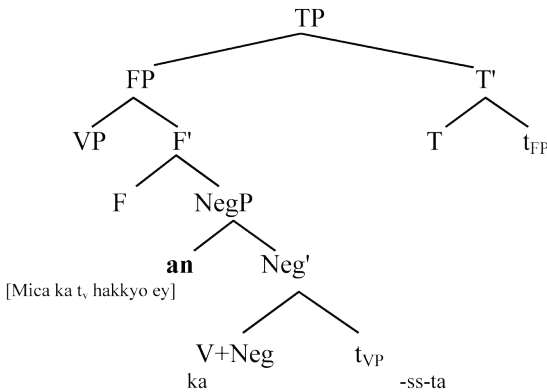
This line of reasoning is not as strong as Kayne intends it to be. One problem, which is a persistent one since the advent of the antisymmetry hypothesis, is the concept of movement. In previous approaches to grammar, in order to show that all instances of OV order are derived from movement, one needs to show that all instances of OV order have distinctive semantic or morphological properties that are indicators of movement, and can be associated with VO counterparts in the same language. This kind of evidence is what motivated Chomsky's *transformational grammar* and many of the subsequent theories. This, however, is not the kind of evidence provided by Kayne. Instead, in all of his examples, we can never find corresponding instances of VO order in the given language. Proponents of the antisymmetry hypothesis have to claim that the relevant object movement and VP-remnant movement *always* take place in the given language. Unfortunately, this claim not only departs from the traditional well-motivated

notion of movement, it also begs the question of what constitutes empirical evidence for and against directionality parameters. If we need no independently-motivated evidence for syntactic movement (i.e. semantics, morphology, etc.), then we can never possibly find evidence *for* directionality parameters, since any word order can be derived from movement. Another problem is that the argument draws a hasty conclusion. It is far from clear that the examples provided from the article constitute a representative sample of how languages with OV order work. The existence of SONegV canonical order only indicates the logical possibility of movement in certain cases in certain languages; it tells us little about the general architecture underlying all head-final languages. These two problems are furthermore exacerbated by the incorrect, or at least controversial, empirical facts provided in Whitman's (2005) analysis of Korean SONegV sentences, which are cited by Kayne as evidence against directionality parameters. Let us now examine the analysis closely.

According to Whitman (2005), a Korean sentence in SONegV order, such as (1), has the structure (2):

- (1) Mica ka hakyo ey **an** ka-ss-ta.
 Mica Nom school to Neg go-Past-Indic
 'Mica didn't go to school.'

(2)



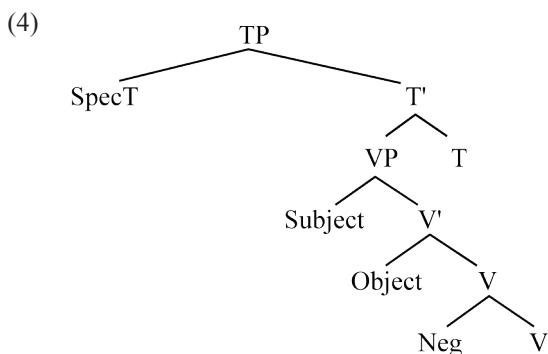
According to this analysis, example (1) does not have any head-final configuration.¹ All phrases are head-initial in their first-Merge positions. The surface order is derived from placing the negative morpheme *an* in the specifier-of-NegP position, V-to-Neg raising, VP movement, and FP (the functional projection that is between TP and NegP) movement.

¹ Whitman's original tree diagram is a bit different from (2), since he places the trace of the verb after the complement. This should be an error since it is incompatible with the antisymmetry hypothesis.

The main analytical problem is that the preverbal negation in Korean has distinctive scopal properties that distinguish it from postverbal negation. According to Suh (1990), Cho (1994), Kim (2006), and various works, the preverbal negation always takes narrow scope with respect to a quantified object NP.²

- (3) John-i motun-salam-ul ani-manna-ess-ta. (QP > Neg only)
 John-Nom everybody -Acc Neg-meet-Past-Indic
 ‘John met nobody.’

Whitman’s analysis wrongly predicts that the above sentence allows negation to take wide scope, since *an(i)*, at the specifier-of-NegP position, c-commands the object QNP prior to the VP movement.³ The scopal facts of preverbal negation can instead be easily accounted for if one adopts the V-adjunction analysis:



According to the analysis, the negative morpheme *an(i)* is left-adjoined to the lexical verb. At this position, its scope is only limited to the verb, since it does not c-command the object noun phrase. Crucially, this analysis does not rely on the Antisymmetry Hypothesis, and is compatible with directionality parameters. At the same time, it seems to be much simpler because it does not need to worry about motivations for various movements that are required in Whitman’s analysis.

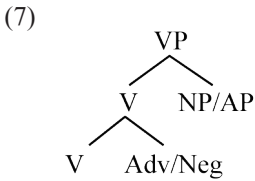
The fourth problem with the analysis is that even SONegV sentences with wide scope reading for negation do not require an object movement or VP-movement analysis. In fact, there have been various analyses that resemble (4) for languages that allow wide scope for negation. Consider negation in French, or modal/focus marker in Cantonese, where the functional morphemes intervene between the lexical verb and the object NP.

² Similar facts are found in Chinese. Huang (1982: 142) observes that the negative morpheme *bu* does not have wide scope over a quantified object NP.

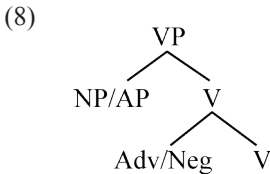
³ Whitman has to maintain that the VP movement has no scopal effects, since post-verbal negation can still scope over object QNPs. I am grateful for an anonymous reviewer for suggesting that I clarify this point.

- (5) Nous ne regardons pas la télé.
 we watch Neg the TV
 ‘We are not watching TV.’
- (6) 佢睇得三本書。(focus operator) (Tang 2002)
 Keoi tai dak saam-bun syu.
 he read only three-Cl book
 ‘He read only three books.’

According to Di Sciullo and Williams (1987) and Iatridou (1990),⁴ a plausible analysis of negation in French is for the morpheme to be right-adjoined to the lexical verb:



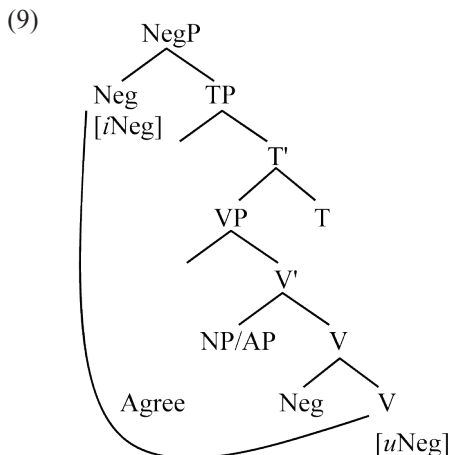
If this analysis is on the right track for French, then we take away one major motivation for Whitman’s analysis of SOXV order and the Antisymmetry Hypothesis. The fact that a lexical verb and the object NP is intervened by a functional morpheme does not necessarily indicate that movement takes place, so a sentence with SOXV order may not involve any movement at all. Such a sentence may instead have a structure such as (8), which is a mirror image of (7):



Now, one may argue that this analysis is infeasible, since it will place the scope of negation or the focusing morpheme within the lexical verb, contrary to the fact. However, this scope problem goes away once we allow Agree to apply between a higher functional morpheme and the lexical verb. Valuation of the verb triggers the “delayed” merger of the overt negative morpheme:⁵

⁴ See also Radford (1988), Sportiche (1988), and Travis (1988) for similar analyses for other structures.

⁵ See Shu (2011) for detailed implementation of delayed-Merge.



Thus, even an SONegV sentence with wide scope negation is consistent with an analysis without any object movement and VP movement.

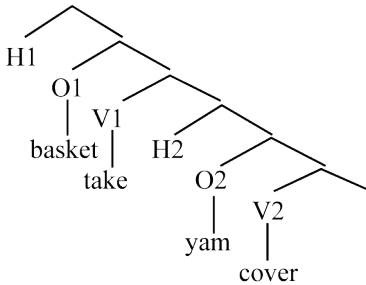
For the above reasons, the existence of SONegV sentences is not an argument against directionality parameters.

2. Serial-verb constructions⁶

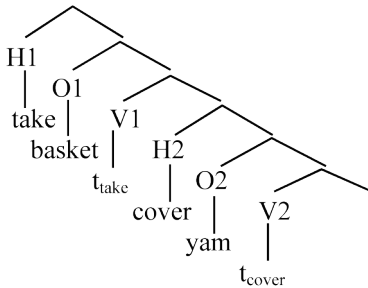
Another of Kayne's major argument against directionality parameters is Carstens's (2002) observation (which I will show to be incorrect) that although serial verb constructions differ cross-linguistically with respect to the relative position of verb and argument, they are cross-linguistically constant with respect to the relative order of the verbs themselves with respect to one another (V1 O1 V2 O2 and O1 V1 O2 V2). This is unexpected if directionality parameters exist. On the other hand, these facts can be account for by the Antisymmetry Hypothesis if we assume that (i) all objects are base-generated in specifier positions; (ii) the second verb, V2, is within the *complement* of the initial verb, V1; (iii) the verbs or the objects may move according to the parameter setting of the language; and (iv) VP movement of the sort in (2) does not take place within serial verb constructions. More specifically, the apparent word order differences are derived from a common base structure, as follows:

⁶ An anonymous reviewer reminds me that it has frequently been noted in the literature that SVCs can be analyzed as many different structures, and this seems to conflict with Carstens's (2002) unified treatment of SVCs. However, due to lack of space, I will not attempt to provide a full account of SVCs here, and will only focus on the specific types of SVCs discussed by Carstens and how they are not strong pieces of evidence against directionality parameters. See Muysken and Veenstra (2006) for a more comprehensive overview of SVCs.

(10) a. SVC in apparently head-final languages



b. SVC in apparently head-initial languages



Carstens argues that this analysis is superior to approaches that allow directionality parameters because only the former can capture the constant order among verbs in SVCs.

This line of reasoning is again beset with many conceptual and empirical problems, in addition to the general problems mentioned in the previous section. At the same time, it is not difficult to find alternative analyses that are compatible with directionality parameters and do not suffer from the same problems. One problem is the unwarranted modification of the complement/specifier distinction. According to these structures, O2 is the first constituent that merges with V2. If we follow the now standard assumptions of *bare phrase structure* thesis, O2 is the complement of V2. However, Carstens obviously follows a different assumption: no matter whether or not an XP is the first constituent that merges with a head Y, if XP precedes Y, XP is the specifier of Y. This modification is not only *ad hoc*, it is also incompatible with most of the works that assume the Antisymmetry Hypothesis, including Kayne (2013), where OV order can only be derived by movement and O cannot be a base-generated specifier. In addition, it is not true that the second predicate is always analyzed as the complement or part of the complement of the first verb. In Larson's (1991) analysis of the sentence *John left the party angry*, the AP *angry* is the sister constituent of the V' *left the party*, instead of part of the complement of *left*. If this structure is legitimate then it certainly weakens

Carstens's LCA account. If right-adjunction or structures that resemble right-adjunction is legitimate, it is possible that various SVCs investigated by Carstens are in fact right-adjunction or left-adjunction structures. Since LCA is incompatible with right-adjunction and, for Carstens, movement of the VP *left the party* across the AP *angry* is barred in SVCs, the sentence would be ungrammatical, contrary to the fact. More generally, there seem to be various cross-linguistic non-SVC VP-level word order variations that are incompatible with Carstens's LCA treatment of VPs. According to her contention, there can be no cross-linguistic variations of word order of predicates within VP, since VP movement does not take place within VPs. There are, however, a significant number of exceptions to this rule. Subject-oriented secondary predicates and various VP-level adverbial adjuncts in VO languages like English generally follow the verb:

- (11) a. They drank their martinis dry standing.
 b. John walked quickly.
 c. John brought some clothes from home.

In OV languages or languages that allow robust preverbal adjuncts, however, all of these expressions have to be preverbal, as illustrated by the following Chinese examples (similar results can be duplicated in OV languages):

- (12) a. Tamen zhan-zhe he jiu.
 they stand-ZHE drink liquor
 'They drank liquor standing.'
 b. Lisi zeme qu Taipei?
 Lisi how go Taipei
 'How does Lisi go to Taipei?'
 c. Lisi cong jiali na-le xie yifu.
 Lisi from home bring-ASP some clothes
 'Lisi brought some clothes from home.'

In all of these examples, the adverbs, PPs, and VP adjuncts have to precede the verb. The reverse order is not possible. It is not clear how Carstens's treatment of VPs can account for these variations, since it does not matter whether these expressions are complements or adjuncts; as long as they are within VP and her assumptions hold, there is no way that languages should vary with respect to the order of the predicates and adjuncts. The fourth problem is that in some of Carstens's SVC examples, as noted by her, the "initial verb" can never function as a main verb, as illustrated in the following Yorùbá examples (p11):

- (13) a. Mo fi ibon pa ekùn.
 I FI gun kill leopard
 'I killed the leopard with a gun.'
 b. Ó ti ilé-ìwé wá
 S/he issue.from school come
 'S/he came from school.'

The fact that *fi* and *ti* cannot function as main verbs cannot be easily derived from the analysis in (10).⁷ This behavior resembles the V2 in (11a) and the V1 in (12a), where *V-ing* and *V-zhe* cannot be main verbs:

- (14) a. *John walking.
 b. *Lisi ku-zhe.
 Lisi cry-ZHE

Finally, the various types of SVCs discussed by Carstens have heterogeneous ordering in other languages.

- (15) a. direct object sharing
 b. resultative
 c. instrumental
 d. motion: source
 e. motion: conveyance
 f. motion: manner
 g. double object

In languages like English, the ordering only resembles the Yorùbá and Ijo ones in (15a, b, e, f), but not in (15c, d, g). In languages like Japanese, the ordering does not resemble the Yorùbá and Ijo ones in (15b).

- (16) a. John cooked some food to eat.
 b. Mary pushed Bill down.
 c. Bill killed the leopard with a gun.
 d. She came from school.
 e. She took them out.
 f. The bird flew to the tree top.
 g. I showed John this book.

- (17) John-ga kabe-o aoku nut-ta. (Japanese)⁸
 John-Nom wall-Acc blue paint-Past
 ‘John painted the wall blue.’

These English and Japanese examples indicate that simply comparing a VO language and an OV language does not help us. What these examples show is that Yorùbá and Ijo form a natural class with respect to ordering of predicates in SVCs, while English-type languages form another natural class, and Japanese perhaps

⁷ To account for the deficient status of V1 in these examples, Carstens proposes that V1 and its surface object do not have thematic relationships, and that O1 is base-generated at the specifier of v_2 , a different verbal head (p24). This analysis still fails to explain why V1 cannot serve as a main verb at all and why (14) are ungrammatical.

⁸ The example is from Washio (1997). Note that Japanese as well as Korean have two types of resultative constructions, one of which does indeed exhibit the same word order as the ones discussed by Carstens. However, examples like (17) are pretty robust and are certainly a serious problem for her.

yet another one. In addition, these examples show us that the inner workings of the so-called SVCs are more fine-grained than Carstens's analyses predict. Some SVCs have constant order cross-linguistically, while the others do not.⁹

There are certainly alternative analyses that are compatible with the empirical facts. The most easily imaginable one is that directionality parameters do exist, as does adjunction, and that Ijo, Yorùbá, and English represent languages that have three different parametric settings. The differences can be summarized as follows:¹⁰

(18)	Head parameter	Adjunction parameter
Ijo	Head-final	Left-adjunction
Yorùbá	Head-initial	Left-adjunction
English	Head-initial	Right-adjunction

The five problems can now be mostly accounted for. Since adjunction is allowed, the second verb need not be within the complement of the first verb, so there is no semantic problem with subject-oriented depictive predicates such as *John left the party angry*. And since both left-adjunction and right-adjunction are allowed, variations in (11) and (12) are expected. The fact that some of the “initial verbs” can never serve as the main verb can be naturally accounted for: the “initial verb” is not a verb and is located within an XP adjunct that is adjoined to the main verb. Similarly, the ungrammaticality in (14) is due to the fact that *-ing* and *-zhe* are markers of a verb that agrees with its dominating A head, which heads any adjunction phrase.¹¹ Since T selects a *v* head instead of an A head, the ungrammaticality of (14) is accounted for. Finally, the fact that the constructions in (15) form a heterogeneous group is also not surprising. The constitution of VP may involve different kinds of ingredients. It may be the case that some ingredients are *sensitive to ordering*, such as (15a, e, f), while the others are not. What Carstens's Ijo and Yorùbá examples show is at best the traditional approach with directionality parameters is insufficient, but it doesn't actually offer us a better alternative.

We can thus conclude that the facts involving serial verb constructions do not constitute an argument against directionality parameters, although they present some problems that need to be solved for all of the current theories.

⁹ I have nothing to say about (15a, e, f) and will leave them aside.

¹⁰ I will abstract away from resultative constructions here, since their status is unclear in Yorùbá and Ijo in Carstens's account.

¹¹ See Shu (2011: 193) for a more detailed account.

3. Adjuncts and their specifications of directions¹²

Once we allow adjunction and directionality parameters, we are able to more precisely describe how language works and enhance syntactic theory. There are at least four correlations between the syntactic status of adjuncts and their directions that need to be accounted for in any syntactic theory.

3.1 Adjuncts vs heads

The fact that certain negation particles in Japanese and Korean occur preverbally can be naturally be subsumed under the more general pattern that left-adjunction is very robust in these languages. On the other hand, in typical head-complement structures, heads never occur to the left of their complement in these languages. The distinction is very sharp: a verb can never occur to the left of its complement, while adverbs and other adjuncts can generally occur to the left of a VP.

Descriptively, distinguishing between heads and adjuncts allows us to capture the distinct clustering of properties of heads and adjuncts, including different ordering patterns. Theoretically, this analysis allows us to ask an important question: what syntactic property allows adjuncts to acquire distinct ordering properties, in addition to their other properties?¹³

3.2 Adjuncts vs complements

The fact that languages like Chinese and Yorùbá have VO order but have similar order in serial verb constructions in OV languages indicates that the syntactic relation between a verb and its complement is distinct from the relations between verbs in a serial verb construction. Among many types of SVCs, one such relation is host-adjunct relation. More specifically, a complement occurs to the right of its head in Chinese and Yorùbá, but an adjunct occurs to the left of its host (unlike English). Any syntactic theory has to describe and explain this distinction.

3.3 Idiosyncratic variations among adjuncts (but not among non-adjuncts)

Adjuncts are also distinct from non-adjuncts in that it is possible that lexical specifications of directionality may be distinct for different adjuncts, but not for different heads and complements.

- (19) a. John saw Mary.
 b. *John Mary saw.

¹² An anonymous reviewer suggests that I present a thorough derivation of adjuncts under my Agree analysis. However, since any approach that allows adjunction to occur between heads and complements and between heads and specifiers can describe the facts, I will not present an account solely based on the Agree framework. Although an Agree account may be helpful, the issue seems to involve various other factors that are not yet explored.

¹³ See Shu (2011: 23) for a list of these properties.

- (20) a. John (only) sang (*only).
 b. John (also) sang (also).
- (21) a. (Only) Mary (*only) speaks Chinese. (with focus on *Mary*)
 b. (*Alone) the rent (alone) is 300 dollars.
- (22) a. He is (very) proud (*very).
 b. He is (*enough) proud (enough).
- (23) a. Zhangsan (bu) chi (*bu) mian. (Chinese)
 Zhangsan Neg eat Neg noodle
 ‘Zhangsan doesn’t eat noodles.’
 b. Zhangsan (*guo) chi (guo) mian.
 Zhangsan Exp eat Exp noodle
 ‘Zhangsan ate noodles.’
- (24) a. Zhangsan (zhi) chi mian (*zhi).
 Zhangsan only eat noodle only
 ‘Zhangsan only eats noodles.’
 b. Zhangsan (*eryi) du-le yi-ben shu (eryi).
 Zhangsan only read-Pfv one-Cl book only
 ‘Zhangsan read only one book.’¹⁴

As is shown in (19), a language generally does not manifest variations among heads and their complements. However, when it comes to adjuncts, variations abound. (20)-(24) shows that in various languages, whether an adjunct occurs to the left or right of its host can be lexically specified.

Descriptively, this means that distinguishing between adjuncts and non-adjuncts helps us to capture the fact that only adjuncts show lexical variations regarding directionality. Theoretically, this means that we need to enhance our theory of PF to see if we can derive the systematic differences from more fundamental principles.

3.4 Directions as functions of categories and sizes of hosts

In addition to lexical specifications of adjuncts themselves, directions of adjuncts are also distinct from non-adjuncts in that they may be affected by the categories and sizes of their hosts.

¹⁴ It is unclear how far lexical specification can go in terms of directionality.

- (i) We are still probably north of Princeton.
- (ii) Pollution will always probably exist.
- (iii) He’d never probably have enough courage to leave.
- (iv) I only really dance sitting down.

As these examples show (cited from Ernst 2002 and Shu 2011: 158), certain English adverbs allow ordering that doesn’t reflect their scopes. This may again indicate that lexical specification plays a role in specifying whether adverbs can right-adjoin or not in certain cases, although details still await investigation.

- (25) a. John only [saw Mary].
 b. John [can] only see Mary. (with wide scope reading for *only*)
- (26) a. Zhangsan yijing [shuizhao] le.
 Zhangsan already fall.asleep Asp
 ‘Zhangsan is already asleep.’
 b. Zhangsan [kan]-le [san]-ben shu.
 Zhangsan read-Pfv three-Cl book
 ‘Zhangsan read three books.’
 c. [Ni shi Lisi] ma?
 you be Lisi Q
 ‘Are you Lisi?’

(25a) shows that when VP is the host, *only* occurs to its left. (25b) shows when an auxiliary verb is the host, *only* occurs to its right.¹⁵ Similarly, (26) shows that when an expression is adjoined to VP, it is generally at the left-adjunction; when it is adjoined to a X⁰ it is generally right-adjunction; when it is adjoined to a CP it is generally right-adjunction.

Descriptively, again, this shows that adjuncts are systematically distinct from non-adjuncts in that the former’s direction is affected by the size and categories of their hosts. Any descriptive linguist has to describe the correlations. Theoretically, this shows PF specifications are affected by various general syntactic factors and deeper principles must be sought.

An approach adopting assumptions of the Antisymmetry Hypothesis, on the other hand, seems to have nothing further to add about the facts in this section, since no motivation is required for movement and word order arrangement as long as LCA is satisfied.

4. Conclusion

In sum, I have critically reviewed some of Kayne’s main arguments against directionality parameters, and pointed out that they are insufficient and/or invalid due to lack of predictive power and descriptive adequacy. Analyses with directionality parameters can well account for the bulk of the data, as well as make correct predictions that could not be easily made by Kayne’s theory (such as the scopal facts in Korean and various cross-linguistic ordering facts of VP-internal constituents). In addition, I mapped out some basic but poorly understood correlations between adjunct-hood and directionality possibilities. It seems clear that adjuncts have distinct directionality specifications, as well as a rich array of factors that help shape their eventual directions. These factors are still a largely uncharted territory, both descriptively and theoretically.

¹⁵ See Shu (2011) for motivations for this analysis.

Acknowledgments

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論方向參數

舒志翔

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摘要

此篇文章以附加語的句法特質為出發點，提出語言事實以及概念上的論點來反駁 Kayne (2013) 反對生成語法中有方向參數的其中兩個主要論點，並提出幾個未來可行的研究方向。首先，我指出 Whitman (2005) 對韓語的 SONegV 語序的觀察分析並非方向參數的反證，因為此分析無法解釋某些範域的現象，同時，我們不難找到符合方向參數的分析來解釋此語序的存在。接著我指出 Carstens (2002) 和 Kayne 對於連動結構的分析也非方向參數的有效反證，因為連動結構在不同語言中動詞語序不同，不符合他們的描述，且右向附加語的分析更能處理這些語料。另外，我也整理出附加語關於方向的句法特質，做為證明方向參數的額外論點。

關鍵詞

附加語，連動結構，方向參數，詞彙檔，句法衍生