Deactivation values

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Sometimes a certain DP moves, sometimes it does not. In a framework where movement is motivated by the need of satisfying features, there must be an explanation for this variability. In this squib, I argue that DPs carry activity features for both A and A'-dependencies, and that these features may be deactivated by assigning them an "OFF" value. The canonical instance of deactivation for φ-related probing is non-structural Case. A similar kind of deactivation would allow explaining scenarios where no intervention effect arise in cases of A'-movement.
KEYWORDS: (i) syntactic movement, (ii) intervention, (iii) activity condition.

I would like to address a technical issue that arises as a consequence of assuming that syntactic movement is triggered by the need of checking/valuing/satisfying features in a local *Probe-Goal* relation (Chomsky 2000, 2001). To begin with, consider a sentence that is unacceptable due to a superiority violation.

(1) *What did who see?

As known, superiority effects may be captured by means of a Probe-Goal relation. That is, the interrogative complementizer C_{INT} probes its c-command domain for an element carrying a matching wh-feature. Since *who* is the closest constituent complying with this condition, *who* must move to Spec,C_{INT}. Any other constituent that is further away from C_{INT} is unreachable for the Probe.

(2) *[$_{CP}$ C_{INT} did [$_{TP}$ **who$_{[Wh]}$** [$_{T'}$ T [$_{VP}$ see what$_{[Wh]}$]]]]

Consider now the example in (3). Here, the DP *the comedian* moves to the left periphery of the sentence as part of a topicalization.

(3) The comedian, the critic saw.

Notice that the DP *the critic* does not create a minimality effect in this case. Applying the same reasoning than in the first example, we can say that the complementizer probes the structure for an element carrying a Top-feature. Given that the DP *the critic* does not have such a feature, the probe reaches the direct object DP *the comedian.*

(4) $[_{CP}\ C_{TOP}\ [_{TP}\ [_{DP}$ The critic$]\ [_{T'}\ T\ [_{VP}$ saw **$[_{DP}$ the comedian$]_{[Top]}$**$]]]]$

Now, it is not obvious why and how the DP *the critic* lacks a Top-Feature while the DP *the comedian* has one; both DPs are phrases that are headed by the same determiner and have the same distributional properties. Therefore, the presence/absence of a distinctive formal feature in one of them should be explained in some way.

One possibility is adopting some form of presyntactic *feature-bundling*, i.e., some mechanism in charge of associating features to create heads with different derivational properties. Thus, for example, a mechanism of this sort would be responsible of assigning a Top-feature to the determiner *the* in the object DP *the comedian* to make it a proper Goal for the probe C_{TOP}. The process is sketched in (5), where the set {...} denotes the bundle of features of the definite determiner.

(5) *Top-feature assignment*
$the_{\{...\}} \rightarrow the_{\{TOP,\ ...\}}$

Operations of this sort seem to be necessary in a theory of syntactic movement that is based on local economy considerations. If movement is triggered by the need of satisfying a feature, there must be a way of explaining that a certain constituent does not move in every single case. For example, the DP *Cosmo* in (6) may move to Spec,C_{TOP} (cf. (6a)) or not (cf. (6b)); such an optionality may be implemented as a mechanism assigning or removing the relevant triggering features.

(6) a. Cosmo, Elaine saw.
b. Elaine saw Cosmo.

In principle, if there are operations assigning features to constituents to make them active for certain type of A'-dependency, this could be extended to any type of A'-dependency. Therefore, we may also propose that there is an operation adding wh-features to certain wh-elements.

(7) *Wh-feature assignment*

$\text{who}_{\{...\}} \rightarrow \text{who}_{\{\text{WH}, ...\}}$

While postulating operations like this one does sound a little odd from a conceptual point of view, i.e., it involves supposing that a wh-pronoun may lack wh-features in certain cases, there are certain patterns that may be explained by adopting (7). Consider the sentence in (8), where *who* is interpreted as an echo-pronoun.

(8) What did ***who*** drink at Mary's party? (cf. Sobin 2010: 132)

This sentence is acceptable as the echo-pronoun *who* does not seem to create superiority effects. This may be explained by proposing that the operation in (7) applies to *what* and not to *who*. The absence of intervention is understood then as the lack of a wh-feature on the subject *who*, so the Probe can reach the direct object *what*.[1]

(9) $[_{\text{CP}}\ C_{\text{INT}}\ [_{\text{C'}}\ \text{did}\ [_{\text{TP}}\ \text{who}\ [_{\text{T'}}\ T\ [_{\text{VP}}\ \text{drink}\ \textbf{what}_{\textbf{[wh]}}\ \textbf{...}\ ]]]]$

In sum, it may be said that there are theory-internal and empirical arguments to adopt operations adding left peripheral features to certain constituents. The question now is whether we want a theory like this or not. There are a number of non-trivial issues that a mechanism of feature assignment should deal with. For instance, there seems to be a certain degree of arbitrariness regarding which type of constituent can carry certain type of feature in each language. English, for example, does not seem to need a rule stating that wh-elements may carry Top-features, as they cannot be topicalized.

(10) *What, Cosmo saw?

However, such a rule seems to be necessary for a language like Spanish, where wh-phrases may participate in Clitic Left Dislocation (CLLD) constructions. CLLD is typically regarded as a phenomenon that involves a topicalized constituent in the left periphery of the clause (e.g., Rizzi 1997).

[1] There are alternative ways of dealing with the lack of superiority effects in echo questions. See Sobin (2010) and Chernova (2012) for discussion.

(11) *Spanish*

¿Cuántos	partidos	los	perdió	el arquero?
how-many	matches	CL	lose	the goalkeeper

'How many matches did the goalkeeper lose?'

CLLD in Spanish shows some properties in common with topics in English, even when the dislocated constituent is a wh-phrase. For instance, both phenomena seem to be immune to weak crossover effects.

(12) John_i, I believe his_i mother loves. (cf. Lasnik & Stowell 1991: 697)

(13) *Spanish*

$[\text{A Juan}]_i$	creo	que	lo	ama	su_i madre.
DOM Juan	believe	that	CL	loves	his mother

'Juan^i, I believe his^i mother loves'.

(14) *Spanish*

$[\text{A qué hombre}]_i$	crees	que	lo	ama	su_i madre
DOM what man	believe	that	CL	loves	his mother

'¿Which man^i do you believe that his^i mother loves?'

Just to be clear, I am not saying that a mechanism of presyntactic feature assignment cannot deal with these patterns. I am only trying to point out that advancing a theoretical device of this type is not a trivial task and requires a rigorous discussion about what kind of constituent may receive a certain type of feature in each language.

My goal in this squib is far more restricted. I argue that an alternative to positing operations that assign left peripheral features consists on (i) extending the *activity condition* (Chomsky 2001) to A'-dependencies, and (ii) assuming that activity features may be *deactivated* by assigning them a certain type of value. I will explain the idea by drawing a parallelism with A-dependencies.

I assume the following definition of the activity condition.

(15) *Activity Condition (Chomsky 2001)*

A goal G is accessible for Agree if G has at least one unvalued feature.

As known, the usual instance of activity/inactivity involves φ-agreement and Case assignment. For instance, a T head requiring values for its φ-features probes its c-command domain for an *active* DP, i.e., a DP carrying an unvalued Case feature [κ: ∅]. If the Probe finds a DP satisfying this requirement, the DP moves to the subject position and receives nominative Case.

(16) a. $[_{TP}\ T_{\varphi}\ [_{VP}$ arrested **Cosmo**$_{[\kappa:\ \emptyset]}]]$

b. $[_{TP}$ **Cosmo**$^{i}_{[\kappa:\ NOM]}\ [_{T'}$ was $[_{VP}$ arrested $t^{i}]]]$

Once the DP received a structural Case value, it becomes *inactive* to enter in further A-dependencies. As a consequence, it cannot act as a Goal for a higher T head probing the structure for φ-features. This accounts for the lack of *hyper-raising* in a number of languages (cf. (17b)).

(17) a. $[_{TP}\ T_{\varphi}\ [_{VP}$ seem $[_{CP}$ that $[_{TP}$ Cosmo$^{i}_{[\kappa:\ NOM]}\ [_{T'}$ was $[_{VP}$ arrested $t^{i}]]]]]]$

b. *Cosmo seems that was arrested.

According to Chomsky (2001), an inactive DP can still trigger intervention effects. He dubs this scenario as *defective intervention.* A pattern that has been analyzed in these terms is the impossibility of A-moving a DP over an experiencer in Romance (cf. Boeckx 1999). As shown in (18), a dative clitic like *le* in Spanish blocks raising of an embedded subject to matrix Spec,T.[2]

(18) *Spanish*

a. Esta persona parece haber obtenido el papel.
this person seems to have obtained the role
'This person seems to have obtained the role'.

b. *Esta persona **le** parece (a él) haber obtenido el papel.
this person CL seems to him to have obtained the role
'This person seems to him to have obtained the role'.

c. **Le** parece (a él) que esta persona ha obtenido el papel.
CL seems to him that this person has obtained the role
'It seems to him that this person obtained the role'.

[2] There are analyses of this phenomenon that do not rely on defective intervention. See Ausín (2001) and Pujalte & Saab (2011) for discussion.

This follows if the dative clitic acts as an intervener for the relation between the T head and the Caseless DP.

(19) $[_{TP}\ T_{\varphi}\ [_{VP}\ \textbf{le}_{[\kappa:\ DAT]}$ parece $[_{TP}\ DP_{[\kappa:\ \emptyset]}\ [_{T'}$ haber $[_{VP}$ obtenido el papel]]]]]]

Interestingly, not every nominal carrying Case triggers intervention effects in contexts like the one depicted in (19). Consider a Spanish sentence containing a nominal adverbial as *esta semana* 'this week'.

(20) *Spanish*

[Esta persona]^{i}	parece	esta semana	haber	sido	elegida t^{i}.
this person	seems	this week	to have	been	chosen

'This person seems to have been chosen this week'.

The usual way to deal with the licensing of nominal adverbials as *esta semana* is assuming that they receive a non-structural Case, i.e., some Case linked to their semantic or thematic interpretation (cf. Chomsky 1986). However, this type of Case value seems to be different from structural Case as nominal adverbials do not trigger defective intervention effects in cases of A-movement, e.g., the DP *esta persona* 'this person' moves over *esta semana* in (20). To account for this, I propose that non-structural Case values form a natural class of syntactic instruction that is interpreted as a *deactivation switch* by narrow syntax. That is, DPs that are not externally merged in a thematic position receive an "OFF" Case value that makes them "invisible" for A-dependencies. This allows the T head in (20) to probe deep down in the structure for the internal argument of *elegida* 'chosen'.

(21) $[_{TP}\ T_{\varphi}\ [_{VP}$ parece $[_{TP}\ [_{DP}$ esta semana$]_{[\kappa:\ OFF]}\ [_{TP}$ haber sido $[_{VP}$ elegida $\textbf{DP}_{[\kappa:\ \emptyset]}\ ]]]]]]$

If, as Saab (2015) proposes, unvalued Case is necessary for theta role assignment, it follows that nominal adverbials should lack a theta role. Therefore, they must receive a "default" interpretation by appealing to the lexical content of their noun (cf. Larson 1985), e.g., a noun like *semana* 'week' denotes an interval of time, so it is interpreted as a temporal modifier.

In sum, there are three types of values for activity features in the realm of A-dependencies: active (i.e., [κ: ∅]), inactive (e.g., [κ: NOM], [κ: ACC]), and deactivated (i.e., [κ: OFF]). Each

of them has a particular functioning in narrow syntax and triggers distinct interpretative processes. In particular, "OFF" values seem to be related to interpretations "by default".

This tripartite value system allows accounting for the lack of intervention effects in topicalization (cf. (3)) and wh-movement (cf. (8)) if the activity condition is extended to A'-dependencies. Assume then that, besides of having a Case feature [κ: ∅], DPs also carry an activity feature [ω: ∅] allowing them to enter in Probe-Goal relations with left peripheral heads. So, for instance, for a DP to move to a topic position it must comply with two independent requirements: (i) satisfying the featural conditions that characterize topics, e.g., being anaphoric (cf. López 2009), and (ii) carrying an unvalued feature [ω: ∅] that makes it a potential Goal for the complementizer. In a sentence like (3), the object DP *the comedian* has an unvalued ω-feature while the subject DP *the critic* is deactivated for left peripheral probing. Therefore, *the comedian* moves to the topic position, and *the critic* receives a "by default" interpretation corresponding to the subject position, e.g., Aboutness (cf. Rizzi 2006).

(22) $[_{CP}\ C_{TOP}\ [_{TP}\ [_{DP}\ \text{The critic}]_{[\omega:\ OFF]}\ [_{T'}\ T\ [_{VP}\ \text{saw}\ \mathbf{[_{DP}\ the\ comedian]_{[\omega:\ \emptyset]}}]]]]$ (cf. (3))

The same logic applies to wh-movement. A wh-element that moves to the left periphery must satisfy two independent conditions: (i) carrying a wh-feature, i.e., the property that makes it a wh-element, and (ii) carrying an active ω-feature [ω: ∅]. An echo-pronoun like *who* in (8) may be regarded as a wh-pronoun that is deactivated to enter in any kind of relation with the interrogative complementizer. This echo-pronouns do not require to obey the same locality conditions than active wh-pronouns, e.g., echo-pronouns can occur within islands.

(23) Elaine read the book [ADJUNCT while Cosmo did **what**]?

Therefore, the analysis for (8) involves assuming that *who* is deactivated for A'-dependencies. It follows then that the interrogative complementizer can probe the direct object wh-pronoun *what.*

(24) $[_{CP}\ C_{INT}\ [_{C'}\ \text{did}\ [_{TP}\ \text{who}_{[\omega:\ OFF]}\ [_{T'}\ T\ [_{VP}\ \text{drink}\ \mathbf{what_{[\omega:\ \emptyset]}}\ \ldots\ ]]]]$ (cf. (8))

In a nutshell, it has been shown that expanding the typology of activity-related features by adding deactivation values allows for a parsimonious analysis of cases where similar DPs do

not trigger intervention effects. The proposal seems to be easier to apply than assuming a presyntactic mechanism of feature bundling.

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