

## ON BRACKETING PARADOXES IN HUNGARIAN\*

ISTVÁN KENESEI

### 1. Introduction

This paper is concerned with a class of bracketing paradoxes in Hungarian. It examines two related constructions and differentiates between them according to the complexity of the 'bases' of which they are formed. We will suggest that one set of bracketing paradoxes has to be resolved by resorting to postsyntactic morphological processes.

Following Stump's (1991) distinctions, bracketing paradoxes are understood as morphosemantic mismatches, i.e., constructions in which morphological or morphophonological structure differs from the corresponding semantic structure, cf. (1), in which brackets, [...], mark semantic constituents, and parentheses, (...), stand for morphological constituents.

- (1) (a) [[two head]-ed] - (two (head-ed))  
(b) [[transformational grammar]-ian]  
- (transformational (grammar-ian))
- (2) (a) [passers-by]-[∅] - ((passer-s)-by)  
(b) [[un-grammatical]-ity] - (un-(grammatical-ity))

The familiar examples quoted above illustrate mismatches in which widely accepted principles of level ordering are violated. Specifically, in order to represent the semantic structures of the examples in (1), the criterion has to be bypassed that all derivation must take place prior to compounding. In (2a), inflection is inside word formation, while in (2b) the phonological properties of

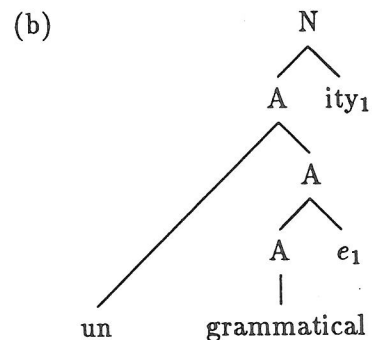
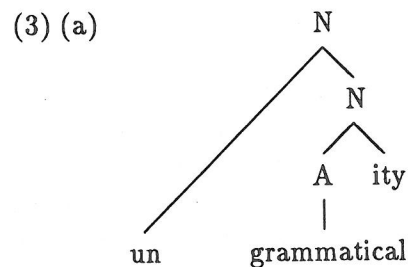
\* The present paper is the written version of a talk presented at the 6th International Morphology Meeting, 16-18 September, 1994, Szombathely, Hungary. I wish to thank the participants for comments and criticisms, in particular, Casper de Groot, László Kálmán, and, most of all, Martin Haspelmath, none of whom will necessarily agree with the views formulated here, as will be clear below.

the nominalizing affix require that it be added to the base before the prefix *un-* is attached, although the resulting structure would run counter to semantic composition.

The problems illustrated in (1)–(2) are all of the kind in which either two types of word formation processes are in conflict or where inflection clashes with word formation. The issue illustrated by the class of the Hungarian bracketing paradoxes discussed in detail below, however, is of a different sort: in this language it seems that some derivational processes have to be postponed till after syntactic operations have taken place, shedding new light onto the intricacies of morphosemantic mismatches, and calling for a further extension of proposals seen in the literature in so far as postsyntactic morphological operations must involve not only inflectional but also derivational mechanisms. Analogous constructions from other languages as well as an alternative proposal will also be considered before we speculate on directions for further research.

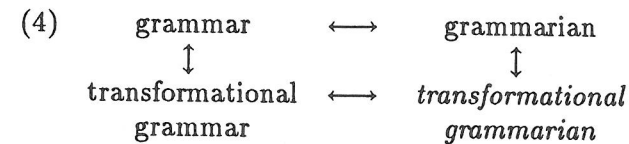
## 2. Selected proposals in the literature

Of the rather extensive literature on bracketing paradoxes relevant to the issues at hand, Pesetsky's (1985) approach is reviewed first. He relies on movement operations at work at the level of Logical Form (= LF) in order to account for the disparate morphophonological and semantic structures for items like *un-happi-er* or, for that matter, *un-grammatical-ity* as in (2b). It is supposed that at S-structure words have their 'regular' morphological structures, while at LF they undergo 'morphological quantifier raising' moving the head of the word into a more prominent position, as shown below.



The raising of *-ity* entails the stipulation that traces of affixes must belong to the null category class (just like prefixes), which makes it possible for *un-* to attach to an adjective in (3b), which observes both the semantic and categorial requirements of morphological constituents, in contrast to the S or PF (= Phonetic Form) structure displayed in (3a).

Spencer (1988) takes a closer look at what he calls 'personal nouns', such as (1b), and creates a 'square' from the three lexicalized items by filling in the 'missing' fourth expression at the bottom right corner of the oppositions thus formed.



According to Spencer, such paradigms apply by extension to other classical paradoxes like (1a). At their very core, these 'paradigmatic word formation' processes are driven by analogy, as transpires from (4).

Stump (1991) also relies on paradigmatic functions in his analysis of Breton plurals, which pose essentially the same problems as (2a), where the paradox arises because the inflectional affix is inside the compound. Stump's remedy is the default rule that takes heads to be central in paradigms and requires morphological processes to operate on heads. Again by extension, the derivation of *transformational grammarians* in (1b) from *transformational grammar* is therefore also seen as regular since it is the head *grammar* in the compound that undergoes affixation. His analysis of such personal nouns is complemented by semantic considerations missing from previous ones.

Beard (1991) suggests that sublexical semantic features are responsible for the apparent noncompositionality of paradoxes like (1b), which derives from the same source as the ambiguity of classical examples, such as *old friend* 'an old actor in a friendship' versus 'an actor in an old friendship' or *good writer* 'a writer who is good' and 'one who writes well'. His Decompositional Composition works on the principle that the semantics of an adjunct may select a single feature of the head and can compose with it rather than the word as a lexical whole.

Halle-Marantz (1993) offer their Distributed Morphology to form an interface between syntax and phonology for inflections. They assume that words pick up inflectional features or actual inflectional morphology in various syntactic processes, such as head-movement, adjunction and merger. Although

their proposal is not directly relevant to the issue of bracketing paradoxes, the fact that (some) word formation is deferred to post-syntactic processes is significant to the position I wish to advocate here.

Other proposals rely on a radically different conception of the relationship of morphology and syntax, such as Sadock (1991), make use of the separation of morphological and phonological information, e.g. Sproat (1984), or introduce a somewhat loose notion of 'lexical relatedness', see Williams (1981).

In the next section I will survey a number of morphosemantic mismatches in Hungarian and will show that at least some of them cannot be accommodated in the approaches discussed above.

### 3. Bracketing paradoxes in Hungarian

As most other languages, Hungarian abounds in cases that can be regarded as 'bracketing paradoxes' in view of the requirement ordering derivational processes prior to compounding. In addition to the predictable equivalents of *transformational grammarian* and *baroque flautist*, there are a number of interesting, sometimes well-researched cases of mismatches.<sup>1</sup>

#### 3.1. Verb + oblique argument nominalizations

Nominal compounds that appear to be nominalizations of the verb and its oblique argument belong to the lesser known types of bracketing paradoxes in the literature. They have been extensively dealt with by Laczkó (1985; 1990; 1993) in a Lexical-Functional Grammatical framework, as well as by Szabolcsi-Laczkó (1992) and Szabolcsi (1994) in Government and Binding Theory. They are formed of an oblique case marked noun and a deverbal nominal. The following illustrate.

<sup>1</sup> One such paradoxical 'occupational' compound has, however, hardly been noted: it is the somewhat humorous

- (i) *alacsony-nyomás-ú kazán-fűtő*  
low-pressure-denom furnace-operator

which has the stress-pattern faithfully represented by the spacing, i.e. each 'word' has its initial stress, indicating a meaning different from what is intended, namely that it is the furnace that has low pressure, rather than the operator. An account of why the semantically justifiable stress pattern is not available will be given below.

- (5) (a) *város-ba érkez-és*  
city-into arriv-dev  
'arrival in (a/the) city'
- (b) *csoport-hoz tartoz-ás* (c) *élet-ben marad-ás*  
group-to belong-dev life-in stay-dev  
'belonging to (a/the) group' 'staying in life'

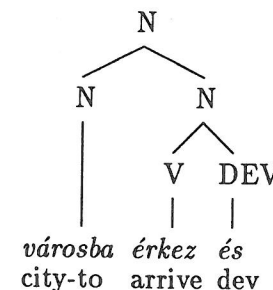
Obviously, the head of the expression, the nominalizer affix on the right edge cannot 'inherit' the complement of the verb that it takes. On the other hand, the strings without the nominalizing affix are perfectly acceptable and commonplace verbal structures containing nonspecific NPs, as has been argued by É. Kiss (1993), among others. In addition, the nominal heads without the oblique complements are not possible, thus, we have no NPs (or DPs, for that matter) containing solely \**érkezés*, \**tartozás*, or \**maradás*.

Note here that the oblique nominals in this group cannot consist of more than one word; as soon as a construction of two or more words precedes the verb, alternative nominalization strategies have to be selected (cf. Szabolcsi-Laczkó 1992; Laczkó 1993; Szabolcsi 1994).

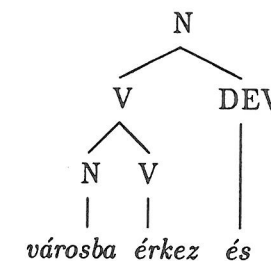
- (6) (a) \**régi város-ba érkezés*  
old city-into arriv-dev
- (b) *régi városba való/történő érkezés*  
being/happening  
'arrival in (an/the) old city'

The account that Szabolcsi-Laczkó (1992) and Szabolcsi (1994) propose for the structures above is based on Pesetsky's (1985) morphological quantifier raising, which would take a compound noun and raise the affix at LF to assign its proper scope.

- (7) (a) S-Structure



- (b) LF



In another subtype of this construction, the deverbal noun cannot combine with the oblique complement unless the principle of compositionality is violated. In the examples below, the verbs and their complements have meanings that do not arise compositionally. If the verb underwent derivation and then the new noun were to combine with the oblique complement, the expected idiomatic meaning would be lost along the way since again it is the head's features that can be inherited in the compound.

- (8) (a) ránc-ba szed-és  
crease-in take-dev  
'disciplining'
- (b) nyak-on csíp-és  
neck-on pinch-dev  
'catching'
- (c) munká-ba lép-és  
work-into step-dev  
'entering employment'

It is this latter group that preverb + verb nominalizations can be thought to belong to, as first described by Ackerman (1987). More recently, the status of preverbs has also been questioned (see É. Kiss 1994; Piñón 1992; 1995), and it has been assumed that preverbs undergo either focus-movement or head-movement onto the verb in overt syntax. In other words, the preverb is not considered to form a lexical unit, i.e. a single word-size item, with the verb. In view of this, it provides a morphosemantic mismatch similar to those immediately above.

- (9) (a) meg-érkez-és  
perf-arrive-dev  
'arrival'
- (b) át-lép-és  
across-step-dev  
'transgression'
- (c) le-tartóztat-ás  
down-hold-dev  
'arrest'

Note in connection with the behavior of preverbs that the phonological constituency of the 'words' in (9) has been shown to support the assumption that the stem and the suffix are at a lower level with respect to the preverb. On the basis of the Strict Hierarchy Hypothesis, cf. Nespor-Vogel (1986), Vogel (1989) argues that the domain of vowel harmony in Hungarian is the constituent called the Phonological Word (PW), and, since the stems in (9) harmonize with the suffixes, they form PWs as marked below. The preverbs in turn do not harmonize with the stems: in (9b) the stem has front vowels, while the preverb has a back one, and in (9c) the case is reversed. Thus the preverbs, just like nonhead constituents of compounds, are outside the minimal domain of the Phonological Word determined by the head word and must

form a prosodic constituent with the head at the next higher level, which Vogel (1989) assumes is the Clitic Group (CG), characterized by a single primary stress in Hungarian.

- (10) (a) [CG[PW át] [PW lép-és]]  
across-step-dev  
'transgression'
- (b) [CG[PW le] [PW tartóztat-ás]]  
down-hold-dev  
'arrest'

All these structures can, in principle, be accounted for by morphological quantifier raising, as suggested by Szabolcsi-Laczkó (1992) and Szabolcsi (1994), following Pesetsky (1985).

However, there is evidence showing that a lexical process of compound formation may not be available to all of these complex verb nominalizations. It has been claimed before that 'ordinary' compounds cannot in general contain referential nouns, such as proper names (Postal 1969; Fabb 1984; Cinque 1993). In current terminology, this is due to the requirement that functional categories should not be available for word-formation processes, and the head of the DP, into which all proper names must move to acquire referentiality, is such a functional category, cf. (11b, c). This is of course not to say that proper names cannot be used in compounds, but that whenever they are, their occurrence does not carry reference. Compare the use of the proper name in e.g. *Kaposi-sarcoma*, and notice that it cannot be referred to by a pronominal. Observe, however, that proper names can be used in the construction-type under discussion without difficulty, as seen in (11a), and referring back to them by means of pronominals is perfectly natural.<sup>2</sup>

- (11) (a) London-ba érkez-és  
London-to arrive-dev  
'arrival in London'
- (b) \*London-épít-és  
London-build-dev
- (c) \*London-épít-ő  
London-build-er
- (d) város-épít-és  
city-build-dev
- (e) város-épít-ő  
city-build-er

<sup>2</sup> For arguments in favour of considering the constructions under discussion to be nouns, rather than gerunds or the like, see Szabolcsi (1994).

Ward *et al.* (1991) argue that compounds in general tolerate referential expressions. Note, however, that the compound types illustrated in (11) are not discussed by them and the contrast reported in (11) is real, which calls for some revision of their analysis.

While (11d–e), in which the noun *város* ‘city’ is not referential, are undoubtedly formed by lexical processes, unlike (11b–c), which are supposed to contain D’s rather than N’s in their ‘argument positions’ (i.e. *London*), examples like (11a) suggest that they must be formed by some syntactic operation for which not only NPs but DPs are available.

Finally, attention should be paid to nominalizations of verb + oblique pronominals, first dealt with also by Ackerman (1987). In the null case they contain preverblike nonreferential oblique case-markers, whose form is identical with that of case-marked pronominals. When they are used nonreferentially, an NP with the same oblique case-suffix has to co-occur.

- (12) (a) bele-botlott (Péter-be)  
into-bumped Peter-into  
‘(s/he) bumped into Peter’
- (b) rá-bízták az ügyet (Péter-re)  
onto-trusted the matter-acc Peter-onto  
‘(they) trusted Peter with the matter’

In their referential uses, they are understood as fully pronominal, and no reduplication of the sort illustrated above is possible. Then the very same examples in (12), but without the strings in parentheses, can be interpreted as meaning ‘S/He bumped into him/her’ and ‘They trusted him (with something)’, respectively. It is this latter form that can undergo ‘nominalization’, and yield a compoundlike construction with a referential, or more specifically, a pronominal first constituent.

- (13) (a) belé-nk botl-ás (b) rá-tok bíz-ás  
into-us bump-dev onto-you.pl trust-dev  
‘(the) bumping into us’ ‘(the) trusting of you’

These constructions do not necessarily have completely identical properties. (13a), for example, can be used in the plural, as in *a belénk-botlás-a-i-tok* ‘(lit.) the into.us-bumping-poss-pl-2pl = your repeated bumping into us’, indicating that it is (also) interpretable as a result nominal (cf. Grimshaw 1990), whereas (13b) has no plural use and can only be construed as a complex event nominalization.<sup>3</sup>

<sup>3</sup> Szabolcsi’s (1994) arguments for the nominal nature of the construction carry over to this type.

Reduplication of preverbs and/or case-suffixes is a highly intricate subject studied in some detail also by Marác (1991).

The possible occurrence of referential NPs in verb + oblique argument nominalizations, cf. (11a) and (13), and the prohibition against them in compounds consisting of a verb and its object, cf. (11b–c), indicate that the latter are lexical, while constituents of the former type must be visible in post-lexical processes. That this must be the case gains further support from the fact that pronominals, which were shown to be possible in oblique argument + verb nominals, cannot occur in object nominalizations.

- (14) (a) \*az-épít-és (b) a-felé-mozg-ás  
that-build-dev that-toward-move-dev  
‘\*that-construction’ ‘movement toward that’

In (14a) the demonstrative pronominal *az* ‘that’ is an object argument of the verb underlying the derived noun; in the grammatical (14b), in turn, it is followed by a postposition, i.e., it is an oblique argument of the verb.

### 3.2. Derived ‘possessional’ adjectives in compounds

Although some of the cases discussed so far, in particular bare nominal or preverb + verb nominalizations, can be regarded as compatible with most of the approaches reviewed in section 2, the case of referential expressions in compound-like constructions, and in morphosemantic mismatches in general, has not been noticed as yet. But, even if they are referential, and consequently cannot be lexically derived, these incorporated arguments are at least single words, unlike the constructions to be discussed in this section.

The possessional adjectives familiar in English, e.g. *white-haired* or *four-legged*, correspond to two parallel structures in Hungarian. The first one, which will be called U-compound here, is composed of an adjective (or a numeral) and a noun to which the harmonizing suffix *-ú/ű* is attached, giving what has been called a compound adjective in traditional analyses. The following will illustrate.

- (15) (a) nagy hatalm-ú (b) három ujj-ú (c) rövid haj-ú  
great power-ed three finger-ed short hair-ed

As far as stress is concerned, the examples in (14) all have a single (word) stress, although, as Kálmán–Nádasdy (1994) mention, they may have a secondary stress, which, however, does not distinguish them from compounds,



- (21) (a) \*minden oldal-as (b) száz oldal-as (könyv)  
 every side/page-OS hundred page-OS book  
 'a 100-page book'

Thirdly, the adjective in U-compounds can be complemented by an intensifier, also unavailable for the equivalent constituent in OS-compounds.<sup>6</sup>

- (22) (a) nagyon/igen/rendkívül nagy hatalm-ú (uralkodó) U  
 very very extremely great power-U monarch  
 'monarch with very/extremely great power'  
 (b) \*nagyon/\*igen/\*rendkívül nagy üveg-es (rekesz) OS  
 very very extremely large bottle-OS crate  
 'crate for very/extremely large bottles'

While it can be claimed that the gradation of adjectives is a lexical process, and thus the examples in (19) are not crucial (although it might then be asked why the corresponding OS-compounds are not possible), the complex adjectival constructions must undoubtedly be classified as syntactic phrases. But even the comparative can be shown to have a syntactic source as evidenced by the examples to follow.

- (23) (a) háromnál kevesebb lámpájú/ujjú U  
 three-than less lamp/finger-U  
 'with less than three lamps/fingers'  
 (b) \*háromnál kevesebb lámpás/ujjas OS  
 three-than less lamp/finger-OS

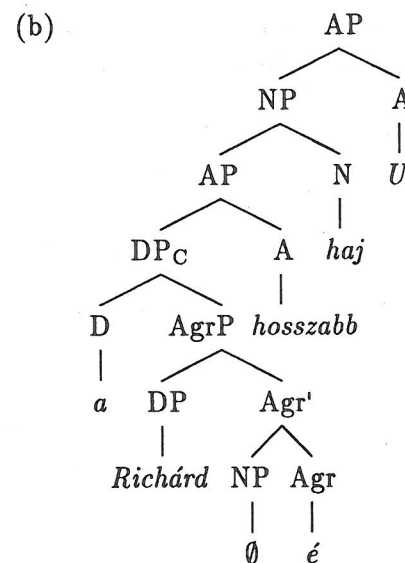
Having demonstrated that U-compounds allow APs (and NumPs) in their first constituents while the corresponding parts of OS-compounds are confined to zero-level categories, we will now forgo any further comparison and concentrate solely on U-compounds. In addition to the comparative constructions illustrated above, it will be seen in the examples to follow that the APs in U-compounds can contain fully referential DPs as well.

<sup>6</sup> Obviously, the ungrammatical examples become grammatical if parsed (and interpreted) differently, i.e. as 'very etc. large (or largest) crate for bottles'. That, however, is irrelevant here.

- (24) (a) a Richárd hatalmá-nál nagyobb hatalm-ú (uralkodó) U  
 the Richard's power-than greater power-U monarch  
 '(a/the monarch) with power greater than Richard's power'  
 (b) a Richárd-é-nál nagyobb hatalm-ú (uralkodó) U  
 the Richard-'s-than greater power-U monarch  
 '(a/the monarch) with a power greater than Richard's'

The structure in (24b) is a result of (in effect) deletion under identity with the head noun *hatalm-* 'power', whatever the exact nature of the operation may be. Note, however, that in order to process the structure at the relevant level, i.e., Logical Form, the head noun has to be available there. In other words, if the head noun 'disappears' in the lexicon in the derivational process that forms an adjective of it, no identity between it and the noun in the DP inside the AP can be realized. The following example is supplemented with a representation of what appears to be its structure on the surface.

- (25) (a) a Richárd-é-nál hosszabb haj-ú (lány) U  
 the Richard-'s-than longer hair-U girl  
 '(a/the girl) with hair longer than Richard's'



It is at the position of the ellipted NP that the 'visible' nouns *haj* 'hair' and *hatalm-* 'power' (can) occur when the constructions appear in their full forms. Note that for ease of exposition the case suffix is not spelled out in this representation but simply marked on the DP by a subscript C. It must also be mentioned that in the position of the DP *Richárd* any complex referential noun phrase can of course be inserted, e.g., *az előtted álló fiú* 'the boy standing in front of you', without affecting grammaticality judgements.

It is not difficult to realize now that if maximal projections, such as NPs, APs and DPs, can occur in the constructions under discussion, these U-compounds, which will hereafter be referred to also as 'phrasal derivations', simply cannot be produced in the lexicon. Consequently, we have to look for other ways to handle them. Two alternatives offer themselves. Firstly, if these are regarded as bracketing paradoxes, then previous methods of resolving morphosemantic mismatches are not applicable and have to be augmented. On the other hand, we may say that we have to do with a new kind of structure which calls for a completely different analysis.<sup>7</sup>

#### 4. Analyzing phrasal derivations

In this section I will review two different approaches addressing the problem of phrasal derivation. The first one maintains that the structure emerges through a derivational process although one that is deferred to a postsyntactic stage. The other makes the novel suggestion that the structures in question arise as a result of the operation of rules of inflection.

The derivational proposal would then take a structure like (25b) for its starting point and raise the head noun *haj* 'hair' into the adjectival head of the construction, i.e. adjoin it to the next higher head, the suffix *U*. It will

<sup>7</sup> Now we are closer to understanding why the compound mentioned in footnote 1 has to be segmented the way shown here:

- (i) [alacsony-nyomás-ú] [kazán - fűtő]  
low pressure-U furnace operator

If the first constituent originates not in the lexicon but in syntax, at no point can there arise a possible constituent structure shown in (ii):

- (ii) [alacsony-nyomás-ú kazán] - [fűtő]

The reason for this lies in the fact that *kazán-fűtő* has to be lexical, whereas *alacsony-nyomás-ú* cannot. The conflict cannot be resolved until the structure reaches LF, thus its prosodic structures must be derived from the segmentation given in (i).

thus create a proper phonological constituent for PF and will not affect the semantic interpretation of the scope of the suffix. It is thus essentially the mirror image of Pesetsky's (1985) morphological quantifier raising, since it is not the affix that is raised out of some morphological unit at LF, but the head word raised 'into' a suffix generated in a scopal position. In terms of Halle and Marantz's (1993) Distributed Morphology, it serves as further evidence that there must be postsyntactic morphological operations. The affix *U* is then seen as subcategorized for an NP complement and will, in effect, require the movement of the N head into it. If such movement should not take place, *U* would form an illegitimate morphophonological constituent, an affix without a base, easily filtered out by PF.

A different approach has been proposed by Haspelmath (1994), who challenges what he calls the 'myth' of the distinction between derivation as a word-class changing operation and inflection as one not affecting word-classes. First of all, he defines inflection as productive, regular and general, and derivation as unproductive, irregular and defective. The examples he has based his claim on do not comprise U-compounds, but include analogous constructions, such as German participial adjectives, see (26a), or Sorbian possessive adjectives, cf. (26b), among others, viz. Lezgian *masdars*, Kannada adverbial participial converbs, Turkish attributivizers, and Blackfoot predicativizers. (The category labels below are ours; for references see Haspelmath 1994.)<sup>8</sup>

- (26) (a) der [AP im Wald laut sing-ende] Wanderer  
the in.the forest loud sing-part hiker  
'the hiker (who is) singing loud in the forest'
- (b) [AP [NP moj-eho muž] -owa] sotra  
my-gen husband poss.adj.fem.sg.nom sister.f.sg  
'my husband's sister'

Instead of the customary difference between derivation and inflection, Haspelmath introduces two new distinctions: one between internal and external syntax and another between lexeme word-class, which takes part in the internal syntax of its combination with 'dependents', and word form word-class, which

<sup>8</sup> Note in relation to (26b) that the NP 'my husband' underlying the possessive adjective preserves its reference as is seen from possible coreference to it by pronominals, not illustrated here.



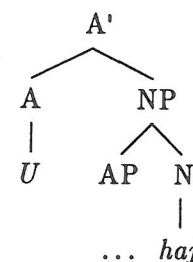
combines with heads 'outside' the construction. The two word-classes can be different, e.g., verb and adjective in German, and noun and adjective in Sorbian.

While Haspelmath's findings have a much wider coverage than ours and indeed show that the problems outlined in the previous sections are not confined to Hungarian, the proposed solution essentially defers the problem by renaming it. To wit, the earlier difference between derivation and inflection is reborn in the form of one between the items whose lexeme word-class does not, at any point, differ from their word form word-class and those whose lexeme word-class differs from their word form word-class at some stage. Moreover, the first group will contain words whose internal syntactic properties are the same as their external syntactic characteristics, while the second do not. It must, however, be said in favour of Haspelmath's initial suggestion that the affixes in question seem not to allow any further (lexical) affixation, that is, the constructions thus created do not undergo further derivation (though they may be inflected for number, case, or gender)—at least in the cases which we have been able to confirm.

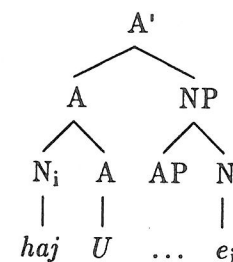
Edging toward a possible account for the problems posed by these phrasal derivations in general, and U-compounds in particular, we may rely on Cinque's (1993) original insight, which posits phrases versus heads in accounting for the headedness of compounds, and Kayne's (1994) Linear Correspondence Axiom, which (a) requires that complements and specifiers be placed on the opposite sides of a head, (b) eliminates the distinction between specifiers and adjuncts, and, finally, at least as far as our concerns go in this paper, (c) dissolves the dividing line between word and phrase syntax, in effect allowing phrases to serve as derivational primitives. Thus, *can opener* is derived from [<sub>N</sub> *er* [<sub>VP</sub> *open* [<sub>NP</sub> *can*]]] by multiple adjunction. Under Cinque's and Kayne's assumptions, the following illustrate the derivation of U-compounds like (25a) repeated for convenience here.

- (25) (a) [<sub>AP</sub> [<sub>DP</sub> [<sub>AP</sub> *a* *Richárd-é-nál* *hosszabb*] *haj-}ú*] (*lány*) *U*  
           the Richard-'s-than longer hair-U girl  
           '(a/the girl) with hair longer than Richard's'

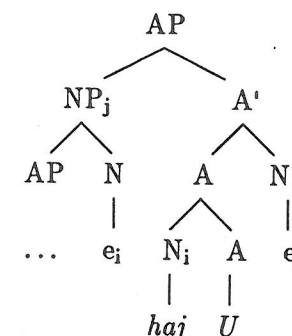
(27) (a)



(b)



(c)



With the internal AP *a Richárdénál hosszabb* 'longer than Richard's' left unanalyzed here, the properties represented are as follows. In (27a) the head A takes an NP complement, whose head noun has an adjoined AP. Following Kayne (1994), head-movement of N to A is executed first (27b), then the NP complement of the head adjective *U* is adjoined to A' in specifier position in (27c). If the division between inflection and derivation is one between lexical and syntactic head movement, then by allowing the head of the NP to move onto the affixal head of the AP, we have in effect defined the operation as inflectional, thus reconciling Haspelmath's original insight with our analysis.

Note that the heads involved in this and similar constructions (cf. (26) and note 5) may be thought of as belonging to functional rather than lexical categories. The relations that the Sorbian (Macedonian, Russian, etc.) possessive adjectival affixes and the Hungarian *-U* affix determine between their NP complements and the referential DPs they are by and large identical to those relations that verbs of possession like *have* define between their objects and subjects. Moreover, German *-ende* may also be a functional head, much like Hungarian *I*, since they resemble predicative verbs like *be* in English. For the relation between the two, cf. Kayne (1993).

It may be supposed that the analogous constructions in (26) are analyzed in ways similar to the above, but the Hungarian U-compound presents one

more difficulty that has not been accounted for. Even though the suggestion that *-U* takes phrasal complements corresponds to the facts discussed, it does not resolve the question of why the head noun always has to be adjoined by an AP. Recall that U-adjectives like (16), where the affix is added to a bare noun, are ungrammatical. I have no suggestion as to how this could be captured, unless the standard relationship between adjectives and nouns is reversed and it will be required that adjectives take NPs as complements, much along the lines of Ritter's (1991) proposals.

The structures reviewed here also help us reevaluate our conception of categories in syntax. The questions that will have to be examined will involve issues of how to categorize prenominal structures which occupy positions that are (otherwise) reserved for or occupied by adjectives, and whether this is sufficient evidence to classify them as adjectives. Note here that much traditional terminology has been reinterpreted in current theoretical linguistics, cf. Chomsky's (1955) definition of functional notions such as subject and object as derived from structural relations. But one traditional functional concept, the *attribute* has escaped attention, and it is precisely this one that is the source of the difficulty here. That our worries are indeed caused by 'attributehood' is demonstrated by the fact that the structures concerned (that is, those that we have evidence of) cannot be used in predicative positions, unlike (almost) all 'ordinary' adjectives. To illustrate, (28a) is ill-formed, although the 'simple', and possibly lexicalized U-compound in (28b), is acceptable, but then the non-lexicalized (and non-inalienable) one in (28c) is again ungrammatical, although as an attributive adjective it is possible with the very same noun—unlike its English equivalent.<sup>9</sup>

(28) (a) \*Mari [a Richárdénál hosszabb haj-ú] volt/maradt  
Mary the Richard's-than longer hair-ed was/remained  
'Mary was/remained longer-haired than Richard.'

(b) Mari hosszú-haj-ú volt/maradt  
long-hair-ed  
'Mari was/remained long-haired.'

<sup>9</sup> Note here that while OS-compounds are grammatical as predicates, the postpositional I-compounds mentioned in footnote 5 are not acceptable, which supports the idea of a closer syntactic relation between U-compounds, which can incorporate NPs, and I-compounds, which are constructed from PPs.

(c) \*Az asztal hosszú-láb-ú volt/maradt  
the table long-legg-ed was/remained  
'The table was/remained long-legged.'

## 5. Conclusion

We have shown in this paper that there is more complication in the issue of bracketing paradoxes than has so far been noticed. Two subtypes of possessional compounds have been distinguished: OS-adjectives (including *white-haired*) as well as the set of examples in (1) constitute 'traditional', i.e. lexical, bracketing paradoxes. U-compounds and I-compounds and the cases reviewed in section 4, are mismatches of a completely different kind since they involve phrase-size items as bases for derivations. The evidence presented forces us to defer some apparently derivational process to a postsyntactic stage, where previously only inflectional rules were supposed to be at work.

It has been suggested that the affixes be regarded as heads that take maximal categories as complements. In these structures Kayne's (1994) Linear Correspondence Axiom makes movement in effect obligatory in languages like Hungarian, which have right-headed compounds. Head-movement and adjunction 'conspire' to yield the left-branching structures, much along the lines of *can opener* in English.

We have also raised the possibility of reviving the traditional functional notion of 'attribute', which could have the role of defining a 'possessional' or a predicative relation exclusively inside a DP. 'Attribute' might then act as a functional category into which ordinary adjectives may (have to) move in DPs, and whose heads are overt only in languages like those reviewed here. Since this category is unavailable in predicates (= VPs), the phrasal derivations discussed here cannot occur there.

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Address of the author: István Kenesei  
 Department of English  
 József Attila University  
 Egyetem u. 2  
 H-6722 Szeged  
 Hungary  
 e-mail: h1056ken@ella.hu