Compounding in Hungarian

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After a brief overview of compound structure in Hungarian I am going to discuss a number of problems which seem to be specific to Hungarian. One of them concerns the role of the subject argument in verbal compounds. It is generally claimed that subject arguments cannot be satisfied in such compounds. Hungarian seems to be a counter-example to this claim. A further problem has to do with verbal prefixation: it will be argued that it is an instance of compounding rather than of prefixation in the usual sense of the term. Still another problem involves noun incorporation, which raises a number of intriguing syntactic and semantic questions.

It will be assumed that compounds which do not contain a deverbal head can freely be generated, the only restriction being categorial. If the head is deverbal, however, its argument structure imposes certain restrictions on the structure of the compound. In this connection we are going to examine if the principles about the satisfaction of arguments put forward in earlier works on compounds is valid for Hungarian as well. We will see that Hungarian does not conform to these principles in every respect.

We will restrict ourselves to the morphological and syntactic aspects of compound structure; almost nothing will be said about semantic interpretation.

1. *Productive patterns of compounding.*

It is not at all surprising that Hungarian, too, has both endocentric and exocentric compounds. Endocentric compounds contain a head which determines the syntactic behavior of the compound. The following generalization holds:

(1)   Endocentric compounds in Hungarian are right-headed.

E.g. *aranygyűrű* 'gold ring', *kisautó* 'small car', *kőkemény* 'stonehard', *világoskék* 'light blue', *visszajön* 'come back', lit. 'back come', *levelet ír* lit. 'letter-write'.

In contrast, there is no syntactic head in exocentric compounds. E.g. *nyakiglab* 'longlegs' (= *nyak-ig* 'up to the neck' + *láb* 'leg'), *kékszakáll* 'bluebeard' (= *kék* 'blue' + *szakáll* 'beard'), *bájtömeg* 'fat-guts' (= *báj* 'fat' + *tömeg* 'mass'). Evidently, longlegs are not legs which reach up to

the neck, a bluebeard is not a beard which is blue and fat-guts are not guts which are fat. Though we know a lot about the mechanisms by which exocentric compounds are created, there are no productive patterns by which new exocentric compounds could be formed. Exocentric compounds are all lexicalized and must therefore be listed in the lexicon. Consequently, they play a rather peripheral role in the system of compounds. In what follows we won't have to say anything more about them.

In view of the above remarks the following generalization may be formulated:

(2) The productive patterns of compounding in Hungarian are all endocentric.

Before embarking on the discussion of the taxonomy of endocentric compounds, a brief remark on the syntactic categories used must be made. There are no prepositions in Hungarian, though there are some postpositions. These postpositions, such as *alatt* 'under' as in *az asztal alatt* 'under the table', or *mögött* 'behind' as in *a báz mögött* 'behind the house', however, can never occur in compounds. Most English prepositions are rendered in Hungarian by case suffixes.

On the other hand, as will be made clear further below, verbal prefixes such as *vissza* 'back', *le* 'down', *fel* 'up', etc. are, in fact, adverbs. Consequently, we will use the category symbol Adv instead of P, though nothing essential hinges on this distinction.

We are now prepared to draw up the chart of the productive patterns of compounding in Hungarian. (Cf. Károly 1969)

(3) a.

N N	A N	Adv N	V N
városháza 'city hall'	kisautó 'small car'	Ø	Ø
tökmag 'pumpkin seed'	melegágy 'hotbed'		

b.

N A	A A	Adv A	V A
kökemény 'stone-hard'	sötétzöld 'dark green'	Ø	Ø
méregdrága 'frightfully expensive' lit. 'poison-expensive'	világoskék 'light blue'		

c.

N V	A V	Adv V	V V
levelet ír lit. 'letter-write'	Ø	visszajön lit. 'back come'	Ø
televiziót néz 'television-watch'		lemegy lit. 'down go'	

From this taxonomy some generalizations follow quite straightforwardly:
(a) Only N, A and V can be heads.

(b) Each of the categories N, A, V and Adv can occur in nonhead position.
(c) If the head is N or A, it can only combine with N or A.
It can easily be seen that the following system of rules accounts for the compounds in (3a-c).

(4) a. $N \rightarrow \left\{ \begin{matrix} N \\ A \end{matrix} \right\} N$

b. $A \rightarrow \left\{ \begin{matrix} N \\ A \end{matrix} \right\} A$

c. $V \rightarrow \left\{ \begin{matrix} N \\ Adv \end{matrix} \right\} V$

This means that Hungarian compounding, too, conforms to the general scheme (5), which it shares with other languages which have right-headed compounds.

(5) $...X^0... \rightarrow ...Y^0X^0...$

What is specific to Hungarian is the fact that X^0 can only be N, A or V, and that there are some particular co-occurrence restrictions between the head and the nonhead category.

2. *Some theoretical assumptions.*

As to the theoretical assumptions, it should first be noted that there seems to be general agreement that the SUBJ or external argument cannot be satisfied in compound structure (Williams 1981, Selkirk 1982, Lieber 1983 and Di Sciullo & Williams 1987). It is also assumed that the SUBJ argument is always an external argument in English. In other languages this need not be the case. Consequently, at least for the time being, we will accept the following formulation of said principle.

(6) The subject argument cannot be satisfied in compound structure.

There is less agreement about the other principles. As to the satisfaction of the nonsubject arguments of the head, the following formulations can be encountered.

(7) a. All nonsubject arguments of the head of a compound must be satisfied within the compound immediately dominating the head. (Selkirk 1982: 36)
b. The argument-taking stem must be able to link all internal arguments. (Lieber 1983: 258)

c. A nonhead may but need not satisfy one of the arguments of the head. (Di Sciullo & Williams 1987: 30)

Selkirk's principle is obviously false: there are quite a few heads with more than one nonsubject argument, yet such heads do appear in two-constituent compounds. In this case clearly only one of the arguments may be satisfied. The same is true of Lieber's formulation as well: obviously not all internal arguments need be linked within a compound. To be sure Lieber's principle can also be interpreted in a different way: the argument-taking stem must be able to link whatever occurs as the second constituent of the compound. However, Lieber's principle is meant to be symmetric, it does not make use of the notion of head. But satisfaction cannot be symmetric: only an argument-taking stem in head position may have this property. (Selkirk 1982: 24-5) We will thus take the formulation given in Di Sciullo & Williams (1987) as our point of departure. For ease of reference we repeat the principle (which the authors call 'fact') under (8).

(8) A nonhead may, but need not, satisfy one of the arguments of the head.

To these principles we may add the principle which allegedly governs the interpretation of the constituents which are left unlinked by an argument-taking stem. These constituents are often referred to as free constituents.

(9) If a constituent is free in a compound which also contains an argument-taking constituent, it must be interpretable as a semantic argument of the argument-taking constituent, i.e. as a Locative, Agentive, Instrumental, or Benefactive argument. (Lieber 1983: 258)

(10) If the nonhead in a compound is not linked by the argument-taking head, it must be interpretable as a semantic argument of the head.

This principle, which presupposes symmetricity, must be reformulated as (10) where reference is made to the head of the compound.

In a little while we will examine to what extent the principles (6), (8) and (10) are valid for Hungarian. First, however, we have to say a few words about morphologically marked compounds.

3. *Morphologically marked compounds.*

Compounds in Hungarian may be morphologically marked or morphologically unmarked. In the first case the morphological marker may appear either on the first or on the second member of the compound. E.g. *újjáépít* (= *új* 'new' + *já* 'factive case suffix' + *épít* 'build') 'rebuild', *belyreállít* (= *bely* 'place' + *re* 'sublative case suffix' + *állít* 'place, set up again', set up again, repair, reconstruct', *újságot olvas* (= *újság* 'newspaper' + *ot* 'accusative case suffix' + *olvas* 'read') 'be engaged in newspaper reading', *tévét néz* (= *tévé* 'tévé

'television' + *t* 'accusative case suffix' + *néz* 'look, watch') 'be engaged in television watching'.

Restricting ourselves to productive patterns the following generalization holds:

(11) Only compounds whose head is V can be morphologically marked.

Notice that morphological marking also occurs in possessive constructions which seems to contradict the above generalization. E.g. *városháza* (= *város* 'city' + *ház* 'house' + *a* 'possessive suffix) 'city hall', *tojásfehérje* (= *tojás* 'egg' + *fehér* 'white' + *je* 'possessive suffix') 'egg-white', *bolondokháza* (= *bolond* 'madman' + *ok* 'Plural suffix + *ház* 'house' + *a* 'possessive suffix') 'madhouse, lunatic asylum'. These compounds do not have an argument-taking head, however. Moreover, and more importantly, this pattern is not productive and cannot be used to form new compounds. The possessive relation in compounds is, normally, morphologically unmarked. It would thus seem that (11) is a valid generalization.

4. *The satisfaction of the subject argument.*

In the vast majority of cases an argument-taking head is either a verb or a deverbal noun or an adjective. Following Selkirk (Selkirk 1982: 23) we will use the term *verbal compound* to designate endocentric compounds whose head is morphologically complex, having been derived from a verb, and whose nonhead constituent may often be interpreted as an argument of the head.

(a) One of the productive patterns of compounding is N A with A derived from a verb (the past participle of the verb). In this case A gets the 3. Person Singular suffix, e.g. *porlepte* (= *por* 'dust' + *lept* 'participal stem of *lep* 'cover' + *e* 'personal suffix') 'covered with dust', *viharverte* (= *vihar* 'storm' + *vert* 'participal stem of *ver* 'beat' + *e* 'personal suffix') 'storm-beaten', *vízmosta* (= *víz* 'water' + *most* 'participal stem of *mos* 'wash' + *a* 'personal suffix') 'water-lashed', *munkáslakta* (= *munkás* 'worker' + *lakt* 'participal stem of *lak* 'inhabit, live' + *a* 'personal suffix') 'inhabited by workers', etc.

In traditional accounts (e.g. Bencédy-Fábián-Rácz-Velcsov 1985: 155) the first constituent of these compounds is considered the subject of the argument-taking head. Such an analysis, however, runs counter the principle formulated in (6). Consequently, either the traditional analysis of these compounds is wrong or principle (6) is not valid for Hungarian.

The analysis of N A constructions with participal heads as verbal compounds is not mandatory, however. It can be argued that these constructions are participal constructions rather than compounds (cf. Kenesei 1986). Notice, for example, that the alleged compound *munkáslakta*

'inhabited by workers' can be modified: both sok munkás lakta 'inhabited by many workers' and kevés munkás lakta 'inhabited by few workers' are possible. The spelling, as in a great number of other cases, may be misleading. Cases where modification is not possible can be cosidered to be frozen expressions: porlepte 'covered with dust', vízmosta 'water-lashed', etc. Productively formed N A constructions with participal heads, however, always allow for modifications. E.g. a híres szerző idézte példa (= a 'the', híres 'famous', szerző 'author', idézt 'participal stem of idéz 'quote, cite', példa 'example') 'the example quoted by the famous author'.

We must thus conclude that the traditional analysis of N A constructions with participal heads is mistaken, consequently principle (6) has not suffered damage.

(b) However, there are verbal compounds which are genuine counterexamples to principle (6) and thus invalidate its alleged universality.

Consider the compounds bóesés (= bó 'snow' + es 'stem of the verb esik 'fall'' + és 'nominalizing suffix') 'snowfall', motorzúgás (= motor 'engine' + zúg 'hum, buzz' + ás 'nominalizing suffix') 'hum of the engine', dióérés (= dió 'walnut' + ér 'stem of the verb érik 'ripen'' + és 'nominalizing suffix') 'ripening of walnuts'. The pattern is quite productive. Notice furthermore that all the head nouns have a complex event interpretation and are not result nominals. Consequently, even on a more restricted view of inheritance they must have an argument structure (Grimshaw 1990: 49-70). The verbs from which the head noun is derived are all intransitive, their only argument being the SUBJ argument, which is satisfied—contrary to what principle (6) would predict—within the compound. In the examples cited above the SUBJ argument is a Theme, but it is quite easy to find examples where it is an Agent: libagágogás (= liba 'goose' + gágog 'cackle, gaggle' + ás 'nominalizing suffix') 'gaggling of a goose', kutyaugatás (= kutya 'dog' + ugat 'bark' + ás 'nominalizing suffix') 'barking of a dog/of dogs', gyermeksírás (= gyermek 'child' + sír 'cry' + ás 'nominalizing suffix') 'crying of a child/ of children'. The nonhead constituent is here an Agent, though a special one: the Agent does not act intentionally. In order to keep apart intentionally acting Agents from nonintentionally acting ones, we will use the label Actor for the former and keep the label Agent for the latter. It would thus seem that Actor arguments cannot occur in nonhead positions, consequently an Actor argument cannot be satisfied within the compound. It is quite possible that this is the correct generalization. Before clarifying this issue, however, let us look at some more examples.

Apparently, most intransitive verbs may enter via nominalization into compounds whose nonhead satisfies the SUBJ argument of the verb. Here are some further examples: árcsökkenés (= ár 'price' + csökken 'decrease' + és 'nominalizing suffix') 'drop in prices', árdrágulás (= ár 'price' + drágul 'go up' + ás 'nominalizing suffix') 'rise of prices', árbullámzás (= ár 'price' + bullámz 'stem of the verb bullámzik 'fluctuate'' + ás 'nominalizing

suffix') 'fluctuation of prices', árbanyatlás (= ár 'price' + banyatl 'stem of the verb banyatlik "decline"' + ás 'nominalizing suffix') 'decline of prices', árkiegyenlítődés (= ár 'price' + kiegyenlítőd 'stem of the verb kiegyenlítődile 'levelling off'' + és 'nominalizing suffix') 'levelling off prices'. In all these examples the nonhead has to be interpreted as the subject argument of the head. Most of these compounds are ambiguous between the event and result interpretation. The verbs underlying the head are intransitive, their only argument is the subject argument. That is, the following generalization seems to be valid.

(12) The subject argument may be satisfied in compounds if it is the only argument of the head.

Consider next compounds whose head is derived from transitive verbs. Let us remain within the semantic field of ár 'price'. And, once again, we will restrict ourselves to nominalizations by menas of the suffix -ás/-és. We get árcsökkentés (= ár + csökkent 'reduce' + és) 'reduction of prices', árdrágítás (= ár + drágít 'run up, raise' + ás) 'raising of prices', árfelhajtás (= ár + felhajt 'force up' + ás) 'forcing prices up', árkiegyenlítés (= ár + kiegyenlít 'level off' + és) 'levelling off prices', árrögzítés (= ár + rögzít 'fix' + és) 'fixing of prices'. In these examples the nonhead is no longer interpretable as the subject argument of the head: it must obligatorily be interpreted as the object argument. But is it always the case that the object argument takes precedence over the subject argument?

There are a number of verbal compounds whose head is derived from a transitive verb and in which the nonhead apparently satisfies the subject argument of the head. E.g. bolhacsípés (= bolha 'flea' + csíp 'sting, bite + és 'nominalizing suffix') 'flea-bite', kutyaharapás (= kutya 'dog' + harap 'bite' + ás 'nominalizing suffix') 'dog-bite', disznótúrás (= disznó 'pig' + túr 'root, grout' + ás 'nominalizing suffix') 'rooting of pigs', macskakarmolás (= macska 'cat' + karmol 'scratch' + ás 'nominalizing suffix') 'cat's scratch', nyúlrágás (= nyúl 'rabbit' + rág 'gnaw' + ás 'nominalizing suffix') 'damage done by rabbits'. One can argue, however, that the head in these compounds is a result nominal, hence it has no argument structure and satisfaction does not apply (Grimshaw 1990: 69). Consequently, the nonhead need not be interpreted as the subject argument of the head, which permits the formulation of the following generalization.

(13) In compounds whose head is derived from a transitive verb the nonhead can satisfy the object argument only.

As we will see in Section 5 the subject argument is never satisfied in the case of nominal heads which are derived from verbs with more than two arguments either, independently of the fact whether the head is an event or a result nominal. This means that (12) is the only exception to principle (6). What can this difference in behavior between English and Hungarian

with respect to the subject argument be due to? In English the subject argument is considered to be an external argument, that is, the subject argument is not an argument of the verb but rather of the whole verb phrase.

The subject is often there only because it is required on formal grounds: no English sentence is grammatical without a subject. In Hungarian, on the other hand, grammar does not impose such a restriction on sentences. Consequently, Hungarian has quite a few genuine subjectless sentences. E.g.

(14) a. Esteledik.
   'It is getting dark'
  b. Villámlott.
   'It was lightning'
  c. Már virrad.
   'The day is already breaking'

The verbs in (14a-c) do not require any argument, which does not mean, however, that they lack any argument structure, though this may be true of some of them. For example, the verb *esteledik* 'get dark' may optionally take a sublative argument as shown in (15a). There are also subjectless predicates which require an oblique argument as testified by (15b-c).

(15) a. Ránk esteledett.
  lit. on-us dark-got
   'Darkness overtook us'
  b. Neki már befellegzett.
  lit. to-him already over-was
   'It's already all over with him'
  c. *Már befellegzett.
   'Already is all over'

(15c) is ungrammatical (Cf. Komlósy 1990: 26-7).

The above observations strongly suggest that the subject argument belongs to the internal arguments of the verb. There are no external arguments in Hungarian. If we now reformulate (6) as (16) and let external arguments be subject to parametric variation, (12) will no longer be an unexplained exception.

(16) External arguments cannot be satisfied within compound structure. (Williams 1981)

That the Actor argument can never be satisfied within compounds is a different story which will be discussed in more detail in the next section.

5. *The selection of arguments.*

The problem of how to explain the selection of arguments already appears with transitive verbs. Why do nominal heads derived from transitive verbs always select the object argument? The problem becomes even more

manifest, however, in the case of compounds whose head has an argument structure with more than two arguments. Let us first consider some examples.

(a) The verb *fest* 'paint' takes an Agent, a Theme and an Instrument argument. The verb selects either the Theme or the Instrument and we get either *falfestés* (= *fal* 'wall' + *fest* 'paint' + *és* 'nominalizing suffix') 'wall painting', *hajfestés* 'hair dying', *arcfestés* 'face-painting, making up', *üvegfestés* 'glass painting, glass staining', etc. or *olajfestés* 'oil-painting', *vízfestés* lit-water-painting, 'painting in water-colors', *zománcfestés* 'enamel painting', etc.

(b) The verb *fűt* 'heat' takes obligatorily an Agent and optionally a Theme and an Instrument argument. Normally one heats an apartment, a house, a room, etc. yet we do not encounter compounds such as *apartment heating, house heating, room heating*. The verb systematically selects the Instrument argument: *fafűtés* 'wood-heating', *szénfűtés* 'coal-heating', *vízfűtés* 'hot-water heating', *gőzfűtés* 'steam-heating', *olajfűtés* 'oil heating', *kokszfűtés* 'coke heating', *gázfűtés* 'heating by gas', etc.

Notice incidentally that the nominal heads of the compounds in (a) and (b) do not fit properly into the categories of event nominals or result nominals. Apparently, there must be several types of nominals not just two.

(c) The verb *mérgez* 'poison', too, takes three arguments: a Theme, a Patient and an Instrument. In spite of the fact that the nominal *mérgezés* 'poisoning' is always a result nominal, it seems to behave in compounds as if it were an event nominal, i.e. it must have an argument structure otherwise the selection of either the Patient or the Instrument argument would remain unexplained. Compare *gyomormérgezés* (= *gyomor* 'stomach') 'gastric poisoning', *kútmérgezés* (= *kút* 'well, fountain') 'poisoning of well/s/', *vérmérgezés* 'blood poisoning', on the one hand, and *alkoholmérgezés* 'alcoholic poisoning', *gombamérgezés* 'mushroom poisoning', *halmérgezés* 'fish poisoning', on the other.

Recall that the original motivation of introducing the distinction between event and result nominals into the description of compounds was the problem posed by compounds such as *flea-bite, dog-bite, bee sting*, etc. One can get rid of the problem by claiming that satisfaction of an argument is only meaningful in the case of event nominals (Grimshaw 1990: 68-70). Notice, however, that the assumption that the subject is not an external argument in Hungarian and the claim that (6) should be replaced by (16) automatically solves the problem for Hungarian. The fact that the categories 'event nominal' and 'result nominal' do not constitute a clear-cut dichotomy and that further types of nominals must be envisaged, shows already that the theory rests on rather week foundations. In view of the fact that event nominals and result nominals do not behave differently in compounds, we can simply wave this distinction in the description of compounds.

(d) The verb *ellát* 'supply someone with something' takes an Agent, a Beneficiary and an Instrument. The deverbal noun *ellátás* 'supply' inherits

this argument structure. As expected, the Agent argument is never selected in compounds with *ellátás* as head. Nor is the – normally human – Beneficiary argument, which may come as a surprise. The head selects systematically the Instrument: *anyagellátás* 'supply of material', *energiaellátás* 'energy-supply', *kenyérellátás* 'bread-supply', *vízellátás* 'water-supply', *húsellátás* 'meat-supply'.

Notice that there is another verb *ellát*, which means 'attend, tend, provide for' and which takes two arguments: an Agent and a Beneficiary. In this case the head selects the Beneficiary and we get *betegellátás* (= *beteg* '(the/ sick)' 'medical attendance, provision for the sick', *gyermekellátás* 'provision for children', *öregellátás* 'provision for the old'.

(e) The verb *támad* 'attack', too, takes three arguments: an Agent, a Patient and an Instrument. From these the deverbal head in compounds selects the Instrument and we get *bombatámadás* 'bombing raid', *repülőtámadás* 'air raid' (lit. airplane attack), *gáztámadás* 'gas attack'.

(f) The verb *vág* 'cut' is similar to *támad* 'attack': it has three arguments, an Agent, a Patient and an Instrument. In compounds the head derived from *vág* normally selects the Patient argument, but it can also select the Instrument argument. E.g. *favágás* 'wood-cutting', *disznóvágás* 'pig-killing', *bajvágás* 'haircut', *nádvágás* 'reed cutting' and *kardvágás* 'sword-cut', *kapavágás* 'stroke with the hoe', though the compounds with an Instrument in nonhead position should perhaps be considered as lexicalized compounds rather than instances of a productive pattern.

What kind of conclusion can we draw from all these examples? First of all, the observations presented above suggest that the nonhead in a compound whose deverbal head has an argument structure may always satisfy one of the arguments of the head. This generalization is formulated under (17).

(17) The nonhead may satisfy one of the arguments of the head in verbal compounds.

Some of the examples seem to suggest that the selection of arguments is, at least partly, determined by thematic hierarchy. The thematic hierarchy has appeared in several versions in the literature, the most recent one, which I reproduce under (18), was suggested by Grimshaw (1990: 8).

(18) (Agent(Experiencer(Goal(Source(Location(Theme)))))))

In Section 4 I suggested that one should probably make a distinction between intentionally acting agents and unintentionally acting agents. For the former I proposed the label Actor retaining the label Agent for the latter. As pointed out earlier, Actor arguments are never satisfied in compounds and they may be assumed to occupy the highest position in the thematic hierarchy, immediately followed by the Agent.

The examples in (d) above may be taken to indicate that the Beneficiary is less prominent than the Agent, but more prominent than the Instrument. Up till now we have thus arrived at the following hierarchy:

(19) (Actor(Agent(Beneficiary(Instrument))))

As testified by the examples in (a), (b), (e) and (f), it is more difficult to situate the Theme and the Patient with respect to the thematic roles in (19). It would seem, however, that Theme and Patient are on the same level and both are less prominent than the Beneficiary. Quite often the selection of the Instrument is favored over that of the Theme or the Patient, which may be taken as an indication that the Instrument occupies the lowest position in the hierarchy. In sum, then, we get (20).

(20) (Actor(Agent(Beneficiary(Theme or Patient(Instrument)))))

As can easily be seen, this hierarchy is not really in conflict with Grimshaw's hierarchy.

Though the thematic hierarchy (20) may adequately reflect certain aspects of the selection of arguments, it leaves several things unexplained. Recall, for example, that not only Actor arguments are excluded from occurring in nonhead position, but human Agents and Beneficiary arguments too, are very rare. In the case of *ellátás* 'supply', as we saw above, only the nonhuman Instrument argument can be satisfied. We may contrast this example with the deverbal head *adó* 'giver' which is derived from the verb *ad* 'give' by means of the agentive suffix *-ó*. The verb *ad* takes three arguments: an Agent, a Theme and a Beneficiary. In compounds, however, only the Theme argument, which is realized as the object of the verb, can be selected: *munkaadó* lit. labor giver, 'employer', *véradó* 'blood-giver', *tanácsadó* lit. advice giver, 'adviser', *szállásadó* lit. shelter-giver, 'someone who puts up someone', etc. Notice that the Beneficiary is typically human with the Theme arguments selected in these compunds. What all this boils down is something like (21).

(21) In compounds there is a strong tendency to avoid human arguments in nonhead position.

Compare next (a) and (b). Both *festés* 'painting' and *fűtés* 'heating' take an Agent, a Theme and an Instrument, but whereas *festés* selects either the Theme or the Instrument, *fűtés* selects systematically the Instrument. The hierarchy (20) cannot explain this difference which, in some intuitive sense, must have to do with relevance. It seems to be more relevant to specify how the energy is generated than to identify the location for which it is used. In contrast, in the case of *festés* both the Theme and the Instrument may be relevant.

Similar conclusions can be drawn from the comparison of (e) and (f). In the case of *támadás* 'attack' only the Means, the Instrument seems to

be relevant, whereas in the case of *vágás* 'cut, cutting' the Patient seems to provide more information than the Instrument.

Relevance is closely connected with what is considered to be typical. There are typical ways of heating, but there are no typical locations. In the case of painting both the Theme and the Instrument may be typical. Similar considerations hold *mutatis mutandis* for attacking and cutting.

The tendency formulated in (21), too, may come under the heading of relevance. The most prominent argument seems to be the least relevant.

Another factor which enters into play here is typicality. Apparently, there are no typical Actors and there are not too many typical human Agents, but there are quite a few typical Themes, Patients and Instruments.

It is quite conceivable that relevance and typicality can also provide an explanation for thematic hierarchy. We have arrived at (20) inductively and no explanation was offered for why the hierarchy should be (20) and not something quite different. The fact that something like (20) is also operative in other parts of grammar is in itself not an explanation. What one would like to have, is independent evidence which may be provided by relevance and typicality, at least in the case of compounds, both based on practical reasoning. To be sure, this sounds very speculative, but much further research is needed in order to clarify the issue.

6. *The problem of prefixation.*

Prefixation is quite common in the morphology of the Hungarian verb. Consider:

(a) *Jön* 'come' — *bejön* 'come in', *megy* 'go' — *kimegy* 'go out', *fordul* 'turn' — *visszafordul* 'turn back', *szakít* 'pull, tear' — *szétszakít* 'pull/tear apart', etc.

(b) *Épít* 'build' — *újjáépít* 'rebuild', *hoz* 'bring' — *rendbehoz* 'set in order', *igazít* 'adjust' — *helyreigazít* 'set right, readjust', etc.

In (a) the prefixes have a directional meaning, in (b) their semantics is more complex. In addition, the prefixes in (b) are also morphologically complex: *újjá* is derived from *új* 'new' by means of the factive case suffix *-já*; *rendbe* comes from *rend* 'order' + *be* 'illative case suffix' and *helyre* is composed of *hely* 'place' + *re* 'sublative case suffix'.

In both (a) and (b) the verb is the head of the construction 'prefix + verb', but the prefix can never be interpreted as an argument of the verb. It can be considered a function which takes the verb as its argument, however (Komlósy 1990: 203-5). In other words, it is a modifier which modifies the verb and is in this sense akin to adverbs: modification brought about by a prefix and that brought about by an adverb come under the same heading.

In principle, prefixation could be considered to belong to derivational morphology. There are, however, several arguments against such a treatment.

(1) Derivational affixes harmonize with the stem:
(a) *szépség* (= *szép* 'beautiful' + *ség* 'nominalizing suffix') 'beauty', *jóság* (= *jó* 'good' + *ság* 'nominalizing suffix') 'goodness'.
(b) *építget* (= *épít* 'build' + *get* 'diminutive suffix') 'build bit by bit', *olvasgat* (= *olvas* 'read' + *gat* 'diminutive suffix') 'read off and on'.
(c) *festő* (= *fest* 'paint' + *ő* 'agentive suffix') 'painter', *olvasó* (= *olvas* 'read' + *ő* 'agentive suffix') 'reader'.

On the other hand, prefixes and prefix-like elements never harmonize. Compare *kilát* 'see out' — *kinéz* 'look out', *beválaszt* 'elect, vote in' — *bevezet* 'lead/show in', *rámosolyog* 'smile at/on/to' — *ránéz* 'look/glance at' which contain the prefixes *ki-* 'out', *be-* 'in' and *rá-* 'at/on/to'. The domain of vowel harmony in Hungarian includes inflection and derivation, but never extends to compounding.

(2) Derivational affixes may change the part-of-speech category of the stem. As known, derivational affixes may be used to derive nouns from verbs or adjectives, verbs from nouns, adjectives from verbs, etc. Prefixation, on the other hand, always maps verbs onto verbs, no change in part-of-speech category may occur.

(3) Derivational affixes are bound morphemes, they cannot occur by themselves. It is different with prefixes and prefix-like elements. In this connection the following facts are worth noting.

(A) All prefixes and prefix-like elements can be used in short answers to questions. Consider

(22) a. Újjáépíted a házat?
   'Are you going to rebuild the house?'
   — Újjá.
   'Yes' /lit. re-, anew/
  b. Elmész?
   'Are you leaving?' /lit. are you away going/
   — El.
   'Yes' /lit. away/

This is, of course, not possible with derivational affixes.

(B) If a prefix or prefix-like element is moved after the verb, it can be stressed on its own right, i.e. independently of the verb.

(23) a. 'Egész 'nap 'szedte 'össze a 'holmiját.
   'He was picking up his things all day'
 b. 'Hozta 'rendbe a 'kocsiját.
   'He was repairing his car'

In (23a) the complex verb form *szedte össze* 'was picking up' comes from *összeszed* 'pick up', in (23b) we have the complex verb form *hozta rendbe* 'was putting in repair' which comes from *rendbehoz* 'put something in order'. Stress is distributed evenly in these sentences, i.e. each constituent is stressed (indicated by ' in (23a-b)).
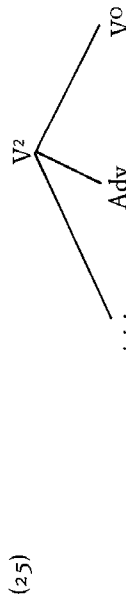
The N V compounds such as *levelet ír* lit. letter write 'be engaged in letter writing', *újságot olvas* lit. newspaper read 'be engaged in newspaper reading', *tévét néz* lit. television watch 'be engaged in television watching', *házat épít* lit. house build 'be engaged in house-building', too, raise a number of interesting problems. Notice first of all that the nominal in these compounds has no article, which is what we would expect. As soon as we put an article in front of the nominal, the 'compound reading' disappears and the noun is normally moved after the verb:

(26) a. Pisti ír egy levelet.
    'Steve is writing a letter'
   b. Pisti írja a levelet.
    'Steve is writing the letter'

The bare noun in N V compounds is typically the object argument of the verb. In general, N satisfies one of the arguments of V. This means that for (17) to be applicable to N V compounds Selkirk's notion of verbal compound must slightly be changed. Recall that up till now we have used the term 'verbal compound' to designate endocentric compounds whose head is morphologically complex, having been derived from a verb, and whose nonhead constituent may be interpreted as an argument of the head. What has to be dropped from this interpretation is morphological complexity. Verbal compounds have to meet two conditions: (a) the head must have an argument structure, (b) the nonhead must be able to function as an argument of the head. Condition (b) excludes from verbal compounds the prefixed verbs (the compounds with the structure Adv V) since prefixes (Adv's) can never function as arguments in compounds.

In N V compounds the bare noun is nonreferential, its meaning is in a way incorporated into the meaning of the verb: the compound denotes a complex activity. The noun *levelet* 'letter' does not refer to any particular letter, it is used to specify the writing activity: letter-writing is a particular kind of writing. Similar things hold for *újságot olvas* 'be engaged in newspaper reading', *tévét néz* 'be engaged in television watching', and *házat épít* 'be engaged in house building'. Noun incorporation takes only place if the activity at hand denotes an institutionalized activity. Under normal conditions, i.e. without contextual support, the N V constructions *széket tisztít* 'chair clean', *orrot mos* 'nose wash', *nagynénit látogat* 'aunt visit' are uninterpretable, they do not denote complex activities. (Kiefer *forthcoming* b).

It is worth noting that N V based nominalizations behave in exactly the same way: *levélírás* 'letter writing', *újságolvasás* 'newspaper reading', *tévénézés* 'television watching', and *házépítés* 'house building' are compounds which can be encountered quite frequently, whereas *széktisztítás* 'chair cleaning', *orrmosás* 'nose washing', and *nagynénilátogatás* 'aunt visiting' are not acceptable without contextual support.

(C) The majority of prefixes are undistinguishable from adverbs. E.g. *bele* 'inwards', *belül* 'inwardly, internally', *benn* 'inside', *előre* 'forward, ahead', *félre* 'aside, apart', *haza* 'home', *körben* 'in circles, around', *oda* 'there /dir./', *ott* 'there /loc./', *tovább* 'further', *utána* 'afterwards', *viszont* 'again, in turn', *vissza* 'back', etc. There is no difference whatever between their prefixal meaning and their adverbial meaning. That is why we have assumed that the categorial structure of prefixed verbs is Adv V.

Though most prefixes have an adverbial usage, this is not always the case. One notable exception are prefixes whose only function is perfectivization. Such prefixes can still be used in short answers, and they can be separated from the verb, but they cannot bear stress (Kiefer *forthcoming* a).

We may thus conclude that prefixation cannot belong to derivational morphology; prefixed verbs are compound words and as such they must be generated in the lexicon. The distribution of prefixes shows quite a few idiosyncratic properties and, in general, it is not predictable which verb selects which prefix. Verbs must be subcategorized for their prefixes. Also the semantics of prefixed verbs is fairly complex which is another reason why the lexicon is the right place to account for these verbs. Prefixed verbs are thus lexical units, generated in the lexicon with the following internal structure:

(24)

$$V^1 \diagdown^{Adv}_{\ \ V^0}$$
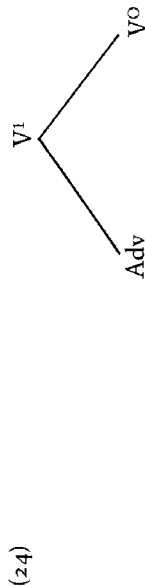
What is special about prefixed verbs is that they are double-faced. They are like genuine compounds lexically, but they are not compounds syntactically. From the point of view of syntax they are phrases which may be subject to movement transformations (word order changes) similarly to any other phrases in Hungarian. Formally, this difference can be accounted for by assuming that V^1 in (24) is just a phantom category from the point of view of syntax which is operative in the lexicon only. This category is systematically overlooked by syntactic rules which are sensitive to the phrasal category V^2 only. That is, for the purposes of syntax what is needeed is (25) instead of (24).

(25)

$$V^2 \diagdown^{Adv}_{\ \ V^0}$$

where '...' stands for further categories.

The proposed solution is, of course, a makeshift device, but for the moment no other solution seems to be available.

Verb meaning, too, imposes restrictions on noun incorporation. For example, statives do not allow for incorporation, nor do instantaneous verbs. Moreover, prefixes and articleless nouns are in complementary distribution, that is, no prefixed verb can occupy the V slot in N V compounds and no bare nominal can occur with prefixed verbs.

Once again, there are goods reasons to assume that N V compounds are lexical units which are generated by means of lexical rules in the lexicon. For these N V compounds we may posit the following structure:

(27)

$$V^1$$
$$N^0 \quad V^0$$
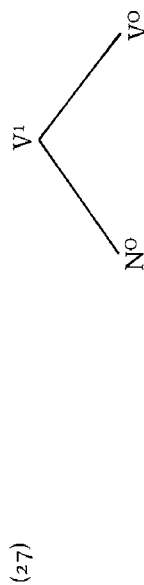
It can easily be shown, however, that N V compounds are nonwords from the point of view of syntax. Their behavior is in many ways parallel to that of Adv V compounds.

Consider first negation. The N V compound can be negated in two different ways: either the negative particle *nem* 'not' is inserted between the bare noun and the verb (e.g. *levelet nem ír* 'he is not engaged in letter writing') or the bare noun is moved after the verb (e.g. *nem ír levelet*). The same holds true, incidentally, for Adv V compounds as well: with negation we get either *ki nem ment* 'he didn't go out' or *nem ment ki; nem kiment* in isolation is impossible. The bare noun behaves in this respect differently: *nem levelet ír* is a well-formed construction, though with a different interpretation. What is negated in this case is not the complex activity but rather the object noun which gets contrastive stress: *Nem levelet ír, hanem cikket* 'He is not writing a letter but an article'.

If the sentence contains a focussed constituent, this must immediately precede the verb stem, consequently the bare noun must leave its place. E.g. *Annának olvas újságot* 'It is Ann to whom he is reading the newspaper'. This is also true for prefixed verbs: *Annával ment el* 'It is with Ann that he left'. In both cases a constituent from behind the verb, i.e. *Annának* 'to Ann' and *Annával* 'with Ann', respectively, has been moved into focus position. In the first case it is the bare noun *újságot* 'newspaper', in the second the prefix *el* 'away' that appears after the verb.

These facts clearly indicate that N V compounds must be considered to be phrases from the point of view of syntax. The situation is thus quite parallel to the one we had in the case of compounds with the structure Adv V. For syntax, then, V^1 is a phantom category. What syntax requires is something like (28).

(28)

$$V^2$$
$$N^0 \quad V^0$$
...

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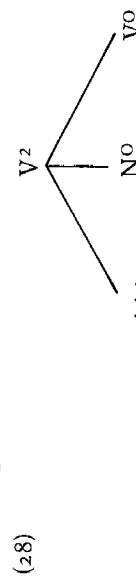
The foregoing discussion suggests that it seems to be reasonable to distinguish two types of compounds: lexical compounds which also appear as compounds (i.e. as words) in syntactic structure and lexical compounds which are not treated as such by syntax. As we saw above, the lexical compounds Adv V and N V are phrases from the point of view of syntax. These compounds must be accounted for both in the lexicon and in syntax. A purely lexical approach would not do justice to their syntactic behavior. A purely syntactic treatment, on the other hand, could not account for the lexical aspects of such compounds.

To sum up, we saw that compounds whose head is V require special treatment. In order to account for these compounds language-specific rules must be set up. This seems to provide a further argument for Wunderlich's claim (Wunderlich 1986) that V heads should be excluded from the universal set of word formation rules. Heads are either nouns, or adjectives or adverbs. Any departure from this condition seems to be a language-specific phenomenon.

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