Iterating Nouns and its Guises – Applying the Hεo in the Nominal Domain

<u>Summary:</u> This paper sketches aspects of a novel approach to the syntax of nominal phrases, based on Oishi 2014 and on Chomsky's (2019) Hilbert epsilon operator (Hεo) approach to adjunction. It shows how these components deliver a relatively simple, yet powerful syntax, while having ingredients to unify phenomena as diverse as polydefiniteness (PD), non-PD, and nominal concord. At the same time, and importantly, it is tailor-made for article-less languages.

<u>Theoretical Background:</u> **A**: Drawing on Chomsky (2007) and in an effort to work out parallels between phasal domains, Oishi (2014) assumes that (i) lexical categories are acategorial roots (R), (ii) phase heads (v, n, etc.) categorize Rs, (iii) the "affixes" v and n are invisible to the labeling algorithm (LA) (cf. Chomsky 2015), (iv) the amalgam $<v/n, \text{R}>$ is visible to the LA, which is obtained by Internal Pair Merge (cf. Richards 2009) of R to the phase head, and (v) roots are visible to the LA, but "too weak" to label (Chomsky 2015). (iii)-(v) force R-to-n-raising to make possible that the set comprising the elements can be labeled at all, as in the derivation (1).

(1)   a. $\{n, \text{R}=author\}$ an unlabelable structure (R, too weak; n, invisible)
       b. $\{<\text{R}=author, n>, \text{R}=author\}$ a structure labelable by the amalgam, an $<\text{R}, n>$P

I take n to come in two (purely formal, not semantically interpretable) flavors: n (indefinite) and n^* (definite) (cf. Chomsky 2007). **B**: Addressing the issue of unstructured coordination (as in *This guy is young, happy, eager to go to college, . . .*), Chomsky (2019) unifies this construction with iterated adjunction phenomena by introducing the Hεo. Hεo comprises selecting the elements functioning as adjuncts ($X_1, . . . X_n$), forming a sequence from them, namely $\Sigma=(Y_1, . . . ,Y_n)$, where the elements of the sequence are drawn from the set, but in any possible way. This, in turn, requires an operator K, either conjunction or disjunction. Specifically, Hεo involves forming a sequence of pairs comprising the adjunct (e.g., adjectives) and "a link" L, the Pair-Merge target (e.g., noun). Hεo aligns each Y with an instance of L, while the operator K specifies the logical connective as in (2). E.g., the part of a noun with attributive adjectives traditionally referred to as adjunction (like in *the friendly old man*) is rendered as in (3). Slightly simplifying and altering Chomsky's (2019) proposal, I assume that N=$<\text{R}, n^*>$ and A=$<\text{R}, a>$ (note that A can be phrasal and is, crucially, not a complement of D, as persuasively argued by Svenonius 1992; Mikkelsen & Hankamer 2005: 96 *i.a.*). (3), in turn, Pair Merges with the head noun to yield the full nominal phrase.

(2) $\langle \text{K}, \langle Y_1, L \rangle . . . \langle Y_n, L \rangle \rangle$ (3) $\langle \text{CONJ}, \langle \text{A}=friendly, \text{N}=man \rangle, \langle \text{A}=old, \text{N}=man \rangle \rangle$

We obtain a structure which roughly means: *the man, and the man is old, and the man is friendly*, reminiscent of the verbal counterpart of event semantics (cf. Davidson 1967). I assume that, in English(-type languages), all except the structurally lowest noun delete under identity, analogously to what is assumed for the Matching Analysis of relative clauses (cf. Sauerland 1998):

(4) $\langle \langle \text{CONJ}, \langle \text{A}=friendly, \text{N}=man \rangle, \langle \text{A}=old, \text{N}=man \rangle \rangle, \text{N}=man \rangle$

<u>Non-PD:</u> The morphological realization of only one definite article in English preceding all adjectives is due to a language-specific rule. It determines that solely the topmost c-commanding A-N-pair realize definiteness, i.e. *the friendly* spells out $\langle \text{A}=friendly, \text{N}=man \rangle$, while none of the lower A-N-pairs, and N, spell out definiteness. As for constituency considerations, the current approach thus converges in spirit with Leu (2008, 2015) for languages like German. Moreover, the current approach recasts Lieb's (2005: 1636 ff.) view that languages like English involve "analytical definite nouns," i.e. a kind of periphrastic definiteness (but no syntactic D-head). This derives non-PD.

<u>PD:</u> Given this much, e.g. Hebrew PD receives a simple analysis. The syntax of an unmodified

definite noun phrase is e.g. N=<R=*yeled*, *n*=ha-*>, which is realized as *ha-yeled* ('the boy'). Attributively modifying a definite noun as in (5) amounts to the analysis (7-a). A morphological rule specific to Hebrew determines that **each** A-N-pair must spell out definiteness (next to N). It follows that obligatory "definiteness spread" emerges as the morphological form of definite adjectives. Modified indefinite nouns as (6) have the analysis (7-b), where n – unlike $n*$ – does not give rise to any morphologically realized article-element.

(5)   **ha**-yeled *(**ha**-)xaxam   (6)   yeled (*ha-)xaxam
      the-boy   *(the-)smart
      'the smart boy'   Doron (2001: 1074)

(7)   a. $\langle\langle\&, \langle\text{A}=xaxam, \langle\text{R}=yeled, n*\rangle\rangle\rangle, \langle\text{R}=yeled, n*\rangle\rangle$
      b. $\langle\langle\&, \langle\text{A}=xaxam, \langle\text{R}=yeled, n\rangle\rangle\rangle, \langle\text{R}=yeled, n\rangle\rangle$

<u>Nominal Concord</u>: Strong and weak adjectival declension in languages like German (8)/(9) receives a similar analysis (following previous unification approaches, cf. Leu 2015; Schoorlemmer 2012).

(8)   (ein) gut-**er** Wein   (9)   d-**er** gut-**e** Wein
      (a) good-STR wine   d-STR good-WK win
      '(a) good wine'   'the good wine'   Leu (2008: 11/12)

(10)   a. $\langle\langle\&, \langle\text{A}=gut, \langle\text{R}=Wein, n*\rangle\rangle\rangle, \langle\text{R}=Wein, n*\rangle\rangle$
       b. $\langle\langle\&, \langle\text{A}=gut, \langle\text{R}=Wein, n\rangle\rangle\rangle, \langle\text{R}=Wein, n\rangle\rangle$

An unmodified definite noun is $\langle\text{R}=Wein, n*\rangle$ which is spelled out *der Wein* morphologically due to the flavor of the phase head. An unmodified indefinite noun is $\langle\text{R}=Wein, n\rangle$. A modified indefinite noun, as in (8) comes about by a rule determining that the strong inflection n=-*er* in (10-b) seek a host. As the only pronounced host is the adjective, strong inflection follows. A modified definite noun, has as its underlying structure (10-a). Morphologically, the definite article and the adjective (i.e. *der gute*) spell out the unit $\langle\text{A}=gut, \langle\text{R}=Wein, n*\rangle\rangle$ (cf. Leu 2008, 2015), again due to the flavor of the phase head $n*$, analogously to unmodified definite nouns.

<u>Beyond Iterating Nouns</u>: The current approach to nominal concord emphatically sides with *inter alia* Norris (2014) that nominal concord is nothing (while possessor noun agreement might be) like subject-verb agreement. If anything, parallels to the sentential domain are to be found in possessor noun agreement. However, this begs the question what the sentential counterpart of nominal concord is, as depicted in table (11). If the syntactic mechanism behind nominal concord is the Hεo applied to N, it appears natural to seek for the counterpart in the verbal domain in adverbial modification (as in *ran quickly, nervously*), along the lines of (12), where V=<R, $v*$>, and to identify adverb endings as expressions of verbal concord.

(11)

	"Subject-verb agreement"	Concord
sentence	Subject-verb agreement'	?
noun phrase	possessor agreement	nominal concord

(12) $\langle\text{CONJ}, \langle\text{A}=quick, \text{V}=run\rangle, \langle\text{A}=nervous, \text{V}=run\rangle\rangle$

<u>Selected References</u>: Chomsky, N. (2019). Lecture at UCLA. April 29–May 2, 2019 ● Leu, T. (2015) *The Architecture of Determiners*. OUP. ● Lieb, H.-H. (2005) Notions of paradigm in grammar. In: D. Alan Cruse et al. (eds). *Lexicology: An international handbook on the nature and structure of words and vocabularies*. Vol. 2. Berlin etc.: de Gruyter, 1613–1646. ● Norris, M. (2014) *A Theory of Nominal Concord*, PhD-thesis, U Santa Cruz. ● Oishi, M. (2015) The hunt for a label. In H. Egashira et al. (eds.), *In untiring pursuit of better alternatives*. Tokyo: Kaitakusha, 322–344.