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On Greenberg’s Universal 20 and the Semitic DP*

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One of the programmatic goals of Kayne’s (1994) antisymmetry theory is that of accounting for the many left-right asymmetries found in natural languages. In Cinque (1996), I suggested that in addition to the left-right asymmetries which Kayne discusses, another could be seen to follow elegantly from antisymmetry: that embodied in Greenberg’s Universal 20.

After briefly reviewing that proposal, I will examine certain generalizations presented in a recent analysis of Standard Arabic DPs (Fassi Fehri 1998a, b; 1999), suggesting that in that language (and Semitic more generally), differently from the received opinion, DPs involve successive internal XP-raising, rather than N-raising (to D), with consequences also for the proper analysis of the so-called Construct State.¹

Greenberg’s (1966: 87) Universal 20 reads:

(1) When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite.

In other words, to the left of the N only one ordering is possible (cf. (2)), while to its right both the same ordering, (3)a, or its mirror-image, (3)b, are possible:

(2) a. Dem > Num > A > N
    b. *A > Num > Dem > N

(3) a. N > Dem > Num > A
    b. N > A > Num > Dem

¹ Shlonsky (2000), on the basis of a rich array of Hebrew and dialectal Arabic facts, has arrived at virtually identical conclusions about the syntactic derivation of Semitic DPs, except for the analysis of the Construct State. A similar roll-up derivation is also proposed in Sichel (2000) to derive the inverse order of Adjective Phrases in Hebrew.

* This text reproduces (with few alterations, and without the appendix on the Construct State) a paper presented at the “Workshop on the Antisymmetry of Syntax”, held in Cortona on May 15-17, 2000, and appeared in University of Venice Working Papers in Linguistics, vol.10 (2), 2000: 45-61. A special thanks to Abdelkader Fassi Fehri for his judgments and comments.

I present this work to Christer, with friendship and respect, and also to confirm his idea of some ten years ago that our department had almost turned into a DP department.
How can we make sense of this left-right asymmetry? Capitalizing on the necessary merge of specifiers to the left of a head, due to the LCA, and on the two options open to leftward movements (head-movement and XP-movement), the pattern in (2) and (3) appears to follow if we take the order of the specifiers to be rigidly Dem > Num > A, as shown in (4):

(4) \[ XPX [YPDem [YPY ...[WPNum [WPW ...[ZPAdjP [ZPZ [NP N ]]]]]]]]\]

If N remains in situ (or moves to a head below the lowest adjective), we have (2a) (Dem > Num > A > N). If N raises as a head to X, we have (3a) (N > Dem > Num > A). If N raises as part of NP, in a “roll-up” fashion, to a Spec,KP in between Num and Adj, then KP raises to a Spec,JP in between Dem and Num; then JP raises to a Spec,XP to the left of Dem, then we get (3b), the mirror image of the “base generated” sequence (I ignore here the stopping of N or NP in intermediate positions, for which see Cinque 1996).

Given this scenario, if the “roll-up” movement is local and successive, like head-movement (and N-raising to X cannot be followed by “roll-up” movements of the remnant, as a consequence of the strict cycle), there is no way of generating (2b). Fassi Fehri (1998a,b;1999) shows that Standard Arabic (but, apparently, the same holds, slightly parametrized, in the other Semitic languages) conforms to Greenberg’s universal, in that it is N A Num Dem (cf. (5)), as well as Dem N A Num (cf. (6a)) and Dem Num N A (cf. (6b)), where the obligatory post-nominal APs are themselves in an order which is the mirror image of the English/Italian order (cf. (7)):

(5) a. š-šuḫuf-u l-jādiidat-u t-talaat-u haadihi \( (N A \text{ Num Dem}) \)
   the.newspapers.nom the.new.nom the.three.nom these
   ‘These three new newspapers’

b. *š-šuḫuf-u haadihi t-talaat-u l-jādiidat-u \( (*N \text{ Dem Num A}) \)
   the.newspapers.nom these the.three.nom the.new.nom
   ‘These three new newspapers’

(6) a. haadihi š-šuḫuf-u l-jādiidat-u t-talaat-u \( (\text{Dem N A Num}) \)
   these the.newspapers.nom the.new.nom the.three.nom
   ‘These three new newspapers’

b. ?haadihi t-talaat-u š-šuḫuf-i/in l-jādiidat-u \( (\text{Dem Num N A}) \)
   these the.three.nom the.newspapers.gen the.new-nom
   ‘These three new newspapers’

(7) a. l-hujuum-u l-ʔamiriikyy-u l-wahšiyy-u l-baliiid-u \( (\text{the probable stupid savage American attack}) \)
   the.attack.nom the.American.nom the.savage.nom the.stupid.nom
   l-muḫtamal-u
   the.probable.nom
   ‘The probable stupid savage American attack’
b. šaay-un šiiniy-un ?aṣṭar-u jayyid-un (N AP3 AP2 AP1)
   tea.nom Chinese.nom green.nom excellent.nom
   ‘An excellent green Chinese tea’ (AP1 AP2 AP3 N)

These important observations suggest that the N raises as part of a larger XP, obligatorily around the APs, reversing their base order, and optionally around the higher specifiers Num and Dem, and the still higher (head) Q (cf. (8)):

(8) a. l-kutub-u l-xaḍra?-u t-talaatat-u kull-u-haa (N A Num Q)
   the.books.nom the.green.nom the.three.nom all.nom.them
   ‘All the three green books’

b. kull-u l-kutub-i l-xaḍra?-i t-talaatat-i (Q N A Num)
   all.nom.them the.books.gen the.green.gen the.three.gen
   ‘All of Aqqad’s three green books’

If there is a Construct State genitive, it is right adjacent to the N and precedes the APs (which are in the usual mirror-image order):

(9) a. hujuum-u l-ḥukuumat-i l-waḥšiy-y-u l-baliid-u
   attack.nom the.government.gen the.savage.nom the.stupid.nom
   l-muḫtamal-u
   the.probable.nom
   ‘The government’s probable stupid savage attack’

b. kutub-u l-‘aqqad-i l-xaḍra?-u t-talaatat-u kull-u-haa
   books.nom al-Aqqad.gen the.green.nom the.three.nom all.nom.them
   ‘All of al-Aqqad’s three green books’

Fassi Fehri, adopting the standard N-raising to D analysis, assumes, in addition to N-movement, a separate movement of the possessor and separate movements of the APs (the latter motivated by the need to reverse their order). But his findings follow in a simple and unified fashion from successive leftward movements of larger and larger XPs: first of the (remnant) NP around the genitive possessor (yielding the Construct State); then, of the larger phrase containing the Construct State around the next higher specifier, and so on. The otherwise curious conspiracy of three different types of movements can be dispensed with.

Let’s consider how (the derivation is shown in (10)).

Following Siloni (1994, chapter 2), I take the argument DP to raise to the Spec of an immediately dominating AgrGENP, where it is assigned (structural)


(i) a. is-sabiha omm Pawlu
   the-beautiful mother Paul ‘Paul’s beautiful mother’

b. ix-xih missier Karla
   the-old father Karla ‘Karla’s old father’
Genitive (cf. also Fassi Fehri 1993: 220). In line with Kayne (1998), I assume Agr\_GEN raises to a head W, thereby activating Spec,WP, which attracts the remnant NP (the complement of the raised Agr\_GEN head). This is the core of the Construct State: [WP [Np t N] Agr\_GEN+W [Agr\_GENP DP t t ]].

The analogous raising of the next head, X, to W\_6 activates Spec,WP\_6, which attracts the complement of the raised head X, WP\_7, yielding the order N DP\_GEN AP\_3. The subsequent raising of the next head X to W\_5, and attraction of WP\_6 to Spec,WP\_5 yields the order N DP\_GEN AP\_3 AP\_2.

Finally, raising of the next head X to WP\_4, and attraction of WP\_5 to Spec,WP\_4 yields the order N DP\_GEN AP\_3 AP\_2 AP\_1, which is the exact mirror-image of the base order.

\[ \text{(10)} \]

\[
\begin{array}{c}
\text{WP4} \\
\text{XP} \\
\text{W4} \\
\text{AP1} \\
\text{WP5} \\
\text{XP} \\
\text{W5} \\
\text{AP2} \\
\text{WP6} \\
\text{XP} \\
\text{W6} \\
\text{AP3} \\
\text{WP7} \\
\text{XP} \\
\text{W7} \\
\text{Agr\_GENP} \\
\text{5} \\
\text{Agr\_GEN} \\
\text{3} \\
\text{DP} \\
\text{1} \\
\text{N} \\
\end{array}
\]

Above the projections hosting the APs, head-raising and attraction to Spec of WP are apparently optional:\[^3\]

\[ ^3 \text{When a Construct State Genitive is also present, demonstratives cannot be prenominal in Modern Standard Arabic (Fassi Fehri 1998a: 30). They can, however, in Maltese (Fabri 1996: 233), where APs can also precede the Construct State (cf. fn.2):} \]

(i) Dikoht Pawlu

that.fsg sister Paul ‘that sister of Paul’s’
Depending on whether just WP₄ raises to Spec,WP₃, or WP₄ raises to Spec,WP₃, and then WP₃ to Spec WP₂, etc., one gets the different possibilities of (12), all attested in Standard Arabic (cf. again Fassi Fehri 1998a,b, 1999):

\begin{align*}
\text{(12) a. } & \text{Q Dem Num N A₃ A₂ A₁} \\
\text{b. } & \text{Q Dem N A₃ A₂ A₁ Num} \\
\text{c. } & \text{Q N A₃ A₂ A₁ Num Dem} \\
\text{d. } & \text{N A₃ A₂ A₁ Num Dem Q}
\end{align*}

As prepositional complements, when present, are DP-final (cf. (13)), I will assume, following Kayne (2000), that the preposition is generated above the containing DP, attracts to its Spec its complement DP, and raises to W₀, P+W₀ attracting the remnant to its Spec. Cf. (14):

\begin{align*}
\text{(13) } & \text{muḥaarrabat-u l-ḥukuumat-i l-muntadarat-u li-l-irtišaa?-i} \\
& \text{fighting.nom the.government.gen the.expected.nom of.the.corruption} \\
& \text{‘The expected fighting of the corruption by the government’}
\end{align*}
This analysis calls into question the traditional analysis of the Construct State as N-raising-to-D (cf. Ritter 1987, and subsequent works) as it reanalyses it as local (remnant) NP movement to Spec, AGRgen+W (followed by possible further roll-up movements).4

Independent evidence that XP-raising rather than N-raising to the left of the genitive DP is involved in the Construct State in Arabic comes from the possibility of coordinating two head-nouns. See (15):

(15) taṭwiir-u wa taḥḍit-u l-luġat-i d-dāʔim-aa-ni
   development.nom and modernization.nom the.language.gen the.constant.dual.nom
   ‘The constant development and modernization of the language’

If no coordination of X°s is possible, but only of XPs (Kayne 1994: 59ff.), (15) indicates that the apparent head-noun of the Construct State is actually (at least) a NP (the marking of dual number on the adjective rules out the possibility that (15) involves the coordination of one elliptical and one full Construct State DP, each containing a single head-noun).5

The XP-raising analysis of the Semitic DP just sketched derives naturally many of the characteristic properties of the Construct State. See the Appendix to Cinque (2000).

This analysis, if correct, calls into question N-to-D raising not only for Semitic, but also for Celtic and Romance, as successive raisings of the remnant

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4 The examples in fn. 2, with their D-AP N DPGEN order, exclude (at least for Maltese) that N raises to D (and, in our reinterpretation of the Construct State, that the Construct State phrase raises to (or above) Spec,DP).

5 Another indication that the constituent preceding the Construct State Genitive is larger than a N comes from Bohas and Al-Qaadirii’s (1998) observation (reported in Kihm 1999; Benmamoun 2000: 165f.) that what look like adjuncts to the head N can intervene between it and the genitive when the head N is a deverbal noun (this marked construction is however not accepted by everybody – Fassi Fehri p.c.):

(i) tarku yawman naṭsi-ka…
   leaving one day self.your
   ‘Leaving yourself…’
NP from Spec,WP to Spec,WP (with no pied piping of the containing WP) could be involved, giving the illusion of N-raising.

The general pattern of the Celtic DP is the one given in (16) (cf. Rouveret 1994, chapter 3; Duffield 1995, chapter 5):

\[(16) \quad Q \text{ NUM } A_1 \text{ N } A_2 \text{ A}_3 \text{ GEN/DEM (P DP)}\]

As opposed to Semitic, in the Irish Construct State the head-noun can (in fact, must – Duffield 1995: 290) be separated from the Genitive DP by the lower APs, if present.\(^6\)

This suggests that the (remnant) NP, after being attracted to the Spec of AGRgen+W (as in Semitic), continues alone from Spec to Spec, without pied piping WP (obligatorily to the Spec of a W above the lower APs). This is supported by the fact that the serialization of the APs corresponds to the direct one of English, not to the inverse one of Semitic (Sproat and Shih 1991: 586f.; Duffield 1995: 295ff.).\(^7\)

The same situation holds in Welsh (Rouveret 1994: 209ff.).\(^8\)

Romance, which conforms to the minimally different pattern of (17) (cf. Cinque 1994), can be taken to differ from Celtic in not having an active AGR\(^\text{GEN}\) licensing a structural Genitive DP, thus requiring the insertion of a Preposition above the DP to license the subject DP (Central and Eastern Romance also differ from Celtic in not allowing a demonstrative to remain in the low “deictic” demonstrative position immediately above the NP – cf. Brugè 1996, Brugè and Giusti 1996):\(^9\)

\[(17) \quad Q \text{ DEM } \text{ NUM } A_1 \text{ A}_2 \text{ N } A_3 \text{ P DP}\]

As a matter of fact, Romanian, among the Romance languages, provides independent evidence for XP-raising (to Spec,DP) rather than N-raising (to

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\(^{6}\) See (ia) vs. (ib) ((35a-b) of Duffield 1995: 290):

(i)   a. guth laidir an tsagairt  
        voice strong the priest.GEN ‘the priest’s powerful voice’

    b. *guth an tsagairt laidir  
        voice the priest.GEN strong ‘the priest’s powerful voice’

\(^{7}\) Cf. for example:

(i)   a. cupan mor Sasannach (Irish – Sproat and Shih 1991: 587)  
        cup big English ‘a big English cup’

    b. an seanachapall mor bui  (Irish – Duffield 1995: 296)  
        the oldhorse big yellow ‘the big yellow horse’

\(^{8}\) (i) cwpan mawr gwyrd Sieineaid  (Welsh – Rouveret 1994: 213)  
        cup big green chinese ‘a big green chinese cup’

\(^{9}\) The main parametric difference between Celtic/Romance and Semitic appears then to be whether the content of Spec,WP raises alone or pied-pipes WP (which recalls Koopman and Szabolcsi’s 2000 derivation of “inverted” and “English” orders of restructuring verbs in Hungarian).
D). The first piece of evidence comes from the possibility of such cases as (18a), where an entire phrase (an AP) is found to the left of the determiner; the second from coordination facts entirely parallel to the Semitic fact noted above (cf. (18b), and especially (18c,d), provided by Giuliana Giusti and Carmen Dobrovie Sorin):

(18) a. Foarte frumosul portret
   very beautiful.the painting ‘the very beautiful painting’

   b. Soțul și soția precauți nu fac mai mult de un copil
      husband.the (sg) and wife.the (sg) careful (pl) not make more than a child

   c. Directorul și presedintele nou
      the new (sg) director and president (one individual)

   d. Directorul și presedintele noi
      the new (pl) director and president (two individuals)

References


10 The fact that when two Ns (cf. (18b)), or two adjectives (cf. (i) below), are coordinated both carry the definite article indicates that the article is a definiteness marker formed in the lexicon rather than picked up in the syntax (if that were the case it should appear only on the second of the two coordinated elements – but that is not the case):

(i) Frumosul și marele portret al lui Ion
   Beautiful-the and big-the painting of J. ‘Ion’s beautiful and big painting.’


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