Handling of Immovable Intermediate Constituents in Top Down Layered Syntax

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Introduction

An important problem in syntactic research is explaining why the faithful application of constituency tests leads to contradictory results. (I will henceforth refer to this problem as contradictory constituency). Tests like VP fronting, ellipsis, pronominalization, and coordination seem to point towards a left branching structure, whereas tests concerning binding relationships seem to point towards a right branching structure.

Resolving the problem of contradictory constituency is key if one wants to maintain the hypothesis that sentences all have a single constituent structure or derivation, what Phillips calls the *Single Structure Hypothesis* (1996). Accounts of contradictory constituency that do not take the single structure hypothesis include positing multiple parallel phrase structures (Pesetsky, 1996), or allowing for flexible constituency, such as in enriched categorial grammars (Steedman, 1985).

Phillips proposes an alternative solution to the problem of contradictory constituency that preserves the *Single Structure Hypothesis*: a principle he calls *Merge Right* which requires that new material always be attached to the right edge of a structure (1996). Using *Merge Right* we get a top down derivation, which unlike typical bottom up derivations can destroy constituents during the derivation. These intermediate constituents that are destroyed will be the basis for Phillips' account for contradictory constituency (along with positing a preference for right branching structures).

In this paper, I am concerned with giving a full account for which intermediate constituents are ineligible for movement (henceforth referred to as immovable constituents). Specifically, I will show his first proposal accounting for the ineligibility of non-left edge constituents of the VP for movement during VP fronting, and his second proposal accounting for the ineligibility of complements of double object structures, arguments or adverbial phrases to be split up by movement to be unable to account for all immovable intermediate constituents.

In §1 I will introduce a relevant example sentence, it's derivation under Phillips' framework. From this derivation I will extract all constituents (including intermediate constituents), and show which of these constituents can't be moved. In §2 I will give Phillips'

proposals to account for these immovable constituents, and use these proposals to show which immovable constituents he accounts for. In §3 I will show that these proposals are insufficient to account for all types of immovable constituents, and that there is good evidence that these are in fact constituents. §4 offers a brief conclusion.

1 Constituents: Intermediate and Immovable

In this section I will give an example sentence, show its full derivation under Phillips' framework, from which I will derive all possible constituents at any point during the derivation. I will then use VP-fronting tests to show which of these constituents can not be moved.

1.1 Constituent Derivation

Let's take the sentence:

(1) John gives candy to children in libraries.

Let us first give a complete left to right, top down derivation of the complex VP of this sentence:

(2)
a. [$_{V(P)}$ give]
b. [$_{VP}$ [$_{V}$ give] [$_{NP}$ candy]]
c. [$_{VP}$ [$_{V}$ give] [$_{PP}$ [$_{NP}$ candy] [$_{P(P)}$ to]]]
d. [$_{VP}$ [$_{V}$ give] [$_{PP}$ [$_{NP}$ candy] [$_{P'}$ [$_{P}$ to] [$_{NP}$ children]]]]
e. [$_{VP}$ [$_{V}$ give] [$_{PP}$ [$_{NP}$ candy] [$_{P'}$ [$_{P}$ to] [$_{PP}$ [$_{NP}$ children] [$_{P}$ in]]]]]
f. [$_{VP}$ [$_{V}$ give] [$_{PP}$ [$_{NP}$ candy] [$_{P'}$ [$_{P}$ to] [$_{PP}$ [$_{NP}$ children] [$_{P'}$ [$_{P}$ in] [$_{NP}$ libraries]]]]]]

This derivation differs from the derivation given in Phillips' paper, as we do not add the PP using a copy of the verb *give*, and instead add the PP as shown below. Phillips uses a copy of *give* as it satisfies the *Configuration for Arguments and Predications* given on page 30 of Phillips 1996, and is more right branching, so it is preferred by *Branch Right*, the condition given on page 29 of Phillips 1996, but as the constituents derived are the same, we will avoid using copies of *give* and use the simpler derivation Phillips' proposes.

In this derivation, we begin by introducing the verb (the left most element of the complex VP), and then adjoin to the right. Constituents are any elements that are enclosed by brackets at any point in the derivation. The following is a complete list of all constituents: *give, candy, give candy, candy to, give candy to, to children, candy to children, give candy to children, children in, to children in, candy to children in, give candy to children in, in libraries, children in libraries, to children in libraries, candy to children in libraries, give candy to children in libraries.*

1.2 Immovability tests

From this list, we will test for immovable constituents using VP fronting:

(3) a. John intended to give candy to children,
... and [give candy to children] he did __ in libraries.
b. John intended to give candy,
... and [give candy] he did __ to children in libraries.
c. *... and [to children] he did __ give candy in libraries.
d. *... and [give] he did __ candy to children in libraries.
e. *... and [give candy to] he did __ children in libraries.
f. *... and [give the children] he did __ candy in libraries.

The four ungrammatical examples cleanly split the immovable constituents in our list. Firstly, we have the class of that are not left-edge (they do not start with give) such as (3c). Once we have removed all constituents that do not start with give, we have the class of constituents that are left-edge but split the argument (3d), the adverbial phrase (3e), or a double object construction (3f).

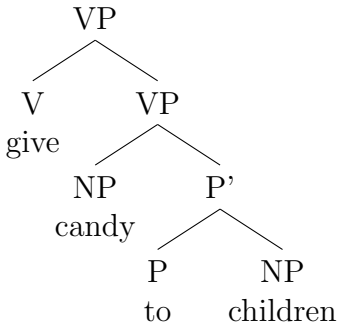
2 Phillips' Accounts for Immovable Constituents

In this section I will outline Phillips' proposals for why each class of intermediate constituent can not be moved.

2.1 Proposal 1: Left-edge Requirement

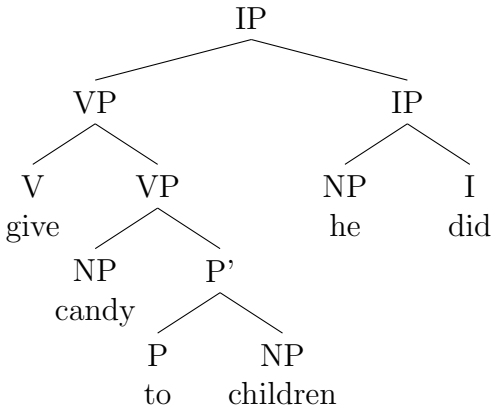
Phillips' account as to why non left-edge constituents like (3c) can not move is the following: movement occurs after these constituents have been created, but they must be created left to right, so non left-edge constituents aren't valid. The following is a derivation of (3a) that will illustrate how Phillips' accounts for VP fronting. We start by building the fronted portion left to right:

(4) a. ... and [give [candy [to children]]]



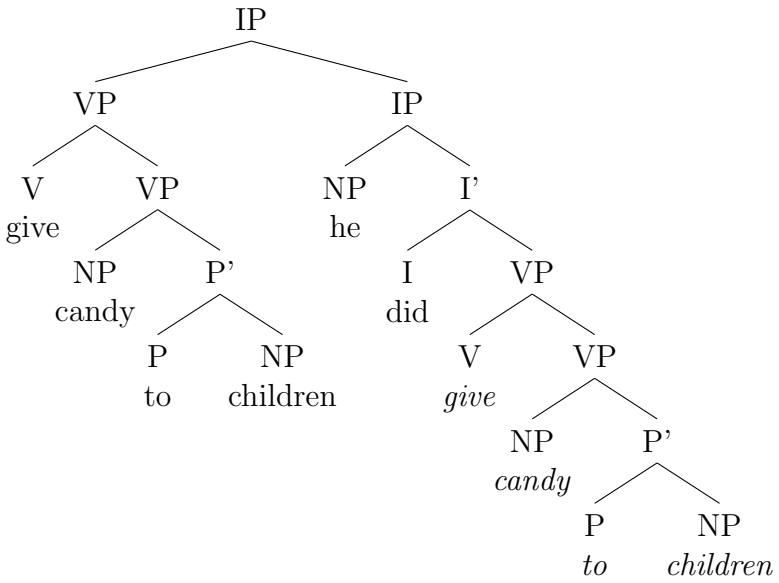
Then we will add the inflectional phrase *he did*:

(5) a. ... and [give [candy [to children]]] he did



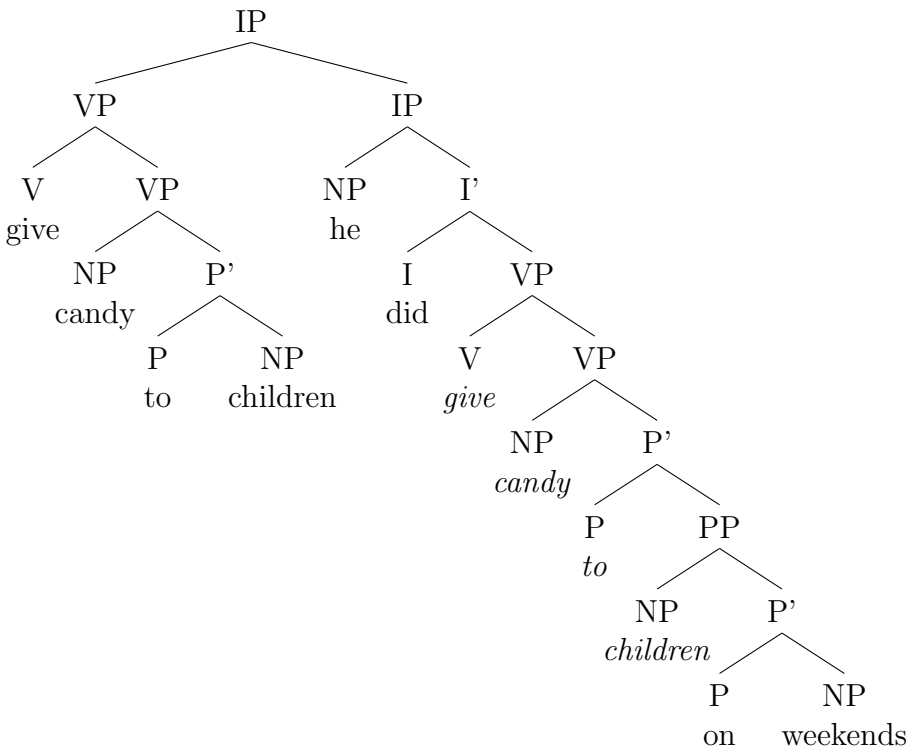
Then we will add a copy of our fronted VP is inserted as a complement of I:

(6) a. ... and [give [candy [to children]]] he did [*give* [*candy* [*to children*]]]



Finally we will add the remaining PP to the right of the VP, which will destroy the constituenthood of *give candy to children*, but we will have already done our movement, which makes this constituent being destroyed irrelevant.

(7) a. ... and [give [candy [to children]]] he did [*give* [*candy* [*to* [*children* [on weekends]]]]]



Under this derivation of VP fronting, we construct the fronted element first, and then we move that element. This would not be possible to do unless we began with the verb, as we derive left-to-right, which eliminates any non-left edge constituents from this type of movement. This derivation accounts for immovability in cases like (3c), but does not account for cases like (3d-f).

2.2 Proposal 2: VP-Completeness

Phillips' account for cases (3d-f) is that candidacy for VP fronting has an additional requirement: being a potential complete VP. While he does not provide a reason for this semantic restriction on VP fronting, he does note that the initial conjunct would be of an obviously unacceptable form for these sentences. Taking (3d) and (3e), their full forms would be:

(8) a. *John intended to give, and give he did candy to children in libraries
b. *John intended to give candy to, and give candy to he did children in libraries

While (8b) and its initial conjunct are unacceptable, the initial conjunct for (8a) is acceptable, which seems related to give being ambitransitive. This is further explored in the next section.

3 Unaccounted for Immovable Constituents

In this section I will provide example sentences that show these proposals are insufficient in accounting for all types of immovable constituents. I will also show that we have good

evidence that these really are constituents.

3.1 Ambitransitive Verbs

The following sentences contain intermediate constituents that are left-edge, potentially VP complete and are immovable:

(9) a. John baked a cake for Joe on Wednesday
b. *John intended to bake a cake for Joe on Wednesday, and bake a cake he did Joe on Wednesday
c. John baked a cake

(10) a. John read a book on Wednesday
b. *John intended to read a book on Wednesday, and read he did a book on Wednesday
c. John read

This seems straightforwardly unaccounted for by Phillips' theory. These are intermediate constituents that are clearly left-edge, and are clearly potentially VP complete, but they are immovable. It could be argued that the ditransitive and transitive case in (9b-c), and equivalently the transitive and intransitive case in (10b-c) are not the same underlying verb, and so one would be eligible for movement while the other wouldn't.

Some evidence that these strings really are constituents:

(11) a. John baked a cake for Joe on Wednesday
b. John baked a cake and delivered a telegram for Joe on Wednesday

(12) a. John read a book on Wednesday
b. John read and burned a book on Wednesday

The above sentences use coordination to test for whether these immovable constituents really behave like constituents. (11b) and (12b) are straightforwardly acceptable, which is good evidence these immovable constituents really are constituents.

4 Conclusion

This paper presents the contradictory constituency problem and Phillips' approach to solving this problem using left-to-right top down syntax. I have identified all constituents for a specific sentence using his derivation methods, identified which of these constituents are immovable, and have applied his proposals to see if all immovable constituents are accounted for. Finally, I have found some immovable constituents that are not currently accounted for under his theory, and provided some evidence that these elements really are constituents.

References

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