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CHAPTER 8

Blackjack!

21 arguments that agreeing adjectives are derived nominals*

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Adjectives in many Indo-European languages morphologically agree with the nouns they modify in gender, number and case (if the language's nouns can differ in case). These agreeing items seem to undermine several otherwise broad generalizations about morphology, word order and phrasal stress. Mysteriously, agreement in Germanic languages is limited to pre-nominal attributes, while all adjectives agree in Romance and Slavic languages.

This essay proposes to analyze adjectival agreement in terms of a "Derived Nominal Hypothesis," which assigns agreeing adjectives a word-internal nominal structure whose head is the agreement suffix itself. Consequently, these "adjectives" are actually Nouns (by Lieber's Right Hand Head Rule), and so qualify as unexceptional heads of NPs. This supports Abney's controversial conjecture for pre-nominal attributive adjectives (that they are heads of NPs). The Derived Nominal Hypothesis additionally succeeds in making several traditional observations on the behavior of agreeing adjectives fully compatible with current explanatory grammatical theory. It also accounts for many previously puzzling morphological properties of agreement and its syntactic distribution in those languages on which the study primarily focuses, namely Dutch, German, Latin and Czech. To a lesser extent, the essay touches on English adjectival word order and on common properties of Spanish and Latin agreement.

In many Indo-European languages, adjectives "agree" with the nouns that they modify in Number and Gender (φ-features) in some or all positions. Some examples of agreement are given in (1), where *novārum* is unmistakably feminine, plural and genitive case, and taken together *černou kavu* can only be feminine, singular and accusative case.

(1) Latin: *rērum novārum* 'of new things'
Czech: *černou kavu* 'black coffee'

As seen here, this agreement extends to Case agreement in case-inflecting languages, where these are to be understood as follows. Many languages exhibit case differences only on pronouns or at the periphery of noun phrases ("DPs"). For example, English DPs are marked as genitive or possessive by the *-s* on the right of DP rather than inside it. DPs in Japanese and Turkish also exhibit case only at their right edge. Thus:

(2) **Case-inflecting languages.** A language is case-inflecting if and only if overt Case occurs *inside DPs other than at the edge of DPs or on bare Ds* (= those with no other overt material in DP).

Consequently, Czech, German and Latin are case-inflecting languages, but Dutch, English, French, Japanese, Spanish and Turkish are not. It seems then that adjective agreement with nouns is in "φ'-features," defined as φ-features supplemented in (only) case-inflecting languages by Case features. Thus, all the Indo-European languages mentioned so far, other than English, exhibit *adjectival φ'-feature agreement*. Because Dutch, French and Spanish are not case-inflecting, their agreement is limited to Number and Gender.

1. Can't we do it the old way?

The traditional way of thinking about adjectival agreements, which hasn't substantively changed in generative grammar, is far from consistent with several formal restrictions widely thought of as reflecting today's advanced theoretical perspectives. Five such restrictions are given in (3)–(7).

(3) *Only DP arguments and their heads should be assigned Case. APs and As are neither arguments nor heads of arguments, and so shouldn't receive Case at all.*

In non-Indo-European languages like Japanese, As show no sign of "receiving case." And in Indo-European, Vs never assign "accusative" directly to AP complements, nor are APs ever nominative subjects, etc. Yet no matter how terminology disguises it (using "agreement," "case-spreading," "free riders," etc.), the fact is that, if an attributive adjective modifies a direct object N, a V that assigns accusative seems to "indirectly" assign accusative to a case-inflecting adjective modifying this N. Under this traditional conception, case-marking is actually reaching down into a domain which in principle should be "impenetrable."

(4) *Presence or limited presence of A agreement is language-particular. Yet this cannot be parsimoniously expressed by specific lexical items in a grammatical lexicon.*

Most practitioners of Government and Binding/Minimalism with explicit views on the subject make the working assumption that grammatical lexicons of individual languages are the sole repository of language-specific syntax (Borer 1984: 29; Ouhalla 1991). But if for example, Czech differs from English in having say 15+ morphemes expressing A agreement, it's pretty empty to say that hundreds of possible grammatical lexicons between English and Czech having between 1 and 15 such morphemes are just accidentally unattested. Purely descriptive parameters (with no mention of lexical items) would be more parsimonious. E.g. English lacks A agreement, Spanish has it without having case-inflection, and Czech has both. However, as (4) states, such formulations are not properties of specific lexical items.

(5) *A agreement violates a general pattern that specific inflectional types should be uniquely linked to projections of specific lexical categories.*

Thus, Tense and Person inflections are characteristic of heads in extended projections of V; Number, Gender and Definiteness inflections typically occur on heads in extended projections of N; inflections on heads of APs express aspects of Gradability such as comparative and superlative degree. But agreement in Gender and Number on adjectives conflicts with the expected locus of these features on nominal heads.

(6) *Agreeing As and APs often, though not always, violate expected parametric (head-initial) word order.*

Czech, Dutch, English, French, German and Spanish vary greatly in how they order the internal constituents of their VPs and IPs. But all have in common that *their NPs* (*contained in DPs*) *are head-initial*, i.e. N precedes its complements, adjuncts, relative clauses, and in fact many of its AP modifiers. Thus, NPs in these languages are "head-initial," in contrast to "head-final" NPs of Chinese, Japanese and Turkish. Yet all the former languages, in somewhat different ways, have pre-nominal adjectives inside NPs. Of particular interest are Dutch (non-case-inflecting) and German (case-inflecting) since their Adjectives agree with modified Ns *if and only if they violate expected word order* (i.e. precede N).

(7) *In English and French at least, and probably most of these languages, pre-nominal As, including agreeing As, violate Nespor and Vogel's (1982) "Complement Law."*

These authors show that in a wide range of cross-linguistic contexts, heads receive less prosodic stress than do complements and adjuncts. Yet in A-N combinations in NPs, it is generally the pre-nominal A that receives less stress, acting *as if it is the head*.

Since generative syntax privileges well justified restrictive cross-linguistic principles, adjectival agreement must be radically re-analyzed so as to remove the five violations (3)–(7) of plausible hypotheses of Universal Grammar.

2. Structural definition of "Derived Nominals" for A agreement

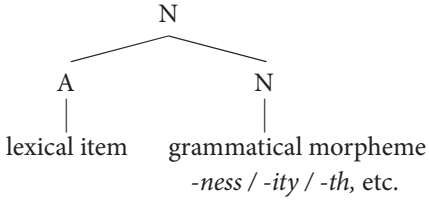
In order to reconcile adjectival agreement with explanatory grammatical theory, this study proposes that As that agree with Ns they modify in φ' features have the following right-hand-headed word-internal structure:

(8) **Derived Nominal Hypothesis.** Agreeing As have the structure $[_N$ A $[_N$ φ' features]].

Spanish agreement provides a familiar and uncomplicated example. In all non-adverbial positions, one large class of Spanish adjectives has agreeing inflections *-o(s)/-a(s)* for respectively masculine and feminine forms of A: *bueno(s)/buena(s)* 'good'; another large class exhibits only number agreement with *Ø/(e)s: joven(es)* 'young'. By (8), the As of the former class have the internal structure $[_N$ $[_A$ *buen*] $[_N$ {*o/a*} (*s*)]]. Section 6.2 will introduce the factor in (8) that distinguishes As that agree only in pre-nominal attributive position (Germanic) from those that agree in all positions (Romance, Slavic). This mechanism can be better understood later in the analysis, so is not introduced here.

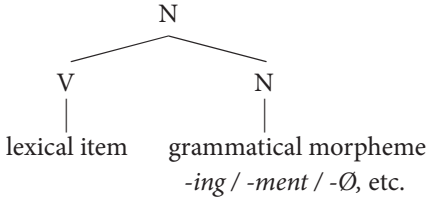
The structure of agreeing adjectives proposed in this study has been standard for nominals derived from verbs and adjectives since Lieber's (1980) introduction of the Right Hand Head Rule inside X^0, illustrated here for English:

(9) a.



(a) *heavy-ness, mad-ness, same-ness, formal-ity, rapid-ity, san-ity, dep-th, tru-th, warm-th*

b.



(b) with N overt: *clos-ing, hear-ing, think-ing, contain-ment, develop-ment, replace-ment*
(b) with a null suffix: *approach, benefit, drink, escape, fall, gain, hold, jump, measure, push*

There is of course a difference between agreement morphemes (8) and nominalizers (9). However, the difference is *one of constitutive syntactic features but not of structures;* the latter are identical. The classic derived nominal suffixes in (9) are autonomous nouns with their own interpretations in Logical Form (LF), while the agreement feature nouns in (8) are either uninterpreted (as will be seen, in Germanic) or are interpreted in LF as antecedent-seeking bound anaphors (as will be seen, in Romance and Slavic). Either way, the grammatical Ns consisting of agreement features in (8) do not contribute their own content to LF, and hence have not been recognized as Ns according to traditional definitions, e.g. the vague notion that nouns should be "names."[1]

The structures (8), whereby *pre-nominal adjectives qualify as N heads of NP complements of Ds,* immediately remove the five objections (3)–(7) to traditional treatment(s) of agreement, as follows:

(10) Five initial arguments for the derived nominal status of agreeing adjectives:
- Violation (3): Agreeing adjectives are by (8) *nominal projections N^0* and so *should be assigned Case features*. For example trees see (19) for case-inflecting German and (51) for case-inflecting Czech.
- Violation (4): The suffixes hosting agreements in (8) are parsimonious language-particular *lexical entries of grammatical nouns*, and conform to Borer's conjecture.[2]
- Violation (5): The inflectional types of Gender, Number and Case are cross-linguistically linked to N projections, of which (8) is simply a typical instance.
- Violation (6): Pre-nominal agreeing As as in (8) conform to expected head-initial phrasal syntax because they are *inside head Ns in expected head-initial NPs*.[3]
- Violation (7): Since pre-nominal adjectives are left hand N-heads of NPs, Nespor and Vogel's Complement Law correctly *predicts these As should have less stress*.

The "derived nominal" analysis of adjectival agreement thus already has five arguments in its favor. The morphological and interpretive properties of agreement and its syntactic distribution in different Indo-European systems furnish many more.

Standing back for a moment, a phrase just before (10), *pre-nominal adjectives qualify as N heads of NP complements of Ds,* echoes a claim in Abney (1987).

He was led to this position by the implications of his analysis of internal noun phrase structure, but in fact found little evidence for it. From this perspective, the reviewer sees "what Emonds does here as making sense of Abney's original claim." Indeed, we will see how adjectival agreements in case-inflecting languages provide independent justification that Abney's original study lacks.

3. Adjectival pre-nominal agreement in Germanic languages

3.1 Arguments from Dutch inflection

Dutch and German Adjectives inflect for agreement only if, in the same NP, *they precede the noun that they modify*. Their adjectives that follow a modified noun or appear in predicative positions simply lack agreement inflection. I first show that agreeing Dutch and German pre-nominal adjectives have the derived nominal structure, namely $[_N$ A – $[_N$ "agreement"]].

Dutch adjectival inflection is simpler to describe because the language is not case-inflecting (2). There is only one overt agreement morpheme *-e.* This inflection is obligatory when As pre-modify N, except for nouns that are singular, indefinite and "neuter," in which case a null allomorph emerges. (Many semantically inanimate Dutch nouns have +ANIMATE grammatical gender.)

(11) **Dutch adjectival agreement.**
N, <A___>, {*-e,* < +ANIM / +PL / +DEF > / Ø}[4]

According to van Riemsdijk (1998), the alternation *depends only on Gender and Number* (of the modified noun) and perhaps *Definiteness* (of the containing noun phrase). These are precisely features of N-projections, not of A-projections, particularly in Dutch, where APs never exhibit Gender except in pre-nominal position. That is, the realization of Gender (and Definiteness) in the morpheme *-e/Ø* can only indicate its status as an N.[5]

As in English, a Dutch attributive adjective with no complement generally *must precede* the Noun it modifies besides agreeing with it in Gender. The examples (12) show my proposed derived nominal structure:

(12) a. de $[_{N,\ ANIM}$ $[_A$ trots] $[_{N,\ ANIM}$ -e]] $[_{N,\ ANIM}$ vader]
the proud father

b. een $[_{N,\ ANIM}$ $[_A$ $[_V$ verlief] $[_A$ -d]] $[_{N,\ ANIM}$ -e]] $[_{N,\ ANIM}$ jongen]
an enamoured boy

The tree structure for adjectival modification of an N in LF apparently requires simply that *a projection A^k be a sister of some projection N^j of a lexical head noun.*

Assuming that the agreement morphemes are not visible in LF, the A^0 *trots* and *verliefd* in (12) satisfy this condition for modifying *vader* and *jongen* respectively.

The derived nominal structures for agreement in (12) now explain why *Dutch As lacking complements don't appear in post-nominal (non-agreeing) position*. If the bare A^0 in (12) *followed* the lexical head Ns *vader*/*jongen*, they would have to be the latter's complements or adjuncts. But because bare As cannot be immediately dominated by NPs (in any linear order), they would project to *separate phrasal APs*. Since being inside phrases would not change interpretations,[6] such needlessly projected APs are excluded by Economy:

(13) **Economy of Representation.** If two structures have identical LFs, prefer the one using the fewest phrases.

Thus, the non-phrasal position of a simple modifying A in an N^0 head (i.e. with agreement) is more economical than as a head of an AP (no agreement).[7]

Modifying As in Dutch and German can also of course have their own phrasal complements and adjuncts. Such As occur both pre-nominally with their complements *preceding* them and in post-head position with their complements *following*. In (14) (van Riemsdijk 1998) and (15) (Corver 1990: 316), the brackets indicate my proposed structures.

(14) a. een vader [$_{AP}$ zo [$_{A}$ trots(*-**e**)] op zijn zoon] dat …
'a father so proud of his son that…
b. de [$_{XP}$ op zijn zoon [$_{N,\ ANIM}$ [$_{A}$ trots] [$_{N,\ ANIM}$ -**e**]]] vader
'the of his son proud father'

(15) een [$_{XP}$ in het geheim op Marie [$_{N}$ [$_{A}$ [$_{V}$ verlief] [$_{A}$ -d]] [$_{N}$ -e]]] jongen
an in the secret with Mary in-love boy

If a post-nominal adjective has a complement, the AP can naturally follow the NP-initial head N as in (14a). But why must such full APs in post-nominal positions in Dutch and German *not agree* with modified Ns? An additional factor here is that NPs (as opposed to bare Ns) in these languages (and English) *must project to their extended projections* DP. Consequently, an *agreeing* adjective with phrasal complements will project to NP and further to DP. Since DPs contain more phrasal structure than just AP, an A with post-head phrasal complements is more economically projected as an AP without agreement.[8]

(16) **3 Agreement properties explained.** Derived nominal agreement structures together with Economy (13) explain why:
- Dutch/German As *without complements* agree,
- Dutch/German bare As are pre-nominal, and
- Post-nominal Dutch/German As *with complements* don't agree.

In addition to structures already mentioned, agreeing *pre-nominal* Dutch and German As can also follow their own complements and adjuncts as in (14b) and (15). This possibility requires clarifying the sequencing of structure-building derivational steps, in particular the proper labeling of XP in these examples. In Dutch and German, phrasal complements and adjuncts of As and Vs first merge with a selecting head-final A or V *on their right* (their well-known VP-final word order). Just as in English verbal gerunds (see again Note 8), these heads determine phrase-internal relations in narrow syntax. These AP/VPs cannot combine (Merge) with head N on their right without violating head-initial property of German noun phrases.

But then nominal agreement suffixes can be inserted in Phonological Form (PF) on the pre-nominal head As in (14b) and (15), so that the A-headed projections of narrow syntax *become N-headed in PF*. That is, in a modifying participle containing Dutch or German head-final Vs, phrasal complements end up preceding agreement-expressing head Ns, as in (15).

Since these pre-nominal adjective-headed phrases actually contain no AP separate from NP, they are in fact more economical than post-nominal APs as in (14a). It appears that only these latter are compatible with a range of adjectival specifiers such as *zo* 'so', and so are allowed because their LF is not available with pre-nominal placement.

3.2 German strong and weak adjectives

Pre-nominal adjectival agreement in case-inflecting German is more complex, since differing "strong" and "weak" agreements spell out Case features as well as those of Gender and Number. However, these complexities only confirm the agreement morpheme's nominal (rather than adjectival) character, since again, categories like V and P do not generally assign Case to German As or APs. Rather, these "agreements" in pre-nominal position reflect exactly those cases which would be assigned in this position to Ns and Determiners, so their appearance in suffixes on As simply indicates that the latter are themselves of category N.

So-called German "strong" agreement appears to not be adjectival inflection at all, but the result of adjectives moving into the head D in extended noun phrases, i.e. DPs (cf. Milner and Milner 1972). This functional head above N in German is the locus of inflected quantifiers, definite Determiners and "*ein*-words" (= indefinite and negative quantifiers and possessive pronouns). The pre-condition for this movement is the lack of any other lexical entry in D. For concreteness, here are *masculine and feminine dative singular paradigms*:[9]

(17) **Masculines** *brave Hund* 'brave dog' **Feminines** *rote Rose* 'red rose'

Dative singular	**Spec**	**D(-m)**	**A(-n)**	**N**	**Spec**	**D(-r)**	**A(-n)**	**N**
definite article		de**m**	braven	Hund		de**r**	roten	Rose
demonstrative *this*		diese**m**	braven			diese**r**	roten	
quantifier *every*		jede**m**	braven			jede**r**	roten	
indefinite article		eine**m**	braven			eine**r**	roten	
possessive pron *his*		seine**m**	braven			seine**r**	roten	
possessive noun	Peters	brave**m** ← Ø			Peters	rote**r** ← Ø		
no article		brave**m** ← Ø				rote**r** ← Ø		

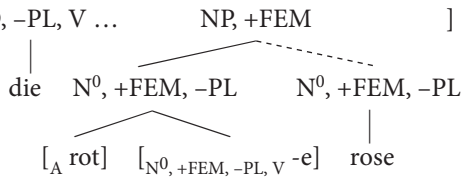
This kind of table repeats itself, with few complications, for all German cases and φ-features. We see that masculine and feminine dative singular inflections on D are respectively *-m* and *-r.* Moreover, the table suggests by use of Ø that adjectival "strong agreements," here *-m* and *-r*, simply result from As surfacing in D position "when they have to," i.e. when there is no other candidate for filling this position.[10] The agreement on As that do not surface in D is called "weak agreement" and is most often *-en,* dative singulars being no exception.

One complication for generalizing from these tables results from a second, actually prior displacement: that of *ein*-words into Spec(DP) in singular "V-assigned cases" (= nominatives and accusatives). When this happens, following As move into and are inflected like D (strong agreement) rather than as A (weak agreement). As a result, German agreement on those adjectives *actually in A positions*, and not realized in D, is fairly simple. It is always expressed by either *-e* or *-en*. The only debate can be over specifying the contexts determining the allomorphy, i.e. why masculine accusative singular is marked with *-en.* This point aside, "weak" A agreement is fully captured by one lexical entry.

(18) **German adjectival agreement.**
N, <A___>, {*-e,* < [D, -PL, V-case] > / *-en*}

The entry is read thus: an N suffix on A is *-e* when a projection of this N-headed word is a sister to a singular D with V-marked case. Otherwise, the N suffix on A is always *-en.*

The structure for the derived nominal hypothesis of agreeing adjectives is therefore as follows. The broken line indicates compatibility with analyses of extended projections that use either dominance (binary branching) or immediate dominance (flat structures).

(19) 

In sum, German adjectival agreement (18) resembles Dutch agreement (11), with the difference that it mentions a case feature of the adjacent D. It consists of two N allomorphs on A that reflect the case and number of D. As in Dutch, *German post-nominal adjectives do not inflect* but rather project to full APs that include complements and adjuncts of lexical As. Pre-nominal Dutch word order (15) also arises in German and can be treated the same way.

– My conclusion is that the Dutch and German systems for adjectival modification are formally very similar, in spite of their difference with respect to case-inflection.

In contrast, traditional and pedagogical descriptions *do not claim these systems are similar* or reflect identical structures. Nor have generative treatments claimed to reduce them to the same system. *This reduction is made possible only by the Derived Nominal Hypothesis* (8), in tandem with a commitment to formalizing lexical entries for grammatical morphemes (Emonds 2000). This successful reduction must count as an independent argument for (8).

3.3 A note on German *ein*-words in D

Outside of pronouns, German accusative and nominative DPs *differ only in masculine singulars.* I interpret this as reflecting the fact that, in German as well as other languages, nominatives and accusatives are actually a single "V-marked case." Accusative-only forms are specially marked as [V, –I] and nominative-only forms as [V, +I]. In any language, the undifferentiated specification "V-case" then refers to "all nominatives and accusatives not specially marked with ±I."[11]

With this simplification, it appears that precisely the class of *singular V-case ein-words* are realized in Spec(DP) rather than D.[12] This leads to contrasting accusative singular counterparts, masculine vs. the others.

(20)

	Masculines: case features [V, –I] *brave Hund* 'brave dog'				**Neuters: case feature [V]** *gutes Kind* 'good child'			
Accusative singular	**Spec**	**D(-n)**	**A(-n)**	**N**	**Spec**	**D(-s)**	**A(-n)**	**N**
definite article		den	braven	Hund		das	gute	Kind
demonstrative *this*		diesen	braven			dieses	gute	
quantifier *every*		jeden	braven			jedes	gute	
indefinite article		einen	braven		**ein**	**gutes ← Ø**		
possessive pron *his*		seinen	braven		**sein**	**gutes ← Ø**		
possessive noun	Peters	braven ← Ø			Peters	gutes ← Ø		
no article		braven ← Ø				gutes ← Ø		

Nominative masculine and both nominative and accusative feminine and neuter modifiers pattern like the above neuters. *The V-marked adjectival singular allomorph* is thus *-e* as in (18). Elsewhere, e.g. in masculine accusatives and all datives, it is *-en,* as Table (17) shows.[13]

4. Adjectival word order and null inflectional heads in English

4.1 Evidence for null nominal inflection

English of course lacks adjectival agreement. At the same time, an explanatory account of the pre- vs. post-nominal alternation of English adjectives has eluded generative analyses from the beginning But strikingly, with respect to the arguments given so far and two more below, this word order alternation *follows* from assuming that English pre-nominal adjectives still have the derived nominal structure (8) of West Germanic (pre-head) agreement. Such structure explains the following three properties that English shares with Dutch and German:[14]

(21) a. English pre-nominal As violate expected parametric word order (head-initial NPs).
b. According to Nespor and Vogel's (1982) "Complement Law," a head should receive less stress, and in English "A-N" sequences, the A receives less stress.
c. Only English As without complements can be pre-nominal; As with complements, i.e. APs, conform to English head-initial word order, following the N that they modify (*meet some girls glad to be home*; *those guys unsure of their jobs were arguing*).

For English A-N word order, I thus propose an N suffix on pre-nominal As *whose phonology before a following N projection is Ø.* (Because of Economy (13), just as in Dutch/German, post-nominal and predicative As lack this inflectional head.) However, this N suffix is not everywhere null; its allomorph *one* is curiously absent in languages with overt agreement.

(22) **English adjectival inflection.**[15] N, <A___>, { Ø, < N > / *stuff,* –COUNT / *one* }

The formal similarity of this lexical entry to that of Dutch agreement (11) suggests that entry (22) is roughly a descendent of Early Middle English adjectival agreement, very similar to today's Dutch and attested until almost 1300 (Strang 1976).[16]

This lexical entry i.e. the Derived Nominal Hypothesis, additionally accounts for two properties of the English "pro-N" *one* that have previously required ad hoc statements.

– Entry (22), together with Nespor and Vogel's Complement Law, predicts the following puzzling stress contrast.

(23) [$_{D}$ That [$_{NP}$ [$_{N}$ heavy' one] there]] contains books.
(Compound stress on the left branch)
[$_{D}$ That [$_{NP}$ [$_{N}$ heavy] [$_{NP}$ box' there]] contains books.
(Stress by the Complement Law)

Similarly, *That pink' stuff in the oven looked strange* vs. *That pink beef' in the oven looked tasty,* since *stuff* is the unstressed head N of the NP, while the post-adjectival noun *beef* is inside a complement to the head *pink*, a derived nominal.

– The pro-form *one* can't be followed by phrases subcategorized by its antecedent N (Jackendoff 1977) because the entry (22) for *one* lacks any subcategorization frame.

(24) *We accept young students of math but not older ones of medicine.
*The director tolerates tendencies to be lazy more than ones to be dishonest.
??Some peaceful protests over safety preceded violent ones over pay.

The formulation (22) also predicts that the pro-N *one* must *immediately follow an adjective*, and some depictions of sub-standard speech even write it as a bound morpheme:

(25) a. I like fish, but these three (*ones) aren't fresh. Let's buy those (*ones) over there.
We need tomatoes. Five (*ones) should be enough, but Sam's (*ones) aren't ripe.
Look at those fish! I'd consider a fresh for example {trout / *one} for dinner.
b. Substandard: A big'un mightn't cost no more th'n them little'uns.

The fact is, a child learner of English has always been more or less forced to postulate the adjectival "null nominal" morpheme (22). Just like its Middle English linguistic ancestors, it constantly hears pre-nominal adjectives, yet knows that English phrases are head-initial, so that its NPs must begin with a noun. It additionally hears that these adjectives are not stressed, so that they must somehow occupy this head N position (referring again to Nespor and Vogel 1982). It thus arrives on the basis of positive evidence at the derived nominal structure (8) and acquires the lexical entry (22).

Of course, it is natural to intuitively doubt that English pre-nominal adjectives have a bound nominal morpheme that is almost always zero. Yet the overt Dutch and German counterparts appear to express only grammatical gender and (in German) one simple case feature. Since these have long disappeared in English, the language has no features for this morpheme to express, except by default its most basic nominal feature, ±COUNT. And this feature is indeed spelled out, as *one* vs. *stuff*.

More generally, a child learning English syntax is no stranger to *null inflection*:

(26) a. All marked forms for English present tense agreements are null allomorphs.[17]
b. English infinitives have no overt affix, even though neighboring Romance and West Germanic infinitives always do. (Dutch *te* and German *zu* are prefixal.)
c. An analysis of English double object constructions that generalizes to constructions in other languages with similar properties suggests that ditransitive verbs have a null "applicative" affix (Pesetsky 1995; Emonds and Ostler 2006).

A null inflectional affix on English pre-nominal adjectives is thus not so surprising; on the contrary, its null phonology is common to several of the language's (few) bound inflections.

4.2 A special history leading to null inflection

Uncontroversially, Modern English has its origins in the 15th century East Midlands dialect, spoken north and east of a line running northwest from London. Over roughly 150 years centering on the 12th century, this area witnessed full integration of two previously estranged communities, Scandinavian and Old English speakers. This period of "amalgamation," described in Baugh and Cable's (2005) respected *History of English*, resulted from thorough mixing of largely illiterate populations under the unrelentingly harsh Norman rule that began in 1066. This new linguistic community, largely lacking any written culture, completely refashioned both their open class and grammatical lexicons and grammars – far beyond levels typically encountered in cultural borrowing. For example, Middle English incorporated up to 1800 Scandinavian words of daily and family life (Baugh and Cable 2005) and much basic syntax unknown in Old English: full blown P stranding and head-initial VPs (van Kemanade 1987), as well as many grammatical verbs, copula forms and personal pronouns.

Baugh and Cable hypothesize that these two intermarrying populations simply "gave up" on reproducing their differently pronounced inflections. But apparently, giving up in this instance didn't mean "losing entirely," but only "losing the phonology." For this reason, English has the remarkable number of grammatical null morphemes surveyed just above.

5. Further consequences of non-phrasal adjectival structure

5.1 A common restriction in X^0-X^0 sequences

In A-N structures, Dutch, German and English all exclude complements of A between the A and the N, as seen in (27).

(27) Some similar (*to Bill) men appeared.
A dozen uninvited (*by the host) guests showed up.

This cannot be due to incompatibility of pre-nominal or inflected A with complement phrases, because Dutch allows both (14b). The restriction is rather that phrases cannot intervene among the sequence of X^0 heads in a single extended projection XP. For DPs, these sequences consist of "grammatical N^0 + lexical head N," including grammatical N suffixes that express agreement on pre-nominal A. The special case (27) is part of the paradigm in (28), where a sequence of head Ns in a single DP is underlined. The offending intervening phrases are bold. Keep in mind that all *pre-nominal As* are inside derived nominal head Ns.

(28) that strange bunch of new students from Miami,
that strange bunch (*[**PP from Miami**]) of students [$_{AP}$ new this year]
*that strange [$_{PP}$ **to us**] bunch of new students
*that bunch of strange [$_{PP}$ **to us**] new students
that strange bunch (*[**PP from Miami**]) of new (*[$_{DP}$ **this year**]) students

This unacceptability of intervening phrases in sequences of X^0 heads in single extended projections is also observed in sequences of grammatical restructuring and causative verbs V^0 that precede lexical heads in e.g. Romance languages. Its most general statement must be that sequences of heads *of identical category* do not each project to *separate maximal projections*.

– Since this restriction treats Germanic *pre-nominal adjectives exactly like grammatical nouns*, these adjectives must in fact have *grammatical N heads of derived nominals*.

5.2 The lack of WH-movement of pre-nominal As

The assumption that pre-head As are a kind of "small adjunct" violating head-initial syntax has never been able to handle the fact that such A, even when pre-modified, cannot undergo WH-movement.

(29) John discussed some {very / less / ?too / quite} expensive books.
*How expensive did John discuss some books?
Mary was invited to a {very / less / ?too / quite} distant restaurant.
*How distant was Mary invited to a restaurant?
How rich a man John has become!
*How rich John has become a man!

In this study's framework, this excluded pattern is transparently explained by the fact that the underlined pre-nominal adjectives and their modifiers *do not form phrases*, and hence are not subject to WH-movement.[18] (In the three Germanic languages under discussion, Economy prefers *non-phrasal pre-nominal "bare A"* modifiers to full phrasal APs.)

– An attributive adjective with no complement can occur inside N^0 without projecting to AP. This lack of a phrase prevents WH movement.

In Dutch the N^0 spells out as *animacy agreement* (common gender *-e*; neuter Ø); in German it spells out as *weak adjectival agreement,* and in English it gives rise to the "Pro-N" *one*. This mechanism can also generate grammatical "participial" As which are themselves derived from lexical Vs: *some boiling water, loudly barking dogs,* etc. Pre-nominal adjectives of Dutch, English and German thus robustly

realize the derived nominal structure [$_N$ [$_A$ …] [$_N$ N-features]]; the fact that these adjectives never move as phrases provides another argument in favor of the Derived Nominal Hypothesis.

6. The economy of Latin agreement and its daughters in Romance

6.1 The nominal base of Romance agreement

This account of adjectival agreement in terms of nominal inflections does not straightforwardly extend to Romance, since agreement there is not limited to pre-nominal position. Rather, *all non-adverbial adjectives in Romance agree.* The pervasive difference between Germanic and Romance is easily illustrated by the following contrast in underlined agreements:

(30) German: Das Mädchen schien sehr {klein / *klein<u>es</u>}.

(31) French: La fille semblait très {*petit / petit<u>e</u>}.
'The girl seemed very small.'

Section 2 introduced the Derived Nominal Hypothesis using the simple example of Spanish adjectives. In these terms, the lexical entry for the nominal suffix of Spanish agreement is (32). There is no need to further specify that it uses the regular plural morpheme *-(e)s.*

(32) **Spanish adjectival agreement.** N, <A___>, {*-a,* +FEM / *-o*}

Spanish additionally has a *null N suffix* for non-agreeing As, also with a regular plural *(e)s*.

Before addressing the central theoretical issue of why Romance (and Slavic) agreement occurs in all positions and not just pre-nominally, an examination of Latin adjectival morphology can provide more arguments for analyzing A agreement as N suffixes.

The analysis of case inflection on Latin nouns in Emonds (2010a) uses only categories and features independently justified in syntax or phonology, e.g. it *avoids any morphology-particular constructs* such as declension classes, language-particular cases, neuter gender, and special "theme vowels." This methodology succeeds in expressing many generalizations obscured in traditional treatments. The crucial step, from Emonds and Spaelti (2005), is to eliminate a timeworn cornerstone of Latin grammar, namely analyzing the defining vowels of "declensions" as parts of inflections rather than of noun stems. In the light of generative phonology, this tenacious traditional practice is close to ridiculous, since it is

simply a fiat that stems must be phonologically invariant, e.g. *servo* 'slave' must derive from a truncated stem *serv-,* because various case inflections can change final *-o* to surface *u* or delete it.[19] This fiat led to an "autonomous morphology" of Latin case ridden with complexity and stipulations, and moreover totally unnecessary. The following almost common sense approach remedies the problem.

(33) **Uniform Case Inflection.** Like other words, Latin noun stems end in consonants or one of five vowels. Underlying case inflections are then uniform; their allomorphy depends only on the phonology of adjacent stem-final and suffix-initial segments.

While the traditional assumption about Latin stems gives rise to somewhat silly (if venerable) analyses of noun inflection, it fatally obscures the analysis of adjectival agreement. For as a result, adjectival stems appear to be immediately adjacent to the (wrongly analyzed) case inflections, because the nominal infix that separates As from these inflections is also thought of as part of these inflections – even though the infix inflects for case and number exactly like other nouns. That is, traditional Latin "adjectival declensions" exclude a priori the Derived Nominal Hypothesis based on [$_N$ A-N]. But the analysis in Emonds (2010a) forces into existence an N morpheme on A that carries case and number.

(34) Analysis of Nouns:
[$_N$ stems, including final vowels] [case/number inflection]
Analysis of Adjectives:
[$_N$ [$_A$ stems] – [$_N$ single vowel]] [case/number inflection]

Here is an example. Once we factor in phonological processes, the uniformity of Latin case inflections of *o*-stem nouns, in columns 2 and 4 of (35), and of *a*-stem nouns, in columns 3 and 5, becomes evident. The underlined vowels truncate when followed by unrounded vowels, by a purely phonological rule. Later Latin also changes the diphthong *ai* to a mid-vowel written *ae*, a process that "bleeds" the truncation rule. Short vowels are given with no diacritic; shaded squares are referred to in Note 21.

(35) **Latin "first and second declension" cases for (non-neuter) Nouns**

Cases	**sing. *o*-stems**	**sing. *a*-stems**	**plural *o*-stems**	**plural *a*-stems**
nominative:	..o-s = ..us	..a-Ø = ..a	..o̲-ī = .. ī	..a-ī = ..ai (ae)
accusative:	.. o-m = .. um	..a-m = ..am	..o-[Syl]s =..ōs	..a-[Syl]s = ..ās
genitive:	..o̲-ī = ..ī	..a-ī = ..ai (ae)	..o-(r)um =.. ōrum	..a-(r)um = ..ārum
ablative:	..o-[Syl] = ..ō	..a-[Syl] = ā	..o̲-īs = .. īs	..a̲-īs = .. īs
dative:		..a-ī =..ai (ae)		

Observe now that these "first and second *noun declension*" endings in (35) are exactly what Latin grammars give as separate "agreement paradigms" for *adjectives* with differing masculine and feminine forms.[20] Under the Derived Nominal Hypothesis the Latin mono-segmental agreement infix {*a/o*} on A is the same as the Spanish agreement N in (32) undisguised by long lost case inflections. This identity strongly confirms the hypothesis that all Romance adjectival agreement is based on a derived nominal affix which, like all other Ns in these languages, expresses grammatical gender.

Latin has two other types of adjective stems, which are lexically specified for taking different derived nominal infixes. A few adjective stems (*dīvi(t)-* 'rich', *pauper-* 'poor', *princip-* 'leading', *veter-* 'old') take a *null derived nominal agreement suffix*. This places the adjective's stem-final consonant phonetically adjacent to the nominal case suffixes, leading to a paradigm identical to nouns with stem-final consonants, traditionally named the "third declension." For deriving surface forms of this declension, see Emonds (2010a). Spanish also has a large class of adjectives whose agreement suffix is null, i.e. their masculine and feminine forms don't differ.

A third class of Latin adjectives takes a derived nominal infix *-i* (Stock 1992: 18). This vowel was subject to a widely discussed phonetic development in Latin, namely lowering of short *i* to *e* in final syllables except before obstruents.[21] These changes give rise to a third type of "agreement declension" for this class of A. It is of interest that tradition has no analysis of this *i* in plural forms, while in the framework here it has a natural place as an N infix.

(36) **Latin adjectives formed with the infix [$_N$ *i*]**, e.g. *gravis* 'heavy'

Case	**singular, non-neuter**	**singular, neuter**	**plural, non-neuter**	**plural, neuter**
nominative:	grav-i-s = gravis	grav-i-Ø = grave	grav-i-[Syl]s = gravēs	grav-i-a = gravia
accusative:	grav-i-m = gravem			
genitive:	grav-i-s = gravis		grav-i-(r)um = gravium	
ablative/dative:	grav-i-[Syl] = gravī		grav-i-bus = gravibus	

We can ask how this analysis of Latin/Romance adjectival inflection argues for the Derived Nominal Hypothesis (8).

– The explanatory "non-declensional" analysis of Latin noun inflection (Emonds 2010a) necessarily leads to re-analyzing Latin's characteristic "adjectival declension" vowels, both *a/o* and the infix *-i-* in (36), *as mono-segmental N infixes.*

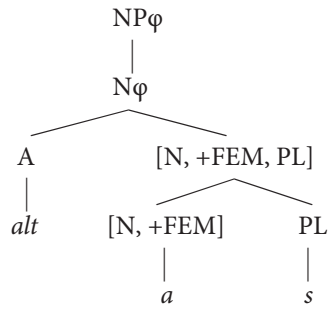
This conclusion essentially forces acceptance of the derived nominal structure (34), whereby Romance adjectival agreements are based on (mono-segmental) *noun affixes*, exhibiting gender in both Latin and Spanish.[22]

– Analyzing Latin in terms of hypothesis (8) independently supports the desideratum (5), that inflection on a category A should express Gradability (which Latin comparative and superlatives amply do) but *not* nominal Gender, Number or Case.

6.2 How Adjectives find their subjects in LF

The discussion of Romance nominal inflections has established that their *agreeing adjectives* all have internal structure typified by e.g. Latin/Spanish *alta* 'high'. Case is absent in Spanish and fused with ±PL in Latin.

(37)



A central question is then, why does Nφ' appear with *post-nominal and predicate adjectives* in Romance and Slavic languages, but not in Germanic, as exemplified in the contrast (30)–(31)?

In other studies of inflectional morphology in Germanic and Romance languages, I have analyzed analogous puzzling contrasting and yet similar syntactic behaviors of constructions based on a single bound morpheme, i.e. "polyfunctionality." My conclusion (Emonds 2000, 2006) is that they can be fully understood in terms of *whether or not the morpheme is interpreted at LF.* The most striking confirmation is how both the similarities and many differences of analytic adjectival and verbal passives fall out from this simple theoretical assumption. The participle suffix [$_{A}$ *-en*] has exactly the same features and structure in both types of passives, and the differences between the two types all follow from whether *-en* is inserted (i) prior to Spell Out and interpreted as an A at LF (adjectival passives), or (ii) only at PF, and hence is not present in narrow syntax (verbal passives).

The success of this account of passive polyfunctionality suggests a similar bifurcation for the nominal agreement suffix Nφ' on adjectives:

(38) **Germanic Agreement.** The adjectival derived nominal suffix is not interpreted at LF.

(39) **Romance/Slavic Agreement.** The adjectival derived nominal (agreement) suffix Nφ' is interpreted in LF.

The option (38) has been assumed for *all* adjectival agreement throughout the history of transformational syntax (cf. Chomsky 1965: Ch. 4), and Sections 3–4 here maintain this perspective. The role of Nφ' in Germanic is thus limited to optimizing Economy of Representation, namely Nφ' permits adjunct As within NPs to be realized inside head Ns, rather than as full APs in post-head positions. Without lexical items for Nφ', the head-initial NPs in the languages under discussion would simply lack pre-nominal adjectives.

Although in Romance and Slavic languages the suffix Nφ' also fulfils this role, it has a second use related to a somewhat different aspect of Economy.[23] Presumably both German and Spanish interpret the following sentences identically, though they have different structures under the Derived Nominal Hypothesis.

(40) a. German: Die Schule scheint [$_{AP}$ sehr [$_{A}$ klein]].
b. Spanish: La escuela parece [$_{\mathbf{XP}}$ muy [$_{N}$ [$_{A}$ pequeñ] [$_{N\varphi}$ a]]].[24]
'The school seems very small.'

The A *klein* in (40a) lacks agreement since the latter is uninterpretable in Germanic and would not otherwise enhance Economy. Nonetheless, the A *klein* must be in a semantic relation with its subject *Die Schule* "at a distance", essentially the same structural distance as that allowed between bound anaphors and their antecedents according to Principle A of Chomsky's (1981) Binding Theory. This relation might be represented via hypothesizing additional phrasal ("small clause") structure *inside AP*, i.e. a subject DP that then moves to SPEC(IP) and binds its trace inside AP. Alternatively, locating the subject of an A may involve defining a grammatical relation between it and this DP at a distance. Either way:

(41) **Germanic APs.** The LF interpretation of non-agreeing adjectives involves relating a projection A^k to a subject at a distance, via extra phrasal structure (inside AP) or by defining a separate relation between A and exterior nominal phrases.

In Spanish (40b), the morpheme Nφ (*-a*) can be taken as the local subject of its A^0 sister *pequeñ-*. That is, the word-internal semantic (theta-role) relation is like that in derived nominals such as *driv-er*, or perhaps in Spanish clitic constructions such as [$_{V}$ [$_{D}$ *lo*] [$_{V}$ *ve*]] 'it-see'. Plausibly, this kind of local relation between X^0 sisters is, at least compared to other more complex structures, essentially free in terms of Economy. So what remains in order to interpret the Spanish sentence

(40b) is specifying the co-reference between the suffix Nφ and its antecedent/subject at a distance, *la escuela.*

Now across languages, various X^0 that require antecedents in local domains (reflexive clitics, reciprocal pronouns and suffixes, English N^0 *self* and D^0 *each other*) are called "bound anaphors." To be interpreted at LF, their antecedents nust furnish values for their incomplete lexical feature specifications (Cardinaletti and Starke 1999). That is, a bound anaphor always has some unvalued or "defective" features for Definiteness and Reference, and so can be interpreted only if locally bound by a DP antecedent with a full set of valued features.

In the present case, I claim that the derived nominal agreement morphemes Nφ' on adjectives are among such bound anaphors – they lack features of Definiteness or Reference. They are thus another class of N^0 subject to Principle A (Chomsky 1981: Ch. 3), which specifies the needed co-reference in (40b) between *-a* and *la escuila.*

(42) **Romance/Slavic APs.** LF interpretation of their agreeing adjectives involves relating *a bound anaphor* (*Nφ*) to an antecedent at a distance (Principle A), with *no recourse to extra phrasal structure or to defining or extending a grammatical relation.*

Crucially, Romance and Slavic languages extensively utilize at least *one other bound anaphor se/si* 'self' independently of adjectival agreement. Consequently all of them use the Universal Grammar of Principle A, however ultimately best formulated, to locate the features for interpreting their underspecified bound anaphors, and furthermore do this *independently of adjectival agreement.* Thus these systems need no special syntactic devices for interpreting their agreeing adjectives, whatever their positions, other than simple lexical entries for an additional "bound anaphor," i.e. the agreement N inflection(s).

More generally, Economy of Representation (13) favors *reducing the number and role of phrases* in derivations as much as possible, in comparing different structures and derivations with the same LFs. From these formulations, the agreement expressed by Nφ, provided it is used in interpretation, significantly contributes to Economy; full agreement in all (non-adverbial) positions is more economic than Germanic partial agreement. It is therefore obligatory when lexicons of particular languages make it available in LF, e.g. in Romance and Slavic.

This explanation of adjectival agreement crucially adds the affix Nφ to the stock of bound anaphors. However, *it does not extend the types of structures which realize bound anaphor*s (N^0 and D^0) from those used in standard Binding Theory. This restriction of bound anaphors to N^0/D^0 is made possible only by hypothesis (8) for adjectival agreement.[25]

– The Derived Nominal Hypothesis accounts for the difference between Germanic and Romance/Slavic agreement using only concepts with strong cross-linguistic justification: the theory of bound anaphors as defective in feature values, and the notion that single grammatical morphemes can be lexically specified as being interpreted in LF or not.

7. Reducing Czech Adjectival Agreement to case on grammatical Ns

Czech, pre-historic kin to German and Latin, exhibits case inflections on a range of categories that agree with nouns, not surprisingly including adjectives. For our purposes, an intriguing characteristic of Czech is that several case/number suffixes for "agreement inflections" are *distinct* from suffixes for open class (lexical) nouns, even though there are also similarities. In order to focus on this property, let's look at a traditionally presented array of adjectival inflections in the oblique cases, leaving aside "V-assigned case," i.e. nominative and accusative. Among other properties, Czech agreement inflections in oblique cases *never* distinguish masculine from neuter, which underscores my more general stance (Emonds 2009, 2010a) that Indo-European gender is basically a binary rather than ternary system.

(43) **Unanalyzed oblique case inflections on "hard" Czech adjectives**[26]
To realize the following cases, add after an A the inflection:

	with N, –FEM, –PL	**with N, +FEM, –PL**	**With N, +PL**
genitive:	*-ého*	*-é*	*-ých*
locative:	*-ém*	*-é*	*-ých*
dative:	*-ému*	*-é*	*-ým*
instrumental:	*-ým*	*-ou*	*-ými*

An obvious property of these adjectival case agreements is their *long vowels* (written with accents in Czech), a property almost absent among its case suffixes for open class nouns. I propose to account for this length by analyzing Czech "hard" A-inflections as two successive morphemes; the first I represent as a generalized long vowel "ɛ́", which is *a grammatical N infix specified for Gender* (like all Czech nouns); the second is the actual case/number suffix. The N infix makes Czech like Latin: in both languages, Case/Number suffixes do not (immediately) follow an A but *always follow an N*. The Czech variant is thus a language-particular subcase of the Derived Nominal Hypothesis (8).

(44) **Composite adjectival inflections.** Czech agreeing "hard" adjective stems precede a *mono-segmental long vowel ɛ́*, which spells out a grammatical N as ±PL, ±FEM.

(45) Allomorphs for the Gender infix [$_N$ ɛ́] on agreeing "hard" adjectives:
(i) *-é* is a default for –PL, though special vowels spell out instrumentals.
(ii) *-ý* is a default for +PL (*y* is a spelling for high front *i* after hard consonants).
(iii) As the next table shows, these values reverse in structural (V-marked) cases.

Further confirmation that ɛ́ is a separate N morpheme is that Czech suffixes for adverbial As, which show no agreement and hence need no N, are *short rather than long vowels*. That is, these non-agreeing suffixes do not involve the noun infix ɛ́ required by (8).

Separating out a derived nominal morpheme ɛ́ in adjectival agreements permits a revealing re-analysis of Table (43)'s unanalyzed forms. I extend the table to include further allomorphs of ɛ́ in structural cases (*ou, á*, *í*), but still leave out neuter agreements. *The shaded squares in (46) indicate where case inflections on agreement and open class lexical nouns are the same or transparently related.*[27]

Parenthesized lexical segments as seen in Table (46) are defined in Emonds (2010a). Informally, these segments enter a derivation only if they enhance CVCV alternation, i.e. the instrumental plural suffix is *-y* if a preceding noun stem ends in a consonant but *-my* (spelled *mi*) if it ends in a vowel.

(46) **Analyzed case inflections on "hard" Czech adjectives**
To realize these cases after A, add [$_N$ ɛ́] plus a case inflection:

Informally labeled case	**with N, –FEM, –PL**	**with N, +FEM, –PL**	**with N, +PL**
nominative:	*-ý+**Ø***	*-á+**Ø***	*-í* or *–é+**Ø***
accusative:	*-ý+**Ø*** or *-é+**ho***	*-ou+**Ø***	*-é+**Ø***
genitive:	*-é+**ho***	*-é+**Ø***	*-ý+**ch***
locative:	*-é+**m***	*-é+**Ø***	*-ý+**ch***
dative:	*-é+**(m)u***	*-é+**Ø***	*-ý+**{ů}m***
instrumental:	*-ý+**m***	*-ou+**Ø***	*-ý+**(m)y***

This bi-morphemic analysis of Czech agreement brings out the identities (in the shaded squares) between agreement and open class nominal inflections in a way that Table (43)'s unanalyzed "adjectival inflections" do not.

– Successful expression of N and Agreement case similarities as in Table (46) justifies factoring the vowel of an N infix out of agreement inflections.
– The bi-morphemic division of Derived Nominal Hypothesis (8) provides a revealing, *entirely parallel analysis of Czech "hard" and "soft" adjectives.*

Czech soft adjectives require only that the gender infix be invariant [$_N$ í] rather than the differently realizable [$_N$ ɛ́]. The choice of infix in turn predictably depends on whether or not *A's stem-final consonant* is "soft" (palatal or palatalized). So like Latin and Spanish in Section 6, Czech agreeing adjectives always consist of *a stem A, a* (*phonologically alternating*) *derived nominal infix, and a single set of case/number suffixes*.[28]

(47) **"Soft" Czech adjectives.** Agreeing As with stem-final soft consonants take *an invariant gender Noun infix -í-,* followed by the exact same bold Case/Number suffixes in (46).

Three additional independent arguments support the division of Czech modifier agreement into a grammatical noun infix preceding case/number suffixes. Notationally, I here write N^0 for open class nouns, and n^0 for *non-lexical grammatical heads* D, Q, Num, etc. in extended noun phrases (DPs). Of course, N^0 and n^0 share basic nominal features.

– Another advantage of factoring out a Gender infix in Czech adjectives is that a traditional grammatical generalization (48) applying only to "soft adjectives" (with stem-final palatals) extends to all adjectives.

Table (46) shows that the so-called agreements of feminine "hard adjectives" reduce entirely to allomorphy of the nominal infix -ɛ́-. So for *both types of adjectives,* forms specifically marked as Feminine *completely lack agreement suffixes* (Plurals are not specified for Gender). This general property of Czech is expressed in one lexical entry of a null morpheme:

(48) **Czech Feminine Impoverishment.** <[n^0, +FEM]___>, CASE, Ø

This unified statement is made possible only by the Derived Nominal Hypothesis, since otherwise agreement on feminine hard and soft adjectives must be specified differently, exactly as in traditional descriptions.

Consider next the fact that several lexical entries for functional heads n^0 in Czech DPs exhibit *the same case inflections* as in (46), rather than the often different case inflections on open class lexical nouns. (I am indebted to L. Veselovská for this point.)

(49) **Third person pronouns:** Non-nominative case forms are composed of a stem *je-/jí-* plus the bold case forms on the right in Table (46).[29]

(50) **Demonstratives:** Non-nominative case forms are composed of a stem *to-/tě* plus the bold case forms in Table (46).[30]

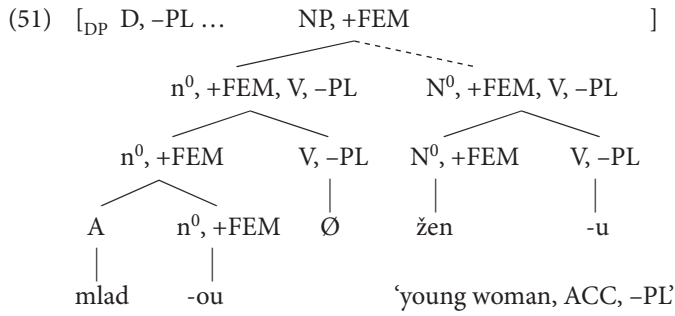
Because pronouns and demonstratives are unlikely to be of category A, it would be misguided to attribute the Case/Number spell outs in Table (46) to a contextual feature <A___>. Outside traditional truisms, nothing formal groups together the lexical open class A with functional heads n^0 in DPs (any more than say lexical Ns or Ps group with TENSE). The case forms in (46) occur rather *only on stems with a nominal feature,* namely in the context <n^0___>. The theoretical expectation that N^0 and n^0 are related is then empirically borne out by the similarities of the case inflections after N^0 and n^0 in the shaded squares of Table (46).

- Hence Czech case morphology on Determiners forces us to conclude that its agreeing adjectives terminate in n^0, namely a grammatical N^0, rather than in A^0.
- Finally, Czech Gender infixes on agreeing adjectives suggest a straightforward analysis for nouns whose forms appear to be irregularly adjectival: *hajná* 'gamekeeper's wife', *vstupné* 'entry fee', *průvodčí* 'female conductor', *telecí* 'veal'.

These nouns have marked internal structure: the first two are formed from "hard" adjectives lexically structured as [$_N$ A–[$_N$ *é*]] and the second two contain "soft" adjectives [$_N$ A–[$_N$ *í*]]. These structures resemble English Ns such as [$_N$ [$_A$ *smart*]–[$_N$ *ie*]], [$_N$ [$_A$ *quick*]–[$_N$ *ie*]], *biggie, brownie, cheapie, cutie, fatty, goodie, hippie, oldie, smoothie, softie, sweetie.*

This section has demonstrated that Czech agreeing adjectives all conform to the single derived nominal pattern in (8). Case morphology reveals many advantages of this hypothesis. All Czech As that modify Ns, i.e. adjectives rather than adverbs, *precede a grammatical noun infix with two phonologically conditioned allomorphs*, *-í* and *-é*, which are then followed by case morphology properly speaking. As concluded in Section 6.2, this infix is a bound anaphor that needs an antecedent in a local "Principle A domain."

The structure of agreeing Czech adjectives, in conformity with (8), is thus as follows:



Such DPs here (and in general) are projections of both functional and lexical heads, and the heads spell out either features that canonically occur with them in LF (e.g. FEM on N, PL on D) or on sisters of one of their projections (the condition of "Alternative Realization").[31] In particular, this study claims that agreeing adjectives are actually structural head Ns, thus avoiding the unwanted consequence (Abney 1987: Ch. 4) that an extended noun phrase could have a head of category other than N. Nonetheless, Abney's conjecture that the pre-nominal A is *under the head* of the noun phrase has been fully vindicated.

Notes

* With great pleasure I dedicate this effort to Carlos Piera, indefatigable and discerning scholar of linguistics – and life, especially in the Spanish capital, where he so warmly welcomed me. His massive assistance with my essay on Latin, a crucial forerunner to this effort, demonstrated again to me the lesson of his life, you can never be erudite enough.

I deeply appreciate the encouragement of both the editor and a reviewer. The latter's comments on the manuscript have been crystal clear and constructive, an incentive to strengthen points that may be weak. However, I regret that I cannot satisfy the very reasonable desire to "see a less condensed treatment of either Latin or Czech rather than a very quick treatment of both." The number of arguments might then fall below twenty!

1. Generative accounts frequently adopt commonplaces of traditional grammar uncritically, unless Chomsky has happened to challenge them. But he has never focused on adjectival agreement, beyond mentioning that agreement features on A are not interpreted (Chomsky 1965: Ch. 4). As indicated in the text, the analysis here partly agrees with but partly modifies this somewhat prima facie observation. See Section 6.2.

2. The nouns themselves are not the agreements, but like other nouns *precede* the agreements, i.e. they are usually infixes. In discussing individual languages, we will see that allomorphy aside, Dutch has one such infix, German 2, Spanish 2, Latin 3, and Czech 1 or 2.

3. Dutch and German word order patterns in NPs are further discussed just below.

4. In the subcategorization formalism of Emonds (2000: Ch. 3), <F> means, "occurs as sister to a (possibly phrasal) X^j whose head has a syntactic feature F." <F___> means "occurs as a right

sister *inside a word* to an X^0 with a syntactic feature F." These two tree configurations "look" very different, but the cited chapter argues that these looks can be deceiving.

5. Veselovská (2001) proposes a two-way implication: a lexical item can enter syntax as a Noun if and only if lexically specified for GENDER.

6. Recall from just above, adjectival modification of an N in LF requires only that some projection A^k be a sister of some projection N^j.

7. We can also ask what prevents a grammatical head N^0 (such as inflection on a bare agreeing adjective) from *following* a lexical head N^0 inside a single (Germanic) NP. The general syntactic model of Emonds (2000, esp. Ch. 6) allows a sequence of X^0 heads in a single XP. However phase-by-phase insertion permits only one X^0 *to be open class, which furthermore is the rightmost* X^0 in a head-initial domain. Germanic nominal domains are all head-initial.

8. This analysis parallels that of English verbal gerunds in Emonds (2000: Ch. 4). In narrow syntax, the lexically filled head of a verbal gerund is V, which selects complements, assigns accusative case, requires *-ly* adverbs, etc. But in PF, the nominal suffix *-ing* is inserted, which makes the phrasal projections containing V into nominals N^j, thus accounting for the NP distribution of gerunds in subsequent phases (cyclic domains). As the cited analysis explains, these NP-gerunds must in fact project to DPs, which are less economical than the morphologically identical participial APs. Consequently, participles are preferred to gerunds whenever material in SPEC(DP) is not needed for interpretation.

9. I am very grateful to Friedrich Neubarth for comments and suggestions on this entire essay, with special attention to this section on German adjectival agreement, for which he has also helped me assemble appropriately exemplified paradigms. He additionally points out some still unresolved puzzles, for example that pre-nominal adjectival sequences share agreement inflections, a property not immediately consistent with sequences of As "moving" to a unique D position. Needless to say, the actual analyses here including its problems are mine.

10. A complication is that the movements indicated in (17) are blocked when the case suffix (genitive *-s*) associated with D is separately expressed on the head N itself.

11. Thus in Japanese, accusative NP-*o* should be assigned by [V, –I], but NP-*ga* by only V, since *ga* occurs on objects as well as subjects, in particular when accusative *o* is absent.

12. This study is not concerned with exactly where and how *ein*-words surface when the "strong endings" of the D position are on A; the point is that in these configurations they do *not* express the obligatory morphology of D. F. Neubarth points out to me that if the N is a covert anaphor rather than lexical, the *ein*-words stay in D with D morphology (*eiiner/eines*).

13. Consequently, German case morphemes succinctly specified as having V-case refer to what in traditional terms is a clumsy disjunction "masculine nominative singulars, and both nominative and accusatives of feminines, neuters and plurals."

14. The conditions in (21) are just English counterparts to those in Dutch and German, less the complication in (14b)–(15) posed by head-final APs.

15. English uses an additional null +ANIMATE nominalizer for adjectives in generic sentences: *We credit the young simply for youth; the unjust often escape punishment.*

16. The two lexical entries are formally close, differing only in bracketed material. Emonds (2010b), as summarized just below, discusses English null morphology more generally, attributing it to Anglo-Scandinavian amalgamation in the English East Midlands.

17. The English finiteness position I has number agreement in both tenses (*was* vs. *were*), and in present tense on V inside VP (*-s* vs. *Ø*). Since third singular forms are cross-linguistically least marked (Benveniste 1966), a child acquiring English must expect marked agreement forms for lexical Vs, and is perhaps relieved to learn they are all null.

18. Measure phrases and possessive phrases in SPEC positions cannot undergo WH-fronting, which I take to be a separate matter.

19. Extending Latin tradition, the stem of English *calf* would be *kæ-,* that of the V *write* would be *r-,* and the V *eat* would have no lexical stem, since (American) *eat, eating, eaten,* and *ate* share no phonetic segment. So "close to ridiculous" is not too harsh a judgment.

20. This identity of stem-final vowels in Latin first and second declension nouns and the derived nominal affix *a/o* on adjectives almost certainly underlies the mistaken early decision in Government and Binding that "Adjectives receive Case."

21. Latin case inflections on nouns have some allomorphy, but massively less than in traditional declensional treatments. Irreducibly, however, after stem-final low vowels *a* and *o,* the forms in shaded squares of Table (35) differ from the default suffixes seen in Table (36). Emonds (2010a) states these minimal variations strictly in terms of phonology and syntax.

22. Curiously, the principal such derived nominal morpheme *a/o* in (32) has not changed in Spain in 2000 years. *Que pais mas conservador!*

23. This is unsurprising, since a range of other familiar inflections (e.g. English past tense, English comparatives, French future tense, German datives without P, etc.) invariably facilitate using "fewer words" for a given LF, i.e. they contribute to Economy – and for this reason are obligatory when possible.

24. As discussed for Germanic agreement in the paragraphs following (16), the label XP becomes NP as soon as the syntactic derivation values φ-features of the N head.

25. Without the Derived Nominal Hypothesis, one could at best introduce an odd concept of "adjectives as anaphors." But outside the present framework, the class of bound anaphors would then encompass the entire open lexical class of As.

26. "Hard" adjectives have final consonants that are not palatal or palatalized. The table's traditional case names are better replaced with justified syntactic features (Emonds 2007). Thus, these cases are all assigned by Ps with particular features, e.g. both locative and instrumental require – GOAL, -SOIRCE. These refinements do not affect the discussion here.

27. This study does not try to express differences between the agreement inflections and corresponding case inflections on lexical nouns.

28. The derived nominal infixes in Latin agreement are not phonologically determined as in Czech, but stipulated with adjectival stems, much as English adjectives are lexically marked for whether they can form derived verbs with *-en, -ize, -ify* or *Ø*.

29. The feminine accusative and instrumental singulars are *ji* not *jou,* as *j-* is a palatal.

30. The near regular numeric singular *jeden, jedna, jedno* 'one' is similarly composed of a stem *jedn-* plus the same vowels as in demonstratives, plus the case forms in Table (46).

31. This principle is defined and multiply exemplified and justified in Emonds (2000: Ch. 4) and several other articles before and since. In (51) for example, the case feature V "alternatively realizes" the case-assigning V sister of DP.

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