The Edges of the Syntax-Phonology Interface

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The purpose of this talk is to shed some light on an understudied area of the PF interface, namely the ordering of operations such as linearization, copy deletion, and vocabulary insertion given a model which assumes multiple transfer (i.e., phases), the copy theory of movement, and direct correspondence between phonological and syntactic domains. This issue is of increased importance in recent years, as the Minimalist Program has reduced complexity in the narrow syntax, leading to the necessity of highly articulated interfaces.

Towards the goal of better understanding the demands posed by PF operations, our main task will be to provide a new minimalist analysis of some facts which are traditionally attributed to the ECP (e.g., Stowell 1981, though see Bošković & Lasnik 2003 for a more recent implementation). An (2007a) suggests these data are captured by the Intonational Phrase Edge Generalization (IPEG), which states that "the edge of an Intonational phrase cannot be empty (where the edge encompasses the specifier and the head of the relevant syntactic constituent)." This explains why sentences which are unacceptable with an empty CP edge can be ameliorated by overt content, be it in SpecCP or in C:

(1) a. *I saw the child yesterday [$Ø_{spec}$ $Ø_C$ Mary was waiting for]
b. I saw the child yesterday [who $Ø_C$ Mary was waiting for]
c. I saw the child yesterday [$Ø_{spec}$ that Mary was waiting for]

In order to allow for (2b), An (2007a) needs to assume that the formation of a separate I-phrase for clausal complements of verbs (and restrictive relative clauses) is optional.

(2) a. I believe [$_{CP}$ that [$_{IP}$ John liked linguistics]].
b. I believe [$_{CP}$ $Ø_C$ [$_{IP}$ John liked linguistics.]]

The IPEG also extends to other categories, including vP (3a,b), DP (3c,d), and AP (3e,f).

(3) a. Eat the cake John did and eat the cookie Mary did
b. *[$_{vP}$ Eat the cake] John did and [$Ø_{spec}$ $Ø_v$ the cookie] Mary did
c. John likes this book of linguistics and Mary, that book of physics.
d. *John likes this book of linguistics and Mary ~~likes~~ [$Ø_{spec}$ $Ø_D$ book of physics.
e. Eager to win the Pulitzer Prize, John is, and eager to win the Nobel Prize, Mary is.
f. *[$_{AP}$ Eager to win the Pulitzer Prize], John is, and [$Ø_{spec}$ $Ø_A$ to win the Nobel Prize, Mary is].

However, the justification for the IPEG is unclear and it does not appear to follow from any independent facts about the architecture of grammar. We will suggest a new analysis which accounts for the above facts, and importantly, does so by referring to independently needed constructs, which we argue should be the null hypothesis given Minimalist concerns about modular architecture.

We argue that the unacceptability of (1a) and (3b,d,f) stems from a problem with linearization. Specifically, we argue that the reason why two consecutive syntactic objects (in these cases, a specifier and a head) cannot be null is that, if this is the case at the stage when linearization applies, or else the linearization algorithm will be unable to return a linearization statement. The linearization algorithm which we propose, along with Epstein et al. (1998) and Richards (2004 et seq.), takes c-command as the basic determiner of linear order at Spell-Out. Each phase head's complement domain is linearized independently, each linearization domain connects to the next domain that is linearized.

(4) *Linearization algorithm*
When encountering the merged {α, β}, α and β c-commanding each other, upon Spell-Out, return an ordered set <α, β> or <β, α>.

We follow Epstein et al. (1998) and Richards (2004) in assuming that mutual c-command 'overdetermines' linearization; the Precedence Resolution Principle demands that in such a

configuration, one object's c-command relations over the other must be ignored (which object being subject to parametric variation). We argue that copy deletion occurs prior to linearization, and that copy deletion removes all featural content from a node, including Edge Features (EF). The removal of all featural content renders a node invisible to any further process. Next, vocabulary insertion occurs, exchanging semantic features for phonological ones, but this does *not* remove EF; only subsequent to this, during the process of linearization, are EF removed from all elements which have not previously had EF removed during copy deletion. The key component to our analysis of (1)-(3) is that the algorithm (4) only succeeds in returning an ordered pair when the elements to be linearized are featurally distinct. This results in a crash when a merged pair of elements has only EF, as a result of non-insertion of phonological content (which is crucially distinct from copy deletion, contra An 2007b.) Two elements with only EF are non-distinct, which will result in a crash at linearization. However, deleted copies will never cause a crash during linearization since they have no featural content whatsoever by the time the linearization algorithm applies. Assuming C does not project a specifier in declarative sentences such as (5a) [or in cases like (2b)], such an account straightforwardly predicts the sentences in (5) to be grammatical, while such cases constitute *prima facie* exceptions to the IPEG and thus require special pleading under An's account.

(5) a. $[_{CP}$ $Ø_C$ $[_{TP}$ Mary was waiting for the child]]
b. $[_{CP}$ Who did Mary $[_{vP}$ see $[_{VP}$ t_v t_{obj}]]]

We further show that the above analysis extends to account for the unacceptable sentences below, involving a sentential subject (6b) and a topicalized CP (6d).

(6) a. $[_{CP}$ $Ø_C$ $[_{CP}$ That John is a genius] was believed by many people.
b. *$[_{CP}$ $Ø_C$ $[_{CP}$ $Ø_C$ John is a genius] was believed by many people.
c. $[_{CP}$ $Ø_C$ $[_{CP}$ That John is a genius], Mary believed.
d. *$[_{CP}$ $Ø_C$ $[_{CP}$ $Ø_C$ John is a genius], Mary believed.

A similar approach accounts for the unacceptability of nominal complementation without an overt C in (7b); following Kayne (2008), the embedded CP is within a covert PP, which we motivate based on languages such as Norwegian, in which this structure appears overtly.

(7) a. I distrust the claim $[_{PP}$ $Ø_P$ $[_{CP}$ that Bill left the party].
b. *I distrust the claim $[_{PP}$ $Ø_P$ $[_{CP}$ $Ø_C$ Bill left the party].

Finally, we use these arguments concerning the relation of linearization to copy deletion and vocabulary insertion to refine the claims made by Idsardi and Raimy (in press) regarding the order of operations on the way from syntax to the phonological component.

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