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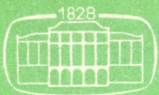
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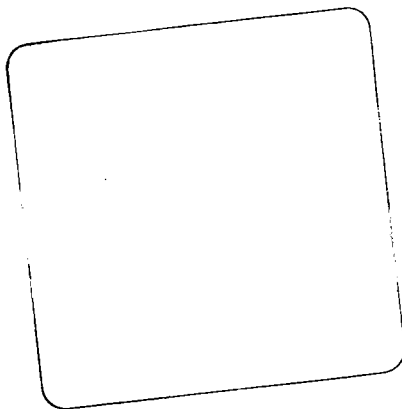
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## PREFACE

The present issue of *Acta Linguistica Hungarica* contains a selection of papers presented at the 6th International Morphology Meeting (Szombathely, 16–18 September, 1994), organized by the Research Institute for Linguistics of the Hungarian Academy of Sciences. The only exception is Laurie Bauer's paper, which was submitted for publication independently of the conference.

The main topic of the conference was devoted to the interrelationship between inflection and derivation. A selection of papers dealing with the central issue of the conference has been published in the *Yearbook of Morphology 1995* (Geert Booij, Ray Fabri, Martin Haspelmath, Jaap van Marle, Franz Rainer and Dieter Wunderlich).

All papers which were submitted have been refereed. The selection for the *Yearbook* was made by Geert Booij and myself on the basis of the referees' recommendations as well as on topical considerations. The reader will find papers dealing with the interrelationship between derivation and inflection in the present volume as well. The explanation is quite simple: a number of papers had to be revised and in some cases the revised version reached us too late to be included in the *Yearbook*. They are now being published in the present volume.

Budapest, April 29, 1996

*Ferenc Kiefer*



## THE CASE OF *un-*

MOHAMED SAMI ANWAR

### 0. Introduction

This paper is about the interaction between productivity in morphology and the semantic constraints on it. It concentrates on the use of *un-* with adjectives as expounded in Katamba (1993).<sup>1</sup> Though there is disagreement with Katamba's data and the way it is handled, the main issues underlying his argument will be dealt with hereafter. The aim of the paper is to give examples of morphological markedness<sup>2</sup> in derivation (without presupposing split morphology) and to show that markedness should not be dealt with only as a universal phenomenon applying at all levels of the grammar but in terms

<sup>1</sup> Katamba (1993, 78) claims that pairs of adjectives may be characterized as positive or negative. So, *well* is positive (or unmarked) and *ill* is negative (or marked). He claims that *un-* is attached to the negative member of the pair. This is an oversimplification because such phenomenon of markedness depends on the adequacy of the system of grammar and interacts with grammatical variables at the different levels of derivation, as will be shown in this paper.

<sup>2</sup> Markedness is generally used to distinguish between linguistic forms according to the presence or absence of a certain feature. A form that has this feature or mark is **marked**, and the other one which does not have this feature or mark is **unmarked**. In English *books* has the plural "mark" *-s* while *book* is unmarked. However, in some cases both forms may have overt markers, e.g., *fruitful* vs. *fruitless*; or both may not be overtly marked: e.g. *well*, *ill*. Here semantic features are resorted to; so *fruitful* and *well* are positive or unmarked since they refer to what is natural or normal in every day situation, and *fruitless* and *ill* are marked or negative. (This is the sense presupposed by Katamba (1993) in his analysis of *un-*.)

The earliest uses of the notion of markedness began with the Prague School of Linguistics, especially in phonology, where a phoneme is **marked** if it has a certain distinctive feature and **unmarked** if it does not have it (cf. Trubetzkoy 1931, Jakobson 1971). Then the notion was developed by Jakobson-Halle (1956). A major contribution to the development of the theory was made by Chomsky-Halle (1968, Chapter Nine). This is considered the first formalized theory of phonological markedness. Then, the natural phonologists subjected the idea to more scrutiny (cf. Stampe 1972). These ideas of Natural Phonology were applied to the new approach developed by Dressler and others (cf. Dressler *et al.* 1987) known as Natural Morphology. The notion is also applied in the semantic analysis of lexical items (cf. Lyons 1977).

of the grammatical process taking place since degrees of markedness are not invariant.

The current analyses (maybe with the exception of Jakobson's (1940) implicational laws) examine markedness (between two forms, such as singular and plural nouns) at one level or between the distribution of one form and another, such as *old* and *young*. *Old* is considered unmarked since it can be used in *How old is he?* but not: *\*How young is he?* So, the member of the pair which is restricted in distribution is considered marked. In this paper I will try to examine this concept of restriction of distribution and show how it interacts with other variables at the different levels of the grammar and that it is not limited to this binary nature which has been concentrated on in the literature so far. I consider markedness to be "more than binary" as it is "accumulative" in nature and draws on features that appear at different levels of the grammar (cf. 2-4 below). A form like *foolish* is marked as negative in relation to *wise*. However, this generalization about the two forms should be examined at different levels of the grammar, as will be shown below.

This is important because:

(a) We expect markedness to increase at derived levels. For example, the derived adjective *drunk* < *drink* (v.) is marked in the following sense. The basic form *drink* can be used as in:

drink	tea
	water
	milk
	wine

but the derived adjective *drunk* is associated with *wine* only. (Notice here the interaction between the semantic and morphological markedness.)

(b) The nature of the process itself (as will be shown below in detail) should be evaluated in terms of its output. For example, the negative form is marked in relation to its positive counterpart semantically and morphologically (in many languages). So, when a form does not serve as an input to this rule, it should not be considered marked. If *un-* does not occur with a certain form, this form should not be considered marked because what it does is that it resists markedness. Thus, if *\*unill* does not occur in English it is simply because *ill* does not like to be marked for negation, although it may be semantically marked when dealt with in relation to *healthy*.



In other words, those who claim that *ill* is marked because there is no form \**unill* have in mind the earlier judgement that *ill* is marked in relation to *well* and that this difference is expected to hold at every level of the grammar.

(c) Markedness may be language specific. So, while *good* is marked for *un-* in English, forms corresponding to \**ungood* may be attested in other languages. Moreover, morphological “choice” is another factor because *ill* (cf. (b) above) can be negated simply by using *not*.

0.1. Katamba (1993, 78) gives examples of how the application of word-formation processes may impinge on semantic considerations. He claims that in the case of two adjectives with opposite meanings, one of which has a more positive meaning than the other, normally the negative prefix *un-* attaches to the positive adjective.<sup>3</sup> If *un-* is attached to the negative member of the pair, the resulting form is usually ill-formed. Katamba cites the following examples:

(a) unwell	(b) *unill	
unloved	*unhated	
unhappy	*unsad	
unwise	*unfoolish	
unclean	*unfilthy, undirty	
unoptimistic	*unpessimistic	(Katamba, <i>ibid.</i> )

He concludes that “if there are two words representing the two poles of the same semantic dimension, we tend to prefer treating the positive end as unmarked (i.e. as normal)” (Katamba, *ibid.*).

<sup>3</sup> It seems that Katamba is trying to formalize Jespersen’s (1917, 143–4) remark that English places three restrictions on the formation of affixal negation:

- a. The stem should be adjectival.
- b. It should have a positive or concendatory value.
- c. The resulting form has a depreciatory sense. Cf.

The man is kind/unkind  
The man is stupid/\*unstupid.

The problem in Katamba’s analysis is attributable to 1) his attempt to “fix” such a rule at one level of derivation, and 2) his assumption that every lexical item should form a pair with another item and that if one is positive (unmarked), the other should be negative (marked). This ignores the system of grammar which may have gaps or varying rules of derivation (cf. 1.5 below).

0.2. The following sections of the paper will be divided as follows: The first part will be an appraisal of Katamba's proposal and how it fits into a theory of morphology in light of our limited knowledge of lexical semantics and its interaction with morphology. Section 2 will show the difficulties in formulating semantic constraints on morphosyntactic rules. Section 3 will deal with the implications of Katamba's assumption for morphology in the light of positing the feature [ $\pm$  marked]. Section 4 will give suggestions as to how to incorporate the findings of this paper into morphological analysis.

### 1. Data

This part will deal with Katamba's claim that *un-* is prefixed to the unmarked (= more positive) member of the pair. There are the following counter-possibilities:

1.1. There may be a pair with a marked and an unmarked member and still *un-* does not attach to either of them; cf. the following:

good – bad	*ungood	*unbad
near – far	*unnear	*unfar
big – little	*unbig	*unlittle

1.2. *Un-* may be prefixed to both the marked and the unmarked member of the pair:<sup>4</sup>

#### *Un-* + [ $\pm$ marked]

unanalytic	unsynthetic
unanswerable	unasked, unquestionable
unapparent	unconcealed, unhidden
unatrophied	unexpanded
unauthentic	unfalsifiable
unawakened	unasleep ?
unappalled	unpacified, unappeased
? (un) enter, register, schedule	uncanceled

<sup>4</sup> The forms in this section are chosen according to Katamba's criterion of markedness in order to show where his argument fails. Some of them are originally deverbal adjectives. They are included here because Katamba does not say if his rules apply only to base adjectives. Moreover, it is the purpose of the paper to show how the different levels of derivation influence the theory of markedness (cf. 1.5 and 2.1–2.5 below).

uncaught	unreleased
uncomplaining	unsatisfied
uncomplicated	unsimplified
uncompounded	unabridged
uncompressed	unstretched
uncondensed	unexpanded
unconfined	unreleased ?
unconfused	unclear ?
unconsenting	unopposing
unconstrained	unfreed ?
unconsumed	unreserved
uncontradictable	unstraightable ?
uncontrolled	unloosened ?
unconvicted	unabsolved
undangered	unsaved
undecayed	unreserved
undefeated	unvictorious
undelayed	unexpedited
undenied	unadmitted
unappreciated	undepreciated
undimmed	unlit
undiscouraged	unencourag(ed), -(ing)
undomestic, untamed	unwild
unendangered	unsecured
un(en)slaved	unfreed ?
unerased	unkept ?
unexhausted	unrelaxed
unimplicit	unexplicit
unforbidden	unallowed
unforsaken	unaccompanied
unhostile	unfriendly
unintimidated	unassured ?
unmenaced	unsecured
unmolested	unrespected ?
unobnoxious	unrestrained
unobscured	unclarified, unshown ?
unobtrusive	uncooperative ?
unoffended	unappeased ?
unlocked	unopened

unprejudiced	unfair
unprofaned	?
unprohibited	unallowed
unrebuked	unpraised ?
unregretted	unrelished ?
unresented	unwelcome ?
unresisted	unwelcome, unencouraged
unrestrained	unobnoxious
unretarded	unadvanced
unrevoked	unupheld
unrough	unsmooth
unscorned	unpraised
unscourged	?
unscrapped	unmaintained
unsubmissive	unaggressive
unsunk	unfloating
unwasted	unreserved
unwithered	unblooming
unwounded	unhealed
unwrinkled	unpressed ?

1.3. *Un-* may be attached to marked adjectives:<sup>5</sup>

unabashed	unconquerable	unerring
unabated	uncontested	unfaded
unabbreviated	uncontroversial	unfading
unabetted	uncontaminated	unfaltering
unabridged	uncrippled	unfeared
unadulterated	undeceivable	unforged
unafraid	undeniable	unforgetful
unalterable	undeviating	unforgettable
unaltered	undiminished	unfussy
unambiguous	undisturbed	unharmful
unappalled	undying	unhasty
uncompromising	unemotional	unimpaired
unconditional	unequivocal	unimpeded

<sup>5</sup> The forms in this section are chosen according to Katamba's criterion of the semantic feature [negative]. To him, such bases will not occur with *un-*.

unmarred	unopposed	unselfish
unmolested	unperturbed	unsunk
unobjectionable	unplagued	unsuspicious
unobstructed	unregretted	untrapped
unoccupied	unriddled	unweary
	unscathed	

1.4. *Un-* requires other negative prefixes notably *de-* or *dis-* so as to be attached:<sup>6</sup>

un - de - composable	(*)uncomposable (a different meaning)
un - de - faceable	*unfaceable
un - de - feated	*unfeated
un - de - formed	(*)unformed (a different meaning)
un - de - preciated	*unpreciated
un - dis - couraged	*uncouraged
un - dis - coverable	(*)uncoverable (a different meaning)
un - dis - membered	*unmembered
un - dis - guised	*unguised

(It is to be noted that in some cases *un-* may also be attached to other positive prefixes, e.g. *un-en-couraged*.)

1.5. *Un-* is attached to derived participles though it may not be attached to the corresponding base verbs:<sup>7</sup>

undefeated	*undefeat
unpromising	*unpromise

The negative *un-* is normally attached only to adjectives; when attached to verbs *un-* has reversative or privative meaning as in *undo* (i.e. reverse the action of), *unclothe* (= remove clothes from) (Adams 1973, 22). With participles and other derived adjectival forms, there may be ambiguity between the two meanings. "The prefix may be seen as attached to the whole word, that is, as

<sup>6</sup> The aim of the argument of this section is to show how affixing *un-* is sensitive to earlier levels of derivation.

<sup>7</sup> The argument in this section and in section 2 is to illustrate how derivational rules and markedness, for that matter, are sensitive to rules from earlier levels of the grammar.

negative, or to the verbal base only, as reversitive" (Adams, *ibid*). So *unlockable* can be understood as:

- (a) un + lockable : cannot be locked (negative)
- (b) unlock + able : can be unlocked (reversative)

*Unlocked* can be also interpreted as:

- (a) un + locked : not locked (negative)
- (b) unlock + ed : has been unlocked (reversative)<sup>8</sup>

Adams (*ibid*) notes that in the latter pair the distinction is to some extent neutralized, since here the result of a 'reversing' action is a 'negative' state. Quirk *et al.* (1985, 1555 Note [a]) note the same; *un-* treats the following adjectives in both *-ive* and *-able* as the same: so *untranslatable* is understood as *un + translatable* (not possible to translate). However, *unpackable* is understood as *unpack + able* (= easy to unpack).

The problem here is also compounded if we look at *un-* as an allomorph of the negative morpheme. There is division of labour between *un-* and *in-* for example, not to mention other negative forms and affixes. But this is outside the scope of this paper.

## 2. Difficulties

The above argument shows the following difficulties in defining the feature [ $\pm$  marked] for the point under discussion in this paper.

2.1. First, the negative form may not have a corresponding positive form, cf.

unshootable	but	*shootable <sup>9</sup>
unbendable	but	*bendable

<sup>8</sup> For more details about bracketing paradoxes, see Spencer (1991, ch.10).

<sup>9</sup> *Shoot* is used here in the sense of using a weapon, and not for example in the sense of shooting a movie. These two verbs are different in their morphological behaviour. We can say:

They shot / \*reshot the elephant.  
They shot / reshot the movie.

Moreover, *un-* may require a certain category; so we have the above positive forms only as passive forms. They are simply there to feed *un-*. Notice that *unbending* and *bending* are acceptable forms but not *bendable*. However, as just mentioned *\*bendable* is not an attested form. This leads to the following conclusion: the feature [+ marked] may not be posited for the stem to which *un-* attaches.

2.2. Second, we are dealing here with morphosyntactic rules of categorial change. The system may have many gaps. In addition to the examples shown above, some marked forms may be limited in use although their paraphrases are available, cf.

This is something that cannot be spoken about > This is something unspeakable.

This is something you can speak about > \*This is something speakable.

2.3. Third, it seems that more productivity is attained at higher strata where the constraint on *un-* becomes more "relaxed". Many of the underived bases to which *un-* is not attached generate derived forms that accept *un-*. So while we do not have the verb *\*uncompromise*, the derived adjectival form *uncompromising* is acceptable.

2.4. Fourth, the situation is not that rosy. We also have to notice that some forms derived at higher strata are constrained in use. A verb like *\*unimpress* is not used; however it is used as a passive participle predicatively as in:

The audience was unimpressed.

\*He unimpressed the audience.

2.5. Some of the uses of *un-* interact with other prefixes (cf. 1.4 above). Other verbs that behave like *impress* are *expect* and *satisfy*:

These results were unexpected.

These were the unexpected results.

\*He unexpected the results.

The case of *unsatisfied* may be more complicated:

The man was unsatisfied by the offer.  
 \*This is the unsatisfied man.

But it is correct to say:

This offer dissatisfied him.  
 The man was dissatisfied.

We can also say:

The man was undissatisfied.

To summarize this section, in order to deal with this compulsory variation in the grammatical forms we need to talk about subcategorization in the prefix and the stem to which it is attached, which means that we cannot specify the feature [ $\pm$  marked] at the base or at one level of derivation. It depends on valency. Therefore, it is accumulative, depending on the level at which the process applies. The word “accumulative” is used instead of “global” because the base may not take *un-* at various levels of derivation. In the cases where a derived form is limited in use and does not follow “naturally” from the base, there is a process of category change (cf. *unspeakable*, *unimpressed*, and *unspeakable* above). Such forms are syntactically [+ marked] because there is a marked change in the category of the root. Of course this effects productivity in the system but it does not follow naturally from the paradigm. In this case, I would tend to consider *un-* as a category changing prefix.

The conclusion of this section is that markedness occurs at different levels of the derivational process. The resulting marked features interact with the inherent features of the lexicon and the morphosyntactic processes.

### 3. Feature representation

This multi-layered relationship between a base and its derivatives as well as between these derivatives and other bases/derivatives requires that given feature specifications occur at various levels of a hierarchical framework in addition to a **Coindexing Specification Rule** to relate various bases/derivatives together. This allows *un-* to choose the marked form through a filter. These features can be shown as follows:



Stem<sub>n</sub>[Verb F<sub>i-n</sub>, Adj F<sub>i-n</sub> . . . C<sub>x</sub> . . .]

where X = indexing with other forms.

(Note that this indexing is multi-layered and looks forward to other levels of derivation.)

The coindexing variable applies automatically once the derived form corresponds to another form, be it derived or non-derived. The application of the rules applies therefore by attrition. They may or may not be exhausted according to the level of derivation. It is however necessary that all these feature specifications be ready at the base. This is how these features are hierarchical because skipping in this case is not allowed, although exhausting all the features may not be necessary. This is so because *un-* should be allowed to subcategorize the words to which it can attach.

*Un-* also interacts with other negative prefixes with which it is mutually exclusive. This may depend on the level of derivation and on the historical origin of the word. There may be the following possibilities (cf. Fowler 1965, 273):

1. Markedly Latin endings produce *in-* not *un-*:

unjust	-	injustice
unable	-	inability
unquiet	-	inquietude
uncivil	-	incivility

2. *-ed* endings have an aversion to *in-*:

- undigested	-	indigestible
unanimated	-	inanimate
uncompleted	-	incomplete
undetermined	-	indeterminate
unseparated	-	inseparable
undistinguished	-	indistinguishable
unlettered	-	illiterate
unlimited	-	illimitable
unredeemed	-	irredeemable
unreconciled	-	irreconcilable

3. *-ing* endings have a similar aversion to *in-*:
 

unceasing	-	incessant
undiscriminating	-	indiscriminate
  
4. *in-* tends to be restricted to the forms that are closest to the Latin, even in the *-able* group:
 

unapproachable	-	inaccessible
undestroyable	-	indestructible
undissolvable	-	indissoluble
unbelievable	-	inconceivable
unprovable	-	improbable
  
5. Usage may also be a factor in this choice: cf. *unaccountable* but *insurmountable*, and *unmelodious* but *inharmonious*. These are examples of "apparent caprice fixed by usage" (Fowler 1965, 273)

#### 4. Conclusion

In this paper I have tried to outline the interaction between semantics and the different levels of morphology in order to define how [ $\pm$  marked] features apply. I have shown how these lexical and morphosyntactic rules interact with each other and how they may be incorporated into the grammatical system. Although the main concentration was on marked phenomena, the insight may be significant in that many irregularities can shed light on the structure of the morphological system of languages, and how the markedness of "unnatural" derivations and the semantic motivation behind them can help in explaining some linguistic phenomena. This necessitates that we should look at the nature of the morphological process and its implications for grammar. In the case under discussion, derivation by definition aims at creating new words. Since derivation may include more than one form (at least in cases of affixation, reduplication and compounding), this process should be examined holistically. This is also required by the fact that derivation affects major lexical categories. Moreover, morphological well-formedness conditions apply within the paradigm. This well-formedness is characterized by the following:

(a) Rules of derivation are language specific. Some rules may be preferred to other rules in some languages and therefore productivity may vary according to certain forms. When such forms are borrowed to another languages, they may keep their indigenous features and may resist adaptation or may behave as "exceptions" to certain rules (cf. 3 above for Latinate words).

(b) As a corollary of (a) above, different processes may apply to generate a required form. For example, there is more than one deverbal nominal prefix in English. This makes the language system rich and also entails asymmetry of processes.

(c) Asymmetry also entails optionality in that more than one process can apply and as a result semantic change may follow. Since derivational rules by definition are optional, various processes may apply and, therefore, resulting markedness may vary from level to level.

(d) Paradigms are the domain in which constraints on the use of affixes are operative. This entails that the presence of markedness at a certain level does not obstruct productivity because other processes may apply as a result of the principle of division of labour. What is at issue here is constructional representation; if a form does not, for example, yield a negative derivative with *un-*, it can do so by applying other processes simply by using *not* or any syntactic phrase with the same meaning. This leads to the absence of uniformity of constructional representation of [Neg + Category<sub>n</sub> / Level<sub>x</sub>]. It is in this framework that markedness should be viewed.

Katamba's analysis, neglecting the different status of the forms to which *un-* does or does not attach, implies that there is one level of morphology at which productivity and markedness can be examined. Although the global (or a better term in this case may be **longitudinal**) application of a certain prefix may lead to maximal productivity, competing processes and the levels at which they apply may function as constraints on some rules and as a result lead to markedness. Therefore, markedness has different values since derivation can be effected, as said above, through different processes and by using different morphemes. It can be by affixation (i.e. expansion), subtraction (with its different forms), or by other processes available in the language. Moreover, more than one process may apply to the same form and the more the processes are applied, the more marked the resulting form will be. (For example, broken plural nouns in Arabic have about 67 patterns, according to some studies.) What should be emphasized here is that languages are selective in applying the processes available to them. Therefore, the degree of natu-

ralness in derivational morphology is difficult to assess. There is, however, a general tendency for variation in derivation which seems to work counter to what Wurzel calls "conflicts of naturalness": "When system congruity comes into conflict with the principles of system-independent naturalness (constructional iconicity, uniformity, and transparency), system congruity wins out" (Wurzel 1990, 2595). This is expected because while inflection tends toward uniformity, derivation aims at "enriching" the categories of the language and hence the naturalness/markedness of a process should be looked at within the degree of "competition" among sister processes (i.e. processes that yield the same category). Therefore, markedness cannot be analyzed in terms of extra phonological efforts or "marking conventions" (as in Chomsky-Halle 1968), or simply in terms of the semantic significance of rules, for example truncation vs. stem modification. It is a matter of "choice" among processes. So, while reduplication pays off (in spite of its markedness) in making the form transparent and therefore easier for the speaker's cognitive effort, it is less marked than, for example, the use of a prefix such as *un-* because the speaker has to learn an extra rule which requires him to block the use of this prefix with certain forms. It should also be noted that one process may take place at the same time such as reduplication, vowel mutation, sentence change, etc. So, markedness may be high or low depending on the degree of the distribution of a certain prefix.

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## IS MORPHOLOGICAL PRODUCTIVITY NON-LINGUISTIC?\*

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### 1. Introduction

Morphological productivity has, for some time now, been the problem child of morphological studies. The fundamental observations are easy to make and, I think, relatively uncontroversial. If we look at the ways of marking the plural in English, we find that we can mark it with *-en* on the end of *oxen* or with *-s* on the end of *cows*. However, these two markers are not of equal status. If we come across a new English noun (either new to the individual or new to the entire society) it is a pretty safe bet that it will not form its plural by adding *-en*, and a not-quite-so-safe bet that it will form its plural by adding *-s*. Various ways of dealing with this have been suggested in the literature. In the case of the English plural, it would be feasible to list all nouns which take an *-en* plural in the lexicon, and to introduce only the *-s* plural by rule. In a closely related language, Dutch, however, where both *-en* and *-s* are also found as plural markers this solution is not possible, since both can be added to new nouns, but to different sets of new nouns (van Marle 1985, 199). Nevertheless, there is a numerical discrepancy between the sets of nouns which take each marker. Here we might talk in terms of the number of formations being a function of the number of words in the available input classes. In some derivational instances, however, this is less clear, and it appears that some affixes occur with fewer stems than others without this being determined by the nature of the particular input class. In other words, we appear to have differences in productivity of particular derivational processes which are a function of the individual derivational process rather than of the input classes. We might call this phenomenon scalar productivity (Bauer 1991).

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Many grammatical descriptions ignore this facet of derivational morphology, and simply list derivational affixes or processes, with examples of the words produced by each. Since at least the 1960s, though, many morphologists have felt that this is not sufficient, and that productivity is itself a phenomenon which a morphological theory has to account for. Discussion has then often centred on suitable terminological distinctions (Corbin 1987, 42), the question of whether productivity is a fundamental notion itself or whether it can be further decomposed into more basic notions (Cutler 1980; Mayerthaler 1981, 124 ff.), and how productivity can be measured (Aronoff 1976; Baayen 1991).

But the question has also been raised as to whether this new view of morphological productivity is justified, and whether apparently variable productivity is properly a linguistic matter or not. Such questions have been asked not only within the more narrowly morphological literature (e.g. Di Sciullo-Williams 1987, 8, where it is asked whether all morphological processes can possibly be viewed as fully productive), but also in more general frameworks (e.g. Langacker 1987, 71-2). In this paper, I wish to begin by making some fairly superficial observations about the way in which speakers exploit morphological productivity (or at least the ability to produce and comprehend new words, which may not always be what linguists mean by 'productivity'). These seem to indicate that a non-linguistic view of morphological productivity might be justified. However, I shall go on to argue that there are some productive processes which do appear to be linguistically governed, and that there is no obvious way to draw a distinction between these and the more controversial examples discussed in the first part of my article. That being the case, despite observations such as those indicated here, it appears premature to exclude morphological productivity from the set of linguistic processes.

## 2. Some observations

### 2.1. Mohawk I

Mohawk is an Iroquoian language spoken by about 1000 people in New York State, Ontario and Quebec (Rudes 1994). It is a polysynthetic language. In general, polysynthetic languages have a lot of productive morphology (Fortescue (1994, 2601) is rather more tentative and merely says that 'such languages do presuppose a certain degree of productivity in their morphology'), and learners of such languages are frequently frustrated by the fact that it is rarely possible to look up an attested word in a dictionary. Superficially, Mohawk is no exception to these generalisations. Yet if learners use affixes productively in Mohawk, they are apt to be told by Mohawk speakers that



'No one ever said it that way before' (Marianne Mithun, personal communication). In other words, although Mohawk allows for productive morphology there is at least anecdotal evidence that speakers prefer to use known words rather than employ the productive capacity of the language system. Making up a new word—at least at the derivational end of any inflectional/derivational cline—is a conscious procedure, and one which is carried out by people with prestige in the community on special occasions, not as a regular thing (Marianne Mithun, personal communication).

This observation is no doubt open to several possible interpretations, including interpretations which hinge on the threatened nature of the Mohawk language. However, rather than try to cover all or any of these interpretations at this point, we shall simply mark this as an observation to be explained, and pass on to other observations.

## 2.2. English I: The productivity of syntax

Syntactic rules are generally assumed to be so productive that productivity is not taken to be an issue in syntax at all. Yet a little thought makes it clear that not all syntactic formations are equally 'productive' in the sense that not all syntactic structures are used equally frequently in the production of new sentences. For instance, even in scientific texts, passive verb groups make up only 30–35% of verb groups in English, and in non-scientific texts the proportion is much lower (Svartvik 1966, 46). The rules providing passives are thus clearly not as productive as the rules providing actives. The whole notion of syntactic markedness depends on this being so.

Pawley–Syder (1983) comment on this as a puzzle for nativelike selection, and in terms very similar to the terms that were used above in the discussion of Mohawk. For example, they comment (1983, 195) that 'Each sentence may be strictly grammatical. The trouble is that native speakers just do not say things that way.' Among a host of other examples, they point out that although in one sense it is perfectly grammatical to say *It is five minutes after half past three* (and although that would be a perfectly normal way of saying things in Danish), people actually say *It is twenty-five to four* (or, in some dialects, *of four*). They suggest that speakers operate with a large lexicon of lexicalised clause stems rather than with a fully productive set of syntactic rules. (See also Fillmore (1979) for a less extreme statement of a similar position, the two apparently independent of each other.)

### 2.3. Language acquisition

#### 2.3.1. Hebrew

Clark–Berman (1984) report that children generally show monotonic improvement in interpreting Hebrew nonce derivatives with age. However, despite the ability of very young children to deal with the transfixal nature of Hebrew morphology, even eleven-year-olds have difficulty in comprehending in context nonce agentive words of the form *CaCaC* (parallel to established words such as *ganav* ‘thief’, *balaš* ‘detective’). Yet this is one of ‘the commonest devices for new agent nouns’ (1984, 551) in the adult population. Part of the difficulty may be that such forms are homophonous with past tense forms (*ganav* ‘stole’, *balaš* ‘pursued’), but if this does not cause problems for adults, we would not expect to find it causing problems for eleven-year-olds.

#### 2.3.2. Flemish

In the formation of synthetic compounds in Flemish, even twelve-year-olds have been observed to retain the ontogenetically earlier pattern of verb + noun rather than the adult pattern of noun + verb + *-er*, e.g. *mix-soep* for a machine that mixes soup instead of the preferred adult form *soepmixer* (Smeds 1979, cited in Clark 1993, 153).

#### 2.3.3. English II

Aitchison (1994) reports that there is a big increase in English speakers’ ability to coin new words in the adult fashion during the early teenage years. My own files show examples of words coined by children in this age-group which appear incorrect by adult norms (however effective they might be). For instance, a fourteen-year-old, reporting on a planned excursion from school in order to gain ‘work experience’, said ‘You can choose what you want to work-experi-ize (/ɪkspiəriəɪz/)’. The same child, when playing Monopoly, was heard to say ‘You are doing better financially but I am doing better propertariially’. According to Aitchison, the development in the ability to form new words comes at approximately the same age as the acquisition of a large amount of new vocabulary. We may thus raise the question as to whether the ability to form new words according to adult models is acquired because of the growth in vocabulary in general, rather than because of the development of any specifically morphological ability.

#### 2.3.4. Mohawk II

As might be expected from the description of the adult use of Mohawk given earlier, young children learning Mohawk appear not to use its derivational morphology to create new words. Mithun (1989, 311) reports that in the small number of children who were learning Mohawk as a first language at the time, there was no evidence of the acquisition of derivational suffixes or noun incorporation as productive processes, even though they are both pervasive in adult speech and the children used individual words which included them.

#### 2.4. Language attrition

We can distinguish between at least three kinds of language attrition: pathological language loss, language death and the case of individual language loss in children who move to a place where a new language is spoken around them. These three do not all work the same way, but there are features in common.

##### 2.4.1. Pathological language loss

Dressler (1977) reports that aphasics reduce the number of derivational affixes they deal with except in highly lexicalised forms (which we may assume are not analysed). This can give rise to what he terms 'over-productivity' of word-formation rules. There is also an increase in transparency, with the loss of morphophonemic variation and the reintroduction of affixes we might consider to be truncated in normal language (Dressler cites a case of *conciliationtory* for *conciliatory*).

##### 2.4.2. Language death

In language death, Dressler (1977; 1991) reports (on the basis of a case study of Breton) that word-formation tends to be replaced by borrowing, that speakers lose the ability to produce, and later even to recognise or interpret, new derivatives. Morphophonemic rules tend to vanish, leaving more transparent forms only. Frequent derivatives may be retained, but infrequent ones are lost and with them semantic distinctions between parallel forms from the same base (compare *commission* and *committal* in English). In inflection, Dressler notes a reduction of allomorphy leading to, for example, a bi-unique plural marker.

##### 2.4.3. Individual language loss

In a study of the language of a Hebrew-speaking child who moved to the United States aged two and a half and then acquired English, gradually losing her Hebrew, Kaufman-Aronoff (1991) report that the complex verbal paradigms

of Hebrew, which the child had controlled on arrival in the United States, were replaced with a single verbal form based on 'one of the most productive templates in children's speech and in the colloquial language' (p. 184). Kaufman–Aronoff stress that although the child's ability to manipulate the Hebrew morphology disintegrates, she still controls the notion of the Hebrew root with transfixes: the patterns remain after the details have vanished.

Although Kaufman–Aronoff speak in terms of the most productive pattern remaining, Dressler (1977, 65) suggests that in language death productivity is replaced by frequency as the motivator of new forms. Dressler, like many others (e.g. Mayerthaler 1981, 125; Bauer 1988, 61; Clark 1993, 130) believes productivity to be distinct from frequency in normal language.

## 2.5. Comprehension

Not all speakers are equally good at interpreting complex words. In a famous experiment, Gleitman–Gleitman (1970) showed that less educated consultants were less able to give grammatically appropriate paraphrases of three-term nominal compounds than were consultants with PhDs. The following passage (from Gleitman–Gleitman 1979, 109, in which they provide a later discussion of their experiment) shows the kind of error that was made when consultants were asked about the compound *house-bird glass*:

We can assume that every speaker of English, approximately, knows how to use *glass* both adjectivally (*a glass house*) and nominally (*a piece of glass; a glass to drink from*). Yet the less educated subjects often interpreted *house-bird glass* as *glass house-bird*, *a house-bird made of glass*, or even as *glass bird-house*. Why not *glass used to make a house-bird* or *the glass used by a house-bird*, solutions which simultaneously resolve the semantic and syntactic properties of the stimulus item?

Gleitman–Gleitman attribute the difference between the two groups to what each group of respondents focused on: the more educated group focused on the syntax, the less educated on the meaning. The differences were certainly deeply ingrained. In an interesting aside, Gleitman–Gleitman (1979, 108 fn) note that

It is of some interest that we could find no simple means to teach the clerical [less well-educated] group to perform as the Ph.D. group performed. For instance, clerical workers listened to the stimuli over and over again, with feed-back as to correct choices and a financial reward for each correct choice made. Finally, their performance for a list of 72 stimuli came close to that of the uninstructed Ph.D. group. Then both groups were given a new, but closely equivalent, list of stimulus phrases from which to choose. Now the disparities in performance for the two groups appeared again, and in the same measure. Thus there is no easy way around the fact that these populations differed in their approach to paraphrasing.

Ryder (1994) also found cases in which speakers interpreted noun-noun compounds as though they were left-headed, so that *quilt-horse* was interpreted by one consultant as 'a quilt made of horse-hair'. She attributes this (1994, 199) to an individual 'style' of interpretation. She also notes that one subject was not able to find interpretations for novel compounds.

In an experiment described by Wheeler-Schumsky (1980), respondents did not differ grossly in educational level, all being college students doing an introductory psychology course. They were asked fairly overtly to divide a base from its final affix, the experiment being carried out both in written and in oral form. In most cases consultants were able to perform the task in accordance with the expectations of the experimenters, but with suffixes like *-ship* and *-dom* and *-er*, the suffix is unrecognised in a large proportion of responses (Wheeler-Schumsky 1980, 11):

For example, *dom* is chosen as the suffix of *kingdom* in 19 written responses and 11 oral responses, but the word is said to have no suffix in 14 written responses and 3 oral responses. For a few of these words, 'no suffix' is actually the majority response in one or both experiments. *Baker*, for example, has 18 'no suffix' responses and only 11 *er* responses in the written experiment.

In both these cases the experimenters suggest reasons for the unexpected findings; nevertheless there is an implication here that speakers may not fully understand the productive morphological mechanisms that are part of the language they speak.

## 2.6. English III: Adult production

Churma (1987, 44) points out that even adults may have difficulty in coining appropriate new words. He cites the following reconstructed interaction from a Philosophy of Linguistics class to make his point. The person taking the class was looking for a word meaning 'the property of being a chair':

[Professor]: ... chairness. Chairness? That's not quite right.

[General agreement that it's not]

[Student]: Chairity?

[General unhappiness about the suggestion]

[Student]: Chairosity?

[More unhappiness]

[Student]: Chairhood.

[General agreement that this is the right word]

The general scenario is likely to be familiar, even if non-Americans may need the homophony of the putative *chairity* and the established word *charity* explicitly pointed out to make sense of that particular suggestion. The implication of this example is that the productivity of morphological processes is not necessarily automatic, even for presumed competent speakers of the language concerned.

### 3. Discussion

What all these observations have in common is the notion that the ability to produce and comprehend new forms is somehow 'harder' for native speakers than is generally assumed: it is acquired late, mistakes are frequently made with it both in production and in comprehension, people appear to prefer to rely on memory rather than use this ability, and so on.

The point about language acquisition is an important one. Although the view is perhaps no longer as prevalent as it once was, we can find linguistic works which suggest that the fundamentals of language acquisition are completed very early. For instance, we find in Carroll (1960, 206) that

By the age of about 6, the average child has mastered nearly all the phonemic distinctions of his language and practically all its common grammatical forms and constructions—at least those used by the adults and older children in his environment. After the age of 6, there is relatively little in the grammar or syntax of the language that the average child needs to learn . . .

If this is true, then the ability to produce and comprehend new forms is a feature of language which is learnt extraordinary late, so late, in fact, that it seems that it may not class as linguistic knowledge, but be, in this respect at least, more like encyclopedic knowledge. We cannot really imagine linguistic knowledge such as the ability to manipulate assimilatory or agreement phenomena being acquired so late in non-pathological cases, though it is perfectly simple to imagine people learning that a regular hexagon of sides  $r$  fits exactly inside a circle of radius  $r$  or that there is a word *glabella* meaning 'the part of the forehead between the eyebrows' at such a (relatively) late stage.

The other observations I have cited are consistent with this view. If the ability to produce and comprehend new forms is a matter of encyclopedic knowledge, dependent upon the (no doubt unconscious) analysis of innumerable word-forms, we would expect people to know more words than they create (Mohawk I) because new words could not be created until a suitably large store had been memorised; we would expect people to produce sentences by analogy with firmly established patterns (English I) because they would not be

able to create new sentences until they had a store of fixed patterns to which they could make minimal changes; we would expect people to lose morphological patterns as they lose the forms which could act as morphological bases for analogies, not to have strategies for interpreting words which happen to be grammatically complex, but simply to learn known words as wholes, not necessarily to realise when individual words are morphologically complex, and to have difficulty in finding parallels on which to base analogies in cases of relatively rare words.

Interestingly enough, this view relates well to ideas already expressed within Cognitive Grammar. Langacker (1987, 71–2) comments that

Applying grammatical rules to compute novel expressions is something that speakers (not grammars) do in response to a coding problem, and the concepts of cognitive grammar reveal it to have the same basic character as the adaptation of lexical items to novel literal and figurative uses.

Accordingly, he argues, productivity is not something which should be a part of a grammar. (See also Ryder 1994, esp. 61.)

Yet there are problems with this kind of view as well. These relate to the numerous places where productivity does seem to work easily. For instance, if we adopt Pawley–Syder's approach to syntactic productivity, we still have to be aware that a lexicalised sentence stem such as 'If it be-TENSE good enough for NP<sub>i</sub> it be-TENSE good enough for me<sub>j</sub>' (Pawley–Syder 1983, 212) we have to account for the appropriate use of tense, and in many cases we have to account for appropriate use of person and number which are slotted into such chunks. Similarly, even though Mohawk-speaking children do not appear to use derivational suffixes or incorporation productively, by the age of five they have mastered an extremely complex inflectional morphology almost perfectly (Mithun 1989). With an agglutinative and non-fusional language like Tamil or Turkish, inflectional morphology is acquired even earlier (Raghavendra–Leonard 1989 on Tamil, Aksu-Koç–Slobin 1985, 854 on Turkish). And there is a large amount of evidence accruing that regular English plural morphology is worked out by rule rather than by any of a number of possible alternatives (see Derwing–Baker 1980 and the summary in Prideaux 1984, 78–84).

Although the examples given above all deal with inflectional morphology, it is not the case that this is simply a distinction between inflectional and derivational morphology. Within West Greenlandic, another polysynthetic language, derivational morphology appears to be far less fixed by lexicalisation than it is in Mohawk, and accordingly appears much more productive (Michael Fortescue, personal communication). Diminutive morphology

appears early in English and Hungarian (MacWhinney 1985, 1147 for Hungarian). Agentive *-er* is used productively from before the age of 6 years in English (Clark-Hecht 1982). One might also cite the large literature on the question of storage of morphologically complex lexical items, which does not unambiguously show a division between inflection and derivation.

#### 4. Conclusion

There appear to be at least two kinds of productivity: the 'easy' productivity of regular, transparent inflection and the 'hard' productivity indicated by the observations cited at the beginning of this paper, which seems to apply to a complementary set of morphological processes. We might question whether 'hard' productivity is a linguistic phenomenon at all, but 'easy' productivity shows no signs of being anything other than linguistic.

Given such an observation it is tempting to draw a distinction both in terms of terminology and in terms of generative procedures. We might, thus, want to distinguish productivity from semi-productivity (or some other label, such as creativity); we might want to distinguish rule-governed behaviour from analogy. And, indeed, many linguists in the past (including myself) have done just this. Unfortunately, it does not follow. It does not follow because not all of the 'easy' cases are equally easy, and not all of the 'hard' cases are equally hard. For instance, Derwing-Baker (1980, 255) provide evidence that for children acquiring English, the plural is an easier marker to learn to use properly than the homophonous third person singular of the present tense. Similarly, in applying the rule to add /s/ to stems ending in non-sibilant voiceless consonants to form the English plural, children find it easier to perform the operation when the stem ends in a stop (optionally preceded by a homorganic nasal, but not in any other cluster) than otherwise (Derwing-Baker 1980, 267). If we look at the 'hard' cases, we can note that although Wheeler-Schumsky (1980) found that many respondents failed to segment the word *baker*, we have noted that this very suffix is acquired early by children, and there is thus a sense in which it is more surprising that this should have been deemed 'hard' by Wheeler-Schumsky's subjects than that a child should have difficulties making an adverb out of *property*. We have also seen that comparably complex morphology is apparently deemed 'harder' by speakers of Mohawk than by speakers of West Greenlandic. If we have gradients within the two categories of 'hard' and 'easy' productivity, then we must consider the possibility that there are not two categories at all, but a single cline running from the easiest at one end to the hardest at the other. And nothing that has



been said here indicates that this may not be the case: the impression of two distinct categories is caused by considering extreme examples, rather than by the nature of the data. Of course, if it is the case that there is a single cline, we would be better off with a single piece of terminology and a single formal representation of the phenomenon.

What I hope to have shown in this paper is that even the observations from the 'hard' cases do not in themselves unambiguously rule out a single scale of productivity, however tempting a conclusion this may be. That being the case, it seems premature to decide whether productivity is or is not a linguistic phenomenon. There is evidence pointing in more than one direction, and we cannot yet come to a firm conclusion.

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## LEXICAL RULES CROSS-CUTTING INFLECTION AND DERIVATION

LEILA BEHRENS

### 1. Introduction

In this paper, I will discuss the relation of INFLECTION and DERIVATION as traditional concepts to the concept of LEXICAL RULES as they have been developed in the last 30 years.

The theoretical distinction between INFLECTION and DERIVATION is rooted in a linguistic tradition, namely, the European philological tradition, which regards morphology and syntax as equally important parts of grammar. This tradition and the typological make-up of Indo-European languages, on which this tradition was based, had strongly contributed to the still common assumption that distinguishing "word formation" ("Wortbildung") from "word-form formation" ("Formenbildung") is generally, i.e., both theoretically and cross-linguistically, a matter of morphology rather than a matter of the entire grammar or, of lexicon-grammar interaction. INFLECTION in Indo-European, i.e., in "inflectional" languages, has served as the model case of INFLECTION, later understood as the construction of complex word-forms in general. The difference between two functionally different types of formation of complex forms observed in Indo-European languages had been generalized in the "morphological typology" of the last century, which was, of course, no longer a classification of languages on the basis of their word-structure, but, rather, on the basis of their dominant patterns relating lexicon to morphology and/or syntax.<sup>1</sup> Nevertheless, the traditional idea has been maintained that the field of morphology is divided into the subfields of INFLECTION and word

<sup>1</sup> It is worth noting though that Gabelentz (1891/1984) had already pointed out, 30 years before the publication of Sapir's famous work (1921/1972), that differences between morphological types concern cross-linguistic differences in the default association of dominant formal means for building complex structures with, on the one hand, the classical INFLECTIONAL domain, and, on the other hand, the classical domain of lexical enrichment, with Indo-European languages taken as *tertium comparationis*. This, in turn, may result in difficulties in distinguishing between "Formenbildung" and "Wortbildung" in languages of a different morphological type. He cites Semitic languages as an example, where internal modification of roots crosscuts the traditional domain of INFLECTION and DERIVATION.

formation (including DERIVATION and compounding) and that, conversely, investigation of INFLECTION or DERIVATION means studying morphology. Almost all introductory textbooks on linguistics and on morphology repeat this traditional wisdom (cf. Fromkin-Rodman 1988; Dürr-Schlobinski 1990; Matthews 1974, 38; Bauer 1988; Carstairs-McCarthy 1992).<sup>2</sup>

The concept of LEXICAL RULES, in contrast, is rooted in a linguistic tradition in which classical morphological issues are distributed over phonology and syntax. LEXICAL RULES were first developed in opposition to syntactic rules in order to relieve the apparent load of the latter and to also allow for the existence of regular processes in the lexicon (cf. Hoekstra-van der Hulst-Moortgat 1980; Spencer 1991; Atkins-Levin-Zampolli 1994, Anderson 1988). However, it was clear from the very outset that LEXICAL RULES<sup>3</sup> crosscut the traditional domain of morphology and syntax.<sup>4</sup> Here, the obvious question arises whether or not LEXICAL RULES, as more powerful rules than those restricted to the domain of the phonological word, could or should substitute traditional morphological rules.

Meanwhile, that is, since the early seventies, which was the beginning of a growing interest in the study of the lexicon, lexicology and especially lexical semantics have developed into a central field of linguistic study (cf. Cruse 1986; Talmy 1985; Hüllen-Schulze 1988; Lehrer-Kittay 1992;

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Interestingly, Gabelentz remarks in the same chapter on "Wörterbuch" that a paradigmatic view on all complex formations, which suggests itself in Semitic languages, is also possible in Indo-European languages such as German. He also observes that, from a paradigmatic perspective, the difference between these two constructional types tends to be blurred, since "Bau, Gebäude, baulich" stehen dem Verbum "bauen" nicht ferner, als dem Infinitive das Imperfectum "ich baute", oder das Participium "gebaut". (1891/1984, 122).

<sup>2</sup> Introductory textbooks on linguistics often do not at all mention that the issue of INFLECTION and DERIVATION has to be studied in morphology, but simply have corresponding subsections of a section "morphology" (cf. Dürr-Schlobinski 1990; Fromkin-Rodman 1988). In contrast, textbooks on morphology, of course, contain more sophisticated discussions about the relation of INFLECTION/DERIVATION to other subfields of linguistics.

<sup>3</sup> Here, I mean the concept of "lexical rules" used, for instance, in the sense of Dowty (1979; 1991), rather than the concept of "morpholexical rules" employed for dealing with "arbitrary, lexically governed, non-meaning changing, non-category changing variation in stems" (cf. Lieber 1981, 164). Dowty (1991, 588, footnote 31) assumes that LEXICAL RULES "include not only word-derivation cases (*decision* from *decide*) and zero-derivation (noun *walk* from verb *walk*) but also "lexical" phrases (*egg on* or *hammer flat*) and changes in valence, including detransitivizations and the changes in argument configurations...".

<sup>4</sup> Cf. "However, taking only partial productivity and semantic unpredictability as the essential properties of lexical rules will have the interesting and I think correct result that the distinction between syntactic and lexical rules may cut across the traditional distinction between morphology and syntax." (Dowty 1979, 301).

Pustejovsky 1989; Boguraev–Pustejovsky 1990). At the same time, morphology has become a new focus of attention (cf. Hammond–Noonan 1988; Dressler *et al.* 1987; Dressler *et al.* 1990; Aronoff 1992; Stump 1993). Finally, there is increasing interest in modeling lexicon–grammar interaction as a necessary prerequisite for language-specific generalizations and as a more adequate basis for cross-linguistic comparison than separate subcomponents such as lexicon, morphology, etc. (cf. the concept of “lexicon–grammar” in Gross 1994 and Halliday 1992).

## 2. What do LEXICAL RULES have to do with INFLECTION and DERIVATION?

These new conditions force us to again discuss the conceptual relation of morphology to lexicon and syntax, and of INFLECTION/DERIVATION to productive lexical processes in general. I will suggest that we cannot expect only one correct answer to the question of whether or not INFLECTION and DERIVATION can be unequivocally distinguished when this question is raised from the background of such different linguistic activities and interests as theory-making on a highly abstract level, the study of language universals, and the representation of language-specific lexicons and grammars. In my opinion, the interdependence between the answers given in the past to this question, on the one hand, and the scientific interest and the languages studied or simply known, on the other hand, is much higher than sometimes assumed. Thus, they are not necessarily contradictory but are (probably) all correct under the conditions given in each case. Nevertheless, we can try to develop a theory-neutral framework which would both incorporate existing linguistic knowledge about language diversity as well as satisfy some elementary representational requirements. My suggestion is that an extended concept of LEXICAL RULES should play an important role in designing such a framework. This could also help in overcoming some difficulties in distinguishing INFLECTION and DERIVATION.

Concerning the relation of LEXICAL RULES to INFLECTIONAL and DERIVATIONAL rules, the most common assumption is that LEXICAL RULES share their domain of application with rules for morphological DERIVATION.<sup>5</sup> In addition, LEXICAL RULES often include two further types of lexically restricted semi-productive processes, which are not subject to an overt morphological operation: (a) processes formerly treated via syntactic rules (for instance, dative

<sup>5</sup> Compare, for instance, Anderson (1992, 38): “The class of morphological operations within the lexicon is roughly coextensive with what is traditionally called derivation, as opposed to inflection. Most of what is said in this section about lexical operations is thus applicable only to derivational morphology.”

alternation (cf. (1)), small clauses, diathesis alternations such as passive, etc.) and (b) processes which do affect syntactic behavior and semantic interpretation but are commonly analyzed as “meaning shift” or systematic polysemy rather than as “zero-derivation” (for instance, argument changing alternations such as transitivity alternations (cf. (2)).<sup>6</sup>

- (1) (a) Peter sent a package to Claire.  
 (b) Peter sent Claire a package.

- (2) (a) Peter opened the door.  
 (b) The door opened.

LEXICAL RULES thus provide a favorable generalization of (in some respect) different types of lexical processes, with the effect that the distinction between “morphology” and “syntax” as defined by the boundary of the phonological word can now appear as a subclassifying parameter resulting in (a) LEXICAL RULES which affect the morphological (i.e. word-internal) make-up of lexical forms and in (b) LEXICAL RULES which require a modification of the syntactic (i.e. word-external) environment.<sup>7</sup>

Here, one is tempted to ask how far one wishes to extend the scope of LEXICAL RULES. First, LEXICAL RULES could be extended in such a way that they will cover all kinds of systematic sense relations connected with a single lexical form. Second, we could think of LEXICAL RULES also accounting for processes which have traditionally been analyzed as INFLECTION. We will discuss these questions in a more detailed fashion in sections 3.2 and 3.3, where we will deal with the contribution of lexical semantics to the problem of distinguishing between DERIVATION and INFLECTION.

<sup>6</sup> This is not to say that the three linguistic analyses were applied complementarily. The very same semi-productive process or alternation could be analyzed via syntactic rules, via morphological “zero-derivation” and as a simple polysemy depending on the spirit of the model in question. The best way to study the different treatments of these closely related phenomena proposed in the past is to read Levin’s (1993) instructive book “English verb classes and alternations”.

<sup>7</sup> Dowty (1979, 301) crossclassifies lexical and syntactic rules with the type of “operations” available to be used in them, i.e., morphological operations and syntactic operations. This yields a subclassification of LEXICAL RULES into rule types with morphological operations and with syntactic operations. Since only the “primitive operations” are disjunctively defined in this model, it is also allowed that a single rule (a syntactic or lexical rule) involves both a syntactic and a morphological operation. This leads to an additional subtype of syntactic respectively LEXICAL RULES.



**3. What does morphology have to do with  
INFLECTION and DERIVATION?**

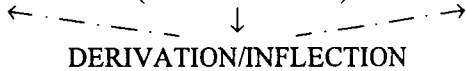
**3.1. The role of INFLECTION and DERIVATION in morphological models**

Several proposals have been made to account for the highly interactive character of morphology and for locating it—as a subdiscipline or as a subcomponent—between lexicology/lexicon, syntax and phonology.<sup>8</sup> Under (3), we can see a simplified representation of three basic proposals, with the phonology–morphology interaction being disregarded here.

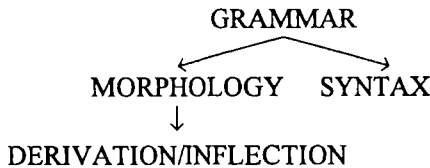
(3) (a) LEXICON/LEXICOLOGY



(b) LEXICON ↔ (MORPHOLOGY) ↔ SYNTAX



(c) LEXICON



According to (3a), morphology is seen as a subdiscipline of lexicology or as a subcomponent of lexicon (cf. Reinhard 1990; Bybee 1988; Di Sciullo–Williams 1987). In (3b), morphology is located between lexicology/lexicon and syntax. As such, it is understood either as an autonomous field/component which has to be studied for its own sake or as an intermediate field/component. In both cases, morphology is subdivided into an INFLECTIONAL part and a DERIVATIONAL part, which are themselves associated with syntax and lexicology/lexicon, respectively. This was the dominating model in the non-generative

<sup>8</sup> Note the ambiguity of the terms “syntax”, “morphology” and “phonology” between the senses “discipline” and “object of discipline”, in contrast to “lexicon”. Thus, if both senses are addressed, I will make use of the terms “lexicology” and “lexicon”, separated by a slash.

linguistics of the last 40 years and also the basis of the “split-morphology” concept (cf. Anderson 1988; 1992). In (3c), morphology is assigned to grammar, where it is distinguished from syntax by its scope of applicability, i.e., morphology is responsible for “word-internal”, syntax for “word-external” regularities (cf. Bergenholtz–Mugdan 1979; Selkirk 1982).<sup>9</sup>

In spite of differences in the lexicon–grammar architecture, it is taken for granted in all approaches that the INFLECTIONAL/DERIVATIONAL distinction has to be treated exclusively as a matter of morphology. That is, lack of evidence for significant word-internal differences between INFLECTION and DERIVATION and the denial of the INFLECTIONAL/DERIVATIONAL distinction in morphology is generally interpreted as the denial of this distinction at all. And, vice versa, arguments for a clear-cut or prototypical distinction in the domain of the phonological word are not generalized as a property of the entire lexicon–grammar. It is characteristic of even those who advocate the location of all types of complex forms in the lexicon, as for instance Bybee (1988), to deal with the separability of INFLECTION and DERIVATION as a morphological rather than a lexicological question (cf. Bybee 1985). Even the traditional functionally motivated association of INFLECTION with syntax and DERIVATION with lexicon is, generally, conceived of as a special property of morphology. Anderson’s approach is still called “split morphology” although it states that INFLECTIONAL operations are to be treated in the syntax and DERIVATIONAL operations in the lexicon. This division is not paralleled, to my knowledge, by an analogous concept of “split syntax” (i.e. “split S-syntax”; cf. footnote 9). Rules systematically forming new lexical units of more than one “phonological word” are sometimes called “syntactic derivation” (cf. Corbett 1981; Fortescue 1979). In the spirit of “split morphology”, which advocates the separation of rules having a morphosyntactic function from those which extend the lexicon, we would expect a similar basic division between (a) constructions or constructional rules serving the morphosyntax and (b) lexical phrases or LEXICAL RULES with syntactic operations such as

<sup>9</sup> The diagrams under (3) are not indicative of the question as to whether or not the respective models actually draw a principal distinction between INFLECTION and DERIVATION. They only indicate that the issue of INFLECTION and DERIVATION is addressed within “morphology”. Only (3b) is likely to assume a fundamental difference between the two, as represented by the broken line. Under both (3a) and (3c) we find proponents and opponents of a clear-cut distinction (cf. Di Sciullo–Williams 1987; Selkirk 1982; for a detailed discussion see Scalise 1986 and Müller 1992). “Grammar” under (3c) is sometimes called “syntax” and distinguished from “syntax” on the second hierarchical level (cf. Selkirk’s “W-syntax” (morphology), contrasted with “S-syntax” and subordinated to “syntax” generally). The three schematic models may also differ with respect to the status of compounding. This, however, is not relevant for our purpose here.

the classifier-noun constructions in Vietnamese, the verb-particle construction in English or the "factitive"/"resultative" constructions in English as shown in (4b) vs. (4a).

- (4) (a) Martin hammered the metal.  
 (b) Martin hammered the metal flat.

The intermediate character of morphology is also reflected in the widely accepted division into the two areas: morphotactics and morphophonology, and morphosyntax. The former has to capture syntagmatic regularities in "word structure", i.e., to establish morphotactic and morphophonological constraints on different types of morphologically complex entities (lexemes, word-forms) in the scope of the phonological word. The latter has to capture paradigmatic regularities among complex phonological words of a certain subtype, namely, among word-forms of morphosyntactic categories. The consequence of this is that morphotactics/morphophonology and morphosyntax are not commonly considered symmetrical with respect to their relation to INFLECTION and DERIVATION. Whereas morphotactics/morphophonology is seen as not limited to INFLECTION nor to DERIVATION, there is a strong historical association between paradigmatic perspective, morphosyntax and INFLECTION. Although there are paradigm-based theories for word formation (cf. Aronoff 1976; van Marle 1983; 1985) and successful implementations of DERIVATIONAL morphology in a paradigm-based representation language (in DATR, cf. Kilbury 1992; Evans ms) also exist, the necessity of paradigmatic considerations and representations for the DERIVATIONAL domain has not yet been generally accepted.<sup>10</sup> This may have two different reasons. First, it could be the case that the INFLECTIONAL domain tends to be universally organized in a paradigmatic fashion, whereas paradigmatic structuring is not typical for the DERIVATIONAL domain. This is, at least, one of the criterial features proposed in the literature for distinguishing INFLECTION and DERIVATION. Second, the stronger interest of a paradigmatic representation in the INFLECTIONAL domain may simply follow from the historical development of linguistics. This asymmetry in the treatment of INFLECTION and DERIVATION continues in that the study of word

<sup>10</sup> Although, ZERO-DERIVATION, for instance, is a concept clearly based on paradigmatic considerations. It is subject to the same analogical reasoning which gives rise to the assumption of zero-morphs in INFLECTION (Sanders 1988, 156).

classes/lexical categories and lexical semantics are, in contrast to morphosyntax, generally not regarded as relevant subfields of morphological investigation (cf. Müller 1992; Carstairs-McCarthy 1992).<sup>11</sup>

### 3.2. Lexical semantics and lexically established systematic alternations

It is undeniable that some of the distinguishing criteria for INFLECTION and DERIVATION immediately concern questions of lexicology rather than questions of structural morphology, namely, the criteria concerning productivity, category change and lexeme identity. Ambiguity types, including so-called “meaning shifts”, and the identity of lexemes and “lexical units” (cf. Cruse 1986) are determined, both in the area of morphologically simplex and complex entities, by the global lexical organization of a language. The same holds true for the lexical vs. phrasal status of categories, for the hierarchical organization of lexical categories and for compositionality. It is lexicology which investigates such issues, which are highly relevant for the INFLECTIONAL/DERIVATIONAL distinction. Thus, as long as the results obtained here are not exploited, meaning change as a criterial feature remains a wild card.

The discrepancy between lexical semantic approaches and traditional morphological approaches interested in morphotactics, morphophonology, and morphosyntax, but not in lexical semantics, becomes particularly apparent in the area of systematic sense relations such as those listed under (5).

- (5) (a) systematic sense relations correlating with differences in lexical category (i.e., conversion (*box, file, shell, mother, copy, telephone, machine*, etc.)); cf. (6))
- (b) systematic sense relations correlating with different argument structures and argument selection such as the causative-inchoative alternation (*break, cool, melt, open, move*) (cf. (2), (7))
- (c) systematic sense-relations correlating with types of transitivity alternations other than the causative-inchoative alternations, for instance, those expressed by the presence and absence of an overt direct object (i.e., alternations signaling unspecified objects (*eat, bake, draw*), impersonal objects (*amuse, shock, bore*), the dispositional property of the selected (agentive or instrumental) subjects (*bite, drink, cut, cook*))

<sup>11</sup> Cf. “The interface between derivational morphology and lexical semantics has not received much attention in recent years, so there is little to report here; but I argue in chapters 2 and 6 that this is a serious deficiency” (Carstairs-McCarthy 1992, 7).

- (d) systematic metonymical relations such as those described by Lakoff–Johnson (1980) (see the metonymical relation “institution/people responsible, institution/place”, etc.)
- (e) systematic sense relations correlating with differences of subcategorical status in the nominal domain<sup>12</sup> (i.e., with mass/count environment; see the sense relations “material/artifact made of the same material (*glass*)”, “animal/meat of the same animal used as food (*lamb, fish*)”, “property/person having property (*beauty*)”)
- (f) systematic sense relations such as found between senses of nominalizations and participles in European languages (i.e., between EVENT, RESULT, AGENT, INSTRUMENT, LOCATION senses; see *building*, German *Durchgang* (‘going through’, ‘passage(way)’), Hungarian *szárító* (‘dryer, i.e. drying person’, ‘dryer, i.e. dryer for clothes’, ‘drying room’).<sup>13</sup>

In principle, all these systematic sense relations can be represented with LEXICAL RULES, although only (5a), (5b) and (5c) are the classical objects of lexical rules. Most of the systematic sense relations listed under (5) may have translation equivalents in other languages related by an overt morphological operation<sup>14</sup> and may be analyzed, with great probability, as instances of a derivational rule. In contrast to this, not all systematic sense relations in English are equally good candidates for an analysis resulting in ZERO-DERIVATION, provided of course that one actually works with ZERO-DERIVATION instead of using LEXICAL RULES or other strategies. Systematic sense relations correlating with differences between major lexical categories (cf. (5a)) have the best chance, also supported by the dominant lexicographic praxis, of being treated as different lexemes and as instances of ZERO-DERIVATION (cf. (6a) vs. (6b)). There is a lower probability for a ZERO-DERIVATION analysis in the case of

<sup>12</sup> The metonymical pattern “institution/place” also correlates (at least partly) with the mass/count distinction (cf. Behrens (1995), where this issue is discussed in detail).

<sup>13</sup> With respect to the alternations listed under (5), see Dowty (1979), Wilensky (1990), Atkins–Kegl–Levin (1988), Levin (1993), Pustejovsky (1991), Behrens (1994).

<sup>14</sup> This is well-known in the case of (5a) and (5b), but also in the case of the other systematic polysemies, languages may exhibit morphologically differing forms. Tagalog, for instance, uses a morphological device for signaling (conceptually) unspecified objects (5c) and for indicating differences between the translation equivalents of EVENT and RESULT nominalizations, nomina instrumenti, nomina loci, etc. (cf. 4.3).

sense alternations correlating with subcategorical differences in the verbal domain (transitivity alternations) (cf. (5b)), which are not commonly seen as distinct lexemes but as distinct “word-senses” of a lexeme (cf. (7a) vs. (7b)). Systematic sense-relations correlating with subcategorical differences in the nominal domain (mass/count alternations) and other sorts of semi-productive (metonymical) sense relations, which are not systematically marked in dictionaries for human users, had never been regarded as an object of research of DERIVATIONAL morphology (cf. (5d) and (5e), (8a) vs. (8b), (9a) vs. (9b)). In the case of (5e), it is usually only the morphological change of a basic lexical form which is treated as an instance of a DERIVATIONAL process rather than the derivation of new senses from a default sense (for instance an EVENT or AGENT sense) of the complex form. Why are cases of conversion more likely to be regarded as ZERO-DERIVATION than transitivity alternations? The degree of semantic distinctness cannot alone be responsible for these varying “morphological strategies”. Here, the fact that competing affixational strategies exist only for conversion (i.e. *move*, *moving*, *movement*) may play a certain role. The decisive factor, however, in assigning identical lexical forms to two lexemes in one case but not in the other is, in my opinion, the prominent role of “major lexical categories” in current linguistic and lexicographic description.

Lexical semanticians, focusing on the importance of recurrent semantic contrasts, may achieve different results regarding the lexeme status of the lexical forms cited in (5) and (6). Cruse (1986, 79–80), for instance, argues against current linguistic and lexicographic practice which regards differences in major lexical category as “justifying a separate main entry, irrespective of the presence or absence or recurrent relationships” (1986, 80). He considers, as I do, the “lexical unit”, i.e., the union of a single, lexically (pre)established sense with a lexical form, as the primary operational unit of the lexicon instead of the lexeme. Furthermore, he takes semantic recurrence as the primary criterion for the hierarchical organization of lexical units. Since all distinct lexical units occurring in the (a)- and (b)-sentences in the examples (6)–(9) are subject to the “principle of recurrent relationships”, they should **not** be assigned to different lexemes according to Cruse.

- (6) (a) Put them in a can.  
 (b) Can them.
- (7) (a) John moved the rock.  
 (b) The rock moved.

- (8) (a) Have some **apple**.  
 (b) Have an **apple**.
- (9) (a) His new **novel** will be published next spring.  
 (b) Why is your desk always piled high with **novels**?  
 (Cruse 1986, 69, 80)

Cruse proposes a further, secondary criterion for the association of “grammatically different” lexical units. To not be treated as two different lexemes, the recurrent sense relation should systematically correlate with a constant grammatical environment. This is exactly the basic principle of alternations, as based on “semantic-syntactic” interdependencies (see above; cf. Atkins-Kegl-Levin 1988; Kilgarriff 1993). Of course, we may find—in addition to the grammatical correlates discussed above—further differences among the alternations under (6)–(9). Nevertheless, a unified treatment of all these alternations is clearly favourable from a semantic and from a cross-linguistic perspective. It is obvious that the concept of LEXICAL RULES is more suitable for such a purpose than the narrower concept of DERIVATIONAL rules rooted in morphology. Extending LEXICAL RULES to also cover systematic sense-relations which correlate with more subtle grammatical and/or collocational differences seems to me to be the next logical follow-through for a typologically adequate treatment of lexicon-grammar interaction.

### 3.3. Lexical semantics and INFLECTION

Linguistic models often show differences in which types of systematic alternations are represented with LEXICAL RULES (cf. Behrens 1994). This does not necessarily mean, however, that different types are deliberately excluded from a treatment with LEXICAL RULES in different approaches. Rather, some alternations simply fall outside the object of research in certain approaches. In contrast to this, productive processes considered as INFLECTIONAL are often explicitly excluded from the application of LEXICAL RULES (cf. Dowty 1979, 301 ff.).<sup>15</sup> This, of course, presupposes that we can always decide whether two forms have to be considered as two word-forms (INFLECTIONAL relation) or as two lexical forms (subject to LEXICAL RULES). Here,

<sup>15</sup> All that is said about “lexical rules” here is only valid for meaning changing LEXICAL RULES (i.e. not for “morpholexical rules”) as linguists commonly use and understand this term. In computational linguistics, there are actually approaches to model INFLECTION using (collections of) LEXICAL RULES. Krieger-Nerbonne (1993) discuss such approaches and also point out differences between theoretical linguists’ and computational linguists’ understanding of “lexical rules”.

the good old problem of distinguishing between INFLECTION and DERIVATION crops up again.

Research in lexical semantics proceeds from a similar assumption, namely, that INFLECTIONAL processes fall outside the domain of the investigation of systematic lexical-semantic relations. The primary operational units of the lexicon ("lexical units") are, for instance, explicitly defined in Cruse's (1986, 76 ff.) approach as abstracted from INFLECTIONAL variation. His arguments are very similar to that of morphologists for INFLECTION as opposed to DERIVATION: the varying forms do not reach a certain threshold of semantic distinctness. Logically, Cruse uses the very same argument for assessing occurrences of a major lexical category in distinct syntactic environments which jointly characterize the lexical category in question in one case (for instance, the predicative and attributive uses of the adjective *open*) as lexically non-distinct occurrences of a single lexical unit, and in another case (for instance, the uses of the verb *open* in a transitive and an intransitive environment) as distinct lexical units of the same lexeme.<sup>16</sup> There is, however, a high interdependence between semantic distinctness and semantic identity of lexical units and lexemes on the one hand, and the grammatically determined hierarchy of lexical categories and the classification of productive processes as INFLECTIONAL and DERIVATIONAL on the other. Thus, without an appreciation of the intricate question of distinguishing INFLECTION from DERIVATION, the study of lexical semantics is bound to fail.

#### 4. INFLECTION and DERIVATION as entities of lexicon-grammar

I claim that INFLECTION and DERIVATION are entities which characterize the lexicon-grammar interaction of languages rather than the morphology. Consequently, we must simultaneously take into account lexicological (especially lexical semantic) and grammatical considerations for studying INFLECTION and DERIVATION. Proceeding from this point, I will now discuss three cases which pose particular difficulties for separating INFLECTION from DERIVATION.

<sup>16</sup> In other words, the argument runs as follows: Occurrences of English *open* used as an attributive and predicative adjective constitute variants of a single lexical unit in spite of apparent syntactic differences and due to insufficient semantic distinctness. Occurrences of *open* used as an intransitive and a transitive verb constitute distinct lexical units of the same lexeme due to sufficient semantic distinctness and recurrence. One should emphasize that insufficient semantic distinctness in this case should not be equated with "generality" and "contextual modulation". The latter is a possible property of lexical forms which have already been abstracted from INFLECTIONAL and syntactic variations.



First, I will discuss adjectives and adverbs in European languages which provide an excellent example for the interaction among the hierarchical organization of lexical categories, the identity of lexical items, and the classification of productive processes. I will compare alternative strategies for dealing with this interaction in languages with an overt morphological marker for adverbials (English, French, Hungarian, etc.) and those without (German). Second, I will deal with some interesting cases of the overlapping of formal means with respect to the basic functions of INFLECTION and DERIVATION, namely, morphosyntactic (grammatical) instantiation and lexical extension, observed in English and German. Finally, I will present some data from Tagalog, which is a language well-known for its difficulties in distinguishing between INFLECTION and DERIVATION.

#### 4.1. Lexical categories, identity of lexical items, and productive processes: the case of adjectives and adverbs

It is common practice in linguistics to generalize lexical categories in such a way that they are canonically associated with more than one truly different syntactic distribution as long as their hypothetical members regularly occur in all of these distributions: Adjectives, for instance, are regularly associated with the attributive position and the predicative position. Idiosyncratic restrictions of the category member with respect to such a set of environments are commonly treated as lexical defectivity, which establish subcategories. Accordingly, adjectives are often characterized as having the following subcategories: (a) used only attributively (cf. German *väterlich* 'paternal', *Schweizer* 'Swiss') and (b) used only predicatively (cf. German *entzwei* 'in two', 'apart'). It is also common linguistic practice to allow a lexical stem belonging to a category with more than one canonical syntactic environments to be inflected in one environment and unchanged in the other. This is the normal analysis of German adjectives, which are seen as "inflected" in the attributive position (cf. (10a)) and as "uninflected" (?) (cf. (10b)) in the predicative position.

- (10) (a) Die **ausgezeichnete** Beschreibung der Zeugin hat zur Aufklärung des Verbrechens geführt.  
'The witness' excellent description helped to clear up the crime'
- (b) Die Beschreibung des Mörders war **ausgezeichnet**.  
'The description of the killer was excellent'
- (c) Die Zeugin hat den Täter **ausgezeichnet** beschrieben.  
'The witness described the killer excellently'

What about adverbs?<sup>17</sup> Although lexical stems are not overtly marked in adverbial position, a separate lexical category—"adverb"—is often established in German on the same hierarchical level of lexical categories as "adjective". From the lexical point of view, we could also establish one single category with three environments (attributive, predicative, and adverbial position). One could rightly argue that the lexical stem *ausgezeichnet* is semantically not specified with respect to the grammatical distinction existing between the attributive ((10a)), predicative ((10b)), and adverbial ((10c)) phrases, or that the semantic distinction correlating with the attributive and predicative positions is not "smaller" than, for instance, that correlating with the attributive and adverbial positions. This is a point in favour of a one-category solution; lexicalized adverbs such as *gern* 'with pleasure', 'to like to do sth.' could be treated in this case as defective members (used only as adverbials) of a lexical category associated with three environments. If the distinctness, between adverbial phrases on the one hand, and attributively and predicatively used adjective phrases on the other, should be maintained from a grammatical point of view, one could relax the mapping principle between lexical and syntactic categories by allowing adverbial phrases which take adjectives rather than adverbs as their head. Deciding in favour of two lexical categories of equal rank, in turn, allows for two principal strategies:

- (a) double categorization of the majority of the relevant lexical stems both as adjectives and as adverbs;
- (b) automatically applying ZERO-DERIVATION of the majority of lexical adjective stems in the lexicon, resulting in lexical adverbs.

In languages systematically marking lexical stems in adverbial position with an affix (cf. (11c) vs. (11a) and (11b)), the one-category and two-category solutions are likewise possible.

- (11) (a) He astonished us by **rapid** movements.<sup>18</sup>
- (b) His movements were astonishingly **rapid**.
- (c) He astonished us by moving **rapidly**.

<sup>17</sup> Only adverbs of manner and corresponding adverbial phrases are at issue here. This opens up another important question concerning the shared and distinct properties of manner adverbial phrases and other sorts of adverbial phrases (locative adverbials, time adverbials, etc.). Unfortunately, limited space here prevents further discussion of this interesting point.

<sup>18</sup> The sentences in (11) are taken from Jespersen (1924/1968, 91).

If we decide in favour of one single lexical category, the adverbial affixation can be treated as an INFLECTION restricted to a specific syntactic position, just as the INFLECTION of German adjectives is restricted to the attributive position. If we decide in favour of two lexical categories (i.e. adjectives and adverbs), we again have the choice between the following two strategies:

- (a) double categorization of the majority of the relevant lexical stems both as adjectives and as adverbs with subsequently applied INFLECTION of stems categorized as adverbs;
- (b) automatically applying DERIVATION (affixation) of the majority of lexical adjective stems in the lexicon, resulting in lexical adverbs.

It is almost unnecessary to mention that the strategy of multiple static categories is not very popular among linguists. However, the (b)-strategy of lexical DERIVATION, which is only motivated by the syntax, is not very elegant either, especially not in languages without overt adverbial markers. In any case, it must be clear that the DERIVATIONAL results are not identical to the entities occurring in adverbial positions in actual sentences, since DERIVATION produces *ex hypothesi* new lexical items (lexical units or lexemes) and actual sentences contain "grammatical forms" selected on the basis of lexical items. That is, just as the entity occurring in predicate position in German and English is no longer a lexical stem having the category of adjective, so the entities occurring in adverbial position are not identical to the adverbs generated by a DERIVATIONAL process in the lexicon. They are all subject to a process which maps lexical items onto appropriate grammatical forms. If INFLECTION is understood as such a mapping process, an "invisible" INFLECTIONAL process must also then be assumed both for ZERO-DERIVED adverbs in German and affixational adverbs in English when analyzed as results of a DERIVATIONAL process. That is, it must be explicitly stated that there is no phonological/morphological difference between the forms representing lexical items (lexical adverbs) and the forms actually used, or it must be universally stipulated that lexical adverbs are not subject to an INFLECTIONAL process.

We may conclude that both the INFLECTIONAL and the DERIVATIONAL analyses of "adverbs" show serious drawbacks in the languages discussed here.

#### 4.2. Overlapping of formal means for INFLECTION and DERIVATION: the case of the English *-ing*-form and the German plural

Now we will turn to a reversed case where, single formations can simultaneously be associated with INFLECTION and DERIVATION since they are systematically used both (a) as word-forms of established morphosyntactic categories

or as part of corresponding periphrastic constructions<sup>19</sup> and (b) as means of lexical extension.<sup>20</sup>

A familiar example is the English *-ing*-form, which is part of the ASPECT/TENSE paradigm and shows a strong tendency toward lexicalization (cf. *calculating* etc.). According to a common analysis, the *-ing*-form receives a verbal status in the progressive construction ((12a)) and an adjectival status following adjectival modifiers such as *very* ((12b)).

- (12) (a) John is insulting me.  
 (b) John is very insulting.  
 (c) John is insulting.

<sup>19</sup> It is significant that there is no widely accepted term for periphrastic expressions as exponents of paradigmatic values. We encounter a number of terms for expressions which are semantically simplex (i.e., constitute one "semantic constituent" in Cruse's (1986) words) and consist of more than one lexical item, which appear as separate phonological words when used in actual sentences: "multi-words", "complex lexemes", etc. However, in the linguistic community, as far as I know, there is no such term as "multi-word form" or "complex word-form", replacing X in the following proportional series: word (lexeme) : multi-word :: word-form : X. The main question here is, of course, what constitutes a grammatical and INFLECTIONAL paradigm. The tradition of grammar book writing is not very helpful and is inconsistent on this point, as already pointed out by Matthews (1974). If the identity of INFLECTION is established from a morphosyntactic point of view, i.e., by the existence of a paradigmatic patterning of grammatical meaning, then the difference between formal means for the expression of grammatical meaning (i.e., "function words", affixes, reduplication, tonal modification, external agreement, etc.) can only be of secondary importance. One of the main advantages of an "Item and Paradigm Model" for the traditional INFLECTIONAL domain rests not so much in its technique for dealing with tonal modification, suppletion, etc., but in its basic capacity for capturing the following fact: Languages mix and organize different formal means for grammatical categories (affixation and function words (TENSE in English and French), affixation and external agreement (NUMBER in English), prefixation and suffixation (PERSON in Kanuri), prefixation, suffixation, infixation, and reduplication (ASPECT/PARTICIPANT ROLE in Tagalog) in a paradigmatic fashion, and do not necessarily prefer only one type. Consequently, I cannot understand Matthews' (1974) argumentation. He advocates, as is well-known, a Word and Paradigm Model for INFLECTION in the scope of the phonological word. He further remarks that a unified treatment of periphrastic and non-periphrastic forms is necessary from a "semantic perspective". "Just as the student of meaning would be unwise to treat inflected and periphrastic separately, so for our present purpose it would be unhelpful not to do so." (1974, 172-3). This is either an early proposal for a kind of "split morphology" or a suggestion that morphology can be studied without considering semantic factors, which would contradict Matthews' own arguments for the Word and Paradigm Model.

<sup>20</sup> I am not concerned here with cases of genuine homonymy of grammatical affixes such as the German *-er* (PLURAL affix and agent affix) but rather, with the systematic overlapping of morphological means in the classical domains of INFLECTION and DERIVATION.

Quirk *et al.* (1972, 244) remark that the status of the *-ing*-form is “indeterminate” in the absence of any explicit grammatical indicator such as direct object or *very* (cf. (12c)). Strictly speaking, they characterize the two possible interpretations (dispositional and actual) of sentences like (12c) as “adjectival interpretation” and “verbal interpretation”, and explicitly assume categorial ambiguity only if the *-ing*-form is strongly conventionalized (for instance, in the case of *calculating*). If we are looking for verbs which may occur in neutral contexts, we primarily find verbs participating in “impersonal object alternation”,<sup>21</sup> that is psych-verbs, for instance, which imply a dispositional interpretation without an object in present tense as well:

(13) That movie always shocks.

This, however, means that the dispositional interpretation alone does not tell us anything about the category of the *-ing*-form. We must ask whether the purely morphological formation (i.e. the affixation) of participles can be described in terms of INFLECTION and DERIVATION. In modern linguistics, participles are not seen as lexical categories, i.e., as categorial features assigned to lexical items. Thus, building of participles does not count *a priori* as a category-changing (DERIVATIONAL) operation and the periphrastic progressive construction is normally not analyzed as involving a derived element. Only the productive occurrences of the *-ing*-form in an adjectival environment and the lexicalized results are possible candidates for DERIVATION. Taking the view that the building of progressive is a complex INFLECTIONAL process, which involves the primitive morphological operation of concatenating the affix *-ing*, implies an indirect association of the *-ing*-form with INFLECTION. This does not mean that the purely morphological formation of *-ing*-forms is ambiguous between an INFLECTIONAL and DERIVATIONAL interpretation—potentially and actually in sentences such as (12c). My suggestion is that there is only one single morphological process neutral with respect to INFLECTION and DERIVATION, the result of which is systematically used both in inflectional (i.e. morphosyntactically relevant) and non-inflectional constructions and may be becoming conventionalized with a new category. Separating the purely morphological aspects from the functional aspects is also advantageous for dealing with further constructions containing an *-ing*-form, particularly for dealing with so-called “hybrid-constructions” (cf. Baker 1985) such as shown in (14).

<sup>21</sup> Levin (1993, 37) calls this alternation “PRO-*arb* Object Alternation”.

(14) John's singing the aria amazed me.

German abstract nouns (including nouns of "sensation", cultural uniques, etc.) show another example for the overlapping of morphosyntactic (grammatical) instantiation and lexical extension. One subset of these nouns lacks morphological PLURAL entirely and its members are typically regarded as mass nouns. The members of another subset show PLURAL forms which are regularly used for "instance" and "sort" senses. These senses, in turn, are subject to a recurrent lexicalization process resulting in new morphologically defective "lexical units", as shown in (15b) and (16b).

(15) Freude (a) SG: 'joy', 'pleasure'  
(b) PL: 'pleasures' (as in *worldly pleasures*)

(16) Freiheit (a) SG: 'freedom', 'liberty'  
(b) PL: 'liberties' (as in *take liberties with someone*)

It is easy to identify this systematic pattern in dictionaries by the following configuration: One sense is often marked as *singulare tantum* and another sense (the extended sense) as *plurale tantum*. Is the plural formation in *Freuden* or *Freiheiten* an instance of INFLECTION or DERIVATION? A primarily INFLECTIONAL means is systematically used here in a prototypically DERIVATIONAL function. The distribution of defectivity over different "word senses" (i.e. lexical units) nicely demonstrates how strategies for extending the lexicon may also affect morphosyntactic paradigms. One should add that we typically observe such phenomena in those morphosyntactic categories which exhibit a high degree of interdependence between lexical semantics and semantic interpretation of grammatical values in the sentence, i.e., with NUMBER and ASPECT rather than with PERSON.

#### 4.3. The case of Tagalog

The conflation of INFLECTION and DERIVATION in Tagalog is not an exceptional phenomenon; rather, it characterizes the entire lexico-grammatical make-up of the language. The same morphological formations are regularly discussed in grammatical descriptions under both "derivation" and "inflection" (cf. Schachter-Otanes 1977).

A typical word-form in Tagalog contains two types of information: (a) a "thematic" information indicating a certain argument of a situation, whereby this argument is interpreted as co-referential to the referent of the topic phrase

if the word-form predicates the situation, and as referential or attributive if the word-form occupies a non-predicative position;<sup>22</sup> (b) an “aspectual” information. The word formation involves an ordered series of primitive operations, namely (a) the concatenation of thematic affixes (prefixes, infixes, and suffixes) and (b) the phonological modification of thematic affixes and/or the phonological modification of stems (reduplication) according to four aspectual features. Example (17) shows the word-forms of the lexical stem *sulat* ‘write/writing’ specified for the thematic roles actor, theme, and benefactive and the aspectual categories basic, future, perfective, and imperfective.

(17)	ACTOR	THEME	BENEFACTIVE
	BASIC	sumulat	sulatin isulat
	FUTURE	susulat	susulatin isusulat
	PERFECTIVE	sumulat	sinulat isinulat
	IMPERFECTIVE	sumusulat	sinusulat isinusulat

Most lexical stems can be instantiated both by such a complex word-form and a word-form which is identical to the stem and denotes an argument (commonly, the theme argument) of the situation expressed by the set of complex word-forms (see the stem *kita*, glossed as ‘salary’ (simplex word-form) and as ‘earn’ (complex word-form)). Lexical stems (i.e. “content words”) are not subcategorized with respect to the major phrasal categories. Any lexical stem, that is, any (simplex or complex) word-form of any lexical stem, is (in principle) allowed to occur in any syntactic position (cf. (18)).

- (18) (a) Manunulat                      ang titser.<sup>23</sup>  
 WRITE:IMP:ACTOR<sup>24</sup> REF TEACHER  
 ‘The teacher writes (professionally)’
- (b) Titser ang manunulat.  
 ‘The writer is a teacher’

Although the Tagalog lexicon lacks real differences in syntactic subcategorization, lexical categories of European style (nouns, verbs) are assigned to

<sup>22</sup> The word-forms are usually translated into English or German as verbs when in the predicative position and as nouns when in a non-predicative position (cf. (18)).

<sup>23</sup> Tagalog has neither morphological PERSON markers nor copula.

<sup>24</sup> There are more than one actor affixes; *manunulat* contains the (assimilated) affix *mang-*.

lexical stems according to ontological criteria and the ability of stems to take “thematic” affixes. Lexical stems building complex forms are categorized as verbs, based on unjustified priority given to predicative occurrences, and lexical stems occurring without affixes are categorized as nouns.<sup>25</sup> This results in an extensive multiple categorization of dictionary entries, both in commercial dictionaries and in linguistically motivated lexicons (cf. English 1986/1990; Santos 1982; Panganiban 1972; Ramos 1971). In Tagalog lexicography and linguistics we encounter three basic analyses of complex word-forms with respect to INFLECTION and DERIVATION:<sup>26</sup>

- (19) (a) the entire word formation (i.e. both the thematic affixation and the aspectual modification) is INFLECTIONAL (De Guzman 1991);
- (b) the entire word formation is DERIVATIONAL (Starosta 1986);
- (c) the thematic affixation is DERIVATIONAL, the aspectual modification is INFLECTIONAL (Santos 1982).

In addition, we find ZERO-DERIVATIONAL analysis on two levels, namely, on the level of stems and on the level of word-forms: The semantic relation of the “noun” and “verb” senses which are derived from each other on the stem level is similar to the relation of English nouns and verbs usually described as conversion. ZERO-DERIVATIONAL rules on the word-form level account either for all entirely regular uses of a word-form such as *manunulat* in the topic/complement position (i.e. for sentences like (18b) in general) or only for the conventionalized uses of word-forms corresponding to English nomen agentis, nomen loci (see actor specification of *awit* ‘song’/‘sing(ing)’ > *mangaawit* ‘singer’, locative specification of *tarangka* ‘latch or bar for fastening a door’/‘fasten(ing) a door’ > *tarangkahan* ‘gate’).

All three analyses in (19) have their special merits and drawbacks. Advocates of analyses with an INFLECTIONAL component ((19a) and (19c)) have to cope with the problem that the output of the INFLECTIONAL analyses may be identical to a form which they would also like to analyze as the output of a DERIVATIONAL process. Thus, they are obliged to assume either a ZERO-DERIVATIONAL process which has an INFLECTIONAL output as its input or two

<sup>25</sup> Here, adjectives, particles, etc. are not taken into consideration (cf. Behrens 1994).

<sup>26</sup> The INFLECTION/DERIVATION distinction in Tagalog is a very controversial topic and cannot be discussed in detail here. I have dealt with this topic in greater detail in Behrens (1994), which addresses lexicographic and grammatical practice on the one hand, and systematic alternations, lexical and syntactic categories on the other.



parallel morphological processes (INFLECTIONAL and DERIVATIONAL) which operate with homophonous affixes and result in homophonous outputs (cf. Maclachlan 1989, 74). De Guzman (1991) opts for the first alternative and presents "this convincing piece of evidence for an inflected form of the verb being inextricably linked to a corresponding derived form" (p. 38) in favour of "placing inflectional and derivational morphology under the same component" (p. 40). Advocates of DERIVATIONAL analyses ((19b) and (19c)) refer to the fact that the thematic specification is not entirely productive. Claiming thematic specification a DERIVATIONAL process and also assuming lexical categories for stems such as noun and verb implies, however, that the lexicon has no simplex stems with the category verb. Santos (1982), for instance, actually glosses stems taking affixes as event or manner nouns (i.e., he glosses *sulat* as "act or manner of writing", *awit* as "act or manner of singing", etc.).<sup>27</sup> The only merit of a split analysis ((19c)) is that it accounts for the high predictability of aspectual modification based on the knowledge that a particular thematic affix is allowed for a particular lexical stem, which is in contrast to the semi-productivity of thematic specification. However, this analysis does not lead very far once formal morphological aspects are taken into consideration. The exponents of thematic and aspectual properties are fused and optimally organized as paradigmatic templates. Thus, we find several features of "inflecting morphology" which have been presented in the literature in favour of a paradigm model (cf. Matthews 1974). It is especially worth noting that the order of operations necessary for building a word-form may vary under certain morphophonological conditions: the reduplication of stems (i.e. aspectual specification) may both precede and follow the affixation of thematic markers<sup>28</sup> (see *mang* (actor) + REDUP + *basa* 'read(ing)' > *mambabasa*, *mang* (actor) + REDUP + *bili* 'buy(ing)' > *mamimili*). Permitting fusion and varying order of INFLECTIONAL and DERIVATIONAL means is probably a very high price for maintaining the distinction between INFLECTION and DERIVATION.

The problems of INFLECTIONAL and DERIVATIONAL overlapping in Tagalog are, in some respects, similar to that found with English *-ing*-forms. However, whereas the entire lexical organization (subcategorizational differences in the lexicon) and grammatical patterning (copula, finite verb forms, lexically restricted grammatical distributions) justifies, to a certain extent, category-changing DERIVATIONS in English, this is not the case in Tagalog at all. Tagalog

<sup>27</sup> Cf. "It is important to remember that, grammatically, Tagalog or Pilipino has no root verbs..." (Santos 1982, xviii).

<sup>28</sup> Both orders are, for instance, permitted for stems beginning with a labial consonant, although the order in single lexical stems is usually fixed.

is a striking example of a language in which LEXICAL RULES in the extended sense used here (cf. 3.2) are able to cover the entire area described as INFLECTIONAL and/or DERIVATIONAL in the literature. They provide a homogenous and adequate account for systematic alternations on the level of stems, on the level of word-forms, i.e., both between different morphological formations and between different senses of identical word-forms, without making extensive use of ZERO-DERIVATION and/or of ambiguous morphological rules.

### 5. On which basis shall we distinguish between INFLECTION and DERIVATION?

As previously mentioned, there is a high interdependence between

- (a) research interests, particularly, the concept of lexicon and syntax advocated and the languages studied and
- (b) proposals pro and contra the separability of INFLECTION and DERIVATION.

Although up to twenty criteria are sometimes proposed in the literature (cf. Dressler 1989), they can basically be reduced to the following five groups of strongly related criteria (with respect to the criteria, see also Bybee 1985; Scalise 1988):

- (20) relation to syntax and lexicon
  - productivity
  - category change
  - ordering constraints
  - recursivity/ability to form paradigms

In this chapter, we will only deal with the first complex of criteria concerning the traditional way of assigning INFLECTION and DERIVATION to syntax and lexicon, respectively. This is not so much a set of operational criteria but, rather, a general characterization of linguistic entities (affixes, rules, series of rules, abstract processes, etc.) in terms of their semiotic function; to put it in Scalise's (1988, 560) words: "DRs [DERIVATIONAL rules; LB] and IRs [INFLECTIONAL rules; LB] 'do' different things." It is worth paying attention to the subtle differences used for stating this well-known functional difference. Compare, for instance, the following statements:

- **DERIVATIONS** “change meaning”/“change conceptual meaning”/“change genuine semantic meaning”/“build new lexemes”/“have the function of lexical enrichment”/“are (more) concrete”, etc.
- **INFLECTIONS** are “sensitive to syntax”/“have the function of serving syntax”/“are required by the syntax”, etc.

It is obvious that “changing meaning” and “having the function of lexical enrichment” are not identical and make rather different predictions. At first glance, all statements about **INFLECTION** seem to center around a broad concept of obligatoriness. What about adverbials marked with an affix in English and French? They are certainly “sensitive” to syntax. But are they also “required by the syntax”? The answer is “no” when we think of “syntactic requirement” in terms of morphosyntactic categories, the values of which must be instantiated in a sentence. We may also say that gerunds are “sensitive to syntax” (see Baker’s (1985) analysis of gerunds as “syntactic affixation”); they are, however, not “required by the syntax”, at least not in the usual sense. Thus, we cannot escape asking for which type of syntax **INFLECTIONS** are or should be sensitive/relevant/necessary.

We can detect at least five concepts of “syntax” which often but not necessarily coincide in linguistic approaches. Usually, one use and interpretation of the term “syntax” is more salient than the others.

- Syntax/1 is seen as structural combinatorics for items equal to or greater than phonological words; this concept is fundamentally based on linear configurations and on distributional criteria; it is an extension of the structuralist concept of morphology to word-forms and phrases.
- Syntax/2 is defined by properties relevant for the identity of phrases, i.e., by “phrasal” properties in opposition to “word” properties; this concept is delimited, like syntax/1, by the boundary of the phonological word; “agreement”, in a broad sense, is its genuine domain (cf. Anderson 1988, 167 ff.; 1992, 82 ff.).
- Syntax/3 is the “rule-governed” counterpart of the “idiosyncratic” lexicon as commonly cited according to Bloomfield (cf. the comments of Di Sciullo–Williams (1987, 1–2) on this syntax concept); this concept is, in principle, neutral with respect to the boundary of the phonological word.
- Syntax/4 is founded on grammatical categories (or “functional categories”); this concept presupposes the existence of a small universal set of semantically defined grammatical categories; it is favoured in typologically-

oriented linguistics (cf. Comrie 1983) and it is also neutral with respect to the boundary of the phonological word.

- Syntax/5 is recognized as a general and abstract principle of natural language concerning the building of propositions out of lexical material and defining basic relations between lexical elements; it is favoured in semantic theories and it was also one of the traditional/prestructuralist concepts of syntax shared by Sapir (1921/1972), Bühler (1934/1982) and the young Bloomfield (1914, 62).<sup>29</sup>

Two of these five concepts are limited to the “non-word” domain. Although the first two syntax concepts are generally combined, the salience of linearity in the first and the salience of constructional units marked by agreement in the second may lead to conflicting results. The last two concepts are developed from a semantic and/or universalistic view on language structure. Nevertheless, they differ in their degree of abstractness and the strength of assumptions they make about universal structures. Syntax/3 is generally recognized as a logically distinct concept, though it is sometimes confused with syntax/1 and syntax/2, and theories of grammaticalization make use of the empirical correlation between it and syntax/4.

One may wonder whether or not there is a correlation among these concepts of syntax, the different research interests such as representational techniques and cross-linguistic generalization, and the diverging answers given to the question “Should INFLECTION and DERIVATION be considered similar or different?”. Let us examine four possible and frequent answers cited after Scalise (1988, 561–2):

- INFLECTION and DERIVATION are **not different**. “They can be handled by the same set of rules”<sup>30</sup> (see, for instance, Halle 1973).
- INFLECTION and DERIVATION are **different**. The “difference is to be seen in the formal properties of the rules that handle DERIVATIONAL and INFLECTIONAL processes”. They “can be located in the same subcomponent of the grammar”, for example, in the lexicon (see, for instance, Scalise 1988).

<sup>29</sup> This concept is the source of the well-known idea that “in every language we can find syntactic properties in the lexicon and lexical properties in the syntax”. Cf. “Das sind, darstellungstheoretisch gesehen, zwei durchaus zu trennende Schritte und Weisen des Vorgehens. . . . Man kann grob gesprochen wohl in jeder Sprache ursprünglich Syntaktisches in den Wortschatz und Lexikalisches in die syntaktische Klasse von Sprachgebilden übergehen lassen.” (Bühler 1934/1982, 73–74).

<sup>30</sup> Bold face and small caps in the quotations are mine (L.B.).

- (c) INFLECTION and DERIVATION are **different**, but only in an **abstract** sense. They constitute opposite poles of a “**continuum**” or “**scale**” without sharp boundaries. For several phenomena, “it is difficult to decide whether these belong to the domain of DERIVATION or to the domain of INFLECTION” (see, for instance, Bybee 1985).
- (d) INFLECTION and DERIVATION are **different**. The difference consists “in the kind of **relationship** they have with **syntax**”. “INFLECTION and DERIVATION are located in different subcomponents of the grammar” (see, for instance, Anderson 1988; 1992).

**Approach (a)** strongly correlates with “IA-morphology” and the corresponding concept of syntax, namely syntax/1 (i.e. structural combinatorics in the scope of the phonological word). Here, the question as to whether INFLECTION and DERIVATION are different or similar concerns segmental affixes rather than other types of linguistic entities (processes, complex rules, etc.). In other words, the starting point here is the traditional wisdom “Affixes can be of two kinds, inflectional or derivational” (cf. Bauer 1988, 12). Furthermore, one asks whether affixes which have traditionally been considered as INFLECTIONAL or as DERIVATIONAL in a particular language show significant differences relevant for their representation. This is the basis on which Halle’s (1973) arguments are founded: There is “no reason why the list of morphemes should not include also the inflectional affixes” (1973, 6) and there is no necessity in developing fundamentally different strategies for dealing with defectivity in the application of “inflectional affixes” from those which are used with “derivational affixes”. This is, of course, correct, but it does not contradict the possibility and/or necessity of subclassifying affixes. And, the subclassification will basically depend on which criteria one takes and in which order. As well-known, in SPE (cf. Chomsky–Halle 1968), two main types of affixes (“#-boundary affixes” and “+-boundary affixes”) had been established on the basis of stress behaviour, which crosscut the traditional boundary of INFLECTIONAL affixes and DERIVATIONAL affixes.<sup>31</sup> The same holds true for the levels in Lexical Phonology (cf. Kiparsky 1982, 132 ff.) which are founded on the SPE-distinction between “#-boundary affixes” and “+-boundary affixes” and define formal types of rules.

<sup>31</sup> “#-boundary affixes” contain both affixes traditionally considered INFLECTIONAL (PAST TENSE affix) and affixes traditionally considered DERIVATIONAL (the adjective forming affixes *-ish*, *-able*, or the noun forming affixes *-hood*, *-ness*), whereas “+-boundary affixes” belong to affixes commonly analyzed as DERIVATIONAL.

Provided that a subclassification of affixes according to certain criteria results in exactly two classes, one can ask in addition whether these correlate with the well-known functional distinction between INFLECTION and DERIVATION. Exactly this is done in **approach (b)**, which is also primarily associated with syntax/1 and presupposes a certain amount of pretheoretical and functionally motivated knowledge about the status of the affixes investigated as well. Scalise (1988), an advocate of this approach, argues that the standard distinguishing criteria altogether (see (20)) confirm this presupposed division of affixes if one also takes subtle types of restrictions (for instance, different productivity conditions) into account. He makes, however, a very important restriction noting that the validity of arguments in favour of a fundamental distinction between INFLECTION and DERIVATION is probably confined to "the so-called "European" (predominantly concatenative) type of morphology" (1988, 564).

The dominating syntax concept in **approach (c)** (cf. Bybee 1985; Allen 1988) is syntax/4 (i.e. morphosyntax). This approach presupposes linguistic knowledge of universal morphosyntactic categories rather than knowledge of the INFLECTIONAL/DERIVATIONAL status of complex forms in single languages. It regards the standard distinguishing criteria as discovery tools for assigning those phonological/morphological means which are possible exponents of morphosyntactic categories to INFLECTION or DERIVATION in any language. Here, the main research interest (cross-linguistic generalization) rules out a restriction to a certain morphological type. The clue of this approach, as presented by Bybee (1985), is the connection of two not unrelated, but different, phenomena:

- (a) cross-linguistic regularities of grammaticalization displaying a continuous development from lexemes to "inflectional" (i.e. bound) morphemes (with an intermediate stage of "derivational" morphemes) as developing from Sapir's (1921/1972) first class ("material content") to his fourth class ("relational content");<sup>32</sup>
- (b) difficulties in identifying certain morphologically complex formations in single languages due to conflicting results obtained from the application of the standard distinguishing criteria.

However, the concept of "continuum" does not provide an equally good explanation for diachronic/cross-linguistic and synchronic/language-specific phenomena. Essentially, it refers only to two types of distinguishing criteria which

<sup>32</sup> The development from "derivational" to "inflectional" morphology can be seen as a development from Sapir's third to his fourth class.

may synchronically and diachronically reflect a one-dimensional continuous development: productivity and syntactic requirement/obligatoriness.

How can syntactic requirement and obligatoriness be interpreted in an approach which is connected with syntax/4, i.e., proceeds from substantive morphosyntactic categories? There is a narrow morphological interpretation of obligatoriness: For each grammatical value of a category, distinct word-forms have to be selected (for instance, nouns must appear in distinct CASE forms). Obligatoriness, in this sense, does not really work in languages in which certain grammatical forms are allowed to be identical to the lexical stems and can potentially be interpreted either as an unmarked INFLECTIONAL form or as the lack of a DERIVATIONAL affix.<sup>33</sup> According to another interpretation of obligatoriness, which is commonly refused but nevertheless employed in practical work, obligatoriness is understood on a semantic and comparative basis. A good example is the following argument: Language X does not obligatorily use a PLURAL marker in contexts in which we would expect it; thus, it has no fully developed INFLECTIONAL PLURAL category.

As opposed to productivity, category change is a non-gradable property and has nothing to do with the continuous grammaticalization of free forms resulting in INFLECTIONAL bound morphemes. Category change depends—as we have demonstrated with the case studies on adjectives/adverbs, *-ing*-forms and Tagalog forms—on the global lexical organization by which major and minor lexical categories, lexical ambiguity, and compositionality are determined. Thus, it comes as no surprise that, applying the whole range of the standard distinguishing criteria in a single language, we normally obtain different kinds of deviation (for instance, fully productive and predictable formation with category change, obligatoriness with a high degree of formal and semantic idiosyncrasy, etc.) from “good” INFLECTION and “good” DERIVATION which cannot be ordered on a continuum or scale. It makes no sense to say that, for instance, adverbial affixation in English is “more” DERIVATIONAL than the affixation of participles or vice versa. This is not a principal drawback of so-called prototype approaches. Although they generally do not make any suggestion as to how “non-prototypical cases” in particular languages are to be represented, they are compatible with the idea (cf. Geeraerts 1989 with respect to the “good-member” concept and the “cluster” concept in prototype theory) that the “non-prototypical cases” may form significant clusters resulting from values in more than one distinct criterial dimension in individual languages.

<sup>33</sup> The problem usually arises in the absence of evidence by further criteria, such as agreement or outmost position in a word-form.

Approach (d), as represented by Anderson (1988; 1992), is both connected to syntax/2 (phrasal domain characterized by agreement) and syntax/4 (morphosyntax). Morphologically complex entities which are first identified as being relevant for phrasal rules such as agreement rules are ultimately interpreted in terms of morphosyntax. Agreement phenomena are better indicators of syntactic requirement than the obligatory realization of a grammatical form characterizing “inflecting languages” or semantically motivated obligatoriness and may be considered as a sufficient criterion for INFLECTION in single languages. Unfortunately, not every language exhibits morphological markers for exclusively phrasal properties such as agreement. Should we conclude that such languages do not have INFLECTION at all, even if they have fully productive morphological means for traditional morphosyntactic categories? It is not surprising that linguists working on languages with no formal agreement are inclined to abandon “syntactic necessity” as a criterion for distinguishing between INFLECTION and DERIVATION.<sup>34</sup>

We can summarize by saying that approaches proceeding from the syntax concepts syntax/1 and syntax/2 have difficulties in typological extension, that is, in covering languages which show an unusual mapping between lexicon and grammar and, particularly, an unusual configuration of formal means which can be associated with lexical enrichment and/or morphosyntax. In contrast, approaches starting from syntax/3 or syntax/4 are commonly deficient in representational issues; in particular, they make no strong suggestion as to what representational consequences for individual languages the cross-linguistic studies have. Thus, Spencer’s critique (1991, 9) is still relevant:

“... it is not difficult to see why people might believe that inflectional morphology is the result of applying processes to words, while derivational morphology is the result of concatenating morphemes. As we shall see, things are not that simple, and it turns out to be extremely difficult to draw the line between inflection and derivation in such a way that it gives simple answers for all languages.”

This also forms the background to the prototype approach. This account implicitly reflects the popular linguistic idea that there is one type of lexicon–grammar interaction which is prototypical for natural languages: A language with a prototypical lexicon–grammar interaction shows well-defined (i.e. formally distinguished) lexical categories, concatenative morphology, one-to-one

<sup>34</sup> Cf. Chelliah (1992, 293) about distinguishing between INFLECTION and DERIVATION in Manipuri (a Tibeto-Burman language): “Note that IM cannot be differentiated from DM on the basis that IM is carried out in the syntax and DM in the lexicon; since there are no agreement features encoded by IM, there is nothing about IM, as opposed to DM, which makes it relevant to the syntax.”



correspondence between functional and formal properties (i.e. between formal classes of morphological entities and the functions "lexical extension" and "morphosyntactic instantiation"), paradigmatic organization of morphosyntactic exponents, "word-based" (i.e. "lexeme-based") lexical extension, etc. It is this prototype which gives rise to the standard criteria for distinguishing INFLECTION and DERIVATION. In languages with a non-prototypical lexicon-grammar interaction (such as Tagalog), some of them are not applicable at all. On the other hand, languages with a prototypical lexicon-grammar interaction certainly may show a relatively clear distinction between what is commonly called a DERIVATIONAL and an INFLECTIONAL linguistic entity.

## 6. Conclusion

In this paper, I claimed that INFLECTION and DERIVATION are linguistic concepts which characterize the lexicon-grammar interaction of languages rather than the morphology alone. This means that we must simultaneously take into account lexicological (especially lexical semantic) and grammatical considerations for studying INFLECTION and DERIVATION.

I argued for a unified treatment of lexically established semi-productive and productive processes, including systematic sense alternations correlating with different syntactic environments, systematic sense alternations correlating with a phonological/morphological modification of the lexical stem in question, and systematic polysemies. Since a substantial part of these processes falls outside the scope of "morphology proper" responsible for word-internal properties, they should not be incorporated via ZERO-DERIVATION into a morphology theory. Rather, traditional morphological issues considered under the paradigmatic aspect should be generalized within a theory of lexical alternations and lexical extension. I tried to show that the concept of LEXICAL RULES is a more flexible and powerful representational device for such a theory than the narrower concept of DERIVATIONAL rules rooted in morphology.

The systematic overlapping of formal means pertaining to the basic functions of INFLECTION and DERIVATION, namely, morphosyntactic (grammatical) instantiation and lexical extension, is a serious problem for most of the treatments of INFLECTION and DERIVATION proposed until now. I presented evidence for this phenomenon from European languages and from Tagalog, a language with a non-prototypical lexicon-grammar interaction. Whereas the conflation of INFLECTION and DERIVATION is rather an exceptional phenomenon in European languages, it characterizes the entire lexico-grammatical make-up of Tagalog. Nevertheless, in both cases, we find arguments against an approach

in which this functional ambiguity has to be treated by multiple morphological operations generating the same outputs twice and/or by using extensively ZERO-DERIVATIONS. Instead, I argued for separating primitive morphological operations (which apply only once) from higher order morphosyntactic and LEXICAL RULES which can themselves combine different sorts of primitive formal operations. In this view, LEXICAL RULES can take productively generated complex forms as their inputs as well. Tagalog turns out to be a language where LEXICAL RULES may cover even the whole area described as INFLECTIONAL and/or DERIVATIONAL in the literature.

Finally, I tried to show that the diverging answers to the question of whether or not INFLECTION and DERIVATION can be unequivocally distinguished are not necessarily contradictory since they are all connected to different linguistic interests. In spite of their differences, they share an underlying concept of prototypical lexicon-grammar interaction.

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## INFLECTION/DERIVATION IN SEPEČIDES-ROMANI

PETRA CECH

### 1. Introduction

Sepečides-Romani is a non-vlach dialect spoken by a group of basketweaver gypsies ("Sepečides") in Izmir, Turkey.<sup>1</sup> Unlike that of other Romani dialects, its derivational morphology is rather rich. This paper discusses passive, deadjectival, denominal and causative verb morphology and its inflectional/derivational character within the theory of Natural Morphology. Based on the assumption of gradual differences on a continuum of inflectional and derivational morphology (Stephany 1982, also Bybee 1985), Dressler (1989) has proposed a scale from prototypical to nonprototypical inflection, nonprototypical derivation and finally prototypical derivation. To define the position of the morphological verb categories on this scale, a selection of the 20 criteria summarized by Dressler (1989) is used:

(i) lexical vs. syntactic function: derivational morphology forms new words, thus enriching the lexical inventory (lexical function); inflectional morphology produces word forms generating a syntactic frame (syntactic function);

(ii) obligatoriness: a syntactic construction is based on inflected words, whereas derived forms not necessarily appear in syntactic constructions;

(iii) biuniqueness: the relation "one meaning—one form" is typical for inflection; derivational morphology is usually not biunique, as different suffixes often form synonymous words;

(iv) meaning change: an inflectional operation causes less change of meaning than does a derivational operation, where new words are produced;

<sup>1</sup> The Sepečides lived in northern Greece until around 1920, then some groups started to migrate to Turkey. One of them finally settled in Izmir, whereas others stayed in Greece and can still be found around Volos today. The group of Izmir Sepečides consists of several thousand speakers. The data are based on tales, anecdotes, biographical stories and songs recorded by Heinschink (Juhász 1992) in Izmir, and on questioning speakers of a Sepečides family living in Vienna.

- (v) predictability/lexicalization: the output of an inflectional process is usually more easily predictable due to morphosemantic transparency of the process. The output of a derivational process can be lexicalized and is not easily predictable;
- (vi) relationality: the meaning of an inflected form is more abstract (more relational) than the meaning of a derived form;
- (vii) productivity: inflectional morphology is mostly more productive than derivational morphology;
- (viii) rule competition: as the tendency towards biuniqueness is higher for inflectional morphology, there is also less rule competition than for derivational morphology;
- (ix) paradigm structure: inflectional morphology can be described by means of a paradigm: a paradigmatic structure is characterized by declensional and conjugational classes, where groups of words inflect uniformly, sometimes with subclasses; the paradigmatic organization of derivational morphology is mostly doubtful and weak;
- (x) change of word class: the inflection of words is rarely connected with a change of the word class, whereas derivational morphology creates new words of different word classes.

## 2. The verbal paradigm

The verbal paradigm distinguishes indigenous verbs and early loanwords on the one side and late loanwords on the other. Romani dialects generally apply special markers to loanwords, verbs as well as nouns. The Sepečides loanverb marker is *-din-* or *-tin-*, applied to the verbal stem. There are no inflectional subdivisions within this class and all members inflect uniformly with the participle and preterite suffix *-d-*.

Indigenous verbs have several subclasses: Present in *-e-* vs. present in *-a-*, as well as classes with several different preterite stems (*-d-*, *-l-*). Preterite is formed with the preterite stem followed by the inflectional endings of the present substantive verb.



## 2.1. Passive

The passive is formed with the preterite stem + passive suffix + passive inflection.<sup>2</sup>

The subdivision: loanwords vs. indigenous verbs with different preterite stems is also valid for passives. The passive paradigm has its own subclasses with different suffixes.

### 2.1.1. Indigenous verbs; passive: preterite stem + -j-

stem: *kin-* 'buy'; preterite stem: *kin-d-*; passive: *kin-d-j-* 'be bought'

	Act. Pres. 'buy'	Act. Pret. 'bought'	Pass. Pres. 'is/are bought'	Pass. Pret. 'was/were bought'
Sing.				
1.	<i>kin-ava</i>	<i>kin-d-om</i>	<i>kin-d-j-ava</i>	<i>kin-d-il-om</i>
2.	<i>kin-esa</i>	<i>kin-d-an</i>	<i>kin-d-j-osa</i>	<i>kin-d-il-an</i>
3.	<i>kin-ela</i>	<i>kin-d-as</i>	<i>kin-d-j-ola</i>	<i>kin-d-il-o/i</i>
Plural				
1.	<i>kin-asa</i>	<i>kin-d-am</i>	<i>kin-d-j-asa</i>	<i>kin-d-il-am</i>
2.	<i>kin-ena</i>	<i>kin-d-en</i>	<i>kin-d-j-ona</i>	<i>kin-d-il-en</i>
3.	<i>kin-ena</i>	<i>kin-d-e</i>	<i>kin-d-j-ona</i>	<i>kin-d-il-e</i>

### 2.1.2. Indigenous verbs; passive: preterite stem + -iv-

stem: *šun-* 'hear'; pret.stem: *šun-d-*; pass: *šun-d-j-* 'be heard'

	Act. Pres.	Act. Pret.	Pass. Pres.	Pass. Pret.
Sing.				
1.	<i>šun-ava</i>	<i>šun-d-om</i>	<i>šun-d-iv-ava</i>	<i>šun-d-il-om</i>
2.	<i>šun-esa</i>	<i>šun-d-an</i>	<i>šun-d-iv-osa</i>	<i>šun-d-il-an</i>
3.	<i>šun-ela</i>	<i>šun-d-as</i>	<i>šun-d-iv-ola</i>	<i>šun-d-il-o</i>
	:	:	:	:

<sup>2</sup> Diachronically the suffixes originate from a syntactic construction of combining the past participle active (-*do*, -*di* and -*lo*, -*li*) with the verb *uv-* 'become' (cf. Arli dialect of Priština: *ul-um* 'I have become', part. *ulo*. Also in Bugurdži *uj-om*, -*an*, part. *ulo*.): *kheldo uvela* > *kheldjovela* (cf. Arli dialect of Prilep, Boretzky 1993) > *kheldjola*. Several dialects tend to drop the palatal, thus > *kheldola*. -*d-ivola* as alternative to -*d-jola* is not found in other dialects. The suffix either represents a state of the past participle active (-*do*)+*uvela* prior to contraction > -*d-jola* or a secondary lengthening of the contracted form, -*djola* → -*divola*.

### 2.1.3. Loanverbs (marker *-din-*); passive: preterite stem + *-iv-*

stem: *adži-din-* 'be sorry for'; pret.stem: *adži-din-d-*; pass: *adži-din-d-iv-* 'be pitied'

	Act. Pres.	Act. Pret.	Pass. Pres.	Pass. Pret.
Sing.				
1.	adžidin-ava	adžidin-d-om	adžidin-d-ivava	adžidin-d-ilom
2.	adžidin-esa	adžidin-d-an	adžidin-d-ivosa	adžidin-d-ilan
3.	adžidin-ela	adžidin-d-as	adžidin-d-ivola	adžidin-d-ilo/i
	:	:	:	:

## 2.2. Deadjectival intransitives

Again there are (a) verbs with an indigenous base, where corresponding transitive actives are formed with the causative suffix *-ar-*, and (b) verbs with a loanword base, without corresponding transitives.

### 2.2.1. Indigenous base: adjectival stem + *-j-*

stem: *bar-* 'big'; intransitive: *bar-j-* 'become big'; transitive: *bar-j-ar-* 'raise'

	Trans. Pres.	Trans. Pret.	Intrans. Pres.	Intrans. Pret.
Sing.				
1.	bar-j-ar-ava	bar-j-ar-d-om	bar-j-ava	bar-il-om
2.	bar-j-ar-esa	bar-j-ar-d-an	bar-j-osa	bar-il-an
3.	bar-j-ar-ela	bar-j-ar-d-an	bar-j-ola	bar-il-o/i
	:	:	:	:

### 2.2.2. Loanword base: adjective stem + *-ndiv-*

stem: *frengi* (Turk.) 'nasty, cheeky'; intransitive: *frengi-ndiv-* 'turn cheeky'

	Intrans. Pres.	Intrans. Pret.
Sing.		
1.	frengi-ndivava	frengi-ndilom
2.	frengi-ndivosa	frengi-ndilan
3.	frengi-ndivola	frengi-ndilo/i
	:	:

**2.3. Denominal intransitives: no subclasses; noun-Nom.Pl. + -ndiv-**

stem: *grasta-ndiv-* 'turn foolish' (*grast* 'horse')

Intrans. Pres.    Intrans. Pret.

1. Sing. *grasta-ndivava*    *grasta-ndilom*

          :                       :                       :

**3. The inflectional/derivational status of passives**

Passivation as discussed here is a suffixational process applying to active transitive or intransitive verbs, resulting in verbs denoting events with a non-agent orientation. As such passivation at first sight appears as an undoubtedly inflectional process, cf. Dressler (1989), who lists voice among the prototypical inflectional categories. For the criteria listed above the prototypical character of passives though is not at all clear.

(i) Criterion of function: passivation serves mainly syntactic purposes: the passive form determines the syntactic relations (intransitivity, position of arguments, non-agent orientation) within the sentence. Still there is a lexical function as well. In opposition to many passive verbs with small meaning change and rather abstract meaning, several passives serve lexical enrichment, adding a meaning of "possibility" (see also passivation in Hindi and Turkish):

*xa-la* 'eat' → pass. *xa-l-jola* 'edible, bearable':

(1) *Xal-jola*    *i*    *Renata purum-en-džar.*  
 eat-pass3sg art. Renata onion-pl-instr  
 'Renata is hard to endure.'

*čid-ela* 'pull, suffer' → pass. *čid-indivola* 'bearable', cf.

(2) *O tatipe na čid-indivola.*  
 art. heat neg. tolerate-pass3sg  
 'The heat is unbearable.'

Apart from the meaning of "possibility", many passive forms are unpredictably lexicalized:

*muk-ela* 'leave' → pass. *muk-ljola* 'get divorced', as in

- (3) *Isi len trin čhave, ama akana muk-ljona.*  
 is pron. three son-nom.pl but now leave-pass3pl  
 'They have three sons, but now they are getting divorced.'

*učhar-ela* 'cover' → pass. *učhar-divola* 'be covered up', but only in certain phrases:

- (4) (a) *Po ladž učhar-dilo.*  
 poss. shame cover-part.pass  
 'His shame has been covered.'
- (b) \**Vov učhar-divol ko jorgani.*  
 He cover-pass3sg prep. blanket  
 'He is covered with a blanket.'

*dikh-ela* 'see' → pass. *dikh-indivola* 'feel, consider'

- (5) *Von dikh-indivona sar phrala, phenja.*  
 pron. see-pass3pl as brothers sisters  
 'They feel like brothers and sisters.'

Whereas many passives do not involve a big change of meaning, many others show a trend towards lexicalization. Thus they enrich the semantic inventory of verbs, though they are not "new" verbs in a derivational sense. In exceeding their syntactic function passives do not appear as prototypically inflectional.

(ii) Obligatoriness: Passives are intransitive; the majority of intransitive verbs though has active inflection; thus any active intransitive verb can substitute a passive of another word in a sentence without disturbing the syntactic frame:

- (6) *O Lev čumid-indivola ki Christiane.*  
 art. Lev kiss-pass3sg prep. Christiane  
 'Lev is kissed by Christiane.'
- (7) *O Lev beš-ela ki Christiane.*  
 art. Lev stay-act3sg prep. Christiane  
 'Lev is staying with Christiane.'

- (8) Ko jataki na sov-djola.  
 prep. bed neg. sleep-pass3sg  
 'The bed is not slept in.'
- (9) Ko jataki na sov-ela.  
 prep. bed neg. sleep-act3sg  
 'He does not sleep in the bed.'

A passive form is not obligatory in a certain syntactic environment, but can be replaced by another active, as long as the active verb is intransitive. The lack of obligatoriness is not a feature of prototypical inflection.

(iii) Biuniqueness: The process not only signals passivation but has a multiple function within the verbal paradigm. In many cases it serves for intransitivization: *phang-ela* ('break', trans.) → *phang-jola* ('break', intrans.); in some cases there is no transitive base to the intransitive (*thor-djola* 'stop' → \**thor-ela*).

Apart from intransitivization, the passive suffix may add a reflexive meaning to the verb (reflexives are generally expressed periphrastically with the active verb plus a reflexive pronoun): *mar-ela* 'beats' → *mar-djola* (pass3.sg) 'is beaten' but *mardjona* (pass3.pl) 'they are fighting'; *pher-ela* 'fill up' → *pher-djola* 'get filled, fill'; *katladin-ela* 'fold up' → *katladin-divola* 'fold', as in:

- (10) Adaja makina katladin-divola šukar.  
 This machine fold-pass3sg nice  
 'This machine folds up nicely.'

As passivation can serve for either intransitivization or reflexivization, the principle "one meaning-one form" is not fulfilled. Moreover, there often exist two synonymous forms for indigenous verbs with the suffixes *-j-* and *-iv-*. The process is not unique, which again is a derivational feature.

(iv) Meaning change: Despite the tendency of some passives to get lexicalized, there is a large group of verbs where passivation involves only small semantic changes. A set of examples is given below:

(11)	active	passive
	šun-ela 'hear'	šun-divola 'is heard'
	bistar-ela 'forget'	bistar-divola 'is forgotten'
	rod-ela 'searche'	rod-indivola 'is searched'
	okutin-ela 'read'	okutin-divola 'is read'
	üteledin-ela 'iron'	üteledin-divola 'is ironed'
	bikin-ela 'sell'	bikin-divola 'is sold'
	suv-ela 'sow'	suv-djola 'is sewn'
	ker-ela 'do'	ker-d(j)ola 'is done'
	axav-ela 'understand'	axa-dindivola 'is understood'

Small meaning change is typical for inflectional categories, but as passivation may as well produce verbs with considerably big meaning change, a definite status of inflectionality according to this criterion cannot be assigned.

(v) Predictability: This criterion is connected with criterion (i) (function) and with criterion (vi) (lexicalization): As some passives have an irregular, lexicalized meaning, the outcome of passivation is not predictable for these verbs. The semantic gap between input (active verb) and output (passive verb) is wide. These forms show less relationality in their meaning than the ones where small meaning change is involved.

(vii) Productivity: The process is not fully productive. Passivation of verbs is often impossible without any apparent phonological or semantic reason. As there are no alternatives to these unacceptable forms, they are not "blocked" as defined by Aronoff (1976). The process is simply not very productive.

(12)	čor- 'steal' → *čordjola, *čordivola, *čordindivola
	da- 'give' → *dinjola, *dindivola
	la- 'take' → *lindjola, *lindivola

Though loanverbs are passivized more often than indigenous verbs, some of them do not form acceptable passives either, irrespective of semantic/pragmatic feasibility: *anlatin-* 'explain' → \**anlatindivola* 'be explained'.

(viii) Competition: There are three suffixes competing for indigenous verbs, *-j-*, *-iv-*, and *-in-d-iv-*, which is actually a suffix accumulation of loanverb marker + preterite suffix + passive suffix. With the internal structure being opaque for speakers, the suffix complex is applied to indigenous verbs as well. Thus we have several passive variants for many indigenous verbs:

(13)	bistar-	'forget'	pass.	bistar-d-j-ola	or	bistar-d-iv-ola
	vaker-	'say'	pass.	vaker-d-j-ola	or	vaker-d-iv-ola
	kin-	'buy'	pass.	kin-d-j-ola	or	kin-d-iv-ola
	šun-	'hear'	pass.	šun-d-j-ola	or	šun-d-iv-ola
	dikh-	'see'	pass.	dikh-l-ola	or	dikh-indiv-ola

There is no rule competition in the class of loanverbs, where the suffix *-iv-* is obligatory and *-j-* variants are ungrammatical:

(14)	jazdin-	'write'	pass.	jazdin-d-iv-ola	*jazdin-d-j-ola
	okutin-	'read'	pass.	okutin-d-iv-ola	*okutin-d-j-ola

A definite value of inflectionality cannot be assigned, as rule competition is strong within some classes of the passive paradigm.

(ix) Paradigm structure: passives clearly show a paradigmatic structure. They establish subclasses with different suffixes, divergent from the active verbal classes (see above). Verbs of different active present and preterite inflectional classes belong to the same passive classes: stem *dža-* 'go', preterite stem *gel-*, passive *džal-d-j-*, as regular verbs cf. *kin-*. The distinction between indigenous verbs and loanverbs valid for active verbal (and noun) inflection occurs with passives and deadjectival intransitives, but not with denominal intransitives.

(x) Change of word class: passivation does not generate words of a different word class.

The criteria of paradigm structure (ix) and change of word class (x) assign inflectional status to passives. For the criteria of function (i), meaning change (iv), predictability (v), relationality (vi) and competition (viii) the situation is not clear: Passivation serves syntactic and lexical functions (i); meaning changes are small for many verbs, but high for others (iv). The meaning of passives may be more or less relational (vi) and there is rule competition in the class of indigenous verbs, but no rule competition in the class of loanwords (viii). The criteria of obligatoriness (ii), biuniqueness (iii), productivity (vii) and competition (viii) suggest derivational features for passives. Overall, passive in Romani appears as an inflectional, but not a prototypically inflectional category.<sup>3</sup>

<sup>3</sup> Looking at other Romani dialects we find a similar situation: passive in non-vlach Bugurdži (Mazedonia, Kosovo; Boretzky 1993) with preterite stem+*-jol(a)*, but defective and often lexicalized. Passive forms have lost their passive function in most cases and are

#### 4. The inflectional/derivational status of deadjectival intransitives

Intransitive deadjectival verbs denote a transition between two different states, in the sense of 'become something'. In a broad semantic sense of passive as non-agent orientated, they are passive verbs with the affixes *j-/indiv-* such as the verbs previously discussed. They differ from passives in that they lack corresponding primary actives and their semantics of 'change of state' leaves no position for an agent. Thus the subject of the passive sentence is not the object of a corresponding active one. Semantic emphasis is often on the non-agentive transition (ingressive and inchoative), which distinguishes deadjectival intransitives from denominal ones, where semantic emphasis is on a slow transition and the resulting state respectively (inchoative and durative). Their semantic closeness to passive and their common diachronic origin (involvement of the same suffixes) suggest a similar degree of inflectionality as passives. Deadjectival intransitives however present a different pattern of values according to the criteria:

(i) Function: The verbs serve for lexical enrichment much more than passives do. They are always newly formed words with a non-verbal base (see also criterion (x)).

(ii) Obligatoriness: A deadjectival intransitive verb can be substituted for by another active intransitive verb without syntactic changes of the sentence:

(15) Me   dava        tut   xani        ti    zuran-divos!  
       pron. give-act1sg pron. something part. strong-pass2sg  
       'I give you something to get well!'

(16) Me   dava        tut   xani        ti    xa-s.  
       pron. give-act1sg pron. something part. eat-act2sg  
       'I give you something to eat.'

(iii) Biuniqueness: As there are two suffixes for two classes (indigenous vs. loan-words) and transitions hardly occur, deadjectival intransitives are biunique.

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used as actives parallel to their active counterparts or occur as preterites to analytically formed reflexives.

Pobozniak (1964) mentions passive forms (Preterite stem + *-jov- av, -os, -ol*) as "relics" (52 f.) for Lovari (Vlach): "The relics of this construction have survived in our dialect and belong to word formation, since this suffix adds a special meaning to the verb, mainly a reflexive one (...)."



(iv/v) Meaning change and predictability: predictability is high, as there are only few lexicalized verbs.

(17)	adjective		verb
	buxl-	'broad'	buxl-jola 'get broad'
	xurd-	'small'	xurd-jola 'become small'
	čal-	'full/filled'	čal-jola 'get full/filled'
	khamni	'pregnant'	khamn-jola 'get pregnant'
	phur-	'old'	phur-jola 'grow old'
	lol-	'red'	lol-jola 'turn red'
	parn-	'white'	parn-jola 'turn white'
	šuk-	'dry'	šuk-jola 'dry out'
	sast-	'healthy'	sast-jola 'get well'
	nern-	'young/awake'	nern-jola 'turn young/wake up'
	loanwords: <i>-ndivol</i>		
	frengi	'nasty, bad'	frengi-ndivola 'turn cheeky'
	limame	'greedy'	limame-ndivola 'turn greedy'

(vi) Relationality: The semantics of change of state has a similar degree of relationality as (regular, predictable) passives.

(vii) Productivity is even lower than with passives. Loanword adjectives are very rarely used as bases, and there are no suppletives for ungrammatical forms.

(18)	köti	(Turk. 'bad')	*kötindivola
	merhametli	(Turk. 'compassionate')	*merhametlindivola
	temizi	(Turk. 'clean')	*temizindivola

(viii) Competition: Unlike for passives, the suffixes *-j-*, *-iv-* and *-(i)ndiv-* do not compete: *-j-* is restricted to indigenous words, *-indiv-* to loanwords: \**freng-j-ola* 'turn cheeky' as well as \**phur-indiv-ola* 'get old' are not accepted.

(ix) Paradigm structure: No subclasses are established. Still the division indigenous vs. loanverbs is valid and no transitions between these classes occur.

(x) A change of word class is involved in the process: the base is either an adjective or, in a few cases, a noun.

With the criteria of obligatority (ii) and paradigm structure (ix), deadjectival intransitives correspond to passives. With the criteria of biuniqueness (iii), meaning change (iv), predictability (v), relationality (vi) and competition (viii) they appear more inflectional than passives. In opposition to the inflectional character of passives concerning function (i), productivity (vii) and change of word class (x), deadjectival intransitives have derivational features.

### 5. The inflectional/derivational status of denominal intransitives (denominal inchoatives)

Denominal intransitives abound in Sepečides-Romani. We find the passive formative *-(i)ndiv-* beside *-liv-*, both being productive with indigenous words and loanwords. Thus rule competition is high: most denominal intransitives in fact appear in two variants without obvious semantic differences.

One reason for establishing denominal vs. deadjectival intransitives as a class of their own is their additional durative semantic feature in opposition to the more ingressive, non-durative one of deadjectival verbs: 'become/be like, become/be . . . ish, become/be full of', very often in a figurative sense. Semantic emphasis is on development. Restrictions in productivity are mainly semantic. 'Become someone' in connection with professions or 'resemble someone, take after someone' cannot be expressed with denominal intransitives.

The most remarkable feature of these verbs is the involvement of plural formation before derivation takes place in the synchronic process. The actual formation by speakers in elicited performance is a two-step process:<sup>4</sup> (a) plural formation of the base noun, (b) suffixation of *-ndiv-*:

- (19) SING. o rukh 'tree' / PL. rukha / INCH. rukha-ndivola:  
O veš rukhandivola. 'The wood gets dense with trees.'
- (20) SING. o gras 'horse' / PL. grasta / INCH. grasta-ndivola:  
Mo rom grastandivola. 'My husband is (turning) a fool.'
- (21) SING. o khul 'feces' / PL. khula / INCH. khula-livola:  
Mi soston khulalivola. 'My underpants are full of dirt.'

<sup>4</sup> This can be directly observed when an unusual loanword is presented as a base for an inchoative, e.g. *o kurti* 'worm' < Turk. *kurt*. Speakers would form the plural *kurtja* in the first step, then add *-ndivola* and immediately accept or reject the inchoative due to semantic restrictions.

- (22) SING. *i grasni* 'mare' / PL. *grasna* / INCH. *grasna-ndivola*:  
Mi *daj grasnandivola*. 'My mother is (turning) a fool.'
- (23) SING. *o patrin* 'leaf' / PL. *patria* / INCH. *patria-ndivola*:  
*O rukh patriandivola*. 'The tree gets dense with leaves.'
- (24) SING. *i zar* 'pubic hair' / PL. *zara* / INCH. *zara-ndivola*:  
*O čhavo zarandivola*. 'The boy gets mature.'
- (25) SING. *o luludi* 'flower' / PL. *luludja* / INCH. *luludja-ndivola*:  
*O phuva luludjandivona*. 'The fields get (are) in blossom.'
- (26) SING. *i lumli* 'prostitute' / PL. *lumlja* / INCH. *lumlja-ndivola*:  
*O čhaja lumljandivona*. 'The girls are (turning) bad.'
- (27) SING. *i džuv* 'louse' / PL. *džuva* / INCH. *džuva-ndivola*:  
*O bala džuvandivona*. 'The hair is (getting) full of lice.'
- (28) SING. *i makhi* 'fly, mosquito' / PL. *makhja* / INCH. *makhja-ndivola*:  
*O kher makhjandivola*. 'The house is (getting) full of flies.'

Plural formation: Several noun classes have plural in *-a*: indigenous masculine and feminine nouns ending in *-C*, indigenous fem. nouns ending in *-V* and masc. loanwords that take the sing. suffix *-i* when incorporated into Sepečides inflection. Fem. loanwords get sing. *-a*, pl. *-es*. The loanword class is extremely productive, as Romani dialects constantly take up new words from surrounding languages to fill up the gaps in their vocabulary; in gender assignment for new loanwords there is a strong tendency to assign masculine gender in *-i*, plural *-a* to Turkish words ending in *-C*. Due to the steadily increasing number of loanwords incorporated in the masc. declension class, *-a* is the most abundant plural type within noun declension in Sepečides-Romani.

Affixation is different for irregular plurals (the—Greek—plural in *-es* is rare):

- (29) SING. *o alaz-as* 'flame' / PL. *alaza-des* / INCH. *alazad-ivola*:  
*I jak alazadivola*. 'The fire starts burning well.'

Verbs of this type are unknown to other Romani dialects.<sup>5</sup> Their diachrony is unclear, and explanations for the involvement of plural are so far speculative: The plural might be semantically motivated by the collective meaning of 'getting full of'. If this was the original meaning of these verbs, a collective (pluralic) element in a diachronically compositional process would be likely. The process established for expressions of collective meaning (involving the plural forms of the base nouns) then may have spread to non-collective ones via generalization. Primary collective nouns with unusual plurals are derived by affixation of the stem. Plural formation of the noun is not involved:

- (30) SING. o kad-os 'smoke'/PL. kad-odes (\*smokes)/INCH. kad-indivola:  
O bambukia kadindivona. \*'The cottons are slightly burning.'

Denominal intransitives show a high degree of derivationality, although the linear suffix order: first inflection, then derivation, is unnatural. For the criteria of function (i) and obligatoriness (ii), denominal intransitives resemble deadjectival ones, for the criterion of biuniqueness (iii) passives.

(iv/v) The semantic distance between input and result is higher than for the other intransitives (change of meaning). The output is not predictable without pragmatic background information.

(vi) The verbs are not relational in their meaning. An abstract feature apart from 'get full of, get more and more like ...' common to the examples cited above can hardly be defined. For instance, *grastandivola* 'gets more and more like a horse' = 'gets foolish' refers to one special feature of horses. The use of these verbs presupposes similar pragmatic knowledge about the base nouns among speakers and listeners. In their unpredictable reference to either one specific feature of the base noun (*grastandivola*) or a more general one (*lumljandivola*), the verbs resemble contextuals in the manner of Clark-Clark (1979). For the question of predictability vs. productivity see also Levi (1983) and Četnarowska (1992).

(vii) Productivity is high in comparison to passives, but still lower than e.g. causative formation.

<sup>5</sup> Slovakian Romani (Hübschmannova 1984) expresses inchoative meaning with *del* 'give' or *lel* 'take' or *čhudel* 'throw' + verbs in the sense of 'start to': *del te rovel*, *čhudel te rovel*, 'he starts to cry'. Vlach dialects construct inchoatives with the passive form of *ker*- 'do': *keržol*+adjective or participle, in the sense of 'become'.

(viii) Rule competition is strong: the two variants *-ndiv-/-liv-* existing for almost every inchoative are randomly used. For loanwords, *-ndiv-* is preferred but not obligatory as with passives or deadjectival intransitives, where *-ndiv-* is the only productive suffix.

(31)	grast	'horse'	→	INCH.	grastandivola,	grastalivola
	grasni	'mare'	→	INCH.	grasnandivola,	grasnalivola
	patrin	'leaf'	→	INCH.	patriandivola,	patrialivola
	:				:	:

(ix) Within this verb class there are no subclasses. Loanwords or indigenous words: neither have an obligatory suffix, with only a few exceptions. This distinguishes denominal intransitives from passives, deadjectival intransitives, causatives and most inflectional categories, where loanwords are treated differently from indigenous words at least in their restriction to a single marker or suffix.

(x) Nouns serve as bases. Word class change is obligatory.

According to the above criteria, denominal inchoatives, formed with the same suffixes as passives and deadjectival intransitives, have even less inflectional features. Their productivity though shows that inchoative formation might not be a prototypical derivational process, but far more derivational than passive and deadjectival verb formation.

## 6. Causatives

There are several formatives in use for morphological causativation, often applying to the same words mostly without semantic differences. Although many verbs have lexicalized meanings, there are hardly any lexical causatives, where a suffixational origin could not be detected (even the lexical causative 'kill', *mudar-*, proves related to the simplex verb 'die': *mer-*, preterite stem *mul-*).

### 6.1. Semantics, definition

Semantically the causative denotes force (manipulative), order (directive) and permission (permissive) for the causee in any combination of the three. The specific reading of a causative—manipulative, directive, permissive—is selected by the context. Negation and adverbs in a causative sentence refer to the causator only. This is a main difference to Turkish, where diathetic (directive)

causatives are not morphologically distinct from manipulative ones, but can be distinguished by negating the sentence or adding adverbs (Schlögel 1985).

The causator can be animate or inanimate:

(32) O askeri na sov-darela man.  
 art. soldier neg. sleep-caus pron-acc  
 'The soldier keeps me awake.'

(33) O čaj nernj-arela man.  
 art. tea wake up-caus pron-acc  
 'The tea wakes me up.'

The causee is not obligatory in a causative sentence. If expressed, the causee is denoted with the preposition *ka*, i.e. *ka*+causee-nom. In opposition to Turkish, there is no option in Sepečides-Romani to express the causee other than with the preposition. In most cases the preposition fuses with the article: *ka o*, *ka i* → *ko*, *ki*.

(34) Putravkerav ko Mozes i vudar.  
 open-caus prep+art Mozes art. door  
 'I let/make Mozes open the door.'

(35) Dikhlarel peske fali ki romli.  
 see-caus refl. coffee prep+art gypsy-woman  
 'He has his fortune told by the gypsy-woman.'

(36) Düšündiskerava ki Fatma.  
 think-caus prep+art Fatma  
 'I let Fatma do the thinking.'

## 6.2. Causative suffixes

### 6.2.1. Suffixes for indigenous verbs

6.2.1.1. Preterite-stem + *-ar-* (other dialects *-er-*, diachronically ?derivational < *ker-* 'do' (Sampson 1926)); the base verb may be transitive or intransitive.

(37)	stem		pret.stem	causative	
	dikh-	'see'	dikh-l-	dikh-l-ar-	'let sy see'
	gin-	'count'	gin-d-	gin-d-ar-	'make/let sy count'
	khuv-	'knit'	khuv-d-	khuv-d-ar-	'have sy knit sg'
	kin-	'buy'	kin-d-	kin-d-ar-	'make sy buy sg'
	khel-	'dance'	khel-d-	khel-d-ar-	'make/let sy dance'
	mar-	'hit'	mar-d-	mar-d-ar-	'have sy hit'
	thord-	'stand'	thord-	thord-ar-	'stop'
	xrand-	'dig'	xrand-	xrand-ar-	'have sg dug out'
	xut-	'jump'	xut-l-	xut-l-ar-	'make/let sy jump'
	vaker-	'say'	vaker-d-	vaker-d-ar-	'make sy talk'
	la-	'take'	lind-	lind-ar-	'make/have sy take'

In cases of strong suppletion with an irregular preterite stem, the causative is formed in analogy to the regular verbs:

(38)	an-	'bring'	gel-	an-d-ar-	'send for, order'
	sov-	'sleep'	sut-	sov-d-ar-	'make/let sy sleep'

*-ar-* is also used for the causativation (transitivisation) of indigenous deadjectival intransitives:

(39)	buxlj-ola	'become broad'	buxlj-ar-ela	'make broad'
	xurdj-ola	'become small'	xurd-j-ar-ela	'make small'
	nernj-ola	'turn young, awake'	nernj-ar-ela	'wake sy up'
	khamnj-ola	'get pregnant'	khamnj-ar-ela	'make pregnant'

6.2.1.2. Pres.stem + *-av-* (diachrony: Prakrit causative *ve/va*). The bases are intransitive verbs only.

(40)	bilj-	'melt'	bilj-av-	'melt sg'
	per-	'fall'	per-av-	'make/let fall'
	baš-	'make noise'	baš-av-	lex. 'fart'
	beš-	'sit'	*beš-av-	blocked (phonological similarity to <i>bašav-</i> )
	naš-	'run'	naš-av-	lex. 'kidnap, lose'
	phir-	'hike'	phir-av-	'guide', refl. 'take a walk'
	ušt-	'stand up'	ušt-av-	lex. 'step upon'

As all bases are intransitives, the suffix is actually a transitivizer. The verbs are frequently lexicalized in their meaning.

**6.2.1.3. Pres.stem + -avker-**. Substitutional for many verbs with *-ar-* or *-av-* and lexicalized meaning. The verbs are morphotactically double causatives, but morphosemantically not, as *-ar-* and *-av-* are opaque for speakers. *ker-* 'do' exists as an independent verb and is frequently involved in compounding, e.g. for expressing intensivation:

- (41) Von thoven-kerena la  
 pron. wash-3pl-do-3pl pron.  
 'They are washing her thoroughly.'

Here *-ker-* is loosely added to a fully inflected form. In the case of causativation *-ker-* is combined with suffixes like *-ar-* and *-av-*, and has developed from a compounding construction into a suffix with the restricted meaning of 'cause sy ...' (see Bauer 1988, 23, for the term "synaffix" for suffixes of this kind). Due to the existence of *ker-* as a free verb 'do', the suffix is very transparent and therefore frequently used. *-avker-* is applied to all stems of lexicalized causatives to obtain a general causative meaning as well as to many stems of the first group without semantic difference:

- (42) pi- 'drink' pi-avker- 'make/let sy drink'  
 putr- 'open' putr-avker- 'make sy open sg'  
 as- 'laugh' as-avker- 'make sy laugh'

Two syllable words (which are all old causatives with the simple base lost) are causativized with *-ker-* only:

- (43) bičhav- 'send' bičhav-ker- 'have sg sent'  
 axav- 'understand' axav-ker- 'make sy understand'  
 gilav- 'sing' gilav-ker- 'make sy sing'

**6.2.1.4. Pret.-stem + -arker-:** for many verbs in competition to *-ar-*: the competing forms have the same meaning, with very few exceptions like *thord-* 'stand' → *thord-ar-* 'stop' vs. *thord-a(r)ker-* 'let sy wait'.

- (44) sov- 'sleep' → sov-d-ar-, sov-d-a(r)ker- 'let sy sleep'



6.2.2. Causativation of loanwords: no rule competition: all loanwords are causativized with their marker *-tis-* or *-dis-* + *-ker-*:

(45)	bekle-tin-	'wait'	bekle-tis-ker-	'make/let sy wait'
	jaz-din-	'write'	jaz-dis-ker-	'make/have sy write'
	kazgeč-tin-	'stop'	kazgeč-tis-ker	'make sy stop'
	düşün-din-	'think'	düşün-dis-ker	'make sy think'

As with passives, the loanword marker is seen as part of the causativation suffix, and being the only productive one it is also applied to indigenous verbs. These forms are used alternatively to "old" causatives as listed above.

(46)	čumid-	'kiss'	čumid-isker-	'have sy kissed'
	rov-	'cry'	rov-disker-	'make/let sy cry'

### 6.3. The inflectional/derivational status of causatives

(i) Function: lexical enrichment is the main function. The main motivation for using a causative is the lack of a simplex word denoting an action of ordering or manipulating.

(ii) A causative verb can be substituted for by another simple transitive verb without syntactic changes.

(iii) With several suffixes available for one process as well as single suffixes serving for more than one process (*-ar-* for causativation or transitivization without causative meaning) the process is ambiguous. Causativation with the highly productive loanword suffix *-dis-ker-* on the other hand is unique, as it serves only for causativation.

(iv/v) Meaning change can be high, as shown by the lexicalized meanings of *-av-* causatives. Predictability is low for these verbs. Verbs causativized with *-(dis)ker-* show small meaning changes and are thus highly predictable.

(vi) Depending on the suffix involved, the meaning of causatives can be more (*-(dis)ker-*) or less relational (*-ar-*, *-arker-*, *-av-*, *-avker-*). As with criteria (iv) and (v), there is no definite status valid for the process as a whole.

(vii) Causativation with *-. . . ker-* is very productive. The suffix is transparent; its compounding origin is obvious. The verb *ker-* is also used for the periphrastic causative construction in many dialects that have already lost a productive causative suffix.

(viii) There is a high degree of competition of the various suffixes among indigenous verbs, which leads to the existence of synonymous causative forms, most of them without semantic differences.

(ix) The paradigmatic structure of causatives is complicated. Again there is a primary division into loanverbs vs. indigenous verbs with a single suffix for loanverbs. Within the class of indigenous verbs there are two subclasses with *-ar-* and *-av-* and a regular preterite *-d-* independently of the verbal class of the stem. Within these major classes suffixes compete or are applied additionally. With several criteria (iv, v, vi, vii, and ix) these verbs differ from causatives with the suffix (*-dis-*)*ker-*. As pure causativizers they have become opaque and developed into stem suffixes, thus creating a class of two syllable verbs with predominantly causative meaning. Productive causativization with *-ker-* can take the already transitivized (i.e. causativized) stem as a base.

(x) A change of word class does not occur.

The criteria show that there is no inflectional feature valid for all types of causative suffixation except for the criteria of function (syntactic function of transitivization apart from lexical enrichment) and word class change. The various suffixes have different values with respect to the criteria of productivity, meaning change, predictability, relationality and derivability.

## 7. Discussion

Investigating passives, deadjectival and denominal intransitives with inchoative semantics and causatives in Sepečides-Romani, we found that the processes show various degrees of inflectionality/derivationality, with neither passive being prototypically inflectional nor denominal intransitives prototypically derivational. All processes are located somewhere in the middle of the scale. Note that Bybee (1985) situates passive morphemes between those for valence and (non prototypically inflectional) aspect and gives examples of derivational passives in other languages; cf. also Anderson (1992, 142 ff.), who points out that “the morphemes traditionally regarded as “passives” do not represent instances of a single, prototypical morphological category”.

Denominal intransitives have a majority of derivational features. High productivity however and an unnatural suffix order suggest a nonprototypically derivational status for these verbs. As Dressler (1989) postulates, unnatural order of inflectional and derivational suffixes occurs rather with non-prototypical processes than with prototypical ones. If we assume that plural

generally represents nonprototypical inflection (*ibid.*) and denominal intransitives in Sepečides-Romani nonprototypical derivation, we could explain the derivational process following the inflectional one as less unnatural and less marked.

It is interesting to note that crosslinguistically inchoatives appear diachronically mobile with respect to their position between inflection and derivation. For Romance languages it has been shown that the Latin suffix *-sc-* (a productive derivational inchoative formative) diachronically turned into an inflectional one (cf. Zamboni 1983, 87 ff.). Primarily being a productive inchoative marker in classical Latin (*albeo—albescō, ira—irascor . . .*) it became an inflectional suffix of a limited verb class in the modern Romance languages, thus moved from derivation to inflection. In Proto-Romantic it appeared partly as a derivational formative, partly as an inflectional suffix.<sup>6</sup>

In a comprehensive table all criteria are listed. The processes are assigned either \* (derivational) or - (inflectional) according to their more derivational or more inflectional character for each criterion. If a clear definition is impossible, \*/- is used.

(47)		Passive	Causative	Deadject.	Denom.
(i)	Function	*/-	*/-	*	*
(ii)	Obligatority	*	*	*	*
(iii)	Biuniqueness	*	*	-	*
(iv)	Meaning change	*/-	*/-	-	*
(v)	Predictability	*/-	*/-	-	*
(vi)	Relationality	*/-	*	-	*
(vii)	Productivity	*	-	*	-
(viii)	Competition	*	*	-	*
(ix)	Paradigm struc.	-	*/-	-	*
(x)	Word class change	-	-	*	*
(xi)	(Suffix order)	-	*	-	

As can be seen from (47), there is no clear linear and symmetrical pattern. The four processes, neither of them prototypical, are scattered between inflection and derivation. For several reasons the criteria appear inapplicable for a clear

<sup>6</sup> Hittite: Very productive iterative-durative suffix (Schwyzer 1939). Ancient Greek: partly derivational iterative, partly inflectional (Risch 1971). Tocharian: iterative, durative and causative (Krause-Thomas 1960). Armenian: inchoative (Klingenschmitt 1982): (. . .) "daß das Subjekt in einen bestimmten Zustand gerät."

ordering of processes within nonprototypical categories, especially in an Indo-Iranic language in contact with a non-Indo-Iranic one (Turkish):

- 1) Some criteria, like meaning change or relationality, describe tendencies rather than features, and neither quantification nor a definition of values is possible.
- 2) The criterion of productivity cannot distinguish a very productive derivational rule from a rarely used inflectional one. Especially in a non-written language like Sepečides-Romani the use of the passive is rare and causatives abound, thus the latter are fully productive and passives are not, irrespective of their inflectional or derivational character.
- 3) The criterion of obligatoriness is distinctive only for prototypical categories. In our case it provides no further information apart from obligatory transitivity or intransitivity of the verb.
- 4) There is a problem with categories being expressed by more than one affixation rule. Different suffixes serve for one process, therefore the category is assigned different values for several criteria (see again causatives and passives) in contrast to a category expressed by only one suffix. None of the criteria is sensitive to the fact that passivation and causativation etc. of loanwords is more productive, more predictable and less ambiguous in contrast to indigenous verbs.

Additional criteria:

Some of the criteria listed by Dressler (1989) could not be used, as they only concern crosslinguistic investigations (variation of affixes), some proved inapplicable for language-specific reasons (grammatical agreement, reapplication).

The criterion of storage distinguishes indigenous verbs from loanwords, but not inflectional forms from derivational ones. The strong difference in the treatment of indigenous vs. loanwords in Romani points to the possibility that indigenous forms—except for inflection for person and tense—are merely stored, whereas loanwords undergo the morphological rules. The suffixes for indigenous words are unproductive. When using a causative or a passive, speakers have the possibility to take a stored, indigenous verb or produce a loanword-based one with the morphological rule or, as in many cases, take the stored one and apply the morphological rule. Productivity is not restricted to loanwords alone, but the loanword suffixes are used to form purely indigenous neologisms, sometimes on the basis of stored, already fully suffixed

words (causatives). Although this violates any postulate of economy, it would explain why there are so many synonymous forms for indigenous causatives and passives. According to the parameter of storage indigenous verbs with indigenous suffixes would have to be regarded as entirely derivative, loanwords as highly inflectional. The same process would be derivational for one group of words and inflectional for the other group.

The criterion of suffix position becomes important for denominal intransitives (see above), and, to a certain extent, for deadjectival verbs. The latter can be causativized resulting in a transitive verb. The causative suffix is positioned right of the passive one, which is next to the adjectival stem:

(48) bar- 'big'      bar-j- 'get big, grow'      bar-j-ar- 'raise'

Affix order assigns a higher inflectional value to the more peripheral (i.e. causative) suffix. Still the criterion is invalid for the other groups, as they all lack further derivability.

Thus, according to the evidence from Sepečides-Romani, the criteria of morphological prototypicality may prove adequate for differentiating prototypical from nonprototypical inflection or derivation, but are inadequate for distinguishing the degree of nonprototypicality within the continuum from nonprototypical inflection to nonprototypical derivation.

### Summary

Passives, deadjectival and denominal intransitives and causatives of a non-vlach Romani dialect, Sepečides-Romani, were investigated. With ten criteria selected from the twenty presented by Dressler (1989) the inflectional or derivational value of each process was defined. In a comprehensive table the results were summarized. All processes were found to be nonprototypical. For several reasons the criteria proved inapplicable for defining a clear position within nonprototypical inflection and derivation. The strict dichotomy in the morphological handling of indigenous vs. loanwords in this Romani dialect makes a definition of clear positions impossible.

The assumption of strict linearity, transitivity and symmetry between inflection and derivation does not seem to hold for nonprototypical categories, but is valid only for the macrosets of prototypical inflection—nonprototypical inflection—nonprototypical derivation—prototypical derivation.

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## DERIVATIONAL MORPHOLOGY AND THE SYSTEM OF WORD CLASSES IN GERMAN\*

STEFANIE ESCHENLOHR

### 0. Introduction

Derivational affixes can change the word class of the base form they attach to. Word formation rules specify the syntactic category of the input base and that of the output. In addition, the application of a word formation rule is often restricted by phonological and semantic conditions.

Morphological restrictions on word formation rules are usually stated in terms of positive and negative input conditions that capture the combinatorial properties of individual affixes (cf. Aronoff 1976; Scalise 1984). Most morphologists would agree that morphological complexity does have some impact on the productivity of word formation rules. Nevertheless, the morphological conditioning of word formation rules in German has not yet been investigated in a systematic way. In this paper, I intend to explore how the productivity of word formation rules is affected by the morphological structure and the word class of the input bases. The study covers a wide range of data drawn from dictionaries (Wahrig 1980; Mater 1989) and from standard descriptive studies on German word formation (Fleischer-Barz 1992; *Deutsche Wortbildung* 1973, 1975, 1978).

In section 1, I will sketch the system of category shifting derivational morphology in German. In particular, affixless derivation, i.e. conversion, is compared to derivation by overt derivational affixes. It will turn out that the direction of category shifts by conversion is limited whereas derivation by overt affixation can go in any direction. In section 2, I will examine which category shifting derivational rules can feed each other. As it turns out, most restrictions are imposed on the derivation of derived nouns. In section 3, some possible explanations for these restrictions will be discussed. I will argue that explanations in terms of blocking are not satisfactory. Furthermore, no general constraint on the iteration of derivational processes seems to be at work.

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Rather, the constraints turn out to be category-specific. Complex nouns are most resistant to undergo further derivation. Finally, in section 4, I will propose an alternative explanation. It is argued that derivational category shifts follow a funnel direction which is given by a syntactically motivated ordering of word classes (cf. Ross 1972; Eisenberg 1994).

1. Category shifting morphology in German: a survey

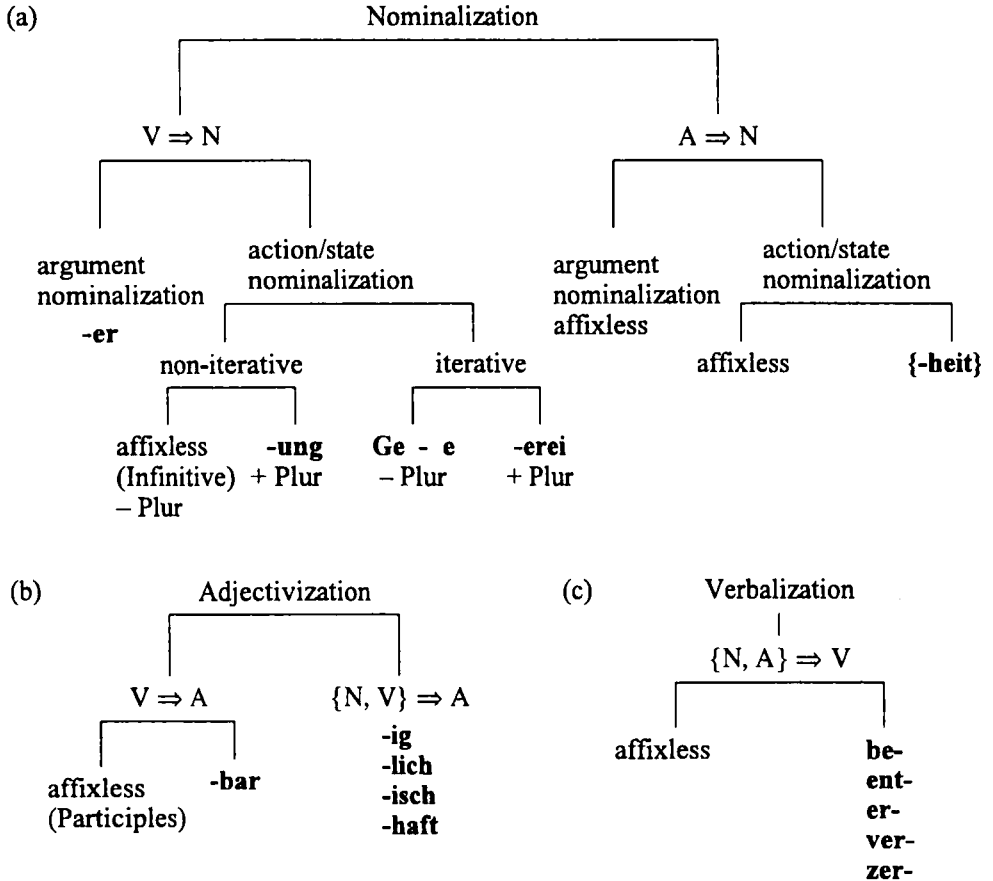


Fig. 1  
Major types of category shifts

Figure 1 gives a rough survey of category shifting morphology in German with respect to derivations between nouns, verbs, and adjectives. The categories are to be understood in a prototypical sense. I do not consider adverbs in the following as their status as a major lexical category is a notoriously problematic issue.

### 1.1. Conversion

The most striking uniformity in the system is the occurrence of a category "affixless" in each subbranch. By "affixless category shifts", i.e. conversion,<sup>1</sup> I mean those category shifts that do not involve derivational affixes. Conversion can operate on base forms of nouns and adjectives,<sup>2</sup> and on non-finite verb forms (verb stems, infinitives and participles).

Of course, conversion does not mean the same for nouns, adjectives, and verbs. Any verb in German regardless of its syntactic and semantic properties possesses an infinitival and two participle forms which allow for nominalization and adjectivization, respectively. In contrast, nouns and adjectives cannot always be verbalized. If we compare infinitive nominalizations to noun verbalizations, the following differences show up: Infinitive nominalization is semantically transparent and only rarely lexicalized. Noun-verb-conversion, on the other hand, is highly restricted by phonological and semantico-pragmatic factors. The meaning of verbalized nouns is not completely predictable and denominal verbs tend to get lexicalized. Put in a nutshell, derivations from nouns to verbs are more idiosyncratic than derivations from verbs to nouns. The same holds true for category shifts from adjectives to verbs as compared to the nominalization of adjectives.

The theoretical status of 'nominalized infinitives', 'adjectival participles' and 'nominalized adjectives' is still an issue of debate (cf. Olsen 1988; Wunderlich 1987; Zimmermann 1988). It is by no means clear whether they result from a derivational process changing verbal forms into nominal and adjectival ones. One proposal that has been made in the literature is to account for the different types of conversion by assigning them to different levels of grammar. The more idiosyncratic category shifts, i.e. noun  $\Rightarrow$  verb, adjective  $\Rightarrow$  verb, and

<sup>1</sup> In the following, I will use the term 'conversion' for all kinds of affixless category shifts, i.e. nominalized infinitives and adjectives, adjectivized participles, as well as instances of "morphological conversion" (zero-derivation) are subsumed under conversion. For the differences between these types of conversion cf. Eschenlohr (in prep.).

<sup>2</sup> Sometimes, plural forms of nouns and comparative forms of adjectives can serve as input for affixless category shifts, e.g. *Blätter* (Pl)  $\rightarrow$  *blättern* (V), *Eier* (Pl)  $\rightarrow$  *eiern* (V), *besser* (Adj Comp)  $\rightarrow$  *bessern* (V), *schmäler* (Adj Comp)  $\rightarrow$  *schmälern* (V).

verb stem  $\Rightarrow$  noun, are treated as cases of morphological conversion, whereas the nominalization of infinitives and adjectives are usually located in syntax (Olsen 1990; Wurzel 1988). It is beyond the scope of this paper to discuss this question in any detail, however. Let us assume for the present purpose that 'nominalized infinitives and adjectives' and 'adjectival participles' as well as instances of "morphological conversion" can be subsumed under 'conversion'.

(1) gives a survey of conversion rules in German. Processes which are marked by "+" are restricted in productivity. Note that conversion from nouns to adjectives is not productive.<sup>3</sup>

(1) V $\Rightarrow$ N	<i>das Suchen</i> (nominalized infinitive)
A $\Rightarrow$ N	<i>das Gute</i> (nominalized adjective)
V $\Rightarrow$ A	<i>geliebt, liebend</i> (adjectivized participles)
+N $\Rightarrow$ V	<i>buttern</i> ("morphological" conversion)
+V-stem $\Rightarrow$ N	<i>der Bau</i> ("morphological" conversion)
+A $\Rightarrow$ V	<i>kürzen</i> ("morphological" conversion)
*N $\Rightarrow$ A	

## 1.2. Category shifts by affixation

### 1.2.1. Nominalization

The survey in Fig. 1 shows deverbal and deadjectival nominalizations to be structured in parallel. Deverbal argument nominalizations and action/state nominalizations are paralleled by deadjectival ones.<sup>4</sup> In the case of verbs, action/state nominalizations may be further subdivided into aspectually differing classes, such as iterative and non-iterative.

Each of these nominalization rules is highly productive. Restrictions may be explained by 'blocking' or in terms of aspectual and argument structural properties of the input verb forms. For example, some adjectives in German do not allow for derivation by the suffix *-heit*. The lack of derivations like *\*Armheit*, *\*Reichheit* is usually explained by the existence of the nouns *Armut*, *Reichtum*, i.e. by blocking. In general, however, conversions and overt

<sup>3</sup> Colour terms like *orange*, *flieder*, *aubergine* and expressions referring to inhabitants of cities (e.g. *Berliner*, *Münchner*, *Londoner*) may be considered as exceptions to this constraint. However, prenominal modifiers like *Münchner* in *Münchner Bier* do not behave like adjectives morphosyntactically (they are not inflected, cannot appear in predicative position and do not form comparatives). Similar restrictions can be found for derived colour terms unless lexicalized like *orange* in *orange T-shirt*. Thus, it is anything but clear whether these coinages should be categorized as adjectives derived by a N  $\Rightarrow$  A conversion rule.

<sup>4</sup> The terminology is borrowed from Comrie–Thompson (1985).

derivations do not block each other. Both nominalizations exist side by side, cf. *das Schöne, die Schönheit; das Sammeln, die Sammlung*. Sometimes, the meaning of the input verb forbids the attachment of an affix. In these cases, conversions fill the gap and provide a nominal form, cf. *kriechen, das Kriechen, \*die Kriechung*.<sup>5</sup>

### 1.2.2. Verbalization and adjectivization

The most productive adjectival suffixes in German are *-bar, -haft, -ig, -lich*, and *-isch*. *-bar* derives adjectives from transitive verbs, whereas the other suffixes clearly prefer to attach to nominal bases. However, for each adjectival suffix *-ig, -lich* and *-isch* coinages with verbal bases can also be found (cf. (2)). The suffix *-lich* also combines with adjectives. It is not quite clear whether adjectival suffixes productively combine with bases of more than one syntactic category. The data suggest that at least the suffix *-ig* has the capacity to attach to nominal as well as to verbal bases.<sup>6</sup>

(2)	<i>-lich</i>	denominal:	mütterlich, körperlich, männlich
		deverbal:	verzinslich, rühmlich, bedenklich
		deadjectival:	bläulich, dummlich, weichlich
	<i>-ig</i>	denominal:	riesig, wäßrig, salzig
		deverbal:	kitzelig, kitzelig, tüftelig
	<i>-isch</i>	denominal:	schurkisch, weibisch, diebisch
		deverbal:	mürrisch, neckisch, zänkisch

<sup>5</sup> While semantic differences between affixless and affixal action/state nominalizations may be subtle, they differ morphologically in their ability to build plural forms. Nominalized infinitives and adjectives have defective nominal paradigms (cf. *das Sammeln* (Sg) – *\*die Sammeln* (Pl), *das Schöne* (Sg) – *\*die Schöne* (Pl)). Plural forms can only be built from suffixed nominalizations (cf. *die Sammlungen, die Schönheiten*).

<sup>6</sup> This claim is controversial because it contradicts the Unitary Base Hypothesis (UBH) (cf. Aronoff 1976) which is taken for granted by most morphologists. The adoption of the UBH has an unpleasant theoretical consequence, though: it leads to a proliferation of homonymous affixes. I take the view that subcategorization frames of affixes tend to be asymmetrical. Affixes fix the category of the output but are more tolerant with respect to the lexical category of the input base. This has already been proposed by Wilmanns: "So bindend wie die Wortart des abgeleiteten Wortes ist freilich die des Stammwortes nicht." (1899, 18).

Prefixes differ from suffixes in several respects. Each of the verbal prefixes *be-*, *ent-*, *er-*, *ver-*, *zer-* combines with verbal bases, but it is an issue of debate whether verbal prefixes can attach to nominal and adjectival bases as well.<sup>7</sup> (3) and (4) give some examples of denominal and deadjectival verbs derived by the prefix *be-*.

- (3) *bepflanzen* (relatable to *Pflanze* (N) and *pflanzen* (V)),  
*beerben* (relatable to *Erbe* (N) and *erben* (V)),  
*bekräftigen* (relatable to *kräftig* (A) and *kräftigen* (V))
- (4) (a) nominal bases: *beschuh*en, *bedach*en, *beseel*en (\**schuh*en,  
\**dach*en, \**seel*en)
- (b) adjectival bases: *beschwer*en, *betäub*en, *belustig*en (\**schwer*en,  
\**täub*en, \**lustig*en)

The complex verbs in (3) can be related to bases of more than one category. In these cases, both analyses are possible, i.e. the derivations can be conceived of as category-shifting or category-preserving. A decision can only be made on semantic grounds, if at all. The verbs in (4a) and (4b), in contrast, seem to be derived from nominal and adjectival bases respectively, because the corresponding simplex verbs do not exist. Those who argue that verbal prefixes only attach to verbs (cf. among others Stiebels 1994; Stiebels–Wunderlich 1994), have to assume a conversion rule which derives non-existent, ‘morphologically virtual’ verbs like *schuh*en, *dach*en etc.<sup>8</sup> Apart from the fact that this analysis has to cope with morphologically impossible verbs,<sup>9</sup> it still leaves unexplained why denominal and deadjectival prefix verbs are much more common than simple conversion verbs in German. Apparently, the verbalization of

<sup>7</sup> The question is, in other words, whether prefixes are ‘morphological heads’. The notion of head has been shown to be a problematic concept in morphological theory, however (cf. Zwicky 1985; Becker 1990; Bauer 1990). In the following, I will not discuss questions of head assignment. The fact that prefixes can function as potential category shifters is not considered to imply that prefixes are morphological heads.

<sup>8</sup> Prefix verbs have also been analyzed as parasynthetics, i.e. as complex words derived by means of the simultaneous attachment of a prefix and a suffix to a single base (for discussion cf. Scalise 1984, 147 f.).

<sup>9</sup> There are cases where verbal prefixes attach to word forms which can never be verbalized, cf. *veruntreuen*, *verunsichern*, *verunzieren*, *verunklaren*, *verunstalten*. These prefix verbs cannot be derived from \**untreuen*, \**unsichern*, \**unzieren*, \**unklaren*, \**unstalten* as words prefixed by *un-* cannot be verbalized in German. Derivational affixes can be interpreted as ‘categorial indicators’ that fix the word class of the derived word form (cf. Eschenlohr (to appear)).

nouns and adjectives by prefixation is morphologically preferred in German. Therefore, it seems justified to conclude that verbal prefixes can function as category shifters.

To sum up: Derivational affixes in German allow for all possible category shifts between nouns, verbs, and adjectives. Each category can be mapped onto any other category.

However, this neat picture is only valid for morphologically simple inputs. Only non-derived words allow for categorially unrestricted shifts. It will be shown in the next section that the possibilities to shift derived word forms are highly limited.

## 2. Morphological restrictions on category shifting derivation

Figure 2 gives a survey of category shifting derivational rules operating on derived words that have already undergone a category shifting derivational process. The words serving as input bases contain at least one category shifting derivational affix.

The following pattern emerges: Derived nouns are not further derivable whereas complex verbs and adjectives always allow for at least one type of category-shift, namely for nominalization. The fact that affixed words do not allow for zero-derivation is well known (Marchand 1969), whereas restrictions imposed on overt derivation have gone largely unnoticed. In the following, I will examine the derivability of complex nouns, verbs and adjectives by affixless and overt derivational processes.

### 2.1. Derived nouns as input

Deverbal and deadjectival nouns cannot be derived by conversion. The verbs in (5a, b) are completely unacceptable. Interestingly, derived nouns cannot be category-shifted by overt derivational affixes either. Productive adjectival suffixes, such as *-ig*, *-lich*, *-isch*, *-haft* do not attach to derived nouns, as shown in (5c, d).<sup>10</sup> The same restriction can be observed for verbal prefixes. The nouns in question can never be verbalized by any of them (cf. (5e)).

<sup>10</sup> A few exceptions are found for deadjectival nominalizations with the affix *-heit*. In some cases, they combine with the adjectival suffix *-lich*. The attested coinages are: *gesundheitlich*, *freiheitlich*, *einheitlich*, *zweiheitlich*, *mehrheitlich*, *ganzheitlich*, *obrigkeitlich*.

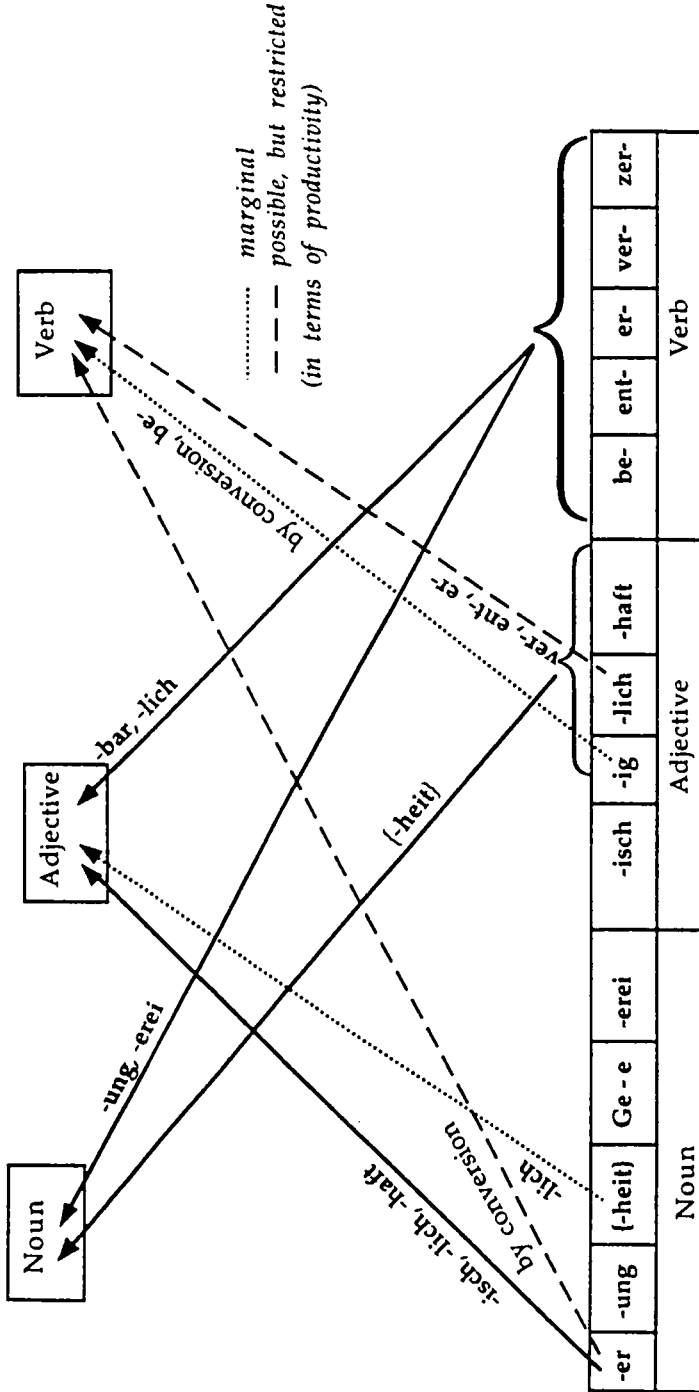


Fig. 2  
Category shifting derivation: input bases with category shifting affixes



- (5) (a) \*leitungen (V), \*untersuchungen (V), \*trennungen (V)  
 (b) \*gleichheiten (V), \*freiheiten (V), \*brüderlichkeiten (V)  
 (c) \*schönheitlich, \*klugheitlich, \*ehrlichkeitlich  
 (d) \*leitunglich, \*untersuchunglich, \*trennunglich  
 (e) \*begleichheiten, \*befreiheiten, \*bebrüderlichkeiten  
 (exception: bewahrheiten)

Only so-called semi-affixes like *-mäßig*, *-frei*, *-voll* do combine with derived nouns (cf. (6a, b)). Semi-affixes are halfway grammaticalized compound parts. Not surprisingly, lexical stems freely combine with derived nouns forming compounds, as shown in (6c).

- (6) (a) untersuchungsmäßig, hingebungsvoll, reibungsfrei  
 (b) gesundheitsmäßig, streitereimäßig, gerennemäßig  
 (c) Untersuchungsbericht, Hausdurchsuchung, Kindergeschrei

There is an important exception to the non-derivability of complex nouns. Agent nouns that are formed by the suffix *-er* productively combine with most adjectival suffixes (cf. (7a)). In some cases, they can also be verbalized by conversion rules (cf. (7b)).

- (7) (a) tänzerisch, streberhaft, richterlich  
 (b) dienen, strebern, malern

The exceptional behaviour of *-er*-derivatives can be explained in terms of their specific phonological<sup>11</sup> and semantic properties. *-er*-nominalizations denote agents (persons and instruments). Thus, they fulfill the semantic input conditions of several word formation rules. For example, the conversion rule instantiated in (7b) derives verbs whose semantics may be roughly characterized as 'denoting activities which are characteristic for the referents of the nouns they are derived of'. Deverbal agent nouns fit this rule semantically and some are attested as input bases (cf. *Diener*, *Streber*, *Maler*).

<sup>11</sup> *-er* plays a special role in German word formation. It does not only function as a derivational and inflectional suffix, but also belongs to the class of so-called pseudo-suffixes (*-er*, *-e*, *-en*, *-el*). Pseudo-suffixes are word final schwa-syllables which are typical for native German nouns (cf. *Hammer*, *Eimer*, *Priester*) and verbs (cf. *labern*, *blubbern*, *hadern*). Because of this situation, most suffixes attach to (morphologically simple) bases ending in *-er*. The fact that the phonologically identical suffix *-er* combines with almost any other suffix (cf. Fleischer-Barz 1992, 40) and that some *-er* agent nouns even allow for conversion (cf. (7b)) may be explained by structural analogy to pseudo-suffixed nouns and verbs.

## 2.2. Derived adjectives as input

All complex adjectives can be nominalized by *-keit* or *-igkeit* which are allomorphs of the suffix *-heit* (cf. (8)).<sup>12</sup>

(8) Spießigkeit, Zickigkeit, Schreckhaftigkeit, Ehrlichkeit, Lieblichkeit

In contrast, verbalization of complex adjectives is far more restricted. In particular, conversion rules never apply to complex adjectives (cf. (9a)). Some examples of conversions (cf. (9b)) are found for adjectives derived by *-ig*. The relatively great number of attested forms can be explained diachronically; *-ig* was a productive verbal suffix in older stages of German (cf. Paul 1920, 122). In contemporary German,  $A \Rightarrow V$  conversion does not productively apply to morphologically complex adjectives. Most of them are not derivable by verbal prefixes either, as demonstrated by the ungrammatical coinages in example (9c).

(9) (a) \*friedlichen, \*mürrischen, \*rosigen, \*ekelhaften  
(exceptions: ehelichen, offenbaren)

(b) kräftigen, demütigen, steinigen

(c) \*vergierigen, \*verspießigen, \*verschauerhaften, \*verekelhaften

Verbalization by overt prefixes seems to be possible for adjectives formed by the suffix *-lich*. A considerable number of verbalized *-lich*-adjectives is attested (cf. (10a)). It is not quite clear, however, whether verbal prefixes productively combine with *-lich* adjectives. New coinages seem to be quite odd or even ungrammatical (cf. (10b)):

(10) (a) verdeutlichen, veranschaulichen, vereinheitlichen, entstaatlichen, verbürgerlichen, verwirklichen, ermöglichen etc.

(b) ?verdicklichen, ?verkränklichen, ?verweinerlichen

<sup>12</sup> The forms *-keit* and *-igkeit* are morphologically conditioned allomorphs of *-heit*. They preferably attach to bases containing a derivational suffix, except for *-isch*, cf. \**Seelischkeit*, \**Mürrischkeit*, \**Regnerischkeit*, \**Launischkeit*. I have no explanation for this restriction. Apparently, each suffix has some idiosyncratic combinatorial properties which cannot be explained on phonological or semantic grounds.

To sum up: Morphologically complex adjectives can be nominalized, both by affixless and affixal derivation. Verbalization of complex adjectives is severely restricted. Conversion rules never apply. Category shifts by prefixes are attested, but it is not clear whether new coinages according to these patterns can be formed.

### 2.3. Derived verbs as input

There are almost no restrictions on the derivation of derived verbs. On the contrary, complex verbs are preferred inputs for several word formation rules. Often, complex verbs are more ready to undergo derivation than the corresponding simplex verbs.

This has to do with the specific semantic and syntactic properties of derived verbs in German. Most prefix verbs are transitive and telic. Thus, they satisfy the subcategorization frames of some very productive affixes, e.g. *-bar* and *-ung*. The *-ung*-nominalization rule, for instance, preferably operates on transitive telic verbs (cf. Fleischer-Barz 1992, 173 f.).<sup>13</sup> Therefore, a complex verb like *verbrennen* can be nominalized by *-ung*, whereas the corresponding simplex verb *brennen* cannot (cf. (11a)). Accordingly, restrictions on the derivation of complex verbs can mostly be explained in terms of the semantic and syntactic properties of the verbs in question. The prefix *er-*, for example, forms inchoative intransitive verbs which are not derivable by the suffix *-bar* (cf. (11b)).

- (11) (a) *brennen*, \**die Brennung* vs. *verbrennen*, *die Verbrennung*  
 (b) \**erblühbar*, \**errötbar*, \**erstrahlbar*

Furthermore, derivation may be ruled out by prosodic well-formedness conditions, as shown in (12). A sequence of two unstressable schwa-syllables at the beginning of a word is not possible in German (exception: *vergesellschaften*).

- (12) \**das Gebegieße*, \**das Geverlaufe*, \**das Geerrate*

<sup>13</sup> This may be explained by the semantics of *ung*-nominalizations which always allow for process readings as well as result readings. Atelic verbs denote processes without inherent end, thus result readings cannot be derived. This might be the reason, why *ung*-derivation is usually ruled out with atelic verbs (cf. *kriechen* – \**Kriechung*, *suchen* – \**Suchung*, *hören* – \**Hörung*).

Note that conversions are always possible. Every complex verb has an infinitival form that can be nominalized, and at least one participle form that allows for attributive usage.

### 3. Possible explanations

#### 3.1. Blocking

Usually, restrictions on the productivity of word formation rules are explained by blocking mechanisms. According to Aronoff (1976, 43) blocking is defined as 'the non-occurrence of one form due to the simple existence of another'.<sup>14</sup>

At first glance, blocking seems to explain the ungrammaticality of forms like those in (5). One may assume the derivation of a verb like \**verzweigungen* is blocked by the existence of the simplex verb *verzweigen*. By the same token, the non-existence of the adjective \**verzweigungig* might be attributed to the existence of the participle *verzweigt*.

However, the non-existence of coinages like those in (13) cannot be accounted for by blocking. These are formed from lexicalized *-ung*-nouns like *Böschung*, *Satzung*, *Quittung*. Although they are to be analyzed as morphologically complex, they can no longer be related to existing verbs. Thus there are no infinitives or participles to block coinages like those in (13).

- (13) (a) \**böschungen* (V), \**satzungen* (V), \**quittungen* (V)  
 (b) \**böschungig* (A), \**satzungig* (A), \**quittungig* (A)

#### 3.2. Morphological constraints on word formation rules

Usually, application conditions on word formation rules capture the combinatorial properties of individual affixes (cf. Aronoff 1976; Scalise 1984). In many cases, however, seemingly morphological complexity constraints can be traced back to phonological or semantic restrictions.

Plank (1981, 138) surmises that there are two general tendencies at work which might be responsible for morphological complexity restrictions: One that forbids the reapplication of derivational processes (unless semantically

<sup>14</sup> The notion of blocking is an issue of debate in morphological theory. Scalise (1984, 164) argues that blocking is not a formal constraint on word formation rules but has to be understood as 'a tendency of the lexicon towards "economy"'. More refined and elaborated notions of blocking have been proposed by Plank (1981) and Wurzel (1988).

licenced, cf. *Ururgroßvater* vs. \**grünlichlich*) and another one which delimits the iteration of category-preserving derivational processes (cf. \**käsiglich*, \**verbegehen*, ?*Lehrerinchen*).<sup>15</sup>

The data discussed in this paper rather suggest that category-shifting derivational processes cannot be reverted. We might hypothesize that in general deverbal nouns cannot be re-verbalized, deadjectival adverbs cannot be re-adjectivized and so on.<sup>16</sup> However, (14a) lists deverbal nouns that do allow for verbalization. Though not formed productively, they are still relatable to the corresponding verbs (cf. (14b)). Again, conversion is not allowed (exceptions: *befunden*, *beschlagnahmen*, *wallfahrten*).

- (14) (a) *vereinnahmen*, *bevorzugen*, *bezuschussen*, *beschriften*, *veranlagten*  
 (b) *einnehmen* → *Einnahme*, *vorziehen* → *Vorzug*, *zuschießen*  
 → *Zuschuß*, *schreiben*, → *Schrift*, *anlegen* → *Anlage*

To conclude: The property to refuse further derivation is not a property of deverbal nouns in general. Rather, it seems to be a specific property of the nominal suffix *-ung*.

There are two more reasons which speak against the “no-reversion-hypothesis”. Firstly, it does not explain the prohibition of  $V \Rightarrow N \Rightarrow A$  derivations (cf. section 3.1). Secondly, as will become clear from Fig. 3, category-preserving affixes tend to block further derivation as well. Figure 3 shows that all nominal affixes constrain the application of category shifting processes.

Some adjectives are attested but there are many gaps which cannot be accounted for (cf. (15)).

<sup>15</sup> The question whether the iteration of category-preserving derivational processes is to be avoided, requires further investigation. The crucial question is how many category-preserving derivational steps are allowed. Apparently, it is possible to attach two or even three category-preserving suffixes to a stem, e.g. *burschen<sub>N</sub>-schaft<sub>N</sub>-ler<sub>N</sub>*, *burschen<sub>N</sub>-schaft<sub>N</sub>-ler<sub>N</sub>-in<sub>N</sub>*. To get a complete picture of the restrictions at work, each word-class has to be examined individually.

<sup>16</sup> This seems to be true for deadjectival adverbs derived by *-(er)weise*, such as *möglicherweise*, *glücklicherweise*, *fatalerweise* which do not allow for attributive usage, whereas some denominal adverbs, e.g. *probeweise*, *schrittweise*, *versuchsweise* can function as adjectives (*die probeweise Durchführung*, *die schrittweise Annäherung*).

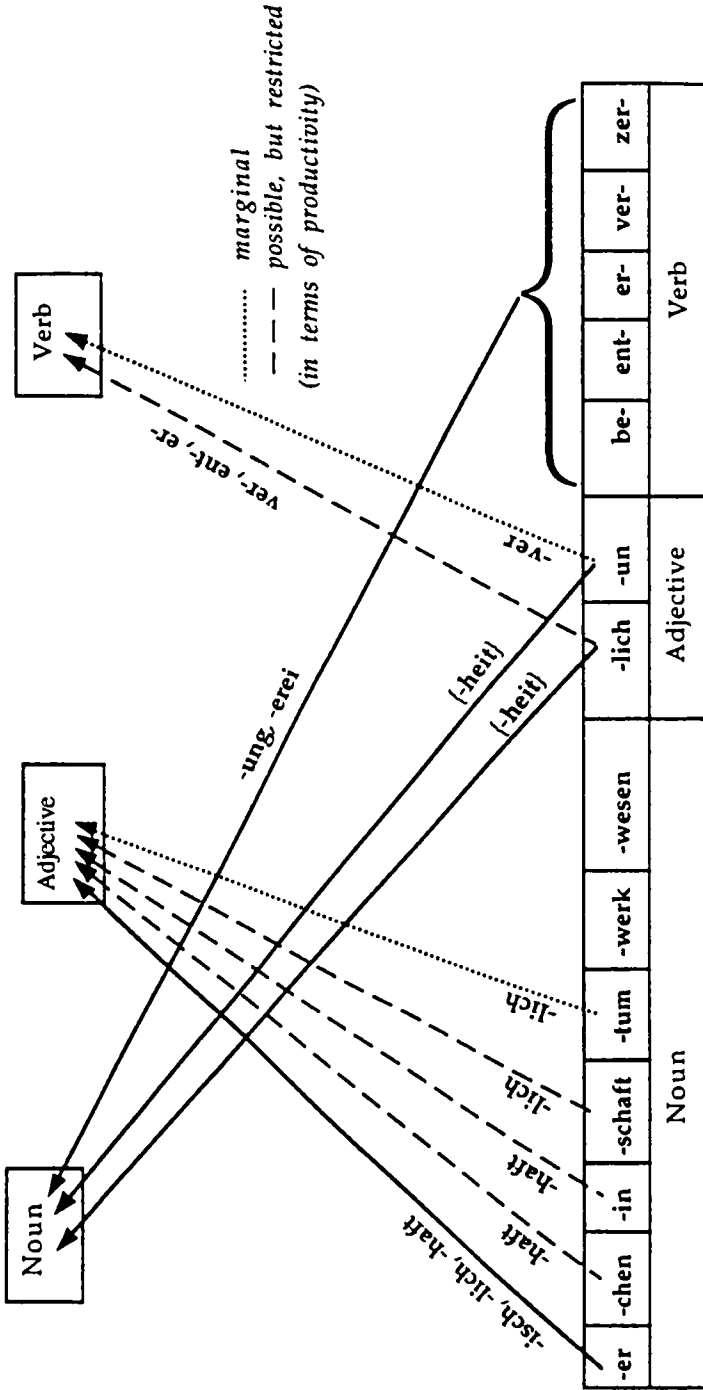


Fig. 3  
Category shifting derivation: input bases with category maintaining affixes

- (15) (a) verwandtschaftlich, partnerschaftlich, nachbarschaftlich  
 (b) ?präsidenschaftlich, ?vaterschaftlich, ?bürgertümlich,  
 ?beamtentümlich, ?christentümlich

Verbalization, on the other hand, is not possible. The attested exceptions concerning conversion and overt derivation are given in (16a) and (16b), respectively.<sup>17</sup>

- (16) (a) wirtschaften, fuhrwerken, bollwerken  
 (b) erkundschaften, vergesellschaften, bewirtschaften

#### 4. Conclusion

We have seen that the productivity of a word formation rule is restricted by the morphological complexity as well as by the syntactic category of the input base. In particular, the following constraints can be found:

- Derived nouns are most inert to undergo further derivation.
- Derived adjectives can be productively derived into nouns while verbalization is heavily restricted.
- Complex verbs, however, are ready to serve as inputs for further word formation rules

How are these findings to be interpreted? Figure 4 is a slightly modified adaptation of a scale where syntactic categories in German are ordered according to a parameter of nominality (cf. Eisenberg 1994, 73). This scale is independently motivated by the morphosyntactic properties of the forms in question.

<sup>17</sup> There is a systematic exception to the non-derivability of the nouns in question. Nouns containing the category-preserving suffixes *-tum* or *-schaft* can be derived by the verbal suffix *-(e)ln* which is the only productive verbal suffix in German (e.g. *altertümeln*, *deuschtümeln*, *gewerkschafteln*, *wissenschafteln*). These coinages are slightly facetious but interpretable.

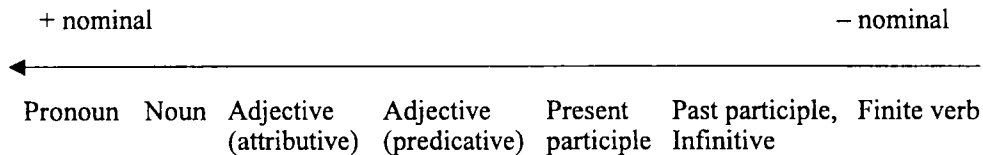


Fig. 4

Syntactic categories in German ordered on a categorial scale

The thing to notice is that category shifts usually follow a “funnel direction” running from verbs to nouns. To put it in J.R. Ross’ (1972) terms: Endstation Hauptwort! This can be shown for the different types of category shifts I have discussed so far.

**1. Conversions:** Affixless category shifts run unrestrictedly from verbs to nouns. Participles can be shifted into adjectives and adjectives can be shifted into nouns. The opposite direction from nouns to verbs is heavily restricted. Affixless shifts from nouns and adjectives to verbs are idiosyncratic in meaning and often considered odd. Shifts from nouns to adjectives are not possible at all.

**2. Category shifts operating on non-derived inputs:** Here, derivations may run the ‘wrong funnel direction’. Nouns may be shifted into adjectives and adjectives into verbs by several productive derivational affixes. Even nouns can be verbalized quite productively by prefixation. Thus, it seems that category shifts can run the wrong direction on two conditions: Firstly, the category shift has to be triggered by an overt derivational affix and secondly the input base has to be morphologically simple.

**3. Category shifts operating on derived inputs:** If derived words form the inputs for word formation rules, the natural funnel direction is maintained: Complex verbs can be shifted into adjectives and complex adjectives can be shifted into nouns. In contrast, the opposite direction is hardly possible.

My findings support Hopper and Thompson’s (1984) observation that morphological relations between nouns and verbs tends to be asymmetrical. Whereas all languages seem to be equipped with tools for nominalization, verbalizing morphology is often scarce (see also Szymanek 1993). Whether the funnel direction as proved for German represents a universal tendency, remains an open question.



Furthermore, it has been shown that word formation rules are sensitive to internal morphological structure. Many restrictions, it is true, can be explained in terms of semantics and phonology. However, there seem to be cases where the mere property of being a morphologically complex word affects the productivity of a given word formation rule.

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## ON MORPHOLOGICAL ENTITIES AND THE COPY PRINCIPLE\*

BERNARD FRADIN

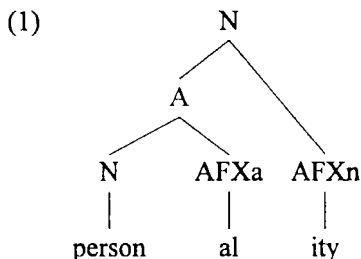
### 1. Introduction

Anyone who admits that there is some regularity, however minimal, in morphological phenomena will be led to postulate two kinds of entities, namely rules and objects to which these rules apply. Until recently, under continuing influence of structuralism, morphological rules were expressed as mere affixation rules whose job was to concatenate morphemes. For our purposes, suffice it to say that this conception of morphology embodies the following assumptions:

(I) **Morphemes are true signs**, which means that the relation between sound and meaning they present is direct, strictly arbitrary, and one-to-one. By definition, morphemes are the minimal linguistic signs. According to this conception, two main varieties of morphemes can be distinguished: lexical morphemes, which are listed as roots in the lexicon, and grammatical and/or semantic morphemes, which show up in a wide range of forms (e.g. affixes, apophony, stress shifts, etc.).

(II) **Morphological rules combine morphemes to build complex lexical entities**. According to the Item and Arrangement approach underlying this combinatory morphology, every complex lexical item must be broken down exhaustively into morphemes (that is without rest). As a consequence, configurational representations such as tree diagrams of the kind shown in (1) are appropriate for representing the complexity of any lexical item:

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For over fifteen years, in-depth criticisms have been raised against this view of morphology both on an empirical and a theoretical level. Works by Matthews, Aronoff, Anderson, Beard, Hoeksema, Janda, Joseph, Stump, Zwicky, to mention just a few, have shown, convincingly in my opinion, that a combinatory approach to morphology suffers from serious drawbacks and cannot account for all prosodically parametrized morphological phenomena.<sup>1</sup> At a formal level, it can also be shown that a system consisting of context-free rules coupled with subcategorization rules as in Selkirk (1982) is an unsuitable tool for handling derivational phenomena (cf. Fradin 1993, 5.2), to say nothing of inflectional ones (cf. Stump 1992), although it was devised precisely with this aim in mind. The solution toward which most of these works converge is to shift from an Item and Arrangement (ITA) approach to a Word or, more appropriately, to a Lexeme and Paradigm (LEP) approach. The picture which emerges is that morpheme-based morphology has to be replaced by lexeme-based morphology.<sup>2</sup>

In its strongest version, lexeme-based morphology makes the following claims:

**(I) Lexemes are the only true signs.** They are the only entities made of a phonetic segment tied in a regular way to a stable interpretation. The sound/meaning relation they offer is arbitrary, direct and one-to-one.

**(II) The so-called morphemes (or affixes) of the ITA approach are not signs but mere exponents of morphosyntactic properties.** They do not show the one-to-one sound/meaning correspondence which characterizes true signs. To phrase the matter another way, they are no more than the phonetic reali-

<sup>1</sup> Arabic broken plural is an example of such a phenomenon, cf. McCarthy-Prince (1990) who provided further examples of these phenomena.

<sup>2</sup> From now on, for the minimal free entity, or, in a wording more appropriate to syntax, for the minimal projection in the X-bar system, instead of "word" I will speak of "lexeme" according to the distinction made by Matthews (1974). See also Aronoff (1994).

sations of grammatical or semantic features attached to lexemes by syntactic or morphological rules.

(III) Consequently, and leaving aside the account of clitics, **lexemes are the only objects to which morphological rules apply**. These rules have to be conceived as functions taking lexemes as arguments and again giving lexemes as values, as schematized in (2).

$$(2) \text{ FCT}_{\text{morph}}: \text{LXM} \rightarrow \text{LXM}$$

The important point to be noted for our purposes is that, beyond their divergence, the two approaches to morphology agree on the fact that lexemes must be considered as true signs.

My first concern in this paper will be to unfold the theoretical and descriptive consequences which follow from the mere fact of “being a true sign”. I will claim that the way a lexeme conveys lexical information makes any ITA-like approach doomed to failure. If lexemes are what they are, namely true lexical signs, we cannot choose anything but a lexeme-based morphology. For the sake of argument, in this paper I will adopt the point of view of a processual lexeme-based morphology, which is the most widespread view in the works criticizing the ITA approach.<sup>3</sup> My second concern will be to explore some practical consequences of this choice. More precisely, I will be interested in phenomena previously accounted for by the so-called Copy Principle in the works of Dell (1970) or Corbin (1987). These phenomena still beg for a solution within a lexematic framework insofar as the latter does not provide any structural analysis to which the Copy Principle could apply. My third and final concern will be to argue that the phenomena in question should take into account the paradigmatic dimension of language, an aspect not easily expressible in the current lexeme-based frameworks.

The paper is organized as follows. In the second section I will recall some of the main properties a lexeme is supposed to have and discuss their bearing upon theoretical as well as descriptive choices we have to make. In the third section, I will introduce the Copy Principle and related problems. The next

<sup>3</sup> The term “processual” refers to analyses where lexeme formation or inflectional phenomena are described in terms of processes instead of relations (as in ITA). It also implies a sequential account of morphological facts in contradistinction to a declarative one (cf. Zwicky 1992 for the relevance of these distinctions to morphology). I will not discuss these topics here nor the problems stemming from existing versions of processual lexeme-based morphology (e.g. Anderson’s; cf. Carstairs-McCarthy 1993 and Booij 1993 for some sound criticisms).

two sections will be devoted to revisiting the Copy Principle in a lexeme-based framework and discussing alternative proposals.<sup>4</sup> The final section will outline the role of paradigm for the derivational phenomena in question.

## 2. Some fundamental characteristics of lexemes

### 2.1. The global format

It is widely assumed that the representation of lexical items consists of at least three fields or rubrics:

- A phonological rubric (abbreviated as (F)) which provides the material form of the lexical sign.

- A semantic rubric (S), where the stabilized meaning associated with the phonological form in question is stored.

- A syntactic rubric (SX) which gives the syntactic category of the lexeme. Although much could be said about this topic, for the sake of simplicity I will assume that the category in question is chosen from the set {N, V, A, D} where "D" abbreviates "adverb".

In Fradin (1993), I argued that two more rubrics should be added to the three just mentioned, namely:

- A morphological rubric (abbreviated as (M)) which could contain at least idiosyncratic information relative to morphology: declension class, gender, etc.<sup>5</sup>

- A graphemic rubric (abbreviated as (G)). Roughly speaking, this rubric gives us the citational form of the lexeme in the writing system of the language in question. These pieces of information prove particularly interesting in languages such as Chinese or Japanese where the spelling is tied either to the meaning or to the pronunciation of the item (cf. Tamba 1986; more hints on these rubrics can be found in Fradin 1993, 5.3).

The examples (3) illustrate what the general format of lexemes looks like for English *book*, Russian *sluga* 'servant', and Hungarian *ház* 'house':

<sup>4</sup> A weak version of the lexeme-based morphology is possible. It differs from the strong version in claiming that derivational (but not grammatical) affixes are also true signs (cf. Fradin 1993 for an illustration). In this paper, I will confine myself to the strong version.

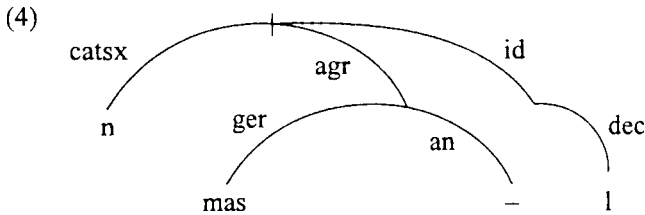
<sup>5</sup> The question of whether we need to postulate morphological categories distinct from syntactic ones will be left aside. This point is discussed in Fradin (1993, 213–22).

(3)	(G)	book#	(G)	служка#	(G)	ház#
	(F)	(bʊk)	(F)	(slug)	(F)	(hɑ:z)
	(SX)	CAT:N, GER:NEU	(SX)	CAT:N, GER:MAS, AN:+	(SX)	CAT:N
	(M)		(M)	DEC:1	(M)	VOC:a
	(S)	book'	(S)	servant'	(S)	house'

The symbol # indicates the citation form; CAT = syntactic category, GER = gender, MAS = masculine, NEU = neuter, DEC = declension, AN = animate, VOC = {a, o}.<sup>6</sup>

It should be kept in mind that not all rubrics have the same importance. The basic rubrics, without which no lexical sign would exist, are the phonological and the semantic ones.

Although conceptually morphological and syntactic rubrics have to be kept distinct, practically they may be subsumed under a single rubric. The reason for this stems from the fact that both have a feature-stored content and that acyclic graphs seem to be the most appropriate way of handling information expressed by features (cf. Smolka 1988; Renaud 1992). Moreover, these graphs allow a simple enough definition of the unification mechanisms we need to account for inheritance phenomena. Insofar as, very often, transmitting a syntactic feature will depend on morphological idiosyncratic information, it is technically more convenient to deal with one large graph than with several smaller ones scattered in two rubrics. Schema (4) illustrates this point:



where catsx = syntactic category, id = idiosyncratic features, dec = declension, an = animate, ger = gender, the rest as usual.

Graph (4) can be expressed equivalently in the form of feature-form (5) (for some discussion cf. Fradin 1993 and references therein):

<sup>6</sup> Before accusative or plural ending an epenthetic /a/ or /o/ can appear. Inasmuch as this vowel cannot be predicted cf. *házat* 'house-acc' vs *barátot* 'friend-acc' vs *ételt* 'meal-acc' from *ház*, *barát* and *étel*, it has to be specified in the lexical entry of the lexeme (as a value of the feature VOC in the notation proposed).

(5) (catsx:n  $\cap$  agr:(ger:mas  $\cap$  an:-)  $\cap$  id:dec:1)

From now on, I will store all information expressible by features under the (SX) rubric in keeping with (5). However, phonological, graphemic or semantic information, which is not expressed through feature networks such as (4), is kept under separate rubrics.

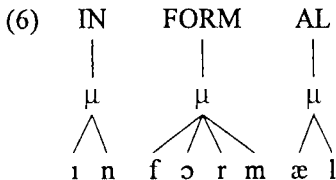
## 2.2. Lexical sign

Keeping in mind the general format of the lexeme I have just sketched out, we can return to the sign nature of the lexeme. As Beard (1988) put it, what characterizes a lexical sign is that sound and meaning are mutually implied. You need both in order to have a lexical sign. Two points have to be stressed in relation to this:

(a) Sound and meaning are independent, or, more appropriately, each is incommensurable with the other. There is no link between them, because they belong to different orders of reality. Rules dealing with sounds cannot yield changes in the order of meaning because they are sensitive only to sound representations and vice versa, meaning rules operate only on meaning representations.

(b) Sound and meaning are simultaneously present. This means that they are both accessible at the same time to morphological rules or mechanism.

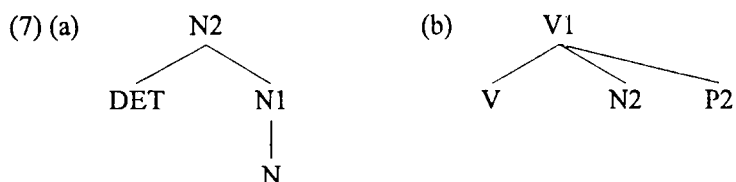
I will briefly review some of the consequences implied by these two points. From (a) we can establish that we never have representations like (1) where a syntactic symbol dominates a phonological form. More generally, consider (6), inspired by Anderson (1992, 52), which portrays quite accurately, in my view, what a morpheme is according to the combinatory morphology approach:



The upper row gives the interpretational units and the lower one the phonological segments they correspond to. In the middle, the morphemes as mediators link together both of the rows. Not infrequently the literature offers representations of this kind but without the morpheme row (Dell 1973, 40;



Pollock 1989, 394). The problem we are facing with the conception underlying (6) can be worded as follows: What do the lines connecting the meaning side with the sound side mean (through the medium of the morpheme row or without it)? What do they say about the relationship between sound and meaning? It is crucial to note that these lines do not serve the same purpose as in the classical syntactic representations such as (7) (which are also configurational in essence):



In (7), the link materialized by the lines between for example, N2, N1 and N or V1 and P2, are guaranteed, so to speak, by the rules of grammar (in this case context-free production rules). But no equivalent rules exist in the case of (6). And no such rule can exist because the connection between sound and meaning rests on their mutual independence. This connection means nothing but the simultaneity of their presence in the syntagmatic chain. But this simultaneity should not be expressed by any link as in (6), insofar as such a link would attest that meaning and sound both belong to the same space and, consequently, are of the same nature, which is blatantly wrong. What has just been said about sound and meaning equally applies to other informational components of the lexeme. For this reason, lexical pieces of information are stocked under separate rubrics as in (3). For sure, the number of these rubrics as well as their content are open to discussion, but what is beyond dispute is the fact that after having been established, they constitute each an independent stratum.<sup>7</sup> As a conclusion, the sign nature of lexeme forces us to give up configurational representations such as (6) or (1).

The argument I have just put forward against (6) could be disputed on the basis of well-known rules such as (8), where a non-terminal symbol is rewritten as a terminal symbol standing for a phonological representation:

<sup>7</sup> This point of view is found also in the conception of linguistic sign promoted by recent linguistic theories such as Unification Categorical Grammar (Zeevat *et al.* 1986; Bashung 1991) or Head Driven Phrase Structure Grammar (Pollard–Sag 1988).

- (8)  $N_{\text{inan}} \rightarrow$  tree, bottle, table, etc.  
 $V_{\text{trans}} \rightarrow$  give, move, chase, etc.

Representations (6) or (1) are given strong formal support by rules of this kind. Without stressing the inadequacy of rules (8) to account for lexical classes (cf. Chomsky 1965; Gazdar *et al.* 1988), suffice it to note that they introduce an unjustified discrimination between lexical pieces of information. Take the example of *donner*, the French equivalent of *give*. According to (8), the syntactical information V dominates the phonological information (dɔn). But the verb *donner* also conveys morphological information (it belongs to the first conjugation) and semantic information (it is transitive). This information is necessary for some morphological rules and has (partly or totally) to be kept in derivations. (cf. *redonner*, *donneur*, *donateur*, *don* . . .), as is the phonological information. Logically, the V node should also dominate this information without restricting itself to the phonological information. In fact, it does not show the incompleteness and the inconsistency of representations (8). Correlatively, promoting the syntactic information as the dominant node can be explained only by the fact that these representations adopt a syntactic model. From the strict lexical point of view, syntactic information has no priority over the other kind of information.

Let us see now what hinges on point (b). This point functions as the complement of point (a). It aims at conciliating two opposed facts, namely: (i) the fact that the content of each rubric is incommensurate with the content of the other; (ii) the well-known fact that changes in meaning may often be correlated with changes in the phonetic shape of linguistic expressions and conversely; or, more generally, that information from one rubric has a bearing on changes that could take place in another rubric. Frequently, this correlation shows itself in the writing of phonological rules, as in (9a) or (9b) for example:

- (9) (a)  $C \# [-\text{subj}, +\text{present}, +\text{sg}, +3\text{conj}]$  (Tranel 1981, 249)  
 $\quad 1 \qquad \qquad \qquad 2 \qquad \qquad \qquad \Rightarrow \emptyset \quad 2$
- (b)  $Q \rightarrow a$  in env. [Class A] + \_\_\_ Sg. Gen. (Halle 1992, 40)

Let us focus the discussion on case (9a). In this rule, the deletion of certain final consonants (in French verbs) is conditioned by the tense value of the verb and by its conjugation class. But this correlation, indisputable though it is, is not adequately stated in (9a) because this formulation mixes a phonological representation, namely /C/, with a semantic one (the features 'subj, present, sg').

Since the domain of phonological rules involves only phonological entities such as phonological features, and so on, semantic features are out of reach. To be stated properly, the phenomenon in question has to be described as a local lexematic change from (10) to (11) (the phonological representation given in (F) is always in brackets):

(10) (F) (... C)  
 (SX) catsx:v  $\cap$  tense:pst  $\cap$  mode:ind  $\cap$  nb:sg  
 (M) id:conj:3

(11) (F) (... )  
 (SX) catsx:v  $\cap$  tense:pst  $\cap$  mode:ind  $\cap$  nb:sg  
 (M) id:conj:3

The final consonantal segment in the phonological rubric may be deleted providing the verb shows the features listed in (10). As such, this deletion is accomplished by a phonological operation whose scope is limited to the (F) rubric. The scanning of the other rubrics involved in the phenomenon is devoted to a rule of larger extension, to be precise a function whose domain is the rubrics (F), (SX) and (M). (Detailed examples of this type of rules are given in Fradin 1993.)

### 3. The two original versions

It is time now to turn our attention to the Copy Principle problem. There are two different versions of this principle. The first one, which can be traced back to Dell (1970), is expressed as (12) by Corbin (1987, 136):<sup>8</sup>

(12) COPY PRINCIPLE (basic version; abbreviated in Copy Principle 1)  
 Let X be a base belonging to the lexical category C, let Y and Z be two words derived from X both belonging to the lexical category C' (where  $C \neq C'$ ), and showing the following structure (p and s respectively denote a prefix and a suffix):

$$Y = [[X]_C (s)_{af}]_{C'}$$

$$Z = [[[p]_{af} [X]_C]_{C'} (s)_{af}]_{C'}$$

Then the superficial string Xs contained in Z is strictly identical to Y.

<sup>8</sup> F. Dell pointed out to me a potential problem with the formulation (12) (translated from Corbin 1987), namely the fact that the strict identity mentioned in (12) clearly requires that Z and Y partake of the same structural analysis, while the term "string" (Fr. "suite") involves no analysis at all.

Originally, this principle was introduced to ensure that derivational prefixation and suffixation will use the same stem when applying successively to a lexeme. For example, it aims at guaranteeing that the prefixed nouns in (14) show the same alternation pattern as the basic or suffixed forms listed in (13):

- |          |              |                |                          |
|----------|--------------|----------------|--------------------------|
| (13) (a) | approuver    | approbation    | 'approve of/approval'    |
| (b)      | faire        | façon          | 'make/making-up'         |
| (c)      | construire   | construction   | 'build/building'         |
| (14) (a) | désapprouver | désapprobation | 'disapprove/disapproval' |
| (b)      | contrefaire  | contrefaçon    | 'forge/forgery'          |
| (c)      | reconstruire | reconstruction | 'rebuild/rebuilding'     |

If *approbation* and *désapprobation* are respectively analysed as (15) and (16):

$$(15) \quad Y = [[\text{approb}]_V (\text{ation})_{af}]_N$$

$$(16) \quad Z = [[[dés]_{af} [\text{approb}]_V ]_V (\text{ation})_{af}]_N$$

Copy Principle 1 says that the underlined part of (16) has to be reanalysed as (15), which gives, presumably, the final analysis (17) for *désapprobation*:

$$(17) \quad Z = [(dés)_{af} [[\text{approb}]_V (\text{ation})_{af}]_N]_N$$

In short, Copy Principle 1 deals with paradigmatic effects, namely the fact that derivation mechanisms tend to use the same stem whether the derived lexeme is prefixed or suffixed. In contrast, the extended version of the Copy Principle deals with mismatches between form and meaning occurring inside a single lexeme. This version has been devised by D. Corbin essentially to cope with the facts regarding the prefixation of *anti-*, *trans-*, *intra-*, *inter-*, etc. in French.

- (18) COPY PRINCIPLE (extended version—Copy Principle 2; cf. Corbin 1987, 654–55)

Let X be a base belonging to the lexical category C, let Y and W be two words derived from X both belonging to the lexical categories C' and C\* (where C ≠ C' ≠ C\*), and showing the following structure (with s ≠ s'):

$$Y = [[X]_C (s)_{af}]_{C'}$$

$$W = [[X]_C (s')_{af}]_{C^*}$$

If a derived word Z is formed by a WFR such that

$$Z = [(p)_{af} [X]_C ]_{C'} \quad \text{or} \quad Z = [(p)_{af} [W]_{C'} ]_{C'}$$

then replace Z by Z' such that  $Z' = [(p)_{af} [Y]_{C'} ]_{C'}$

Instead of dwelling on the formulation of this extended version, which is fairly complicated, I will illustrate the way it functions examining some examples. What we have to explain is the fact that adjectives like *transocéanien* or *antidépresseur* have—roughly—the attested meaning ‘which stands beyond ocean’ and ‘against nervous breakdown’ respectively. However, with regard to the first example, we see that this result can be achieved neither by suffixing *-ien* to the noun <sup>o</sup>*transocéan* because we would get the meaning ‘relative to transocean’ or the predictable meaning ‘which sails across the ocean’<sup>9</sup> (cf. Corbin 1989), both possible though non-attested, nor by prefixing *trans-* to the noun *océanien* because as a common noun *océanien* can only be thought of as the name of a fictitious geological era (cf.  *cambrien*, *dévonien*), which gives the predicted meaning “which goes across the oceanic period”, a result radically different from that sought. The extended Copy Principle is supposed to offer an escape hatch insofar as it allows us to analyse this example as (19):

- (19) X = océan  
 Y = [[océan]<sub>N</sub> (ien)<sub>af</sub> ]<sub>A</sub>  
 Z = [(trans)<sub>af</sub> [océan]<sub>N</sub> ]<sub>A</sub>  
 Z' = [(trans)<sub>af</sub> [océan]<sub>N</sub> (ien)<sub>af</sub> ]<sub>A</sub> ]<sub>A</sub>

The underlining corresponds to Y, which replaces the noun *océan* in Z. The derivation of *antidépresseur* illustrates the second case of (18) when Z already contains a derived lexeme W:

- (20) X = déprim (suppletive variant: dépress)  
 Y = [[dépress]<sub>V</sub> (eur)<sub>af</sub> ]<sub>A</sub>  
 W = [[dépress]<sub>V</sub> (ion)<sub>af</sub> ]<sub>N</sub>  
 Z = [(anti)<sub>af</sub> [dépression]<sub>N</sub> ]<sub>A</sub>  
 Z' = [(anti)<sub>af</sub> [dépress]<sub>V</sub> (eur)<sub>af</sub> ]<sub>A</sub> ]<sub>A</sub>

<sup>9</sup> I adopt the use of “<sup>o</sup>” to note possible but unattested lexemes from Danielle Corbin.

In both cases, the scope of Copy Principle 2 is to make possible the matching of a meaning, which corresponds to the structure Z, with the actual surface form, which corresponds to Z'. As Corbin (1989) clearly states, the Principle is required for cases where the final suffix does not bring any substantial meaning by itself but functions as a mere "paradigmatic integrator" (*intégrateur paradigmatique*). The instruction is: avoid forming denominal adjectives lacking the adjective ending as long as the adjective exists. Instead use this adjective while keeping the semantic part untouched. For example, in spite of its form, semantically *antidépresseur* relates the meaning of *anti-* with the meaning of *dépression*, and this is so because *dépresseur* is the adjective most closely related to *dépression*. If there is no such adjective, the derived adjective keeps a noun-like form. This is what happens in (21):

(21)	Adjective	Example	Gloss
	antibrouillard	phare ~	'fog lamp'
	antichar	engin ~	'anti-tank device'
	antibuée	bombe ~	'anti-mist spray'
	transmanche	tunnel ~	'the Channel tunnel'
	transalaska	route ~	'road crossing Alaska'

In this case Copy Principle 2 does not apply. For this reason, examples (21) differentiate clearly from those in (22), which motivated the extension of the Copy Principle:

(22)	Adjective	Gloss	Base-noun
(a)	antialcoolique	'anti-alcoholism'	alcoolisme
	anticyclique	'against cycles'	cycle
	antigaullien	'against de Gaulle'	de Gaulle
	antipatriotique	'antipatriotic'	patrie
	antivenimeux	'anti-venom'	venin
(b)	transalpin	'crossing the Alps'	Alpes
	transcanadien	'crossing Canada'	Canada
	transfrontalier	'crossing the border'	frontière
	transculturel	'crossing cultures'	culture

(c)	extraparlémentaire	'extra-parliamentary'	parlement
	extracellulaire	'outside cells'	cellule
	extrarénal	'outside kidneys'	reins
	extrascolaire	'extra-academic'	école
(d)	intragalactique	'intra-galactic'	galaxie
	intracellulaire	'inside cell'	cellule
	intracontinental	'intra-continental'	continent
(e)	intergalactique	'between galaxies'	galaxie
	interaméricain	'between Americas'	Amérique
	interconfessionnel	'between denominations'	confession
	interbancaire	'between banks'	banque
	intereuropéen	'between European countries'	Europe
(f)	périurbain	'surrounding town'	urb-/ville
	péribuccal	'surrounding mouth'	bucc-/bouche
	périutérin	'surrounding womb'	utérus
(g)	sous-alaire	'under wing'	aile
	sous-glaciaire	'under glacier'	glacier
	sous-fluvial	'under river'	fleuve

As expected, examples illustrating Copy Principle 2 can be found in other languages than French. Some are given for Italian and Russian in (23), (24) below:

(23)	Adjective	Gloss	Base-noun
	antifamiliare	'anti-family'	famiglia
	anticellulite	'anti cellulitis'	cellulite
	antidivorzistico	'anti-divorce'	divorzio
	antifecondativo	'against fecondation'	fecondazione
	antigorbacioviano	'against Gorbachev'	Gorbaciov

(cf. Iacobini 1991, 192-3)

(24)	Adjective	Gloss	Base-noun
	protivotankovyj	'anti-tank'	tank
	protivozakonnyj	'against the law'	zakon
	protivoximičeskij	'anti-chemical gas'	ximija
	protivopomexovyj	'anti-interference'	pomexa
	antiobščestvennyj	'anti-society'	obščestvo
	antipravitel'stvennyj	'against government'	pravitel'stvo

What must we think of the Copy Principle as a grammatical device? I will answer this question by three remarks.

1) First of all, I will just mention here a few problems the Copy Principle raises without trying to address each of them in detail. The interpretation of the instruction "replace" in (18) is far from clear. Does it mean that you have to replace a subpart of a tree representation by another imported from outside? Normally, this kind of operation is precluded unless you adopt a tree grammar formalism, like Tree Adjoining Grammar for example (cf. Joshi 1985). But in this case, the operation is formally well defined and very restricted. Would it mean instead that the replacing involves surface strings only? If so, it would be a rather weird mechanism of a kind never used elsewhere in grammar to my knowledge. The same remarks hold as well for the "strict identity" relation assigned by the basic version of the principle in (12).

2) The extended Copy Principle must not be used blindly, otherwise inadequate descriptions could result. First, as Corbin (1989) herself pointed out, doublets like those in (25) show that Copy Principle 2 does not apply all the time:

(25)	Adjective 1	Adjective 2	Gloss
	anticorrosion	anticorrosif	'anticorrosive'
	antimafia	antimafieux	'against Mafia'
	antimigraine	antimigraineux	'against headache'
	antipellicules	antipelliculaire	'anti-dandruff'
	antithéâtre	antithéâtral	'anti-theatre'
	transocéan	transocéanique	'crossing the ocean'

Second, and more annoying, even if the basic adjective exists, it happens that it is not used in the formation of the *anti-* adjective, for example (26):



(26) <i>Anti-Adjective</i>	<i>Expected Adjective</i>	<i>Gloss</i>
antiart	<sup>o</sup> antiartistique	'anti-art'
antiflocons	<sup>o</sup> antifloconneux	'against snowflakes'
antihausse	<sup>o</sup> antihaussier	'hold-the-line'
antisecte	<sup>o</sup> antisectaie	'against sects'
antisystème	<sup>o</sup> antisystémique	'anti-system'

These facts indicate that the data are more tricky than expected and, consequently, that a mechanical application of Copy Principle 2 cannot adequately describe the existing situation.

3) As the crucial use of labelled tree structures attests, the Copy Principle, in both versions, is stated within an Item and Arrangement framework. It rests on a configurational conception of morphology which is no longer available in the lexeme-based approach defended here. So we have to find another way of accounting for the phenomena shown in (13)/(14) and (22).

All these conclusions support the view that the Copy Principle is in need of revision, even though we agree that the basic intuitions it is intended to express are sound.

#### 4. Revisiting the basic version

In essence, the Copy Principle has a harmonizing effect insofar as it forces more complex lexemes to fit in the paradigm of simpler ones (within a family of lexemes). However, as the above examples suggest, each version of the Principle deals with a specific kind of phenomena. This is the reason why a lexeme-based approach can account for the facts discussed so far by two completely different mechanisms. Let us start by re-examining the basic version of the Copy Principle.

The insight of Copy Principle 1 can be recast as follows: the derived noun corresponding to *désapprouver* has to be formed upon the same stem as the derived noun formed from *approuver*, just because *désapprouver* is a prefixed and more complex lexeme than *approuver* (which is used here as a base). This can be figured through paradigmatic equations (27):

$$(27) \frac{\text{approuver}}{\text{approbation}} = \frac{\text{désapprouver}}{\text{désapprobation}}$$

However, the fact that paradigm (27) can be extended into (28) shows that the formulation given in (12) is not general enough:

$$(28) \frac{\text{approuver}}{\text{approbation}} = \frac{\text{désapprouver}}{\text{désapprobation}} = \frac{\text{réprouver}}{\text{réprobation}}$$

It cannot handle the pair *réprouver/réprobation* because *réprouver* is not a verb formed by prefixation upon *approuver* as was *désapprouver*. Yet we would like to say that the same alternation phenomenon occurs throughout paradigm (28). Contrary to what is suggested by the basic version, the whole story boils down to choosing the right stem from a set of several presented by a lexeme. This holds for each of the pairs mentioned in (28), as shown by the complementary paradigms (29) and (30):

$$(29) \frac{\text{approuver}}{* \text{approbation}} = \frac{\text{désapprouver}}{* \text{désapprobation}} = \frac{\text{réprouver}}{* \text{réprobation}}$$

$$(30) \frac{* \text{approber}}{\text{approbation}} = \frac{* \text{désapprober}}{\text{désapprobation}} = \frac{* \text{réprober}}{\text{réprobation}}$$

It is worth noting that Copy Principle 1 does not say anything which helps to choose the right stem for cases (28). This Principle applies after the mechanism which achieves these choices has applied, or independently of it. This view presupposes that Copy Principle 1 is still needed after the stems have been appropriately chosen. But actually, this view proves to be wrong as we shall see now.

Suppose that the lexical entry for the verb *approuver* looks like (31):

(31)	(G)	approuver#		
	(F)	(apruv)	(aproub)	
	(SX)	catsx:v $\cap$ conj:l	res:n	
	(M)			
	(S)	approve'		
		I		II

Column II gives the suppletive stem of the lexeme *approuver*. By convention, all the rubrics left unspecified therein have the same content as the corresponding rubrics in the first column. The two specified rubrics, namely (F) and (SX), provide respectively the phonological form of the suppletive stem and the piece of information that this stem is reserved for noun formation (which is noted by the feature (res:n)).

In a lexeme-based framework, the coining of a derived noun such as *approbation*, *réprobation* will be the responsibility of a specific rule that I will call  $N_{\text{abst-1}}$  (Abstract Noun 1). This rule involves the morphological operations listed in (32):

- (32)  $N_{\text{abst-1}}$  (Abstract Noun 1)  
 (a)  $\text{ion}_F$  suffixes (jɔ̃) to rubric (F)  
 (b) **ion'** applies function **ion'** to rubric (S)  
 (c)  $V \rightarrow N$  assigns feature (catsx:n) to rubric (SX)

Broadly speaking, the function  $\text{ion}_F$  suffixes (jɔ̃) to stems specifically marked as supine stems, which are characterized by a final "t" in the spelling (pronounced [s] before the suffix *-ion*). The supine stem can show a thematic vowel viz. *conserv-a-t*, *répét-i-t*, or can be athematic viz. *absorpt*, *contradict* (cf. Plénat 1988, 110).<sup>10</sup> The function (32) must also be made sensitive to the feature (res:n). If this feature appears within the (SX) rubric of a stem, then this stem must be chosen as the one to which the ending must be suffixed. An informal formulation of the functioning of  $\text{ion}_F$  is given in (37) (for cognate but more precise formulations cf. Fradin 1993, 438):

- (33)  $\text{ion}_F$  Domain : (F), (SX)  
 Change : (sfx•(sjɔ̃)•(F))  
 Condition : if there is a LXM whose (SX) contains (res:n),  
 apply sfx to the (F) of this LXM; if not, apply sfx to the (F)  
 of the LXM whose (SX) contains the feature (catsx:v).

On the other hand, the coining of lexemes prefixed with *dé-* will necessitate several morphological rules, for these lexemes present several clearly differentiated meanings which cannot be subsumed under a single semantic function. By and large, three main groupings can be distinguished (cf. Corbin 1987, 63):

- (34) Meaning : "cancel the result of the action V"  
 Category change :  $V \rightarrow V$   
 désasservir      décroître      décourager      déballer  
 décontaminer    détacher      déboîter      déclouer  
 déverrouiller    dépêtrer      débarquer

<sup>10</sup> The root is printed in bold. On the problem of how to demarcate between roots and stems, cf. Aronoff (1994, ch.2) and Huot (1995).

The V' abbreviates the meaning of the base verb. For example, *verrouiller* 'to lock', *déverrouiller* 'to unlock'. Except for the left column, the base verb is a prefixed verb e.g. *attacher/détacher* 'to fasten/to unfasten', *emboîter/déboîter* 'to fit together/to dislodge', *emballer/déballer* 'to wrap/to unwrap'.

(35) Meaning : "remove N', take off, strip off N' (from Y)"

*Category change* : N → V

découronner	désailer
démailloter	déviander
déplâtrer	dénerver

There is no base verb for the examples of the second column: *désailer* 'tear out wings', *dénerver* 'tear out nerves', and those in the first column sometimes have a prefix e.g. *emmailloter/démailloter* 'to wrap up/to unwrap', sometimes do not have one: *couronner/découronner* 'to crown/to dethrone'.

(36) Meaning : "action opposing to action N"

*Category change* : N → N

déglaciation	'melting of the ice'
dénatalité	'decrease in the birth rate'
désescalade	'de-escalation'

The verb *désapprouver* pertains to case (34). More specifically, it belongs to the paradigm *déverrouiller, déasservir, décontaminer* . . . I will dub UNDO<sub>1</sub> the morphological rule whose task is to account for case (34). On the model of (32), this rule involves the following operations:

(37) UNDO<sub>1</sub>

(a)	dé <sub>F</sub>	prefixes (de) or (dez) to rubric (F)
(b)	Dé1'	applies function Dé1' to rubric (S)
(c)	V → V	assigns feature (catsx:v) to rubric (SX)

As suggested, I suppose that the function dé<sub>F</sub> in (37a) copes with the allo-morphic alternations illustrated in (38):

(38) Before consonant (de)		Before vowel (dez)
défroisser	'to smooth out'	désarrimer 'to shift'
décontaminer	'to decontaminate'	désembuer 'to demist'
dégeler	'to thaw'	désarmer 'to disarm'

With these rules in mind, we are going to examine how to derive the lexemes of paradigm (28). After the application of the rule UNDO<sub>1</sub> to (31), we obtain (39):

(39) (G)	désapprouver#	
(F)	(dezapruv)	(dezapɔb)
(SX)	catsx:v $\cap$ conj:l	catsx:v $\cap$ res:n
(M)		
(S)	dis'•approve'	dis'•approve'
	I	II

The changes have been made according to the instructions mentioned in (37). It is worth noting that these operations apply to each of the stems unless otherwise specified by the operation. This is precisely what happens when one applies the rule Abstract noun to the lexeme *approuver*. Because of its sensitivity to the feature (res:n), phonological operation (37a) selects the second stem of the lexeme *approuver* and gives (40) as result:

(40) (G)	approbation#
(F)	(apɔbasjɔ̃)
(SX)	res:n $\cap$ catsx:n
(M)	
(S)	ion'•approve'

This condition works as well if the rule is applied to *désapprouver*. From (39), we get (41) as output:

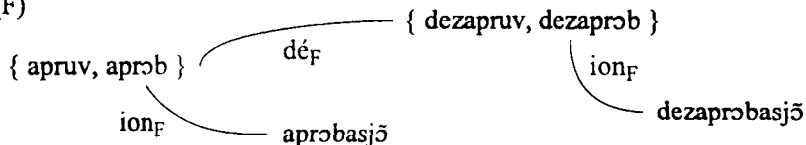
(41) (G)	désapprobation#
(F)	(dezapɔbasjɔ̃)
(SX)	catsx:n $\cap$ res:n
(M)	
(S)	ion'•(dis'•approve')

By the same means, we can obtain all the nouns of paradigm (28) and none of (29) as expected. A similar device can be used to bar the ungrammatical forms \**approber*, \**désapprober* and \**réprober* listed in (30). Along this line, the lexical entry for *réprouver* would be on the model of (39). This analysis captures two facts: first, that *réprouver* and *réprobation* cannot be viewed as complex lexemes formed out of the prefix *re-* plus the verb *prouver*; second, that these lexemes are nevertheless regarded, somehow analogically, as belonging to the same paradigm as *éprouver*, *approuver*, *désapprover* cf. (28). As previously, for this solution to work it is enough to add the feature (res:n), located inside the (SX) rubric of the second stem in (39), as a triggering condition upon the functions which add inflectional verbal endings.

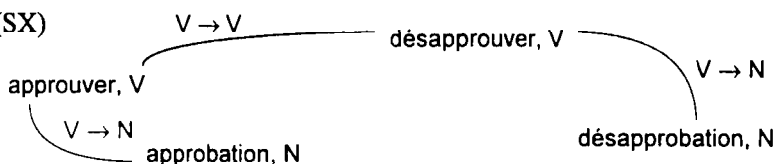
As we see, as soon as the stem alternation problem is solved, there is no room whatsoever for Copy Principle 1. This indicates that we can get rid of this basic version with no detrimental effects. More generally, this shows that the Copy Principle 1 was nothing but an artefact of the ITA framework used by its proponents.

I have summed up the derivations of the lexical family *approuver/désapprover* proposed here in the diagrams (42) to (44), which are self explanatory:

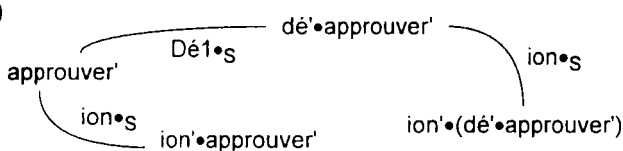
## (42) Rubric (F)



## (43) Rubric (SX)



## (44) Rubric (S)



## 5. Revisiting the extended version

## 5.1. Formulating the problem

Let us now turn our attention to Copy Principle 2. The discussion will focus on the complex lexemes involving the prefix *anti-*. As is often the case, this prefix has several uses which each correspond to a particular morphological rule in a lexeme-based approach. If we leave aside the *antichambre* 'antechamber' type, which does not seem to be productive (cf. Rey 1968, 44) and is related to the Latin *ante* whose form as a prefix is *anti-* (cf. Greek prefix *anti-*), the following uses have been distinguished by Corbin (1987, 652):<sup>11</sup>

- (45) *Meaning*: 'which shows properties which are opposite to those of N'  
*Category change*:  $\rightarrow N$   
 antihéros 'anti-hero'  
 antimatière 'antimatter'  
 antiproton 'anti-proton'
- (46) *Meaning*: 'contrary to what is A', combating what is A'  
*Category change*:  $A \rightarrow A$   
 antidémocrate 'fighting against what is democratic'  
 antidérapant 'non-skid, non-slip'  
 antimoral 'contrary to what is moral'
- (47) *Meaning*: 'which opposes (the effects of) N', fighting N'  
*Category change*:  $N \rightarrow A$
- (a) anticyclique 'which prevents cycles'  
 antidépresseur 'which fights mental breakdown [dépression]'  
 antigaullien 'which opposes de Gaulle'  
 antivariolique 'which fights smallpox [variole]'  
 antivenimeux 'which opposes the effects of venom'
- (b) antichar 'antitank'  
 anticinéma 'against the developing of cinema'  
 antigel 'antifreeze'  
 antiparasite 'anti-interference'  
 antireflet 'antiflare'

<sup>11</sup> Durand (1982, 180–6) does not clearly distinguish meaning (46). Rey's semantic analysis of *anti-* is couched in semiotic terms and contains some perspicacious remarks (cf. Rey 1968, 46–54).

As we have seen before, the extended Copy Principle was devised especially to account for examples (47a). Let us call OPPOSIT the morphological rule devoted to the describing the examples (47) in a lexeme-based approach. Among the operations this rule governs, the following are of interest to us:

- (48) OPPOSIT
- |     |                    |   |
|-----|--------------------|---|
| (a) | anti <sub>F</sub>  | prefixes (āti) to the rubric (F) <sup>12</sup>        |
| (b) | N → A              | assigns feature (catsx:a) to the rubric (SX)          |
| (c) | Anti3 <sub>S</sub> | applies function Anti3 <sub>S</sub> to the rubric (S) |

Applying OPPOSIT to the lexeme *char* gives us the derived adjective *antichar* without any problem, as illustrated in (49):

- |          |      |                 |     |                           |
|----------|------|-----------------|-----|---------------------------|
| (49) (a) | (G)  | char#           | (b) | antichar#                 |
|          | (F)  | (ʃar)           |     | (ātiʃar)                  |
|          | (SX) | catsx:n ∩ ger:m |     | catsx:a                   |
|          | (M)  |                 |     |                           |
|          | (S)  | char'           |     | Anti3 <sub>S</sub> •char' |

The derivation of the other items listed in (47b) follows the same pattern. But, as we know, this is no longer so if we look at examples (47a). Actually, the application of (48) to *variole* gives the result (50b):

- |          |      |                 |     |                              |
|----------|------|-----------------|-----|------------------------------|
| (50) (a) | (G)  | variole#        | (b) | antivariole#                 |
|          | (F)  | (varjɔl)        |     | (ātivarjɔl)                  |
|          | (SX) | catsx:n ∩ ger:f |     | catsx:a                      |
|          | (M)  |                 |     |                              |
|          | (S)  | variole'        |     | Anti3 <sub>S</sub> •variole' |

The problem is that °*antivariole* does not occur in French as a lexeme. We have instead *antivarholique*, whose representation is (51), as the adjective meaning 'which fights against smallpox':

<sup>12</sup> Several scholars (Johnson 1987, 893; Durand 1982, 179; Tranel 1987) noticed that glide formation does not apply with *anti-* cf. (a) *anti-étatique* : [ātietatik], \*[ātjetatik] vs. (b) *étudi-ant* : [etydjā], \*[etydiā]. This suggests that *anti-* constitutes a phonological word of its own (cf. Nespor-Vogel 1986). The details of the phonological representation will not be dealt with.



- (51) (G) antivariolique#  
 (F) (ãtivarjplik)  
 (SX) catsx:a  
 (M)  
 (S) Anti3<sub>S</sub>•variole'

The basic question we have to answer is: how do we get (51) using the rule OPPOSIT? There are potentially two ways of answering this question, both of which correspond to what is chosen as the input to the rule OPPOSIT. In the first hypothesis, (51) is derived from the base-noun *variole*. The question can be reformulated as: how do we get (51) from (50a) using only the rule OPPOSIT? This is precisely the challenge Copy Principle 2 was intended to meet. In the second hypothesis, (51) is derived from the relational adjective *variolique*. This line of argument was taken by Durand (1982), who tried to get rid of the Copy Principle 2.<sup>13</sup> I will examine these hypotheses one after the other.

Because the discussion involves not only *anti-* but all the prefix-like units exemplified in (22) and a few others—*anti*, *inter*, *intra*, *extra*, *sous*, *super*, *supra*, *sur*, *trans*, *péri*—, I will refer to these units as the LOC-class prefixes. This denomination has mainly a practical scope. It was chosen because these units share four characteristics:

(i) they appear in adjectives of the form PFX-ADJ where ADJ is generally formed upon a noun (the base-noun) through a suffixation process,<sup>14</sup> and PFX belongs to the LOC-class prefixes. These ADJs can be used separately and are usually described as relational adjectives (cf. Durand 1982, Riegel 1985);

(ii) all these prefix-like units except *anti-* express a spatial relation in which the base-noun denotes the ground and the noun they determine (the *nom recteur* in Corbin's terminology) denotes the figure;<sup>15</sup>

(iii) in French at least, the majority of the LOC-class prefixes comes from Greek or Latin. As expected, these prefixes serve to coin learned adjectives;

<sup>13</sup> One of the main goals of Durand's paper was to show both the inadequacy and the uselessness of the so-called parasynthetic analysis advocated by some traditional grammarians for words like *antivariolique*, *extraparlémentaire*, etc. The same is true of Corbin's work, except that the means she used differ.

<sup>14</sup> There are exceptions, however; cf. Ger. *innerdeutsch* 'inter-German', Fr. *interturc* e.g. *relations interturques* 'relations between Turks'. Durand (1982, 189) already noticed that very few simple adjectives were used in combination with LOC-class prefixes (none according to him).

<sup>15</sup> For the conceptual setting of the terms "figure" and "ground" cf. Lakoff (1986) or Vandeloise (1986).

(iv) the meaning of the PFX-ADJ adjectives formed with a LOC-class prefix follows the pattern illustrated in (47a), that is to say the denotatum of the base-noun is an argument in the semantic relation expressed by the prefix.

For sure, the LOC-class prefixes require a much more thorough investigation. This task will be left for future research however, since the characterization given above is sufficient for our purpose. On the model of what has been proposed for *anti-*, I propose that each of the LOC-class prefixes is linked to (at least) one morphological rule of the type of OPPOSIT. I will refer to these rules as LOC-morph-rules. In a parallel way, the operations we are interested in which are involved in the LOC-morph-rules will be named PFX<sub>F</sub>, PFX<sub>SX</sub> and PFX<sub>S</sub> for the operations applying to the (F) rubric, to the (SX) rubric and to the (S) rubric respectively. To preserve the terminological coherence, the complex adjectives mentioned in (22) will be called LOC-prefixed adjectives.

## 5.2. The noun-based hypothesis

If we come back to the first hypothesis, we see that all efforts to add conditions on function (48) *anti*<sub>F</sub> are hopeless, because the pieces of information we need in order to write these conditions are stored outside the lexeme to which function (48) applies. Actually, what is required is something like (52):

- (52) Let LXM1 be a lexeme eligible as argument by a LOC-morph-rule.  
 If there is a derived adjective LXM2 formed upon LXM1, then
- (i) apply function PFX<sub>F</sub> to the phonological rubric (F) of LXM2;
  - (ii) apply function PFX<sub>SX</sub> to the (SX) rubric of LXM2;
  - (iii) apply function PFX<sub>S</sub> to the (S) rubric of LXM1.

Concretely, (52)(ii) amounts to unifying the (SX) rubrics of LXM1 and LXM2. Going back to (50), we know that there is an adjective corresponding to the noun *variole*, namely *variolique* given in (53):

- (53) (G) variolique#  
 (F) (varjɔlik)  
 (SX) catsx:a  
 (M)  
 (S) ique'•variole'

If the rule OPPOSIT takes prescription (52) into account, as it should, then it will apply to both (50a) and (53), and provide us with *antivariolique*. Several remarks are in order concerning (52) and the derivation of (51) according to the first hypothesis.

The most striking fact about the LOC-prefixed adjectives is the paradigmatic dimension bestowed on their derivation by the hypothesis under discussion. Three criteria can be put forward in favour of this idea.

(a) First, their derivation does not conform exclusively to the rule-pattern in (2), since we have to introduce an extra device, namely prescription (52). Indeed, *antivariolique*, *intercontinental*, *extraparlamentaire* and so on do not result from the application of the morphological rule to one lexeme but to two lexemes (as it happens in composition), LXM1 and LXM2, contrary to what takes place in derivation.

(b) Second, and more important, one of these lexemes, namely LXM2, is necessarily in abstentia relative to situations where the LOC-morph-rule applies. For example, the rule OPPOSIT as formulated in (48) takes only one argument, which corresponds to LXM1. Whenever it applies to LXM1, it has no access to another lexeme (i.e. LXM2) at the same time.

(c) Third, we need to check whether a morphological relationship exists between lexemes LXM1 and LXM2. This kind of information is not local but global, since it takes it for granted one has an overall view of the whole family of lexemes.

The last two requirements make it impossible for a lexeme-based morphology to derive by itself complex lexemes like those in (22).

The relationship between LXM1 and LXM2 can be made more precise if we define these lexemes in such a way that their phonological, categorial and semantic rubrics conform to patterns (54), (55):

(54)	LXM1	(F)	(X)	(55)	LXM2	(F)	(Y)
		(SX)	catsx:n			(SX)	catsx:a
		(S)	N'			(S)	PFX'•N'

As regards the (F) rubric, generally (Y) = (X sfx). But sometimes LXM2 does not show any suffix e.g. *interturc* (cf. footnote 14).

We are now in a position to (tentatively) define the derivational relationship:

(56) *Derivational relationship*

$LXM_k$  is derived from  $LXM_j$  if for each rubric  $RUB_{kT}$ ,  $RUB_{jT}$  which belongs to  $LXM_k$  and  $LXM_j$  respectively we have  $OP_{nT}(RUB_{jT}) = RUB_{kT}$ , where  $OP_{nT} \in \{OP_{nF}, OP_{nSX}, OP_{nS}\}$  and each operation  $OP_{nT}$  depends upon the same morphological rule  $MR_n$ .

Lexemes related through a derivational relationship constitute a lexical family. For example, the set  $\{eat, eater, eatable, uneatable, eaten, uneaten\}$  is a lexical family.

The paradigmatic dimension is not unknown in morphology. In his well-documented study, Jaap van Marle (1985) discussed at length several examples from Dutch. One of the most striking concerns the coining of personal nouns in *-ster* denoting females. Relying on former studies by Dutch grammarians, Marle states that:

- (57) All verbs that may underlie a neutral personal name in *-er/-der* may also underlie a [+female] personal name in *-ster*; all verbs which cannot constitute the starting-point of a neutral personal name in *-er/-der*, cannot constitute the starting-point of a [+female] personal name in *-ster* either (Marle 1985, 266).

Some of the relevant examples are displayed in (58):

(58) Coining in *-ster* in Dutch; van Marle (1985, 264–6)

	Verb	Neutral name	Feminine name	Gloss
A	renken	renkenaar	*renkster	'to calculate'
	troemmelen	troemmelaar	*troemmelster	'to drum'
B	huuren	huurder	huurster	'to rent'
	spaaren	spaarder	spaarster	'to save'
C	gokken	gokker	gookster	'to gamble'
	grommen	grommer	grommster	'to growl'
	strijden	strijder	strijdster	'to fight'

For sure, the suffix *-ster* may be added to the A type of deverbal, witness *renkenaarster*, *troemmelaarster*, etc. But in this case the derived [+female] name comes from a denominal and not from a deverbal.<sup>16</sup>

In my terms, the insight of van Marle's formulation (57) can be restated saying that the morphological rule coining [+female] personal names has to check whether there is a deverbal in *-er* or *-der* formed upon the verb, before adding the *-ster* affix to the verbal stem. This checking is the symptom of the paradigmatic dimension and is clearly reminiscent of what happens in the French case studied above. However, as van Marle (1985, 266) himself seems to suggest, one could argue that no paradigmatic dimension is involved in (58), but that we merely face a phonological conditioning. Suffixes *-der/-er* on the one hand and *-ster* on the other would simply have the same phonological distribution. Without going into a discussion of this point, I would just mention first, that van Marle provides less controversial examples than (58) farther on in his book (op. cit., 269–72),<sup>17</sup> and second, that such a criticism cannot be levelled against French examples (50a). As a matter of fact, there is another important difference between the French and the Dutch cases. The latter is a case of stem selection. Checking the paradigm allows the rule to select the right stem but afterwards all operations triggered by the rule run unaffected. The former is not a case of stem selection insofar as the LOC-class prefix adjoins to an already full-fledged derived form. Moreover, the operations governed by the LOC-morph-rule are affected in the case of a positive paradigm checking, since two of them will not apply to the initial argument LXM1 but to LXM2, as stated by (52).

### 5.3. The adjective-based hypothesis

The second hypothesis says that LOC-morph-rules apply to the base ADJ simpliciter. Following this view, *antivariolique* is formed upon *variolique*, *extraparlementaire* upon *parlementaire*, and so on (Durand 1982, 200). This hypothesis has to explain how the meaning of the LOC-prefixed adjective (e.g. *antivariolique*) is obtained from the semantic representation of the base-noun

<sup>16</sup> Non-equivalently, Becker (1993, 10) says that the suffix *-ster* substitutes for the affix *-(d)er* in cases B, C, while it adds to the suffix *-aar* in A.

<sup>17</sup> For example, *baakster* comes from *baker* 'nurse' where the *-er* has been reinterpreted as the neuter suffix; *reizigster* 'female traveller' is formed upon the irregular *reiziger* 'traveller' (the regular form would be *\*reiziger*). More generally, the [+female] noun adopts the stem of the *-er/-der* base: regular in *buitenstaenster* cf. *buitenstaander* 'outsider', irregular in *omstandster* cf. *omstander* 'bystander'. These facts remind us of the *aprouver/approbation* series exemplified in (13), (14).

(i.e. *variole*) instead of that of the base-adjective (i.e. *variologique*). Durand's answer to this question articulates two series of assumptions, one concerning the relational adjectives, the other the functioning of LOC-class-prefixes.

With regard to relational adjectives, Durand assumes the following:

1) These adjectives do not belong to the same class as attributive adjectives (e.g. *thick, blue, tall, wooden*, etc.). This difference is reflected in their syntactic behaviour as well-known tests make clear (cf. Bartning 1980, Riegel 1985).

2) These adjectives are formed on nouns e.g. *nervous* < *nerve*, *atomic* < *atom*, Fr. *présidentiel* < *président* and so on.

3) Their semantic representation is strictly equivalent to the semantic representation of the base-noun. To quote him in full:

lexical rules which form a relational adjective by addition of a suffix like *-aire, -ique, -al*, etc., transpose the base-noun into a syntactic adjective and leave unaffected its semantic representation. For example, *parlementaire* means 'parlement' and *hygiénique* means 'hygiène' (Durand 1982, 202).

4) Semantically, relational adjectives show a great adaptability, which is directly linked to the fact that their semantic representation makes available a nominal (the base-noun). This nominal is capable of combining as an argument in as many different ways as the predicate involved by the noun they determine (i.e. the NP head-noun or *nom recteur*) requires. This point can be illustrated with examples (59) where the NPs in column A have the approximate meanings listed in B (cf. Durand 1982, 204–5):

(59)	A	B
(a)	<i>nervous breakdown</i> <i>nervous stimulation</i>	break-down' (nerves') stimulate' (x, nerves')
(b)	<i>economic sanctions</i> <i>military sanctions</i>	sanction' (x, economy') sanction' (army', y)
(c)	<i>élection présidentielle</i> <i>demeure présidentielle</i>	elect' (x, president') live-in' (president', y)

The semantic representation of the base-noun functions either as subject or object of a predicate associated with the NP head-noun.<sup>18</sup>

What Durand says about the behaviour of LOC-class prefixes relates closely to his preoccupation with refuting the so-called parasynthetic derivation for LOC-prefixed adjectives. His main assumptions are:

5) NPs constructed with a LOC-prefixed adjective or simply with the base-noun corresponding to this LOC-prefixed adjective are semantically equivalent. According to Durand (1982, 199), the following statements are true:

- (60) (a) atomic bomb  $\equiv$  atom bomb  
 (b) médicament anticancéreux  $\equiv$  médicament anticancer

6) The semantic function of the LOC-class prefixes applies directly to "the notion represented by the base-noun" (*ibid.*, 202). This stems straightforwardly from the adoption of point 2 above.

To sum up the noun-based hypothesis discussion, I propose to recast Durand's derivational model for *anti-* in the terms of the notation adopted here (some unimportant details have been omitted, cf. Durand 1982, 203). Column I gives the base-adjective and column II the LOC-prefixed adjective:

(61)	(F)	(X)	(ātiX)
	(SX)	catsx:a $\cap$ cop:-	catsx:a $\cap$ cop:-
	(S)	S'	against'•S'
		I	II

The feature cop specifies whether the adjective is attributive (value +) or not (value -).

In the remainder of this section I will briefly discuss some of the criticisms made of the adjective-based hypothesis and try to express in a more precise way the insights it contains.

The more important criticisms concern what is said about relational adjectives. Bosredon (1988) challenges point 1 and contends that relational adjectives have only a classificatory function. According to him, this explains their propensity to have a metadiscursive use when they are in construction with an

<sup>18</sup> For an analysis of related facts involving adjectives like *old*, *good*, etc. cf. Beard (1991).

N (e.g. "(x: a bomb which uses atomic fission) is called (y: an atomic bomb)"). However, he agrees with points 2 and 4 (point 3 is not clearly alluded to in his paper). It seems to me that points 1, 2 and 4 cannot be seriously disputed. On the other hand, it is difficult to lend credence to point 3. (More will be said about point 5 later on.) Nouns and adjectives do not share the same semantic functions in propositions as reflected by their different distributional properties. In fact, point 3 contradicts point 4 and can be maintained only at the expense of an inaccurate rendition of how semantic rules devoted to relational adjectives apply. In essence, point 4 claims that relational adjectives express the property for an  $N_b$  to be used as an argument in whatever predicate the  $N_r$  they are constructed with supplies. But this property is clearly distinct of the meaning of  $N_b$ . As a first approximation, if we agree that semantic representation of common nouns is (62a), then the meaning of the corresponding relational adjectives will be (63a), which gives (63b) for the representation of *presidential* (i.e. when applied to *president*):

- (62) (a)  $N'$  or equivalently  $(\lambda x. (N' \bullet x))$ <sup>19</sup>  
 (b) examples: *president* president' or  $(\lambda x. (\text{president}' \bullet x))$   
 (c) *variole* smallpox' or  $(\lambda x. (\text{smallpox}' \bullet x))$
- (63) (a)  $(\lambda N'. \lambda P^n. \lambda x_1 \dots x_n. \lambda e. (P^n \bullet x_1 \dots x_n \bullet e \wedge N' \bullet x_k))$   
 (b)  $(\lambda P^n. \lambda x_1 \dots x_n. \lambda e. (P^n \bullet x_1 \dots x_n \bullet e \wedge \text{president}' \bullet x_k))$

where  $n$  is the number of arguments the predicate  $P^n$  can have and  $1 < k < n$ . The formula (63a) says that individuals that are  $N'$  (e.g. president') may be used as the  $k^{\text{th}}$  argument of the yet unspecified predicate  $P^n$ . If we suppose that (64)<sup>20</sup> is one of the representations associated with *election*, *presidential election* will have the meanings listed under (65) by application of (63b) to (64):

<sup>19</sup> The notation follows Renaud (1992), which is based on Hindley–Seldin (1986). Application is written  $(MN)$  in mathematical notation,  $M(N)$  in logical notation and  $\text{apply}(M,N)$  among computer scientists. Here a variant of the last notation, the most explicit, is adopted with the inserted "•" indicating that  $M$  applies to  $N$ . Brackets are left associating for application and right associating for abstraction. Whenever there is no ambiguity,  $(M \bullet N)$  have been replaced by  $M \bullet N$  and  $(\lambda x. (\lambda y. (N \bullet x \bullet y)))$  by  $(\lambda x. \lambda y. (N \bullet x \bullet y))$ .

<sup>20</sup> This representation is partly inaccurate because it does not take account of the nominal type of the noun *election*. Each noun can be associated with several semantic predicates, which correspond to the qualia distinctions put forward by Pustejovsky (1991).



(64)  $(\lambda xy. \lambda e. (\text{elect}' \bullet x \bullet y \bullet e))$

(65) (a)  $(\lambda e. (\text{elect}' \bullet x \bullet y \bullet e \wedge \text{president}' \bullet x))$

(b)  $(\lambda e. (\text{elect}' \bullet x \bullet y \bullet e \wedge \text{president}' \bullet y))$

It should be noted that the argument structure of *presidential election* corresponds solely to (65b) (the president is the one who is elected but not the one who elects). The choice between (65a) and (65b) can only be made by resorting to pragmatic information. Sketchy though it may be, the semantic analysis of relational adjectives I have just given can help us to see how the interpretation of LOC-class-prefixes operates.

One way to obtain the correct combination of arguments with the predicate underlying relational adjectives is to postulate that LOC-class-prefixes are functions taking arguments of the same type as formula (63a)—noted here by  $\mathcal{P}$ . For *anti-*, this function could be written as (66):

(66)  $(\lambda \mathcal{P} . \lambda P^n . \lambda x_1 \dots x_n . \lambda x_r . \lambda e. (\mathcal{P} \bullet P^n \bullet x_1 \dots x_n \bullet e \wedge \text{against}' \bullet e \bullet x_r))$

A remarkable fact about *anti-* is that the argument it binds must not be included in the set of the arguments bound by the predicate associated to the relational adjective. In other words, *anti-* seems to appropriate for its own use one of the arguments of the predicate introduced by the relational adjective. (Which implies that the condition  $i < k < n$  does not hold any more.) This is made explicit in (66) by the fact that  $x_r$  is bound by a separate lambda operator. This property of *anti-* can be shown by the contrast between *religious speech* and *antireligious speech*. Provided the semantic representation of *religious* is on the model of (63) and that of *speech* is (67), the most widespread interpretation of *religious speech* will be (68) (= the speech held by religion or by people authorized to speak in the name of religion):

(67)  $(\lambda x. \lambda e. (\text{speech}' \bullet x \bullet e))$

(68)  $(\lambda e. (\text{speech}' \bullet x \bullet e \wedge \text{religion}' \bullet x))$

On the other hand, *antireligious speech* will have roughly the meaning expressed in (69):

(69)  $(\lambda xy. \lambda e. (((\text{speech}' \bullet x \bullet e) \wedge \text{religion}' \bullet y) \wedge \text{against}' \bullet e \bullet y))$

As (69) makes it clear, the event of speaking is against religion but the religion is not the source of the discourse (though it may be in a further expansion of the NP cf. *the antireligious speech of the bishop*). By the same token, when (66) is applied to the semantic representation of *presidential* (63b), by beta-reduction we get (70) as the interpretation of *antipresidential*:

$$(70) \quad (\lambda P^n. \lambda x_1 \dots x_n. \lambda x_r. \lambda e. ((P^n \bullet x_1 \dots x_n \bullet e \wedge \text{president}' \bullet x_r) \wedge \text{against}' \bullet e \bullet x_r))$$

At the NP level, function (70) applies to the N head. Suppose this N is *gossip* whose semantic representation is (71):

$$(71) \quad (\lambda x. \lambda e. (\text{gossip}' \bullet x \bullet e))$$

By applying (70) to (71) we get (72) as a rough approximation of the meaning of *antipresidential gossip*:

$$(72) \quad (\lambda xy. \lambda e. (((\text{gossip}' \bullet x \bullet e) \wedge \text{president}' \bullet y) \wedge \text{against}' \bullet e \bullet y))$$

This formula expresses the fact that the gossip—as an event—is directed against the president. Although formulas (69) or (72) do not tell the whole story about the meaning of the expressions in question, nevertheless they provide the correct assignation of arguments.

Nothing has been said so far about derivation of the type (47b) e.g. *antichar*. We saw that the noun-based hypothesis forces us to give a more fine-grained representation for Anti3<sub>S</sub> than the one mentioned in the rule OP-POSIT (cf. (48)). In fact, Anti3<sub>S</sub> must be separated into two functions: (66) on the one hand, one which applies to relational adjectives, and (73) on the other, one which calls for nominal arguments:

$$(73) \quad (\lambda N'. \lambda P^n. \lambda x_1 \dots x_n. \lambda x_r. \lambda e. ((P^n \bullet x_1 \dots x_n \bullet e) \wedge N' \bullet x_r) \wedge \text{against}' \bullet e \bullet x_r))$$

For example, on the basis of (74) as the semantic representation of *canon*, we obtain (75) as the interpretation of *canon antichar* 'antitank gun':

$$(74) \quad (\lambda xy. \lambda e. (\text{fire}' \bullet x \bullet y \bullet e \wedge \text{shell}' \bullet y))$$

$$(75) \quad (\lambda xyz. \lambda e. (((\text{fire}' \bullet x \bullet y \bullet e \wedge \text{shell}' \bullet y) \wedge \text{tank}' \bullet z) \wedge \text{against}' \bullet e \bullet z))$$

It should be emphasized that, most of the time, expressions with LOC-class prefixes cannot be given a formal analysis as easily as is the case for *antireligious speech*, *antipresidential gossip*, or *canon antichar*. Moreover, traditional problems linked to typing, variables bounding, choosing the appropriate qualia structure or coercion phenomena crop up as soon as we try to extend the analysis. As their discussion would take us too far afield, it will not be undertaken here. Even if the noun-based hypothesis seems to be workable on a formal basis, solving the problems just alluded to is a precondition for it to find acceptance. As the scope of this article limits me to evaluating to what extent the noun-based hypothesis could be given credence on a formal basis, I will leave these problems pending for further research.

As a conclusion, we can say first that the derivation set out in (61) is a feasible one in that the tricky problems just alluded to will receive an adequate treatment. Second, that this solution also allows us to dispense with the Copy Principle 2. We now have to consider whether the paradigmatic dimension mentioned in section 5.2 is also needed by this solution.

## 6. Derivation and paradigm

Expliciting the noun-based hypothesis shows us that it is possible to apply rule OPPOSIT straight away to the adjective and still get the interpretation of the LOC-prefixed adjective formed on the meaning of the base-noun. What seemed to be a mismatch between sound and meaning in former analyses is now readily accounted for. This implies that (52) is technically no longer necessary. Nevertheless, there is a statement in (52) which is worth keeping, namely the idea that the lexeme resulting from a LOC-class rule must look like an adjective more than a noun. Because all hypotheses—including the adjective-based one—have to give an explanation of the preference of *antivariolique* over *antivariolle*, *extraparlémentaire* over *\*extraparlément*, and so on. If we stay at the level of the lexematic entities involved, what is at stake could be described as follows: let us call situation 1 the situation where the category of a derived lexeme is overtly marked in the phonological string. That is what happens with *variolique*, as the lexematic form schematized under (76) reminds us:<sup>21</sup>

<sup>21</sup> Actually the (S) rubric has the form (63b). In a parallel way, the *ique* function, as for all semantic functions introduced by relational adjectives, follows the format (63a).

- (76) (F) X ik  
 (SX) catsx:a  
 (S) ique'•N'

The fact that the basic semantic content of *varioliq* results from applying the function *iques* to the semantic of the base-noun *variole* is directly encoded by the final ending /ik/. But if we compare (76) with the lexematic form of its base-noun given in (77):

- (77) (F) X  
 (SX) catsx:n  
 (S) N'

and if we suppose further that in French, as in most Indoeuropean languages, the category of derived lexemes is usually marked by the ending, we see that the surface marker /ik/ in (76) encodes the adjectival category as well. To echo a formulation of Natural Morphology (cf. Dressler 1985, 307; Dressler *et al.* 1990), we could say that (76) illustrates a diagrammatic situation (Situation 1). If we look now at <sup>o</sup>*antivari*ole or *antichar*, the result of applying the rule OPPOSIT to *variole* and *char* respectively, we see that no similar ending plays this role, cf. (78):

- (78) (F) āti X  
 (SX) catsx:a  
 (S) anti3<sub>S</sub>•N'

As in (76), the semantic content is reflected by the surface marking, but unlike (76) and like (77), the syntactic category is left without overt surface marking. I will dub Situation 2 the situation described in (78). The effect of prescription (52) may be described as a shift from Situation 2 to Situation 1, or more precisely, as a pressure for the Situation 2 not to arise. But the same effect can be obtained by resorting to a harmonizing strategy which can be worded as recommendation (79):

- (79) Make the encoding of the semantic changes as explicit as possible.

The simplest way to satisfy (79) is to have the X suffixed with an adjectival ending it usually takes (e.g. the phonological segment /ik/). In the case in question, this gives us (80), which was subjacent to (51):

- (80) (F)    āti (X ik)  
       (SX)  catsx:a  
       (S)   anti3<sub>S</sub>•N'

Notation (80) makes explicit the "paradigmatic integrator" property of the suffix.<sup>22</sup>

The explanation put forward predicts that in doubles like *antimafia/antimafieux*, both lexemes do not have an equal status. Situation 2 provides a paradigmatic regulation which does not occur with Situation 1. (80) would be more stable than (78) because the derived lexeme fits in more clearly with the adjectival pattern. Or, as Natural Morphology would probably say, we come across a case of rearrangement favouring diagrammaticality. The truth of this assumption can be settled only through diachronic as well as corpus-based inquiries. It must be emphasized however that rules of proportional analogy are of no help to account for the formation of the lexemes under discussion, because, unlike what happens in (28), no well-formed fourth proportional can be expressed in this case.<sup>23</sup>

$$(81) \frac{\text{varirole}}{\text{variologique}} = \frac{^{\circ}\text{antivarirole}}{\text{antivariologique}}$$

Consequently, the paradigmatic morphology solution put forward by Becker (1993) proves unsuitable here.

Substantiating the paradigmatic regulation hypothesis requires answering questions like the following: What is the importance of the phenomenon in question relative to the derivation with *anti-* in general? How can counter-examples (26) be dealt with? Are they numerous? Although I do not intend to answer these questions here, it is worth giving a few indications of what the answers look like. Prefixation with *anti* with meaning (47) is very productive in French. On the basis of the small corpus I have examined,<sup>24</sup> the total number of

<sup>22</sup> The Copy Principle 2 does not express correctly the fact that /ik/ is semantically void, because it keeps analysing this ending as a plain affix. On this point also it proves inadequate.

<sup>23</sup> In some cases, the numerator of the second fraction is not only unavailable but also ungrammatical (with the meaning intended) cf. \**antimélogie* 'anti-melody', \**antimilitaire* 'anti-military', \**antination* 'anti-nation', \**antimère* 'anti-mother'.

<sup>24</sup> This corpus, which is far from exhaustive, is a partial compilation of neologisms gathered from 1966 to now (mainly in newspapers and weekly magazines) by the Neology Unit (Unité de néologie) presently working at the Laboratoire de Linguistique Informatique (CNRS-Paris 13).

occurrences of the *antichar* type (with meaning (47b)) is 265. There are about 25 per cent fewer occurrences of the type *antivariolique* (with meaning (47a)), which shows that this type is nevertheless very widespread. There are about 20 cases of facultative application of recommendation (79) (cf. (25)). For the time being, I have no principled explanation to offer for these cases. Such an explanation requires a thorough examination of the conditions of appearance of these lexemes in discourse, a task I leave for the future.

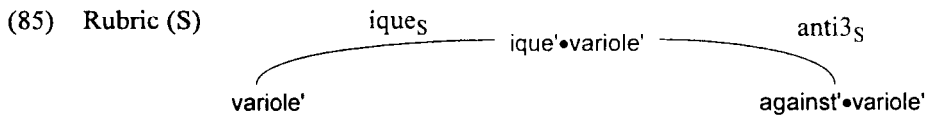
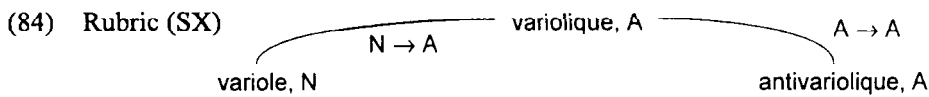
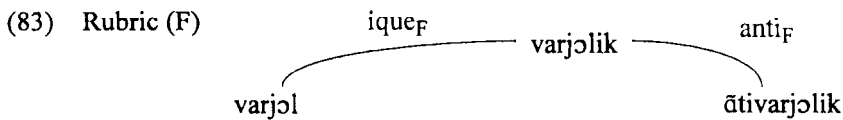
As for counter-examples (26), their number is more or less the same (21 in the corpus). As *antichar* reminds us, it is necessary to have a derived adjective conforming to format (76) for recommendation (79) to apply. Moreover, the adjective must be the relational adjective corresponding to the base-noun, a condition not satisfied by most of the counter-examples of type (26), as shown in (82):

(82)	Noun	Adjective	Gloss
	chlore	chloré	'chlore/chlorinated'
	flocon	floconneux	'flock/fluffy, frothy'
	hausse	haussier	'rise/bullish'
	héros	héroïque	'hero/heroic'
	insomnie	insomniaque	'insomnia/insomniac'
	jeu	ludique	'gambling/play'
	mariage	matrimonial	'marriage/matrimonial'
	misère	miséreux	'poverty/poverty-stricken'
	mousse	mousseux	'froth/frothy'

The meaning of the adjectives in (82) does not express the relation (63a) (usually paraphrased as "which belongs to N", or "characteristic of N"). Most of them have characteristics of attributive adjectives. *Chloré* means 'with chlore in it', *insomniaque* means 'suffering from insomnia', *héroïque* is related to heroism more than to heroes, and *miséreux* does not mean 'characteristic of poverty'. On the other hand, *ludique* is the adjective corresponding to the meaning 'play' of *jeu* and consequently is inappropriate whenever the latter means 'gambling'. *Haussier* belongs to a rather specific lexical domain and has got a technical meaning, far more restricted than that of *hausse* (the same is true of *satellitaire*, *systémique*). It seems to me that the inappropriateness of the adjective can be put forward to explain the lack of lexemes such as <sup>o</sup>*antichloré*, <sup>o</sup>*antifloconneux*, <sup>o</sup>*antihéroïque*, <sup>o</sup>*antihaussier*, <sup>o</sup>*antiludique*, <sup>o</sup>*antimatrimonial*, <sup>o</sup>*antimousseux*, and so on. The other reason

is that a few lexemes so constructed could naturally be interpreted with meaning (46) 'contrary to what is A', combating A" e.g. *conduite antihéroïque* 'behaviour contrary to what is heroic', *discours antithéâtral* 'anti-theatrical/non-histrionic speech'. To avoid this meaning shift, the form antiN is preferred. Obviously, an explanation along these lines requires further studies, at both empirical and theoretical levels. But what it indicates is that we must take into account the structural place the newly coined lexeme occupies in the lexical family to which it belongs, because the relationships it has with other members of the family can act as conditions upon the lexeme formation mechanisms (namely rule (48)). Because these triggering conditions are as important as the rules themselves, we have to depart from the strictly rule-centered and local approach prevailing in morphology.

Up to now, in keeping with the majority of linguistic works on morphology, I have formulated the rules as processes applying to lexical entities and giving some result. As we know, this generative view can be opposed to a stative view which sees the rules as conditions upon relations between existing lexemes (cf. Zwicky 1992, Wunderlich-Fabri 1993). Instead of separate entities, lexical items can be seen as points in a network. This network—the lexical family—is the set of all lexemes linked by derivational rules. To be precise, we have as many networks as strata in the lexeme. For the set {*variole*, *variologique*, *antivariologique*}, the network looks like (83)–(85):



According to the stative view, the effect of recommendation (79) is to allow the extension of the family {*variole*, *variologique*} to the set {*variole*, *variologique*, *antivariologique*} with the minimal change in form. As illustrated by the diagrams, the phonological and categorial rubrics are homomorphic. This homomorphism disappears in the case of the semantic rubric because the interpretation of the derived lexeme seems to be constructed only from the meaning of the base-noun.<sup>25</sup> As we saw in section 5.2, this effect results of the semantic transparency of relational adjectives and does mean that there is no link between *variologique* and *antivariologique*. The fact that extensions of the kind (83)–(85) are nevertheless licit extensions indicates that, in this case, the material side of the sign prevails over the semantic side. Which is the clue to paradigmatic adjustment, as I suggested.

## 7. Conclusion

Five main conclusions may be drawn from the present paper:

1) The sign nature of the lexeme prevents us from using a combinatory morphology framework. It forces us to adopt a lexeme-based morphology.

2) In a lexeme-based approach, we can dispose of the basic version of the Copy Principle 1 as far as ordinary mechanisms devoted to suppletion account for the data in question.

3) A first reason to abandon Copy Principle 2 lies in the fact that the deriving of LOC-class prefixed lexemes from relational adjective can be made workable.

4) A second reason is that these lexemes (e.g. like *antivariologique*, *transocéanien*, an so on) involve a paradigmatic dimension. This dimension implies that we take the facts at the level of the lexical family, a task which goes beyond the capacities of a lexeme-based approach. Owing to its fine-grained notation, the multistratal representation of lexemes offers a better description of the mismatches occurring in these lexemes than Copy Principle 2.

<sup>25</sup> This kind of mismatch is traditionally described through bracketing paradoxes. Bracketing paradoxes rest on the Item and Arrangement framework, against which I argued in section 2. Besides, the so-called paradoxes are very often tied to a sequential approach of the linguistic analysis. For a more detailed discussion cf. Fradin (1993, 455–69).



5) The parameters to which recommendation (79) is sensitive (making licit lexemes *antivariolique*, *antimaternel* and illicit  $^{\circ}$ *antivariolique*,  $^{\circ}$ *antimère*) as well as the reasons why this recommendation fails to apply in cases like  $^{\circ}$ *antihaussier*,  $^{\circ}$ *antihéroïque* (making licit the adjectives *antihausse*, *antihéros*) are conditioned by the relationships a coined lexeme can have within its lexical family. Discovering these parameters supposes that we adopt also a structural point of view (in the European sense) concerning morphological phenomena.

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## 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

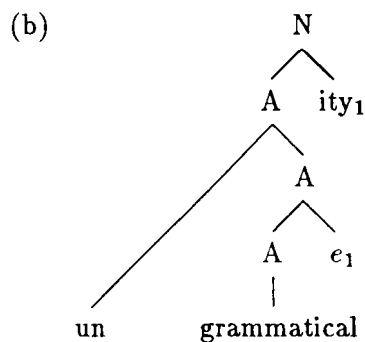
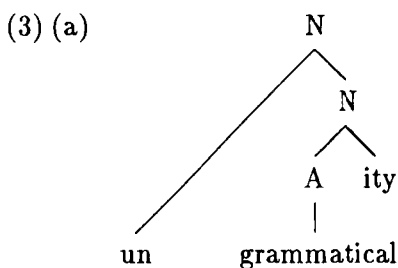
\* The present paper is the written version of a talk presented at the 6th International Morphology Meeting, 16-18 September, 1994, Szombathely, Hungary. I wish to thank the participants for comments and criticisms, in particular, Casper de Groot, László Kálmán, and, most of all, Martin Haspelmath, none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

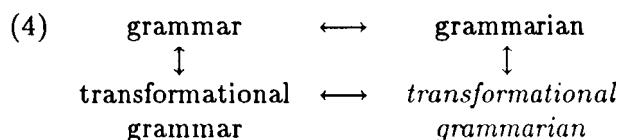
## 2. Selected proposals in the literature

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 grammarian* 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  
 group-to belong-dev  
 'belonging to (a/the) group'
- (c) élet-ben marad-ás  
 life-in stay-dev  
 'staying in life'

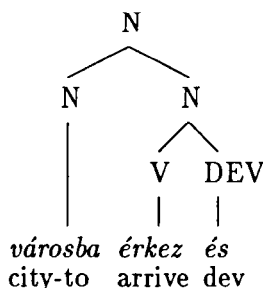
Obviously, the head of the expression, the nominalizer affix on the right edge cannot 'inherit' the complement of the verb that it takes. On the other hand, the strings without the nominalizing affix are perfectly acceptable and commonplace verbal structures containing nonspecific NPs, as has been argued 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).

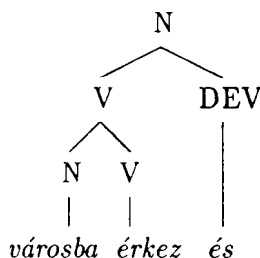
- (6) (a) \*régi város-ba érkezés  
 old city-into arriv-dev
- (b) régi városba való/történő érkezés  
 being/happening  
 'arrival in (an/the) old city'

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<br>crease-in take-dev<br>'disciplining'        | (b) | nyak-on csíp-és<br>neck-on pinch-dev<br>'catching' |
| (c)     | munká-ba lép-és<br>work-into step-dev<br>'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<br>perf-arriv-dev<br>'arrival' | (b) | át-lép-és<br>across-step-dev<br>'transgression' | (c) | le-tartóztat-ás<br>down-hold-dev<br>'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]]                      (b) [CG[PW le] [PW tartóztat-ás]]  
           across-step-dev                                      down-hold-dev  
           'transgression'                                      '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                                      (c) \*London-épít-ő  
           London-build-dev                                      London-build-er
- (d) város-épít-és                                      (e) város-épít-ő  
           city-build-dev                                      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 belé-nk-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<br>that-build-dev<br>‘*that-construction’ | (b) | a-felé-mozg-ás<br>that-toward-move-dev<br>‘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<br>great power-ed | (b) | három ujj-ú<br>three finger-ed | (c) | rövid haj-ú<br>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,

since these can also have secondary stresses.<sup>4</sup> Like Szabolcsi–Laczkó (1992), who mention this construction *in passim*, Kálmán–Nádasdy, too, suggest that the derivational affix is somehow related to the adjective + noun structure, rather than to the noun itself since, as is well known, if the head nouns are unaccompanied by an adjective, they cannot be suffixed by -ú/ű, see (16).

- (16) (a) \*hatalm-ú (b) \*ujj-ú (c) \*haj-ú  
 ‘\*powered’ ‘\*fingered’ ‘\*haired’

However, they all gloss over the paradox that arises on account of the divergence of morphological and semantic structures, and assume in effect that U-compounds are created in the lexicon of [A+[N+Sfx]] structures, which, at least according to Szabolcsi–Laczkó, undergo morphological quantifier raising at LF.

Before we discuss U-compounds any further, let us see the parallel but somewhat different construction, which we will call OS-adjective. They look much like U-compounds, and are claimed to be formed of A+N strings through suffixation of the head noun by the harmonizing -os/as/es/ös/s derivational ending. In all analyses they have been lumped together with U-compounds, though the conspicuous difference has often been noted that this derivational affix does not ‘require’ the presence of an adjective adjacent to the head noun to which it is attached, as illustrated here.

- (17) (a) rövid kabát-os (b) három ujj-as (c) kabát-os/ujj-as  
 short jacket-ed three finger-ed jacketed/fingered  
 ‘in a short jacket’ ‘with 3 fingers’ ‘in jacket/with  
 fingers’

Another difference has also been observed before: U-compounds can be used to designate so-called inalienable possessions, like body-parts, which cannot occur in OS-compounds.

- (18) (a) öt ujj-as kesztyű/\*kéz (b) öt ujj-ú kesztyű/kéz  
 five finger-ed glove/hand five-finger-ed glove/hand

<sup>4</sup> This claim, incidentally, is ill-substantiated minimally in the case of short (mono- or disyllabic) first constituents, such as those in (15), which always have a single initial stress.

To simplify reference, ‘adjective’ will be used as inclusive of numerals in reference to the string that serves as the base of the derivation.

### 3.3. Evidence for post-syntactic derivation

So far we have noted one construction, viz. referential nominals in compounds, that proposals to handle morphosemantic mismatches seem unable to process by means of the lexical processes as supplemented by alternative devices that they have posited. In this section we will show that these approaches face an even more serious challenge from a peculiar property of U-compounds.<sup>5</sup>

First of all, it has so far gone unnoticed that in contrast to OS-compounds, the adjective in U-compounds need not be a plain adjective: it can be in either comparative or superlative. (For ease of comparison *U* and *OS* are marked below at the right margin to indicate the respective compounds.)

- (19) (a) nagy/nagyobb/legnagyobb hatalm-ú (uralkodó) U  
 great/greater/greatest power-U monarch  
 'monarch with (the) great/er/est power'
- (b) nagy/\*nagyobb/\*legnagyobb üveg-es (rekesz) OS  
 large/larger/largest bottle-OS crate  
 'crate for large/er/est bottles'

Secondly, some U-compounds can contain universal quantifiers (even though the resulting expression is not a quantifier proper), whereas they are excluded from OS-compounds, which can have numerals instead, much like U-compounds.

- (20) (a) minden oldal-ú  
 every side-U  
 'pertaining to every side; multilateral'
- (b) minden irány-ú (vizsgálat)  
 every direction-U investigation  
 'pertaining to every direction; multidirectional'

<sup>5</sup> There is yet another highly productive compoundlike construction that has a syntactic base: I-adjectives. Again the issue is complex, but what is relevant here is the fact that, informally speaking, postpositional phrases can undergo derivation by being suffixed by the adjectival ending *-i*, cf.:

- (i) a [<sub>AP</sub> [<sub>PP</sub> Mari mögött] -i<sub>A</sub>] ház  
 the Mary behind I house  
 'the house behind Mary'
- (ii) \*a mögött-i ház

For analogous derivations in other languages, see section 4.

- (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.

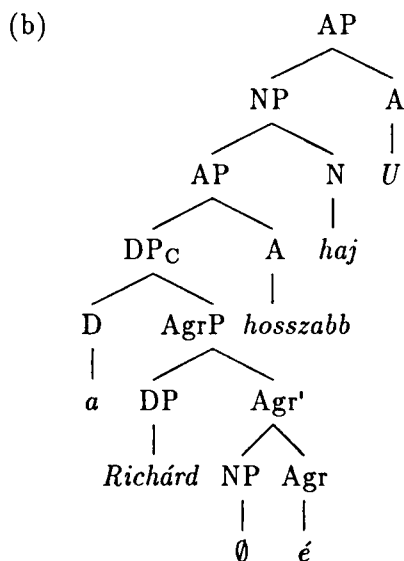
<sup>6</sup> Obviously, the ungrammatical examples become grammatical if parsed (and interpreted) differently, i.e. as 'very etc. large (or largest) crate for bottles'. That, however, is irrelevant here.



- (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.

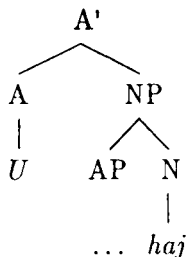
combines with heads 'outside' the construction. The two word-classes can be different, e.g., verb and adjective in German, and noun and adjective in Sorbian.

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.

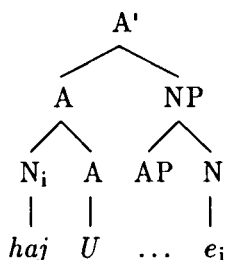
Edging toward a possible account for the problems posed by these phrasal derivations in general, and U-compounds in particular, we may rely on Cinque's (1993) original insight, which posits phrases versus heads in accounting for the headedness of compounds, and Kayne's (1994) Linear Correspondence Axiom, 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'

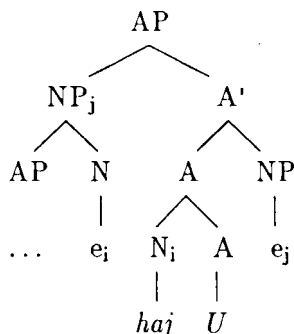
(27) (a)



(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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## PREFIX REDUPLICATION IN HUNGARIAN\*

FERENC KIEFER

### 1. Introduction

Verbal prefixes can be iterated in Hungarian. The reduplicated prefix is used to express iterativity, that is, prefix reduplication belongs to *aktionsart*-formation and it does not affect the meaning of the base verb. Compare the following examples:

- (1) *meg-meg-áll* 'to stop from time to time', *vissza-vissza-néz* 'to look back from time to time', *át-át-jön* 'to come over from time to time', *be-be-rúg* 'to get drunk from time to time', *ki-ki-megy* 'to go out from time to time'

In the present paper the following questions will be addressed:

(i) Can all verbal prefixes be reduplicated? If not, what are the constraints on prefix reduplication?

(ii) In view of the fact that Hungarian has also an iterative suffix, what are the semantic differences, if any, between the suffixed and the reduplicated verbal forms?

(iii) How can the two types of iterativity be semantically represented?

(iv) Are the syntactic properties of the verbs with iterated prefixes different from the simple prefixed verbs? If so, how can they be explained?

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## 2. Some distributional constraints on reduplication

Let us first discuss question (i). In Hungarian the category 'prefix' is one of the most unstable grammatical categories. This is largely due to the fact that prefixes often overlap with adverbials and postpositions and that new prefixes develop constantly from these categories. Moreover, we do not have any clear criteria at our disposal which would enable us to decide in each particular case whether we have to do with a genuine verbal prefix or not. It is symptomatic that the number of elements qualified as prefixes in Hungarian grammar books varies between 38 and 90 (Kömlösy 1992, 495–7). For practical reasons we will restrict ourselves to "clear" cases, i.e. to cases where there is more or less general agreement as to the status of the 'particle' in question. That is, the present study is based on the behavior of the following verbal prefixes:<sup>1</sup>

- (2) *agyon* 'over, to death', *alá* 'under', *át* 'through', *be* 'in', *bele* 'into', *el* 'away', *elé* 'before', *ellen* 'against', *elő* 'forward, out', *fel* 'up', *félbe* 'unfinished', *félre* 'aside', *felül* 'up', *fenn* 'up', *hátra* 'back', *helyre* 're', *hozza* 'to', *ide* 'here', *keresztül* 'through', *ki* 'out', *körül* 'around', *közbe* 'inter, in', *külön* 'apart', *le* 'down', *meg* 'perf', *mellé* 'next to', *neki* 'at, against, set in', *oda* 'there', *össze* 'together', *rá* 'onto', *raja* 'on', *szét* 'apart', *tova* 'off', *tovább* 'further', *túl* 'beyond, over', *utána* 'after', *végig* 'along', *vissza* 'back'

Reduplication does not seem to depend on the phonological shape of the prefix, the only apparent exceptions are the prefixes *keresztül* 'through' and *utána* 'after': the forms in (3) and (4) are impossible.

- (3) \**keresztül-keresztül-bújik* 'to creep through from time to time',  
\**keresztül-keresztül-fut* 'to run through from time to time', \**keresztül-keresztül-vág* 'to cut through from time to time'
- (4) \**utána-utána-megy* 'to go after, to follow from time to time', \**utána-utána-mond* 'to say after, repeat from time to time', \**utána-utána-számol* 'to count after from time to time'

<sup>1</sup> From among the 90 "potential" prefixes quite a few occur with one or two verbs only. Their prefixal status is perhaps the most dubious. E.g. *abba-*, *cserben-*, *egyet-*, *észre-*, *jót-*, *közben-*, *közzé-*, *véghez-* (Kömlösy 1992, 497).

These forms seem to be too heavy to be repeated. Their heaviness is due to the fact that *keresztül* and *utána* are three-syllable prefixes, moreover they are the only three-syllable prefixes from among the prefixes listed in (2). If we take into consideration the prefix-like elements as well (i.e. elements whose prefix status is anything but clear) we may include *keresztbe* and *kétségbe* into our list of three-syllable prefixes. However, these cannot be reduplicated either.

Note that there is no semantic constraint which would prohibit iteration in these cases as testified by the possible forms *keresztülépeget* (*keresztül-lép-e-get*) 'leap through over and over' and *utánajárogat* (*utána-jár-o-gat*) 'go after repeatedly', which contain the iterative suffix *-gat/-get*.<sup>2</sup> It should also be noted that the prefix *át* is quasi-synonymous with the prefix *keresztül* and it can easily be repeated: the examples in (3) with *át* are all grammatical (*át-átbújik*, *át-átfut*, *át-átvág*).

Thus, the following 'phonological heaviness constraint' can be formulated.

- (5) Prefixes longer than two syllables cannot be iterated.<sup>3</sup>

Note next that there are some prefixes which cannot be reduplicated for semantic reasons. Consider, for example, the prefix *túl* 'over':

- (6) \**túl-túl-hangúlyoz* 'overstress from time to time', \**túl-túl-játszik* 'overact from time to time', \**túl-túl-kompenzál* 'overcompensate from time to time', \**túl-túl-komplikál* 'overelaborate from time to time'

In (6) the prefix *túl* means something like 'to do something in an excessive/exaggerated way'. In general, this meaning seems to block reduplication, as also shown by the prefix *agyon* 'to death, over'.

- (7) #*agyon-agyon-hajszol* 'overtire sy from time to time', #*agyon-agyon-dicsér* 'praise to the skies sy from time to time', #*agyon-agyon-sétálja magát* 'walk oneself to death from time to time'

<sup>2</sup> The suffixed forms do not necessarily express iteration, they may also have a "diminished intensity" reading. The latter is often a consequence of the former. We will return to the differences between the iterated prefixal and the suffixal forms further below.

<sup>3</sup> There are a large number of elements which behave in many ways like prefixes in Hungarian (this is the class of so-called preverbs). (For a list of these elements cf. Komlósy 1992, 500.) None of them can be iterated, however.

The same prefix can be iterated, however, if it is used in its literal sense. In this case the prefixed verb means something like 'to do something which causes somebody's or something's death'. Consider:

- (8) *agyon-agyon-tapos* 'trample to death from time to time', *agyon-agyon-üt* 'strike dead from time to time', *agyon-agyon-lő* 'shoot down from time to time', *agyon-agyon-szúr* 'stab to death from time to time'

To be sure, since these verbs all denote irreversible events, they cannot be used with singular objects. We will return to this question later on.

The above observations permit the following generalization:

- (9) Prefixed verbs denoting excessive deeds do not permit prefix reduplication.

(9) seems to be a conceptual constraint (speakers seem to find it awkward to repeat excessive deeds) for which I have no explanation to offer at the moment. Note that the forms in (7) are semantically interpretable but they would never be used. In order to distinguish these cases from ungrammaticality we use the sign # instead of \*.

Though prefixed verbs are, in general, perfective (with one notable exception, see further below), there are some cases where they are stative. Statives are excluded from reduplication, as shown in (10):

- (10) \**össze-össze-fér* 'be compatible/consistent with sg from time to time', \**meg-meg-felel* (pl. *vm a valóságnak*) 'correspond (e.g. sg to reality) from time to time', \**el-el-fér* 'have room from time to time', \**el-el-áll* 'keep over (e.g. food) from time to time'

That is:

- (11) Prefix reduplication is impossible with (prefixed) statives.

It does not come as a surprise that statives do not admit the iterative suffix *-gat/-get* either: \**tartalmaz-gat* 'contain repeatedly', \**birtokol-gat* 'possess repeatedly', \**gyűlöl-get* 'hate repeatedly', \**szeret-get* (as a stative) 'love repeatedly'. Although some perceptual statives do occur with *-gat/-get*, the derived verbs, however, are all lexicalized and their meaning is quite different

from the original perceptual meaning, e.g. *lát* 'see' – *lát-o-gat* 'visit', *hall* 'hear' – *hall-gat* 'keep silent', 'listen to'. Iterativity is thus a property of processes, achievements and accomplishments, non-events cannot be repeated.

Note that (11) is a semantic constraint on prefix reduplication, the forms which violate this constraint are ungrammatical.

Note that (intransitive) change of state verbs expressing irreversible changes do not admit prefix reduplication either, as shown in (12):

- (12) \**meg-meg-öregszik* 'get old from time to time', \**meg-meg-öszül* 'become grey from time to time', \**el-el-butul* 'grow stupid from time to time', \**el-el-csúnyul* 'become ugly from time to time'

Once again, the corresponding forms with the iterative suffix *-gat/-get* are not possible either: \**el-butul-gat* 'get occasionally stupid little by little', \**meg-öszül-get* 'become occasionally grey little by little'.

Irreversibility excludes the possibility of having singular subjects with verbs in (12). Sentences with plural subjects, on the other hand, seem to presuppose (intermediate) stages where the original states obtain, that is, they seem to imply reversibility. Thus, for example, the sentence (13a) would suggest that the children may become clever again, and (13b) that people may become young again, which runs counter the irreversibility of the processes involved:

- (13) (a) \**A gyerekek el-el-butultak.*  
'The children got stupid from time to time'  
(b) \**Az emberek meg-meg-öregedtek.*  
'People got old from time to time'

It should be noted, however, that some of the verbs in (12) may have 'reversible uses'. For example, *elbutul* may also be used to designate a temporary change of state meaning something like 'grow dull' as a consequence of unfavourable circumstances (e.g. heat, lack of air or for some other reason). In such a case, of course, reduplication becomes possible.

Thus, we have arrived at the following semantic constraint:

- (14) Intransitive change of state verbs which express irreversible changes do not admit prefix reduplication.

There are also a number of prefixed verbs which for unclear reasons do not admit reduplication. E.g. *\*át-áttelel* 'overwinter from time to time', *\*vissza-visszaindul* 'start on one's way back from time to time', *\*át-átszellemül* 'be transfigured from time to time'. Such verbs have to be marked in the lexicon to this effect.

We may thus conclude that, contrary to the claim which is often made in the Hungarian descriptive literature (cf., for example, Soltész 1959), not all prefixes can be iterated. There seem to be some systematic exceptions which are either due to phonological reasons (cf. constraint (5)), to conceptual constraints (cf. (9)), or to the semantics of the verb (cf. constraints (11) and (14)).

### 3. Semantic differences between reduplicated and suffixed verbal forms

We may now turn to questions (ii) and (iii). Typically, as pointed out above, reduplicated forms express the iterativity of perfective events. One notable exception is one of the uses of the prefix *el* 'away', e.g. *el-ábrándozik* 'muse, day-dream', *el-báméskodik* 'stand gaping about', *el-dolgozgat* 'be working leisurely', *el-üldögél* 'sit about for some time', where the prefix introduces the aktionsart of durativity rather than the aspect of perfectivity. Note that this prefix, too, can be reduplicated: *el-el-ábrándozik* 'day-dream from time to time', *el-el-báméskodik* 'stand gaping about from time to time', *el-el-dolgozgat* 'be working leisurely from time to time', *el-el-üldögél* 'sit about from time to time'.<sup>4</sup>

Note that the meaning of reduplicated forms is completely and without any exception compositional in the sense that it can always be derived from the meaning of the prefixed verb and the feature of iterativity. There is thus no need to list any of these forms in the lexicon; in fact, reduplicated forms never get lexicalized.

The phonological constraint (5) and the conceptual constraint (9) are not valid for the iterative suffix *-gat/-get*. On the other hand, however, as we saw above, the iterative suffix cannot be attached to statives (with a few exceptions) and to change of state verbs (constraints (11) and (14)). But this is exactly what we would expect: we claimed that these constraints reside in semantics and that their violation thus leads to ungrammaticality. Since the suffix *-gat/-get*, too, may express iterativity, constraints (11) and (14) predict that not only prefix reduplication but also the iterative suffix should be excluded with statives and change of state verbs. The iterative suffix, however,

<sup>4</sup> The situation is somewhat more complicated since the prefixed forms do not pass all the well-known tests for imperfectivity. But they can certainly be used with for-adverbials.



does not always express iterativity. It can also indicate, among other things, diminished intensity, lack of precision invested in the activity described, or reluctance or hesitancy on the part of the agent, e.g. *tud* 'know' – *tud-o-gat* 'know sg sometimes a little', *ért* 'understand' – *ért-e-get* 'understand sg sometimes a little', *olvas-gat* 'read superficially, not very intensily', *esz-e-get* 'eat reluctantly, eat little'. Moreover lexicalizations are legion, e.g. *lát* 'see' – *lát-o-gat* 'visit', *mos* 'wash' – *mos-o-gat* 'wash dishes', *hall* 'hear' – *hall-gat* 'keep silent', etc.

In view of various distributional restrictions the only case when the iterative suffix could, in principle, express the same meaning as the reduplicated prefix is when a (perfective) prefixed verb receives the iterative suffix. However, it is easy to show that the two forms are semantically different. (In the following examples in the verb forms only the relevant morpheme boundaries are indicated. In the examples the following notation is used: rpr=reduplicated prefix, vs=verb stem, ev=euphonic vowel, 3ps=3rd person Past Tense, is=iterative suffix, pr=prefix.)

- (15) (a) *Át-át-tölt-ö- tte a mustot.*  
 rpr vs ev 3ps  
 'He/she decanted the must from time to time' (perfective)
- (b) *Át-tölt-ö- get-te a mustot.*  
 pr vs ev is 3ps  
 'He/she kept decanting the must'
- (16) (a) *El-el-jár-t hozzá.*  
 rpr vs 3ps  
 'He/she visited him/her from time to time'
- (b) *El-jár-o- gat-o- tt hozzá.*  
 pr vs ev is ev 3ps  
 'He/she kept visiting him/her'
- (17) (a) *El-el-olvas-ta az újságot.*  
 rpr vs 3ps  
 'He/she read the newspaper from time to time'
- (b) *El-olvas-gat-ta az újságot.*  
 pr vs is 3ps  
 'He/she read the newspaper quite often but superficially'

At first glance the sentence pairs in (15a,b)–(17a,b) appear to be synonymous. The semantic differences become apparent, however, if the corresponding sentences contain temporal or frequency adverbials. It can be shown that, first, the two kinds of iterativity are associated with different temporal structures. The iterativity expressed by reduplicated prefixes does not seem to admit events reoccurring at regular intervals whereas the events expressed by the forms with the suffix *-gat/-get* seems to require more regular reoccurrence. Second, the latter, but not the former can be downgraded to a single event expressing an activity with diminished intensity, the lack of precision invested in the activity, reluctance or hesitancy on the part of the agent. These points are illustrated by the sentences in (18a,b,c)–(21a,b,c):

- (18) (a) Minden nap át-tölt-ö-get-te a mustot.  
 ‘He/she decanted the must every day.’  
 (b) ??Minden nap el-jár-o-gat-ott hozzá.<sup>5</sup>  
 ‘He/she visited him/her every day’  
 (c) Minden nap el-olvas-gat-ta az újságot.  
 ‘He/she read the newspaper every day’
- (19) (a) \*Minden nap át-át-tölt-ötte a mustot.  
 (b) \*Minden nap el-el-jár-t hozzá.  
 (c) \*Minden nap el-el-olvas-ta az újságot.
- (20) (a) Rendszeresen át-tölt-ö-get-te a mustot.  
 ‘He/she decanted the must regularly’  
 (b) Rendszeresen el-jár-o-gat-ott hozzá.  
 ‘He/she visited him/her regularly’  
 (c) Rendszeresen el-olvas-gat-ta az újságot.  
 ‘He/she read the newspaper regularly’
- (21) (a) \*Rendszeresen át-át-tölt-ötte a mustot.  
 (b) \*Rendszeresen el-el-jár-t hozzá.  
 (c) \*Rendszeresen el-el-olvas-ta az újságot.

<sup>5</sup> This sentence is definitely odd, though not completely excluded. The problem with this sentence is that the verb *eljárogat* can hardly be interpreted in terms of ‘diminished intensity’.

Thus, the adverbial *minden nap* 'every day' is compatible with the suffixed forms only. Note, however, that the verbs in (18a,b,c) denote diminished intensity rather than iterativity: iterativity is expressed by the temporal adverbial. Moreover, the sentences containing the reduplicated forms are incompatible with the adverbial *rendszeresen* 'regularly' (cf. (21a,b,c)) while the sentences with the suffixed forms may occur with such an adverb (cf. (20a,b,c)). But, once again, the suffixed verbal forms denote diminished intensity rather than iterativity. This is why the co-occurrence of an iterated prefix and an iterative suffix does not lead to semantic incompatibility: in the presence of an iterated prefix the iterative suffix always expresses diminished intensity, lack of precision invested in the activity described, or reluctance or hesitancy on the part of the agent.

Note next that reduplicated forms are compatible with frequency adverbials which express the more or less irregular reoccurrence of an event.

- (22) (a) *Időnként át-át-tölt-ötte a mustot.*  
'He/she occasionally decanted the must'
- (b) *Időről-időre el-el-jár-t hozzá.*  
'He/she visited him/her from time to time'
- (c) *Egyszer-egyszer el-el-olvas-ta az újságot.*<sup>6</sup>  
'Every now and then he read the newspaper'

The situation is less clear with the corresponding examples containing the suffixed forms:

- (23) (a) *?Időnként át-tölt-ö-get-te a mustot.*  
(b) *??Időről-időre el-jár-o-gat-ott hozzá.*  
(c) *?Egyszer-egyszer el-olvas-gat-ta az újságot.*

The above observations seem to suggest the following generalizations:

- (24) Suffixed forms are compatible with temporal adverbials expressing more or less regular reoccurrence, but in their presence they denote diminished intensity rather than iterativity. If this reading is not readily available we get an odd sentence. Reduplicated forms do

<sup>6</sup> For some speakers these sentences may appear to be redundant since the adverbials express exactly what the reduplicated prefix is supposed to express.

not admit adverbials which express regular reoccurrence. They are, however, compatible with adverbials which denote irregular time intervals.

From (24) it follows that reduplicated forms are used to denote events which reoccur at more or less irregular intervals. In that case iteration cannot be downgraded to "diminished intensity". Suffixed forms, on the other hand, are normally downgraded to "diminished intensity" in the presence of an adverbial denoting regular reoccurrence.

Typical temporal adverbials occurring with reduplicated forms are *időnként* 'from time to time', *rendszeretlenül* 'at irregular intervals', *nagy ritkán* 'hardly ever', *helyenként* 'sometimes', *egyszer-egyszer* 'once in a while', *időről-időre* 'from time to time', *hébe-hóba* 'now and then'. Events reoccurring at irregular time intervals can also be introduced by phrases such as *ha úgy adódott, hogy...* 'should it so happen that...', *ha úgy hozta a sors...* 'should the occasion arise...', *ha kedve támad, akkor...* 'when the spirit moves him...'. It does not come as a surprise, then, that they, too, are compatible with reduplicated forms.<sup>7</sup>

A verbal form may contain both a reduplicated prefix and an iterative suffix. In this case, however, the iterative suffix can never mean iterativity. Compare the following three sentences:

- (25) (a) El-el-olvas-ta az újságot.  
'He/she read the newspaper (in full) from time to time'
- (b) El-olvas-gat-ta az újságot.  
'He/she read the newspaper (superficially)'
- (c) El-el-olvas-gat-ta az újságot.  
'He/she read the newspaper (superficially) from time to time'  
'He/she thumbed through the newspaper from time to time'

If the suffixed form cannot be downgraded to diminished intensity, i.e. if it expresses under any circumstances just iterativity, no reduplication is possible. This is the case with verbs such as *csuk* 'close' and *nyit* 'open'. By adding the iterative suffix we get *csuk-o-gat* 'close repeatedly' and *nyit-o-gat* 'open repeatedly'. These verbs may be prefixed by various prefixes. For

<sup>7</sup> This has been pointed out to me by M. Ladányi.

example, *be-csuk-o-gat* 'in-close repeatedly', *rá-csuk-o-gat* 'on-close repeatedly', *le-csuk-o-gat* 'down-close repeatedly', *ki-nyit-o-gat* 'out-open repeatedly', *be-nyit-o-gat* 'in-open repeatedly', *fel-nyit-o-gat* 'up-open repeatedly'. In such cases reduplication is excluded, \**be-be-csuk-o-gat*, \**rá-rá-csuk-o-gat*, \**le-le-csuk-o-gat*, \**ki-ki-nyit-o-gat*, \**be-be-nyit-o-gat*, \**fel-fel-nyit-o-gat* are ill-formed.

The observations above suggest that we have to do with two kinds of iterativity. The suffixed form expresses more or less continuous iteration, the prefixed form, on the other hand, has to do with cardinality, i.e. with an unspecified number of the reoccurrence of an event (at more or less irregular time intervals).

The claim that we have to do with two different types of iterativity is further corroborated by the fact that the two forms manifest different scope properties, as shown by (26a,b):

- (26) (a) *Mindenki nyit-o-gat-ta az ajtót.*  
 'Everybody opened the door repeatedly'  
 (b) \**Mindenki ki-ki-nyit-otta az ajtót.*  
 'Everybody opened the door occasionally'

In (26a) the universal quantifier *mindenki* 'everybody' takes scope over the frequency operator: it is true for every member of a given set of people that he or she was opening the door all the time. In (26b), on the other hand, the universal quantifier cannot take scope over the frequency operator, which must have the widest scope.<sup>8</sup>

In the representation of iterativity we have to take into consideration the semantic differences discussed above. Roughly speaking, reduplication refers to the repetition of events at irregular intervals while suffixation is more or less indifferent from this point of view. The difference resembles the difference in iterativity between German *hüsteln* 'cough slightly' and the syntactic expression *oft husten* 'cough often'. It may be argued that it is not necessary to distinguish these two cases in semantic representation since *hüsteln* need not imply regular time intervals and *oft husten* is not necessarily implying irregular reoccurrence (Egg 1994, 159). In Hungarian, however, as we saw above, the situation is quite different, we thus must distinguish two semantically distinct types of iterativity.

<sup>8</sup> This observation is due to Katalin É. Kiss (personal communication).

Iterativity expressed by the suffixed forms can best be represented by defining an iterative operator (Egg 1994, 160):

$$(27) \quad \hat{t} \text{ ITER}(P)(t)$$

which is, for a given predicate  $P$ , the set of all times  $t$ , such that  $t$  is the sum of the set of times  $t'$ , whose members are all phases of  $P$ . The sum  $U$  of two intervals  $t'$  and  $t''$  is defined as the smallest continuous interval  $T$  which contains both  $t'$  and  $t''$ . That is, (27) is defined as (28):

$$(28) \quad \forall P \forall t (\text{ITER}(P)(t) \leftrightarrow \exists t' [t = Ut' \wedge \forall t'' (t'' \in t' \rightarrow P\text{-phase}(t''))])$$

The verb *nyit* 'open' could thus be represented by (29a) and the verb *nyit-o-gat* 'open repeatedly' by (29b):

$$(29) \quad (a) \quad \hat{x} \hat{t} \text{ nyit}'(x)(t) \\ (b) \quad \hat{x} \hat{t} \text{ ITER}(\hat{t}' \text{ nyit}'(x)(t'))(t)$$

But what about *ki-ki-nyit* 'open occasionally/from time to time'? The most plausible solution seems to be to restrict the otherwise unrestricted iterative operator in (29b) by a cardinality predicate. Intuitively, as already pointed out, the difference between *nyit-o-gat* and *ki-ki-nyit* is that while the former involves continuous repetition, the second only occasional repetition. We may account for that by restricting the iteration by  $\text{card}(t) = m$ , where  $m$  stands for an integer. The second half of (28) should thus be replaced by (30):

$$(30) \quad \exists t' [t = Ut' \wedge \text{card}(t') = m \wedge \exists t'' (t'' \in t' \rightarrow P\text{-phase}(t''))]$$

But (30) is still not quite adequate. First of all, the value of  $m$  cannot be one or two, it must be at least three (cf. condition (31a) below). Moreover, since the iteration at hand is incompatible with adverbs such as 'regularly', 'every day', etc. we have to add to (30) a further condition which says that the distance between two time intervals must not be identical for most of two subsequent time intervals. Let us introduce a measure function  $MF$  over time intervals. The relevant condition can now be formulated as under (31b):

- (31) (a)  $m \geq 3$   
 (b)  $MF(t_i, t_j) = A$   
 $MF(t_j, t_k) = B$   
 $A \neq B$  for most consecutive  $t_i, t_j, t_k$  intervals

Thus, Hungarian cannot get along with one single iterative operator. German, and perhaps English, are in this respect different (Egg 1994, 156–160).<sup>9</sup> The two iterative operators in Hungarian can be distinguished by subscripts: (a)  $\hat{t} \text{ ITER}_1(P)(t)$  and (b)  $\hat{t} \text{ ITER}_2(P)(t)$ , (a) is the operator which accounts for the suffixed form and (b) takes care of prefix iteration.

Other semantic differences between the suffixed and the reduplicated forms will become clear as the discussion proceeds.

Let us now turn to question (iv).

#### 4. The syntactic behaviour of verbs with reduplicated prefix

Syntactically, the reduplicated forms behave quite differently from simple forms. The most striking difference between the reduplicated and the simple forms is that the former can never be separated from the base verb whereas the latter are separable. Consider:

- (32) (a) Péter át-ment a szomszédhoz.  
 ‘Peter went over to the neighbour’  
 (b) Péter át-át-ment a szomszédhoz.  
 ‘From time to time Peter went over to the neighbour’
- (33) (a) Péter ment át a szomszédhoz.  
 ‘It was Peter who went over to the neighbour’  
 (b) \*Péter ment át-át a szomszédhoz.  
 ‘It was Peter who went over to the neighbour from time to time’
- (34) (a) Péter nem ment át a szomszédhoz.  
 ‘Peter didn’t go over to the neighbour’  
 (b) \*Péter nem ment át-át a szomszédhoz.  
 ‘Peter didn’t go over to the neighbour from time to time’

<sup>9</sup> Egg claims that a single iterative operator suffices to explain iterativity in German.

(33a–b) shows that sentences with a reduplicated verb form cannot contain a focussed constituent since this constituent obligatorily occupies the position immediately preceding the verb, which is at the same time the position of the reduplicated prefix. (34a–b) shows that sentences with reduplicated verb forms cannot be negated since the negative particle, too, normally occupies the preverbal position.<sup>10</sup>

These observations suggest the following generalization:

- (35) Reduplicated verb forms are syntactic islands. No syntactic operation is possible which would force the reduplicated form out of its original place.

If we assume that reduplication is a kind of focussing operation then we get a natural explanation for (35) since in Hungarian the focus (bound to preverbal position) and the verb (except if the verb itself is focussed) form an inseparable unity. This assumption is reinforced by the fact that we can always insert the focus particle *is* 'even, also' between the reduplicated prefix and the verb (cf. also examples (38a,b)).

The following examples, however, seem to be at variance with this generalization:

- (36) (a) Péter időnként át akart menni a szomszédhoz.  
'Peter wanted to go over to the neighbour'  
(b) Péter időnként át-át akart menni a szomszédhoz.  
'Peter wanted to go over to the neighbour from time to time'

<sup>10</sup> Though sentences with reduplicated verb forms do not tolerate internal (descriptive) negation, they do admit external negation (denial):

Nem igaz, hogy Péter időnként át-átment a szomszédhoz.  
'It is not true that Peter went over to the neighbour from time to time'

Similar things hold true for 'periphrastic' focussing:

János volt az, aki be-benézett hozzá.  
'It was John who occasionally visited him/her'



- (37) (a) Péter hébe-hóba vissza fog járni.  
 'Peter will come back now and then'  
 (b) Péter hébe-hóba vissza-vissza fog járni.  
 'Peter will come back now and then'<sup>11</sup>

(36b) and (37b) show that reduplicated verb forms can be split up by auxiliaries: in (36b) we encounter *akar* 'want' and in (37b) the future auxiliary *fog* 'will, shall', which typically occupy the position between the prefix and the verb. However, it is arguable that *át akart menni* 'over wanted go' as well as *át-át akart menni* 'over-over wanted go' and *vissza fog járni* 'back will come' as well as *vissza-vissza fog járni* 'back-back will come' are both morphological objects created by morphological rules rather than by syntax, similarly to verb cluster formation in German.<sup>12</sup> If this is right then (36b) and (37b) do not pose any problems since these structures are not consequences of syntactic rules and (35) remains true.

It should also be noted that the auxiliaries *akar* and *fog* cannot bear stress in (36a,b) and (37a,b). In fact, they are enclitic, forming a clitic group with the prefix. The reduplicated prefix thus keeps its role as the focus of the sentence.

Consider next (38a,b) where the particle *is* 'also, even' is inserted between the reduplicated prefix and the base verb:

- (38) (a) A kendőt meg-meg is libbentette.  
 'He/she even fluttered the kerchief from time to time'  
 (b) Időnként vissza-vissza is nézett.  
 'He/she even looked back from time to time'

<sup>11</sup> Note that the frequency adverbial *hébe-hóba* 'now and then' and the reduplicated prefix mean the same thing. Thus the literal translation of the Hungarian sentence would be something like 'Occasionally, Peter will come back now and then', which is definitely odd. The Hungarian original, though it sounds slightly redundant, is perfectly acceptable.

<sup>12</sup> Manfred Bierwisch has argued (Bierwisch 1990) that verb clusters such as *gehen lassen wollte, lesen dürfen möchte, sitzen bleiben sehen würde* are formed by morphological processes. In particular, "Complex verbs are formed by means of what might be called pseudo-affixes, that is, lexical items that are categorized as verbs, rather than affixes, but that share with affixes an argument position associated with lexical category features instead of (or rather in addition to) grammatical features. The crucial consequence of this property is that affixal verbs may combine with their complement verb by functional composition" (Bierwisch 1990, 184).

The particle *is* is a focus particle, that is, it can be interpreted as reinforcing the focus position of the reduplicated prefix, the particle itself cannot be focussed. Moreover, it is enclitic, forming one phonological unit with the prefix, as was the case with the auxiliaries in examples (36a,b) and (37a,b). Consequently, the presence of the focus particle between the reduplicated prefix and the verb does not invalidate (35) either. Note that the focus particle may always be inserted between the focussed prefix and the verb: *el is ment* 'he left after all', German 'er ist auch gegangen'. Even *el is ment* form a unity which cannot be split up and *el is* cannot be moved away from the focus position.

### 5. Further aspects of semantic interpretation

Reduplication may affect the semantic interpretation of the subject noun phrase if the verb is intransitive, and that of the object noun phrase if the verb is transitive:

- (39) (a) A gyengébb faj vissza-fejlődött.  
'The weaker species (Sing.) regressed'
- (b) \*A gyengébb faj vissza-vissza-fejlődött.  
'The weaker species (Sing.) regressed from time to time'
- (c) Egy-egy gyengébb faj vissza-vissza-fejlődött.  
'Some weaker species (Sing.) regressed from time to time'
- (d) ?\*A gyengébb fajok vissza-vissza-fejlődtek.  
'The weaker species (Plural) regressed from time to time'
- (40) (a) A fiú vissza-ült a padra.  
'The boy sat down again on the bench'
- (b) A fiú vissza-vissza-ült a padra.  
'From time to time the boy sat down again on the bench'
- (c) Egy-egy fiú vissza-vissza-ült a padra.  
'Some boys sat down again on the bench from time to time'
- (d) A fiúk vissza-vissza-ültek a padra.  
'The boys sat down again on the bench from time to time'

- (41) (a) Agyon-verte a patkányt.  
'He/she killed (by striking) the rat'
- (b) \*Agyon-agyon-verte a patkányt.  
'He/she killed the rat from time to time'
- (c) Agyon-agyon-vert egy-egy patkányt.  
'He/she killed a rat from time to time'
- (d) ?Agyon-agyon-verte a patkányokat.  
'He/she killed the rats from time to time'
- (42) (a) Mari át-festette a cégtáblát.  
'Mary painted over the sign-board'
- (b) Mari át-át-festette a cégtáblát.  
'Mary painted over the sign-board from time to time'
- (c) Mari át-át-festett egy-egy cégtáblát.  
'Mary painted over some of the sign-boards from time to time'
- (d) Mari át-át-festette a cégtáblákat.  
'Mary painted over the sign-boards from time to time'

(39a-d) shows that an intransitive verb with a reduplicated prefix may require a subject noun phrase which makes it clear that there were several events in succession and in each event a different entity was involved. Singular subject nouns provided they are not modified by an appropriate quantifier do not provide for such a reading, (39b) is ill-formed. (39c), on the other hand, is perfectly grammatical: the subject noun phrase contains the quantifier *egy-egy* which is formed by reduplication from the numeral *egy* 'one' and whose meaning can be paraphrased by 'each time one, occasionally some'. It should be made clear, however, that *egy-egy*, depending on context, may have other meanings as well. The subject noun phrase in (39c) provides exactly the required interpretation: the predication concerns each time a different species. The sentence (39d), on the other hand, is definitely odd. It becomes better, or even fully acceptable, if appropriate temporal adverbials are added, for example, the adverbial *az idők folyamán* 'in the course of time' which makes it clear that we have to do with a succession of events each occurring at different times rather than with one single event. Note that the predicate in (39a-d) describes an irreversible event. In (40a-d), on the other hand, the predicate denotes an activity which can be repeated *ad libitum*, consequently we do not

have any problems with sentences (40b and d). In (41a–d), once again, the predicate describes an irreversible event and the verb is transitive. The singular object noun phrase makes the sentence ungrammatical, as testified by (41b). (41c), on the other hand, is perfectly grammatical due to the presence of the quantifier *egy-egy* in the object noun phrase. (41d) is again odd, but if we add a context which makes it clear that we have to do with a succession of events rather than with one single event, the sentence becomes grammatical. This can be achieved by adding, for example, the relative clause *amelyek időnként előbukkantak* ‘which occasionally appeared’ to the sentence. The sentences (42a–d) are all alright because the predicate describes an activity which can easily be repeated.

In sum, then, predicates denoting an irreversible event require either an appropriate quantifier such as *egy-egy*, or a temporal adverbial such as *időnként* ‘occasionally’, otherwise the sentence is ungrammatical. In each case the result is the same: the sentence describes several events rather than just one single event. In the case of *egy-egy* the events in question may be simultaneous, in the case of *időnként* the events must occur at different time points. We have thus arrived at the following generalization:

- (43) Verbs with iterated prefixes which denote irreversible events can only be used meaningfully in contexts in which they are interpretable as referring to several distinct events.

(43) is a straightforward consequence of the irreversibility of the event denoted by the predicates of the respective sentences.

## 6. Conclusion

Some important theoretical consequences follow from what was said above.

- (i) The rule of prefix reduplication is blind to the derivational history of the base on which it is operating. But it is sensitive to the semantic properties of the base verb as well as to the phonological structure of the prefix, and in some cases even to its meaning (recall examples (6)–(8)). However, it need not know anything about morphological constituent structure: it is sufficient if it knows the last morphological rule performed.

Reduplicated forms have the internal structure of (44):

(44) [[PREF-PREF][V]]<sub>V</sub>

which is brought about by copying PREF in (45):

(45) [[PREF][V]]<sub>V</sub><sup>13</sup>

where some of the properties of PREF, too, must be taken into account (number of syllables, stativity, irreversible change of state, excessiveness).

(ii) Prefixed verbs can undergo a number of morphological rules. E.g. event nominalization: *megértés* 'understanding', participle: *megértő* 'considerate, understanding', infinitive: *megérteni*, etc. These morphological rules are not operative in the case of reduplicated prefixes: \**meg-megértés*, \**meg-megértő*, \**meg-megérteni*. The negated form *meg nem értés* 'non-understanding' is normally interpreted as the nominalized form of *meg nem ért* 'he/she does not understand'. Since such negated verb phrases are impossible in the case of verbs with reduplicated prefixes, as we saw above, the corresponding nominalized forms, too, are ungrammatical. The morphological rule which produces reduplicated verbal prefixes seems to be the only morphological rule which can create syntactic islands from syntactically separable words.

(iii) Auxiliaries which can occur between the reduplicated prefix and the verb are not counterexamples to the claim that reduplicated forms are syntactic islands since it can be argued that complex verb forms containing auxiliaries are formed by means of morphological rules. Neither is the possibility of the insertion of the particle *is* a counterexample since the only function of this particle is to reinforce emphasis.

(iv) Prefix reduplication is a highly productive morphological process with compositional semantics. In the case when reduplicated forms denote irreversible events either the subject noun phrase (with intransitive verbs) or the object noun phrase (with transitive verbs) must be interpreted "distributively" which is not the case with simple prefixed verbs. In addition, reduplication often depends on lexical knowledge (statives, prefixes denoting excesses, irreversible changes of states). This implies that it cannot be a syntactic process, its locus is the lexicon.

<sup>13</sup> Some prefixes may also combine: *ki-be* 'out-in' but never \**be-ki*, *le-fel* 'down-up' or *fel-le* 'up-down', *fel-alá* 'up-below' or *alá-fel* 'below-up'. These can also occur in postverbal position.

(v) There are two kinds of iteration which must receive different semantic representations. The iterative operator without any restriction on the internal phases is appropriate in the suffixed case only. For the reduplicated case the occasional reoccurrence of the event must be built into the semantic representation.

(vi) The inputs to the morphological rule which creates reduplicated forms are phrasal constructs (as in Dutch and German in the case of separable prefixes), but what kind of object are the outputs? Evidently, reduplicated forms are not word-like in the sense that (i) they never get lexicalized, (ii) they cannot function as inputs for deverbal word formation processes and compounding, and (iii) reduplication never changes the syntactic valency of the input verbal form. On the other hand, reduplicated forms are syntactic words since no syntactic rule can manipulate their internal structure. Their status is thus similar to that of infinitives and participles of verbs with separable prefixes in some Germanic languages. At the same time, they are morphological words because they are created by a morphological word formation rule.

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## THE VISUAL FIELD EFFECTS ON PROCESSING WORDS IN GRAMMATICAL CONTEXT

DRAGANA NIKOLAJEVIĆ

### Introduction

Looking back over the past twenty years, since Rubenstein introduced his lexical decision task, one might expect that everything that should be known about language processing is already known. Yet, it seems today that such research has come full circle, as far as different models of the mental lexicon are concerned. Along with the accumulation of empirical data the models have become more complex but have failed to account for the whole phenomenon.

The majority of proposed models describe the mental lexicon as a separate domain in our long-term memory, which contains representations of all the words of a certain language, as well as some relevant information about language production and access. The latter is an issue of disagreement and the point for distinguishing various models of lexical access.

Some models proposed that "procedural knowledge", i.e. the knowledge of morphology and syntax, should be placed in a domain separate from the representations of lexical units (see Forster 1979). This concept corresponds to the distinction between semantics vs. morphology and syntax. Numerous experimental and pathological findings support this distinction. Before we present some of them, we should point out one serious limitation to most models of lexical access.

Since most of the recently offered models are empirically supported, there is a "danger" that they can account for the properties of the English language sooner than for some general linguistic properties, since the majority of psycholinguistic research is done on English. This is the major reason why some of these models cannot account for languages structurally different from English. Serbo-Croatian, being inflectional, is one such language.

### Some properties of the Serbo-Croatian noun system

The Serbo-Croatian nominal system follows the typical pattern of flecional Slavic languages. The main attributes of nouns are case, gender and grammatical number. As we can see in Table 1, the suffix marking the specific combination of these attributes is added to the noun stem: the suffix *-u*, for example, will indicate the accusative singular case of a feminine noun. On the other hand, some forms are morphologically ambiguous, like the suffix *-a* which appears, marking different cases, in all three genders, both in singular and plural. This causes ambiguities in specification of case and grammatical number of an isolated noun form, so that such information can only be obtained from the intonation or from the context.

Table 1

CASE	MASCULINE		FEMININE		NEUTER	
	Singular	Plural	Singular	Plural	Singular	Plural
nominative	kanal	kanal-i	sten-a	sten-e	sidr-o	sidr-a
genitive	kanal-a	kanal-a	sten-e	sten-a	sidr-a	sidr-a
dative	kanal-u	kanal-ima	sten-i	sten-ama	sidr-u	sidr-ima
accusative	kanal-a	kanal-e	sten-u	sten-e	sidr-o	sidr-a
locative	kanal-u	kanal-ima	sten-i	sten-ama	sidr-u	sidr-ima
instrumental	kanal-om	kanal-ima	sten-om	sten-ama	sidr-om	sidr-ima
	kanal 'channel'		stena 'rock'		sidro 'anchor'	

The noun modifiers (prepositions, possessive adjectives, adjectives and verbs) specify the particular part a noun plays in the sentence. This requires agreement between the nominal suffix and the adjective in gender, grammatical number and case. On the other hand, prepositions and verbs require a modification of the noun through their meanings and grammatical frames.

Each preposition requires at least one noun case frame (or a set of case frames, but never all the cases). Thus, the agreement between a preposition and a noun is lexically-syntactically defined. The noun case limits the possible meanings and the syntactic functions of a noun in a sentence. The preceding preposition will, if congruent with the case suffix, specify the thematic role of a particular case.

Agreement relations are involved in the experimental manipulation of morphologically congruent and incongruent pairs of stimuli typically used in experiments on the Serbo-Croatian language. These studies examine the influence of context congruence on the recognition of the target word. Although



belonging to different paradigms, the results of experiments in which a noun (a target word) was preceded by adjectives (Gurjanov *et al.* 1985), or possessive adjectives (Gurjanov-Lukatela-Lukatela 1985) and prepositions (Lukatela *et al.* 1983) as context, confirmed Meyer's findings (Meyer *et al.* 1975): if the target word is morphologically congruent with the context, its recognition will be facilitated. Likewise, if there is no congruence, the recognition will be inhibited. The same results were obtained when verbs (as target words) were preceded by personal pronouns (Lukatela *et al.* 1982). Yet, the nature of these effects is different: while adjectives and possessive pronouns modify the case forms of nouns through their suffixes, verbs and prepositions do that by their meaning, since they are not morphologically marked in a way that would allow us to anticipate the noun suffix. The results of the experiments that used verbs and prepositions as a context could not be explained by the model that keeps the pragmatic (grammatical) processor and the postlexical evaluation of the words separate (Forster 1979). We believe that a model encompassing the knowledge of grammar together with the lexical units could account for the findings obtained on Serbo-Croatian.

One such model has been proposed by Chomsky (1965). In his concept of the "lexicon", lexical units are specified in terms of their morphological and syntactic features. This means that a word is categorized, for instance, as a noun, and further, subcategorized according to its gender, case, etc.

Departing from brain-pathology, we intend to check whether this model is more suitable as an explanation of the effects of congruence obtained in the experiments with verbs and prepositions as a context.

F.J. Gall was the first (at the beginning of the last century) to postulate the functional differentiation of the brain. Since then pathological findings, more or less supporting this, have accumulated proving that language abilities are the most clearly lateralised ones. The research on aphasia was the main contributor to this field.

Based on the research on different types of aphasia (which depend on localization of brain lesion and language impairment) it is now taken for granted that both brain hemispheres are capable of processing semantic aspects of language, but only the left hemisphere processes its syntactic aspects (Broca 1861; 1863; Wernicke 1874). The findings showed that the frontal lesion of the left brain hemisphere results in impaired interpretation and production of inflected words along with difficulties in understanding words that belong to so-called closed classes: prepositions, pronouns, conjunctions etc. (Gardner-Denes-Zurif 1975; Friederici 1982; Bradley-Garret 1983; Bhatgar-Whitaker 1984). The same observations are made with patients with split

corpus callosum. The right brain hemisphere with these patients cannot differentiate active from passive sentences, future from present tense, singular from plural (Gazzaniga–Hillyard 1971).

These findings together with those obtained by experimental methods, give us the ground to believe that only the left hemisphere has a “knowledge” of syntax and morphology.

In research on the functional asymmetry of brain hemispheres with normal subjects the commonly used method (besides dichotic listening) is lateral presentation of stimuli: visual stimuli are very quickly presented laterally, in the left or right visual field. The received information is processed contralaterally (the stimulus presented in the right visual field is dominantly processed in the left brain hemisphere, and vice versa).

Using lateral presentations of stimuli in our experiments, we wanted to examine which of the two hemispheres is involved in processing congruence between prepositions and inflected nouns. Moreover, we were interested in where this congruence is invested: only in the noun suffix (with only the left hemisphere being sensitive to it), or in the preposition as well.

### Experiment 1

An experiment with central presentation of stimuli was necessary for comparison with the results obtained from lateral presentations. We anticipated that nouns preceded by the congruent context would be recognized faster than those preceded by an incongruent context.

#### Method

*Subjects.* The subjects were fifty-six psychology freshmen (University of Belgrade), divided into four groups, with normal vision. All subjects were right-handed, with Serbo-Croatian as their mother tongue.

*Stimuli.* A list of 80 word pairs was presented visually. The first stimulus from each pair was always a preposition. We chose four prepositions for our experiment: two of them govern the locative/dative case: *pri* ‘near, at, with’ and *ka* ‘toward, to’. The other two were prepositions that govern accusative case—*niz* ‘down, along’ and *za* ‘behind, for, to’ which governs either accusative or locative.

The second stimulus was either a feminine, singular, five-letter noun, or a pseudonoun of the same form. The phonological structure of the pseudonouns corresponded to the phonological structure of existing words in Serbo-Croatian. All the nouns belonged to the middle frequency range (Kostic 1965).

Both the nouns and the pseudonouns had case inflections. The inflections were “-i” for the dative/locative case and “-u” for the accusative.

The stimuli were displayed in two situations: in the congruent one a preposition was followed by stimuli with matching inflection, in the incongruent one the inflection of a (pseudo)noun did not mark the noun case which was expected to follow the preceding preposition.

*Design.* The experiment had three two-leveled factors of stimuli: the first factor was the case of the (pseudo)noun, the second factor involved preposition-inflected noun congruence and the third was the lexical status of the second stimulus in the pair. All subjects were shown all the nouns and the pseudonouns, as well as all the prepositions in both the congruent and the incongruent situations. Since we had four subject groups, each subject saw any given test word only once. This means that each subject saw one experimental list with the 40 nouns and the 40 pseudonouns. In each of these two groups, there were 20 words with the dative/locative inflection and 20 words with the accusative inflection. Every such group of 20 inflected words was preceded five times by each of the four prepositions mentioned. These 80 stimuli were presented in random order so that the pseudonouns or the incongruent pairs were not presented more than twice in a row.

*Procedure.* The stimuli were presented visually, on the screen of an Apple II/e computer. First, a preposition was presented for 500 ms in the centre of the screen (replacing the fixation point). After an interstimulus interval, which lasted for 100 ms, the second stimulus from the pair was presented, also centrally. That was an inflected noun or pseudonoun whose appearance on the screen lasted for 1500 ms.

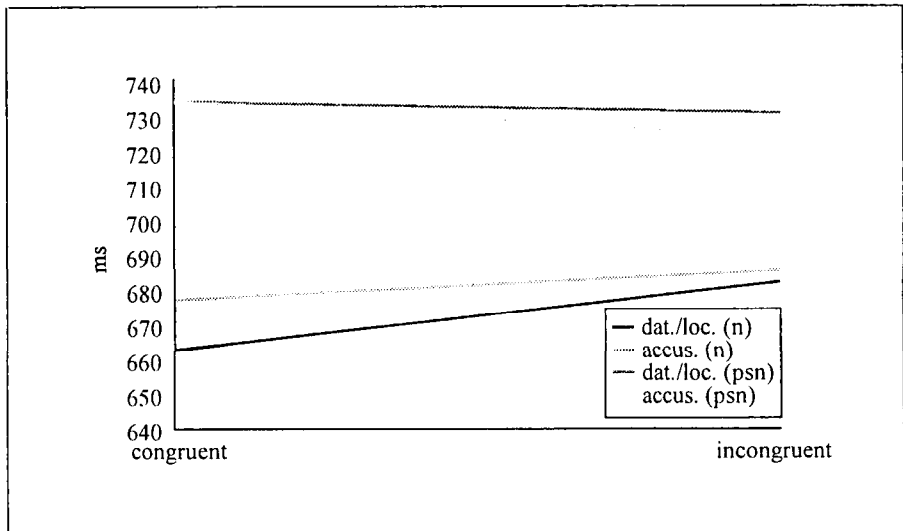
The subjects were asked to look at the fixation point and to answer (by pressing the yes-no button with both hands), as quickly as possible, whether the second presented stimulus (an inflected noun or a pseudonoun) was a word in Serbo-Croatian. The reaction times (in ms) were measured from the onset of the second stimulus. Sixteen practice trials were employed before the experimental list.

## Results

The results of forty-four subjects were included in the final analysis. The reaction time and the number of errors were the main dependent variables.

The analysis of variance on subjects revealed a significant effect of the lexical status of the second stimulus from the presented pair: the nouns were processed faster than the pseudonouns [ $F(1,43) = 64.26$ ,  $MSe = 3839.02$ ,  $p < 0.01$ ]. Also, an interaction between the congruence and the lexical status of the second stimulus was found: [ $F(1,43) = 10.19$ ;  $MSe = 976.45$ ,  $p < 1.01$ ].

The analysis of variance for nouns revealed a significant effect for the congruence: nouns were processed faster when they were preceded by a congruent preposition [ $F(1,43) = 10.38$ ,  $MSe = 1113.77$ ,  $p < 0.01$ ]. A significant difference between the cases was obtained: dative/locative nouns were processed faster than nouns in the accusative [ $F(1,43) = 4.32$ ,  $MSe = 621.40$ ,  $p < 0.05$ ].



*Fig. 1*

Experiment 1: Average reaction time for nouns and pseudonouns

Figure 1 shows the average reaction times for both the nouns and the pseudonouns. The error rate was higher for the nouns preceded by the incongruent preposition [ $F(1,43) = 4.58$ ,  $MSe = 17.86$ ,  $p < 0.05$ ] (see Fig. 2).

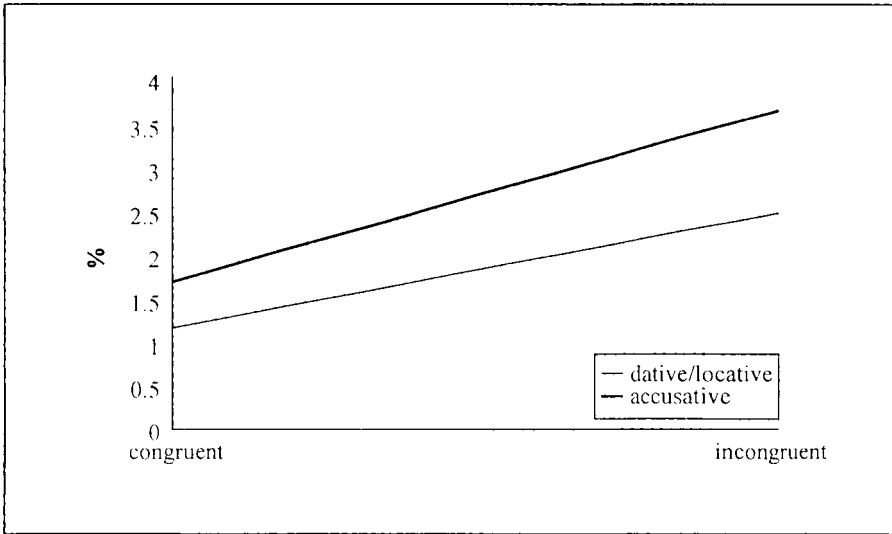


Fig. 2  
 Experiment 2: Error percents for nouns

**Discussion**

The results show that, in central presentation, the noun is processed faster if preceded by a congruent preposition. Also, the nouns in dative form are processed faster than those in accusative form. This case effect had not been expected, since some previous results (see Todorovic 1988) showed that there was no significant difference between the different cases when nouns were presented in isolation, without grammatical context. According to the other results, this experiment confirmed the findings that the congruence effect depends on the lexical status of the second stimulus (cf. Lukatela *et al.* 1983).

**Experiment 2**

The results of Experiment 1 with the central presentation of stimuli showed that nouns are recognized faster if preceded by a congruent preposition. With Experiment 2 we went a step further to see what role each hemisphere plays in processing words in grammatical context. In this experiment the prepositions were presented centrally and the nouns were presented laterally. According to numerous pathological and experimental findings, we expected a left hemisphere competence for processing words in grammatical context.

## Method

*Subjects.* Sixty-eight psychology freshmen (University of Belgrade) participated in the experiment. They were all right-handed, as in the previous experiment.

*Stimuli.* The list of the same eighty pairs of stimuli, as in Experiment 1, was presented to the subjects. The only difference was that the inflected nouns or pseudonouns which followed the centrally presented preposition were presented laterally on the screen.

*Design.* This experiment had three factors: the first factor was congruence between a preposition and an inflected second stimulus. The second factor was the visual field in which the second stimuli were presented, and the third was the lexical status of the second stimulus.

Each subject saw all the nouns and the pseudonouns (in dative/locative or in accusative both in congruent and incongruent situations) sometimes in the right visual field, sometimes in the left one. Four groups of subjects were used and each subject saw any given stimulus only once during this experiment.

*Procedure.* The experiment was performed on the same Apple II/e computer but the procedure was somewhat different.

The first presented stimulus was a preposition. It was centrally presented and its presentation time was 500 ms. Then, after a delay of 150 ms, the second stimulus appeared, 40 pixels from the fixation point, either on the right, or on the left. This second stimulus (a noun or pseudonoun) was displayed for 150 ms. That was long enough to ensure that the stimulus was processed only in one hemisphere contralateral to the visual field. In addition, the distance between the subject and the computer monitor was kept constant: 50 cm.

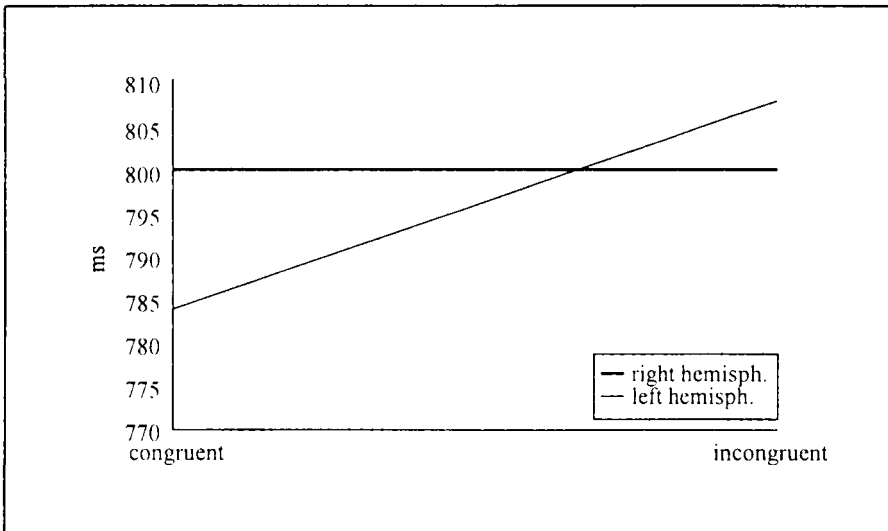
The whole experimental procedure is a replication of the procedure used by Todorovic (1988).

The subjects had the same task as in Experiment 1: to look at the fixation point and answer (by pressing the yes-no button, with both hands), as quickly as possible, whether the second presented stimulus (a string of letters which, actually, were inflected nouns or pseudonouns) was a Serbo-Croatian word.

The reaction time (RT), being the main dependent variable together with the number of errors, was measured in ms from the onset of the second stimulus. Sixteen practice trials were employed before the experimental lists.

## Results

The analysis of variance for the reaction times of nouns (see Fig. 3), indicated that the effect of congruence was statistically significant [ $F(1,67) = 5.63$ ,  $MSe = 2203.42$ ,  $p < 0.05$ ]: the reaction time for a noun preceded by a congruent preposition was shorter than for a noun preceded by an incongruent preposition.



*Fig. 3*

Experiment 2: Average reaction time for nouns

The interaction between the visual field and congruence was statistically significant [ $F(1,67) = 8.12$ ,  $MSe = 1092.36$ ,  $p < 0.01$ ]. This revealed that the left hemisphere was “sensitive” to the grammatical context while the right hemisphere was not.

The effect of the visual field was not statistically significant.

The analysis of the errors for the nouns did not show any significant effect. With the pseudonouns the subjects made more mistakes when the incongruent pairs of stimuli were shown in the left visual field [ $F(1,67) = 5.14$ ,  $MSe = 120.25$ ,  $p < 0.05$ ].

## Discussion

The results from the RT analysis confirmed our expectation that only the left hemisphere would be sensitive to a grammatical context. Furthermore, the extent of the effect was close to the one that we had in the central presentation of stimuli (14 vs. 16 ms).

The fact that there was no difference between the right and the left visual field in processing the incongruent pairs of stimuli can be understood as the effect of facilitation by a congruent context or as an effect of both facilitation and inhibition. To check on one of the two possible reasons for causes, repeating the experiment in a neutral context would be essential.

## Experiment 3

The two previous experiments showed that the noun is processed faster if it is preceded by a grammatically congruent context. Also, results from Experiment 2 showed that when prepositions are presented centrally and nouns laterally there is an effect of congruence, but only for the nouns presented in the right visual field. But we still do not know where this effect comes from. Does it originate only in the case form of the noun, with only the left hemisphere being sensitive? Or rather, does a preposition have a different functional status, depending on the visual field of its presentation?

We supposed that our third experiment, with lateral presentation of prepositions and central presentation of nouns and pseudonouns, would answer this question.

One possible result of Experiment 3 could be the effect of congruence but only when the preposition is presented in the right visual field, with the effect only in the left hemisphere, suggesting that prepositions undergo a certain morphological subcategorization, besides just marking a certain relation based on their meaning. The alternative result would be the one showing no differences between the left or right hemisphere while processing laterally presented prepositions. This result would imply that both hemispheres "understand" the meaning of the preposition and the relation marked by it.

## Method

*Subjects.* Seventy-two psychology freshmen (University of Belgrade) participated in the experiment. They were right-handed and their mother tongue was Serbo-Croatian.

*Stimuli.* The stimuli were identical as in the previous two experiments.



*Design.* Experiment 3 had three factors: the first was the congruence between the inflection of noun (pseudonoun) and preposition, the second was the visual field in which the prepositions were presented, and the third factor was the lexical status of the second stimulus. As we can see, the only difference from Experiment 2 was that now, in Experiment 3, the prepositions were presented laterally and the nouns were presented centrally.

Since no subjects were to see the same stimulus twice, there were four groups of subjects.

*Procedure.* The first stimulus (a preposition) was presented laterally, 40 pixels from the fixation point to the left or to the right. The presentation time of this first stimulus was 150 ms. After a delay of 150 ms, the second stimulus appeared in the centre of the screen, and lasted for 1500 ms.

The subjects were 50 cm away from the screen of the Apple II/e computer. Their task was just the same as in the previous two experiments: they were required to look at the fixation point, and to answer (by pressing the yes-no button with both hands), as quickly as possible, whether the second stimulus was a word of Serbo-Croatian. Again, it was a lexical decision task.

The reaction time (in ms) was measured from the onset of the second stimulus, and together with the number of errors, was the main dependent variable in the experiment.

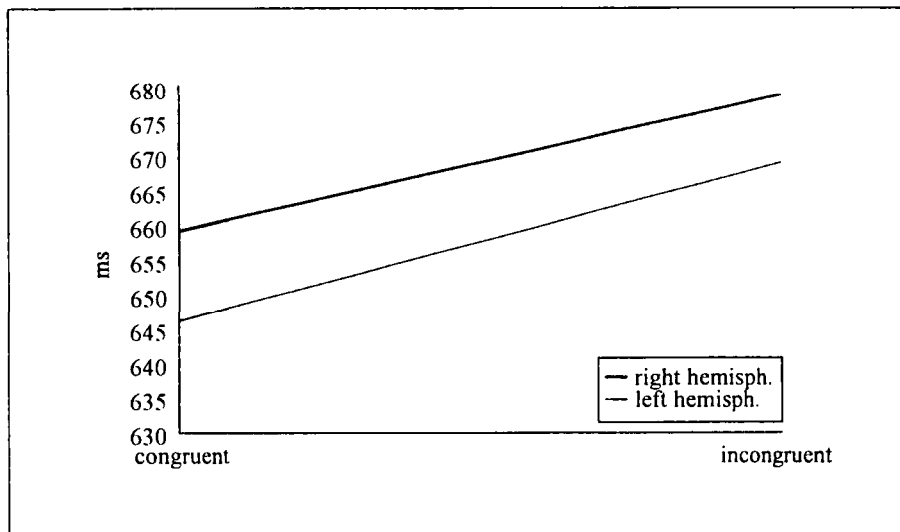
Before the actual experiment, the subjects had sixteen practice trials.

## Results

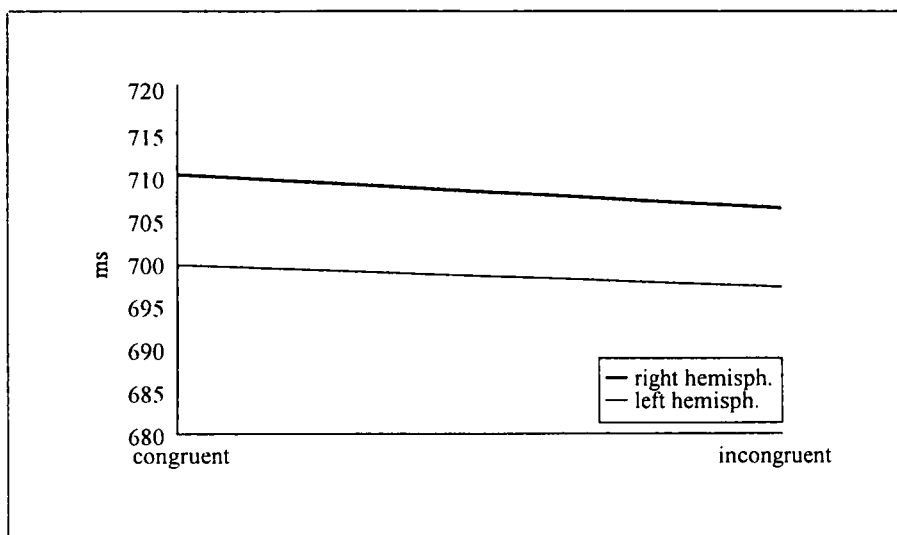
The average reaction times for nouns and pseudonouns are shown in Fig. 4 and in Fig. 5, respectively.

The analysis of variance for the nouns revealed a significant effect for congruence: if a noun was preceded by a congruent preposition the reaction time was shorter [ $F(1,71) = 19.22$ ,  $MSe = 1818.77$ ,  $p < 0.01$ ]. Reaction time for the nouns was shorter if a noun was presented in the right visual field [ $F(1,71) = 6.90$ ,  $MSe = 1315.34$ ,  $p < 0.01$ ].

The interaction between congruence and the visual field is not statistically significant. Analysis of variance for the pseudonouns showed that their reaction times were significantly shorter when the context was presented in the right visual field [ $F(1,71) = 6.59$ ,  $MSe = 1105.28$ ,  $p < 0.01$ ].



*Fig. 4*  
Experiment 3: Average reaction time for nouns



*Fig. 5*  
Experiment 3: Average reaction time for pseudonouns

## Discussion

The results showed the effect of congruence (the nouns were processed faster if they were preceded by the congruent prepositions). A more important result for us here is that there was no significant interaction between the congruence and the visual field. This implies that there is no functional asymmetry between two brain hemispheres when processing prepositions. This is the main reason for rejecting the familiar idea of subcategorization proposed by Chomsky, as long as prepositions are concerned.

### General discussion

All previous research on the influence of context on noun recognition in Serbo-Croatian, no matter what was presented as context (verb, preposition or adjective), suggested that there was an effect of congruence. Depending on what the context was, the "roots" of this congruence effect were different. If a noun was preceded by an adjective (Gurjanov *et al.* 1985; Gurjanov-Lukatela-Lukatela 1985), the meanings of both the noun and the adjective were irrelevant, since the agreement of their inflexions was enough to produce the effect of congruence. With a verb context the effect of congruence comes from a noun suffix and the meanings of both the noun and the verb.

Our third experiment showed that when a preposition plays the context role, the effect of congruence comes from the meaning of the preposition and the inflexion of the noun. Bearing pathological results in mind, there should not be any subcategorization present in the right hemisphere. Since our results showed that both hemispheres process prepositions, our conclusion is that prepositions are not subcategorized.

The results obtained by this research suggest that the grammatical context effect depends on the word type: if the words which undergo declension (adjectives or possessive pronouns) play the role of context, congruence is obtained by matching the suffix of the context word with the suffix of the target word (noun). If the noun is preceded by a word which does not undergo transformations marked by a suffix, the congruence is obtained through the meaning of the context and the inflexion of the noun. Since both hemispheres process the meaning of a word, the effect of congruence can occur in both of them (as suggested by the results of Experiment 3).

Let us now try to imagine how the brain hemispheres process pairs of a laterally presented preposition and a centrally presented noun. Since both hemispheres are sensitive to the meaning of a word, the meaning of a preposition is evoked in both of them. When the noun was presented centrally, it

was the left hemisphere which realized the potential meanings of the case and contrasted them with the preposition. In other words, it was the left hemisphere that joined the lexical meaning of a preposition (processed by the right hemisphere) with the syntactic meanings of a given case in the central presentation.

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## PROCESSING OF MULTIMORPHEMIC WORDS IN HUNGARIAN\*

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### 1. Basic issues of morphological processing in Hungarian

Hungarian provides good testing grounds to study some of the basic issues in lexical access and morphological decomposition in processing and representation. With its rich agglutinative structure accompanied with more and less productive allomorphy patterns it offers ample opportunities to raise and test quite straightforwardly some of the issues that are central in the contemporary literature on morphology processing. The following list is presented here as a sort of a general research program. The experimental work presented thereafter only touches upon a subsample of these issues up to now.

#### 1.1. Segmentation

The parsing system in all languages can be expected to decide upon word boundaries at least for two reasons. First, in order to allow lexical access the system 'has to know' what string to look for in its lexical memory. Even if the search is incremental as some models like the cohort model of Marslen-Wilson-Tyler (1980) suggest word boundaries would be useful in deciding about the maximum possible string to be looked for. Second, segmentation would be of use in deciding what length of a sign-string the mental parser has to combine to arrive at the meaning and syntactic function of the given word form. This second function is an especially burdensome issue in an agglutinative language. Agglutinative languages may support these efforts by their structural features. E.g. the fixed first syllable stress in Hungarian gives a cue concerning access of the given stem and a 'backward sign' for compilation.

Spoken based models of lexical access all emphasize the importance of first syllable in access, which is our first proposed factor here (see Marslen-

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Wilson-Tyler 1980, and the volumes edited by Frauenfelder-Komisarjevsky-Tyler 1987 and by Marslen-Wilson 1989). Several observations also highlight the importance of stressed syllables on lexical search (Grosjean-Gee 1987; Gósy 1993). We suggest that the Hungarian system uses both principles—relying in search on first and on stressed syllables. Segmentation is possibly also supported by vowel harmony as a possible cue in the sense that all suffixes belonging to the same word form 'have to harmonize'. The appearance of a non-harmonizing syllable as well as a word stress may serve as instructions to start a new word in the analysis of the input. It is noteworthy in this context that Peters (1985) in her review of segmentation issues in language acquisition also highlights the importance of first syllables, stable stress, and vowel harmony in the segmentation task facing the child.

### 1.2. Lexical access

It is a central theoretical issue in Hungarian processing what weight the system should allocate to access and to decomposition respectively. The usual processing issue of holistic and analytic approaches, total access or decomposition (for reviews see Aitchison 1987; Clark 1991; and the volume edited by Sandra-Taft 1994) has rather interesting implications if applied to Hungarian (Gergely-Pléh 1994). It seems to be natural that an entirely holistic approach to access in Hungarian would become enormously resource sensitive due to the large number of word forms around a given stem and also due to the unsaturation of the paradigms in language use. (Even in relatively large corpora only a few dozen forms of even the most frequent stems do show up, as Kornai 1992 has recently pointed out). That would favor an analytic model. One could suggest, however, that even in the framework of a generally analytic model in some cases holistic access might be used. Several mixed models have been proposed in the literature e.g. for Slavic languages (Lukatela-Carello-Turvey 1987; Kostic 1994) and the mixed model has also been proposed as a general one favoring the holistic representation of frequent forms (Sternberger-MacWhinney 1986).

The proposed mixed models are regularly related to derivation-inflection differences as well as suggesting that derived words would be processed as holistic units (for a review see Clark 1991) especially in the case of non-transparent derivations (Marslen-Wilson *et al.* 1994) while inflection would be treated in an analytic manner. It is of some interest to see whether there would be similar differences between derivational and inflectional suffixes in an agglutinative language (where these morphemes are subject to unifying morphotactic rules) in the preferred mode of access. Niemi *et al.* (1994), mainly on the basis of



pathological data, claim for Finnish that while nominal inflections are treated in an analytic way, derivational suffixes form a holistic entry together with their stem.

One of the basic issues in our studies up to now was to see how differentially morphological decomposition is prevalent with different types of affixes, and whether there are signs of preferential processing orders in suffixes (like the 'bathtub effect' proposed by Aitchison 1987). Hungarian word formation rules allow us to study affixes that differ both positionally (prefixes and ordered suffixes), and functionally (derivational suffixes, plural and possessive markers, and case markers).

### 1.3. Formal combinatorics

The issue of analytic and holistic (as well as mixed) access is complicated by a further concern in agglutinative languages characterized by long multimorphemic words. How are morphemes integrated over a time scale during understanding? For a characterization of some of the theoretical possibilities listed here, see Gergely-Pléh (1994).

One option is a stepwise incremental left-to-right view: multimorphemic words 'are glued together' right away as the different morphemes come in. There is a constant search in a morpheme store (maybe even in two stores, one corresponding to lexical words, the other to bound grammatical morphemes) and the accessed morphemes are integrated together right away. Another option is integration initiated by the word boundary marker. In this case compilation would wait until the end of the word. As one extreme, one could even imagine to start lexical search for the stem also only after a word-end signal was received. This would of course be most inefficient. Its analysis, however, points out that in the temporal organization of access interesting asymmetries might be present in Hungarian. With regard to prefixes (a most prevalent affix type in Hungarian, see below) a stripping-access-combination cycle might be imagined while regarding suffixes the initiation of search would not require an 'active stripping' merely a lexical search for the 'remainder' of the word body.

The possible sequential differences also relate to the issue of possible typologically specific processing mechanisms as proposed by Gergely-Pléh (1994; cf. also Gergely 1991; Pléh 1989; 1990) suggesting a more analytic mechanism in Hungarian compared to e.g. English, or by Berwick (1991) claiming that non-configurational languages still have an order based strategy but on the level of words rather than on the level of phrases.

#### 1.4. Semantic integration

Along with integration of forms one also needs to integrate the meaning of multimorphemic words. (As a matter of fact it is an empirical issue whether this goes on simultaneously with the integration of form or subsequent to it.) Some of the theoretically interesting empirical issues relate here as well to the temporal course of events. In listening to or reading a multimorphemic word like (1), do the corresponding conceptual elements such as units corresponding to 'plurality', 'Ego', and so on, already become active at the given earliest decision points, or are they activated only later on? Does their activation depend on transparency or on change in part-of-speech category (compare (1) and (2))?

- (1) *barát -sága -i -m -ban*  
 friend -ship -pl -1sg -Inessive
- (2) *ház -as -sága -i -m -ban*  
 house -Adjder. -Nderiv -pl -1sg -Inessive  
 (cf. *házas* 'married', *házasság* 'marriage')

Does 'house' get activated at all in a non-transparent case like (2)? Is there an on-line semantic integration corresponding to the proposed incremental formal compiler irrespective of semantic transparency?

It is quite natural to expect differences related to morpheme types. The studies by Marslen-Wilson *et al.* (1994) had shown in English that in a cross-modal priming paradigm there were no signs of integration between the stem and the derived form in the case of non-transparent derivations. They have also raised the issue of what the relationship is between access/integration on the one hand and lexical representation on the other. It is possible in principle to have a direct access to *barátság* 'friendship' in (1) with no need to build it up starting from the two morphemes while on the level of lexical representation this form might still have a pointer to the word *barát* 'friend' that would fill it up with semantic content during speech understanding. However, does *házas* 'married' in (2) have a pointer towards the word *ház* 'house' even in a secondary way i.e. on the level of representation? From the point of view of language structure this suggests that in dealing with multimorphemic word forms psycholinguists have to differentiate between access and representation issues allowing most of all holistic access combined with analytic representation, and some kind of control over this by apparent (or naive) motivation of derivational semantic relations (Dressler 1989). Principles like the one proposed by

Kiefer (1992) to the effect that opaque derivations are of the same order of semantic complexity as transparent ones may hold for representation but not for access. In access, opaque derivations might be very well less complex than transparent ones.

The general idea of a differentiation between access and representation issues may be rather directly connected to our experiments up to now. We were running lexical decision tasks that are most likely targeting slow (secondary) representation processes rather than access itself. Thus our results may not tell too much about fast access routes.

### 1.5 Allomorphy

Hungarian is infamous for its rich allomorphy relations (for linguistic characterizations see Papp 1982; Kálmán 1985; Nádasdy 1985; for a psycholinguistic one MacWhinney 1978). Quite a few studies on acquisition patterns—overgeneralizations, rules versus exceptions or items etc.—have applied different existing approaches to rule learning to Hungarian (MacWhinney 1975; 1978; 1994; Réger 1979). Some studies (MacWhinney–Pléh–Bates 1985; Pléh 1989; 1990; Pléh–Jarovinskij–Balajan 1987) also showed that sentence processing was related to allomorphy: in interpreting simple transitive sentences both preschoolers and adults reverted to order based strategies—and thereby sometimes to mistakes—when accusatives of allomorphs that result in processing difficulties (consonant clusters) were in a non-prototypical linear position (as sentence initial objects).

The allomorphy issue, however, should also be taken up with regard to access and representation as a function of allomorphy. Some trivial issues to be studied are listed here. They should come as no surprise knowing the child language data, the history of stem classes and their possible relationship to the rule versus exception issue so central not only in contemporary linguistics at large but in psycholinguistic studies on morphology in particular (Pinker 1991; Pinker–Prince 1994; MacWhinney 1994; Rebrus 1994).

Are allomorphs always mapped onto the same citation form during access or are there different access files depending on frequency and phonetic motivation? E.g. just to take the accusative (-*t*), is the mapping the same in the case of *mókust* MÓKUS ‘squirrel’, *kutyát* KUTYA ‘dog’, a very productive lengthening type, *kezet* KÉZ ‘hand’, a no more productive shortening type, and *havat* HÓ ‘snow’, a closed class of ‘*v*-insertion stems’ that has less than a dozen members?

Is there a primary access of the allomorph relevant to the given ending in entries with multiple allomorphs or are word forms directly mapped onto

a dominant or abstract allomorph? Thus, would there be more facilitation in cross-modal priming between the prime and the congruent allomorphs ((a) types in (3–4)) compared to the non-congruent allomorphs ((b) types)?

	PRIME	TARGET	
(3)	<i>ló-nál</i> 'horse-at'	(a) <i>ló-hoz</i> 'horse-to'	(b) <i>lov-ak</i> 'horse-pl'
(4)	<i>lov-at</i> 'horse-acc'	(a) <i>lov-ak</i> 'horse-pl'	(b) <i>ló-nál</i> 'horse-at'

Is frequency relevant here? According to data from a Hungarian frequency dictionary (Füredi-Kelemen 1989), in some forms the non-citation allomorph is more frequent. To take shortening stems as an example, with KENYÉR 'bread' the shortening allomorph *kenyere-* is twice as frequent as the citation allomorph *kenyér*, while with SÁR 'mud' the citation allomorph (*sár*) is much more frequent than the shortening one (*sara-*). The issue of primary access could be tested by using delays in priming (of a few hundred ms magnitude). If priming depends in the case of identical and different allomorphs on delays that would imply a primary access of allomorphs and a secondary access of the theoretical underlying form if any. Of course the whole issue is becoming even more intriguing in Hungarian if we consider that due to the morphemic-analytic nature of orthography in some cases we find a non-transparency (though a systemic one) between the acoustic and the orthographic forms. For English, Taft (1985) showed some effects of orthography. In Hungarian there are interesting regularities in orthography that should be exploited from a psycholinguistic point of view. Usually, orthography at morpheme boundaries is analytic in Hungarian as well as in other languages, i.e. it follows morphemic structure even if there is assimilation through regular morphonology. If the access is influenced by acoustics, one would expect to find a large priming difference between (5) and (6), the first one deviating from morpheme-grapheme-phoneme correspondence while being transparent in writing. Of course one would expect even more difference in cross-modal priming.

(5) *szabadság* [sabatša:g] *szabad* [sabad] 'freedom – free'

(6) *butaság* [butaša:g] *buta* [buta] 'stupidity – stupid'

Do predictability relations related to the paradigms (Papp 1982) have an effect on processing load and speed? E.g. in a shortening stem like KÉZ 'hand' the *keze-* and *kéz-* allomorphs have some differentiating value. Singular cases except the accusative go with *kéz-* while *keze-* goes beside the singular accusative with all the plural forms plus with most of the possessive paradigm. In the productive lengthening paradigm like KUTYA 'dog', however, the *kutyá-* lengthened allomorph appears in all word forms but the singular nominative where the short allomorph is used. Thus, in this case, the use of one allomorph has little predictive value while in other paradigms it has. This might be relevant in the light of the approach taken by Kostic (1994) that tries to relate all morphology processing issues to information load considerations.

### 1.6. The primary aim of our experiments

Out of all these relevant issues of morphology processing in Hungarian our studies up to now mainly deal with the problems outlined under 1.2 and 1.3. Using rather slow processing measures and only visual presentation we were looking for **representation** differences between different morphemes both as a function of linear position and morpheme type. Since we were using a lexical decision type of task our results are also relevant to the problem of how 'formal compilation' goes on in processing isolated words.

We used the traditional **lexical decision paradigm** introduced to the study of morphological processing by Taft (1979). Words are presented one by one on a computer screen and the task of the subject is to tell (by pressing one of two buttons) whether they are indeed words in the language. This procedure has its well-known limitations: it is of course isolated word processing and only written processing. As the use of the cross-modal priming paradigm by Marslen-Wilson *et al.* (1994) indicates, however, quite similar effects show up in acoustic processing as well.

## 2. Experiment One: Differential treatment of different affixes

In his pioneering studies on the decision task, Taft (1979) has outlined the rather sophisticated negative type of argumentation characterizing the entire field since that time. He has shown that deciding about real, but still 'abstract stems' like *scribe* that they were not words took longer than deciding about non-stems like *lish*. The reason for this in the original model of Taft was straightforward: as (7a) shows, *scribe* corresponds to a series of prefixed forms with the virtual stem while as (7b) indicates *lish* only appears in one form. Thus, for the (a) forms there is a prefix-stripping strategy when we process the

prefixed items. The subjects would in fact strip the prefix, take the remaining stem, decide about its legitimacy and then decide about the correctness of the combination of prefix and stem. This would show up in slower rejection times with forms like (7c) where only the combination is illegal but both morphemes are legal.

(7)	STEM	Combinations
	(a) <i>scribe</i>	<i>de-scribe, sub-scribe, pre-scribe</i>
	(b) <i>lish</i>	<i>relish</i>
	(c) <i>scribe</i>	<i>re-scribe</i>

It is noteworthy that compared to the separable and entirely productive prefixes in Hungarian and German, most of the studies following Taft in English, French (Beuvillain 1994), or Italian (Laudanna-Burani-Cermele 1994) are using abstract stems that are normally not free forms and at the same time the 'prefixes' (*de-*, *re-*, *sub-* etc.) are not free forms either. That might be quite relevant in interpreting some of our results.

Several studies have extended the lexical decision task and the prefix stripping model to the processing of suffixes. In general, most research has come up with interesting asymmetries suggesting e.g. that stripping was not characteristic of (at least inflectional) suffixes (Taft 1985), that in slow secondary measures (comparing the identity of two visually presented words) the stem was a more important initiator for search than prefixes (Beuvillain 1994). Some general models were also suggested claiming on the basis of mostly lexical decision studies that there is a general search economy difference between prefixes and suffixes. It is profitable to develop a strategy to strip prefixes to assist access because stem based search is more economical. Laudanna *et al.* (1994) would add that this is especially true if the given prefix is very frequent and the given word initial string is statistically very rare as a non-prefix. However, with suffixes that would not work: the stem would already be there directing search before we would be able to start stripping. General stripping with suffixes would delay search. This leaves open, however, two basic issues that motivated our studies. First, what happens if you compare lexical decisions over comparable items in a single study in a language where the same forms can be combined with a rich variety of suffixes and prefixes. Second, even if suffixes are not stripped for search, some kind of decomposition might be important in the formal combination of the given word form into a 'legal form'.

## Methods

**Subjects and procedure.** 20 undergraduate psychology students (12 females, 8 males) between 18 and 23 participated in the experiment. They were instructed to read 'words' on a computer screen and decide if the string was indeed a word. They had to make decisions by pressing the letter I (*Igen* 'yes') or N (*Nem* 'no') on the keyboard of the computer.<sup>1</sup>

Stimuli were presented in a random order. Each stimulus stayed on the screen until the button pressing response. It was followed by the next stimulus with a delay of 1 sec. The program measured RTs in units of a hundredth of a second. Subjects had to read 100 strings. 50 words were correct, 50 somewhere spoiled. Only data for the rejection times are used here.

### General structure of the words

All stimulus items (correct and incorrect alike) were formed on the structure of deverbal nouns, with prefixes, derivational suffixes, possessive markers and case, as (8) shows.

- (8) *ki -véd -és -é -re*  
 Pref V DerSuff Poss Case  
 'for warding it off'

Regarding the linear structure of the words the ordering of the different morphemes was strict. This ordering is of course always fixed in Hungarian. Our subjects could build up specific strong expectations. The prefix always preceded the verbal stem, and after the stem the deverbal suffix—possessive marker—case marker order was strictly obligatory. It is important to note that all our words—as well as the non-words—had basically the same structure and also the same length. This could have led to strong expectation effects and also to long reaction times with all words being six syllables long. That is, much longer than the words used in most recent studies on morphology processing. All the 'spoiled' words contained only one mistake and the mistake always involved changing one letter as compared to the correct target.

<sup>1</sup> An IBM PC-286 type computer was used with colored EGA screen. The experimental program that recorded reaction times was prepared by Zoltán Reményi and Tamás Szabó under the direction of László Bernáth supported by the foundation 'For Hungarian Higher Education and Research'. We thank for their courtesy here.

**Stimulus list.** Table 1 shows examples and the logical structure of the stimulus list together with the number of tokens the given type was represented by and also the correct 'target word'. The table shows in bold the entire morpheme that was spoiled but it can be seen that in fact only one letter was changed.

*Table 1*  
The different types of stimuli used in Experiment One

Types of mistakes	spoiled	target	n	RT
1. Prefix comb.	<b>meg-intézkedésében</b>	??	5	2.66
2. Prefix nonexist.	<b>mag-bízói</b> mnak	<b>meg-bízói</b> mnak 'to my clients'	5	1.92
3. Stem bad	<b>be-súd-ói</b> nkát	<b>be-súg-ói</b> nkát 'our informants-acc'	5	2.33
4. Derivation bad	<b>elolvas-án-á</b> val	<b>elolvas-ás-á</b> val 'by reading it'	5	2.36
5. Poss incorrect	<b>kifaragó-e-ként</b>	<b>kifaragó-ja-ként</b> 'as its carver'	5	2.00
6. Case non-harm.	<b>lemondása-ről</b>	<b>lemondása-ról</b> 'of his resignation'	5	2.37
7. Case misspelled	<b>elválásod-gan</b>	<b>elválásod-ban</b> 'in your separation'	5	2.18
8. Miscellaneous	<b>elválákodban</b>	<b>elválásodban</b>	15	2.13
9. Correct	<b>elindulásakor</b>		50	2.20

In (1) an existing prefix was combined with a stem yielding a form that is semantically banned. In (2) the prefix was misspelled resulting in a nonexisting morph. In (3) the same was done for the stem, and in (4) for the derivational suffix, in (5) for the possessive marker. We had two types of mistakes for case markers. (6) used an existing case marker that was, however, breaking vowel harmony, while (7) was a 'typo' leading to a non-existing suffix. Category (8) was in a way a filler. We tried to have exactly as many mistakes as we had correct forms. Therefore 15 further mistakes were introduced in order to supplement the 35 that were introduced systematically. It is slightly misleading to call them 'miscellaneous' because in an abstract sense they could all be classified under one of the above types.



### Results and discussion

Reaction time data were analyzed using multiple one-sample *t*-tests with the 3D program of the BMDP program package (Dixon-Horton 1979). This rather questionable process was used because the comparisons were made only on the basis of correct responses. Therefore, actual *N*s were different in different comparisons. Only rejection times will be considered. It is still worth to notice from the mean values presented in Table 1 two general facts. RTs were extremely slow, the overall mean being well over 2 sec. If we compare this with the average times in similar experiments of the magnitude of 6–800 msec with three syllable words in Laudanna *et al.* (1994), or 1100–1330 msec with four syllable non-words in Taft (1994) it seems to be evident that our task was rather difficult. For the systematically varied rejections subjects needed over 450 msec for each syllable, while in the studies quoted a syllable needed 2–300 msec. However, in our material, each new syllable was a new morpheme. The long reaction times probably were spent both in reading and in morphological analysis. But across the board, these slow procedures certainly suggest that here we have data mainly on representation rather than access.

Another interesting overall aspect of our data is that accepting correct words was not faster compared to all mistakes. As a matter of fact, out of the 8 paired comparisons between the correct words and the different incorrect ones only one gave a significant difference. Non-existent prefixes indeed were rejected faster than correct words were accepted ( $t(19)=2.23$ ,  $p<.05$ ). This overall relative slowness of the positive judgments suggests that due to the long words and the enforced analytic strategy our subjects were forced to read all items in a careful analytic way.

**Treatment of prefixes.** Existing prefixes that violated some combinatory restriction (1) took longer to reject than nonexistent ones did (2). This 700 msec difference was statistically very reliable ( $t(19)=4.13$ ,  $p<.001$ ). That corresponds to the general prefix stripping idea of Taft (1979) and Clark (1991). To use the more recent formulation by Sandra (1994) regarding prefixes, a language like Hungarian follows the economy according to search (fewer units) rather than that of the economy of grammatical analysis. The new model of Taft (1994) presents a 'pseudoconnectionist' analysis of the stripping effects. He claims that in English one does not have to postulate a separate prefix store. Rather, a model with separate levels of representation (morphs, word forms, conceptual units) with a strong automatic activation between levels (*vive* activates *revive*) would be sufficient. However, for languages where prefixes have

their own life (they are not only productive but also separable, show up as individual stress units) this would hardly work without supposing an individual storage for forms like *meg-*. We could interpret the extreme slow times with type (1) due to the classic prefix stripping ideas: one accesses both elements and finds a rule-based mismatch. But one could be a 'mellowed connectionist' like Taft (1994) seems to be, saying that the 700 msec are needed for a search starting both from *meg-* and from *-intézkedésében* in a connectionist net. But even if you are replacing rules here with a failure of pattern matching in a connectionist net you still have to suppose 'stripping' i.e. a separate existence for the prefix units.

**'Stripping of case markers'.** There was a similar trend for case markers: rejection of existing but non-harmonizing case markers took almost 200 msec longer than rejecting non-existing case markers ( $t(19)=2.03$   $p<.10$ ). Though this was only a statistical trend it would support the idea that at least in representation, i.e. with slow decision processes like the ones involved here, Hungarian nouns follow the 'stripping and checking' view (Sandra 1994). This would mean here in the case of the non-harmonizing suffix an identification of the last syllable as a case marker and then checking its 'properness' vis-à-vis the preceding parts of the word. On this basis of course one cannot claim any relationships between phonological (i.e. harmony), formal (e.g. using verb inflections on nouns) or syntactic and semantic coherence. In order to study that, further experiments using suffixes crossing part of speech boundaries and also violating ordering rules should be used.

**Stems and derivational suffixes.** There was no difference between mistake types (3) and (4) ( $t(19)=.25$ ,  $p>.80$ ). We tend to interpret this as an indication for a holistic or separate entry approach to derived stems in the lexicon as suggested by many previous models (for reviews see Sandra 1994; Taft 1994). The only novelty in or finding is that this effect shows up with long words with many suffixes both preceding and following the derivational suffix. However, this result does not in fact suggest any special search for derivational suffixes. The sequences *be-súd-ó* and *elolvas-án-á...* were only trivially differentiated in the design, the first one being treated as a spoiled stem and the second one as a spoiled suffix. But as a matter of fact, one could say that the processor treats the sequence *olvasán* as a non-word i.e. as a 'non-stem'. At the same time both spoiled stems ( $t=3.81$ ,  $p<.001$ ) and derivations ( $t=2.83$ ,  $p<.01$ ) took longer to be rejected than forms with non-existing prefixes. That is indirect support

for the prefix-stripping idea: the stripped early part is easier to search in a possible special limited store while searching for the 'main body' of the word takes place over a much larger store.

**Phonetically wrong possessive markers** had the second fastest rejection rate. They were significantly faster than combinatorically inappropriate prefixes ( $t=4.26$ ,  $p < .0005$ ), wrong stems ( $t=2.59$ ,  $p < .02$ ), wrong derivational suffixes ( $t=2.72$ ,  $p < .001$ ), and both types of wrong case markers ( $t=2.97$ ,  $p < .01$  and  $t=2.41$ ,  $p < .05$ ). One could suggest a post hoc explanation for this effect. In this fixed position setup there had to be a possessive marker at the given spot. This provides the subject with a predetermined very small closed set to search through. If the system has accessed the stem and sees that this cannot be a case marker (because the word is still longer), it would only have a small set to check. Similar data were obtained by Gergely-Pléh (1994) in a click detection time experiment in sentential contexts. Though all suffixes increased processing load showing up in slower reaction times to target clicks, possessive markers seemed to have a relatively smaller processing load.

**Linearity and the bathtub effect.** Was there any clear linear effect? In a broad sense, yes. If we set aside possessives and only consider the strings at morpheme slots that are in themselves non-existent (i.e. if we only consider the search problem and not the combination) we find the following trend: **Prefix > Case, Stem, Derivation**. Prefixes made for faster rejection than case markers ( $t=2.63$ ,  $p < .01$ ). At the same time it was faster to reject would-be words on the basis of prefixes ( $t=3.81$ ,  $p < .001$ ,  $t=2.83$ ,  $p < .01$ ) compared to spoiled stems and derivations. Though non-existing case markers seemed to be faster, their advantage over spoiled stems and word form internal derivational suffixes was not significant ( $p > .02$ ). Thus, there is some slight evidence for the 'bathtub effect' proposed by Aitchison (1987) but it mainly concerns primacy of the beginning of the word.

### 3. Experiment Two: Positional effects and vowel harmony

Experiment One had several disadvantages that all had to do with the fact that search and position were both involved. The differences found between combination based (existing morphemes in wrong combination) and 'sign body' based mistakes (non-existing morphemes) raise the trivial empirical issue: what would happen if only one type of mistake—namely, phonological combination—was involved in the combination mistakes.

In the second study the empirical issues represented by the design were simplified. The only spoiled forms used were strings with vowel harmony mistakes. This provided a possibility to study more neatly the linear ordering effects in morphological parsing since rejection on the basis of 'non-existence' was not possible here. Stems were always correct. Subjects had to make their decisions on the basis of non-compatibility of the morphs. The exclusive use of vowel harmony mistakes (rather than semantic or word-class combination mistakes) had another function as well: it set up a shallower processing attitude in the experiment.

### Methods

**Subjects and procedure.** 20 undergraduate psychology students (10 males, 10 females between 19 and 23) had to decide on 84 words, half of them being correct half of them not. Details of the procedure were identical with those in Experiment One.

#### General structure of the words used

- (9) *nevet -és -ed -ben*  
 V DerSuff Poss Case  
 'in your laughter'

The general structure of words corresponded to (9). All stimuli were multiply suffixed nouns. In comparison with the previous study, however, the material was more varied in length and complexity. Sometimes the words were prefixed (though prefixes were not experimental variables) and due to singular-plural variations in the possessive marking word length varied between 4 and 8 syllables, most of the words being 6 syllables long. Mean word length was 5.7 syllables, 5.8 for correct words and 5.7 for incorrect ones.

**Stimulus list.** The structure of the stimulus list is shown in Table 2 together with the mean reaction times. (The 1s show the linear position of the vowel harmony mistake.)

*Table 2*  
The structure of words in the second study  
together with mean rejection times

Types of mistakes	form	gloss	n	RT
000: correct	futásod-dal	'with your run'	42	1.61
001: case is bad	futásod-del	'with your run'	6	1.73
010: poss is bad	kiáltás-em-ra	'to my shout'	6	1.62
011: case and poss	olvasás-ük-re	'to their reading'	6	1.62
100: derivation	ír-és-aimból	'from my writings'	6	1.60
101: der and case	húz-és-á-ben	'in his pull'	6	1.56
110: der and poss	fest-ás-aink-re	'to our paintings'	6	1.53
111: all suffixes	hat-és-ed-nek	'to your impact'	6	1.42

### Results

A 3-way analysis of variance was performed on the reaction times. Mean RTs for each type of target were used in each subject. The three within-subject factors were the three types of suffixes: derivational suffix, possessive, and case. Each factor had two levels: right or wrong. This model has two disadvantages. It underestimates the weight of the correct items their number being 42 while that of each incorrect type being represented by 6 tokens. Second, it directly compares rejection and acceptance time which is a questionable practice.

Table 3 summarizes the effects found in the analysis of variance.

*Table 3*  
Effects on reaction times in the vowel harmony experiment

Effect	df	F	p
Derivational suffix	1,19	8.03	.01
Possessive marker	1,19	7.08	.02
Case marker	1,19	< 1	n.s.
Der x Poss	1,19	< 1	n.s.
Der x Case	1,19	6.08	.02
Poss x Case	1,19	2.86	n.s.
Der x Poss x Case	1,19	< 1	n.s.

**General observations.** RTs were quite slow in this study as well. The mean RT for rejections was 1.58 sec while for accepting the correct items the mean RT was 1.61 sec. This is, however, by far not as slow as results in Experiment One. When subjects had to make rejections only on the basis of a 'shallow' phonological feature, mean times needed by syllable went down to the usual 2–300 msec range quoted above. (The actual mean by syllable was 233 msec.) Rejection of incorrect strings on the whole was of the same magnitude as acceptance of correct items. At the same time, similar to the results in Experiment One, some mistakes were rejected faster than the mean correct acceptance times. Here this was mainly true for cumulative cases with several mistakes piled up. Forms with three mistakes took 190 msec less time to reject than correct forms to be accepted.

Two of the three morpheme types had a significant main effect. If the derivational suffix was spoiled, mean RTs went down to 1.53 sec compared to 1.64 if the derivational suffix was correct. If the possessive marker was spoiled, again RTs were faster, 1.55 sec compared to 1.62 when the possessive was correct. Only the last possible suffix had no main effect. With case markers the spoiled forms had a mean RT of 1.56 sec while the non-spoiled forms showed a mean RT of 1.59 sec. The strong interaction of Case with Derivation, as well as the main effects found can be summarized into some meaningful patterns.

**Linearity.** If only one suffix was wrong there was a clear linearity effect observed, cases taking the longest time to be rejected. The linear order was 1.60, 1.62 and 1.73 sec. This is not trivial because it does not support the slight 'bathtub effect' found in our first study. It seems to be that a bathtub effect only prevails if we consider non-existing morphemes. As we turn to incompatibility decisions based on shallow features, a clear left-to-right linearity shows up. The earlier a mistake is, the faster it is rejected.

**Stem closeness.** If the first mistake is next to the stem (i.e. the derivational suffix does not harmonize) rejection is faster. Mean times being 1.53 and 1.66 for the relevant mistakes (for all the mistakes that do involve derivational suffixes compared to those that do not). This is the reason for the strong interaction between Derivation and Case.

#### 4. General discussion

The two experiments presented here are only the first steps in the more ambitious program outlined in the introductory section of this paper. The rather off-line and methodologically questionable lexical decision types of these studies showed a few interesting methodological and a few substantial results. Regarding methodology our studies showed that in an agglutinative language if lexical decisions involve both search and grammatical-semantic combinations, reaction times become extremely slow. It is apparent that in these cases one can only study secondary representation processes rather than "lexical access" itself and the role of morphological parsing in it. The overall times are very sensitive to the general arrangement. If only combinatory mistakes are present and on a rather shallow level, processing becomes much faster.

With the provision that we might very well have limited our scope to secondary analysis due to the nature of our task, we could still claim a few substantial results. In Hungarian both prefix stripping and case stripping were present. Also, decision times with non-existing morphemes indicate that search according to a fixed word structure is influenced by the relevant set size. That implies that people in a reanalysis of the input consult different types of stores, one corresponding to lexical stems, the other to grammatical morphemes.

On the basis of Experiment Two we can also claim that the most important integrator of word forms in Hungarian, namely vowel harmony, can become the basis of systematic decisions during reanalysis, features of this reanalysis being combinatorics and linear effects.

However, in order to see whether all this combinatorics of Hungarian morphological parsing is a real element of the primary access process, one would need to turn to more indirect on-line methods and to the study of continuous speech processing.

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# REGULARITY IN INFLECTION AND DERIVATION: RULE VS. ANALOGY IN JAPANESE DEVERBAL COMPOUND FORMATION\*

YOKO SUGIOKA

## 1. Introduction

In this paper I will discuss deverbal compounds in Japanese and show the possibility that their derivation involves two different types of mechanisms, rule and associative memory, both of which have also been claimed to be operative in inflectional morphology.

### 1.1. Regular and irregular inflection

In languages that show dichotomy between regular and irregular inflection such as English, it has been assumed that the forms with regular inflection (*boys*<sub>PL</sub>, *walked*<sub>PAST</sub>) are generated by rule, while those with irregular inflection (*teeth*<sub>PL</sub>, *ran*<sub>PAST</sub>) are memorized, that is, the inflected forms are listed in the lexicon item by item.<sup>1</sup> Various facts about level-ordering in word formation as pointed out by Kiparsky (1982) support this dichotomy, and acquisition studies such as the experiments reported in Gordon (1985) have shown that the level-ordering between regular and irregular inflection is attested in children of 3-5 as well.

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<sup>1</sup> The dichotomy between regular inflection and irregular inflection is admittedly less clear in some other languages. Nevertheless, there is some evidence reported in Clahsen *et al.* (1992; 1993) that the dichotomy between regular and irregular inflection is observed in the acquisition of German noun forms and verb participles, which show much more complex inflectional paradigms than English.

More recently, it has been claimed by Pinker–Prince (1991) and others that it is not a simple dichotomy, but there are three different mechanisms involved in the production and comprehension of a complex lexical item as listed below:

- |                          |   |
|--------------------------|---|
| (1) Type of process:     | examples (English past forms):  |
| (a) computation / rule   | (V+ed) walk/walked, laugh/laughed   |
| (b) associative memory   | sing/sang, ring/rang, drink/drank, sink/sank<br>sleep/slept, keep/kept, feel/felt, mean/meant |
| (c) rote memory / listed | go/went, be/was   |

Rule-governed processes such as the English past participle formation with *-ed* in (1a) are derived by pure concatenation of stem and affix, and are characterized by being productive, applied to nonce words, and compositional in meaning. On the other hand, the so-called irregular inflection forms are not simply listed in the lexicon, but can be divided into two groups, (1b) and (1c) above. Associative memory links patterns or types and this handles the irregular forms that show ‘sub-regularities’ or family resemblance, as exemplified in (1b). This process can be characterized as semi-productive, as it allows analogical extension as we will see below. Rote memory links item to item without any association of patterns, so the suppletion pairs shown in (1c) are simply listed in the lexicon. This process is completely unproductive.

## 1.2. Rule and associative memory in inflection

According to this view put forward by Pinker–Prince (1991), rule and associative memory represent two mechanisms for computation of complex lexical items that are very different in character. First, associative memory, but not rule, shows the frequency effect because the association link is strengthened by frequency. It is well known that irregular forms are the ones frequently used, while less frequent words tend to be overgeneralized. Secondly, associative memory is based on similarity of the linked items; thus we find some patterns of resemblance among the family of irregularly inflected forms as shown in (1b) above. And finally, associative memory may allow for analogical extension. For instance, as a speech error one may utter *brang* as the past form of *bring* by analogy to the registered pattern of *sing/sang*, *ring/rang* and so on, when the rote memory that links *bring* and *brought* fails. In contrast to this, application of rule is not affected by frequency nor similarity, and by being the default, applies to new words, loanwords, and exocentric words.

### 1.3. Associative memory and analogy in compound formation

Taking the view on inflection proposed in Pinker-Prince (1991) as a starting point, I would now like to address the question of whether this rule/associative memory distinction can be applied to other areas of morphology. In this paper I would like to show that the distinction is valid in analyzing the deverbal compound formation of Japanese.

Compound formation is generally perceived as a rule of simple concatenation of two items (e.g., [*computer*]<sub>N</sub> + [*desk*]<sub>N</sub>), just like the regular inflection we saw above (verb + suffix). Alternatively, it is also possible to say that in some cases a new compound is formed by analogy to the existing one, as schematized in (2):

(2) XZ → YZ (X → Y on the basis of XZ)

In this formation a new compound YZ is formed by analogy to the existing XZ by supplying a different non-head Y.<sup>2</sup> Take the English back formation compound verb, for instance. English does not have a productive compound verb formation rule, and it has been claimed that what appear to be compound verbs in English are formed by back formation from the related compound nouns; for instance, a verb *babysit* is derived from a compound noun *babysitter*. Now a number of variants of this compound verb such as *phone-sit*, *dog-sit*, *house-sit*, *plant-sit*, and so on are found in use. Such compound verbs are not necessarily derived by back formation but can be formed by analogy to the existing verb *babysit* by replacing the non-head element as in (2), especially since there is no productive compound verb formation rule [NV]<sub>V</sub> in English.<sup>3</sup> In other words, it is possible that a speaker derives and uses a compound verb *phone-sit* without there being a compound noun *phone-sitter* in the lexicon.

Now we have seen the possibility that compound formation may involve analogy as opposed to a rule of concatenation, let us proceed to the discussion of deverbal compounds in Japanese.

<sup>2</sup> See Bauer (1983, 95–6) for some discussion on such analogical formation. Bauer lists *seascape*, *cloudscape*, *waterscape*, and so on, as the examples of analogical formation based on the existing word *landscape*.

<sup>3</sup> See Shimamura (1990, ch.5) for more discussion on backformation verbs. It is also noteworthy (ibid. 202) that her informant found the verb *phone-sit* acceptable but not the noun *phone-sitting*.



## (4) Productive – direct object+V:

- (Act) tegami-kaki 'letter writing', takara-sagasi 'treasure hunting',  
gohan-taki 'rice cooking', sakana-turi 'fish fishing',  
tuna-hiki 'rope tugging' pan-yaki 'bread baking',  
mizu-kumi 'water fetching', kihukin-atume 'donation collecting'
- (Agent) sinario-kaki 'scenario writer', hana-uri 'flower vender',  
hituzi-kai 'sheep herder'
- (Instrument) tume-kiri 'nail cutter', kawa-muki 'skin peeler',  
hae-tataki 'fly swatter'

Note that it is easy to coin a new word in this category as well. For example, when bending spoons became meaningful as a sign of supernatural power, it was named *supuun-mage* 'spoon bending', and jargons related to computers abound in new compounds such as *bagu-hiroi* 'bug hunting'.

In contrast to this, as shown below, compounds with unaccusative subjects and adjuncts are possible but not fully productive.

## (5) Semi-productive – unaccusative subject + V:

- yuki-doke 'snow melting', \*koori-doke 'ice melting'  
zi-nari 'ground rumbling', \*beru-nari 'bell ringing'  
ne-agari 'price rising', \*kion-agari 'temperature rising'

## (6) Semi-productive – semantic argument/adjunct + V:

- GOAL Pari-iki 'Paris going(bound)', \*Pari-tuki 'Paris-arriving'  
INSTRUMENT te-gaki 'hand writing(handwritten)', \*te-tumi 'handpicked'  
LOCATIVE Amerika-umare 'American-born', \*Amerika-zini 'America-died'  
CAUSE sigoto-zukare 'work tired', \*sigoto-nayami 'work troubled'  
MANNER/RESULT<sub>Adv</sub> haya-gui 'fast-eating', usu-giri 'thin-cutting'

One important characteristics of the adjunct compounds of (6) is that the particular heads of the existing compounds are quite productive, and we will return to this point in the next section. It is also remarkable that many consist of adjunct and transitive verbs, so they violate what is known as the First Sister Principle unlike their English counterparts.

As pointed out in Kageyama (1982), the external argument cannot appear in VC at all. In other words, an unergative or transitive subject cannot form a VC as shown below. We will henceforth exclude this type of VC from our discussion.

- (7) Impossible – unergative/transitive subject + V:  
 (unergative) \*inu-hoe ‘dog barking’, \*hito-narabi ‘people-queuing’  
                   \*otona-naki ‘adult crying’ (cf. otoko-naki ‘cry like a man’)  
 (transitive) \*hati-sasi ‘bee stinging’, \*kodomo-kui ‘kid-eating (agent reading)’,  
                   \*sensei-tataki ‘teacher hitting (agent reading)’

The second factor that affects productivity of VC is the interpretation of the output. In short, act/agent nominals are productive, but result nominals are not, as illustrated below.

- (8) (a) tamago-yaki ‘egg-frying’ (egg frying<sub>ACT</sub>/fried egg<sub>RESULT</sub>)  
       (b) tamago-yude ‘egg-boiling’ (egg boiling<sub>ACT</sub>/\*boiled egg<sub>RESULT</sub>)  
 (9) (a) isi-gumi ‘stone-put together’ (stone piling<sub>ACT</sub>/stone wall<sub>RESULT</sub>)  
       (b) isi-narabe ‘stone-put side by side’ (stone setting<sub>ACT</sub>/\*lined stone<sub>RESULT</sub>)

Of the pairs in (8) and (9), only the (a) examples have the product interpretation while both have the act interpretation, showing the unproductivity of the formation of result nominals as opposed to act nominals.

### 2.3. Morphological productivity vs. morphological creativity

In regard to different notions of productivity, Schultink (1961) says that morphological productivity and morphological creativity are different; the notion of morphological productivity applies to word formations that are unintentional and uncountable, while morphological creativity is involved in intentional coinage that tends to draw attention and are limited in number (as cited in Lieber 1992, 3). This distinction partially overlaps with the rule/analogy dichotomy we saw in relation to inflection, and is helpful for the understanding of the different types of productivity displayed by the Japanese VCs.

The VCs formed with direct object nouns (DO compounds) as discussed in 2.2 show the characteristics of morphological productivity and rule-generated items. In contrast, the VCs with non-DO (adjunct compounds) are mixed in character because they have many lexical gaps as we saw in (5) but at the same time they exhibit considerable productivity with specific heads.<sup>5</sup> Some examples of such productive head items are given below.

<sup>5</sup> It is also observed in Mihara (1988) that some deverbal heads such as *-gaeri* ‘returning from’ and *-mairi* ‘visiting (to worship)’ are highly productive in forming a VC with locative argument, but no account is given in his analysis.



- (10) (a) Tokyo-umare, Tokyo-sodati '[place name] Tokyo born, Tokyo-bred'  
 (b) pen-gaki, waapuro-gaki, kureyon-gaki '[writing utensil] pen/word  
 processor/crayon-written' or 'writing with pen, etc.'  
 (c) usu 'thin' / yotu 'four pieces' / ara 'coarse'-giri '[resultative]-cut'

These deverbal heads are extremely productive only with the particular type of argument and in the particular usage. For instance *-gaki* '-written, writing with -' combines productively with instruments as shown in (10b), while *-giri* '-cut' combines productively with resultatives as shown in (10c) but not with instruments: \**hasami-giri* 'scissor-cut'. Given this, we are led to believe that productivity of these adjunct compounds are not due to the rule operating on abstract categories but rather they are formed by analogy based on a specific head, using the mechanism of associative memory. Furthermore, a new compound can be intentionally created, and this is most clear when the coined word is based on a lexicalized compound with noncompositional meaning as the following:

- (11) (a) sen-giri 'thousand'-cut' (finely chopped) →  
 hyaku-giri 'hundred'-cut' (not finely chopped)  
 (b) tomo-bataraki 'both working (double income)' →  
 kata-bataraki 'one of the pair working (single income)'

The important point is that the newly formed (11a) *hyaku-giri* 'hundred-cut' meaning 'not finely chopped' is not interpretable by itself but only as an intended pun on the base compound, and the same is true with (11b). Thus these coined VCs exemplify a case of morphological creativity that manifests itself in formation by analogy.

We have now seen that the productivity of the DO compounds can be attributed to their rule-based character, while the semi-productivity of the adjunct compounds can be due to their analogy-based character. Although Japanese VCs have been treated as one type of lexical word formation, we can now say they are actually two distinct processes involving two different mechanisms, rule on the one hand and analogy based on associative memory on the other. In the following Section 3, we will see further evidence for their difference and propose different structures that will account for their contrasting behaviours.

### 3. Rule vs. analogy in VC formation

To summarize the discussion so far, we have postulated that Japanese VCs can be divided into the following two types.

- (12) Rule-generated (X+Y) VC: DO+deverbal N, productive, compositional<sup>6</sup>  
 Analogy-based (XZ → YZ) VC: adjunct+deverbal N, semi-productive

We will now look at some evidence for their different nature.

#### 3.1. Categorical features of Rule VCs and Analogy VCs

Although the Rule VCs and the Analogy VCs with the interpretation of act nominal are both event nominal in the sense of Grimshaw (1990), they are different in their [ $\pm V$ ] features, as shown below.

- (13) Rule VC: N[+N, -V]: simple event nominal (Grimshaw 1990)
- (a) tegami-kaki o do 'do letter-writing'  
 letter write acc suru
- (b) (o-rei o) \*tegami-kaki suru 'to letter-write (thanks)'  
 thanks acc letter write do

The Rule VC *tegami-kaki* 'letter writing' can be the argument of a regular verb *suru* 'do' but it cannot be incorporated into the light verb *suru* to form a complex verb, *tegamikaki-suru*, as shown in (13b).<sup>7</sup> This fact indicates that this nominal does not have a [+V] feature, and is a simple event nominal.<sup>8</sup>

<sup>6</sup> We can also find a number of noncompositional compounds with DO non-heads, as pointed out by an anonymous reviewer (e.g., *kubi-kiri* 'head-cut, to fire' *asi-kiri* 'leg-cut, to pre-select by some cut-off point'). This is natural, since compounds, once created, tend to be listed in the lexicon and go through lexicalization. We will see more such cases in Section 4.

<sup>7</sup> See Kageyama (1982) for the categorial features of Japanese, and Kageyama (1993, 178–93) for the discussion of the various interpretations of VCs, and also Kageyama (*ibid.*, Chapter 5) for the discussion of light verb constructions.

<sup>8</sup> An anonymous reviewer pointed out the following example as an exception.

Tenryuu-gawa o kawa-kudari suru  
 Tenryu River acc river go-down do  
 'to ride a boat down the Tenryu River'

*Kawa-kudari* is not a typical DO compound because the non-head bears a Path relation, not Theme to the verb base of the head. I must leave the relevance of the thematic relations within compounds to their classification for further study.

The Analogy VC with the act interpretation behaves differently as shown in (14).

(14) Analogy VC<sub>ACT</sub>: VN[+N, +V]: complex event nominal (Grimshaw 1990)

- (a) tegami o pen-gaki suru 'do pen-writing of letters  
 letter acc pen write do =write letters with a pen'
- (b) cf. English: \*pen-writing of letters vs. to hand-pick tomatoes

The Analogy VC *pen-gaki* 'pen-writing' can be incorporated into the light verb, and the complex verb *pen-gaki suru* can take the internal argument of the base verb, as shown in (14a). This indicates that *pen-gaki* is a complex event nominal, a verbal noun with [+V] feature, and that it shares argument structure with the base verb (cf. Kageyama 1993, 188).

On the other hand, the Analogy VC with the result/product interpretation is naturally a referential nominal and hence cannot occur with *suru* with or without incorporation as shown in (15).

(15) Analogy VC(result): referential nominal N

- (a) \*ninsoo-gaki (o) suru 'to do a portrait'  
 portrait writing(product) acc do
- (b) \*tamago-yaki (o) suru 'to do a fried egg'

As we have seen in this section, the heads of different types of VCs, although they are all nouns, are not uniform in their categorial features.

### 3.2. Internal structure of Rule VC and Analogy VC

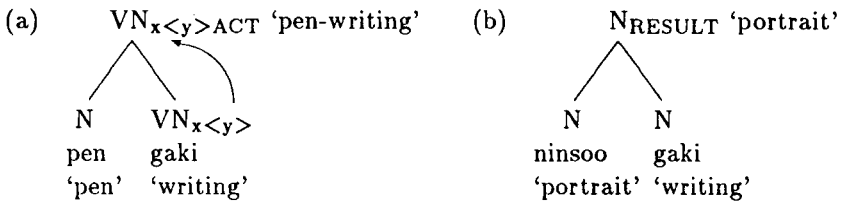
Let us now consider how we can represent the observed differences more concretely. Taking their categorial features as well as their interpretations, we can postulate the following internal structures for each type of VCs, starting with the Rule VC:

- (16) Rule VC
- $$\begin{array}{c}
 N_{ACT} \text{ 'bread cutting'} \\
 | \\
 V' \\
 / \quad \backslash \\
 N_y \quad V_x \langle y \rangle \\
 \text{pan} \quad \text{kiri} \\
 \text{'bread'} \quad \text{'cut'}
 \end{array}$$

In forming a Rule VC any noun and a transitive verb, putting pragmatic constraints aside, can be picked from the lexicon to constitute a V', which is then nominalized by conversion. Note that the verb *kiri* 'cut' here is the head of the V', but not of the top N. In other words, (16) is an exocentric structure, so the categorial features including the argument structure cannot percolate up to the top N node. This structure reflects our intuition about the meaning and function of these VCs. That is, a certain action such as 'cutting bread' is given a name by turning it into a noun. Since it is a pure noun, it is [-V] and does not allow incorporation by the light verb as we saw in (13). As for the agent or instrument interpretation which also exist with many Rule VCs, I conjecture they are derived by zero-nominalization from the act nominal, since there is some evidence that they have the same exocentric structure, as we will see later.

In contrast with this, the Analogy VCs all have adjunction structure, with an adjunct or a modifier as non-head, which is consistent with our assumption in (12) that these VCs are formed by analogy on the existing compound by replacing the non-head.

(17) Analogy VC



The head of the act nominal (17a) is a verbal noun [+N, +V] with argument structure  $x<y>$ . We assume here that verbal nouns have separate lexical entries from verbs. Since Analogy VCs have endocentric structure unlike Rule VCs, the features of the head verbal nouns such as category features and argument structure percolate up to the whole compound. In other words, *pen-gaki* is a VN with the argument structure  $x<y>$ , which accounts for the observations we made in (14) that *pen-gaki* can be incorporated by a light verb and can also license an internal argument as an outside NP. The Analogy VC with the result interpretation, on the other hand, is formed with the head deverbal noun with the result meaning and its modifier as shown in (17b). The process of deriving a common noun from a monomorphemic verb is not productive in Japanese, and that explains the relatively small number of Analogy VCs with the product interpretation.

I will now discuss some phonological and syntactic differences between the Rule VC and the Analogy VC, which will follow from the different structures we have postulated in (16) and (17).

### 3.3. Accent patterns of Rule VC and Analogy VC

First, we will see that the different accent patterns of these compounds can be accounted for if our assumption is correct that the right-hand element of the Rule VC is a V root and that of the Analogy VC is a noun. The compound accent rule of Japanese is very complex and we cannot go into the details. For the present purpose, I will borrow from the rule proposed in McCawley (1977, 272).

- (18) (a) In a noun compound X#Y, the accent of Y predominates (i.e. the accent of X is eliminated).
- (b) If Y is long [ $>2$  moras] and final-accented or unaccented, put accent on the first syllable of Y.
- (c) If Y is short and final-accented, deaccent the whole compound.

If we restrict ourselves to the compounds with 2-mora words, the general stress pattern of the Rule VC is that the second element is preaccented, and that of the Analogy VC is that the whole compound is deaccented as illustrated below. (The capital letters in the examples represent the accented moras.)

- (19) (a) Rule VC: hoN-YOmi 'book-reading', paN-YAki, 'bread baking/baker'
- (b) Analogy VC: taTI-YOMI 'stand-reading (browse)',  
maRU-YAKI 'whole-baked'

At first sight it appears puzzling that they do not exhibit the same accent pattern. However, note the following interesting fact about the verb root (*ren'yoo-kei*) in Japanese. The verb root in Japanese has two functions in a way comparable to English gerund; one as a verb to appear in infinitival constructions such as *V-ni iku* 'go to V', and the other as a noun to form deverbal nominals. The crucial point for the accent pattern of VC is that for a number of verbs the verb root form bears different accent depending on its function (Kawakami 1973). As shown below, the verb root form is preaccented when used as a verb in the infinitival constructions (20), while a deverbal nominal derived from the same verb is final-accented (21).



- (23) (a) Rule VC: hito + kai → hito-kai 'man buyer (slave merchant)'  
 Analogy VC: matome + kai → matome-gai 'collective buying'
- (b) Rule VC: kane + kasi → kane-kasi 'money lending/-er'  
 Analogy VC: zikan + kasi → zikan-gasi 'lending by the hour'

The situation with 3-mora verbs is somewhat complicated, although it is consistent with our analysis. See the following examples.

- (24) (a) kaSEg-u 'earn' / (Noun) KAsegi 'earning, salary'  
 Rule VC: syookin + kaSEgi → syoOKIN-KAsegi 'prize earning'  
 Analogy VC: aRA + KAsegi → aRA-KAsegi 'big earning'
- (b) taTAK-u 'hit, pat' / (Noun) taTAKI 'hit, mushed product'  
 Rule VC: KAta + taTAKi → kaTA-TAtaki 'shoulder patting'  
 Analogy VC: huKURO + taTAKI → huKURO-DAtaki 'beaten  
 by many'

The accent pattern of the Analogy VC in (24) follows directly from (18); (24a) from (18a) and (24b) from (18b), respectively. On the other hand, that of the Rule VCs predicted by (18a) would be *syoOKIN-KASEgi* and *kaTA-TATAki*, but the accent shift rule that moves the nucleus forward by one mora in the 3-mora head seems to be operative here. The same type of accent shift is attested in a number of nominal compounds such as the following (Sato 1988, 248):<sup>10</sup>

- (25) NAmA + taMAgo → naMA + TAmago 'raw egg'  
 siBU + uTIwa → siBU + UTiwa 'dark-colored fan'

The compound accent patterns of Japanese are complex, and very little analysis has been published on the accent patterns of the deverbal compounds. Here I have only touched on a subclass of the phenomena and must leave many questions for future study. Nevertheless, it is clear that the different accent patterns of the two types of VCs give support to the categorial features of the right-hand element we postulated for Rule VCs and Analogy VCs.

<sup>10</sup> It is also noted in Akinaga (1981, 16-7) that compound heads longer than 3-mora tend to be initially accented.

### 3.4. Rendaku

Rendaku, voicing of the initial consonant of the second element of a complex word, is very common among compounds in Japanese. Some examples are given below.

- (26) ame 'candy' + tama 'ball' → ame-dama 'candy ball'  
 hi 'sun' + kasa 'umbrella' → hi-gasa 'parasol'

In the number of examples given so far, the readers must have noticed that in some VCs the initial consonant of the non-head shows Rendaku. In fact, in some examples in the preceding section (23, 24b) where both types of VCs exhibit the same accent pattern, that voicing feature seems to mark the distinction when applicable—it has long been noted that when the word already contains a voiced consonant it cannot undergo Rendaku, which explains its absence in (24a) above. Some structural conditions for the application of Rendaku have also been proposed (e.g. Right Branch Condition, see Otsu 1980), but the process is basically believed to be largely idiosyncratic and lexically determined. For instance, some native words have been found to resist Rendaku completely (27a), and most loanwords do not undergo Rendaku under any condition (27b) (Sato 1988).

- (27) (a) saki 'end': pen -saki /\*pen-zaki 'pen point'  
           iki -saki /\*iki-zaki 'go-end (destination)'  
           (cf. saki 'to bloom': oso-zaki 'late blooming', nido-zaki 'twice blooming')
- (b) sukaato 'skirt (loanword)': maki-sukaato /\*maki-zukaato 'wrap-around skirt'  
       kuriimu 'cream': nama-kuriimu / \*nama-guriimu 'fresh cream'

So it is clear that Rendaku is not only phonologically conditioned but must be triggered by the lexical feature (henceforth [ $\pm R$ ]) of the right-hand element of the complex word.

In addition to the trigger by the lexical feature, it has also been pointed out that certain types of compounds resist Rendaku. Sugioka (1984, 105–13) has noted that VCs with the direct object as the non-head have the tendency to resist Rendaku, while the same deverbal head shows Rendaku with the adjunct non-head.<sup>11</sup> See the following pairs of examples illustrating the contrast.

<sup>11</sup> Sato (1988) also makes this observation.



- (28) (a) tegami-kaki 'letter writing', syoosetu-kaki 'novel writer', e-kaki 'painter'  
/ pen-gaki 'writing with a pen', hasiri-gaki 'hastily written', sita-gaki  
'draft'
- (b) pan-kiri 'bread cutting', hara-kiri 'belly cutting', kan-kiri 'can opener'  
/ usu-giri 'thin-sliced', te-giri 'hand-cut', yotu-giri 'cut into four'
- (c) sakana-turi 'fish-fishing' ika-turi 'squid-fishing'  
/ umi-zuri 'ocean fishing', ippon-zuri 'single-hook fishing'
- (d) kusa-kari 'weed mowing' / maru-gari 'completely mowed'
- (e) ase-huki 'sweat wiping, handkerchief', mado-huki 'window wiping',  
asi-huki 'foot wiper' / zookin-buki 'mop wiped', kara-buki 'dry wiped'
- (f) huton-hosi 'mattress airing' / kage-bosi 'drying in the shade'
- (g) gohan-taki 'rice cooking' / yu-daki 'cooking with hot water'
- (h) hae-tataki 'fly swatter' / hukuro-dataki 'beaten by many'
- (i) musu-tori 'insect catching' / ike-dori 'caught alive', yoko-dori 'snatched'
- (j) usi-kai 'cow herder' / hanasi-gai 'loose herding', ko-gai 'raise from earl'
- (k) syoozi-hari 'window papering' / garasu-bari 'glass-fitted', ita-bari  
'boarded'
- (l) imo-hori 'potato digging', ana-hori 'hole digging'  
/ roten-bori 'opencut mining', te-bori 'hand digging'
- (m) yane-huki 'roof thatching' / wara-buki 'straw-thatched', kawara-buki  
'tile-roofed'
- (n) kubi-turi '(neck) hanging', zubon-turi 'trouser hanger'  
/ sakasa-zuri 'upside-down hanging', chuu-zuri 'in-the-air hanging'

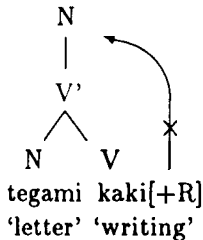
These examples amply indicate that Rendaku is sensitive to the classification of VCs we have been developing in this paper. Namely, Rule VCs resist Rendaku while Analogy VCs allow it. To further confirm this point, the same contrast is found among the direct object VCs: as shown below, the act / agent nominals (i.e. Rule VC) (29a, 30a, 31a) resist Rendaku while result nominals (i.e. Analogy VC) (29b, 30b, 31b) allow it.

- (29) (a) ninsoo-kaki 'portrait painting (act) / portrait painter'  
 (b) ninsoo-gaki 'portrait (i.e. product of painting the portrait)'
- (30) (a) atena-kaki 'address writing (act)'  
 (b) atena-gaki 'written address (product)'
- (31) (a) huton-hosi 'mattress airing (act)'  
 (b) ume-bosi 'dried plums (product)'

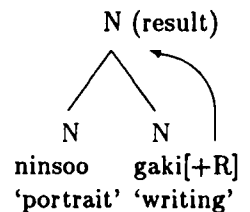
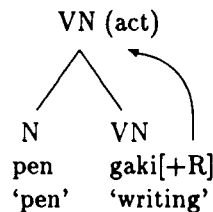
Note that there appears to be some correlation between the accent pattern and Rendaku.<sup>12</sup> Many of the Analogy VC with two-mora heads are deaccented and show Rendaku, e.g. *uSU-GIRI* 'thin-sliced', *uME-BOSI* 'plum-dry (dried plum)', and so on, while their Rule VC is dominated by the preaccented pattern of its heads, e.g. *paN-KIri* 'bread cutting', *huTON-HOsi* 'mattress airing'. There are some cases, however, where the accent patterns are the same and in such cases we still find the difference in Rendaku, as in (23ab) and (24b); e.g. *kaNE-KASI* 'money-lending' vs. *jiKAN-GASI* 'hour lending'. Thus we can say that neither Rendaku nor the accent patterns directly triggers the other, but they are triggered by the different structures of these VCs.

The contrasts in Rendaku can be explained if we assume that in order for Rendaku to apply, not only the head must bear the feature [+R] as discussed above but it is also vital that the whole compound have the feature [+R]. Since the Rule VCs have exocentric structure as we have seen above, the feature of the head cannot percolate up to the top N and Rendaku is blocked, as shown in (32a) below. In contrast, the Analogy VCs have endocentric structure and as shown in (32b) the head feature can percolate up to the top N, allowing it to trigger Rendaku.

(32) (a) Rule VC



(b) Analogy VC



<sup>12</sup> See Sato (1988) for more discussion on accent patterns and Rendaku.

This account predicts that the Analogy VC with the same [+R] head will always show Rendaku regardless of what occupies the non-head position, and this generalization holds as far as I can tell. In turn, the facts about Rendaku confirm the significance of our classification of VCs and the structures postulated for each type.

### 3.5. Percolation of the [+wh] feature

The last piece of evidence has to do with feature percolation in syntax. In Japanese so-called Pied-Piping is less restricted than in English, and it has been observed that the *wh* element inside a complex NP or a compound noun can license the sentence-final question particle *-ka*, as shown in (33).

- (33) [Dare ga kaita hon]<sub>NP</sub> o yomi-masita ka?  
 who nom wrote book acc read-past Q  
 '(lit.) [The book that who wrote] did you read?'

Here it must be assumed that the complex NP marked by the bracket in (33) takes on the feature [+wh] of the subject NP of the relative clause within it.

This percolation of the feature [+wh] has also been observed inside the word (Kageyama 1993):

- (34) Kore wa [doko-iki]<sub>N</sub> no densya desu ka?  
 this top. where going of train be Q  
 '(lit.) The train of [where bound] is this?'

By the same reasoning we must assume that the [+wh] feature of the left-hand element of the compound percolates up to the whole compound. Note here that the compound in (34) is formed with a locative adjunct so it is an Analogy VC. If we look more carefully, we find that the Rule VCs and Analogy VCs behave differently with respect to the [+wh] feature percolation. See the following examples.

- (35) (a) Kono kaado wa pen-gaki desu. Sore wa nani-gaki desu ka?  
 this card top. pen-write be that top. what-write be Q  
 '(lit.) This card is pen-written. What-written is that one?'  
 (b) Watasi wa namae-kaki o simasu. \*Anata-wa nani-kaki o simasu ka?  
 I top. name-write acc do you top. what-write acc do Q?  
 '(lit.) I do name-writing (as my job). What-writing do you do?'

*Pen-gaki* in (35a) is an Analogy VC and it is possible to replace the non-head element by *nani* 'what' to form a question. On the other hand, it is not possible to do so with the VC *namae-kaki* 'name-writing' as we can see in (35b) because it is a Rule VC. Further examples below confirm their difference.

- (36) (a) *Ninjin wa usu-giri desu. Imo wa nani-giri ni simasu ka?*  
 carrot top. thin cut be potato top. what cut to make Q?  
 'The carrots are thinly sliced. How should the potatoes be cut?'  
 (b) *Kore wa garasu-kiri desu. \*Are wa nani-kiri desu ka?*  
 this top. glass cutter be that top. what-cutter be Q?  
 'This is a glass cutter. What-cutter is that?'
- (37) (a) *Anata wa doko-sodati desu ka?*  
 you top. where-bred be Q?  
 'Where did you grow up?'  
 (b) *\*Tugi wa doko-luki o simasu ka?*  
 next top. where-wipe acc do Q?  
 'Where should I wipe (clean) next?'  
 (c) Analogy VC: *nani-zukuri* 'what-made', *doko-zumai* 'where-living'  
 (d) Rule VC: *\*nani-tukuri* 'what-making', *\*nani-sagasi* 'what-searching'<sup>13</sup>

From these contrasts, we can say that [+wh] percolation is limited to the adjunction structure of the Analogy VC and it is blocked in the Rule VC, as shown in (38).

<sup>13</sup> It was pointed out by an anonymous reviewer that the following is not ungrammatical.

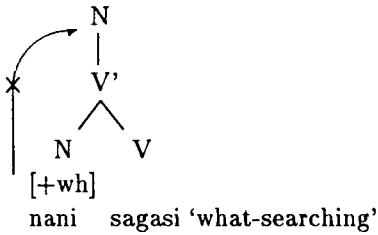
- (i) *Kore wa nani-sagasi no geemu desu ka?*  
 this top. what-search of game be-Q  
 'What is this game a search of?'

It seems that the compound with a [+wh] non-head becomes more acceptable in the context where it denotes an entity rather than action, so the same compound is much less acceptable in the following context:

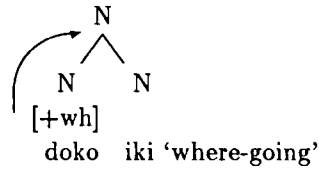
- (ii) *?Anata-wa nani-sagasi ni iki-masu-ka?*  
 you top. what-search to go-Q  
 'What-searching will you go?'

It is conceivable that the compound in (i) has been reanalyzed and has an endocentric structure with a noun head, which allows the [+wh] percolation.

(38) (a) Rule VC



(b) Analogy VC



We have now seen that two different lexical features, one phonological and the other syntactic in their functions, and one head feature and the other non-head feature, behave in a parallel fashion and support the different structures postulated for the Rule VC and the Analogy VC.

#### 4. Rule-analogy dichotomy and the lexicon

##### 4.1. Blocking effect

In this section we will study this dichotomy between the Rule VC and Analogy VC in relation to the lexicon. As we have seen at the beginning, it is assumed that rule-generated lexical items are generally not listed in the lexicon, while in the case of analogy using the mechanism of associative memory, the VC that serves as a base must be listed. Therefore, it is predicted that rule-generated VCs show no effect of blocking between the synonymous compounds, while blocking can take place between the analogy-based compounds. Indeed, we find one such case with the semantically close pair of verbs *sumau* and *sumu*, both meaning 'to live in'. Look at the following examples.

(39) (a) Tookyoo ni sumau / sumu 'to live in Tokyo'  
Tokyo loc live / live

(b) (loc)-zumai 'living in x': Tookyoo-zumai, apaato 'apartment'-zumai,  
tokai 'city'-zumai

(c) Blocked: \*(loc)-zumi: \*Tookyoo-zumi, \*apaato-zumi, \*tokai-zumi

The adjunct compound with the location as its non-head is formed with the deverbal noun *-sumai*, and as shown in (39b) such compounds as *Tookyoo-zumai*, 'living in Tokyo' or *apaato-zumai* 'apartment living' with Rendaku are formed. However, the parallel form with the synonymous *-sumi* in (39c) is clearly impossible. This is presumably due to the blocking by the synonymous

forms with *-sumai* in (39b). In contrast with this, we cannot find such a case of blocking between the Rule VCs with a semantically similar pair of base verbs. For instance, the verbs *tugu* and *sasu* both mean 'to pour', but they can both form a Rule VC with the direct object:

- (40) (a) *abura o tugu / sasu* 'to pour oil'  
           oil   acc pour / pour  
       (b) *abura-tugi / abura-sasi* 'oil pitcher'

This contrast with respect to blocking is predicted by our claim about the difference between the two types of VCs as explained above.

#### 4.2. Diachronic shift from rule to analogy

It is a fact about word formation that even the output of some productive processes can be listed in the lexicon, and the same is true with some rule-generated VCs. It is possible that some of them enter the lexicon as a word and become reanalyzed as an Analogy VC. This seems to explain the fact that there are verbs, for example *tukuri* 'making' that used to form Rule VCs, as shown in (41a), but now only form Analogy VCs and undergo Rendaku, as shown in (41b).

- (41) (a) *tati-tukuri* 'sword (archaic) making', *tama-tukuri* 'jewel' (archaic) making'  
       (b) *x-zukuri* 'x-making': *kome-zukuri* 'rice-growing', *tomato-zukuri* 'tomato growing', *kodomo-zukuri* 'child-bearing'

Similarly, *-korosi* 'killing' now uniformly shows Rendaku in a VC (42b), although some older forms (42a) exist without Rendaku.

- (42) (a) *oni-korosi* 'demon killer (name of sake)', *usi-korosi* '(cow) butcher',  
           *inu-korosi* 'stray dog killer'  
       (b) *keikan-gorosi* 'policeperson murdering', *hito-gorosi* 'man slaughter',  
           *titioya-gorosi* 'father murdering', *aizin-gorosi* 'mistress murdering' . . .

What is crucial for us here is that such a diachronic shift is found only in the direction from Rule VC to Analogy VC but not vice versa, which is consistent with our general knowledge about reanalysis and lexicalization as stated above.

### 4.3. Idioms and listed nominal heads

Another instance of the shift from rule to analogy is found with the VCs with idiomatic meanings. See the following example.

- (43) *humu* 'to step on':  
 (a) Rule VC: *budoo-humi* 'grape treading', *kage-humi* 'shadow treading'  
 (b) idiomatic: *se-bumi* (lit. river-treading) 'sound out'  
                   *ne-bumi* (lit. price-treading) 'appraisal'

The verb *humu* 'to step on' can form Rule VCs as shown in (43a). However, the VCs with idiomatic meanings in (43b), although they are act nominals with the direct object non-head, show Rendaku. This can be explained by assuming that being an idiom and thus listed in the lexicon they have been reanalyzed as Analogy VCs in the lexicon.

We can also find a limited number of cases where a deverbal noun is listed and is used extensively to form what would otherwise be a rule VC. The deverbal nouns *-kari* 'hunting' (44a) and *-some* 'dye(ing)' (44b) constitute such cases and invariably show Rendaku.

- (44) (a) *kitune-gari* 'fox hunting', *raion-gari* 'lion hunting', *hannin-gari* 'criminal hunting', *aka-gari* 'red (communist) purge'  
 (b) *ke-zome* 'hair dye', *siraga-zome* 'hair dye (for white hair)'

One interesting fact about *-kari* 'hunting' is that its usage is now wider than the original meaning of the verb 'to hunt', which confirms our conjecture that it has been listed in the lexicon. So in addition to (44a) we also find the following.

- (45) (a) *budoo-gari* 'grape picking (as recreation)', *ringo-gari* 'apple picking',  
           *itigo-gari* 'strawberry picking' (cf. \**budoo o karu* 'to hunt grape')  
 (b) *momizi-gari* 'foliage viewing', *sakura-gari* 'cherry blossom viewing'  
       (cf. \**momizi o karu* 'to hunt maple trees')

As we have observed in this section, the borderline between Rule VCs and Analogy VCs is not a completely rigid one and is subject to change over time and also to individual variation. Nevertheless, it is significant for our claim in this paper that the cases of VCs that seem to go against our generalization are always Rule VCs behaving like Analogy VCs but not vice versa, confirming our

assumption that some heads of Rule VCs undergo lexicalization and become the base for Analogy VCs. Although it is never easy to tell what percentage of the rule-generated lexical items enter the lexicon and what objective test can be applied to verify it, the one-way tendency of the 'counterexamples' we have observed in this section seems to confirm our claim about the dichotomy between rule and analogy in VC formation in relation to the nature of the lexicon.

### 5. Conclusion

In this paper we have seen that the rule/associative memory dichotomy that has been proposed for inflection can be extended to some cases of compounding as well. In particular, by using this distinction, we have been able to classify Japanese VCs into Rule VC and Analogy VC, and account for their different productivity as well as various contrasting behaviours which hitherto have been left unexplained or unnoticed.

A number of questions remain for future study. We saw in Section 3 that the two types of VCs differ with respect to the accent pattern and Rendaku. The question of whether Rendaku is affected by the accent pattern must be clarified. As briefly discussed in the last section, the fact that some rule-generated compounds can and do enter the lexicon must be studied in more detail. Furthermore, it is conceivable that some very productive head of the Analogy VC—for example, (*place*)+-*iki* 'place-bound'—has been reanalyzed as an affix. After all, affixation may be viewed as a form of analogy because both processes involve attaching or replacing of the non-head element to the particular lexical item, but comparison of affixation and compounding is well beyond the scope of this paper.

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## PARAMETRIC DIMENSIONS IN MORPHOLOGY: ON INALIENABLE POSSESSION IN ENGLISH AND POLISH

BOGDAN SZYMANEK

### 0. Introduction

The problem that this article attempts to investigate is the grammatical status of so-called “inalienable possession”, in particular its role as a significant factor which underlies a considerable portion of the systems of English and Polish word-formation. It is argued that inalienable possession may be viewed as a morphological parameter whose values are set on a language-specific basis. The paper consists of two parts. Section 1 provides an overview of literature on the subject in general, with illustrations from English. In Section 2 we present a set of Polish data involving inalienable possession, pointing out similarities and differences between the Polish and English systems of derivation.

### 1. Evidence from English

The number of published sources dealing more or less exclusively with the notion of inalienable possession in English is quite impressive. The present section will give a brief outline of the principal facts and findings concerning the status of inalienable possession in the derivational system of English.

“Inalienable possession” (henceforth [+INP]) is usually viewed as a notion which defines the semantics of certain classes of denominal adjectives in English, in particular the type of *-ed* adjectives like *bearded* ‘having a beard’. Ljung (1976, 162) offers the following brief definition of the concept in question: “having—as inherent part or property”; Katamba (1993, 332) characterises the notion as follows: “Inalienable possession [r]efers to non-accidental (and hopefully lasting) possession. For example, branches are inalienably possessed by a tree and body-parts like legs and eyes are inalienably possessed by animals. But cars and shoes are not inalienable possessions”.

The type of adjective just illustrated is said to be “semi-productive”; indeed, one should probably qualify it as weakly productive, in view of the fact that very few derivatives of the structure  $[[X]_N -ed]_A$  exist in modern

English. The impossibility of deriving forms like \**shirted*, \**carred*, \**catted*, etc. (meaning 'having a shirt/car/cat') may be explained, precisely, as being due to the fact that the objects designated by the base nouns in question (*shirt*, *car*, *cat*) are not inalienably possessed by whoever (whatever) is expressed by the head noun (typically, a noun denoting a human being, cf. *bearded man*). Thus, [+INP] presents itself as a powerful semantic (conceptual) constraint on the class of bases that may be used in deriving the *-ed* adjectives, i.e. Possessional adjectives: the derivation of Possessional adjectives is permitted only when the base is inalienably possessed by the head noun (subject to further limitations).

There is yet another group of derived adjectives which have been discussed in the context of [+INP]. These are the premodified *-ed* adjectives like *blue-eyed* 'having blue eyes'. The type is, evidently, more numerous and is said to be largely or even fully productive; cf. *red-haired*, *one-armed*, *short-sighted*, *red-nosed (reindeer)*, *three-legged (stool)*, *green-roofed (house)*, *short-sleeved (shirt)*, *five-sided (box)*, etc. Nevertheless, when the concept of [+INP] is not present, the derivation is blocked; cf. \**two-carred (family)*, \**big-Alsatianed (woman)* (Katamba 1993, 78). The morphological structure of these longer, premodified adjectives does not lend itself to a simple and straightforward interpretation: see, for instance, the early lexicalist analysis of the problem in Allen (1978, 252 ff.) and its critical re-examination in Botha (1984, 138 ff.). Indeed, it appears that the premodified adjectives in *-ed* evidence the much discussed phenomenon of bracketing paradoxes (cases of morphosemantic/morphophonological mismatches in the constituent structure of complex words and phrases; cf., for instance, Sproat 1984; 1988; Spencer 1988; Marantz 1988; Beard 1991; Chelliah 1992; Kenesei 1994). This claim is made by Spencer (1991, 417) in his discussion of bracketing paradoxes in general. As Spencer observes, *-ed* adjectives are problematic because we cannot derive them unequivocally from a single source. Thus, an adjective like *red-bearded* may be interpreted, structurally, in two alternative ways:

- (1) (a) Morphosemantic constituent structure  
 [[[red]<sub>A</sub> [beard]<sub>N</sub>]<sub>NP</sub> -ed]<sub>A</sub>
- (b) Morphophonological constituent structure  
 [[red]<sub>A</sub> [[beard]<sub>N</sub> -ed]<sub>A</sub>]<sub>A</sub>

There exist arguments which substantiate the reality of both kinds of structural analysis. Thus, the morphosemantic solution reflects the intuitively plausible semantic grouping of constituents, encoded in the derivational paraphrase: *a red-bearded man* is 'a man who has a red beard'. Moreover, this

solution avoids the morphologically awkward (if not intolerable) consequence of positing non-word base forms. Notice that, apart from *bearded* and a few other attested denominal adjectives in *-ed*, the premodified structures are not relatable to any existing *-ed* input forms, e.g. *blue-eyed* (\**eyed*), *short-sighted* (\**sighted*), *red-nosed* (\**nosed*). Furthermore, there are a few adjectives in *-ed* which seem to be derived from compound nouns, e.g. *fat-headed* (*fat-head*), *loudmouthed* (*loudmouth*). Examples like these provide support for the phrasal analysis illustrated in (a) above. The structure  $[[[\text{fat-head}]_N \text{-ed}]_A]$  is parallel to that of  $[[[\text{red}]_A [\text{beard}]_N]_{NP} \text{-ed}]_A$ , the only difference being that the first element in the latter is a noun phrase rather than a noun. The morphophonological approach, on the other hand, mirrors a structural configuration that is more in line with the purely formal properties of the complex words in question, like their stress and rhythm pattern. For instance, if a short pause is to appear in the pronunciation of an adjective like *red-bearded*, it will fall between *red* and *bearded* and never between *red-beard* and the suffix.

Both interpretations of the forms at hand serve different ends and are an outcome of considerations based on conflicting criteria. At any rate, a surfacy characterisation of the pattern must, minimally, state the fact that the central element of every derivation is the nominal base, followed by the suffix *-ed* and preceded by either an adjective or a numeral (e.g. *three-legged*). A single noun can be premodified by several different lexical items (*red-bearded*, *grey-bearded*, *dark-bearded*, *long-bearded*, etc.), which lends further support to the claim that the type in question is highly productive.

In spite of the fact that inalienable possession has been investigated to date by several authors (including studies which examine its role in syntax; cf. Fillmore 1968; Guéron 1985), the linguistic status of this feature is far from obvious. It may be argued that this is (a) a semantic property (primitive), or (b) a thematic role (like Patient or Experiencer), i.e. the role of Inalienable Possessor, or, alternatively, it could be viewed as (c) a basic cognitive (conceptual) category, motivated by human experience.

There are also a number of more specific, unresolved problems concerning the class of Possessional adjectives in English. Briefly speaking, the controversy centres around the following questions:

a. The grammatical status of the *-ed* forms in the adjectival type with premodification. Thus, for instance, Ljung (1976) refers to the second element in *blue-eyed* as a "premodified adjective", the *Longman Dictionary* defines it as a "combining form", while Katamba (1993) views it as a "past participle (Ved)";

b. The nature of other putative constraints which, together with [+INP], affect the productivity of the *-ed* adjectives. Thus, for instance, Hirtle (1969) and Beard (1976a) point out that, in the case of simplex derivations (not compounds), inalienable possession must be optional, which is said to explain the grammaticality contrast between *a bearded man*, *a hairy man* and *\*a necked man*, *\*a headed man*: "The reason for this is purely semantic: all men are presumed by definition to have a head, neck and knees. Thus *head* is implied by *man*, so that *\*a headed man* is as redundant and therefore as semantically awkward as *\*a male man*" (Beard 1976a, 50). Another characteristic limitation is discussed in Beard (1976b, 157), namely that inalienable possession cannot be too "distant" (a derivational rule may not reach "too far"), cf. *?a small-pupilled man* vs. *a small-pupilled eye*. Ljung (1976, 162) points out, in addition, that [+INP] is a scalar characteristic and may have varying scope, depending on whether "the relevant part or property [is] the inalienable possession of all the referents of the possessor noun or of just some of them". Thus, the fact that "all squares have corners" is an example of 'absolute' (first-degree) inalienable possession, while 'men have beards' illustrates 'second degree' inalienable possession;

c. The formal and semantic links between the *-ed* adjectives and certain other classes of English derived adjectives. Thus, it ought to be borne in mind that the suffix *-ed* is not the only formative used in deriving English Possessional adjectives; other 'rival' suffixes may be used in this function as well, cf. *wart-y*, *knowledge-able*, *intellect-ual*, *sorrow-ful*, *styl-ish*, *nod-ose*, *nodul-ous*, *modul-ar* (Beard 1976a, 155). Besides, the semantics of the *-ed* Possessional adjectives is frequently enriched by a variety of intensifying admixtures (conveying the idea of greater size or prominence, abundance or excess); cf. the meanings of the following *-ed* adjectives: *branchy bush* (*many-branched bush*), *leafy tree* (*thick-leaved tree*), *leggy friend* (*long-legged friend*) (Beard 1976b, 53). The examples just cited clearly demonstrate that the significance of [+INP] extends beyond a single adjectival type (like the *-ed* adjectives) or a single derivational category (like the category of Possessional adjectives).

In fact, it turns out that [+INP] plays a significant role also in other areas of English word-formation, apart from the class of Possessional adjectives or its (formally delineated) subclass of adjectives ending in *-ed*. Below we present certain other classes (categories) of English derived words, whose semantic/functional identity and characteristics hinge on the notion of inalienable possession:

- (2) *Privative adjectives*  $[[X]_N -less]_A$   
 semantics: 'without \_\_\_', 'deprived of \_\_\_', 'devoid of \_\_\_'  
 fingerless  
 legless  
 headless  
 noseless  
 lashless

Of course, the domain of this highly productive class cannot be defined solely in terms of [+INP] (there are numerous examples of *-less* adjectives derived from both inalienably possessed and non-inalienably possessed bases, e.g. *shoe-less*, *wife-less*, *joy-less*). However, it should be stressed that in those cases of Possessional adjective derivation where rival affixation comes into play, the property [+INP] may help explain the preference for one suffix over another; such is the case with parallel derivations of the type *sugar-less/sugar-free*, *error-less/error-free*: the derivation involving the 'semi-suffix' *-free* is blocked when the base-noun bears the property [+INP]; cf. *finger-less* vs. \**finger-free*.

- (3) *Privative verbs*  $[[X]_N -\emptyset]_V$   
 semantics: 'deprive of \_\_\_', 'remove \_\_\_ from'  
 core (an apple)  
 bark (a tree)  
 top (a tree)  
 bone (fish)  
 hull (rice)  
 gut (an animal)  
 scale (fish)  
 skin (an animal)  
 husk (wheat)  
 stone (a plum)

Evidently, the domain (i.e. productivity) of this characteristic pattern of English  $N \rightarrow V$  conversion is definable in terms of the implicitly present notion of [+INP]. In contrast to the derivational classes discussed so far, the pattern in question affects inalienably possessed (body-)parts of animals and plants rather than humans, which seems to reflect the operation of a specific pragmatic constraint. (The derivational category under discussion may further be illustrated with a few, lexicalised instances of denominal verbs which involve prefixation: *de-horn*, *de-bone*, *dis-branch*, *be-head*.)

(4) *Exocentric (bahuvrihi) compounds*  $[[X]_A [Y]_N]_N$ 

- |              |               |
|--------------|---------------|
| (a) paleface | (b) redbreast |
| lazybones    | blackhead     |
| (c) bluebell | (d) greenback |
| longleaf     | hardtop       |

This specific pattern of 'headless' compounding in English reveals a strong tendency to operate on Adj + N combinations (though N + N as well as V + N structures are also possible) where the semantic relationship of both constituents with regard to the unexpressed nominal head is interpretable in terms of [+INP]. The whole class of compound nouns which illustrate this pattern falls into four semantic groups: (a) human (personal) names, (b) animal names, (c) plant names, and (d) names of objects/substances. If we generalize this division and view it against the animacy hierarchy: human < animate < inanimate < abstract, it will turn out that English exocentric compounds do not refer, as a rule, to items representing the rightmost category, i.e. nouns specifiable as [+abstract] (with a few possible exceptions, like *roughhouse* 'a noisy fight').

Additionally, it should be noted that there exists a strong link (functionally speaking) between the type of compounds just mentioned and the premodified *-ed* adjectives discussed at the outset; cf. parallel forms like *hunchback* (compound noun) vs. *hunchbacked* (derived adjective, also interpretable as an 'extended bahuvrihi combination'). Doublets of this sort provide convincing evidence against viewing [+INP] as being linked exclusively to any single derivational type. Rather, it appears that "inalienable possession" is a factor which affects the functioning of a variety of formally unrelated processes of English word-formation.

## 2. Evidence from Polish

The status of [+INP] is quite significant also within the system of Polish derivational morphology (although this fact seems to have been neglected in the literature). Again, the notion/property in question appears to function as a powerful limiting factor which defines the productivity of several, formally disparate, morphological operations. The table given below presents some relevant data in Polish which illustrate the nature of the problem. The [+INP] nouns, which may serve as potential inputs for adjectivisation, are arranged into groups to reflect, roughly, the animacy hierarchy: human < animate < inanimate < abstract.



(5)

[X] <sub>N</sub> [+INP]	[[Y] <sub>A/Num</sub> -o- [X] <sub>N[+INP]</sub> ] <sub>A</sub> Premodified Possessional Adj.	[bez-[X] <sub>N[+INP]</sub> ] <sub>A</sub> Privative Adj.	([[X] <sub>N</sub> +suf.] <sub>A</sub> ) (Rel. Adj.)
<b>(a) HUMANS</b>			
biodr(o) 'hip'	wąskobiodr(y) 'narrow-hipped'	*	biodrow(y)
brew 'eyebrow'	czarnobrew(y) 'black-browed'	*	brwiow(y)
brod(a) 'beard'	siwobrod(y) 'grey-bearded'	bezbrod(y)	?
brzuch 'belly'	okrągłobrzuch(y) 'round-bellied'	*	brzuszn(y)
głow(a) 'head'	twardogłow(y) 'hard-headed'	bezglów(y)	głowow(y)
lic(o) 'face,cheek'	bladolic(y) 'pale-faced'	*	?licow(y)
nog(a) 'leg'	krótkonog(i) 'short-legged'	beznog(i)/ -nożn(y)	nożn(y)
nos 'nose'	długonos(y) 'long-nosed'	*	nosow(y)
ok(o) 'eye'	niebieskook(i) 'blue-eyed'	bezok(i)	oczny(y)
palec 'finger'	długopalc(y) 'long-fingered'	bezpalc(y)/ -ow(y)	palcow(y)
ręka(a) 'arm,hand'	jednoręk(i) 'one-handed'	bezręk(i)	ręczny(y)
rzęs(a) 'eyelash'	ciemnorzęs(y) 'dark-lashed'	bezzrzęs(y)	?rzęsow(y)
skór(a) 'skin'	czerwonoskór(y) 'red-skinned'	*	skórny(y)
stop(a) 'foot'	plaskostop(y) 'flat-footed'	*	?
szyj(a) 'neck'	gruboszy(i) 'thick-necked'	*	szyjny(y)
twarz 'face'	okrągłotwarz(y) 'round-faced'	*	twarzew(y)
uch(o) 'ear'	długouch(y) 'long-eared'	bezuch(y)	uszn(y)
ud(o) 'thigh'	krótkoud(y) 'short-thighed'	*	udow(y)
ust(a) 'mouth'	twardoust(y) 'hard-mouthed'	*	ustny(y)
wąs(y) 'moustache'	krótkowąs(y) 'short-moustached'	bezwąs(y)	?
włos(y) 'hair'	jasnowłos(y) 'fair-haired'	bezwłos(y)	włosow(y)
zab 'tooth'	jednozęb(y) 'single-toothed'	* (bezzębny)	zębow(y)
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czaszk(a) 'skull'	*twardoczaszk(i) 'thick-skulled'	* (bezczaszkowy)	czaszkow(y)
język 'tongue'	*ostrojęzyk(i) 'sharp-tongued'	*	językow(y)
kciuk 'thumb'	*długokciuk(i) 'long-thumbed'	*	kciukow(y)
paznokieć 'fingernail'	*wąskopaznokc(i) 'narrow-nailed'	*	paznokciow(y)
piers 'breast'	*płaskopiers(i) 'flat-breasted'	*	piersiow(y)
plec(y) 'back'	*szerokoplec(y) 'broad-backed'	*	plecow(y)
warg(a) 'lip'	*wąskowarg(i) 'narrow-lipped'	*	wargow(y)
<b>(b) ANIMALS</b>			
dziób 'beak'	ostrodziób(y) 'sharp-beaked'	*	dziobow(y)
łusk(a) 'scale'	srebrnolusk(i) 'silver-scaled'	bezlusk(i)	łuskow(y)
piór(o) 'feather'	czarnopiór(y) 'black-feathered'	bezipiór(y)	piórow(y)
pletw(a) 'fin'	długopletw(y) 'long-finned'	*	pletwow(y)
róg 'horn'	krótkorog(i) 'short-horned'	bezrog(i)	rogow(y)
skrzydl(o) 'wing'	prostoskrzydł(y) 'straight-winged'	bezskrzydł(y)	skrzydłow(y)
szpon 'talon'	długoszpon(y) 'long-taloned'	*	?szponow(y)
-----			
ogon 'tail'	*cienkoogon(y) 'thin-tailed'	* (bezogonowy)	ogonow(y)
<b>(c) PLANTS</b>			
kłos 'ear'	złotokłos(y) 'golden-eared'	bezkłos(y)	kłosow(y)
liść 'leaf'	srebrnolist(y) 'silver-leaved'	* (bezlisty)	liściow(y)

(d) THINGS

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(e) ABSTRACTS

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2.1. The prototypical instances of [+INP] nouns in Polish are common names of body-parts of human beings and animals, i.e. nouns characterisable as [+animate]. Within this class of nouns, the feature of "inalienable possession" seems to have a formal, morphophonological correlate: premodified Possessional adjectives as well as Privative adjectives are formed from names of human and animal body-parts by means of the suffixless method of paradigmatic derivation, i.e. the citation forms of such adjectives (nom. sg. masc.) reveal only the *-i/-y* desinence, directly following the nominal root (e.g. *brod(a)* 'beard' – *siwobrod(y)* 'grey-bearded' / *bezbrod(y)* 'beardless') (see Waszakowa 1993 for an insightful account of paradigmatic derivations in Polish).

The method of adjectivisation in question is unique for this particular group of nominal bases, since other types of denominal adjectivisation obligatorily involve an overt suffix, selected from several adjective-deriving formatives such as *-ow-*, *-n-*, *-sk-/ck-*, *-an-*, *-at-*, *-ast-*, *-ist-/yst-* (see e.g. Szymanek 1987 for a survey of denominal adjectivisation in Polish).

Specifically, it ought to be stressed that there are no attested examples of premodified Possessional adjectives of the suffixless *-i/-y* type, derived from common names of parts of plants (except: *złotokłos(y)* 'golden-eared' and the parallel derivatives from *liść* 'leaf'; e.g. *srebrnolist(y)/srebrnolistn(y)* 'silver-leaved'). And this is true even about such nouns which could legitimately be interpreted as bearing the feature [+INP]. Consider the following adjectives, pertaining to certain common and/or salient parts of plants, which incorporate full-fledged adjectival suffixes:

(6)

[X] <sub>N</sub> [+INP]	[[Y] <sub>A/N</sub> Num -o- [X] <sub>N</sub> [+INP]] <sub>A</sub> Premodified Possessional Adj.	[bez-[X] <sub>N</sub> [+INP]] <sub>A</sub> Privative Adj.	([[X] <sub>N</sub> +suf.] <sub>A</sub> ) (Rel. Adj.)
kwiat 'flower'	wielokwiatow(y) 'multiflorous'	bezkwiatow(y)	kwiatow(y)
łodyg(a) 'stalk'	długolodygow(y) 'long-stalked'	bezlodygow(y)	łodygow(y)
pestk(a) 'stone'	jednopestkow(y) 'single-stoned'	bezpestkow(y)	pestkow(y)
włókn(o) 'fibre'	długowłóknist(y) 'long-fibred'	bezwłóknist(y)	*

What is remarkable then is the lack, within the semantic domain illustrated above, of suffixless adjectives like \**wielokwiat(y)*, \**bezkwiat(y)*, analogous to the derivational pattern observable in adjectives from [+animate] body parts.

Likewise, numerous nouns which denote objects and substances may derive premodified Possessional as well as Privative adjectives, all of them being marked by overt adjectival suffixes. Here it does not matter at all whether the semantic relationship which holds between two nominal concepts (expressed by the base noun of the derived adjective and the head noun of the NP) is or is not an instance of inalienable possession: in either case an overt adjectival suffix will be used. Consider, for instance, the occurrence of the suffix *-n-* in both *trójkąt równoboczny* 'equilateral triangle' (< *bok* 'side', [+INP]) and *wielobarwna ilustracja* 'multicoloured illustration' (< *barwa* 'colour', [-INP]). In other words, the Polish evidence does not offer any examples of premodified *-i/-y* adjectives corresponding to names of things (inanimate objects), comparable to the English derivatives like *four-sided (box)*, *green-roofed (house)*, *short-sleeved (shirt)*, etc. Formally speaking, Polish does not appear to treat the instances of an object's "inalienable possession" on a par with the prototypical cases where [+INP] relates, as a property, to human beings (or other living organisms). Where things are relatable to other things, through [+INP], Polish does sometimes allow for the formation of a premodified, complex adjective, but then one of the full-fledged adjectival suffixes must be inserted between the stem and the desinential vowel. For example:

- (7) *bok* 'side' – *czworoboczn(e) pudeko* 'four-sided box'  
*maszt* 'mast' – *dwumasztow(y) statek* 'two-masted ship'  
*ziarn(o)* 'grain' – *drobnoziarnist(y) papier ścierny* 'fine-grained  
sandpaper'

Additionally, note the following "minimal pair", where the adjective in (a) is a typical example of a [+INP] incorporating derivation (hence, no overt derivational suffix appears in it), while the form in (b) is an instance of lexicalised, metaphorical semantics (synchronically not relatable to "possession" of any kind):

- (8) *skór(a)* 'skin' (a) *gruboskór(y)* 'thick-skinned'  
(b) *gruboskór(n)y* 'callous, coarse'  
(lit. 'having thick skin')

In order to make the picture more complete, in the list given below we present a few examples of the numerous class of affixally derived Privative adjectives:

(9)	-ow-	cel 'aim'	- bezcelow(y) 'aimless'
		przyrostek 'suffix'	- bezprzyrostkow(y) 'unsuffixed, suffixless'
		kofein(a) 'caffeine'	- bezkofeinow(y) 'caffeine-free'
	-n-	barw(a) 'colour'	- bezbarwn(y) 'colourless'
		chmur(a) 'cloud'	- bezchmurn(y) 'cloudless'
		dym 'smoke'	- bezdymn(y) 'smokeless'
	-own-	sens 'sense'	- bezsensown(y) 'senseless'
	-ist-	krew 'blood'	- bezkrwist(y) 'bloodless, anaemic'
	-aw-	krew 'blood'	- bezkrwaw(y) 'bloodless, free of bloodshed'

Summing up, we should like to point out that the suffixless mode of derivation (with only the *-i/-y* desinence following the nominal stem), employed in the formation of certain premodified Possessional (and a few Privative) adjectives, encodes formally the fact that the base noun bears the property [+INP] (except: *trosk(a)* 'care' - *beztrosk(i)* 'careless').

There is only one more functional class of Polish denominal adjectives which exhibit this formal property. These are the so-called Possessive adjectives like *krow(i)* 'cow's' (from *krow(a)* 'cow'), *szczurz(y)* 'rat's' (from *szczur* 'rat', etc.). What is remarkable here is the fact that just these two categories of Polish Possessional and Possessive adjectives stand out as exceptions, in the sense that any other type of Polish denominal adjectivisation must involve the attachment of a derivational suffix (cf. above). The important functional generalisation which should not be overlooked, as far as the classes of Possessional and Possessive adjectives are concerned, is the fact that they are subject to an apparently identical and unique mode of suffixless derivation. Now, both classes derive their functional identity from the primitive notion/property of Possession; and this shared identity is uniformly reflected in the formal operations of adjective formation.

The mechanics of deriving both Possessional and Possessive adjectives from nouns has recently been explained in Beard (1993, 717-8) as follows:

[T]he possessional adjective maps from a two place predicate POSSESS(XY). The base of the possessional adjective coindexes specifically with the second or object argument of POSSESS(XY), so that the base of a possessional adjective is the object possessed, while its phrasal head represents the possessor; *the bearded man* = POSSESS(MAN, BEARD). [...] Adjectives take only one argument, while the predicate structures POSSESS(XY) and SIMILAR(XY) have two. How can a single-predicate structure interpret a two-place

predicate? The obvious means is to select either the subject or the object argument of the base to lexicalize in the derivation, allowing the alternative argument to be expressed in syntax. [...] This characterization of the OPAdj allows for another type of adjective based on POSSESS(XY) which lexicalizes the subject argument and ignores the object, what might be called a **Subject of Possession Adjective** (SPAdj) [= Possessive Adj] (Beard 1993, 717–8).

The following example from Polish illustrates the difference between Possessive and Possessional adjectives:

- (10) POSSESS(tatus, broda)  $\Rightarrow$   
 (a) tatusiowa broda 'daddy's beard' (Possessive), or  
 (b) brodaty tatuś 'bearded daddy' (Possessional)

Returning to the suffixless adjectives involving possession, we see that, on the one hand, the underlying conceptual affinity of Possessional and Possessive adjectives seems to be manifested on the level of formal expression, in that no overt suffix is present. On the other hand, though, the specific categorial difference between the Possessional and the Possessive forms also appears to be reflected in their formal behaviour. The contrast is phonologically encoded: while the *-i/-y* desinence of the Possessive forms triggers palatalization of the stem-final consonant, the phonetically identical ending which appears in the Possessional adjectives is phonologically neutral with respect to the base-final segments (except for the surface velar palatalization which turns /k/ into [k'] and /g/ into [g']). Thus:

- (11) (a) Possessive *-i/-y*  $\Rightarrow$  [+palatalizing]  
 wilk 'wolf'            - wilcz(y) 'wolf's'  
 szczur 'rat'            - szczurz(y) 'rat's'
- (b) Possessional *-i/-y*  $\Rightarrow$  [-palatalizing]  
 ręk(a) 'hand'        - jednoręk(i) 'one-handed'  
 piór(o) 'feather'    - czarnopiór(y) 'black-feathered'

2.2. The type of premodified Possessional adjectives derived paradigmatically from names denoting body-parts of [+animate] nouns is relatively productive: the majority of common names which represent the semantic class in question have corresponding *-i/-y* adjectives.

2.3. The type of ordinary Possessional adjectives (without premodification), derived from names of human and animal body-parts appears, at first sight, to be less productive. Only less than half of the base-nouns listed under (5) have corresponding Possessional adjectives, attested in dictionaries of modern Polish. These adjectives are derived by means of one of the following 'rival' suffixes: *-at-*, *-'ast-*, and (less frequently) *-ist-/-yst-*. Their distribution, within the semantic class of bases under discussion (as well as with nouns of other semantic groups) is not predictable, apart from the automatic, phonologically triggered variation between *-ist-* and *-yst-*. Consider the following examples:

(12)	<i>-at-</i>	brod(a) 'beard'	- brodat(y)
		brzuch 'belly'	- brzuchat(y)
		uch(o) 'ear'	- uszat(y) / uchat(y)
		włs(y) 'moustache'	- wlsat(y)
		włos(y) 'hair'	- włoschat(y)
		róg 'horn'	- rogat(y)
		skrzydl(o) 'wing'	- skrzydlat(y)
		ząb 'tooth'	- zębat(y)
	<i>-'ast-</i>	biodr(o) 'hip'	- biodrzast(y)
		głow(a) 'head'	- głowiast(y)
		palec 'finger'	- palczast(y)
		piers 'breast'	- piersiast(y)
		piór(o) 'feather'	- pierzast(y)
		szpon 'talon'	- szponiast(y)
		ogon 'tail'	- ogoniast(y)
	<i>-ist-/-yst-</i>	kość 'bone'	- kościst(y)
		plec(y) 'back'	- pleczyst(y)

The existence of the above adjectives calls for a comment, since their derivation may appear to be, logically speaking, somewhat redundant or superfluous. Quite simply, if a given body-part is viewed as an "inalienable possession" of a man or an animal, then there seems to be no need to reassert this fact through morphological expression, i.e. given the fact that every man is known to have a skin, there appears to be absolutely no need to derive an adjective like \**skórzast(y)*, meaning '(man) having skin'. Consequently, this adjective (in the sense in question) is unlikely to be coined. Therefore, the existence of the few Possessional adjectives listed above needs to be explained. By and large, the linguistic motivation for the coining of these forms may be reduced to one of the following two cases: (a) the body-part denoted by the putative base-

form is not an instance of absolute "inalienable possession", e.g. *włos(y)* 'hair', *brod(y)*, 'beards', *piór(a)* 'feathers', *rog(i)* 'horns' are not "possessed" by all men or animals, respectively, and hence one may need to communicate their presence by means of a suitable Possessional adjective. The case also refers to a number of derivatives from "accidental body-parts", like *garbat(y)* 'hunch-backed', *piegowat(y)* 'freckled', *pryszczat(y)* 'pimpled', etc.; (b) in a number of cases the regular, categorial function of Possession is augmented or replaced with the meaning of intensification; a particular body-part is viewed as a salient feature (attracting the observer's attention due to its extraordinary size, etc.). Thus, adjectives like *brzuchat(y)*, *biodrzast(y)*, *piersiast(y)*, *ogoniast(y)* roughly mean 'having (a) big N' (belly, hips, breasts, tail). The principle of saliency is responsible, too, for the non-existence of Possessional derivatives from names of invisible, internal body-parts ('kidney', 'heart', etc.; cf. below).

2.4. Likewise, the existence of a few Privative adjectives in *bez-* from names of human and animal body-parts may seem paradoxical, in view of the fact that their derivation results in a semantic clash: something is (by virtue of a gross semantic classification) viewed as "inalienably possessed" and yet, at the same time, the derivational interpretation suggests that it is not possessed. This is the problem that we are facing with the following noun/adjective pairs:

- |      |                           |  |
|------|---------------------------|--|
| (13) | <i>brod(a)</i> 'beard'    | - <i>bezbrod(y)</i> 'not having a beard'             |
|      | <i>ok(o)</i> 'eye'        | - <i>bezok(i)</i> 'not having an eye or eyes'        |
|      | <i>palec</i> 'finger'     | - <i>bezpalc(y)</i> 'not having a finger or fingers' |
|      | <i>uch(o)</i> 'ear'       | - <i>bezuch(y)</i> 'not having an ear or ears'       |
|      | <i>wąs(y)</i> 'moustache' | - <i>bezwąs(y)</i> 'not having moustache'            |
|      | <i>włos(y)</i> 'hair'     | - <i>bezwłos(y)</i> 'not having hair'                |

Again, as may be seen from the above examples, these are names of body-parts for which [+INP] does not function as an absolute property (i.e. the body-parts in question are not possessed by every human being, cf. *brod(a)*, *włos(y)*). Or else, some of the nouns on the list denote salient body-parts which are most likely to be lost (e.g. in an accident), without affecting in any fundamental way the integrity of the possessor (a person without one or several fingers still remains a living human being).

However, not every kind of inalienable possession licenses a potential adjective in *bez-*, even if the base is a common name for a human body-part: the adjectivisation process may not apply to names of internal organs (body parts). Consider the following examples:

- (14) nerk(a) 'kidney' - \*beznerk(i) pacjent  
   vs. pacjent bez nerki  
 wątroba(a) 'liver' - \*bezwątroba(y) pacjent  
   vs. pacjent bez wątroba(y)  
 serce 'heart' - \*bezserc(y) pacjent  
   also ?\*pacjent bez serca (extremely inalienable!)

The limiting effect of the property [+INP] on morphological derivation is well visible if we consider the fact that the Privative notions encapsulated in the ungrammatical adjectival formations are, nevertheless, quite freely expressed on the level of syntax (it should be added, though, that syntax itself is also sensitive to certain unique constraints resulting from the use of body-part nouns; see Wierzbicka (1988, 169 ff.) for a discussion of relevant examples from Polish and other languages).

Incidentally, the use of the prefix *bez-*, where it is permitted, may result in ambiguous derivations (besides, notice that the prefix is phonetically identical with its cognate preposition *bez* 'without' and the remaining portion of the derived adjective is formally indistinguishable from the gen. sg. of the corresponding noun). For example:

- (15) beznogi malarz - 'legless painter'  
 (a) 'without one leg' cf. malarz bez nogi (gen. sg.)  
 (b) 'without both legs' cf. malarz bez nóg (gen. pl.)

2.5. Let us return to one of the examples just mentioned, which involved the vital organ: *serc(e)* 'heart'. Since the heart is a prototypical example of an extremely, absolutely inalienable body-part, it is never found in privative derivations (\**bezserc(y)*), and hardly possible as the head of the corresponding prepositional phrase (?\**bez serca*), when the construction denotes, literally, Privativity. However, the restriction obviously does not hold in extended, metaphorical uses of the noun *serc(e)* (and several other names of body-parts). For instance, the metaphorical meaning of the phrase *bez serca* 'heartless' is 'cruel, unkind' and, when used in this sense, the phrase is freely conjoined with personal nouns.

There are a number of metaphorical expressions and set phrases in Polish, involving the common names of body-parts, whose literal interpretation clashes with the feature [+INP] and thus prompts the figurative, extended sense. Consider the following examples which imply the notion of Privativity:



- (16) **głow(a)** 'head' – człowiek bez głowy  
 'absent-minded man', lit. 'man without a head'  
 – stracić głowę  
 'lose one's head', lit. 'lose one's head'  
 – robić coś bez głowy  
 'do sth without thinking', lit. 'do sth without  
 one's head'  
 – nie mieć głowy do czegoś  
 'have no head for sth', lit. 'have no head for sth'
- serc(e)** 'heart' – człowiek bez serca  
 'heartless man', lit. 'man without a heart'  
 – stracić serce  
 'go off sth', lit. 'lose one's heart for sth'  
 – nie mieć serca do czegoś  
 'have no heart for sth', lit. 'have no heart for sth'  
 – serce się komuś wyrywa do czegoś  
 'have an urge to do sth', lit. 'heart tears itself  
 out to sth'
- twarz** 'face' – człowiek bez twarzy  
 'faceless person', lit. 'man without a face'  
 – stracić twarz  
 'lose face', lit. 'lose face'
- nos** 'nose' – nie mieć nosa do czegoś  
 'have no nose', lit. 'have no nose for sth'
- ok(o)** 'eye' – nie mieć oka do czegoś  
 'be blind to sth', lit. 'have no eye for sth'
- uch(o)** 'ear' – nie mieć ucha (do muzyki)  
 'be tone-deaf', lit. 'have no ear (for music)'
- ręk(a)** 'hand' – nie mieć ręki do czegoś  
 'not to be handy at', lit. 'have no hand for sth'
- plec(y)** 'back' – nie mieć pleców  
 'have no backing', lit. 'have no back'

A few more examples, given below, demonstrate that the strict, literal interpretation of inalienable possession may be violated more indirectly in some metaphorical phrases, where a transfer of a particular body-part from one person to another seems to be implied, in the literal sense of the expression:

- |                           |   |
|---------------------------|---|
| (17) ręk(a) 'hand'        | - być czyjąś prawą ręką<br>'be someone's right-hand man', lit. 'to be<br>someone's right hand'        |
| ok(o) 'eye', uch(o) 'ear' | - być czyimś uchem i okiem<br>'inform for sb', lit. 'to be someone's<br>ear and eye'                  |
| mózg 'brain(s)'           | - być mózgiem (grupy, etc.)<br>'be the brains behind sth', lit.<br>'be the brains (of a group, etc.)' |

It should be noted that the above metaphorical phrases, implying the notion of Privativity, have no equivalents on the level of morphological expression, i.e. there are no Privative adjectives like *\*bezserc(y)*, *\*beztwarz(y)*, etc. (except: *bezgłow(y)*, *bezręk(i)* and *bezok(i)*). Generally speaking, the few Privative adjectives in *bez-* (relatable to names of body-parts) that are attested, are never used metaphorically. This demonstrates a remarkable contrast with the corresponding English data. Consider the following examples:

- |            |  |                                      |
|------------|--|--------------------------------------|
| (18) heart | - heartless 'cruel'                      | - large-hearted 'generous, kind'     |
| head       | - headless 'without a leader'            | - cool-headed 'calm, hard to excite' |
| blood      | - bloodless 'lacking in human feeling'   | - cold-blooded 'cruel'               |
| face       | - faceless 'without any clear character' | - two-faced 'deceitful'              |
| gut(s)     | - gutless 'cowardly'                     | - —                                  |
| foot       | - footless 'stupid, inept'               | - —                                  |
| leg        | - legless 'very drunk'                   | - —                                  |
| liver      | - —                                      | - lilly-livered 'cowardly'           |
| tongue     | - —                                      | - sharp-tongued 'harsh, angry'       |

The data above demonstrate that, in contrast to Polish, English uses both types of adjectives (Privative and premodified Possessional) quite freely in order to convey a wide variety of metaphorical senses. Corresponding to a given nominal stem, one often finds several figurative premodified adjectives; cf. *large-hearted*, *light-hearted*, *heavy-hearted*, *faint-hearted*, *soft-hearted*, etc.

2.6. As a class, the Polish [+INP] nouns (names of body-parts) also demonstrate a remarkable degree of uniformity with respect to a variety of verbalisation processes. Thus, for instance, in spite of the fact that there exist a few Privative adjectives formed from such nouns, the corresponding process of Privative verb formation seems to be blocked completely. The semantic incompatibility of the categorial concept of 'depriving/removing' and the property [+INP] (implying that something cannot be removed) prevents the derivation of Privative verbs. Consider the following examples:

- (19) ręk(a) 'hand' – \*odręczyć 'remove the hand(s)' – (cf. bezręki)  
 włos(y) 'hair' – \*odwłosić 'remove the hair' – (cf. bezwłosy)  
 rzęs(a) 'eyelash' – \*odrzęsić 'remove the eyelash(es)' – (cf. bezrzęsy)

The above gaps in the paradigm are worth noting, since the process of Privative verb formation is otherwise known to be fairly productive; cf. *odpchnąć* 'deflea', *odwzyszyć* 'delouse', *odrobaczyć* 'deworm', *odrdzewić* 'remove rust', etc. Again, the fact that there are no such verbs from names of human body-parts seems to be due to pragmatic restrictions.

The class of [+INP] body-parts of animals, again, reveals a characteristic contrast between Polish and English: in Polish, the derivation of Privative verbs from such nouns is blocked almost completely, while in English the pattern is mildly productive and typically involves zero-derivation. For example:

- (20) łusk(a) 'scale' – \*odłuszczyć rybę = to scale fish  
 płetw(a) 'fin' – \*odpłetwić rybę = to fin fish  
 kość 'bone' – \*odkościć kurczaka = to bone chicken  
 skór(a) 'skin' – \*odskórzyć królika = to skin a rabbit  
 róg 'horn' – \*odrożyć krowę = to dehorn a cow

In most contexts of the above sort Polish uses a single, general verb *oprawić* which, depending on the particular context, means 'to skin/scale/gut', etc.

As might be expected, there is yet another characteristic gap in the verbal output, when the putative nominal base bears the property [+INP]: due to a semantic incompatibility, the Polish nouns in question do not derive transitive verbs with the categorial meaning 'provide with \_\_\_' (sometimes referred to as "ornative", e.g. *aromat* 'aroma' – *aromatyzować* 'aromatize', *las* 'forest' – *zalesiać* 'afforest', cf. Szymanek 1989). There are no verbs like \**ugłować (kogoś)*, 'provide sb. with a head', \**owłosić (kogoś)* 'provide sb. with hair' etc. Evidently, in any prototypical case, a human possessor of a [+INP] body-part cannot be deprived of it, let alone being equipped with a new one. These simple experiential truths are duly encoded/reflected in the functioning of the derivational system.

Given the fact that the major derivational categories of Polish verb formation are made unavailable for the whole class of [+INP] nouns, the number of verbs based on such nouns is characteristically low; as a rule, the coinages that do exist are lexicalised formations, characterised by idiosyncratic and/or metaphorical semantics. Consider the following examples:

- (21) ręk(a) 'hand' – wyręczyć 'help sb out'  
 – zaręczyć 'ensure, assure'  
 – poręczyć 'guarantee'  
 głow(a) 'head' – głowić się 'rack one's brains, puzzle'  
 – główkować 'head (the ball)'  
 ok(o) 'eye' – unaocznic 'visualise, demonstrate'  
 – przeoczyć 'overlook'  
 ząb 'tooth' – zazębiać (się) 'indent, dovetail'  
 palec 'finger' – palcować 'finger'

As can be seen, this is yet another lexical domain where evident differences exist in the handling of [+INP] nouns by the morphological systems of English and Polish: while deverbal derivation from such nouns is relatively rare and unproductive in Polish, in English it is commonplace; cf. the relatively numerous zero-derived verbs like *to eye*, *to finger*, *to foot*, *to head*, *to mouth*, *to thumb*, etc.

#### 4. Conclusion

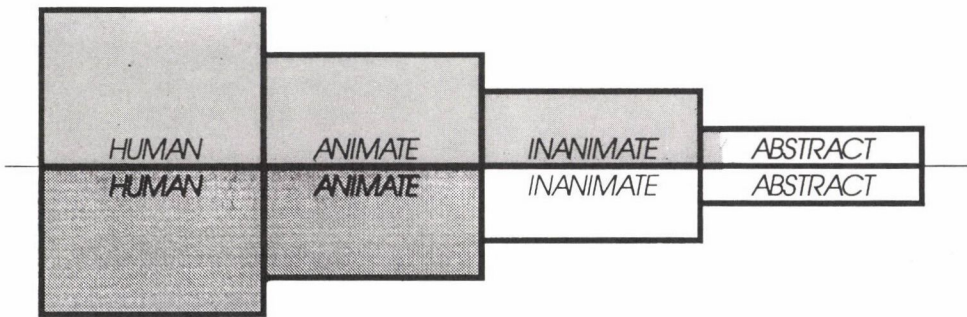
The English and Polish evidence discussed above demonstrates unequivocally that the predominant type of [+INP] adjective is that represented by *blue-eyed* and *niebieskook(i)* 'id.', respectively. These adjectives appear to be semantically motivated by noun phrases and, as such, constitute examples of 'bracketing paradoxes'. Apart from the adjectival types in question, the property of 'inalienable possession' has been shown to affect and constrain the scope and productivity of several derivational processes in both languages.

The Polish data demonstrate convincingly the semantic/functional links between the categories of Possessional (e.g. *jednoręk(i)* 'one-handed') and Possessive (e.g. *wilcz(y)* 'wolf's') adjectives. Both the underlying notional relatedness as well as the morphological (categorical) distinctness of these two classes are reflected in their phonological characteristics.

Far more importantly, the English and Polish evidence analysed in this article reveals as well significant differences in the morphological status of the property of "inalienable possession" in both languages. The data in question prompt the following conclusion: [+INP] appears to function as a conceptual (semantic) parameter whose universal range is definable over the animacy hierarchy: human < animate < inanimate < abstract. The language-specific values that are set for this parameter may (partly at least) be arrived at by investigating the input scope and productivity of the morphological devices

which, in a given language, function as the principal exponents of [+INP] or are sensitive to [+INP]. Thus, a detailed analysis of the English type of Possessional adjectives derived by means of the suffix *-ed* and of its Polish equivalent (unsuffixed) pattern in *-(i)/-(y)* demonstrates that, in English, the parameter [INP] may be interpreted as set ON (i.e. as [+INP]) for the following noun classes: [+human], [+animate], [-animate; -abstract] while in Polish only the properties [+human] and [+animate] set the co-efficient on [INP] as ON. This major contrast in the grammatical organisation of both languages is represented schematically in Fig. 1 below.

*English*



*Polish*

*Fig. 1*

The range of the parametric value [+INP] in English and Polish viewed against the animacy hierarchy

Hopper and Traugott (1993, 157) point out that “[a]ccording to the animacy hierarchy, human nouns are more likely to be included in linguistic rules than animates in general (e.g., animals), and animates are more likely to be included than inanimates”. This generalization finds support in the data analysed here; moreover, it explains why both in English and in Polish [+human] nouns constitute the preferred input domain for a variety of derivational processes.

As far as English is concerned, it follows from the above diagram that it is impossible, in principle, to derive the *-ed* adjectives from the vast majority of [+abstract] nouns. The existence of a few apparent counterexamples like *(old-)fashioned*, *(rosy-)coloured*, *(ill-)humoured*, *(U-)shaped*, based on [+abstract] stems, indicates that the parametric switch between [+INP] and [-INP] does not strictly overlap with the semantic borderline which sets

off the nominal class of abstracts from the remaining noun classes (indeed, this mismatch rather seems to suggest that there is a fuzzy border-area between the two categories).

The morphological behaviour of the relevant derivational types in Polish seems to suggest that the parametric contrast [+/-INP] is to be associated with a different point upon the animacy hierarchy, corresponding (fairly accurately) to the borderline between [+animate] and [-animate] entities.

The differences in the grammatical organisation of both languages, as outlined above, may, of course, turn out to be accidental and thus hardly significant. More work on this aspect of the morphosemantic structure of a wider range of languages is needed in order to ascertain the theoretical relevance and validity of the foregoing remarks.

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## FRENCH ADVERB FORMATION, DERIVATION VERSUS INFLECTION AND WORD STRUCTURE LEVELS\*

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### 0. Introduction

In this paper I would like to examine the status of French adverb formation in *-ment* with relation to derivation and inflection. More particularly, I would like to argue that the formation of French deadjectival adverbs in *-ment* illustrated in (1) belongs to inflection:

- (1) *une marche lente*            'a slow walk'  
      *Jean marche lentement*    'Jean walks slowly'

Such an argumentation presupposes some kind of split between word formation and inflection. And in fact in section 1 I will propose a model of morphology accounting for such a split. The essential idea behind it is the formula of Anderson (1982) as expressed in (2), but limited to the morphosyntactic aspect of morphology as opposed to its morphophonological aspect:

- (2) Inflectional morphology is what is relevant to the syntax.

The proposed model separates morphosyntax and morphophonology, and moreover it takes into account the distinction between inherent and contextual inflection as developed in Anderson (1982) and Booij (1993).

In section 2 I will examine French adverb formation in *-ment* in the light of the proposed model. Contrary to the often expressed view that French adverb formation belongs to derivation, I will defend the following thesis against the background of a morphosyntactic split between word formation and inflection:

- (3) French adverb formation in *-ment* belongs to (contextual) inflection.

\* I would like to thank Frank Drijkoningen for reading several versions of this paper and commenting patiently on each of them.

Apart from morphosyntactic arguments, I will also bring up an argument concerning the morphophonological aspect of word structure, namely the distinction between different levels of morphophonological structure as proposed in lexical morphology. And this will lead me to consider in section 3 the relation between morphosyntax and morphophonology more closely, particularly insofar as it concerns the distinction between word formation and inflection.

I will argue that the hierarchy in word structure is more complex than suggested by the one-dimensional models proposed by lexical morphology. It is necessary to distinguish more clearly between two different dimensions of word structure, morphosyntax and morphophonology, which have each their own levels and present an intricate interplay:

- (4) (a) morphosyntax:  
word formation / inflection
- (b) morphophonology:  
level 1 affixation / level 2 affixation / compounding

A closer examination of the interplay between these two dimensions will show them to be more independent than lexical morphology suggests. But the model allows nevertheless to conclude from one dimension to the other under certain conditions.

### 1. Morphosyntactic split between word formation and (inherent and contextual) inflection

According to Anderson (1982) there is a discrete distinction between derivation and inflection, as formulated in (2), and the two should be treated in different components of the grammar. According to Selkirk (1982) derivation and inflection present the same kind of affixation and should be treated in the same component.

In Zwanenburg (1990) I have argued that derivation and inflection present a discrete opposition in their morphosyntactic aspects, i.e. in their meaning and their relation to syntax, and should in that respect be treated in different components *à la* Anderson. But in their morphophonological aspects they present in many cases a similar or identical phonological realization, and should in that respect be treated in the same component *à la* Selkirk. This position resembles that of Scalise (1984, 101–36; 167–200).

In such an analysis one may imagine a morphological component containing morphosyntactic rules for derivation and compounding plus morphophono-

logical rules for their phonological realization. After lexical insertion giving the syntactic information needed for inflection, these morphophonological rules can operate a second time in order to account for the morphophonological realization of the inflection features.

Now, Booij (1993) argues against Anderson's split morphology and distinguishes between inherent and contextual inflection. Contextual inflection concerns configurational properties like case marking and agreement properties, while inherent inflection concerns such properties as number of nouns and tense of verbs. Inherent inflection resembles derivation particularly in that it may feed word formation, as in *build-ing-s inspector*, except when it has a deictic character, as in the case of verbal tense.

Booij's arguments are not without raising some questions. Thus Booij (36–43) enumerates as cases of inherent inflection feeding word formation plural nouns, infinitives, participles and comparatives. But it is not excluded that his examples of infinitives and participles concern in fact derived deverbal nouns and adjectives. And it remains to be seen whether his examples of comparatives are not marked exceptions rather than regular cases. On the other hand (42–45) there is some inconsistency between Booij's observation that verbal tense cannot feed word formation because of its deictic character, and the fact that deictic personal pronouns can, by losing their deictic character, in such cases as *she-wolf*.

However that may be, the distinction between inherent and contextual inflection (the latter comprising configurational and agreement inflection in Anderson's terms) seems to be an interesting one. And one wonders what this distinction means for an analysis like the one proposed above, which separates derivation and inflection in the morphosyntactic dimension, but brings them together in one morphophonological component when it comes to their phonological realization.

Booij's main arguments against a split between word formation and inflection, or, alternatively, between inherent and contextual inflection, are of two kinds. Against the former kind of split he argues, as we have seen, that inherent inflection can feed word formation. And against the latter kind of split (41–42) he argues that the two kinds of inflection cannot be separated: the same affix may express both inherent and contextual inflection, and the same affix may sometimes function as contextual inflection and in other cases as inherent inflection.

Now, the latter two facts concern only the morphophonological aspect of word structure, and constitute no arguments against a discrete distinction between the two kinds of inflection in the morphosyntactic dimension. It re-

mains to be seen whether the two cases mentioned by Booij (1993, 35 (Wels Romany), 42 (Georgian)) of intermingling between the two kinds of inflection which concern the morphosyntactic dimension are more than marked exceptions.

As long as a closer examination of these cases leaves open that question, it remains possible that word formation and inflection can be distinguished in their morphosyntactic aspect, apart from their unitary morphophonological treatment. The simplest possible and overidealized model might be a linear organization like the one in (5):

- |     |                           |                       |
|-----|---------------------------|-----------------------|
| (5) | before lexical insertion: | derivation            |
|     |                           | compounding           |
|     | after lexical insertion:  | inherent inflection   |
|     |                           | contextual inflection |

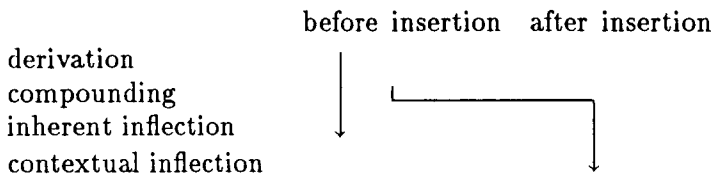
In fact, Booij does not say much on the internal organization of his unitary morphological component, or how it can account for the fact that exceptions to the order given in (5) are far less numerous than cases obeying it and seem to present in general a marked character.

Something more may be said, perhaps, when we examine a fairly unproblematic case of inherent inflection feeding word formation mentioned by Booij, namely inherent inflection feeding compounding as in *home furnish-ing-s department*, from a morphosyntactic point of view.

What is interesting here, apart from inherent inflection feeding compounding, is that the nominal base  $[[home][furnish-ing]]-s$  obeys a linear organization like the one in (5). Derivation in *furnish-ing* feeds compounding in *home [furnish-ing]*, which then feeds inherent inflection in  $[[home][furnish-ing]]-s$ . It is unimaginable that inflection would feed derivation as in *\*furnish-es-ing*. And it is also unimaginable in a morphosyntactic perspective that inflection would feed compounding, as in *home-[[furnish-ing]-s]*, because inflection marks the plural of the compound *home-[furnish-ing]*, not of the derived noun *furnish-ing*.

It seems, thus, that there is not a random intermingling of word formation and inflection, but that there is a marked possibility for word structure to undergo under certain conditions several times (parts of) the cycle given in (5). This is illustrated in (6), which shows that in the last cycle inflection is what is relevant to the syntax. Thus Anderson's formula should be amended in such a way that inherent inflection, as opposed to contextual inflection, can occur independently of the syntax in all but the last cycle:

## (6) home furnish-ing-s department:



Cases like *home furnish-ing-s department* can thus be accounted for by going several times through the cycle under the condition that we can start a new cycle from compounding on after inherent inflection, as in the case of *build-ing-s inspector*, but not after contextual inflection.

In such a view we can maintain almost all of the principal criteria of Scalise (1984, 102–15), enumerated in (7), for inflection as opposed to derivation. I have left out his criteria concerning meaning, which would have to be looked at more closely, and his criterion concerning productivity, which has been proven by Anderson (1982, 585–6) to be non-distinctive and at most relative.

- (7) (i) inflection is peripheral with respect to derivation  
 (ii) inflection rules apply once while derivation rules may reapply  
 (iii) inflection applies obligatorily while derivation applies optionally  
 (iv) inflection is non category-changing while derivation may change the category of the base  
 (v) inflection cannot change certain syntactic features (including the subcategorization) of the base while derivation can

In a cyclic interpretation, indeed, (i) inflection is peripheral with respect to derivation, (ii) inflection rules apply once while derivation rules may reapply, and (v) inflection cannot change particularly the syntactic feature of subcategorization.

Whether (iii) inflection applies obligatorily depends on whether one considers that e.g. in English singular nouns or, for that matter, non-comparative or superlative adjectives have zero inflection for number or degrees of comparison. It will not go into that here.

As to (iv) category change, Scalise agrees with Anderson (1982) in saying that inflection is not category-changing, while derivation may be but need not.

Booij (1993, 40–1), on the other hand, considers Dutch present and past participles as cases of inherent inflection with category-change. But he does not discuss the distinction between their purely adjectival use, which might be derivational, and their verbal use in adjectival position. The distinction can more easily be demonstrated in French, where the derived adjective is inflected for gender and number, as opposed to the present participle:

- (8) (a) derived adjective:  
 des femmes très charmant-e-s 'very charming women'  
 \*des femmes charmant-e-s les hommes
- (b) present participle:  
 \*des femmes très charmant  
 des femmes charmant les hommes 'women charming men'

Drijkoningen (1989, 20–117) makes such a distinction for French participles, and argues that even when they maintain intact their verbal argument structure and thus must be inflectional, as in (9b), they present a category-change from verb to adjective:

- (9) (a) Jean ne parle pas quatre langues.  
 Jean les aide tous.  
 Jean arrive toujours en retard.
- (b) Un homme ne parlant pas quatre langues.  
 Un homme les aidant tous.  
 Un homme arrivant toujours en retard.

Thus, it seems that Scalise's criterion (iv) is not true in an absolute way. It must be added, however, that there is a strong tendency for inflection to be non-category-changing and for derivation to be category-changing.

As to inflection, it remains to be seen to what extent the rare cases of category-change can be explained as principled ones. As to derivation, it may be argued that in its dominant form of suffixation it is always category-changing apart from what Scalise (1984, 131–3) calls evaluative suffixation, which is illustrated in (10), together with non-category-changing prefixation. Scalise shows that evaluative derivation shares certain features with derivation and others with inflection, and proposes to order it between the two.

- (10) (a) evaluative suffixes: frér-ot, pâ-l-ot, touss-ot-(er)  
 (b) prefixes: dé-faveur, mé-content, re-fai-(re)

It seems thus possible to conclude, apart from what we can say about obligatoriness and category change, that the syntax-dependent character of inflection manifests itself in its peripherality, the once-only application of its rules and its maintenance of subcategorization. In the proposed model this holds for all inflection, including inherent inflection applied syntax-independently in compounds.

## 2. French adverb formation in *-ment* belongs to (contextual) inflection

In this section I will examine a neglected case of morphological structure, namely French adverb formation in *-ment*. This is often considered to be part of derivation, as in Nyrop (1908, 291–9), Scalise (1984, 103–5; 1990), and, though less unequivocally so, in Grevisse (1955, 692–7). When we examine French adverb formation in *-ment* in the light of the above criteria, our conclusion must be that it is a case of contextual inflection.

In the first place, in conformity with (i) it is absolutely peripheral in that it closes the affixal structure of the words in which it occurs. It may be preceded by other suffixes, but no other suffix may follow it, not even an inflectional one, witness (11), as opposed to French productive derivational suffixes, like homophonic nominal *-ment* in (12):

- (11) (a) constitu-tionn-elle-ment (adverbial *-ment*)  
 (b) \*lente-ment-el  
 (c) \*lente-ment-e-ment
- (12) (a) passe-ment-erie (nominal *-ment*)  
 passe-ment-ier  
 (b) régle-ment-aire  
 gouverne-ment-al  
 (c) régle-ment-er, with deverbals like:  
 régle-ment-able and régl-ement-ation

Such facts are potentially problematic for Scalise (1984, 103–5; 1990), who considers *-ment* and its Italian and Spanish counterparts to be derivational. This would be a problem if *-e-* preceding *-ment* were the feminine inflection

of the adjectival base. But he argues on Italian examples that this cannot be the case, and the same holds for French.

As to French, *-e* may not be part of the suffix, witness examples like the following ones:

(13) *puissa-ment, prude-ment*, from: *puissant, prudent*

And apart from that, Dell (1973) shows that in order to account for the opening of schwa into *è* in the cases illustrated in (14) it is necessary to suppose a morpheme boundary after schwa:

(14) *achev-er*    *achèv-e-ment*    (action noun)  
*hôtel-ier*    *hôtell-e-rie*    (quality noun)  
*bref*    *brièv-e-té*    (quality noun)  
*achev-er*    *achèv-e-rai*    (future tense)  
*nouvel*    *nouvell-e-ment*    (adverb)

But there is no formal or semantic reason to consider *-e* as a feminine inflection before *-ment*. In fact, we find *-e* in such deadjectival nouns as those in (15), which contain also superficially the form of feminine adjectives, without any indication that it would be the feminine agreement suffix:

(15) *brièv-e-té, dur-e-té, naïv-e-té* (quality nouns)

Second, in conformity with (ii) French adverb formation applies only once, in that adverbial *-ment* may never occur twice in a word.

Third, in conformity with (v) French adverb formation cannot change subcategorization. In fact, when *-ment* adverbs have an argument, they present the same argument as the corresponding adjective:

(16) *antérieur à*    –    *antérieurement à*  
*concurrent avec*    –    *concurrentement avec*  
*conforme à*    –    *conformément à*  
*conjoint avec*    –    *conjointement avec*  
*indépendant de*    –    *indépendamment de*  
*heureux pour*    –    *heureusement pour*



It seems then that French adverb formation in *-ment* is unequivocally a case of inflection. This means that such an adverb constitutes a particular form of the adjective required by its syntactic context as often as it functions as a modifier of adjectives, verbs or adverbs instead of nouns. It is thus to be considered as a form of contextual inflection of the adjective. In terms of the distinction made by Anderson (1982) within contextual inflection; it will belong more particularly to configurational inflection as opposed to agreement inflection.

The kind of inflection which the formation of *-ment* adverbs represents looks more or less like a form of adjectival inflection comparable to case inflection in nouns. How does this relate to the fact that it must be considered to be a category-changing inflection, with a change from adjective to adverb?

Emonds (1972; 1976) argues that prepositions, particles and many adverbs constitute together the fourth major lexical category P. And I have argued in Zwanenburg (1994) that the same may hold for prefixes. If this is on the right track, it might well be that the category change of French adverbs is in fact from adjective to P. This might help us to determine more precisely the status of these adverbs.

In fact, Jackendoff (1977, 80–1) discusses the relation between prepositions and case markers, opposing the view “that case markers are transformationally reduced prepositions”. He argues that we must “consider case markers and prepositions as distinct syntactic entities, the ranges of whose interpretations overlap to some extent”, as “is the case with adverb phrases and prepositional phrases”.

His argument is that “this view allows a more unified theory of case marking in languages such as German and Russian, which have a mixture of prepositional phrases and cases: prepositions, like every other lexical category, determine the cases of their complements. Thus the lexical and transformational machinery necessary to enforce case marking is very general, applying to the complements of all lexical categories. By contrast, in the prepositions-as-case-markers view, the case markings due to prepositions must be accounted for separately from those due to other categories.”

Now, in French prepositions can never be followed by *-ment* adverbs. This seems then to distinguish such adverbs from adjectival case, and to allow their interpretation as an instance of an inflectional category change from A to P.

In the above morphosyntactic argumentation I have left out, in conformity with Anderson (1982), productivity as a criterion for inflection. This means that the arguments for the derivational character of *-ment* based on its relative productivity in Scalise (1990) lose their value.

Historically speaking, of course, we are dealing with a word structure which has gone from compounding through derivation to inflection. And it may show traces of this history, which is most clear in separable structures like Spanish *fría y rigurosa-mente*. But even there Scalise's principal criteria for inflection enumerated in (7) hold. What we see in a case like the Spanish one is what we find elsewhere in morphology, i.e. that the morphophonological dimension maintains a feature which has disappeared in the morphosyntactic dimension. Thus it has been argued for certain derivational structures in Dutch that they are compounds morphophonologically speaking, and for certain monomorphemic words that they are derived structures morphophonologically speaking.

So far for morphosyntactic arguments in favour of the inflectional character of French *-ment* adverbs. In addition there seems to be a morphophonological argument, which goes as follows.

In conformity with the separation between morphosyntax and morphophonology, we have established in Zwanenburg (1993) that in derivation a particular morphosyntactic class like action nouns may be expressed by a series of suffixes in the morphophonological dimension, and on the other hand a suffix like *-age* may belong to such different morphosyntactic classes as action nouns, quality nouns and collective nouns:

- (17) (a) pass-age, arrest-ation, chang-ement, pend-aïson etc.  
(action nouns)
- (b) pass-age (action noun), esclav-age (quality noun),  
feuill-age (collective noun)

Such a separation is also found in Moortgat-van der Hulst (1981) and Beard (1984), under the terms polyfunctionality and morphological asymmetry, respectively. I have argued, however, in Zwanenburg (1993), that this relation between meaning and form is not completely arbitrary. Thus it seems possible to distinguish one set of suffixes serving to form action nouns, quality nouns and collective nouns, and another disjunct set of suffixes serving to form nouns denoting persons and objects. And this holds for other languages like English or Dutch as well.

Now, there seems to be a morphophonological difference between derivation and inflection as to the kind of suffixes that they make use of.

In terms of lexical morphology as developed in Kiparsky (1983), derivational affixes come in two kinds, namely morphophonological level 1 or learned

and morphophonological level 2 or non-learned. For the equation of level 1 and level 2 affixation in derivation with learned and non-learned affixation see Zwanenburg (1987). Now, a set of affixes corresponding to a particular morphosyntactic derivation class presents normally affixes of the two kinds. Thus I have tried to show in Zwanenburg (1988) that among the denominal adjectival affixes those in (18a) are level 1 or learned and those in (18b) level 2 or non-learned:

(18) (a) level 1 or learned denominal adjectives:

complément-aire  
continent-al  
anglic-an  
europ-éen  
exceptionn-el  
péd-estre  
min-eur  
fructu-eux (-*eux* also non-learned)  
algér-ien  
min-ime  
alp-in  
académ-ique

(b) level 2 or non-learned adjectives:

afric-ain  
franç-ais  
dent-é  
livr-esque  
amour-eux (-*eux* also learned)  
deux-ième  
droit-ier  
villag-eois  
barb-u

Inflection, on the other hand, makes use of level 2 or non-learned suffixes only.

Now, the adverbial suffix *-ment* clearly is level 2 or non-learned, and it does not alternate with level 1 or learned suffixes. In fact, it only alternates with level 2 or non-learned zero derivation, as in the following cases:

(19) voir clair, travailler dur, chanter juste

This, then, seems to provide an extra argument in favour of the inflectional character of adverbial *-ment*. It seems probable, though, that, contrary to the other arguments, this one is language-specific, in conformity with the observations in Scalise (1984, 81–90) concerning the language-specific character of morphophonological level distinctions.

With relation to adverb formation in *-ment* it may be observed in passing that yet another morphophonological fact may seem to point to its inflectional character. This is the fact that there is only one affix at play. We have seen above, in relation with (17a) and (18), that derivation classes tend to have sets of synonymous affixes. Inflection, on the other hand, often makes do with one affix per class, such as *-e* for feminine adjective formation or *-ons* for first person plural verbal forms. In this respect it may be telling that, apart from exceptional conversion, deadjectival adverb formation has only one suffix, *-ment*. But this is certainly not an absolute condition.

However that may be, in conformity with our conclusion of the preceding section it seems possible to oppose French adverb formation in a discrete way as a case of contextual, more particularly configurational, inflection to other kinds of word structure.

### 3. The relation between morphosyntax and morphophonology

It may have come as a surprise that, while distinguishing between morphosyntax and morphophonology and ascribing the distinction between word formation and inflection to the morphosyntax, we have used a morphophonological argument in favour of the morphosyntactic inflectional status of French *-ment* adverbs. There is thus reason to look a little deeper into the relation between morphosyntax and morphophonology, which I have already argued to be not entirely arbitrary.

In order to do so, it is useful to make two more distinctions besides the ones made in (4) and (5):

- (20) (a) level 1 inflection / level 2 inflection  
 (b) compounding / pseudo-compounding

As to (20a), Kiparsky (1983, 133; 137–9) has argued, in the context of lexical morphology, in favour of a distinction between level 1 and level 2 inflection. What level 1 inflection has in common with level 1 derivation is particularly less “boundary strength”, i.e. more phonological interaction between base and affix, and the fact that blocking takes place from level 1 to higher

levels and not inversely. But the phonological rules for level 1 or "learned" derivation and level 1 or irregular inflection are different, as can be illustrated by the examples in (21) and (22), respectively. Moreover level 1 inflection always closes the word structure, without level 2 affixation outside of it. Thus being morphophonologically level 1 means something different for derivation and inflection.

- |      |              |          |                                 |                      |
|------|--------------|----------|---------------------------------|----------------------|
| (21) | <i>fleur</i> | 'flower' | <i>flor-al</i> (learned)        | 'floral'             |
|      | <i>fleur</i> |          | <i>fleur-ette</i> (non-learned) | 'little flower'      |
|      | <i>mer</i>   | 'sea'    | <i>mar-in</i> (learned)         | 'marine'             |
|      | <i>mer</i>   |          | <i>a-merr-ir</i> (non-learned)  | 'to land on the sea' |
- 
- |      |                |             |                            |              |
|------|----------------|-------------|----------------------------|--------------|
| (22) | <i>meur-s</i>  | 'I die'     | <i>mour-ons</i> (level 1)  | 'we die'     |
|      | <i>fleur-e</i> | 'I smell'   | <i>fleur-ons</i> (level 2) | 'we smell'   |
|      | <i>tien-s</i>  | 'I hold'    | <i>ten-ons</i> (level 1)   | 'we hold'    |
|      | <i>alièn-e</i> | 'I give up' | <i>alién-ons</i> (level 2) | 'we give up' |

As to (20b), according to di Sciullo-Williams (1987) much of what is in general considered to be French compounding is in fact listed phrases with idiosyncratic meaning and syntactic behaviour, as in the cases of (23) with plural *-s* on the head constituent:

- |      |                           |                   |
|------|---------------------------|-------------------|
| (23) | <i>timbre-s-poste</i>     | 'postage stamps'  |
|      | <i>carte-s de visite</i>  | 'visiting cards'  |
|      | <i>coffre-s-fort-s</i>    | 'strongboxes'     |
|      | <i>machine-s à coudre</i> | 'sewing machines' |

Now, Drijkoningen (1989, 71-117) argues that inflection, as in the case of French passive and perfect, can also present such pseudo-compounding. Thus we find number and person agreement inflection on the auxiliary as the head of passive and perfect:

- |      |                              |                 |
|------|------------------------------|-----------------|
| (24) | <i>nous so-mmes trouv-és</i> | 'we are found'  |
|      | <i>nous av-ons trouv-é</i>   | 'we have found' |

If we add the levels resulting from these two distinctions to the morphosyntactic and morphophonological levels distinguished in (4) and (5), we obtain the levels enumerated in (25):

- (25) level 1 derivation  
 level 1 inherent inflection  
 level 1 contextual inflection  
 level 2 derivation  
 compounding  
 level 2 inherent inflection  
 level 2 contextual inflection  
 pseudo-compound word formation  
 pseudo-compound inflection

No distinction is made in (25) between the morphosyntactic and the morphophonological dimension. If we introduce this distinction, we obtain figure (26). The morphosyntactic dimension (*morphos*) concerns from top to bottom word formation = derivation and compounding (*wf*) and (inherent and contextual) inflection (*infl*). The morphophonological dimension (*morphoph*) concerns from top to bottom level 1 affixation (*af1*), level 2 affixation (*af2*), compounding (*co*) and pseudo-compounding (*pco*).

(26)	morphos wf/infl	morphoph af1/af2/co/pco
level 1 derivation	┌───┐	┌───┐
level 1 inherent inflection	└───┘	└───┘
level 1 contextual inflection	└───┘	└───┘
level 2 derivation	┌───┐	┌───┐
compounding	└───┘	└───┘
level 2 inherent inflection	└───┘	└───┘
level 2 contextual inflection	└───┘	└───┘
pseudo-compound word formation	└───┘	└───┘
pseudo-compound inflection	└───┘	└───┘

It seems, then, that there is a more complex relation between the two dimensions than suggested by one-dimensional models, like the morphosyntactically oriented one in (5) or the morphophonologically oriented one of lexical morphology *à la* Kiparsky (1983).

The two dimensions present some central-to-peripheral organization (from top to bottom in (26)) and a certain kind of parallelism. But apart from the fact that there is no one-to-one relationship between the two, the morphosyntactic dimension has moreover, as illustrated in (6), a cyclic character which the morphophonological dimension has not or has at other points.

It would lead us too far to examine here in detail the interaction between the two dimensions. But figure (26) suffices for the moment to show that the two dimensions are neither in a one-to-one relationship nor entirely independent from each other.

In such a model it is not any more astonishing that at a given point of contact between the two dimensions, namely level 1 derivation and level 1 inflection, there is a parallelism between the dimensions which allows to conclude from one dimension to the other.

#### 4. Conclusion

In this paper I have examined the status of French adverb formation in *-ment* with relation to derivation and inflection. More particularly, I have argued that the formation of French adverbs in *-ment* belongs to inflection.

To that effect I have proposed in section 1 a model of morphology accounting for a morphosyntactic split between derivation and inflection, as opposed to the morphophonological dimension where they are treated alike.

In section 2 I have examined French adverb formation in *-ment* in the light of the proposed model, and claimed its (contextual, more particularly configurational) inflectional character, as opposed to the often expressed view that French adverb formation is part of derivation.

Apart from morphosyntactic arguments, I have brought up an argument concerning the morphophonological dimension of word structure, namely the distinction between different levels of morphophonological structure as proposed in lexical morphology. And this has led me to consider in section 3 the relation between morphosyntax and morphophonology more closely.

I have argued there that the hierarchy in word structure is more complex than suggested by the one-dimensional models proposed by lexical morphology, and that it is necessary to distinguish between two different dimensions of word structure, morphophonology and morphosyntax. These present both some central-to-peripheral organization, but they present at the same time an intricate interplay. In such a model it becomes particularly clear that belonging to level 2 affixation means something different for derivation and inflection, which reinforces the morphophonological argument for the inflectional status of French adverb formation in *-ment*.

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- (1) (a) A sólymaid            elszálltak  
          the falcon-gen-pl-2sg away-flew-3pl  
          'Your falcons have flown away.'

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## GUEST EDITOR'S NOTE

Apart from one or two individual efforts, modern sociolinguistic studies were conspicuously absent from Hungarian linguistics as late as the mid-1980s. The university departments of general and Hungarian linguistics showed little interest in teaching anything more than highly traditional courses in dialectology. Sometimes the traditional dialectology courses were renamed courses in sociolinguistics, which they were not.

By 1995 Hungarian sociolinguistics has become known both within Hungary and abroad. In the past decade theoretically and methodologically sound research projects began to be carried out, annual conferences organized, proceedings and other volumes published. Sociolinguists from East and West have been coming to Hungary to give lectures and Hungarian scholars have attended Central European and western conferences in increasing numbers. 1995 also saw the first-ever Hungarian issue of the *International Journal of the Sociology of Language* (No. 111). A supplement to it, *Studies in Applied Linguistics*, was published by Kossuth Lajos University, Debrecen, Hungary in the previous year.

This issue of *Acta Linguistica Hungarica* contains seven papers and four reviews on sociolinguistics. The papers are arranged according to a geographical core-to-periphery principle, that is they concern the study of Hungarian in Hungary, then other languages in Hungary, then Hungarian in the neighboring countries, and finally, Hungarian in emigration. In the first paper Tamás Váradi analyzes an important morphological variable drawing on data from the Budapest Sociolinguistic Interview project, which is also known as the Survey of Spoken Hungarian. The next two papers deal with the language attitudes and language choice of indigenous Romanians living in Hungary (Anna Borbély), and code-switching as a communicative strategy used by recent Chinese immigrants to this country (Juliet Langman). Two articles deal with Hungarian language use in Hungary's neighboring countries. Miklós Kontra analyzes the Law on the State Language of the Slovak Republic, in force since 1 January 1996, which has dramatically curtailed Hungarian lan-

guage use in Slovakia. The other paper, by Anikó Beregszászi, demonstrates some of the language planning problems which arose in the indigenous Hungarian community in Sub-Carpathia, Ukraine, with regard to place-names after 1989. Finally, two papers are published about Hungarian in the United States. Anna Fenyvesi gives a meticulous analysis of cases as used by the Hungarian community in McKeesport, Pennsylvania—a novel topic in the growing literature on Hungarian–American English contact. The last paper in this issue is by Csilla Bartha, who analyzes the social and linguistic characteristics of another Hungarian-American community undergoing rapid language shift, that in Detroit, Michigan.

Four reviews conclude this issue: two are about books published in Hungary, and one each about volumes published in Slovakia and Germany respectively.

East Lansing, Michigan, April 9, 1996

*Miklós Kontra*

## STYLISTIC VARIATION AND THE (bV<sub>n</sub>) VARIABLE IN THE BUDAPEST SOCIOLINGUISTIC INTERVIEW\*

TAMÁS VÁRADI

The present paper aims to examine the effect of self-monitoring on adherence to the standard in the Budapest Sociolinguistic Interview (henceforth BSI, see Kontra 1990; 1995). This question will be investigated through the analysis of the use of the (bV<sub>n</sub>) sociolinguistic variable, thus providing a contribution to the literature on this puzzling phenomenon.

### The role of self-monitoring in sociolinguistic analysis

As is well known, self-monitoring plays a central role in the Labovian paradigm of sociolinguistics. Speakers are thought to pay varying amounts of attention to their own speech depending on the level of formality of the speech situation. Accordingly their speech will display an array of *styles*, a technical term used here to denote the language variety speakers use as a function of the amount of self-monitoring of their speech, which in turn is thought to be governed by the perceived level of formality of the speech situation (see Labov 1984; Chambers 1995).

In the most informal situations (as for example over breakfast within the family) self-monitoring is assumed to be minimal. The language variety used in such a setting is called the speaker's vernacular and is of particular importance to the sociolinguist as the variety reflecting the most 'natural', 'spontaneous' characteristics of the speaker's language. At the other extreme, as in delivering an 'impromptu' speech on receiving a prize in front of TV cameras and a live audience, speakers will obviously exercise a much higher level of control over most aspects of the content as well as form of their speech. Ranging between

\* The research reported here was supported by Országos Tudományos Kutatási Alap, Élőnyelvi Vizsgálatok, Grant No. T 018272. I wish to record my gratitude to Jeff Harlig for his invaluable comments on a draft version of this paper without implicating him for any of its remaining weaknesses which, of course, are my full responsibility.

these two extremes there is a whole continuum of styles that speakers use. One of the central tasks of Labovian sociolinguistic analysis is to account for the variability of language use in terms of different language styles.

### Speech settings in BSI and the level of self-reflection

The staff compiling the Budapest Sociolinguistic Interview had to face a difficult problem. Their aim was to capture as wide a range of language use as possible in the most accurate manner. Ideally, this would have entailed recording the conversations of the informants in a wide variety of settings to reflect the different styles speakers use in those situations. However, for obvious practical limitations it was simply not feasible to carry out such an undertaking with 250 informants. Therefore, the chosen form of data collection, the sociolinguistic interview, had to be designed to be capable of providing relevant data through an array of tasks that call for different amounts of self-monitoring. Accordingly, BSI was compiled in such a way that the informants were engaged in a number of tasks ranging from reading out minimal pairs to guided conversations. It is suggested here that the speech situations within BSI could be allocated in the following scale in terms of diminishing levels of self-monitoring.

Table 1  
Level of self-monitoring in BSI modules

Level	Description of BSI task
1	Reading out minimal pairs, word lists
2	Reading out the key word in sentence completion tasks
3	Reading out the frame sentence in sentence completion tasks
4	Slow reading of passages
5	Fast reading of passages
6	Guided conversation

To illustrate the difference between levels 2 and 3 consider the following example. In several of the test modules informants were given a card with a frame sentence like *Ebben a .... nem mehetsz színházba* 'In this .... you can't go to the theatre' and a prompt word placed in the bottom corner of the card, which was *farmer* 'blue jeans' in our example. They were asked to insert the prompt word in the sentence and read out the full sentence. One possible standard form of the above sentence is *Ebben a farmerben nem mehetsz színházba* 'In this pair of jeans you can't go to the theatre'. Note that

Standard written Hungarian uses the *-ban/ben* ending to mark the so-called inessive case denoting stative location inside a place and the *-ba/be* ending is used for the illative case denoting dynamic movement towards the inside of a place. For example, *a dobozban* 'in the box', *a dobozba* 'into the box'. The choice in the vowel of the ending *a* vs. *e* is governed by rules of vowel harmony operating in Hungarian, hence the notation (bVn) where V stands for either of these vowels. In the rest of the paper this notation will be used in reference to the morphs as well, i.e. instead of the notation *-ban/ben* I will refer to the same pair of endings as the *bVn* form.

The above rules are observed in writing but not in speech. In spoken language the rules are recognised in the sense that copious lip service is paid to them but are blithely violated as a matter of course. The ending *-bV* is widely used in inessive function as well. Deviation from the written standard is noted by linguists and language educators alike but is attributed to either dialect or casual speech and no satisfactory account of the (bVn) variable has so far been proposed.

The (bVn) variable presents some interesting questions. One is tempted to approach it as a matter of final nasal deletion. However, final *-n* deletion does not operate across the board: the overwhelming majority of cases are indeed confined to the *-ban/ben* morpheme. Another point to note is the discrepancy between the written and the spoken norm. The fact that in writing most literate Hungarian speakers would use *-ban/ben* forms in inessive function suggests that in their mental grammar the inessive case is firmly established and is associated with the *-ban/ben* ending. One can then assume that in spoken language speakers intend to produce *-bVn* forms yet somehow end up uttering *-bV* forms. Therefore the matter of awareness and self-monitoring is a question that has particular bearing on this issue. Another reason why the (bVn) variable is particularly suited for analysis here is its frequent occurrence as well as the fact that the use of *-bV* ending in inessive function in spoken language is hardly noticed let alone stigmatised by ordinary speakers; therefore informants will produce these forms with apparent abandon.

It should be noted that what is referred to as the (bVn) variable in this paper, or customarily the *-BA/-BAN* variable elsewhere (Váradi 1994; Pléh 1995), actually involves two distinct variables: a) the inessive (bVn) variable with the two variants [bVn] and [bV], the latter slightly stigmatized; b) the illative (bV) variable with the variants [bV] and [bVn], the latter hypercorrect.<sup>1</sup> For the purposes of the present paper I shall adhere to established use referring to both cases as the (bVn) variable.

<sup>1</sup> I am grateful to Miklós Kontra for bringing this distinction to my attention.

this would involve two occurrences of the (bVn) variable. One is attached to the prompt word, which is assumed to have attracted more attention from the informant, hence its assignment to level 2. The other token of the (bVn) variable occurs as part of the frame sentence, which was deemed to engage the attention of the informant to a lesser degree, hence it was assigned to level 3 of self-monitoring.

The following points should be noted about the list. First of all, it has been made purely on hypothetical grounds, i.e. on assumptions about the level of conscious attention resorted to in the particular situation. Obviously, it would have been nice to be able to measure in some way the actual level of self-consciousness but no such physiological or psychological evidence was available.

Secondly, the list does not contain all the tasks used in BSI as the central question of this paper can only be applied to production tasks. The perception and judgement tasks in BSI are irrelevant from this point of view.

Thirdly, certain distinctions among tasks were deliberately ignored. For lack of sufficient data, for example, the task of reading out minimal pairs and word lists were lumped together, although a more refined analysis would want to treat them as distinct. Furthermore, there are tasks in the non-conversational part of BSI which involve some activity other than reading, i.e. role playing. Such is the so-called 'reporter' module in which the informant is asked to give a running commentary of what the field worker is acting out. In a careful analysis such a task may be set apart from the rest. The guided conversation seems to be amenable to further distinctions. Some modules have been compiled so as to be capable of provoking a state of anxiety, which obviously could result in lower levels of self-monitoring. Therefore, a fuller analysis would give separate treatment to the 'danger of death' module, in which the informants are asked if they have ever been in a situation where they thought they would die.

### The (bVn) variable

In Hungarian the concept of location is inextricably bound up with the notions of being in/on/at/under etc. a place, moving towards it or moving away from it. Accordingly, a tripartite set of endings is used with each locative case denoting different locations with respect to a reference object. Such a set could be glossed in English as 'in', 'into', 'out of' or 'under', 'to under', and 'from under' etc. respectively.

Table 2 displays the full list of the items that contain tokens of the (bVn) variable in the non-conversational test modules of BSI.

Table 2  
BSI test items containing the (bVn) variable

s	Item	M	Stimulus	Response	n
s	10	3	Ebben a .... jól nézel ki.	ebben	1
n	10	3	Ebben a .... jól nézel ki.	ebbe	2
s	20	2	Ebben a .... jól nézel ki.	farmerben	1
n	20	2	Ebben a .... jól nézel ki.	farmerbe	2
s	20	2	Ebben a .... jól nézel ki.	farmerban	3
n	20	2	Ebben a .... jól nézel ki.	farmerba	4
s	150	3	Ebben a .... állandóan hideg van.	ebben	1
n	150	3	Ebben a .... állandóan hideg van.	ebbe	2
s	160	3	Ebben a .... állandóan hideg van.	szobában	1
n	160	3	Ebben a .... állandóan hideg van.	szobába	2
s	180	2	.... jární nem olyan feltűnő, mint szmokingban.	farmerben	1
n	180	2	.... jární nem olyan feltűnő, mint szmokingban.	farmerbe	2
s	180	2	.... jární nem olyan feltűnő, mint szmokingban.	farmerban	3
n	180	2	.... jární nem olyan feltűnő, mint szmokingban.	farmerba	4
s	200	3	.... jární nem olyan feltűnő, mint szmokingban.	szmokingban	1
n	200	3	.... jární nem olyan feltűnő, mint szmokingban.	szmokingba	2
s	260	3	Tegnap Péter .... minden könyvem az antikváriumba.	antikváriumba	1
n	260	3	Tegnap Péter .... minden könyvem az antikváriumba.	antikváriumban	2
s	320	3	Abban a .... nem mehetsz színházba.	abban	1
n	320	3	Abban a .... nem mehetsz színházba.	abba	2
s	330	2	Abban a .... nem mehetsz színházba.	farmerban	1
n	330	2	Abban a .... nem mehetsz színházba.	farmerba	2
s	330	2	Abban a .... nem mehetsz színházba.	farmerben	3
n	330	2	Abban a .... nem mehetsz színházba.	farmerbe	4
s	360	3	.... hogy igazad van mindenben.	mindenben	1
n	360	3	.... hogy igazad van mindenben.	mindenbe	2
n	460	2	— Hová tetted a biciklit ? — Kiraktam a ....	kertben	1
s	460	2	— Hová tetted a biciklit ? — Kiraktam a ....	kertbe	2
s	650	2	Történetünk Európában, annak is egy furcsa vidékén, a Tiszántúlon, akár .... is játszódhatna.	Debrecenben	1
n	650	2	Történetünk Európában, annak is egy furcsa vidékén, a Tiszántúlon, akár .... is játszódhatna.	Debrecenbe	2
s	810	3	Az új adótörvények a mai újságban .... .	újságban	1
n	810	3	Az új adótörvények a mai újságban .... .	újságba	2
s	1300	4	újságban	újságban	1
n	1300	4	újságban	újságba	2
s	1350	4	közelben	közelben	1
n	1350	4	közelben	közelbe	2
s	1480	5	újságban	újságban	1
n	1480	5	újságban	újságba	2
s	1530	5	közelben	közelben	1
n	1530	5	közelben	közelbe	2
s	1650	1	ember – EMBERBEN	emberben	1
n	1650	1	ember – EMBERBEN	emberbe	2

s	1750	1	ERDÖBEN – erdőbe	erdőben	1
n	1750	1	ERDÖBEN – erdőbe	erdőbe	2
s	1910	1	kertbe – KERTBEN	kertben	1
n	1910	1	kertbe – KERTBEN	kertbe	2
s	2190	1	erdőbe	erdőbe	1
n	2190	1	erdőben	erdőben	2
s	2310	1	kertben	kertben	1
n	2310	1	kertben	kertbe	2
s	2420	1	kertbe	kertbe	1
n	2420	1	kertbe	kertben	2
s	2480	1	erdőben	erdőben	2
n	2480	1	erdőben	erdőbe	1
s	2940	4	környezetünkben	környezetünkben	1
n	2940	4	környezetünkben	környezetünkbe	2
s	3030	4	ebben	ebben	1
n	3030	4	ebben	ebbe	2
s	3040	4	helyzetben	helyzetben	1
n	3040	4	helyzetben	helyzetbe	2
s	3130	4	mozgalomban	mozgalomban	1
n	3130	4	mozgalomban	mozgalomba	2
s	3320	5	környezetünkben	környezetünkben	1
n	3320	5	környezetünkben	környezetünkbe	2
s	3410	5	ebben	ebben	1
n	3410	5	ebben	ebbe	2
s	3420	5	helyzetben	helyzetben	1
n	3420	5	helyzetben	helyzetbe	2
s	3510	5	mozgalomban	mozgalomban	1
n	3510	5	mozgalomban	mozgalomba	2
s	3830	4	utcában	utcában	1
n	3830	4	utcában	utcába	2
s	3880	4	kertbe	kertbe	1
n	3880	4	kertbe	kertben	2
s	4000	4	csőndben	csőndben	1
n	4000	4	csőndben	csőndbe	2
s	4030	4	magában	magában	1
n	4030	4	magában	magába	2
s	4110	4	utcában	utcában	1
n	4110	4	utcában	utcába	2
s	4160	5	kertbe	kertbe	1
n	4160	5	kertbe	kertben	2
s	4280	5	csőndben	csőndben	1
n	4280	5	csőndben	csőndbe	2
s	4310	5	magában	magában	1
n	4310	5	magában	magába	2
s	4400	4	utcánkban	utcánkban	1
n	4400	4	utcánkban	utcánkba	2
s	4730	5	utcánkban	utcánkban	1
n	4730	5	utcánkban	utcánkba	2
s	5390	4	lakásban	lakásban	1
n	5390	4	lakásban	lakásba	2
s	5660	5	lakásban	lakásban	1
n	5660	5	lakásban	lakásba	2



s	6160	4	színházban	színházban	1
n	6160	4	színházban	színházba	2
s	6250	4	hónapokban	hónapokban	1
n	6250	4	hónapokban	hónapokba	2
s	6390	5	színházban	színházban	1
n	6390	5	színházban	színházba	2
s	6480	5	hónapokban	hónapokban	1
n	6480	5	hónapokban	hónapokba	2
s	6560	3	Sok mindenre emlékszem, .... gyerekkoromban történt.	gyerekkoromban	1
n	6560	3	Sok mindenre emlékszem, .... gyerekkoromban történt.	gyerekkoromba	2
s	6620	3	Van valami ebben a dologban, .... nem világos.	ebben	1
n	6620	3	Van valami ebben a dologban, .... nem világos.	ebbe	2
s	6630	3	Van valami ebben a dologban, .... nem világos.	dologban	3
n	6630	3	Van valami ebben a dologban, .... nem világos.	dologba	4

The column named *s* marks the particular response as either standard (s) or non-standard (n). Column *M* indicates the level of self-monitoring as defined in Table 1. *Stimulus* refers to what was presented to the informants to elicit their *Response*, which was coded numerically in the BSI data files with the number in column *n*.

As it appears from the table, the test items were compiled in such a way that the response corresponding to the standard is not necessarily the *-ban/ben* form. Item 260 is such an example which was designed to elicit data for possible hypercorrect use. Table 3 contains the number of items at each level of self-monitoring.

Table 3  
Number of items at each level of self-monitoring

Level of self-monitoring	Number of items
1	7
2	5
3	10
4	14
5	14

At the time of analysis only 15 fully transcribed and checked interviews were available, all from the the BSI-2 pilot study conducted in 1987. Table 4 contains relative frequency data for each level of self-monitoring of the responses given by each informant where a value of 1.00 means 100% standard responses. The figures were calculated in the following way: each standard response scored one point, with a non-standard response scoring 0. The points thus scored were divided by the total number of items for each level and informant.

Even the raw figures clearly show how the conversation data stand apart from the rest. This is well borne out by Fig. 1.

*Table 4*  
Proportion of standard use of the (bVn) variable at different levels of self-awareness (1.00 = 100% standard use)

Informant	Level of self-monitoring					
	1	2	3	4	5	6
B7108	1.0000	1.0000	1.0000	1.0000	1.0000	0.3443
B7125	1.0000	1.0000	1.0000	1.0000	1.0000	0.8944
B7205	0.8671	1.0000	1.0000	1.0000	0.9091	0.9138
B7206	1.0000	1.0000	1.0000	0.9231	0.7273	0.2162
B7213	1.0000	1.0000	1.0000	1.0000	1.0000	0.6579
B7313	1.0000	1.0000	1.0000	0.9231	0.9091	0.9394
B7314	1.0000	1.0000	1.0000	0.8667	0.9231	0.1053
B7330	1.0000	1.0000	1.0000	1.0000	1.0000	0.0532
B7407	0.7143	1.0000	1.0000	1.0000	0.9000	0.3448
B7411	1.0000	0.6000	0.6250	0.4615	0.5000	0.0330
B7504	1.0000	1.0000	1.0000	1.0000	1.0000	0.2593
B7510	1.0000	1.0000	1.0000	1.0000	1.0000	0.3396
B7511	0.8571	1.0000	1.0000	0.9333	0.6154	0.1754
B7514	1.0000	1.0000	1.0000	1.0000	0.8462	0.1757
B7515	1.0000	1.0000	1.0000	1.0000	1.0000	0.2941

An analysis of variance on matched samples carried out with the Ministat statistics package (Vargha 1995) showed strongly significant variation in the data by the level of self-monitoring.

Testing the equality of population means:

- ANOVA:  $F(5,70) = 40.60^{**}$

Testing the hypothesis of stochastic homogeneity:

- Friedman test:  $G(5) = 47.24^{**}$

- ANOVA on ranks:  $rF(5,70) = 23.85^{**}$

Tukey-Kramer pairwise comparison of rank means ( $k = 6$ ,  $df = 70$ ) showed the following results (+:  $p < .10$  \*:  $p < .05$  \*\*:  $p < .01$ ):

T12 = 2.00    T13 = 2.27    T14 = 1.07    T15 = 3.60    T16 = 10.81\*\*  
 T23 = 0.27    T24 = 3.07    T25 = 5.61\*\*    T26 = 12.82\*\*    T34 = 3.34  
 T35 = 5.87\*\*    T36 = 13.08\*\*    T45 = 2.54    T46 = 9.75\*\*    T56 = 7.21\*\*

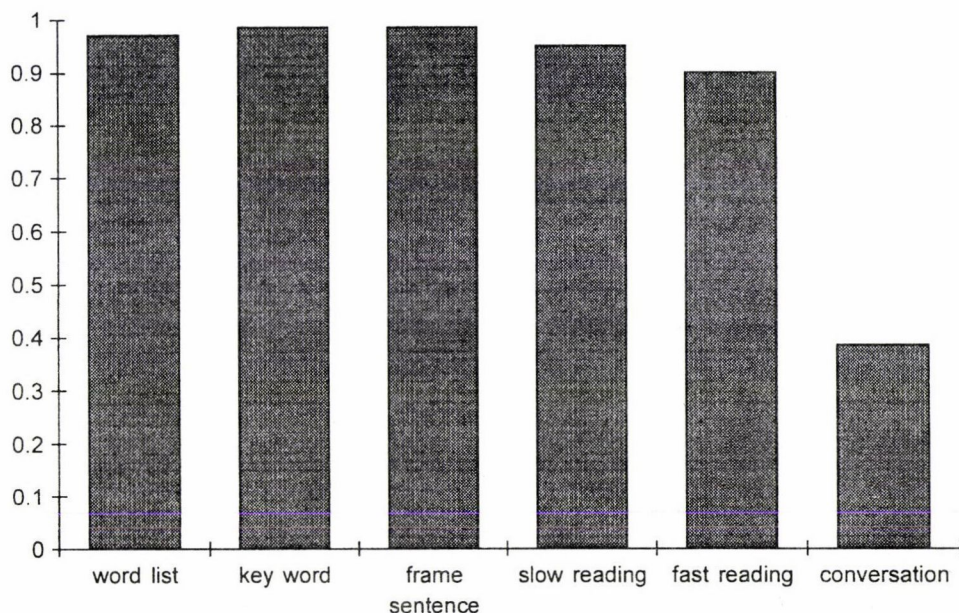


Fig. 1

The proportion of the standard use of the (bVn) variable at different levels of self-awareness

The levels of self-monitoring are coded with numbers corresponding to Table 1. An item like 'T16 = 10.81\*\*' means that the difference between level 1 and level 6 of self-monitoring is significant at the .01 level. In the light of the data in Table 4 it is hardly surprising that variable 6 (conversation) significantly differs in pairwise comparisons from each of the rest. It is more interesting to consider the difference between levels 1-5. Clearly, there is no significant difference among levels 1-4. Only the performance in fast reading (level 5) differs significantly from the rest, although curiously fails to show a difference from level 1, which is at the other end of the range.

Table 5 lists all the instances where a non-standard form was used by the informant. In some cases (as in item 460 in the top row of the table) the response offered represented a hypercorrect answer. *Inf* stands for informant, *M* denotes level of self-monitoring, *Stimulus* refers to what was presented to the informant to elicit their *Response*.

Table 5  
The non-standard responses in the test modules of BSI

Inf	Item	M	Stimulus	Response
B7113	460	2	— Hová tetted a biciklit ?	← kertben
B7202	200	3	.... jární nem olyan feltűnő, mint szmokingban.	← szmokingba
B7202	260	3	Tegnap Péter .... minden könyvemet az antikváriumba.	← antikváriumban
B7205	2310	1	kertben	← kertbe
B7205	3420	5	helyzetben	← helyzetbe
B7206	3420	5	helyzetben	← helyzetbe
B7206	3510	5	mozgalomban	← mozgalomba
B7206	6160	4	színházban	← színházba
B7206	6390	5	színházban	← színházba
B7302	360	3	.... hogy igazad van mindenben.	← mindenbe
B7302	1530	5	közelben	← közelbe
B7302	3040	4	helyzetben	← helyzetbe
B7302	3130	4	mozgalomban	← mozgalomba
B7302	3510	5	mozgalomban	← mozgalomba
B7302	6250	4	hónapokban	← hónapokba
B7302	6480	5	hónapokban	← hónapokba
B7313	1350	4	közelben	← közelbe
B7313	3420	5	helyzetben	← helyzetbe
B7314	3040	4	helyzetben	← helyzetbe
B7314	6250	4	hónapokban	← hónapokba
B7314	6480	5	hónapokban	← hónapokba
B7401	200	3	.... jární nem olyan feltűnő, mint szmokingban.	← szmokingba
B7402	6390	5	színházban	← színházba
B7402	6480	5	hónapokban	← hónapokba
B7403	1530	5	közelben	← közelbe
B7403	3040	4	helyzetben	← helyzetbe
B7403	4400	4	utcánkban	← utcánkba
B7403	6160	4	színházban	← színházba
B7403	6390	5	színházban	← színházba
B7407	2420	1	kertbe	← kertben
B7408	650	2	Történetünk Európában, annak is egy furcsa vidékén, a	← Debrecenbe
B7411	20	2	Ebben a .... jól nézel ki.	← farmerba
B7411	180	2	.... jární nem olyan feltűnő, mint szmokingban.	← farmerba
B7411	200	3	.... jární nem olyan feltűnő, mint szmokingban.	← szmokingba
B7411	360	3	.... hogy igazad van mindenben.	← mindenbe
B7411	810	3	Az új adótörvények a mai újságban ....	← újságba
B7411	1300	4	újságban	← újságba
B7411	1350	4	közelben	← közelbe
B7411	1480	5	újságban	← újságba
B7411	1530	5	közelben	← közelbe
B7411	2940	4	környezetünkben	← környezetünkbe
B7411	3420	5	helyzetben	← helyzetbe
B7411	5390	4	lakásban	← lakásba
B7411	5660	5	lakásban	← lakásba
B7411	6160	4	színházban	← színházba
B7411	6250	4	hónapokban	← hónapokba
B7411	6390	5	színházban	← színházba

B7416	360	3	.... hogy igazad van mindenben.	← mindenbe
B7502	180	2	.... jární nem olyan feltűnő, mint szmokingban.	← farmerba
B7502	650	2	Történetünk Európában, annak is egy furcsa vidékén, a	← Debrecenbe
B7503	320	3	Abban a .... nem mehetsz színházba.	← abba
B7503	330	2	Abban a .... nem mehetsz színházba.	← farmerbe
B7505	200	3	.... jární nem olyan feltűnő, mint szmokingban.	← szmokingba
B7505	360	3	.... hogy igazad van mindenben.	← mindenbe
B7511	1480	5	újságban	← újságba
B7511	1530	5	közelben	← közelbe
B7511	1910	1	kertbe - KERTBEN	← kertbe
B7511	3040	4	helyzetben	← helyzetbe
B7511	3420	5	helyzetben	← helyzetbe
B7511	6390	5	színházban	← színházba
B7511	6480	5	hónapokban	← hónapokba
B7514	3320	5	környezetünkben	← környezetünkbe
B7514	6480	5	hónapokban	← hónapokba

The (bV<sub>n</sub>) variable and final consonant deletion in BSI

An earlier attempt to analyse the (bV<sub>n</sub>) variable (Váradí 1994) raised the possibility that the deletion of the word final nasal in *-ban/ben* may be akin to the deletion of other final consonants in spontaneous speech. Common forms with deleted final consonants include *azér, mer* for standard *azért, mert* 'for the reason, because'; *attó* for standard *attól* 'away from that'. As a matter of ancillary interest to the central issue of the present paper I have carried out a comprehensive analysis of all the final consonant deletion cases recorded so far in BSI. BSI transcripts register the deletion of final *-t, -l* and *-n*, therefore the present analysis is obviously limited to these items.

As Table 6 demonstrates, a correlation analysis between the use of non-standard *-bV* forms and final *-t* and *-l* deletion shows a significant correlation.

Table 6  
Correlation between the non-standard variants of the (bV<sub>n</sub>) variable and final *-t* and *-l* deletion

CORRELATION MATRIX (+: p<.10 \*: p<.05 \*\*: p<.01)

Variable	<t>	<l>	-ba/e<n>
<t>	1.000	0.732**	0.692**
<l>	0.732**	1.000	0.746**
-ba/e<n>	0.692**	0.746**	1.000

The same correlation analysis was carried out in each of the five social groups involved in the BSI-2 project. They are as follows: 1 teachers, 2 university students, 3 sales clerks, 4 blue-collar workers, 5 vocational trainees aged 15–16. The results are displayed in Table 7.

Table 7

A breakdown of correlations between the non-standard use of *-bV* forms and deletions of *-t*, *-l* by social groups

CORRELATION MATRIX (+:  $p < .10$  \*:  $p < .05$  \*\*:  $p < .01$ )

Group number: 1 Group name: teachers

Variable	<t>	<l>	-ba/e<n>
<t>	1.000	0.469	0.822+
<l>	0.469	1.000	0.525
-ba/e<n>	0.822+	0.525	1.000

Group number: 2 Group name: university students

Variable	<t>	<l>	-ba/e<n>
<t>	1.000	0.481	0.262
<l>	0.481	1.000	0.731+
-ba/e<n>	0.262	0.731+	1.000

Group number: 3 Group name: sales clerks

Variable	<t>	<l>	-ba/e<n>
<t>	1.000	0.875+	0.917*
<l>	0.875+	1.000	0.778
-ba/e<n>	0.917*	0.778	1.000

Group number: 4 Group name: blue-collar workers

Variable	<t>	<l>	-ba/e<n>
<t>	1.000	0.663	0.600
<l>	0.663	1.000	0.997+
-ba/e<n>	0.600	0.997+	1.000

Group number: 5 Group name: vocational trainees

Variable	<t>	<l>	-ba/e<n>
<t>	1.000	0.692	0.028
<l>	0.692	1.000	-0.139
-ba/e<n>	0.028	-0.139	1.000

It appears from the correlation tables that within the particular groups there is not such a strong correlation between the variables as in the pooled data. The non-standard use of *-ba/be* forms shows a weak correlation with *-t* deletion in the speech of teachers and *-l* deletion in that of university students and blue-collar workers. The data from sales clerks show a correlation between all three variables, while no correlation is found in the speech of vocational trainees.

As there does not seem to be any clear trend between the correlation patterns observed and the social groups of the informants the issue must be subjected to further, more detailed analysis.

### Final *-n* deletion and the (bVn) variable in BSI conversations

To round off the analysis of the (bVn) variable as a case of final consonant deletion, cases of final *-n* deletion in general should be considered. The data from BSI conversations did not yield any instances of final *-n* deletion where the form affected was something other than *-ban/ben*. However, even within words ending in *-ban/ben* one can find some with a different morphological composition. Among them are stems that happen to include *-ban* or *-ben* such as the verbs *robban* 'explode', *dobban* 'throb', *csobban* 'splash', *döbben* 'be startled' etc. More interestingly, there is a set of inflected adverbial forms which result in pseudo *-ban/ben* morphemes. Such forms come about when the comparative form of an adjective in *-bb* is further supplied with the adverbial derivational suffix *-an/en*, yielding words like *jobban* 'in a better way', *szebben* 'more nicely' etc.

The transcripts of the BSI conversations so far included 136 tokens of words ending in this pseudo *-ban/ben* form. None happened to belong to the single stem variety, presumably because such forms are limited to the third person singular in the present tense, this being the only case where the verbs are not given any ending.

Of the 136 words ending in *-ban/ben* but not in the inessive case, not one was found with the final nasal deleted. This unambiguously suggests that the phenomenon is clearly morphophonemically conditioned. When it happens, final *-n* deletion is limited to the inessive case marker *-ban/ben*. This finding, however, does not explain why it happens when it does and therefore it still seems entirely appropriate to seek an answer to the problem in terms of the level of self-awareness and formality of the speech situation.

### Summary

The present paper analysed the relationship between the (bVn) variable and the different levels of self-monitoring that may be presumed to exist in the various modules in the Budapest Sociolinguistic Interview. Results based on an exhaustive set of data transcribed so far clearly indicate that the five levels of awareness assumed for the non-conversational tests in BSI did not have a significant effect on the use of the (bVn) variable. Given that the levels of self-monitoring are merely postulated on theoretical grounds, it is reasonable to conclude that the test situations involved are not distinct enough rather than to suggest that the (bVn) variable is 'insensitive' to the level of self-awareness. To arrive at a more solid conclusion on the matter one would either have to obtain independent corroboration of the distinct levels of self-monitoring assumed in this paper or to analyse the behaviour of other variables with respect to this factor.

One conclusion, however, that most firmly suggests itself is the great discrepancy that exists between the test modules and the conversational modules. In the performance of the same informant a 100% compliance with the standard in the test modules can drop as low as under 10% in the conversation modules. As far as field worker technique is concerned this is certainly welcome news as it suggests that they managed to create the relaxed informal atmosphere which they were supposed to aim for. On the other hand, the results for the test modules reveal an undesirably high level of formality and, perhaps more important, an insufficient degree of differences between the particular test situations.

The use of *-ba/be* forms in the conversation data for all informants together shows a strong correlation with the deletion of both final *-t* and *-l*. However, a breakdown of the correlation by the five social groups involved in BSI-2 shows that the correlations are not at all so widespread and strong in the particular groups. The evidence is not clear enough to support any solid conclusion on the matter yet.

The conversation data clearly established that final *-n* deletion does not operate across the board in all words ending in final *-n*. In fact, it is absent even in words ending *-ban/ben* that are either stem forms or in which the *-ban/ben* sequence comes about coincidentally.



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ATTITUDES AS A FACTOR OF LANGUAGE CHOICE:  
A SOCIOLINGUISTIC INVESTIGATION  
IN A BILINGUAL COMMUNITY OF  
ROMANIAN-HUNGARIANS

ANNA BORBÉLY

1. Introduction

*Attitude* is an interdisciplinary term, bridging psychology and sociology, but it has become also a term of linguistics, in particular in psycholinguistics and sociolinguistics. The term *language attitude* may refer to people's evaluation judgments about one or other language and it may also refer to the evaluation concerning a particular language of speakers of an ethnic group having particular personality characteristics (Pap 1979). Attitudes play a powerful role in determining one's behavior (Lambert 1967). Attitudes may also be viewed as reflections of behavior (Brudner-Douglas 1979). The main factors which influence language attitudes are social and political changes, for example changes in language policy (cf. Woolard-Gahng 1990). For these reasons the attitudes of the speaker may be regarded as an important factor in the description of his/her bilingualism.

In this paper<sup>1</sup> I would like to present the language attitudes of Romanian-Hungarians, the indigenous ethnic Romanians living in Hungary. This community now can be characterized with the language shift situation. The paper is based on an empirical investigation carried out in 1990 in Kétegyháza, a Hungarian village situated near the Hungarian-Romanian border. In this village Romanian-Hungarians are in a numerical majority relative to the inhabitants of other ethnic groups (mainly Hungarians and some Romanies). In Kétegyháza two varieties of Romanian are used: Standard Hungarian Romanian and Local Romanian. The former, abbreviated SHR, is different from Standard Romanian (SR) inasmuch as it is a contact variety influenced by Hungarian. The latter (abbreviated LR) is a local dialect of Romanian different from both SR and SHR.

The primary aim of this investigation was to assess the language use of Romanian-Hungarians, the degree and nature of Romanian and Hungarian

<sup>1</sup> A shorter Hungarian version of this paper was presented at the 6. Élőnyelvi Konferencia, Budapest, October 14-15, 1993.

language choice (cf. Borbély 1993), code-switching (cf. Bartha-Borbély 1995) and linguistic change in LR and SHR.

The changes of attitudes of members of the community toward their own ethnicity started when bilingualism developed in the community. Bilingualism among Romanian-Hungarians results from the postwar border modifications of 1920. After the Second World War the process of bilingualism got new impulses due to the radical postwar social changes. These changes have caused the isolation of the Romanian-Hungarians to dissolve. Since the 50s, the Romanian-Hungarians have established stronger contact with the Hungarian majority (Hungarian workplaces, mixed marriages, etc.), and have modified their attitudes and emotions towards their own Romanian minority culture and language.

## 2. The community

Romanian-Hungarians live in nearly twenty settlements near the Hungarian–Romanian border in the three southeastern counties of Hungary. The ancestors of Romanian-Hungarians came from the area (in present-day Romania) bounded by the Crişul-Repede, Crişul-Negru, and Mureş rivers in several waves. Most of them settled between 1700 and 1750. The settlers came to the new country in the hope of a better life. The settlements were established with ethnic minorities living separately. This helped the new communities become accustomed to the new conditions (Márkus 1936, 82) and as a result they retained their old habits, life style, and ethnic identity for centuries.

Prior to the Second World War most Romanian-Hungarians were involved in agriculture. Following the Communist takeover, collectivization eliminated small village farms, causing the break up of closely-knit village communities all over the country. In 1990, during the time of data collection, most Romanian-Hungarians worked on collective farms or as skilled laborers. Some were clerks or professionals.

From the time of Romanian-Hungarian settlement, Romanian-Hungarians worshiped in a separate Orthodox Church. In these churches religious services were and are still held in SHR. Today, in two villages there is also a Baptist Romanian community, with Hungarian-dominant bilingual religious services. In Hajdú-Bihar county a part of Romanian-Hungarians practice Greek Catholicism. Until the beginning of this century religious services were held in SHR, but today they are exclusively in Hungarian.

Currently there are twelve kindergartens where Romanian courses are offered 2–4 hours a week. The Romanian-Hungarians have six minority ele-

mentary schools with some courses in Romanian. In particular, Romanian language and literature are taught in Romanian, while the other subjects are taught predominantly in Hungarian. There are also six Hungarian elementary schools where Romanian language and literature are taught. The Romanian-Hungarians also have a secondary school in Gyula, the only secondary school where Romanian is taught in Hungary. At the highest levels of education, there are three colleges and one university where Romanian is taught as a major.

The 1990 census counted 10,740 Romanians living in Hungary, but the Association of Romanian-Hungarians estimates about 20,000 to 25,000.

Currently the majority of Romanian-Hungarians are bilingual in Hungarian and Romanian. They speak a LR, their mother tongue (which has preserved age-old features of the Crișean region dialect) and Hungarian (also a local variant). Very few Romanian-Hungarians, mainly intellectuals, speak the SHR, a variety of Romanian close to SR, in addition to their LR. SHR can be differentiated from SR on the basis of certain grammatical forms (in particular grammatical agreement and conjugation), a smaller vocabulary, a slower rate of speech, and in some cases stress and intonation. SHR is a learned variant developed by systematic replacement of dialectal elements of LR (the mother tongue) with the corresponding elements of the SR.

A minor part of the community, mainly the younger generation, can be considered Hungarian monolingual. In the case of the Romanian-Hungarians, bilingualism can be considered a transitory state between Romanian and Hungarian monolingualism.

The LR is used in conversations within the family, between friends and neighbors. Except for conversations before and after Orthodox religious services, however, the dominant language (spoken by more than 50 percent of the interlocutors) is Hungarian (Borbély 1993). At other local places (e.g. shops, doctor's waiting-rooms, the Mayor's Office, at work), and outside the local settlements only Hungarian is used. SHR is used in the institutions of the Romanian-Hungarians, that is school classes, the mass media, and Orthodox church services, and at meetings with relatives from Romania.

### 3. Method, research design, and informants

In the study of language attitudes three assessment techniques are generally used. The first is the analysis of societal treatment. It occurs mainly in autobiographical, observational, and case studies (Agheysi-Fishman 1970; Fishman 1966). The second is the use of a series of direct questions, presented either in written form to large groups or in individual interviews (Gal 1979;

Kontra 1990; Trudgill–Tzavaras 1977). The third is the indirect method, inferring language attitudes from evaluations of speakers of two or more language varieties. The matched-guise technique was introduced by Lambert–Hodgson–Gardner–Fillenbaum (1960). Most data have been gathered with this technique (Lambert 1967).

In my research the attitudes were examined with direct questions borrowed mostly from two questionnaires (Gal 1979; Kontra 1990). The questionnaire was administered orally, in LR, by the author, herself a Romanian-Hungarian, known to the interviewees. Sixty informants were selected according to three age levels (18–39, 40–58, 59–69), gender (half of the subject were male in each group), and education (levels: 4–7, 8–11, 12–14 years completed).

The responses were analyzed by standard statistical methods (Chi-square test, ANOVA, and correlation calculations).

According to my hypothesis language attitudes are in close relationship with the language choice, and these attitudes are likely to be affected by the age, gender and education level of the speakers.

## 4. Results

### 4.1. Language and ethnicity

Today the main identifying characteristic of Romanian-Hungarians is their language. I asked each subject (in LR) if he/she feels himself/herself Romanian or Hungarian. If the subject considered himself/herself Romanian, I asked why he/she thought so. Most responses to this question (33%) refer to their language (*Că vorbăsc românește* 'e. 'Because I speak Romanian.'). However, my informants were very keen to emphasize the fact that they were Hungarian citizens.

It may be interesting to compare this result with that obtained by an equivalent question asked in research carried out in 1989 and 1990 in Budapest by Csepli and Závecz (1991). Here only few Hungarians from Budapest (7%) linked their Hungarian ethnicity to their language. For this reason alone it is very important to study the direction of change in language attitudes in the community of the Romanian-Hungarians. It seems likely that if their language dies they will lose their Romanian ethnicity entirely.

With some questions of the questionnaire I wanted to gather the opinion of Romanian-Hungarians about their LR, SR, and Hungarian.

Two frequent answer types occurred concerning the LR. (1) 79% of the group of older informants and nearly half of the middle-aged informants (46%)

characterized the LR dialect as a mixed variety between Hungarian and Romanian. (2) The second most frequent answer type for this question was as follows: "This dialect differs very much from Standard Romanian, thus it is less correct than Standard Romanian". This answer type characterizes 68% of the younger group and nearly half (45%) of the middle-aged subjects. However, it is interesting that 92% of informants answered "Yes" to the question *Îi bine dacă un prunc să învață să vorbască și rîmâneșt'e nu numai ungureșt'e?* 'Is it good for a child to learn Romanian in addition to Hungarian?'. As in other minority language situations (cf., e.g., Gal 1979) some of the informants answered that their Romanian minority language was useless, because they only could use it within the village borders, and they often added: "You can't go far with Romanian".

#### 4.2. Language attitudes

In this paper I use three variables for language attitudes: aesthetic, preference, and competence.

The greatest proportion of the informants (48%) comparing SR with Hungarian were unable to decide which of the two languages was more beautiful. A considerable proportion of the informants (37%) answered that *Limba rîmână îi mai mîndră dăcît limba ungurească*. 'Romanian is more beautiful than Hungarian'.

Responses, given in Fig. 1, refer to the answer "Hungarian is more beautiful than Romanian". It is interesting to note that old men and young women were those who preferred Hungarian to Romanian. Young men like Romanian more than Hungarian because it is nicer to say in Romanian *te iubesc* than in Hungarian *szerelek* 'I love you'.

The question *În care limbă îți plăce mai tare să vorbești?* 'Which language do you prefer to speak?' refers to the LR dialect versus Hungarian. The same is true for the question *În care limbă îi mai ușor să vorbești?* 'Which language is easier for you to speak?'. These questions referred to speakers' attitudes towards languages, as well as their preference and competence in the LR dialect or Hungarian. I noticed that older people speak the LR dialect more frequently than the younger generation. Therefore it seems likely that the older generation prefers LR to Hungarian and is able to speak the LR dialect more easily than Hungarian.

To the question "Which language do you prefer to speak?" more than half of the informants (53%) answered that they preferred to speak Hungarian to the LR, and nearly one-third of them (30%) liked to speak the LR more. Responses, given in Fig. 2, refer to the answer "I like to speak Hungarian

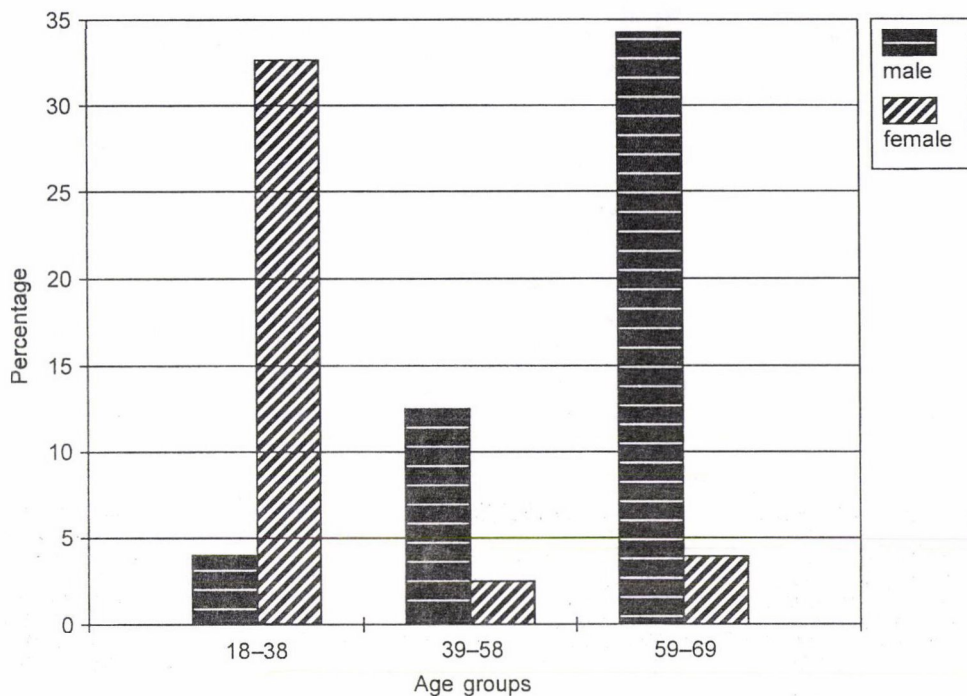


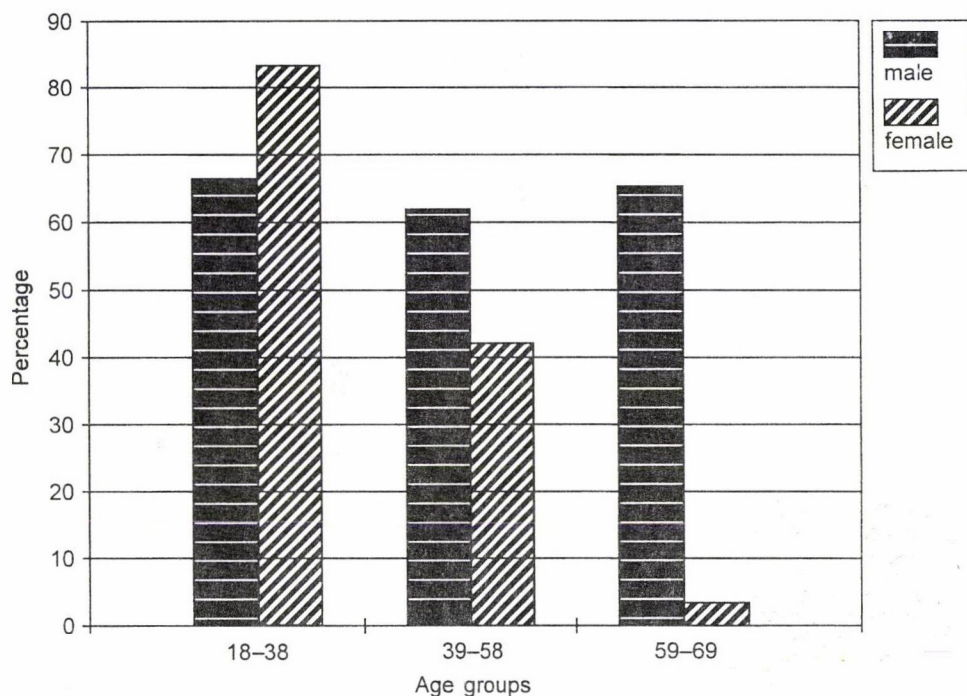
Fig. 1

The percentage of subjects who claimed that "Hungarian is more beautiful than Romanian" in each age X gender subgroup

more than the LR dialect". These responses show a gender by age interaction. Responses of males are not affected by the age, but for females there is a significant difference among the three age groups. Old women like Hungarian the least, middle-aged females moderately, and younger women the most.

Responses to the question "Which language is easier for you to speak?" are quite similar to the previous question. Most of the informants (55%) answered *M-i mai ușor să vorbăsc ungreșt'e decât rîmâneșt'e*. 'It is easier for me to speak Hungarian than the LR dialect', and only about a third of them (32%) chose LR as the easier language. Figure 3 refers to the answer "It is easier for me to speak Hungarian than the LR dialect". As with the previous question, there were only slight differences between the age groups among the men, but marked differences among the three age groups of women. Older women felt that Hungarian was not easy to speak and most young women said that Hungarian was easy to use.

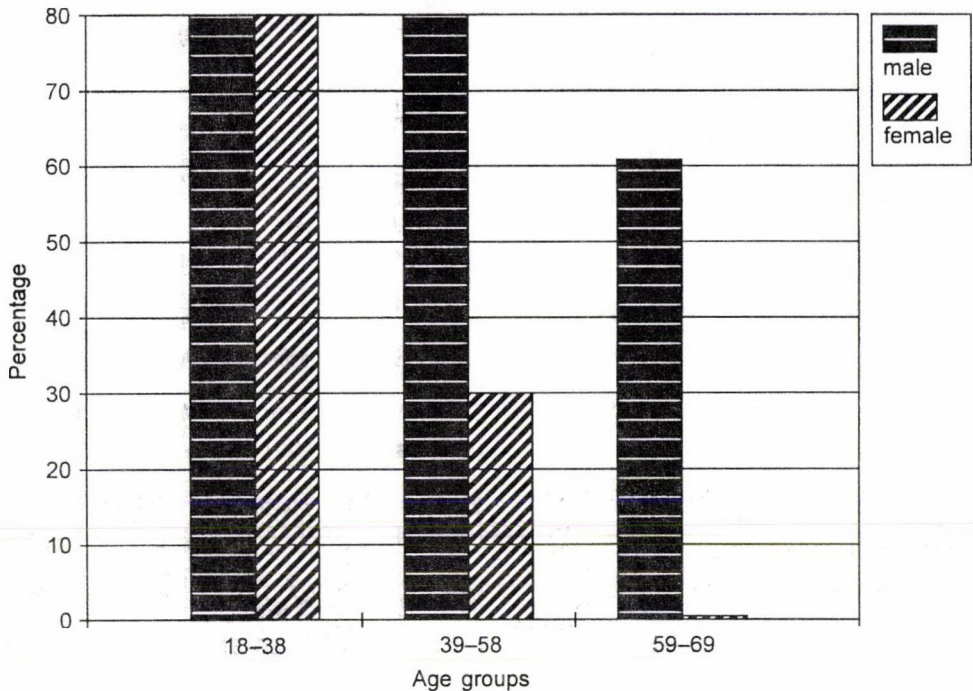




*Fig. 2*

The percentage of subjects who claimed that  
 "I like to speak Hungarian more than the Local Romanian dialect"  
 in each age X gender subgroup

Much sociolinguistic research reports that women in many societies are less favorably disposed to low status forms of language than men (Brouwer 1987; Thorne-Henley 1975; Trudgill 1972; Trudgill-Tzavaras 1977), and women's linguistic and attitudinal changes depend on their relation to larger social forces (Gal 1978; Lieberman 1970). It is interesting to note that in the community in question younger women like Hungarian the most. The changes in these women's attitudes towards Hungarian can be influenced by the radical economic and social changes. Women have come into contact with Hungarian people more slowly than men. For decades most Romanian-Hungarian men had occasions for contact with the Hungarian population (through military service, markets, etc.). After the 1950s it was also the men who went to work in towns, into purely monolingual Hungarian surroundings. Old women have never worked outside the village, and only half of the middle aged women worked outside their own village. Currently most young women



*Fig. 3*

The percentage of subjects who claimed that  
 "It is easier for me to speak Hungarian than the Local Romanian dialect"  
 in each age X gender subgroup

go to work in towns. The fact that young women like to speak Hungarian more than LR implies the sad consequence that they do not or will not speak LR with their children, but will only use Hungarian.

#### 4.3. Attitudes and language choice

In this section I compare attitude responses with language choice responses. A second part of the questionnaire concerned language choice. Language choice questions referred to the place of speech inside the village (at home, the school, church, work, the Mayor's Office, doctor's waiting-rooms, shops, and market, etc.), and the partners (husband/wife, children, grandson, schoolmates, colleagues, Mayor, patients, shopkeepers).

The gathered data show that aesthetic, preference and competence language attitudes are in a different correlation with the choice of LR and Hungarian. Among Romanian-Hungarians the aesthetic language attitudes are not in

a positive relationship with the language choice, because those who answered "Romanian is more beautiful than Hungarian" do not choose the LR dialect more frequently. But there is a positive correlation between preference language attitudes and language choice, because those who said "I like to speak the LR more than Hungarian", do choose the LR variety more than subjects who prefer speaking Hungarian. The highest correlations occurred between answers referring to the attitudes of competence and language choice. Respondents who answered that they spoke LR more easily than Hungarian choose LR more frequently than others.

### 5. Conclusions

One of the clearest conclusions to emerge from this research is that LR, in all probability, is a dying language, as younger Romanian-Hungarians are increasingly shifting to monolingual Hungarian use. This shift from LR is in part due to the change in attitudes towards their language.

Attitudes towards Romanian-Hungarians' mother tongue are not very positive (they viewed it as a mixed variety or a non-standard variety). As in many language communities in the world attitudes of women and men differ from each other. Social and economic changes have caused attitudes of younger women to change. Young women like and prefer to speak Hungarian more than LR, but older women have preserved most their positive attitudes towards the LR dialect. The age and the gender of the speakers also have an influence on the responses. In this community I have not found any significant relationship between the education level and the language attitudes of the informants.

Unlike aesthetic language attitudes, preference and competence language attitudes of the speakers are in a positive correlation with the language choice.

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## THE ROLE OF CODE-SWITCHING IN ACHIEVING UNDERSTANDING: CHINESE SPEAKERS OF HUNGARIAN\*

JULIET LANGMAN

### 1. Introduction

Research on communication strategies, within the interaction framework, focuses on identifying the types of strategies that second language learners use in order to ensure that their messages are getting across when there is some misunderstanding. Parallel research on foreigner talk focuses on those strategies that native speakers use in interactions with learners to ensure or facilitate communication (see, for example, Tarone 1977; Bialystok 1983; Bremer *et al.* 1993; Wesche 1994).

Tarone (1977) provides a typology of communicative strategies, comprised of five types: (a) avoidance (topic avoidance, message abandonment); (b) paraphrase (approximation, word coinage, circumlocution); (c) conscious transfer (literal translation, language switch); (d) appeal for assistance; and (e) mime. Several other typologies have been suggested by other researchers (see for example Váradi 1980; Faerch-Kasper 1980) all of which are quite similar in terms of the types of strategies they uncover.

In this paper I examine in detail one particular type of communication strategy, namely the use of code-switches. Tarone (1977) identifies the code-switch as a type of conscious transfer. Faerch and Kasper (1980) include code-switching (along with foreignizing and literal translation) as part of L1/L3 strategies, where the learner makes use of a language other than L2. They identify these strategies as a sub-type of achievement strategy, i.e. that type of communication strategy in which the learner opts to keep as opposed to abandon (reduction strategies) the communicative goal. These strategies are moreover considered to be non-cooperative strategies, as opposed to those in which the learner asks for help directly or indirectly (compensatory strategies).

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Bremer *et al.* (1993) discuss the mechanics of the joint negotiation of meaning, and the ways in which the interlocutors must work to "create conditions that make shared interpretation possible" (Bremer *et al.* 1993, 180). They outline a number of joint strategies between the speakers, at the level of discourse: deciding to solve the miscommunication or not; resolution through collaboration, and collaboration through prevention. Code-switching falls into the category of resolution through collaboration when we look at the native speaker's code-switches as well as the learner's code-switches. Taking this perspective is somewhat in contrast to Faerch and Kasper's view that code-switching is a non-cooperative strategy.

One issue of interest to researchers in communication strategies is whether the proficiency level of the learner has an effect on the types of learner strategies chosen. It seems that learners begin with a preference for reduction strategies and later move to achievement strategies (see Tarone 1977). Moreover as learners advance they use increasingly more L2-based strategies (such as paraphrase). Hence we would expect to find more advanced speakers making more use of code-switching in the intermediate stage, as it is already a type of achievement strategy, with respect to the goal of passing on a message, but not yet an L2-based strategy.

A second central question in the discussion of communication strategies is the relationship between communication and language learning strategies, particularly in the case of adult immigrant second language learners. Related to this is the question of the degree to which particular strategies and processes are related directly to language learning as opposed to more general learning processes (Bialystok 1990). With respect to communication strategies, researchers have tried to make distinctions between long-term and short-term or on-the-spot strategies in terms of the degree to which the process is related to general cognitive processes which will then lead to language learning (cf. Bialystok 1990; Ellis 1985). We can see learner strategies as "long-term solutions to problems" and the communication strategies as "short-term" or on the spot solutions to problems (Ellis 1985, 181). Distinctions between long- and short-term strategies, as well as the degree to which communicative strategies are conscious are, however, difficult at best to determine on the basis of naturalistic and cross-sectional data. Moreover, Hatch (1978), among others, suggests that the very act of communication or interaction may be crucial in language learning, and thus we cannot clearly separate long- and short-term processes from surface data.<sup>1</sup>

<sup>1</sup> The distinction between short- and long-term processes is of course important in terms of how these processes interact with general cognitive function. Long-term processes can



These two questions are related to one another insofar as we think of learning as a joint negotiation and one in which the learner must be provided with input that is within the zone of proximal development. Thus, subjects who find interlocutors who can provide them with the right kind of feedback, can use interactions as learning opportunities as well. Here in particular we will examine the effectiveness of code-switching both for communicative and for eventual language learning purposes.

The particular focus of this study is the examination of code-switching, not between the native and second language, but rather between two foreign languages—in this case Hungarian and English. Moreover, this study focuses on the strategy of code-switching used by both Chinese subjects and their interlocutors who are both native Hungarian and second language Hungarian speakers. This type of analysis allows us to look at the effectiveness of switching codes between speakers who do not share a single code to the extent needed for effective communication, and who choose, on a number of situations, to opt for a second code, limited for both.

## 2. The study

### 2.1. The subjects

The five subjects for this paper are drawn from a set of subjects who were interviewed in March and April 1994. All of our subjects are engaged in business either through selling in the various open markets, or working as wholesalers for these small merchants.

The subjects of this research are representative of the Chinese population in Hungary. The majority of Chinese came to Hungary from Mainland China between 1989 and 1991 during the political changes in Eastern Europe. In mid-1991, an estimated 40–50 thousand Chinese lived in Hungary (Nyíri 1994, 53), and worked primarily in open market places and restaurants. Following legal changes backed by police actions, including forced deportation, however, the population decreased to 7–10 thousand. New laws have made it increasingly difficult for Chinese to stay in Hungary, the majority must now renew their visas on a monthly basis (Nyíri 1994, 53).

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be conceived as ones that are potentially “process-initiating” and thus will be extended to other areas of language learning. Such initiating processes, according to Bialystok (1990), include overgeneralization and transfer. Short-term or situation-bound processes on the other hand are seen to serve more local communicative needs and include such strategies as circumlocution and paraphrase, language switch, appeal to authority, topic change and avoidance (Bialystok 1990).

The limited and insecure time perspective is a defining characteristic of life in Hungary for the majority of the Chinese. The majority of Chinese have left family in China and send money home on a regular basis. While a number claim that they would like to stay, without better immigration possibilities the majority have no plans for buying property or bringing dependents to Hungary.

One consequence of these restrictions is that the Chinese devote all of their time to work, and rarely if ever learn Hungarian in classroom situations; rather theirs is classic adult immigrant acquisition, in the context of the marketplace where the majority of them work.

The subjects' knowledge of Hungarian ranges from beginning to intermediate. A number of potential subjects were not interviewed as they considered their Hungarian inadequate, or did not understand what we wanted from them; that is, no initial communication and understanding could be established.

For all of the subjects, the primary and often only exposure to Hungarian is in the context of work in the markets, or in interactions with neighbors. The majority of the speakers claimed to speak Hungarian rarely. At the time of the research, one subject, KIN6, had begun formal language instruction and was at the time of the interview on Lesson 5 and in the fifth week of study. Rare free time and much of work time is spent in the company of other Chinese speakers and the need for Hungarian is limited. Official interactions with the police and immigration offices generally do not require interpreters, as they generally entail only the paying of fees.

Use of English as a strategy was pointed out during the interviews by a number of the subjects.<sup>2</sup> A number of other subjects, while they did not point it out explicitly, did in fact make use of this strategy. Table 1 gives an overview of the participants discussed in this paper.

The interviewers in this study consisted of the author, JUL, and two assistants, ZSU and VIK. While ZSU and VIK are native speakers of Hungarian with intermediate and beginning knowledge of English, respectively, JUL is a native speaker of English with intermediate knowledge of Hungarian.

<sup>2</sup> The use of English as a strategy in cross-language interaction is prevalent in many immigrant communities particularly in those areas where the language of the majority is not a widely-known language (see Langman 1989 for a discussion of the use of English among "Yugoslav" immigrants in the Netherlands). This is yet another of the many functions of English as a language of world communication. While not the focus of this paper, there is evidence of some interference from English in the word order of Hungarian sentences uttered by some of the subjects.

*Table 1*  
List of subjects, their grammatical level and interlocutors

Subjects	DOB	Gramm. Level	Interviewer(s)
Kínai1 – male	1956	3	Zsuzsa, Juliet
Kínai3 – female	1955	2	Zsuzsa
Kínai6 – female	1959	2	Viktor, Juliet
Kínai8 – male	1961	1	Viktor
Kínai9 – female	1964	3	Viktor

## 2.2. Interview setting

The data are drawn from open-ended interviews focusing on the subject's arrival and experiences conducted by one or two interviewers. The interviews were conducted at the office in March and April of 1994, in the waiting room of the accounting office. The interviews were all roughly 30 minutes in length. An interview guide was used to cover the following topics:

- how, when and by what means the subject came to Hungary
- current situation in Hungary: where and with whom they live and work
- how a normal day is spent
- the best and the worst experiences in Hungary
- the best and the worst aspects of life in Hungary
- comparisons of life in Hungary with life in China
- how and when the subject learned Hungarian
- how well the subject speaks, reads, writes Hungarian
- future plans: staying in Hungary, returning to China, or moving on
- feelings about Gypsies gathered by the question: Have you ever seen the graffiti *CMŌ* 'Gypsy-Free Area'?<sup>3</sup>

Within the interview setting, two goals operated simultaneously, and thus affected the nature of the overall interaction; the first was to gather information on Hungarian language use and the second, more basic goal was to establish rapport between the interlocutors. These two sets of goals can be seen as goals of the interview setting on the one hand, and goals of communication on the other.

<sup>3</sup> This last question was drawn from the Budapest Sociolinguistic Survey and intended to be used for comparisons with responses by Hungarian subjects. In general the response to this question was that the subjects had not seen such graffiti, but that their general impressions of Gypsies was negative.

The interviews can be divided into two subsets in terms of participants; those in which JUL was present, versus those in which she was not. JUL's role was two-fold during the interviews at which she was present; these interviews served as a training session for the other interviewers, as well as a setting for gathering information from the Chinese subjects.<sup>4</sup>

The second difference that colored the nature of the interactions was the degree to which the subject knew and spoke English. The choice of strategy of switching to English on the part of the interviewer shows some of the ways in which the strategies of "gathering Hungarian language data" (implicit and partially explicit goal of interviewers) and gathering information (explicit goal), and maintaining rapport interact with one another.

### 3. Analysis

The interviews were all transcribed following the guidelines and using the CHILDES transcription and analysis system.<sup>5</sup> An earlier analysis established a rough level of proficiency in Hungarian for each of the speakers on the basis of verbal morphology (Langman forthcoming).

The subjects overall were grouped at four levels of proficiency. The group discussed here fell into Levels 1-3; that is the speaker in Level 4 (the most advanced) did not use code-switching strategies. The subjects in this paper were ranked as follows on the basis of their verbal morphology:

- Level 1: KIN8
- Level 2: KIN3, KIN6
- Level 3: KIN1, KIN9

See Appendix A for a list of criteria on the basis of which verbal morphology was analyzed.

<sup>4</sup> Where JUL was present additional elements having to do with how to conduct the interview, and how to distribute turns at talk were present in addition to the interviewer-interviewee dynamic. In these interviews a three-way turn-taking negotiation was present as opposed to the more simple two-way turn-taking system.

<sup>5</sup> We have used the CHILDES (Child Language Data Exchange System) programs and transcription system. The programs: CLAN (Child Language Analysis) are written by Leonid Spektor at Carnegie Mellon University with design assistance from Brian MacWhinney. For information on transcription conventions see MacWhinney (1991).

### 3.1. Analyzing distribution of use of Hungarian and English

A first step in the analysis is to determine an overall look at the use of the two codes by the interlocutors in each interview. Table 2 shows the distribution of use of English and Hungarian across the interviews for the subjects in terms of lexicon and number of turns. Minimal responses (e.g. *mhm*, *uhuh*, *hm*, *yes* and its Hungarian counterpart *IGEN*)<sup>6</sup> are not counted as turns in this analysis as with the exception of *yes* and *IGEN* they cannot be assigned a language and in all cases they mark attention, agreement or understanding, but do not affect the communication strategy related to code-switching.

Comparing the subjects, we see that with the exception of KIN1, who uses 58% English, all subjects use more Hungarian than English lexicon. While in Hungarian all speakers have roughly the same size lexicon, the percentage of Hungarian over English varies, lying at around 60/40 for KIN8 and KIN9, and around 70/30 for KIN3 and KIN6. In English, KIN3 and KIN6 have the smallest lexicon as well as the smallest proportion vis à vis Hungarian.

With respect to number of turns, we see that while all subjects have a higher percentage of Hungarian turns than English or mixed turns, KIN1 has the highest percentage of English turns (39%), while KIN3 (15%) and KIN6 (16%) have the smallest, corresponding with their smaller English lexicon. For mixed turns KIN8 has the largest number at 33%, with KIN1 having the smallest, at 7%, with the other three ranging between 21–24%. For all but KIN1, there is an almost equal amount of English and mixed turns, especially with KIN9 (23/24%) suggesting that English use is not strong, and/or that the attempt to speak Hungarian leads to mixed turns.

In terms of the interlocutor(s), we need to distinguish between those in which JUL is present (KIN1, KIN6) from those where she is not. In these two interactions, JUL uses close to one-third English lexicon, while ZSU and VIK use almost none (3% and 4%). Similarly, in terms of number of turns, JUL uses around 75% Hungarian turns, while ZSU and VIK use close to 100% (96% and 97%). These interactions have the highest degree of use of English for all interlocutors. The remaining three interviews show variable use of English. Both ZSU (KIN3) and VIK (KIN8) use around 25% English in terms of lexicon. In terms of number of turns however, ZSU (KIN3) uses only 12% English while VIK (KIN8) uses 30%. If we compare the use of English and Hungarian with these two subjects, we see that as KIN8 uses a far higher degree of English and especially mixed turns that can explain the corresponding higher use of English

<sup>6</sup> To distinguish Hungarian from English items, the Hungarian examples are presented in both capital letters and italics, while the English examples are in italics only.

*Table 2*  
Use of English and Hungarian lexicon and number of turns

Subject	KIN1	ZSU	JUL	KIN3	ZSU	KIN6	VIK	JUL	KIN8	VIK	KIN9	VIK
Total Lexicon*	534	147	371	279	232	328	204	249	315	235	417	250
% Hungarian Lexicon	42%	97%	70%	73%	79%	70%	96%	73%	61%	77%	59%	89%
% English Lexicon	58%	3%	30%	27%	21%	30%	4%	27%	39%	23%	41%	11%
Total Turns	288	78	161	160	122	117	70	86	209	115	249	138
% Hungarian Turns	53%	96%	73%	72%	84%	63%	97%	76%	43%	65%	53%	80%
% English Turns	39%	1%	22%	15%	12%	16%	1%	17%	24%	30%	23%	12%
% Mixed Turns	7%	3%	5%	13%	3%	21%	1%	7%	33%	5%	24%	7%

\* number of types

by VIK. Finally in the case of KIN9, we see a different pattern, with VIK using a small degree of English lexicon (11%) and turns (12%) in spite of KIN9's use of a higher degree of English. In comparing KIN8 and KIN9, the major difference seems to be in the degree of mixed turns. For the interlocutors, the percentage of mixed turns is small in all cases, the highest percentage being 7% (JUL with KIN6, and VIK with KIN9).

In summary, we see that the interview with KIN1 is weighted toward English (although still over 50% Hungarian), the interviews with KIN3 and KIN6 are weighted toward Hungarian, and the interviews with KIN8 and KIN9 are balanced between Hungarian and non-Hungarian, with KIN8 having a high degree of mixed utterances.

### 3.2. Analyzing types of code-switching

The second step in the analysis entails a detailed examination of the code-switched utterances. Code switching in this paper is broadly defined to include both those switches that occur within utterances, at morpheme, lexical or clause boundaries, as well as those that occur at sentence boundaries, as well as at speaker boundaries.<sup>7</sup>

<sup>7</sup> The issue of base language is not considered here as the primary aim of this study is to examine how code-switching acts as a communication strategy, and not in what ways particular syntactic or morphological rules may be violated. In addition, as a large number of the code-switches discussed here occur at the level of discourse and across speakers, syntactic level constraints are not relevant. Furthermore, it is likely that the code-switches operate as part of a converged system, rather than as switches into and out of a given base language. For a further discussion of this issue see Romaine (1989).

In the completed transcripts all instances of inter-sentential as well as cross-utterance and cross-speaker switches were marked. These instances were then characterized on the basis of the function the switch may serve from the perspective of communication strategy.

Code-switches found in the data are classified in three main types in terms of size and function of the code-switched element as follows:

(1) Single constituent switches. These are switches taking part at the lexical level, or small constituent level (no larger than the clause). These switches are further categorized as follows:

- (a) lexical translation (of lexical item): e.g. *HARMINCHÁROM* *thirty-three* where the lexical item is uttered twice, once in each language by the same speaker.<sup>8</sup>
- (b) lexical gap—where the entire utterance is in one language except for a given lexical item, e.g. *KÍNAI VAN EGY letter*. ‘Chinese there is a letter’.
- (c) borrowing—where the item is incorporated into the language used by the speaker.
  - (i) English in Hungarian: *police*, *business*, *graffiti*,
  - (ii) Hungarian in English: *PIAC* ‘market’, *ÁFA* ‘tax’, *KFT* ‘company’, *PÁLINKA* ‘brandy’, *VÁR* ‘castle’

(2) Large constituent code-switches. These encompass larger units of meaning than the lexical, but are still carried out within one turn and thus by one speaker. These were divided into two sub-groups depending on the nature of the information given in the second code:

- (a) rephrasings: where the information is roughly the equivalent of that uttered previously. See Ex. 1 where ZSU repeats her question to KIN3 first in Hungarian then English.

Ex. 1. KIN3

\*ZSU: ÉS LEGTÖBBET MILYEN NYELVEN BESZÉL ITT MAGYARORSZÁGON? ÁLTALÁBAN NAPKÖZBEN MILYEN NYELVEN BESZÉL? LEGTÖBBET. The most of the day, what language do you speak? Chinese, English, Hungarian?

<sup>8</sup> I distinguish this from literal translation, in that both forms are present.

%eng: And most of the time which language do you speak here in Hungary? In general during the day what language do you speak?  
The most.

(See Appendix B for transcription conventions.)

(b) expansions: where the switch is followed by new or additional information. Ex. 2 shows how KIN6 switches to English to give more information.

Ex. 2. KIN6

\*KIN6: TÁBLA VAN OTT ÍRNI SZERET VENNI ÉS UH MENNYI FORINT DARAB ÉS MENNYI FORINT KILÓ ÉS uh # we see that only to show that which one.

%eng: sign is there write+INF like+3S buy+INF and how many forint piece and how many forint kilo and

(2a) is seen as serving the function of ensuring understanding, while (2b) involves more, that is the desire to impart information that cannot be given in the language currently being used.

(3) Code-switch across turns. These types of code-switch take place across speakers. These have been divided as follows:

- (a) rephrasings—where one speaker rephrases the utterance of the other in the second code (or in some instances, rephrases his own utterance after an intervening utterance by another speaker)
- (b) expansions—in this setting, these generally entail answers to questions placed in one language, but responded to in the other.
- (c) filling lexical gap—this entails those instances where another speaker fills a lexical gap either with or without the request of the speaker who created the gap.

A detailed discussion of how to determine which lexical items should be coded as code-switches and which as borrowings, takes us beyond the scope of this paper at present. In particular this is the case, as both types of non-native lexical items may serve communication strategy functions equally, in spite of the fact that one (borrowing) is an integrated part of the code, from the perspective of the speaker, while the other (code-switch) is not. Here, frequency across the interviews and across speakers was one of the primary bases upon



which code-switches were distinguished from borrowings. In addition, an examination of those items which native speakers use, in the interviews, as well as in other settings also informed the distinction. As all of these interviews entail the only interaction with the speakers, we coded according to the evidence in the interaction at each particular exchange.

Table 3 shows the distribution of single and large constituent switches across the interlocutors. Omitted from this table are those switches that entail proper names, of e.g. restaurants and schools. In addition, those switches that are pragmatic, or morphological in nature have also been omitted. Finally, a few unclear utterances have been omitted, as well as those switches that come hand in hand with a new question on the part of the interviewer. These last are seen as attempts on the part of the interviewers to keep the interaction in Hungarian, but do not serve as communication strategies, evidenced by the occasional need of the interviewers to switch back to English to get a response.

Table 3  
Types of code-switching used as communicative strategies

INTERLOCUTORS	KIN1	ZSU	JUL	KIN3	ZSU	KIN6	VIK	JUL	KIN8	VIK	KIN9	VIK
<b>TOTAL Single Constituent*</b>	5/1	1/0	5/0	14/3	2/0	10/1	1/2	1/0	56/14	2/1	31/9	5/3
lexical trans.	1/0	-	3/0	1/1	1/0	1/1	1/2	-	3/3	1/1	6/3	4/3
lexical gap	3/0	-	-	5/2	-	9/0	-	-	18/1	-	20/1	-
borrowing	1/1	1/0	2/0	8/0	1/0	-	-	1/0	35/10	1/0	5/5	1/0
<b>TOTAL Large Constituent<sup>y</sup></b>	15/0	0	5/0	5/5	3/2	7/5	4/2	1/1	7/3	6/0	18/3	-
rephrasing	2/0	-	3/0	2/3	3/0	1/1	4/1	1/1	2/1	6	2/1	-
expansion	13/0	-	2/0	3/2	0/2	6/4	0/1	-	5/2	-	16/2	-
<b>TOTAL Cross speaker<sup>y</sup></b>	7/0	0/2	0/1	1/0	1/0	6/1	4/6	0/1	3/2	2/6	6/2	1/8
rephrasing	1/0	0/1	-	-	1/0	2/0	4/0	-	-	2/2	5/2	0/1
expansion	6/0	-	-	1/0	-	4/1	-	-	3/2	-	1/0	-
fill lex. gap	-	0/1	0/1	-	-	-	0/6	0/1	-	0/4	-	0/7

\* in single constituent columns the first number in the series (1/1) refers to an English word used in Hungarian, i.e. a switch to English, while the second refers to a Hungarian word used in an English frame, i.e. a switch to Hungarian.

<sup>y</sup> in large constituent and cross-speaker switches, in the series (1/1) the first number refers to a switch from Hungarian to English, and the second refers to switches from English to Hungarian.

The interaction with KIN1 is characterized by the shifts to English on the part of KIN1 in order to carry on a discussion. In addition, the switches by the interlocutors also move in the direction of English (in the case of JUL) with the exception of the cross-speaker turns where the interlocutors use the switch to Hungarian 21 times (JUL 12, ZSU 9) when asking a new question. Cross-speaker turns are divided according to language of preference, with KIN1 using English and JUL and ZSU supplying lexical items and phrases in Hungarian. In the case of the interview with KIN1 all instances of lexical gaps are gaps in Hungarian, and all borrowings are borrowings into Hungarian, with the exception of *PIAC* used by KIN1 in the English utterance *go to PIAC*. Ex. 3 shows an example of a typical interaction with KIN1. KIN1 pulls the discussion to English, while the interviewers try to pull it back to Hungarian.

## Ex. 3. KIN1

*ZSU:	ÉS MI VOLT AZ ELSŐ BENYOMÁS MAGYARORSZÁGRÓL?	1
%eng:	and what was your first impression of Hungary?	
*KIN:	EZ <NEM ÉRTEM> [>1], EZ(T) <NEM ÉRTEM> [>2].	2
%eng:	I don't understand that, I don't understand that.	
*JUL:	<BENYOMÁS> [<1].	3
%eng:	impression	
*ZSU:	<AZ ELSŐ> [<2].	4
%eng:	the first	
*KIN:	ELSŐ +...	5
%eng:	first	
*ZSU:	ELSŐ VÉLEMÉNYE, AMIKOR ELŐSZÖR JÖTT, MIT GONDOLT A MAGYAR, MAGYARORSZÁGRÓL?	6
%eng:	first opinion, when you came the first time, what did you think about Hungary?	
*KIN:	what <the > [>] first impression?	7
*ZSU:	<xxx jó volt> [<].	8
%eng:	was it good	
*JUL:	mhm. <BENYOMÁS, first impression > [>].	9
*KIN:	<ah the first thing xxx> [<]. aha. It's ah ah you know um, when do we first came here #, I feel the Hungarian, the Hungarian people very friendly...	10

In this example, KIN1 first marks his lack of understanding (2) leading ZSU and JUL together to rephrase in 3–6. In 7 KIN1 switches to English to rephrase the question, which overlaps with a further rephrasing to ZSU in 8. In 9 JUL offers a lexical translation of the key word leading to KIN1's full response

in 10. Here the lexical translation in 9 can be seen as a language teaching device, which was not necessary to the understanding of the question in 1, as KIN1 has already rephrased it correctly in 7.

The interview with KIN3 is markedly different from that of KIN1. While KIN1 uses predominantly large constituent switches, and all but one switch moves to English, KIN3 uses predominantly single constituent switches (and especially borrowings, which are arguably not switches at all). In addition, she switches back and forth between Hungarian and English a few times, especially in the course of telling a story about a car accident. Particular words seem to trigger switches from one language to the other in this case. ZSU for her part, also uses switches to English, particularly in rephrasing questions, and switches to Hungarian to accommodate her poor English.

Ex. 4 shows an extract from a story KIN3 tells predominantly in English, with a switch to Hungarian triggered by *EMBER*.

Ex. 4. KIN3

- |       |  |    |
|-------|--|----|
| *KIN: | ÉS NEHÉZ BESZÉL MOST uh uh RENDŐRSÉG police.   | 1  |
| %eng: | and difficult speak now police   |    |
| *KIN: | NEM JÓ um &KÍN KÍNAI situation not NEM OLYAN   |    |
| %eng: | Not good Chinese not very  |    |
|       | JÓ KÍNAI.  |    |
|       | good Chinese.  |    |
| *ZSU: | mhm.   | 2  |
| *KIN: | NEM TUD MÉRT.  | 3  |
| %eng: | Not know+3S why.   |    |
| *ZSU: | mhm.   |    |
| *KIN: | you we, we meet some problem.  | 4  |
| *ZSU: | mhm.   |    |
| *KIN: | yes. um for example in xxx you have accident. My car<br>parking in the parking. The other park. The other car<br>touch my <my> [>] +/. | 5  |
| *ZSU: | <yes.> [<]   | 6  |
| *KIN: | +, car yes. &an and the Hungary EMBER  | 7  |
| %eng: | person   |    |
| *ZSU: | yes.   | 8  |
| *KIN: | A MAGYAR EMBER SOK <drink> [>] +/.   | 9  |
| %eng: | the Hungarian person a lot   |    |
| *ZSU: | <IVOTT> [<]  | 10 |
| %eng: | drank  |    |

- \*KIN: PÁLINKA. IGEN IGEN. Touched my car, I said this  
no not good, I will ask uh police... 11
- %eng: brandy. Yes yes.

In 1 KIN3 begins with a lexical translation of *police*. Thereafter she uses *situation* to fill a lexical gap. In 4 she switches to English to give a concrete example, a story of a car accident. In 7 she fills a lexical gap in English with *EMBER*, which also leads to a switch to Hungarian beginning with a rephrasing in 9 and moving on to an expansion with *SOK drink PÁLINKA*. Here too she fills a lexical gap with *drink*, which ZSU fills in 10. Then in 11 after acknowledging ZSU's understanding/help with *IGEN IGEN* she switches back to English to continue her story.

Characteristic of KIN6 is the presence of lexical gaps in KIN6's speech, followed by the filling of those gaps by JUL or VIK. Here, as with KIN3 we see near equal amounts of rephrasings and expansions into both English and Hungarian on the part of KIN6, with JUL using rephrasings in English to ensure understanding. The majority of JUL's cross-speaker rephrasings constitute rephrasings of VIK's questions; thus it is similar to the within speaker rephrasings carried out by one interviewer. Ex. 5 shows how the interlocutors work together to fill gaps.

Ex. 5. KIN6

- \*JUL: SZERETSZ SZERET<sup>9</sup> MAGYARORSZÁG? 1
- %eng: do you like, do you like Hungary?
- \*KIN: IGEN # HODMODA<sup>10</sup> MAGYAR EMBER NAGYON
- %eng: yes how to say Hungarian person very  
KEDVES # friendly. 2  
sweet
- \*JUL: BARÁTSÁGOS. 3
- %eng: friendly.
- \*VIK: BARÁTSÁGOS. 4
- %eng: friendly.

In line 2 KIN6 responds using a possible lexical translation. We cannot, in fact, say that she intends it as a lexical translation, as it is inaccurate. JUL and VIK in any event proceed to fill what they perceive as a lexical gap.

<sup>9</sup> Here JUL corrects herself by moving from the informal 'tu' form to the formal 'vous' form of the verb. Nonetheless her utterance is still ungrammatical as the object marker *-t* is missing from *Magyarország*.

<sup>10</sup> *hodmoda* is an idiosyncratic form of *hoggy mondjam* 'how do I say'.

Characteristic of KIN8 is the high number of borrowings and lexical gaps, particularly in Hungarian and also in English. What is striking about KIN8, in fact, is that he has a number of set phrases that have been incorporated as lexical items into his Hungarian (which have here been counted as borrowings). They include: *business* (16 times), *make (a) business* (6 times), *make (a) company* (4 times), *young people* (4 times), and *country* (4 times).

In Ex. 6 KIN8 uses a mixed utterance full of set phrases.

Ex. 6. KIN8

\*KIN: mm um young people, young people MINDEN SZERETI make a NAGY business. VAN SOK PÉNZ ÉS business JÓ, make a NAGY company. And make a bossier.

%eng: mm um young people, young people every likes make a big business. there is a lot of money and business good, make a big company. And make a bossier.

In such utterances of KIN8, it is difficult to determine which language serves as the frame or matrix into which elements can be inserted. Here, we can say that across the interaction Hungarian is more often the intended frame, but the success of staying within it is quite limited. Moreover, here, the overall fluid manner in which KIN8 speaks, as well as the frequency of a number of set phrases have led us to count them as borrowings as opposed to code-switches. Similarly, he has borrowings from Hungarian in English which he uses consistently, such as *MUNKA* 'work' as in *MOST MUNKA*, *MOST the MUNKA is uh make company, profit*.

For his part VIK relies on rephrasing questions in English in attempts to make himself understood. In addition, he supplies lexical items in Hungarian.

Ex. 7. VIK supplies KIN8 with some vocabulary

*KIN:	so MEGYÜNK maybe other MÁSIK country.	1
%eng:	go+1P other	
*VIK:	MÁSIK ORSZÁG.	2
%eng:	other country.	
*KIN:	ORSZÁG.	3
*VIK:	ORSZÁG.	4
*KIN:	MÁSIK ORSZÁG is SZERETI ÉS VAN business ÉS.	5
%eng:	other country is like+3S and there is business and.	

...

- \*KIN: EZ uh business NEM JÓ, ITT ÉL NINCSEN business 6  
 EZ finish MEGYÜNK VISSZA KÍNA AZ KÖRÜBELÜL  
 MÁSIK business JÓ country.  
 %eng: This uh business not good, here live no business  
 this finish go+1P back China that's about  
 another business good country.

After VIK offers a lexical item in Hungarian *ORSZÁG*, KIN8 picks it up in 5. Later, however, (here marked as line 6), KIN8 returns to his form of *ORSZÁG*, namely the English word *country*. With a few exceptions, such as when KIN8 asks for a rephrasing in English, we cannot see his use of code-switching as a communication strategy; it is rather an integral part of his particular interlanguage.

At the outset of the interview KIN9 repeatedly responds in English, to which VIK repeatedly (7 times) urges *MAGYARUL!* 'Hungarian!' Throughout she jokes about his demands saying as in Ex. 8.

Ex. 8. KIN9

- \*KIN: JÓ MAGYARUL DE NEM TUDOM HOGY MIT MOND A  
 MAGYAR. Please try to to teach one or two word I can maybe  
 use, make a sentence.  
 %eng: ok Hungarian but I don't know how what say the Hungarian.

As the interview progresses, KIN9 moves more into Hungarian, and switches her strategy to using the interview as a language learning opportunity, for which she uses code-switching to draw language teaching from VIK.

Ex. 9. KIN9 and VIK

- \*KIN: NA ÉN NAGYON SZERETI AZ A climate. How to say  
 %eng: well I very much like+3S that's the  
 climate. 1  
 \*VIK: mhm. 2  
 \*KIN: climate. 3  
 \*VIK: climate, KLÍMA KLÍMA. IDŐ<JÁRÁS.> [>] 4  
 %eng: climate climate. Weather.  
 \*KIN: <KLÍMA aha> [<]. 5  
 \*VIK: IDŐJÁRÁS. 6

*KIN:	IDŐ, IGEN IDŐJÁRÁS NAGYON SZERETI.	
%eng:	&weath, yes weather very much like+3S.	
	TETSZIK IDŐJÁRÁS.	7
	I like weather.	
*VIK:	IDŐJÁRÁS <JELENTÉS weather> [>] report.	8
*KIN:	<IDŐJÁRÁS IDŐJÁRÁS.> [<] Weather yeah.	9
*VIK:	IDŐJÁRÁS.	10
*KIN:	IDŐJÁRÁS. EZ TUDOM.	11
%eng:	Weather. This I know.	

In 1 KIN9 asks for help with a lexical item, *climate*. In 3 she repeats the lexical item, yielding a lexical translation from VIK in 4, which she verifies by repeating in 5. Then in 6, VIK begins a new sequence by introducing the related word, *IDŐJÁRÁS*, which KIN9 uses actively in 7, to which VIK, apparently for his own practice in English, produces a lexical translation in 8. This KIN9 again repeats for herself as a lexical translation in 9. In 10 and 11 they again repeat each other, and then KIN9 ends the interchange with *EZ TUDOM*.

#### 4. Discussion: A question of style or level of language competence?

At the start of this paper I asked the questions

(a) whether different types of communication strategies, and in this case more specifically, different types of code-switching phenomena are related to different levels of proficiency; and

(b) whether communication strategies are the same as some long-term language learning strategies.

In terms of the degree of proficiency of the speaker and type of code-switching, we see that the two slightly more advanced speakers (KIN1 and KIN9) seem to direct the flow of the conversation more so than the more beginning speakers. In addition, they use more large constituent switches, although not necessarily less single constituent switches.

In terms of use of the interaction as a language learning opportunity, we see that there is a distinct difference between KIN6 and KIN9, both of whom seek and also engender language learning help in the form of having lexical gaps filled, and the other speakers, who do not explicitly seek or use repetition and requests to gain language learning practice. This strategy seems

to be independent of the level of proficiency in Hungarian, and furthermore, seems to work best with small chunks, that is lexical items and short phrases.

When looking at these communication strategies that involve code-switching we must ask the question of what the link is between achieving successful communication at the point in question, and language learning more generally. Here we see that the two seem to work hand in hand when there are exchanges, offered by the interviewer or requested directly or indirectly by the learner that serve the two purposes together. Moreover, we have seen that those learners who already possess particular lexical items, often use a code-switch as a type of check or validation of the meaning of that item.

KIN1 and KIN9 use their switches to English to check on their understanding of the Hungarian and to expand their answers when their Hungarian is not sufficient. In the case of KIN1 this is an effective strategy as JUL and ZSU can understand him, in the case of KIN9, not, because of VIK's limited English. For KIN3 and KIN6 a far more limited type of code-switching takes place, as both their Hungarian and English are more limited than that of KIN1 and KIN9. Here the strategies are seen with the use of lexical gaps and borrowings more so than larger constituents. However again we see that the interaction with the interlocutors affects the success of communication on the one hand and language learning on the other, for while KIN6 receives feedback in the form of having lexical gaps filled, KIN3 does not.

Code-switching for the other speakers (especially KIN1 and KIN3) is primarily for the purpose of achieving understanding, rather than for language learning practice. KIN8 falls into a separate category. While he is the least advanced in Hungarian, it is most notable that he seems to be operating with a mixed code as his code, as opposed to switching back and forth between two codes for communicative purposes. He speaks a form of telegraphic speech that is comprehensible only for those with knowledge of both Hungarian and English. In the case of all of the other speakers, we see an attempt to keep the codes separated, and with KIN9, with the second greatest amount of switching, we see it clearly as a strategy for learning, that is with lots of lexical translations and lexical gaps bounded with requests to have them filled.

Code-switching on the part of the native speaker can be seen to work to a certain degree insofar as clarifying questions, through rephrasings in English, and in terms of filling lexical gaps which can aid both understanding and learning. However, the degree of effectiveness is limited by a number of factors including:



- (a) level of proficiency in L3 (English) of the interlocutors
- (b) level of proficiency in L2 (Hungarian) of the interlocutors

This last point is related to the extent to which the non-native speaker stays within the frame of L2 and makes attempts to respond in L2, in spite of potential ease of response in L3. This moreover is related to the communicative goal of the interaction in the case of these interviews, where two sometimes opposing goals—communicating information, and speaking in Hungarian existed.

In this case code-switching as a strategy is related to the level of proficiency of both speakers. In the case of code-switching over longer stretches of discourse on the part of the non-native speaker, in particular in those cases where expansions take place, it would seem that this strategy works counter to language learning. However, when the form of the switching is more direct rephrasings, it may be related to language learning as these types of code-switches may serve as checks on understanding either self-directed or directed at the native speaker. These types of language practice and repetition, moreover, were evident in only some of the speakers, not in all, thus suggesting that the level of proficiency does influence choice of communication strategy.

“Communication strategies are psycho-linguistic plans which exist as part of the language user’s communicative competence. They are potentially conscious and serve as substitutes for production plans which the learner is unable to implement” (Ellis 1985, 182). If this is true, then we need to think of production in the case of these subjects as not constrained to one system, but rather made up of two interlocking second language systems. Here we see that code-switching as communication strategy is used for different sets of goals; for KIN1 code-switching and thus use of English allows his goal of giving information to be successful, while for KIN9 code-switching allows her to achieve a goal of language learning, although somewhat unsuccessfully due to the lack of English proficiency of her interlocutor.

Bremer *et al.* (1993) suggest that the native speaker in negotiation with the language learner can set up a learning environment by bringing the learner to the “zone of proximal development” (cf. Vygotsky 1978). Hence, each interaction can be seen as a potential language learning instance, insofar as all of the interlocutors are able to recognize and assist in one another’s goals.

In response to the question of whether code-switching is a non-cooperative achievement strategy, we can see that it is an achievement strategy, although what is to be achieved, communication versus language learning determines whether or not it should be classified as non-cooperative. For the purposes of language learning, the subjects must rely on the support of their interlocutors.

We see it being used as a language learning strategy on the part of KIN1, KIN6 and KIN9. Whether it is effective, depends both on the nature of the interaction with the interlocutors, which we were able to examine here, and also on the degree of retention of language learned, which we cannot determine from the data presented here. Hence longitudinal data of interactions with these adult second language learners may help us to find out more about the interplay between communication strategy and language learning.

### Appendix A

#### Description of verbal morphology used to determine the level of grammatical ability of the subjects

- Level 1: – use of base form (based on 3S) for all persons  
 – use of copula *van*  
 – use of frequent, set expressions *tudom* ‘I know’ in 1S
- Level 2: – use of infinitive  
 – systematic use of morphological endings attached to base in the form of base + vowel (*-i, -e, -o*)  
 – use of past tense of copula and in set expressions;  
*mondtam* ‘I said’, *szoktam* ‘it’s my habit to’
- Level 3: – productive use of some other forms (e.g. 1S, 1P, 3P)  
 – productive use of definite and indefinite forms in 1S and 3S although not always correctly  
 – use of verbal prefixes (not in separable form).

### Appendix B

#### Transcription conventions

Below is the basic set of transcription conventions used in the examples. They are drawn from MacWhinney (1991). For a more complete explanation of transcription conventions see MacWhinney (1991). The presentation of the examples has been modified; more than one utterance has been listed on a single line in some cases, and false starts that entail only partial words have been deleted. In addition, retracings have been removed. In the examples, Hungarian words are presented in ALL CAPS. Examples given in the text are in italics, with Hungarian words also in ALL CAPS.

*XXX:	marks the speaker
xx	unintelligible speech treated as word
xxx	unintelligible speech, not treated as word
&	phonological fragment
#	pause between words
< > [>]	overlapping speech follows
< > [<]	overlapping speech precedes
„	tag question
%eng:	English translation
%com:	comment on the preceding line
%add:	addressee
[= ]	explanation of preceding word
[=? ]	alternative transcription
[?]	uncertain transcription
[=! ]	paralinguistics, prosodics
+ . . .	trailing off
+ / .	interruption
+ ,	self-completion

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## ENGLISH ONLY'S COUSIN: SLOVAK ONLY\*

MIKLÓS KONTRA

### Introduction

In the words of Rodley (1995, 48), "Not since the close of the First World War has the issue of minority rights achieved the central place in international relations and their legal regulation that it currently occupies." Minority rights are often linked to language rights and there is a growing concern, at least among some linguists, about linguistic human rights (see, e.g., Skutnabb-Kangas-Phillipson 1994). The idea of restrictive legislation for language use seems to be an equally central issue for some politicians in "established democracies" such as the USA and "emerging democracies" such as Slovakia. While attempts to make English the official language of the United States have not been successful at the federal level for over a decade now, legislators in Slovakia have passed two official Slovak language laws in less than six years.

In this paper I will briefly sketch the current situation of the Hungarian national minority in Slovakia and the context of the adoption of the Slovak State Language Law of 1995; then I will show how the English Only movement in the USA is related to the new Slovak law and will analyze the law from the point of view of a basic requirement in the Linguistic Society of America's statement on language rights: that speakers be allowed to express themselves, publicly or privately, in the language of their choice.

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### 1. Hungarians in Slovakia

When the Austro-Hungarian Monarchy collapsed in 1918, the architects of the peace treaties following WW I ignored Hungarian ethnic boundaries,<sup>1</sup> and about two-thirds of historical Hungary's territory was ceded to the newly-created multiethnic states of Czechoslovakia and Yugoslavia, to an enlarged Romania, and to Austria. Today ethnic Hungarians number about 600,000 in Slovakia, constituting over 10% of that country's population.<sup>2</sup> They are indigenous to the area where they live, in a somewhat<sup>3</sup> similar way to, for instance, "members of the Spanish culture" who "woke up one morning to find themselves citizens of the United States" (Marshall 1986, 40) when the US annexed New Mexico following the Treaty of Guadalupe Hidalgo in 1848. The Hungarian minority lives in the southern part of the Slovak Republic, in over 400 towns and villages Hungarians constitute the local majority of the population.

In a historical sociolinguistic analysis of Hungarian in Czechoslovakia between 1918 and 1991, Lanstyák (1991, 60–1) concluded that

When examining the seven decades of history of the Hungarian minority in Czechoslovakia, it is impossible to ignore that there was a singular purpose in policy. Regardless of the regime . . . that policy was to keep the nationality rights and within these the linguistic rights at the very lowest level that would be tolerated by the minority group and by the international climate of opinion.

(Translation quoted from Huseby-Darvas 1993, 453–4)

After the Velvet Revolution in 1989, for a short while there were hopes that the interethnic tensions would lessen in Slovakia, but those hopes soon evaporated when the Slovak Official Language Law was adopted in October 1990. With regard to this law Plichtová (1993, 17) has made the false claim that it granted "the status of official language to a minority language if an ethnic minority in a given region exceeds 20 per cent of the population." If minority languages had been official languages in the said localities, Section 6,

<sup>1</sup> See, for instance, Magocsi (1993, 134–5).

<sup>2</sup> According to the 1991 census, Slovakia's population consisted of over 4.5 million Slovaks, 566,000 Hungarians, 80,600 Roma, 53,400 Czechs, 16,900 Ruthenians, 13,800 Ukrainians, 5,600 Germans, 2,900 Poles, and 17,100 "other and unidentified" people (Plichtová 1993, 18).

<sup>3</sup> Slovaks and Hungarians have lived together in the territory that is today called the Republic of Slovakia for about a millennium.

Paragraph 2 of the 1990 law would hardly have stated that state and local government officials were not required to know and use the minority languages (see, e.g., Zalabai 1995, 324). What the law did allow was oral use of the minority language in official contacts in the said localities. For years after 1990, fierce language battles took place over bilingual city- and village-limit signs, the right to use Hungarian personal names, language rights in education etc.

From a legal point of view, many of the controversies in the early 1990s were due to what Phillipson-Skutnabb-Kangas (1995a, 41) call *posturing*: not providing for the implementation of a policy. The following case illustrates such posturing, a far cry from the rule of law. Sketching the recent constitutional evolution of Slovakia, Plichtová (1993, 17) writes

In September 1992 the Slovak National Council (SNC) endorsed a constitution for an independent republic based on principles of parliamentary democracy. The constitution reiterates that state power is derived from citizens and that citizens are permitted to do all that which is not prohibited, whereas the government is permitted to do only what is explicitly allowed under the law. [...] The Slovak language is the official language and the use of other languages will be regulated by a separate law.

One year after the adoption of the official language law, in October 1991, the Ministry of the Interior called bilingual city-limit signs illegal. The text of the official language law did not prohibit bilingual signs, hence Hungarians in Slovakia argued that under the principle of "what is not prohibited is permitted" the signs were legal. When questioned, Ladislav Pittner, the Minister of the Interior, said the following:

We have a special legal case here, when, due to the specificity of the language law, the general and lay principle whereby what is not prohibited is permitted, cannot be observed.<sup>4</sup>

(Zalabai 1995, 24–5)

To some extent the linguistic human rights situation of the Hungarian minority in Slovakia is influenced by various European organizations. As Phillipson-Skutnabb-Kangas (1995b, 486) observe,

When former communist states apply for admission to the Council of Europe, they are required to prove that they follow policies that respect human rights. This is supposed to be a precondition for membership of

<sup>4</sup> My translation from the original Hungarian newspaper report published on 5 November 1991 and reprinted in Zalabai (1995).

the European club. Ironically, a higher standard of minority protection is required, at least in theory, of eastern European states than exists in many member states.

It was due to such Council of Europe requirements that, following very heated public debates and politicking, the Law on the Registration of Births, Marriages and Deaths, and the Law on Bilingual Placename Signs were adopted in Slovakia in 1994. Nevertheless, rather than create order, the 1990 Official Slovak law resulted in confusion and increased interethnic antagonism. As Obrman (1990, 16–7) put it, “the law leaves no room for discrimination against Slovaks, as some radicals argue it does. On the contrary, if the law discriminates in any way, it is in curtailing rights previously enjoyed by other ethnic minorities. The new law is, in fact, a step backward and is likely to harm Slovakia’s image, even in its present, relatively moderate form.” Brunner (1994, 35) has noted that “Before 1990, there was no direct regulation, but in territories inhabited by Hungarian minorities, Hungarians could often use their language in offices even in the case of lower proportions.” The Official Slovak law was revoked when the new Law on the State Language of Slovakia was adopted at the end of 1995. Thus there is a pattern of increasing language restrictionism from Communism to 1990 and then to the law of 1995.

The Justification of the 1995 law implies that ethnically non-Slovak citizens of Slovakia, about 20% of the country’s population, are not a “state-forming element”:

The Slovak language is the national language of the Slovaks, who comprise the only state-forming element of the Slovak Republic. The role of the Slovak language as the unifying language of all citizens of the Slovak Republic also arises from the position of [the Slovaks as the] state-forming element.

(The Slovak State Language Law and the minorities, p. 13)

The critical question is this: If ethnic Slovaks are the only state-forming element, what are the national minorities? This question is left unanswered in the Justification of the law. In a candid assessment of the situation the Slovak political scientist Kusý (1996) offers a clear answer: Since 1 January 1993, Hungarians and the other minorities have become “tenants in the country in which they have lived together with us because the Slovaks turned it into their own nation-state.”<sup>5</sup>

<sup>5</sup> My translation.



## 2. The State Language Law of Slovakia under international scrutiny

When the Slovak National Council adopted the Law on the State Language on 15 November, 1995, western newspapers as well as Hungarian politicians in Slovakia and neighboring Hungary immediately started to criticise it. "Slovaks further curb use of the Hungarian language," reported *The New York Times* on the following day. "Language law raises ethnic fears" was the title of a report in *The Globe and Mail* (6 December, 1995), while *The Independent* (2 December, 1995) told the story of the European Parliament threatening to suspend EU assistance to Slovakia and expressing grave concern at policies which "show insufficient respect for democracy, human and minority rights and the rule of law."

The Slovak ambassador to the US wrote letters to *The New York Times*, which were entitled "Slovak language law won't harm minorities" (27 November, 1995) and "Slovakia is committed to democracy" (3 January 1996). The Slovak foreign minister told a press conference in Bratislava that since his country's language law neither threatens nor affects human and minority rights, it cannot be an issue of dispute with Hungary (OMRI No. 240, 1995). Hungary's foreign minister called the Slovak language law "regrettable" and reaffirmed that the goal of his government remains ensuring that Hungarian minorities have unrestricted use of their native language.<sup>6</sup> In January 1996, the OSCE High Commissioner on National Minorities paid a three-day visit to Slovakia to examine the situation of the Hungarian minority there. Among other things, topics for discussion included the ratification of the Slovak-Hungarian treaty,<sup>7</sup>

<sup>6</sup> The foreign policy dilemmas of the Hungarian government are aptly illustrated by Béla Markó, president of the Democratic Federation of the Hungarians in Romania, in a recent interview: "Hungary is moving rapidly towards Europe, and it is therefore in the country's interest to settle things with all her neighbours as quickly as possible. The need to represent the interests of Hungarians outside Hungary, including those of Romania—and to do so in a manner that nobody could describe as half-hearted—is in diametric opposition to this" (Hovanyecz 1995, 49).

<sup>7</sup> A basic treaty between Hungary and Slovakia was signed by the two prime ministers in March 1995. The Hungarian parliament ratified it in the summer of 1995, but the Slovak parliament has postponed ratification several times. A major stumbling block is that the treaty contains Recommendation 1201 (1993) of the Parliamentary Assembly of the Council of Europe. On 30 January, 1996 the Slovak parliamentary chairman announced that ratification of the Slovak-Hungarian treaty would be postponed until after "the parliamentary Foreign Affairs Committee has drawn up an interpretation clause on CE Recommendation No. 1201, which deals with autonomy for minorities." (OMRI No. 22, 1996) Some Slovak politicians in the ruling coalition push for the adoption of a law, prior to ratification of the Slovak-Hungarian treaty, on the protection of the republic, which should "prevent the

Slovakia's state language law, preparations for a law on minority languages,<sup>8</sup> plans for territorial administration or redistricting, and "alternative" (bilingual) education for minorities (OMRI No. 6, 1996).

Critics of the new law have pointed out that it is unconstitutional, and on 18 January the President of Slovakia said that if the implementation of the law leads to any infringements of minority rights, he will ask the Constitutional Court to decide whether the law is constitutional (OMRI No. 14, 1996). New controversies continue to be created at this writing in February 1996. For instance, the head of the language department of the Culture Ministry claimed the mayors of certain southern Slovak communities acted illegally by passing directives allowing for the use of both Slovak and Hungarian in official contacts. Slovakia's Hungarian coalition pointed out that although the new language law cancels the previous one, it fails to regulate the use of minority languages. Because the use of one's mother tongue is a constitutional right, the coalition believes the directives are legal. "Meanwhile," OMRI (No. 24, 1996) reported that "although fines cannot be issued until 1997, four »language consultants« began work on February 1 in three Slovak districts and in Bratislava to supervise the observance of the language law."<sup>9</sup>

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creation of autonomous regions" (OMRI No. 21, 1996; for post-1989 territorial revisionism see Borsody 1993 and Brunner 1994). Others would like to see the ratification conditional on receiving an apology from Hungary for "the occupation of Southern Slovakia in WW II" (OMRI No. 29, 1996). That apology is unlikely to be forthcoming until Slovakia abolishes the Beneš decrees of 1945 (under which ethnic Germans and Hungarians were expelled from Czechoslovakia), which have also been the cause of conflict between Germany and the Czech Republic (see *The New York Times*, 9 February 1996, pp. A1 and A6).

<sup>8</sup> See note 24 for the short life of these preparations.

<sup>9</sup> The 1995 law empowers the Culture Ministry with the task of a linguistic police (see Section 10 of the law in 3. below). The Hungarian press in Slovakia has started using two new Hungarian words: *nyelvérendőr* 'language policeman' and *nyelvérendőrség* 'language police'. Some Hungarian community leaders predict that the creation of the linguistic police in Slovakia may easily lead to a return of a time, all too well-known during communism, when one citizen can effectively harm another by informing government officials on him or her (see Vonyik 1995). And indeed, one of the language consultants has recently said in a press interview that he plans to visit villages with a Hungarian majority population in the Galánta district because he has received phone calls complaining that some local organizations such as the village fishing clubs post their announcements in Hungarian only. The same person, a retired physician before becoming a language expert, has also expressed dissatisfaction at how a hairstylist said what in English is "Can I help you?" to her customer. She said *Tessék – prosím*, that is the Hungarian word first and the Slovak equivalent second. According to language expert Andrej Šuják if the hairstylist had observed the official Slovak language law, she would have spoken the two words in the opposite order (see Kamoncza 1996).

Clearly, the new Slovak law has attracted international scrutiny. To facilitate further discussion of it, I will quote the law in its entirety.

### 3. Text of the law on the state language of the Slovak Republic

As I have no access to an official English translation of the law, I will present an unofficial translation. The text below is based on two unofficial translations: (1) the one released by the ČTK news agency in Prague on 13 December 1995, and (2) the one published in *The Slovak State Language Law and the minorities* (pp. 7–11). Both English versions have been checked against the official text of the law in Slovak by István Lanstyák.<sup>10</sup> The text published here has been freed of the mistranslations and omissions of the translations in (1) and (2) and is, as far as Lanstyák and I can tell, a more accurate English rendition of the official Slovak text than either (1) or (2).<sup>11</sup>

#### LAW OF THE NATIONAL COUNCIL OF THE SLOVAK REPUBLIC, OF 15TH NOVEMBER 1995 ON THE STATE LANGUAGE OF THE SLOVAK REPUBLIC

The National Council of the Slovak Republic, proceeding from the fact that the Slovak language is the most important distinctive feature of the uniqueness of the Slovak nation, the most valuable piece of the cultural heritage and expression of sovereignty of the Slovak Republic and the general means of communication for its citizens, which guarantees them freedom and equality in dignity and rights in the territory of the Slovak Republic, has approved the following law:

#### SECTION 1

##### Introductory provisions

(1) The state language in the territory of the Slovak Republic is the Slovak language.

(2) The state language takes precedence over other languages used in the territory of the Slovak Republic.

(3) The law does not legislate the use of liturgical languages. The use of these languages is determined by the regulations of the Church and religious communities.

<sup>10</sup> I am indebted to Professor István Lanstyák of Comenius University, Bratislava, Slovakia for checking the translations for accuracy, for providing important information used in this paper, and commenting on an earlier version. Any infelicities are entirely my own responsibility.

<sup>11</sup> The original Slovak text of the law contains 15 notes which refer to the Slovak Constitution and other laws. Their omission here does not affect the discussion below.

(4) The law does not legislate the use of languages of national minorities and ethnic groups. The use of these languages is determined in other laws.

## SECTION 2

The state language and its protection

### (1) The state

a) Provides the necessary conditions in the educational, academic and informational systems to enable each and every citizen of the Slovak Republic to learn and use the state language orally and in writing.

b) Takes care of the scientific study of the state language, its historical development, of the study of regional and social dialects, of the codification of the state language and of the raising of linguistic culture.

(2) The codified form of the state language is decreed by the Culture Ministry of the Slovak Republic (henceforth "the Culture Ministry") on the basis of proposals made by specialist Slovak language institutes.

(3) Any form of interference with the codified form of the state language which is not in line with its rules is inadmissible.

## SECTION 3

The use of the state language in official contacts

(1) State organs and state organizations, organs of local government and public statutory organs (henceforth "statutory organs") are obliged to use the state language in the performance of their tasks in the entire territory of the Slovak Republic. Proving an adequate level of competence in writing and speaking the state language is a condition for employment or similar work relationship and a condition for the performance of work agreed upon in a particular work activity in a statutory organ.

(2) Employees and functionaries of statutory organs, employees of public transport and communications, members of the armed forces, armed security services and other armed units and the fire department use the state language in official contacts.

### (3) The state language is used in

a) laws, government directives and other generally binding legal regulations, including regulations of organs of local government, rulings and other public documents.

b) sessions of statutory organs.

c) all official written material (registers, minutes, announcements, statistics, files, accounts, official records, information for the public, and so on) and written material of the Church and other religious communities intended for the public.

d) official names of towns and parts of towns, signs denoting the names of streets and other public areas, other geographical names, such as

names on state maps including maps of land registries; denoting the names of towns in other languages is legislated by a separate law.

e) chronicles of communities. Occasional, foreign-language versions must be translations from the state language.

(4) Statutory organs and organizations established by them are obliged to use the state language in all information systems and mutual contacts.

(5) All paperwork submitted by citizens to statutory organs is in the state language.

(6) Every citizen of the Slovak Republic has the right to have his/her first and last names adjusted according to the rules of Slovak orthography free of charge.

#### SECTION 4

The use of the state language in education

(1) The teaching of the state language is obligatory at all elementary and secondary schools. Languages other than Slovak are used as the languages of instruction and testing to the extent determined by other regulations.

(2) Pedagogical workers in all schools and educational facilities in the territory of the Slovak Republic, with the exception of foreign pedagogues and language assistants, are obliged to master and use the state language in its written and spoken forms.

(3) All pedagogical documentation is in the state language.

(4) Textbooks and texts used in the teaching process in the Slovak Republic are published in the state language, except for textbooks and teaching materials in the languages of ethnic minorities, ethnic groups and other foreign languages. Their publication and use is covered by other laws.

(5) The provisions of paragraphs (1), (2) and (4) do not apply to the use of the state language in teaching at universities, the teaching of other languages or teaching in other languages than the state language, or the use of textbooks or teaching materials in teaching at universities.

#### SECTION 5

Use of the state language in the mass media, at cultural events and at public meetings

(1) Radio and television broadcasting is in the state language throughout the Slovak Republic. The exceptions are

a) foreign-language radio broadcasts and foreign-language television broadcasts composed of audiovisual works and other picture-and-sound recordings with subtitles in the state language or which in some other way meet the criteria of basic comprehensibility with regard to the state language,

- b) Slovak Radio's international foreign-language broadcasts, television and radio language courses and other programs with related aims,
- c) musical programs containing original texts.

The broadcast in national minority and ethnic group languages is regulated by separate provisions.

(2) Other-language audiovisual works aimed at children under 12 years must be dubbed into the state language.

(3) Radio and television operators, presenters, announcers and editors are required to use the state language in broadcasts.

(4) Broadcasts by regional and local television channels, radio stations and radio facilities take place basically in the state language. Other languages may be used before the broadcast and after the broadcast of a given program in the state language.

(5) Periodical and non-periodical publications are published in the state language. Press publications issued in other languages are regulated by a separate provision.

(6) Occasional publications designed for the public, catalogues for galleries, museums and libraries, programs for cinemas, theaters, concerts and other cultural events are issued in the state language. If necessary they may contain translations into other languages.

(7) Cultural and educational events take place in the state language, or in another language which meets the criterion of basic comprehensibility with regard to the state language. Exceptions are cultural events by national minorities, ethnic groups or with foreign guests, and musical works with original texts. The presentation of such programs must first take place in the state language.

(8) All participants in meetings or lectures in the Slovak Republic have the right to make their speeches in the state language.

## SECTION 6

The use of the state language in the armed forces, armed units and in the fire department

(1) In the Army of the Slovak Republic, in the troops of the Interior Ministry of the Slovak Republic, in the Police Force, in the Slovak Intelligence Service, in the Prison and Justice Guards Corps of the Slovak Republic, in the railroad police of the Slovak Republic and in the municipal police forces the state language is used in official contacts.

(2) All the official written material and documentation of the armed forces, armed security units, other armed units and fire departments is in the state language.

(3) Paragraph (1) does not relate to the air force during air operations and to the international activity of armed forces.

**SECTION 7**

The use of the state language in court and legal proceedings

(1) Dealings between the courts and citizens, court cases, legal proceedings, decisions and the minutes of court and legal organs are carried out and published in the state language.

(2) The rights of people belonging to ethnic minorities and ethnic groups or the rights of foreigners who are not competent in the state language, as set down in separate laws, remain unaffected.

**SECTION 8**

The use of the state language in the economy, in services and in health care

(1) In the interest of consumer protection the use of the state language is compulsory in the indication of the contents of domestic or imported products, in instructions for the use of products, especially foodstuffs and medicines, in the conditions for guarantees and in other information for the consumer.

(2) Legal documents relating to employment or similar work relationships are drawn up in the state language.

(3) Financial and technical documents, Slovak technical norms, the statutes of associations, societies, political parties, political movements and commercial enterprises are drawn up in the state language.

(4) Health care institutions conduct all their administration in the state language. Contact between health care employees and patients takes place usually in the state language; if the patient is a citizen or foreigner unfamiliar with the state language, then also in such a language in which they can understand each other.

(5) Proceedings before statutory organs regarding contracts shall take place in the state language.

(6) All signs, advertisements and announcements designed to inform the public, especially in shops, sports grounds, restaurants, in the streets, along and above the roads, at airports, bus and railroad stations, in railroad cars and in public transport must be in the state language. They may be translated into other languages, but the foreign-language texts must follow the state-language texts of the same size.

**SECTION 9**

Observance

The Culture Ministry monitors the observance of the obligations ensuing from this law. If it finds non-compliance, it alerts the legal entities or individuals in whose activities the non-compliance has occurred, and is authorized to call upon them to correct the illegal state of affairs.

## SECTION 10

## Fines

(1) If an illegal state of affairs is not corrected (section 9), the Culture Ministry can levy a fine of

a) up to 250,000 Slovak crowns for legal entities in breach of obligations in Section 4, Paragraph 4 and Section 8, Paragraphs 1, 3, 5 and 6.

b) up to 500,000 Slovak crowns for legal entities in breach of obligations set down in Section 5, Paragraphs 2 and 4.

c) up to 50,000 Slovak crowns for individuals licensed to carry out private business activities in breach of obligations set down in Section 4, Paragraph 4, Section 5, Paragraphs 2 and 4, and Section 8, Paragraphs 1, 3 and 5.

(2) In determining fines, the Culture Ministry considers the seriousness of the breach of legal obligations.

(3) Fines can be levied up to one year at the latest from the day on which the Culture Ministry discovers breach of legal obligations, but up to three years at the latest from when the breach of legal obligations occurred.

(4) Fines levied under this law are payable within 30 days after the decision determining a violation has gone into effect.

(5) Fines levied under this law are revenues of the state culture fund Pro Slovakia.

## SECTION 11

## General and interim provisions

(1) The law does not pertain to the use of commonly used foreign words, specialist terms or new expressions for which there are no equivalent terms in the state language.

(2) The heads of statutory organs and other legal entities and individuals (Section 10, Paragraph 1) are responsible for complying with the provisions of this law.

(3) The costs for all changes to public signs and other texts according to this law are covered by the authorities concerned and other legal entities and individuals. These changes must be carried out within one year of the day the law comes into force.

(4) The state language for the purposes of Section 2, Paragraph 1, letters a) and b), Section 3, Paragraphs 1, 2 and Paragraph 3, letters a), c), d) and e), Section 4, Section 5, Paragraphs 5 and 8, Section 6, Paragraph 2, and Section 8, Paragraphs 1 to 5 is understood as being the Slovak language in its codified form (Section 2, Paragraph 2).



## SECTION 12

## Revoking provisions

This law revokes the law of the Slovak National Council (no. 428/1990 Zb.) on the official language of the Slovak Republic.

## SECTION 13

This law takes effect on 1st January 1996 with the exception of section 10 which takes effect on 1st January 1997.

The President of the Slovak Republic

The Speaker of the National Council of the Slovak Republic

The Prime Minister of the Slovak Republic

To understand the severity of the fines in Section 10 of the above law, readers should note, for instance, that the maximum fine which can be levied on a violator (legal entity) of Section 5, Paragraph 4 for failure to air a minority-language TV or radio program in its entirety in Slovak as well is 500,000 Crowns, which is equivalent to half the maximum fine for endangering Slovakia's nuclear safety (see Paragraph 17 of the law Zb.zak. 28/84 adopted on 22 March, 1984). If a private businessman produces an audiovisual program in Hungarian for children under 12 and it is not dubbed into Slovak (violation of 5, 2), the maximum fine for that, 50,000 Crowns, is almost 17 times as much as the maximum fine for desecration of the Slovak national flag, a mere 3,000 Crowns according to law 372/1990. (50,000 Crowns equals about seven times the monthly salary of a tenured associate professor at a university.)

#### 4. The Slovak State Language Law and "US English"

The Founding Fathers of the United States of America "did not choose to have an official language precisely because they felt language to be a matter of individual choice" (Marshall 1986, 11). However, in 1983 a political organization called "US English" was founded whose goals are to make English the official language of the United States, to oppose bilingual education and the provision of bilingual services in the public and private sector. In six years US English built a national membership of between 250,000 and 350,000, and in 1995 it reported 600,000 contributors. As Nunberg (1989, 579) noted earlier, "With an annual operating budget of \$7 million, it has been able to mount legislative and electoral campaigns in almost forty states." In Spring 1996, twenty states and a number of municipalities had English-only laws.<sup>12</sup> The

<sup>12</sup> James Crawford, personal communication, 22 March, 1996.

earlier successes of US English were achieved without the backing of major establishment politicians and organizations, but in 1995 more than a third of the members of Congress supported proposed federal legislation to make English America's official language.

Official English advocates maintain that English is under attack in the USA, immigrants do not learn English, federal support for bilingual education is abused to maintain ethnic languages and cultures rather than used for the purposes of transitional bilingual instruction, and they paint the picture of a linguistically fragmented US, with the potential for political violence. Among other linguists, Marshall (1986, 30, 70–1) has shown that an English Language Amendment to the American constitution would result in the loss of language rights for minorities and that could lead to civil unrest and possible violence.

Crawford (1992, ix) called the Official English campaign, also known as the English Only movement, a new guise of old American ethnic intolerance. While a certain measure of racism and xenophobia is clearly attached to the English Only movement, Nunberg (1989, 582) shows that it has had “many supporters who would not ordinarily countenance openly racist or xenophobic measures.” In seeking answers to this phenomenon, he suggests that

the movement presupposes that measures designed to coerce immigrants into learning the majority language will have the effect of enhancing their identification with the majority culture. The movement has been successful because these assumptions are generally consistent with the commonsense understanding that most of the public brings to linguistic questions, so that well-meaning people find it easy to accept the English-only program as a plausible approach to the problem of *bringing recent immigrants into the economic and social mainstream* [italics added, M.K.].

(Nunberg 1989, 584)

By 1986, five English Language Amendments were proposed to the Constitution of the US, all unsuccessfully (see Marshall 1986). In the Fall of 1995, congressional hearings were held on several official English bills such as the Emerson bill (H.R. 123), the Roth bill (H.R. 739) and the King bill (H.R. 1005). Of particular interest to us is the Roth bill, which Geoffrey Nunberg and James Crawford (1995) describe as having 80+ sponsors and as

roughly similar to the Emerson bill in pronouncing English the language of government, but contains fewer exceptions. It also explicitly repeals Title VII of the Elementary and Secondary Education Act of 1965, which provides for bilingual education, and the sections of the 1965 Voting Rights

Act that provide for bilingual ballots in jurisdictions with substantial non-English-speaking populations. It gives broad standing to sue for enforcement of the act and provides that a party that prevails in such a case shall be entitled to recover attorney's fees—a provision that would permit groups like US English to function as subsidized enforcers of the act.

It seems clear that the Slovak State Language Law of 1995 has been heavily influenced by Official-English legislative attempts in America. The Justification attached to the draft Slovak law on 24 October, 1995 says that<sup>13</sup>

In drafting the law on the state language, we took into consideration regulations having the force of law in several European states, primarily France, Lithuania, Belgium and Holland.

The following information from the USA is characteristic:

Republican Congressional Representative Tobi Roth submitted a bill to Congress whereby the official language of the USA would be English. The law aims to simultaneously terminate bi-lingual education in elementary and secondary schools, as well as multi-lingual election materials. In his opinion, transactions related to obtaining American citizenship also have to be conducted in English. The proposal already has 150 supporters, and should be debated and voted still [better: voted on during, M.K.] this year. In addition to proclaiming English as the official language, the bill also states that English is the preferred form of contact [better: communication, M.K.] for USA citizens, which the government will also support. Employee contact with citizens [better: employees' communication with citizens, M.K.] will also occur in English. It is the compulsory task of citizens to learn to write, read and speak English to the best of their physical and intellectual abilities. Institutions dealing with naturalisation will demand that applicants for citizenship have a standard knowledge of English [sic, M.K.<sup>14</sup>].

(The Slovak State Language Law and the minorities, p. 14)

Indeed, a glance at the text of the Slovak law can convince anybody that it was written with the letter and spirit of Official-English in mind.<sup>15</sup> It is

<sup>13</sup> The following is a verbatim quote from a printed English translation. For the benefit of readers, I have attempted to improve this English text by a few insertions in square brackets.

<sup>14</sup> In the original Slovak: *štandardná znalosť angličtiny* 'standard knowledge of English'.

<sup>15</sup> But this should not be taken to suggest that Bill 101 passed by Quebec's National Assembly in 1977 did not or could not provide many an idea for the drafters of the Slovak law of 1995. The similarities between the two are often glaring (see Quebec's Bill 101: Charter of the French Language), despite the enormous differences in history and power

unclear, however, how much direct influence US English has had in drafting the Slovak bill. The major Hungarian daily in Slovakia, *Új Szó* reported on 5 October, 1995 that a delegation of US English visited Slovakia to meet drafters of the Slovak law and Hungarian opposition members of the Slovak parliament. According to the newspaper reports, chairman of US English Mauro Mujica tried to convince his listeners that in the United States

the academic performance of pupils in bilingual education programs is poor; such children are left behind in social competition and are stuck in ghettos.<sup>16</sup>

(Sándor 1995)

Perhaps surprisingly, some Hungarian politicians in Slovakia adopted a “we do not oppose a good language law” position. At least one Hungarian politician was reported as saying that “As an organization, US English was mainly founded to help immigrants to America.” (*Az amerikai nyelvtörvény szerzői...*). In an interview Gyula Bárdos, a Hungarian member of the Slovak parliament, explicitly said that he asked US English for American draft bills so that Hungarian politicians could study them to be able to judge the references to America in the Slovak draft bill (see Gágyor 1995). There is no reason to doubt that Mr. Bárdos is “well-meaning” (in Nunberg’s words) towards ethnic Hungarians in Slovakia, but it is equally clear that he is misguided or completely ignorant of US English’s goals and activities.<sup>17</sup>

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relationships between francophones in Quebec (a powerless majority in the Province of Quebec and a minority in Canada) and Slovaks in Slovakia (a powerful majority in their own nation-state).

<sup>16</sup> My translation from the original Hungarian newsreport.

<sup>17</sup> It seems more than likely that, in addition to borrowing many an idea for restrictive legislation, Slovak politicians also used the Official-English debate as a sort of red herring during the preparation of the Slovak bill. In distant and informationally less-than-well-served Slovakia, it is fairly easy to point to the United States as an example to follow. Rather than check the validity of references to English Only by himself, a well-nigh impossible task in Slovakia, Bárdos asked US English to provide American drafts so that he could debate Slovak deputies; all this a few weeks before the voting on and the adoption of the law! My conviction of a hide-and-peek game is further supported by the report that the Slovak Cultural Ministry did not show the draft bill to the US English delegation; it was the Hungarian members of the Slovak parliament who gave them a copy (see *Az amerikai nyelvtörvény szerzői*).

### 5. The Slovak State Language Law and the principle of the right to use the language of one's choice

At a time when, at least in Europe, "The nation-state is currently under pressure from globalization, transnational regionalization and local decentralization [...], and has probably outlived itself" (Skutnabb-Kangas-Phillipson 1995, 89), Slovakia is in the beginning phase of trying to create a nation-state. "Slovaks believe the Czechs denigrate them and have always found some excuse to prevent the Slovaks from coming of age" (Plichtová 1993, 18). Much as English Only flows from feelings of insecurity in America (Crawford 1992, xii), Slovaks are defending "the primacy of Slovak" by restricting speech in other tongues. In a nation-state "the mere presence of (unassimilated) minorities is seen as a threat" (Phillipson-Skutnabb-Kangas 1995a, 50) and the solution of the problem is often seen as either the voluntary or forced repatriation of minorities or their rapid linguistic and cultural assimilation. The deportation of all Hungarians from Slovakia was unsuccessfully attempted after World War II.<sup>18</sup>

On a rhetorical level, the Slovak-Only law provides "the general tool of communication" for citizens of Slovakia, which "secures their freedom and equality in their dignity and their rights as well." Slovak is presented here as the language of equal opportunity, but it means equal opportunity for speakers

<sup>18</sup> In Plichtová's words (1993, 14), "The Košice manifesto [in 1945] also identified specific steps to relocate non-Slav minorities to their original pre-war homes and these were gradually implemented. Members of the German and Hungarian minorities had their Czechoslovak citizenship revoked and property confiscated; education in their mother tongues was prohibited and their political organizations were banned. The principle of collective guilt was applied to all, with the exception of anti-fascist fighters. Even so, it was left to the members of the resistance to prove their innocence." In plain English this was "an ugly program for forcibly expelling those forcibly incorporated" (Borsody 1993, 87).

After WW II, under the terms of the Potsdam Conference, about 200,000 Germans were expelled from Hungary to Germany (Kertész 1953, 205). Linked to this expulsion was the Hungaro-Slovak population exchange, whereby some 87,000 Hungarians were forced to leave Slovakia for Hungary and about 73,000 Slovaks went from Hungary to Slovakia without being forced (see Janics-Borsody 1982; Dávid 1988, 338). The Hungarians were not deported to "their original pre-war homes" (as Plichtová puts it), but from their pre-war homes to post-WW I truncated Hungary. Other Hungarians were forcibly relocated to Moravia and the border regions of the Czech lands. In Borsody's words (1993, 290), in 1945 the President of Czechoslovakia, Beneš, "opted for making the nation-state even more national. He embraced the ideology of the ethnically homogeneous nation-state to be achieved by expulsion or assimilation of unwanted nationalities." He forced the expulsion of non-Slav minorities and succeeded fully against the Germans, but not the Hungarians.

of Slovak alone.<sup>19</sup> The language law clearly gives a precedence and primacy to the state language over minority languages, which are given a secondary and subordinate position. The state “as the guarantor of free life and development for the citizen, is required to establish the conditions for every citizen to be able to master the language in which he can make himself understood in the entire territory of the state. The state therefore organises the public education system, as well as the state administrative system, in such a way as to establish, without regard to linguistic identity,<sup>20</sup> the universally appropriate conditions to guarantee the communication needs of the citizen.” (The Slovak State Language Law and the minorities, Justification, 13).

It is impossible to miss the parallel in this Slovak rationale to the markedly hypocritical US English position that minorities never become productive members of American society and remain stuck in a linguistic and economic ghetto because they refuse to learn English.<sup>21</sup> If Hungarians “find mastery of the state language to a sufficient degree to be unnecessary,” as the Justification (15) alleges, the state will nevertheless make sure they are not deprived of mastery of the language of equal opportunity. Such a position can be easily criticised on the grounds that it should be up to the free will of individuals to seek ways of obtaining social equality and dignity; it should not be forced onto them by a patronizing state. To borrow the words of a critic of the English Language Amendment, the “real objection is that the amendment assumes that compulsion, not attraction, is the best way of spreading a language and a culture” (quoted by Marshall 1986, 62–3).

<sup>19</sup> This is similar to the US, where “In an English Only America, only English speakers would enjoy equal rights, including the right to speech itself” (Crawford 1992, 175).

<sup>20</sup> An extreme case of such state-enforced “equality” occurred when Romanian treatment of the Hungarian minority in the late 1980s included plans to raze villages and concentrate populations. In response to heavy international criticism, Romania stated: “The Government recognised the right of minorities to be different and there was no policy of assimilating ethnic Hungarians to Romanians or of destroying their cultural identity. The object was to place them on an equal footing with the rest of the population.” See Thornberry (1991, 278–9).

<sup>21</sup> Notice that any Slovak reference whatsoever to the United States completely ignores the fundamental difference between migrant minorities and indigenous minorities, which is also recognized by international law. Covert or overt references to the US as “justification” for denying or violating Hungarians’ linguistic human rights in Slovakia are based on equating, say, recently arrived undocumented Mexicans who may apply for US citizenship and indigenous Mexicans who, in 1848, “woke up one morning to find themselves citizens of the United States” (Marshall 1986, 40). In the Slovak National Council in July 1993 an ethnic Hungarian and an ethnic Ukrainian deputy protested sharply when the Slovak deputy Ivan Hudec (now Minister of Culture in Mečiar’s government) implied that there was little if any difference between recent Chinese immigrants to Hungary and Hungarians in Slovakia (see Zalabai 1995, 277–8).

It is the dichotomy of compulsion vs. attraction that lies at the heart of the very first principle in the Linguistic Society of America's Statement on Language Rights<sup>22</sup> issued in 1996:

At a minimum, all residents of the United States should be guaranteed the following linguistic rights:

- A. To be allowed to express themselves, publicly or privately, in the language of their choice.

Under the Slovak State Language Law, minority citizens<sup>23</sup> of Slovakia do not have the right to use "the language of their choice" in the following domains of language use, among others:

- local government (according to Section 3, Paragraph 1);
- a public transport bus driver talking to a fellow driver on the job (3, 2);
- public announcements by local governments (3, 3, a);
- sessions of local government; teachers' meeting in a state school (?) (3, 3, b);
- church bulletins (3, 3, c);
- street signs (3, 3, d);
- written submissions to local governments (3, 5);
- elementary and secondary school-leaving certificates (4, 3);
- the presentation of the program of cultural events such as poetry recitation, concerts etc. (5, 7);
- legal documents relating to employment (8, 2);
- verbal contact between health care workers and patients (8, 4).

Under this law, in certain cases national and ethnic minorities may use a language other than the state language, but only at a cost. The use of a minority language is made costly, in a discriminatory fashion, in, for instance

- foreign audiovisual works aimed at children under 12 years, which must be dubbed into the state language (5, 2);
- broadcasts by regional and local television channels, radio stations and radio facilities, which must be broadcast in their entirety in the state language as well (5, 4);

<sup>22</sup> See the insert in the LSA Bulletin, No. 151, March 1996. The statement was drafted by the Committee on Social and Political Concerns, and approved by the LSA Officers and Executive Committee. LSA members will be voting on the final text until June 1, 1996.

<sup>23</sup> Except Czechs, whose language meets "the criteria of basic comprehensibility with regard to the state language" (see Section 5, Paragraph 1, a)).

- occasional publications designed for the public, catalogues for galleries, museums and libraries, programs for cinemas, theaters, concerts and other cultural events, which may contain translations into other languages (5, 6);
- all signs, advertisements and announcements designed to inform the public, especially in shops, sports grounds, restaurants, in the street, on roads, at airports, bus and railway stations, in prisons and in public transport, which may be translated into other languages than the state language (8, 6).

In one of his letters to *The New York Times* (27 November, 1995), the Ambassador of the Slovak Republic in Washington claimed that "This law governs only the use of the Slovak language. Use of minority languages in Slovakia will be included in a different law dedicated to this issue."<sup>24</sup> As is demonstrated above, use of the Slovak language is governed such that in many essential domains of language use minority citizens of Slovakia do not have the right to use "the language of their choice." In other domains they have an unduly costly choice and are discriminated against.

### 6. On the role of linguists in X-Only legislation

In the United States, linguists and other language professionals such as teachers of English have time and again voiced their opposition to English Only legislation. In 1986 the Linguistic Society of America adopted a resolution opposing English-Only measures "on the grounds that they are »based on misconceptions about the role of a common language« and are »inconsistent with basic American ideals of linguistic tolerance«" (Nunberg 1989, 585). Similar resolutions were passed by the Modern Language Association, Teachers of English to Speakers of Other Languages, the National Association for Bilingual Education, the National Council of Teachers of English, the American Anthropological Association and several organizations of foreign-language teachers.

<sup>24</sup> The Hungarian Coalition prepared its "Draft Law on the Use of the Languages of National Minorities and Ethnic Groups" by the end of December 1995. By February 1996 their effort was rendered futile because Slovak government officials announced that there was no plan of preparing any minority language draft bill in 1996 (see *Döntötték a mindenható hivatalnokok*). Not long before this time the Slovak government was telling OSCE officials and other European delegates that a minority language law would soon be passed. At this writing in Spring 1996 there is a propaganda campaign about the lack of any need for a minority language law in Slovakia.



Discussing the role of linguists in American language politics, Nunberg (1989, 585) notes that the developments in the 1980s "place linguists in a particularly difficult position" because they are "virtually impotent to affect the opinions of a public that is largely unaware of what linguistics is." The American linguistic community has done all it can to make known its views on language rights and legislation, but, Nunberg (1989, 586) asserts, "the reshaping of fundamental public attitudes about language cannot be efficiently accomplished in the political process itself." The goal should rather be to make linguistics part of the school curriculum. American "Linguists have a singular point of view about these questions" because "they have had the singular experience of DOING linguistics," which is what a reformed language curriculum must convey.

The recent LSA Statement on Language Rights (1996) addresses some misconceptions upon which public debate is based and urges protection of basic linguistic rights. The most important statements include:

- the vast majority of the world's nations<sup>25</sup> are at least bilingual;
- multilingualism by itself is rarely an important cause of civil discord;
- the eradication of indigenous languages in the US was all too often deliberate government policy;
- to be bilingual should be encouraged, not stigmatized;
- multilingualism presents Americans with many benefits and opportunities.

The LSA Statement then lists seven linguistic rights which all residents of the US should be guaranteed:<sup>26</sup>

- (a) the right to express oneself, publicly or privately, in the language of one's choice;
- (b) the right to maintain one's native language and to pass it on to children;
- (c) the right to a qualified interpreter in proceedings in which the government endeavors to deprive people of life, liberty or property;
- (d) the right of children to be educated by teachers who can use their language;
- (e) the right to conduct business in the language of one's choice;

<sup>25</sup> In all probability, the LSA Statement uses the word *nation* with the meaning 'citizens of a country'. Thus the statement asserts that the vast majority of the world's countries or states are at least bilingual.

<sup>26</sup> These seven rights as they appear here have been abstracted by me from the original, much more elaborate LSA Statement.

- (f) the right to use one's preferred language for private conversations in the workplace;
- (g) the right to learn to speak, read and write English.

There is absolutely nothing surprising in the overwhelming rejection of Official English arguments and legislation by American linguists and language professionals. Language-based social discrimination was effectively challenged in the Ann Arbor Black English trial as early as 1979, and linguists' expert testimonies played an important role in that (see Labov 1982).

But not all linguists are like American linguists, who reject linguistic<sup>27</sup> practices and promote linguistic human rights. In the case of Slovakia, admittedly a country with serious economic and social problems in which the language issue seems to be in the center of creating a much belated nation-state whose sovereignty is felt endangered by many, linguists and other social scientists might at least be expected to adopt a neutral position. If they cannot afford to champion linguistic human rights and offer clarification of popular misconceptions which are then used as the basis of linguistic practices in their own country, they might at least be expected to adopt a neutral position. However, some Slovak linguists seem to have chosen another course.

In the political battles preceding the adoption of the Law on Bilingual City-, Town- and Village-limit Signs of 1994, extreme nationalism and linguistics played a joint role in deciding which historical Hungarian placenames were allowed to be used on city-limit signs and which not (see, e.g., Zalabai 1995, 199–201).

In the extremely heated political debates about personal names, the Slovak minister of culture D. Slobodník remarked in 1993 that "language is law above the law" (*jazyk je zákon nad zákonom*), meaning that ethnic Hungarian married women must have their names end in the Slovak *-ová* (the law of the Slovak language) in contrast to European principles<sup>28</sup> which assert everybody's personal right to use their personal name according to their wish (see Zalabai 1995, 281–2, 286). Among other things, the sexist discrimination of

<sup>27</sup> The term *linguicism*, an analogous concept to *racism*, *sexism*, *classism*, has been defined as "ideologies, structures and practices which are used to legitimate, effectuate and reproduce an unequal division of power and resources (both material and immaterial) between groups which are defined on the basis of language" (Skutnabb-Kangas 1988, 13). See also Phillipson–Skutnabb-Kangas (1995b, 497).

<sup>28</sup> "Every person belonging to a national minority shall have the right to use his/her surname and first names in his/her mother tongue and to official recognition of his/her surname and first names." (Article 7, Paragraph 2 of Recommendation 1201 (1993) of the Parliamentary Assembly of the Council of Europe)

such a position was pointed out in the press: the insistence on the mandatory use of *-ová* denies the right of ethnically non-Slovak women to use their names according to the rules and traditions of their mother tongue, a right not denied to men. If born a woman, you must be an *-ová*. In the press debates an ethnic Slovak man pointed out in 1993 that the mandatory use of *-ová* goes back to the orthographic reform of 1953 conceived in admiration of Stalin's "brilliant linguistic guidance." He finds it normal that even after becoming a US citizen, nobody calls tennis star Martina Navratilová *Miss Navratil*, and recalls that foreign students in Czechoslovakia often protested being called *X-ová* (Zalabai 1995, 303–5).<sup>29</sup>

What is astonishing about the *-ová* story is not the attempt to violate linguistic human rights (see Jernudd 1994) in trying to forcibly assimilate a national minority. The astonishing thing is that the director of the Ľudovít Štúr Linguistics Institute of the Slovak Academy of Sciences, Ján Doruľa, reportedly added fuel to the hysteria of "language is law above the law" by petitioning the Slovak government in the summer of 1993 to have the name bill modified such that all female Slovak citizens, without regard to their native language and traditions, mandatorily have their surnames end in *-ová* (see Zalabai 1995, 281–2). Jernudd (1994, 130) claims that

[. . .] human rights are likely to be violated when the state intervenes in the relationship between individuals' names and group identity. Mandatory adjustment of name is a means to deny a group's existence *qua* group, as formerly with the Turks in Bulgaria, or to erode for significant numbers of individuals their ability to manifest their identity as members of a group, as with the Chinese in Indonesia. States wishing to forcibly assimilate visible ethnic groups require names to be changed.

If Jernudd is right and the newsreport reprinted in Zalabai (1995, 281–2) accurate, the director of the leading research institute for Slovak assisted his government's efforts in 1993 to forcibly assimilate visible ethnic groups in Slovakia.

Discrimination can also be based on things other than sex. For instance, according to the text on p. 40 of the current official rules of Slovak orthography, *Pravidlá slovenského pravopisu*, issued in 1991, the spelling of personal names originally written in a Latin alphabet is retained in Slovak, but certain Hungarian historical names are respelled, e.g. *Rákóczi* as *Rákoci*, *Pázmány* as

<sup>29</sup> Since January 1995, when the Law on the Registration of Births, Marriages and Deaths (1994) came into force, ethnically non-Slovak women may register their names and their daughters' names without the suffix *-ová* if they so request.

*Pázmaň*, or *Pálffy* as *Pálfi*. However, no such respelling is required for *William Shakespeare*, which would be *Viliam Šekspír* (see Zalabai 1995, 193).<sup>30</sup> It is regrettable that such blatant linguistic discrimination has been codified by linguists of the Ľudovít Štúr Linguistics Institute of the Slovak Academy of Sciences. All the more so as the rules of Slovak orthography have come to be regarded by the government as a reference point in defining “the codified form of the state language” (see Section 2, Paragraph 2 of the 1995 law). Thus the rules of orthography created by linguists can become a part of the legal basis for the activities of the linguistic police. A strict enforcement of the Slovak State Language Law may well result in excessive fines for the owners of historic buildings if, for example, in an otherwise Slovak-language memorial plaque, the Hungarian name *Pálffy* is written with two *f*'s and a *y*. There are three buildings known as *Pálffy palota* ‘Pálffy palace’ in Bratislava, and at least one has a plaque which violates the orthographic rule created by linguists in 1991 and possibly enforced by the linguistic police following the 1995 law (see II. Rákóczi Ferencből — František Rákoci II.?).

### 7. Ambiguity, double standards, and the New Europe

One problem with the various international covenants, charters and declarations is their often ambiguous wording. For instance, Article 4, 3 of the UN Declaration on the Rights of Persons Belonging to National, or Ethnic, Religious and Linguistic Minorities (1992) reads

States should take appropriate measures so that, wherever possible, persons belonging to minorities have adequate opportunities to learn their mother tongue or to have instruction in their mother tongue.

As Phillipson and Skutnabb-Kangas (1995b, 492) point out, what constitute “appropriate measures” or “adequate opportunities” are open questions, as is who is to decide what is “possible”. And it is unclear whether “instruction in the mother tongue” means ‘instruction through the medium of the mother tongue’ or simply ‘the teaching of the mother tongue as a subject’. They also

<sup>30</sup> Nor would the 18th-century Hungarian writer's name *Kelemen Mikes* be respelled because Mikes does not belong to what the Rules of Slovak Orthography call “the Hungarian era of Slovak history.” Observance of this new (1991) rule presupposes a thorough knowledge of what Hungarians are regarded as belonging to “the Hungarian era of Slovak history”—an unlikely and highly unusual requirement for a spelling rule, which would call for respelling the name if its bearer is officially regarded as belonging to Slovak history, but would retain the Hungarian spelling of the same name in case of a namesake bearer who is not so regarded.

demonstrate that the European Charter for Regional or Minority Languages (approved in 1992) contains a range of modifiers and alternative formulations so that the Charter "permits a reluctant state to meet the requirements in a minimalist way which it can legitimate by claiming that a provision was not *possible* or *appropriate*, numbers were not *sufficient* or did not *justify* a provision, and that it *allowed* the minority to organize teaching of their language at their own cost" (Phillipson-Skutnabb-Kangas 1995b, 493).

Lanstyák (1996, ms) shows how the Slovak State Language Law is replete with ambiguous language. And, in fact, recent political events prove that the ambiguity may very well be deliberate. Recall that introductory provision (4) of the law says

The law does not legislate the use of languages of national minorities and ethnic groups. The use of these languages is determined in other laws.

When staff writers and readers of *The New York Times* charged that Slovakia is further curbing Hungarian language use, the Slovak Ambassador in Washington countered that the new law only regulates the use of Slovak and will not harm minorities. However, soon after the law went into force, Milan Ferko, head of the State Language Department of the Ministry of Culture, claimed that the mayors who passed directives allowing the use of both Slovak and Hungarian in official contacts in their municipalities had acted illegally. In sessions of the consultative body of the mayor of Komárno, a predominantly Hungarian-populated town, only Slovak may be used. Until the new law, which is said to govern the use of Slovak alone, came into force in January 1996, Hungarian was used along with Slovak in those sessions.

The controversies over the Slovak law have highlighted another problem of language politics, that which Phillipson and Skutnabb-Kangas (1995b, 486) described as "Ironically, a higher standard of minority protection is required, at least in theory, of eastern European states than exists in many member states." The Slovak Foreign Minister Juraj Schenk made use of this dilemma when on 30 January 1996 he told reporters that the Council of Europe "should not apply double standards when judging the situation of ethnic minorities in a new or established member country" (OMRI No. 22, 1996). If the CE Parliamentary Assembly compiles a "White Book" on standard ethnic rights, all CE members can be monitored by the same objective criteria.

What is at stake today is nothing less than the right of minority individuals to learn an official language fully (presupposing bilingual teachers), their right to identify positively with their mother tongue(s), their right to education through the medium of their mother tongue, their right to use it

in many contexts, including official contacts; and, at a collective level, the right of minorities to exist, i.e. to be “different”. Enforceable linguistic human rights are at stake, and “human rights are meaningless if they do not apply to all languages” (Phillipson–Skutnabb-Kangas 1995a, 48). The level of minority language rights in the New Europe will significantly affect the future of European nations and national and ethnic minorities. Should the standards for these rights be set relatively lower than they have been in post-WW I East-Central European countries, joining the New Europe may result in a net loss in the human dimension for East-Central European minorities. But setting the standards high can reduce linguistic genocide in East and West Europe alike.

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## LANGUAGE PLANNING ISSUES OF HUNGARIAN PLACE-NAMES IN SUBCARPATHIA\*

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In a minority situation, the question of place-names is among the basic issues of language planning touching upon both corpus and status planning. It is the job of the former to decide that the name of a given place can be used in what language or languages and in what forms; and it is the task of the latter to clarify whether certain variants can be used or not and in what circumstances. There are cases, however, when status and corpus planning are not synchronized, the result of which is that questions of place-name use become very complicated.

Subcarpathian place-names have been changed, or, we could even say, have become victims of change through language planning several times in the course of the 20th century.

The first reform of place-names in Subcarpathia was instituted between 1898 and 1912 in the course of a national regularization of place-names in Austria-Hungary. Several monomorphemic place-names were given premodifying constituents, e.g. *Déda* became *Beregdéda* and *Salamon* became *Tiszasalamon*.

The second change in several place-names dates back to the years following the Treaty of Trianon when this region constituted a part of Czechoslovakia. This was when *Beregszász* was first referred to as *Berehovo*.

In 1939, when, according to the First Vienna Accord, Subcarpathia again became part of Hungary, naturally, another change of place-names was carried out. In principle, the changes automatically reinstated names dating from before the regularization of village names, but in practice some of the names were also modified (Földi 1993, 106-8).

After World War II, in 1944-45 the fourth large-scale place-name reform took place, its changes finalized by the Presidium of the Supreme Soviet of

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the Ukrainian Soviet Socialist Republic on June 25, 1946, approving and making official the Russified names of Subcarpathian towns and villages (which were later given Ukrainian versions of their names as well). Thus *Bátyú* became Russified *Uzlovoje*<sup>1</sup> (*Узловое*) and Ukrainianized *Vuzlove* (*Вузлове*), *Botfalva* became *Prikordonnoje* (*Прикордонное*) and *Prikordonne* (*Прикордонне*), and *Bene* became *Dobroszelje* (*Доброселье*) and *Dobroszilja* (*Добросиля*) etc. From this time on the use of the Russian forms of the names became compulsory in the press and other formal domains. Before recording interviews with Subcarpathian Hungarians, local Hungarian radio or television reporters would, for instance, routinely warn their interviewees that on record they should use the official names, e.g. *Beregovo* instead of *Beregszász* (cf. Balla 1993, 22). Such name change concerned not only Hungarian villages, but many Ukrainian and Ruthenian villages as well. This is how *Volove* became *Mezsgorje* (*Межгорье*) and *Mizsirja* (*Мишир'я*).

The fifth place-name reform, which is the focus of the present investigation, began in 1988 and continues up to the present.

As usual, this wave of name changes was also preceded by political changes. In 1988 the local Hungarian press, encouraged by Gorbachev's policy of *glasnost*, started using Subcarpathian Hungarian place-names in Hungarian. This, however, according to Lizanec (1991, 4), did not bring considerable change, since names approved in 1946 remained the only official designations. This is also supported by Móricz (1990, 3), who says: "Reporters, editors of publishing houses, proofs editors, teachers and all fastidious and conscious users of their Hungarian mother tongue often stop when they have to write the name of a Hungarian place-name, wondering 'How is this then? Which one is the correct form? What suffix shall I write with the name of this or that village or town?'. Their confusion stems from the fact that these place-names have disappeared from the written language over the past few decades. Even if we had been using them in everyday conversations, we tend to easily overlook the ones we knew or suspected to be erroneous because we have not had any source where their correctness could be checked since no dictionary or list of place-names existed to codify them."

Thus something had to be done. The task was two-fold. Status planning had to be instituted to make the use of the Hungarian names of Subcarpathian places LEGAL in WRITTEN language use, and corpus planning tasks had to be carried out by CHOOSING among the variants that existed in SPOKEN discourse.

<sup>1</sup> Latin alphabet versions of Subcarpathian place names are written in their Hungarian-based transliterations throughout this paper. (Translator's note.)

The issue of the Subcarpathian Hungarian place-names was first discussed by an orthographic committee formed in 1988 by members of the Department of Hungarian Philology at Uzhgorod State University, the Hungarian Studies Center of the Soviet Union, editorial offices of publishing houses and Hungarian periodicals, and, naturally at the time, the Communist party committee. This orthographic committee put forward a controversial resolution concerning the Hungarian language use of Subcarpathian place-names: their decision was that Hungarian villages could be called by their Hungarian names, but the four towns had to be continued to be called *Uzsgorod*, *Mukacsevo*, *Beregovo* and *Vinogradov*, instead of their original Hungarian names *Ungvár*, *Munkács*, *Beregszász* and *Nagyszőlős*, respectively (Balla 1993, 39).

This decision clearly did not settle the confusion in the matter of the Hungarian language use of Subcarpathian place-names. By 1989, two forms of place-names were often printed in the local Hungarian press: the Hungarian name, followed by the Russian name in brackets.

It is not surprising, then, that in 1989 the Subcarpathian Hungarian Cultural Association (SHCA) was formed to serve as an organization protecting the interests of the region's Hungarian minority, and which attempted to settle the matter of place-names. To facilitate this, on September 25, 1990, the Mother Tongue and Language Policy Committee of the SHCA addressed its concerns to the Linguistics Institute of the Hungarian Academy of Sciences requesting the Institute's opinion on the following four questions:

1. What form is recommended in the case of place-names which historically have more than one component but whose name is used in its short form in the spoken language (e.g. *Beregsom* vs. *Som*)?
2. Is it fitting to use Hungarian place-names in the case of villages which have no ethnic Hungarian population or where their number is exceedingly low?
3. Which form is recommended in the case of place-names whose names have two variants in spelling (e.g. *Borzsova* vs. *Borzsava*)?
4. Which forms are recommended in the case of place-names that can receive both *in*-cases and *on*-cases in locatives (e.g. *Csapba* vs. *Csapra* for 'to Csap')?

The Linguistics Institute's recommendations arrived promptly, suggesting that linguistically the Subcarpathian Hungarian place-names should be written in compliance with the rules of Standard Hungarian orthography. Names of places having an attributive component should be used in their longer form. In

its answer to the second question, the Linguistics Institute expresses its view that use of the Hungarian name as the official name of a place appears natural in the case of places with considerable Hungarian populations. The official opinion of the Linguistics Institute states: "The use of a Hungarian name with a long history is however recommended as a nonofficial name to be used in the Hungarian press and in everyday spoken communication even when the official administrative name of the place is not its Hungarian name (e.g. in the case of *Ökörmező*). In this respect we consider it acceptable that alongside with their official names, ethnic Hungarians refer to villages *Csinagyíjevo* and *Uszty-Csorna* as *Szentmiklós* and *Királymező*." (cf. Móricz 1990). In answer to the third question the Institute recommends taking into consideration the historical written tradition, and in connection with the fourth question they state that neither variant is considered incorrect and advise referring to norms of local usage as decisive. The statement also considers necessary the compilation of a list of Hungarian names of Subcarpathian villages and towns, mountains and bodies of water.

Following this, as Móricz writes (1990, 3) "The Mother Tongue and Language Policy Committee of the SHCA immediately started compiling the list of Hungarian geographical names of Subcarpathia, which the association is planning to publish soon in order to provide a source for correct language use for all those interested."

It could seem that after the above-mentioned committee of the SHCA compiled and published the promised index of place-names, the question of place-names was resolved and, at the same time, Subcarpathia's Hungarian community finally found the institution which would take up the role of linguistic legislator and which could in the future successfully deal with such tasks of solving questions of regional codification. But, on December 6, 1990, almost exactly at the same time as the above, the deputy president of the Regional Council of People's Deputies addressed a letter to the Ungvár Institute of Hungarian Studies (then still called the Hungarian Studies Center of the Soviet Union) to request their opinion in connection with the Hungarian names of 19 towns and villages of the Beregszász Region (Lizanec 1990). The Institute of Hungarian Studies formulated its professional opinion and, satisfying the request, "prepared a report about every place in the region on the basis of which the committee of the regional council could judge (approve) the historical names to be restored" (Bíró 1993, 138).

From then on, two Subcarpathian institutions simultaneously concerned themselves with compiling the list of Subcarpathian Hungarian place-names. This, however, did not turn out to be an easy task. New, and not at all in-

significant questions occurred during the course of this work such as what constitutes an HISTORICAL NAME, what constitutes an OFFICIAL NAME, what historical situation is to serve as the basis in deciding the official name of a place, and who is entitled to decide the official Hungarian name, the population, the authorities, or perhaps a scientific body? (Móricz 1991, 4). The situation was further complicated by the fact that the two institutions did not agree on several points. For instance, both institutions stated that the main task is the restoration of historical names, but they defined the notion of historical name differently. Major points in the opinion of the Institute of Hungarian Studies was that in transliterating the Hungarian place-names into Ukrainian and Russian the phonetic and morphological rules of those languages should be taken into consideration (e.g. *Barkaszó* should be *Баркасове* and *Bökény* should be *Бекень*) and that in the case of compounded place-names the attributive first component of the name can be translated regardless of whether the name is in Hungarian or Ukrainian (e.g. *Feketepatak* should be *Csornij Potik* and *Verhni Remeti* should be *Felsőremete*).

The other party, the Mother Tongue and Language Policy Committee of the SHCA agreed on several points with the Institute of Hungarian Studies, but they also found excessive science-centeredness detrimental, being of the opinion that "it's not scientists who should decide what this or that village should be called—the primary decisive factor should be the opinion of the locals" (Kárpáti Igaz Szó, February 6, 1991, p. 2).

The SHCA saw the solution in the use of DOUBLE PLACE-NAMES, that is, every place should have an official name in the state language and an official Hungarian name. This, however, was not possible in accordance with the Ukrainian laws in force at the time, in 1991. It is another matter that in reality every Subcarpathian place had two official names, a Russian and a Ukrainian one, although these often differed in one letter alone (e.g. *Мукачеве* vs. *Мукачеве*).

In order to resolve the disputed questions and to bring the opinions closer to each other, the SHCA, the Hungarian Studies Center of the Soviet Union and the Institute of Hungarian Studies, Budapest called a meeting in Uzhgorod on May 11, 1991, which was to be devoted in its entirety to the question of Hungarian place-names. The result of the meeting was an eight-point statement (Kárpátalja 1991, 4) in which the parties present expressed their resolve to adhere to in the future. The statement considers desirable that official place-names be USED PARALLELLY in the languages in question and that the minority population of a town or a village be allowed to officially use their own form of the name of the place if they constitute at least 5% of the total

local population or number at least 1,000 people. The official names are to be formed according to the rules of the formation of proper nouns in each language. The participants of the meeting also considered it desirable that the historical index of Subcarpathian place-names be completed. However, differences remained on some points even after the meeting, and the historical index of Subcarpathian place-names was never completed either.

Two lists of place-names, however, in the end were published: one, a "Subcarpathian Hungarian place-name dictionary" in the volume *So this is our land...* and the other, "Index for identifying place-names" in the volume *A thousand years of Hungarian populated places in Subcarpathia*, both co-authored by József Botlik and György Dupka (Botlik-Dupka 1991, 261-6; and 1993, 326-41), and which contain the Russian and the Ukrainian names alongside with the Hungarian ones. The first volume lists the Russian and Ukrainian names adopted in 1946 and their Hungarian equivalents, while the second follows an official publication of the Subcarpathian Regional Council which reflects the 1993 state of affairs and those official regulations which reinstated the original names of some of the Hungarian populated villages.

Despite the above, the restoration of and official authorization of the traditional names of Hungarian places has been progressing very slowly ever since. The Ukrainian parliament restored the historical Hungarian names of two Hungarian villages, *Eszeny* and *Tiszaásvány*, thus replacing *Javorovo/Яворово* and *Minyeralnóje/Минеральное*. Even though in its decree of December 22, 1992, the Subcarpathian county council brought decisions concerning the restoration of several other places with Hungarian populations, the Supreme Council of Ukraine approved the restoration of the historical names of 27 Subcarpathian places, 23 places with Hungarian populations among them, only in March, 1995 (Kőszeghy 1995). But the principles and opinions discussed above were not followed in these cases consistently either. For instance, while *Szürte*, *Téglás* and *Bátfa* were given back their old names, *Bátyú* continues to be called *Batyovo/Батюво* in official documents.

The question of *Beregszász/Beregovo*'s name also continues to be unclear legally, despite the fact that on November 25, 1990, a referendum was held on this question in this the sole Hungarian majority town in Subcarpathia, where out of 14,478 people who took part in the referendum, 12,457 voted for reinstating the name *Beregszász* to replace *Beregovo* (Dupka-Horváth-Móricz 1990, 128). Lizanec thus turned out to be right in claiming that "the issue of place-names then is the question of constitutional law and not that of a referendum" (Lizanec 1992, 2).

The problem of the place-names has been in the forefront of the agenda of most regional, county, national and also international authorities such as the Ukrainian-Hungarian Joint Committee on Overseeing National Minorities' Rights (cf. Kárpáti Igaz Szó, April 4, 1995). Despite this, there are still many places in Subcarpathia which are referred to in official documents by their old, Russified or Ukrainianized names. Current Ukrainian laws allow changing of place-names, and the right of initiation of such a change lies with the village councils. The fate of place-names is thus the function of both individual community motions and that of politics.

Considering the issue from its practical side, not everything goes smoothly either. Lujza Baksa writes: "A lot of people's work is vested in the changing of the names for dozens of places. ... But this work is not finished yet. What's the point if you have a decree printed in black on white but still don't have the road signs?" (1995, 4). She is correct in noting that chaos reigns in the realm of place-name signs. There are places that have been given back their historic names but their road signs have nevertheless remained unchanged while there are others that have been using the Hungarian road signs without official decrees allowing them. Such a chaotic state of affairs is due, in several cases, to the sloppiness and lack of interest on the part of the local councils.

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## THE CASE OF AMERICAN HUNGARIAN CASE: MORPHOLOGICAL CHANGE IN McKEESPORT, PA\*

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### 1. Introduction

Change in the case system of a language is a development that immigrant languages in contact with American English (AmE) are widely observed to undergo. Both flexional and agglutinative languages have been reported to undergo two kinds of change in their case marking systems: (i) replacement of case affixes that would be required in the standard varieties of those languages and (ii) complete loss of case marking (and use of nominative forms in the case of flexional languages, and use of uninflected stems in agglutinative languages).

In the present paper I will discuss changes in the case system of American Hungarian (AH) in McKeesport, Pennsylvania. I will argue that, in addition to a replacement and loss of case marking, this variety of Hungarian is characterized by two other tendencies as well: a simplification of the system of local case marking and a development of a new distinction, not found in Standard Hungarian (SH), in the local case marking of place-names.

### 2. American Hungarian in McKeesport, PA

The data used for the present study comprises approximately six hours of recordings (242 typed pages of transcripts) of interviews with 20 speakers of Hungarian. The interviews were designed to prompt conversations between the subjects and the interviewer about the subjects' life histories and patterns of Hungarian language use. This method of data collection, while allowing more spontaneous language use which would reflect features of real-life speech, did not permit a more focused elicitation of the same forms and an equal amount

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of data on all points across the subjects. A comprehensive account of the findings on the phonology, morphology, syntax, lexicon and address system of McKeesport Hungarian-American speakers is given in Fenyvesi (1995).

Four of the speakers interviewed are immigrants (two of them being immigrants of the 1956 Hungarian revolution, and the other two more recent), while the remaining sixteen are second-generation Hungarian-Americans. Fifteen of these are children of early-20th-century immigrants, mostly in their sixties and seventies, and one is the college-age son of a 1956 immigrant. All but two of the subjects belong to the community of the Free Hungarian Reformed Church of McKeesport, while the remaining two subjects live outside the community, in nearby Pittsburgh, but regularly attend social gatherings with the McKeesport Hungarians.

McKeesport, with approximately 26,000 inhabitants, is a former steel-mill town about half an hour's drive outside of Pittsburgh. It had its heyday economically in the earlier part of the 20th century when its booming heavy industry attracted large numbers of working class East European immigrants. The post-WW II decline of the steel industry changed the life of the East European ethnic neighborhoods as well—today the younger generations have all moved elsewhere, and what remains is a small number of ever-decreasing ethnic islands whose mostly older members remain connected only through their Polish, Slovak, Serbian and Hungarian churches. Due to these socio-historical factors, the McKeesport Hungarians are both socio-economically homogeneous and form a real speech community the majority of whose members have known each other for decades.

### 3. Case features in McKeesport Hungarian

Standard Hungarian is a heavily agglutinative language. The various cases vary greatly in frequency of occurrence—some are extremely common (e.g. the accusative *-t*, dative *-nak*, and the local cases, such as inessive *-ban* or superessive *-n*), but many are very rare (e.g. the temporal iterative *-onta*, the distributive *-nként*, and the modal *-lag*). The same variability in frequency is also true for the McKeesport data, where some of the cases (e.g. the temporal iterative *-onta*, the comitative *-stul*, and the distributive *-nként*, among others) do not occur at all, and it is by no means the case that all of the others show any changes. Thus, I am not able to present a fully detailed picture of the entire case system of McKeesport Hungarian in this paper, but will, instead, delineate the most prominent tendencies observable in the corpus. In the following sections I will first discuss the replacement and loss of cases (section 3.1)

and then concentrate on two tendencies emerging as part of this overall phenomenon, namely the simplification observable in the system of local cases in their primary, directional meaning (section 3.2), and a new distinction which occurs in the use of local cases in connection with place-names in American Hungarian (section 3.3).

### 3.1. Replacement and loss of cases

The replacement of cases with other cases and the loss of case inflections in immigrant languages is a phenomenon which has been recognized and described for many such varieties. It has been documented among immigrant groups in the United States e.g. for Polish by Lyra (1966) and Preston (1986), for Slovak by Meyerstein (1969), for Czech by Henzl (1982) and Kučera (1990), for Croatian by Gasiński (1986), for Serbo-Croatian by Albin and Alexander (1972) and Jutronic-Tihomirović (1985), for Russian by Olmsted (1986) and Polinsky (to appear), for Yiddish by Levine (1995), for Greek by Seaman (1974), and for Finnish by Lehtinen (1966) and Larmouth (1974). Although the exact configurations vary from language to language, the changes in the case systems of the immigrant varieties of these languages show one main tendency: nominals appear bearing cases other than what would be employed in the standard variety of the language in question, with the most widely occurring form replacing other cases being the nominative, although sometimes other forms take over other nonnominative positions as well. The former process, the replacement of nonnominative forms with the nominative, means, for the flexional type of languages (all of those mentioned above except for Finnish), the complete loss of case marking in some instances, and the replacement of nonnominative inflections with nominative ones in other occurrences, where the nominative form itself is inflection-bearing (e.g. Russian *-a* class feminine nouns). In agglutinative languages like Finnish, the replacement of nonnominative forms with the nominative means a complete loss of case marking and use of the bare stem.

Even though there are comprehensive studies describing American Hungarian, they do not discuss case features in detail. Kontra (1990) provides a thorough description of the structural features of Hungarian spoken in South Bend, Indiana, but he does not analyze the case system in a detailed way. The only case feature Kontra (1990, 73–74) discusses for South Bend is the affectiveness of local cases in place-names (see below), although some of the other case phenomena treated in the present paper do occur in examples throughout his book. Solovyova (1994) surveys morphological changes in Kontra's computerized corpus of South Bend data, pointing out several characteristics of

case marking changes, but not in enough detail to provide a basis for thorough comparison with the McKeesport data. Two overall details provide some insight at the global comparison of the two corpuses: Solovyova (1994, Table 4) found 282 instances of case marking different from SH (counting the total of omitted and replaced case suffixes) in what amounts to approximately 80 hours of South Bend recordings, or, roughly, 3.5 occurrences per hour; in the 6 hours' worth of McKeesport data there are 179 occurrences (again, of replacement and loss together), or about 30 occurrences per hour—almost nine times as much, in relative terms, than in South Bend. More details of Solovyova's findings will be referred to in relevant sections throughout this paper.

Bartha (1993, 135) very briefly mentions that accusative case marking is sometimes missing in her American Hungarian data from Detroit, but she does not discuss any details about its occurrence or whether other cases are affected in her subjects' speech.

Case marking in McKeesport Hungarian undergoes similar changes as in the other immigrant language studies referred to above. Of the 179 instances where case is used differently than it would be in Standard Hungarian, 94—i.e. slightly more than half—are examples where no case suffix is used at all, while in the remaining 85 instances a different case is used than what would occur in Standard Hungarian.

### 3.1.1. Loss of case

There are 94 examples in the McKeesport data where case endings are omitted. The omissions are syntactically of two different kinds: 42, or somewhat fewer than half of all the omissions, constitute loss of case marking in argument positions, while the remaining examples are those of case loss in adjuncts. The figures are given in Table 1 in order of frequency of omission; the last row refers to examples where it is not clear what case was omitted.

Interestingly, Solovyova's (1994) findings about the numbers of case omissions in the South Bend American Hungarian data are very similar to those in the McKeesport data. Comparative percentages of the individual case omissions for South Bend/McKeesport are 39.7%/47.8% for the local cases,<sup>1</sup> 29.4%/28.8% for the accusative, 14.7%/7.4% for the instrumental, 10.3%/5.3% for the dative, and 5.9%/11.6% for the other cases (Solovyova 1994, Table 7 for South Bend figures). In both corpuses the local cases are affected the most, followed by the accusative, the dative, and finally the instrumental.

<sup>1</sup> The sum of percentages for inessive, superessive, allative, inessive, delative, sublative, and elative for the McKeesport figures from Table 1 above.

Table 1  
Omission of case marking in the McKeesport data

Case	Total number of omissions	Number of omissions in argument positions
accusative <i>-t</i>	27	23
inessive <i>-ban</i>	13	0
superessive <i>-n</i>	11	0
essive <i>-ul</i>	9	0
instrumental <i>-val</i>	7	5
dative <i>-nak</i>	5	3
allative <i>-hoz</i>	5	2
illative <i>-ba</i>	3	0
delative <i>-ról</i>	3	0
sublative <i>-ra</i>	2	0
elative <i>-ból</i>	3	0
terminative <i>-ig</i>	2	0
[case unclear; local]	4	0
Total:	94	33

Loss of case marking occurs in the speech of most of the McKeesport subjects: fourteen of the sixteen second-generation speakers and three of the four immigrants have instances of it in their speech samples.

Loss of case marking in argument positions is most prevalent in the accusative, i.e. direct object case marking, but there are a few examples each of dative, instrumental, and allative argument omissions. The overwhelming majority of them are arguments of verbs, while a few are those of postpositions. All are listed in (1) below, where case-bearing arguments and their English equivalents appear in boldface and *somebody* and *something* are abbreviated as "sby" and "sth", respectively.

(1)	Standard Hungarian	English meaning
accusative:	<i>felad vmit</i>	'give up sth'
	<i>felejt vmit</i>	'forget sth'
	<i>fizet vmit</i>	'pay sth'
	<i>hoz vmit</i>	'bring sth'
	<i>ismer vkit/vmit</i>	'know sby/sth'
	<i>kap vmit</i>	'get/receive sth'
	<i>kér vmit</i>	'ask for sth'
	<i>készít vmit</i>	'prepare sth'

	Standard Hungarian	English meaning	(cont.)
	<i>küld vmit</i>	'send sth'	
	<i>mond vmit</i>	'say sth'	
	<i>olvas vmit</i>	'read sth'	
	<i>szeret vkit/vmit</i>	'like sby/sth'	
	<i>tart vmit</i>	'hold sth'	
	<i>tesz vmit</i>	'put sth (somewhere)'	
	<i>tud vmit</i>	'know sth'	
	<i>vár vmit</i>	'wait for sth'	
dative:	<i>hív vkit vminek</i>	'call sby sth'	
instrumental:	<i>találkozik vkivel</i> <i>x-vel ezelőtt</i>	'meet sby' 'x (time) ago'	
allative:	<i>vmühez közel</i>	'close to sth'	

Some examples of sentences with case loss in arguments are given in (2a-g).<sup>2</sup>

- (2)(a) *huszonegy doláR egy hounapra kapot* (vs. SH dollárt)  
 twenty-one dollar a month-subl get-past-3sg-indef  
 'he got 21 dollars a month'
- (b) *thugya Goldi Szarka?* (vs. SH Szarkát)  
 know-3sg-def Goldie Szarka  
 'do you (formal) know Goldie Szarka?'
- (c) *szeretem a muzsikát a csárdás* (vs. SH csárdást)  
 like-1sg-def the music-acc the csárdás  
 'I like music and *csárdás*'

<sup>2</sup> Throughout this paper, American Hungarian examples are given in a broad phonetic transcription based on Hungarian orthography. The capital letters *L* and *R* in AH forms stand for velarized *l*'s and retroflex *r*'s, respectively. American Hungarian forms illustrating the case loss or replacement in question appear in boldface in the examples, with the corresponding Standard Hungarian form given in brackets to the right of each example, or at the right end of the line containing the English meaning. Standard Hungarian forms are given in Standard Hungarian orthography. Abbreviations used in the glosses are the following. Cases: abl=ablative, acc=accusative, ade=adessive, all=allative, caus=causal, dat=dative, delat=delative, elat=elative, ess=essive, ill=illative, iness=inessive, instr=instrumental, sublat=sublative, super=superessive, term=terminative. Other abbreviations: adjder=suffix deriving an adjective, def=definite conjugation, indef=indefinite conjugation, inf=infinitive, pl=plural, Px=possessive, sg=singular.

- (d) mektartoták mindig a március tizenötödik (vs. SH tizenötödikét)  
hold-past-3pl-def always the March fifteenth  
'they always celebrated March 15th'
- (e) asz hituk a magyar negyed (vs. SH negyednek)  
that call-past-1pl-def the Hungarian neighborhood  
'that's what we called the Hungarian neighborhood'
- (f) s ako tanákosztam a férjem (vs. SH férjemmel)  
and then meet-past-1sg-indef the husband-Px1sg  
'and that's when I met my husband'
- (g) mekhalt khéit év ezelőüt (vs. SH évvel)  
die-past-3sg-indef two year ago  
'she died two years ago'

Adjunct phrases affected by loss of case marking include place, time and other adverbial phrases, examples of which are given in (3a–g) below.

- (3) (a) [*Árpi bácsi mikor született?* 'When were you born, Uncle Árpi?']  
Janyuár tizenharmadikon, tizenkilenc huszonketőü. (vs. SH 1922-ben)  
January thirteenth-super nineteen twenty-two  
'On January 13, 1922'
- (b) anyám ment a kiropektor (vs. SH csontkovácshoz)  
mother-Px1sg go-past-1sg the chiropractor  
'my mother went to the chiropractor'
- (c) apám születet Szatmár megy (vs. SH megyében)  
father be-born-past-3sg Szatmár county  
'my father was born in Szatmár county'
- (d) (:Monroeville:) laknak.<sup>3</sup> (vs. SH Monroeville-ben)<sup>4</sup>  
Monroeville live-3pl-indef  
'They live in Monroeville'

<sup>3</sup> Words and phrases pronounced by the subjects in their usual American English pronunciation are given enclosed in parentheses and colons throughout this paper.

<sup>4</sup> Declined forms of *Monroeville*, as well as of *Pittsburgh* and *Duquesne* below, contain a hyphen before the case ending since, according to the rules of SH orthography, one is required when the stem ends with a silent letter.

- (e) [*Hol születtek a szüleid? Where were your parents born?*]  
 Az édesapám Fábiánház, (:and:) édesanyám Beregszász.  
 the father-1sgPx Fábiánháza and mother-1sgPx Beregszász  
 'My father in Fábiánháza, and my mother in Beregszász'  
 (vs. SH Fábiánházán; Beregszászon)
- (f) [*Tud olvasni magyarul? Can you read in Hungarian?*]  
 vaLamenyi thúdom, kicsi (vs. SH kicsit)  
 some know-1sg-def little  
 'I can to some extent, a little'
- (g) az énekeket jobban thudom madzsarul mint angol  
 the hymns-acc better know-1sg-def Hungarian-ess than English  
 'I know the hymns better in Hungarian than in English'  
 (vs. SH angolul)

As I have shown elsewhere (Fenyvesi 1995, 76–77), and as some of the examples above in (2) and (3) also illustrate, loss of case (especially loss of case in arguments) often occurs together with SVO word order and without focus-movement (replacing the usual Standard Hungarian SOV order accompanied by focus).<sup>5</sup> Table 2 below shows the co-occurrence of case loss and focus-movement loss by speaker. The first row shows whether or not loss of case marking in adjuncts occurs in the speech of a given speaker, the second indicates case loss in arguments, the third marks whether either of the previous kind of case loss occurs with a speaker, while the fourth shows whether SVO word order occurs with no focus-movement in sentences uttered by the speaker where SH would have SOV order together with focus-movement. (In designations of speakers "f" and "s" refer to first-generation speaker and second-generation speaker, respectively.) It is reasonable to suppose that these two features—loss of case marking and the development of SVO word order—occur as integral components of the same process, with the latter compensating for the former in a change from a synthetic Hungarian grammatical and syntactic structure towards a more analytical English-like one. The source of the change is most likely the joint effect of borrowing (in Thomason and Kaufman's (1988, 21) sense of "incorporation of foreign elements into the speakers' native language") from AmE and a tendency towards simplification and reduction in language attrition.

<sup>5</sup> This development of SVO word order and loss of focus-movement is a prominent tendency in the AH spoken in McKeesport (for details on the syntax see Fenyvesi 1995): two of the four first-generation speakers and all second-generation speakers except one have examples of it in their speech.



Table 2

Co-occurrence of case loss features with loss of focus-movement and SVO

Speaker:	f1	f2	f3	f4	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Case loss in adj.:	+	+	+	-	-	+	+	-	+	+	+	+	+	+	+	+	+	+	+	-
Case loss in arg.:	-	+	-	-	+	+	+	-	+	+	+	-	+	+	+	+	-	-	-	-
Case loss total:	+	+	+	-	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	-
SVO + F loss:	+	+	-	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-

### 3.1.2. The replacement of cases

There are 84 examples in the McKeesport data where a different case is used from the one which would be required in SH. All but one of the second-generation speakers and two of the first-generation speakers have one to twelve occurrences of case replacement. A total of 45 examples concern local cases used in locatives, and the remaining 39 examples involve various local and nonlocal cases serving purposes other than locative. The distribution of the kinds of case replacements by speakers is summarized in Table 3.

Table 3

Occurrence of case replacement features by speaker

Speaker:	f1	f2	f3	f4	s1	s2	s3	s4	s5	s6	s7	s8	s9	s10	s11	s12	s13	s14	s15	s16
Locatives:	-	+	-	+	+	+	+	-	-	+	-	+	+	+	-	+	-	-	-	+
Non- locatives:	-	+	-	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+
Overall:	-	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

The distribution of the various case replacements by case is given in Table 4, where the number next to each AH case is the number of occurrences of that particular substitution. The replacements of various cases with AH illative and inessive are not given separately, since, due to a deletion of suffix-final *n*'s, the realization of inessive *-ban* becomes identical with illative *-ba* in AH, just as it does in all Hungarian dialects in Hungary (Imre 1971, 316) as well as in the informal register of spoken SH (Váradi 1990).

*Table 4*  
Number of replacements by case

Instead of SH:	AH, in nonlocatives:	AH, in locatives:
ablative <i>-tól</i>	elative <i>-ból</i> 1	elative <i>-ból</i> 1
allative <i>-hoz</i>	dative <i>-nak</i> 1 instrumental <i>-val</i> 1	adessive <i>-nál</i> 5 illative <i>-ba</i> 2 superessive <i>-n</i> 1
causal <i>-ért</i>	terminative <i>-ig</i> 1	–
delative <i>-ról</i>	ablative <i>-tól</i> 1	ablative <i>-tól</i> 1 elative <i>-ból</i> 5
elative <i>-ból</i>	illative/inessive <i>-ba</i> 2	ablative <i>-tól</i> 1 delative <i>-ról</i> 1
essive <i>-ul</i>	superessive <i>-n</i> 5 illative/inessive <i>-ba</i> 1	–
illative <i>-ba</i>	–	inessive <i>-ban</i> 1 sublative <i>-ra</i> 2
inessive <i>-ban</i>	superessive <i>-n</i> 8 terminative <i>-ig</i> 1 elative <i>-ból</i> 1	superessive <i>-n</i> 10
instrumental <i>-val</i>	superessive <i>-n</i> 1	–
sublative <i>-ra</i>	delative <i>-ról</i> 1 superessive <i>-n</i> 2	allative <i>-hoz</i> 2 illative <i>-ba</i> 2 superessive <i>-n</i> 10
superessive <i>-n</i>	illative/inessive <i>-ba</i> 10 sublative <i>-ra</i> 1	illative/inessive <i>-ba</i> 2
terminative <i>-ig</i>	sublative <i>-ra</i> 1	–

Solovyova's findings about the percentages of case replacements as part of the total number in the South Bend corpus are again similar to the percentages in the McKeesport data. Comparative percentages for South Bend/McKeesport are 79.8%/89.4% for local cases, 3.4%/0% for the accusative, 3.4%/0% for the dative, 0%/1.2% for the instrumental, and 13.4%/9.4% for the other cases (Solovyova 1994, Table 8 for South Bend figures). Thus, in both corpora of data local cases are the targets of the overwhelming majority of replacements. Unfortunately, Solovyova does not say

what the replaced cases are replaced with, thus making such comparison between the two corpora impossible.

The overall picture of case replacement in McKeesport Hungarian is rather striking as far as the number of occurring case replacement combinations is concerned. All other immigrant language studies with which I am familiar that discuss case features note tendencies whereby a larger number of cases is replaced by a smaller number. For instance, the six cases of Standard Russian are decreased to two—nominative and accusative—in American Russian (Polinsky to appear), five Standard Polish cases are replaced by three—nominative, accusative and genitive—in American Polish (Lyra 1966), and for Finnish, a language with 16 cases which is related and grammatically similar to Hungarian, both Lehtinen (1966) and Larmouth (1974) mention only case loss, but not replacement of cases with other cases. In the McKeesport data, by contrast, a total of twelve cases are replaced by forms of eleven cases<sup>6</sup>—hardly a notable decrease. And even if the instances of local case replacements in locative meanings are analyzed separately to demonstrate an overall simplification in the system of local case marking (see below for discussion), the replacement of eleven cases by nine others in nonlocative phrases still does not show a significant reduction in numbers.

I will first discuss the replacement of local and nonlocal cases in nonlocative phrases, and will then consider the locative phrases separately, in section 3.2 below.

All in all, there are 21 examples of nonlocal case replacement where borrowing from AmE can be traced. These include all 10 of the examples where the superessive is replaced by the illative/inessive, in two different constructions. The first is *nyárba* 'in the summer', which occurs 8 times instead of SH *nyáron* in the speech of five second-generation speakers. The second construction occurs twice in the same phrase from the same speaker, where 'both' refers to 'both languages' (i.e. English and Hungarian), as an answer to the questions 'what language do you pray in?' and 'what language do you curse in?' (4). In all of these 10 cases the English prepositional counterpart of the Hungarian case ending is *in*, which is the closest equivalent of the AH case.

- (4) mind a khetõRbe (vs. SH mind a két nyelven)  
 all the two-iness  
 'in both'

<sup>6</sup> These numbers do not include replacement by nominative forms, which I categorized as instances of case loss.

Three examples (all from the same speaker) of the replacement of the inessive by the superessive, involving the same phrase—a radio program *being on*—can be attributed to borrowing:

- (5) (a) minden phéinteken **rajta** van (vs. SH rádióban)  
 every Friday-super super-3sg be-3sg  
 'It is on every Friday'
- (b) Oszt van themplom a rádión is. (vs. SH rádióban)  
 and be-3sg church the radio-super also  
 'And there is a church (service) on the radio, also'
- (c) amikor az **rajta** van (vs. SH rádióban)  
 when that super-3sg be-3sg  
 'when it is on'

All 6 replacements of the essive case are affected by AmE: in 5 the essive is replaced by the superessive in phrases meaning 'in language X'. Although the superessive is not the closest Hungarian equivalent of the English preposition *in*, it expresses the same dimension of static location (as opposed to direction towards or from) in the three-fold grouping of Hungarian local cases. The superessive is also interchanged frequently with the inessive in locative phrases in AH (see discussion below). This replacement occurs in the speech of three second-generation speakers and is illustrated in (6) below:

- (6) (a) jou tuta a szlovákon (vs. SH szlovákul)  
 well know-past.3sg-def the Slovak-super  
 'she spoke Slovak well'
- (b) (:always:) angolon beszélnek ök is (vs. SH angolul)  
 always English-super speak-3pl-indef they also  
 'they, too, always speak English'

The only replacement of the essive with the illative/inessive also reflects borrowing from AmE:

- (7) minden könnyeb az angolba (vs. SH angolul)  
 everything easier the English-ill/iness  
 'everything is easier in English'

One case replacement of elative with illative/inessive (8a), and the only replacement of allative with dative (8b), also reflect borrowing: the former

replaces the SH 'direction-from' case with what is probably intended as the inessive 'location' case where AmE has the preposition *at*, while the latter has dative instead of a 'direction-to' case where the AmE preposition is used for both functions.

- (8) (a) De **magyarba** is nagyon jó. (vs. SH magyarból)  
 but Hungarian-ill/iness also very good  
 'But she is also very good at Hungarian'
- (b) jöttem anyukának (vs. SH anyukához)  
 come-past-1sg-indef mom-dat  
 'I came to mom'

The only replacement of causal with terminative shows both the influence of AmE and simplification characteristic of language attrition: the preposition *for* is the English equivalent of both in some situations (e.g. marking the goal in *elmegy a boltba kenyérért* [causal] 'to go to the store for bread', and marking a time adverbial in *egy hétig volt New Yorkban* [terminative] 's/he was in New York for a week'); but, since the two cannot be used interchangeably in SH, doing so in AH reflects a reduction.

- (9) egy dollárig dolgozott az ember egész héten  
 one dollar-term work-past-3sg-indef the person whole week-super  
 'you worked a whole week for a dollar'  
 (vs. SH dollárért)

In the remaining 17 examples of case replacement no direct influence from AmE can be established. Eight of these are substitutions of two local cases of the same direction dimension, some examples of which are given in (10):

- (10) (a) nem mesze (:New York:)-ból (vs. SH New Yorktól)  
 not far New York-elat  
 'not far from New York'
- (b) **mindenfélektű** tanutunk (vs. SH mindenféléről)  
 every-kind-thing-pl-abl learn-past-1pl-indef  
 'we learned about all sorts of things'
- (c) nagyon vágyot a szüleihez meg Magyarországhoz  
 very long-past-3sg-indef the parents-3sgPx and Hungary-all  
 'she longed for her parents and for Hungary very much'  
 (vs. SH Magyarországra)

The last examples do not show such simplification, but rather a partial breakdown of the SH rules. Among these are the ones given in (11):

- (11) (a) *thanitota az osztájt az első hétre* (vs. SH *héten*)  
 teach-past-3sg-def the class-acc the first week-sublat  
 'she taught the class the first week'
- (b) *nem volt semmi mondanivalónk a felnőttekkel*  
 not was nothing subject-matter-1plPx the adults-instr  
 'we had nothing to say to the adults'  
 (vs. SH *felnőttekhez*)
- (c) *vicbe mondok valamit magyarul* (vs. SH *viccből*)  
 joke-ill/iness say-1sg-indef something-acc Hungarian-ess  
 'I say something in Hungarian as a joke'

A curious detail in connection with the replacement of cases in nonlocative phrases is that, of the total of 39 replaced case endings, 29 receive one of two cases, the illative/inessive (13 times) or the superessive (16 times). This also points to the fact that there is some overall simplification involved in the AH case assignment changes.

### 3.2. The simplification of the locative system

The nine local cases of SH make up an elaborate system expressing, on the one hand, the dimension of location *in*, *on*, or *at*, and, on the other hand, the dimension of *static location* vs. *movement from* and *movement towards*. The cases and the dimensions they represent are shown in Table 5.

Table 5  
Local cases in SH

	Movement from	Static location	Movement towards
<b>in</b>	elative (-ból)	inessive (-ban)	illative (-ba)
<b>on</b>	delative (-ról)	superessive (-n)	sublative (-ra)
<b>at</b>	ablative (-tól)	adessive (-nál)	allative (-hoz)

Although in their most basic meanings all local cases can be used with a noun—e.g. SH *a dobozból* 'from inside the box', *a dobozban* 'inside the box', *a dobozba* '[to] inside the box', *a dobozról* 'from on top of the box', *a dobozon* 'on top of the box', *a dobozra* '[to] on top of the box', *a doboztól* 'from near/outside

the box', *a doboznál* 'at the box', and *a dobozhoz* '[to] near/outside the box'—only one set of cases (one of the horizontal sets in Table 5, e.g. only the *in*-cases or the *on*-cases) can co-occur with names of institutions or places, as in *az iskolából jön* 'come from school', *az iskolában van* 'be at school', and *az iskolába megy* 'go to school', but *az állomásról jön* 'come from the station', *az állomáson van* 'be at the station', and *az állomásra megy* 'go to the station'.

As I mentioned briefly in section 3.1.2, in AH, as in all Hungarian dialects and in informal spoken SH as well, the inessive *-ban* suffix loses its final *n* and is pronounced identically to the illative *-ba*. Since without specific study of this issue it is impossible to tell which McKeesport subjects are aware of the distinction between the two cases and which suffix they mean when they say [-ba] and [-be], I will not try to analyze the relevant AH examples, but will regard each of them as the case (inessive or illative) that would be assigned in SH.

Replacements of local cases in the McKeesport data are of three kinds. The majority (29 out of the 45) are violations of co-occurrence of a particular place with the set of cases appropriate for SH (that is, in terms of the arrangement in Table 5, selecting the column correctly but choosing the wrong row). A smaller number (9 examples) are violations of the grammatical position—or column, in the table—while staying in the right row. One example each concerns the postposition *alatta* 'under it (static loc.)' and the partitive place pronoun *valahova* 'somewhere (movement towards)', and two examples are of the adverbial *ott* 'there (static loc.)'—these four express the dimensions of static location or movement from or towards. (Because they do not carry case, these examples are not included in Fig. 1 below.) The remaining 3 examples involve both horizontal and vertical violations. The replacement of cases in the McKeesport data is summarized in Fig. 1: arrows point from the SH case to the case it was replaced with in AH, while the numbers at the head of each arrow show the number of occurrences of that particular replacement.

Violations of the first kind, those of row selection, can be illustrated with the following examples:

(12) (a) delative instead of elative:

elhoszták                                  a LigetrőL a misz madzsart  
 perf-bring-past-3Pl-indef the park-del the miss magyar-acc  
 'they brought *Miss Magyar* over from the park'

(vs. SH *ligetből*)

	Movement from	Static location	Movement towards
in	Elat ↓ ↑ ↑ ↑ ↑	Iness ↑ ↑ ↑	Ill ↓ ↑ ↑
on	Delat ↓ ↑ ↑ ↑ ↑	Super ↓ ↓ ↓ ↓ ↓	Subl ↓ ↑ ↑
at	Ablat ↓ ↓ ↓ ↓ ↓	Ades ↓ ↓ ↓ ↓ ↓	All ↓ ↑ ↑

Fig. 1  
Local case replacements in the McKeesport data

- (b) ablative instead of delative:  
 onat jöt Magyarországtu  
 from-there come-past-3sg-indef Hungary-abl  
 'she came from there, from Hungary'  
 (vs. SH Magyarországról)
- (c) ablative instead of elative and sublative instead of illative:  
 mentek egy themplomtul a másikra ezek a népek  
 go-past-3pl-indef one church-abl the other-subl this-pl the people  
 'these people went from one church to the other'  
 (vs. SH templomból, másikba)
- (d) elative instead of delative:  
 mi MagyarországboL jötünk (vs. SH Magyarországról)  
 we Hungary-elat come-past-3pl-indef  
 'we came from Hungary'
- (e) superessive instead of inessive:  
 ő a Ligeten dougozot sokig (vs. SH ligetben)  
 she the park-super work-past-3sg-indef much-term  
 'she worked in the park for a long time'
- (f) inessive instead of superessive:  
 ő Gyálba lakik (vs. SH Gyálon)  
 she Gyál-iness live-3sg-indef  
 'she lives in Gyál'



(g) illative instead of allative:

mindenki a thükörbe akart egyszere meni  
 everyone the mirror-ill want-past-3sg-indef at-same-time go-inf  
 'everyone wanted to go to the mirror at the same time'

(vs. SH tükörhöz)

(h) illative instead of sublative:

A khéit időRsebig fiju mentek a Pittbe thanuLni.  
 the two older boy go-past-3pl the Pitt-ill study-inf  
 'The two older boys went to Pitt to study'

(vs. SH Pittre)

Because of the scarcity of examples of case replacement involving the same noun, it is not possible to make generalizations about whether there might be any nouns for which case selection in AH differs systematically from that of SH. Only one noun, *utca* 'street', stands out as a possible candidate for systematic differentiation: it occurs six times in the speech of three second-generation speakers with superessive instead of SH inessive:

- (13) a themplom ot ál harmadik ucán (vs. SH utcában)  
 the church there stand-3sg-indef third street-super  
 'the church is there on 3rd Street'

This is definitely the result of AmE influence, since in AmE the required preposition is *on*, the closest equivalent of the superessive case.

These examples of case replacement—where the static location vs. direction distinction is preserved while the rules concerning the in/on/at dimension are violated—can be attributed both to the influence of AmE, which does not have a complex equivalent system for directional endings, and to the effect of simplification of the rules of local case assignment through the loss of the in/on/at distinction. With the loss of this distinction the rules of local case assignment are simplified—the three rows are merged into one. At the same time, however, the cases belonging to the same column (but formerly belonging to different rows) occur in free variation.

The examples of the second kind of case replacement, in which the location vs. direction distinction is violated, are of three types. One example is hypercorrection of a type very common in Hungary as well—due to the phonetic merger of the two suffixes—in which illative *-ba* is replaced by inessive *-ban* when illative would be required:

- (14) mind a kheten angoL themplomban járnak (vs. SH templomba)  
 all the two English church-iness attend-3pl-indef  
 'they both attend an English church'

Five examples show the influence of the dialect area of the speakers' parents—the area north of the imaginary line that can be drawn between the Sajó River and Szatmár County, in northeastern Hungary—where replacement of SH allative with adessive is common (Imre 1971, 318):

- (15) (a) ELvitte apám anyámat  
 perf-take-past-3sg-def father-1sgPx mother-1sgPx-acc  
 a kiropektorná. (vs. SH csontkováczhoz)  
 the chiropractor-ades  
 'My father took my mother to the chiropractor'
- (b) minálunk gyűtek (vs. SH hozzánk)  
 we-ades-1pl come-past-3pl  
 'they came to our house'

Interestingly, though, according to Imre (1971), such replacement occurs in this dialect only in noun phrases referring to occupations and in family names (as in (15a)). Example (15b) and three other examples like it in the McKeesport data do not contain noun phrases referring to occupations or family names, but, instead, are pronominal.

In three examples, given in (16), sublative is replaced by superessive, which cannot be attributed to either Hungarian dialectal features or the influence of English.

- (16) (a) a madzsar istentiszteLeten járok (vs. SH istentiszteletre)  
 the Hungarian service-super attend-1sg-indef  
 'I attend the Hungarian service'
- (b) a kisjány kiszaLat az uton (vs. SH útra)  
 the little-girl out-run-past-3sg-indef the road-super  
 'the little girl ran out in the road'
- (c) ha egyetemen jársz akkor sokat keL óvasni  
 if university-super attend-2sg-indef then much-acc must read-inf  
 'if you go to university you have to read a lot'  
 (vs. SH egyetemre)

The remaining three examples of replacement of local cases come from two second-generation speakers. Two examples by one of them concern one kind of structure, in which sublative *-ra/-re* is replaced by adessive (17a–b). One example by the other replaces allative by superessive (17c). Both AmE and Hungarian dialects can be discounted as the source for these instances of substitution, so I attribute them to a breakdown of the rule assigning the SH case in this example, i.e. to language attrition.

- (17) (a) *egy évet jártam a (:University of Pittsburgh:)-nél*  
 one year-acc attend-past-1sg-indef the U. of Pgh-ades  
 'I attended the University of Pittsburgh for a year'
- (b) *jártam két évet (:Cleveland State University:)-nél*  
 attend-past-1sg-indef two year-acc CSU-ades  
 'I attended Cleveland State University for two years'
- (c) *tartoztunk a független egyházon (vs. SH egyházhoz)*  
 belong-past-1pl-indef the independent church-super  
 'we belonged to the independent church'

The examples concerning the postposition, the partitive pronoun of place, and the adverbial all violate the dimension of static location vs. movement towards: three of them express static location where SH would have movement towards (18a–c), and one does the exact opposite (18d). They are all from the same speaker.

- (18) (a) *alatta tették (vs. SH alá)*  
 under.3sgPx put-past-3pl-def  
 'they put it under it'
- (b) *és ott is mentünk (vs. SH oda)*  
 and there also go-past-1pl-indef  
 'and we went there, also'
- (c) *ott mentünk magyar iskolába (vs. SH oda)*  
 there go-past-1pl-indef Hungarian school-ill  
 'we went to Hungarian school there'
- (d) *ha kint vagyunk valahova (vs. SH valahol)*  
 if outside be-1pl somewhere-towards  
 'if we are outside somewhere'

These four examples show both the influence of AmE, since in AmE the equivalent forms would be identical for static location and direction towards, and attrition in language death, since they involve simplification of the directional system with these two columns merging into one.

To summarize findings in connection with the replacement of cases in locative phrases: although many of the examples discussed in this section show borrowing from parallel AmE structures as well, a general simplification of the system, mostly along the direction dimension is clearly evident.

### 3.3. The replacement of cases in place-names

The last feature related to the use of cases in AH concerns locative case usage with names of cities and towns. Examples referred to in this section structurally belong and have been discussed in section 3.2.2 above, together with all other cases of locative case replacements, but, as I will show below, they merit further discussion as a separate sub-system.

In SH the names of cities, towns and villages (referred to simply as 'place-names' from here on for brevity's sake) receive either the *in*-cases (inessive for location, elative for direction from, and illative for direction towards) or the *on*-cases (superessive for location, delative for direction from, and sublative for direction towards): 80% of Hungarian place-names receive *on*-cases (e.g. *Budapesten*, *Siófokon*, and *Celldömölkön* for 'in X') and about 20% receive *in*-cases (e.g. *Badacsonyban* and *Veszprémben* for 'in X'),<sup>7</sup> while all foreign city and town names receive *in*-cases (e.g. *Párizsban* and *Helsinki*). The use of one or the other case with Hungarian place-names is not predictable morphophonemically.

In AH the usage of cases with U.S. place-names is different from that of SH: it displays an interesting new distinction that does not exist in Standard Hungarian, namely the use of both the *in*-cases and the *on*-cases.

In a brief preliminary paper Kálmán (1970, 42–5) proposes that in AH some U.S. place-names receive *in*-cases, others *on*-cases. He also suggests that because the U.S. is the homeland for Hungarian-Americans, the SH usage of inter-item variability is 'translated' into the terms of the U.S.

In his much more detailed investigation, Kontra (1990, 73–4) demonstrates that the situation is not so clearcut in the case of Hungarian speakers in South Bend, IN, however: in his data, first-generation speakers conform to

<sup>7</sup> These are my own calculations based on the 113 towns and cities listed in the Hungarian guidebook Kulcsár (1989). Because, as Miklós Kontra pointed out to me (personal communication, 1995), there can be differences in the choice of the case-sets between speakers (see also Beregszászi this issue), these figures should serve as approximations only.

the model as proposed by Kálmán, while second-generation speakers use only in-cases for U.S. towns and cities. (Neither author discusses case endings for non-American city and town names in their respective corpora.) Kontra also notes that big cities like *New York*, *Cleveland*, and *Pittsburgh* never receive on-cases even in the speech of first-generation speakers, though smaller cities like *Mishawaka* and *Elkhart* do.

The McKeesport data differ from the situations described by both Kálmán and Kontra in three respects: first, both first- and second-generation speakers use on-cases with names of U.S. towns and cities; second, several of them use in-cases interchangeably with on-cases with the same place-name; and third, even names of big cities can get on-cases in the speech of some speakers.

All U.S. place-names that occur in the McKeesport data receive both in-cases and on-cases (*Pittsburgh-ban* and *Pittsburgh-on*, *Clevelandban* and *Clevelandon*, *McKeesportban* and *McKeesporton*, *Ligonierban* and *Ligonieron*, etc.),<sup>8</sup> with the exception of *Duquesne*, a small town between Pittsburgh and McKeesport, which receives only in-cases (*Duquesne-ban*, *Duquesne-ból*, and *Duquesne-ba*) in data from all speakers. The only difference among speakers is that all first-generation speakers and one second-generation speaker use one set of cases (either the in-cases or the on-cases) with each place-name, while 25% of the second-generation subjects use different sets with the same place-name at different points in their interviews (e.g. *Verszaleszen* vs. *Verszaleszbe* 'in Versailles (PA)'; (:West Mifflin:)-en vs. (:West Mifflin:)-ba 'in West Mifflin'; *Mikiszporton* vs. *Mikiszportba* 'in McKeesport'; *Klivlandon* vs. *Klivlandba* 'in Cleveland'). Because U.S. place-names occur only sporadically in the data of several second-generation subjects, and the same place-name would often occur just once, I cannot make any generalizations about second-generation usage, except to note that both intra-item and inter-speaker variability occurs among them. Such variability, however, is an important structural characteristic of situations where language attrition is involved (Campbell-Muntzel 1989).

The source of the differences in Kálmán's (1970) and Kontra's (1990) findings and my own are difficult to pin down. Kálmán does not supply any information on the speakers who provided his data, so it is impossible even to speculate about the source of the differences there. The degree of variability in the use of the *in*- and *on*-cases is less in Kontra's South Bend corpus than in the McKeesport data, which is probably due to the fact that, as far as it is possible to tell from Kontra's description of the extent of Hungarian language

<sup>8</sup> Examples from individual speakers are cited in broad phonetic transcription, while all others are cited in SH orthography in this section.

use in South Bend (1990, 26–27), Hungarian is more widely and more often used in South Bend than in McKeesport and is, therefore, probably affected by attrition to a lesser extent than in McKeesport. The relative number of occurrences of case loss and replacement, which is almost nine times as high in the McKeesport data as it is in the South Bend data, can also be an indication of this.

#### 4. Conclusion

In this paper I have described the differences in case marking between American Hungarian data from McKeesport, PA, and in Standard Hungarian. The main tendencies, case loss and case replacement, were found to be similar to changes in case systems of other immigrant languages which have complex inflectional noun morphology and are in contact with American English. The case changes in McKeesport Hungarian, especially those involving case replacement, are, however, more diverse than in other documented immigrant language studies. Nevertheless, the McKeesport findings can only serve as pointers to be used in more focused investigations of American Hungarian targeting the use of cases and eliciting data in order to provide more detailed results.

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## SOCIAL AND LINGUISTIC CHARACTERISTICS OF IMMIGRANT LANGUAGE SHIFT: THE CASE OF HUNGARIAN IN DETROIT

CSILLA BARTHA

### 0. Introduction

Linguistic research on immigrant minorities—primarily in North America, but also in Western Europe—has a long history. A new wave of migration in East-Central Europe due to political changes, economic instability, and military conflict has created a need for a re-evaluation of the theoretical questions and research methodologies that guide this investigation. The sociolinguistic approach to this inquiry focuses on concepts like immigrant/transitional bilingualism, language shift and language loss. Although the phenomena in question can be studied separately, I will attempt in this paper not only to define these concepts, but also to demonstrate their interrelationship through the empirical results of a case study performed on the Hungarian American minority in Detroit.<sup>1</sup>

### 1. A proposed theoretical framework

#### 1.1. Interethnic communicative strategies

Irrespective of whether the background of migration is determined by economic, religious, ethnic, political or even military motivations, ethnic communities in minority settings generally have to face two facts simultaneously: (1) members of the community mostly do not speak the language of the host country, and (2) their existential security, chances of social and linguistic integration and the rise of their socio-economic status are deeply influenced by the new society and its institutional systems. In other words, it is almost inevitable that they will confront the other, dominant language, i.e. speakers

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who do not know the language of the new immigrants. The minority group can attempt to resolve this conflict in four possible ways (see Fase *et al.* 1992, 4–5; Bartha 1995a):

(a) The minority group avoids communicating with people who do not speak their language. Of course, the success of the avoidance strategy varies by situation.

(b) The minority group tries to develop a communication network in its own language. The success of this strategy is influenced by the interplay of many factors, like the ethnic group's relative economic and political status, internal network ties, subjective ethnic vitality (Giles *et al.* 1985), and institutional and organizational structures. It is likewise affected by the attitudes of the mainstream society toward ethnic minorities and the language policies of the government. These policies determine whether the minority language becomes segregated or integrated. However, it is no paradox that the legitimization of minority languages in certain domains makes assimilation attractive, thereby undermining the development of a separate communication network.

(c) The sociologically dominant and subordinate groups interact in a third language. While the usage of a lingua franca or a pidgin is a common phenomenon in multilingual countries, it is rather exceptional and more individually based in subordinate immigrant settings.

(d) The most frequent norm of interethnic communication is to interact in the dominant language.

At a given moment all four of the above-mentioned communicative strategies can appear in parallel as means of interethnic communication. Studying the different migratory and generational groups within the immediate post-migration and then post-settlement phases, it can be suggested that (a), (b), and (d) cannot be described as a set of discrete points, but as a process. In those minority groups in which interethnic communication norms change from (a) to (b) to (d), this change often correlates with language shift.

## 1.2. Language shift in immigrant settings

One of the central categories of immigrant contact situations is language shift. According to Gal's definition (Gal 1979, 17) language shift "consists of the socially motivated redistribution of synchronic variants to different speakers and different social environments". In an immigrant context we can go on refining this general definition. A convenient starting point is the concept of **linguistic market** in Bourdieu's theory (Bourdieu 1977; 1994): languages

compete in linguistic markets, "on a structured space of positions in which the positions and their interrelations are determined by the distribution of different kind of sources or capital" (Bourdieu 1994, 17). The real value of languages depends on their symbolic social values.

It is important to note that Bourdieu is no economic determinist, nor is he reducing language use to strictly economic terms. To the contrary, Bourdieu sees the economic market as but one type of market, or field. Fields are loosely defined games in which players try to hold or improve their social standing; in Bourdieuan terminology, players attempt to retain or increase their social capital. There are many overlapping markets in any society, such as the fields of art, science, literature, and politics. Different language groups can also be considered separate markets. Bourdieu tends to use this framework to understand the interaction among classes, but it can be easily applied to the interrelationship among ethnic groups.

In our case social interactions can be said to occur in two linguistic markets: the above described strategies refer to that market ( $M_1$  = external linguistic market) on which the communication of immigrant and dominant groups takes place; the second market is where members of the ethnic group communicate with each other ( $M_2$  = internal linguistic market) (see also Jaspert-Kroon 1991). The redistribution of variants (language shift) can be present in these two domains. In immigrant settings  $M_1$  necessarily leads to this change (external or interethnic language shift), because it is impossible for a group permanently settled down in a new environment to avoid contact with members of the host community if the minority language is not "legal tender" for institutionalized fields like education, the labor market, politics, media etc.

Although  $M_1$  and  $M_2$  are not isolated from each other, language shift on the external linguistic market does not always result in the weakening of the minority language within the group. Moreover, if internal communicative norms and the distribution of variants and speaker's positions remain intact, the linguistic situation of the community can be characterized as stable bilingualism. *Complete realization of language shift—which may be distinguished from an external type language shift—is when communication in the minority language entirely disappears also within the minority group.* Experts differ as to whether a minority group can maintain its group identity after choosing to use the majority language exclusively (cf. Fase *et al.* 1992, 6).

Since the process must be seen as a simultaneous social and linguistic change in the life of a community (Gal 1991, 66–7), its study requires the involvement of multiple approaches. First, its social aspect can be successfully

understood within the multidisciplinary frameworks of the **ecology of language** (Haugen 1972) and **symbolic fields** (Bourdieu 1994).

Next, there are two levels of linguistic phenomena that should be analyzed: The first is the speech community's **practice** and the second is the individual's **language use and knowledge**. The former represents language shift itself. Changes in the individual's use and knowledge can be understood through the concept of first language (L1) loss or language attrition. In other words, language shift must be studied on three different but interrelated abstract levels.

It is unavoidable to define the ecological aspect which includes the **historical and social context**, since we know that in one context a similar historical, social, and economic setting favors language maintenance, while in another context it leads to attrition. We have to note, however, that immigrant bilingualism and language shift need not co-occur, for two reasons: (1) language shift also occurs in indigenous communities: this is the case of East Sutherland Gaelic (Dorian 1980; 1983) or Hungarian in Burgenland (Gal 1979), etc.; and (2) there are immigrant groups which are strongly resistant to the attrition of their mother tongue, such as the Pennsylvania Dutch or Old Order Amish (see Kloss 1966; Hostetler 1968), or some Spanish speaking groups from Puerto Rico or Mexico in the US (see López 1982; Veltman 1983) or the Greek minority in Australia (Smolicz 1984). Consequently, highlighting specific extralinguistic characteristics of a given contact situation beyond the general tendency allows us to study the dynamics of language maintenance and shift (for further extralinguistic factors see e.g. Kloss 1966; Fishman 1966b; Grosjean 1982; Clyne 1982, 1992; Paulston 1994).

The **level of the speech community** needs to be evaluated next: what kind of rules are valid in language choice, style-shifting and code-switching; what virtual and symbolic roles in everyday communication one or another language plays; and what the functional division of labor among codes is. If members of the community significantly prefer to use the dominant language of the new environment irrespective of situation, topic or place, this is a clear indicator of language shift. This is a consequence of the environmental language becoming more and more prestigious in the system of values of the community, so that on this level of study it can be also essential to analyze the attitudes and ideologies adopted by the speakers towards the languages in question.

The third level—the individual's language ability—is narrowly linked to the previous one, because the dramatic change of linguistic functions, norms and patterns does affect the **structure of language**. Nevertheless, this change influences the language use of newcomers and the subsequent generations in a

diverse manner and to a varied extent. Since space constraints prevent me from presenting the above phenomena in their full complexity, in the following I will simply illustrate certain tendencies that have emerged from my investigation.

### 1.3. On data

Data for the present report come from a larger study (Bartha 1995b) where the process of language shift was examined correlating with the three levels of analysis introduced above. In 1987 fifteen sociolinguistic interviews were conducted in Hungarian by the author with the instruction that if the informant encountered any difficulty in expression he could switch to the language in which he could express himself most easily. Each interview contained a conversation section, a language-usage questionnaire, and attitude and self-evaluation tests. Although many attempts were made to minimize the so-called 'experimental effect' (cf. Labov 1984, 30), and, although I attained the status of a good friend, the semi-formal interview situation was unnatural and quite different from the informants' everyday one-to-one interactions. Additionally the situation of speaking to a monolingual may evoke completely different communicative strategies in terms of code choice and attitudes toward language alternation or mixing during a certain discourse unit. Because of these methodological difficulties I also applied participant observation to gain data on bilingual speaking mode (cf. Grosjean 1982, 1992; Gal 1979, 6–12).

## 2. The community: ecology of language

The term 'Hungarian ethnic community in Detroit' is a generalization and denotes all those who live in the suburbs around the Detroit metropolitan area, who were born in Hungary (or in the former Austro-Hungarian Empire before the Trianon Peace Treaty), and those born in the United States, who identify themselves as Hungarian or Hungarian-American.

A wide range of socio-economic statuses, and attitudes toward the home country and varieties of the Hungarian language, are represented among the three major immigrant groups according to the significant migration waves in the last 80–100 years (for a detailed description see Fishman 1966b):

1. Old Americans (arrived in the USA between 1870 and 1920);
2. DPs (displaced persons, the post-1945 political immigrants);
3. '56 refugees (arrived in 1956–7 after the Hungarian revolution).

## 2.1. The Old Americans

Substantial differences among groups stem from their different socio-historical, cultural and political backgrounds, which determine different ways and intensity of social, linguistic, and/or cultural assimilation. For this paper I chose the Old Americans and their second generation children as my focus. The Old Americans played a critical role in establishing a symbolic community in Delray, the former immigrant section of Detroit. They were also central in maintaining the Hungarian language, and they represent the largest number of Hungarian immigrants in the twentieth century. Their American-born children are also included, of course, because language shift can only be studied across generational lines.

The Old Americans arrived in the US between 1870 and 1920 for economic reasons. A population explosion in the Austro-Hungarian Empire came at the same time as an economic downturn. An unequal development of the Hungarian agricultural and manufacturing industries led to widespread unemployment and a drop in the standard of living. Simultaneously, the industrial boom in the US produced a huge demand for labor creating an excellent job market for the East-European labor force. Better economic conditions and occupational opportunities in America attracted many, generally unmarried Hungarian men. They traveled by ship over the Atlantic with the clear intention of earning enough money to pay back their debts within a few years, or even to buy some land after going back to the homeland (Puskás 1982; Fejős 1993).

A general feeling of transition characterized the Old Americans' motivations, a feeling that was usually absent among the later migratory groups. As several authors point out (Tezla 1987; Puskás 1982, 1987; Szántó 1984), re-emigration also must be taken into account, although there are no precise statistical data that measure the number. Those who achieved their objectives before World War I tended to return to Hungary. After the war, however, the situation changed radically: Austro-Hungary lost the war; the Trianon Peace Treaty shrunk the Hungarian borders, placing home villages and towns into foreign countries; and new Federal immigration quotas would have made re-immigration into America extremely difficult (Szántó 1984, 63). Hungarians were deeply shocked by all these factors and motivated to settle down permanently in the US after having obtained American citizenship.

With respect to their professional distribution, two-thirds of them were agricultural laborers, the remaining one-third were skilled workers, craftsmen, merchants and a small number of intellectuals. The vast majority of Old Americans either were uneducated or had received virtually no education. Most of

them became factory workers, but until getting settled permanently, they were only low-status, unskilled guestworkers with modest wages with which they could barely survive.

## 2.2. The Hungarian community in Delray

Delray, the center of Hungarian immigration in Michigan, was a separate village near Detroit, which was annexed to the city in 1905. Hungarians, Germans, French, Armenians, Slovaks etc. had been arriving here for several decades (Hauk-Abonyi-Anderson 1977, 16). As Hauk-Abonyi and Anderson indicate, "although Hungarian immigration into the United States had reached its peak in 1907 [338,492], this was not reflected in Detroit statistics until 1920", the year of absolute peak of the first great wave in the inflow of Magyars (Hauk-Abonyi-Anderson 1977, 20). The reason for this was the fact that newcomers who were received on the East Coast (in the beginning at Castle Garden and later at Ellis Island) became first employed in mines or railroad construction companies in Pennsylvania or in Ohio. They spent 2-4 years at these jobs. There was a constant internal migration in the hope of better job opportunities and higher salaries (cf. Dégh 1992). Detroit's heavy industry strengthened around 1920; plants and factories were established which are still determining the character of the city.<sup>2</sup> This period meant a happy encounter of cheap Hungarian labor with abundant job opportunities created by the new economic situation.

After a period of transition, when Magyars only formed a community in a geographical sense (because of the lack of ethnic solidarity), they built up the ethnic, cultural, religious and social organizations that were indispensable to settling down permanently. This was a defense against discrimination and other external effects on the one hand, and a device for strengthening in-group consciousness on the other. Many features were set up to remind them of rural Hungary together with the attributes of urban culture that they lacked in their homeland.

Besides cohesion and ethnic solidarity, social differentiation also appeared. The base of the Delray community was made up of industrial unskilled and semi-skilled workers of peasant origin. The very fact that professionals constituted a reduced number in the community is explained by Beynon in terms of the needs and protection of the colony (cf. Beynon 1934, 606-7). He set up three major groups of first generation professionals:

<sup>2</sup> Solvay Process Company, Peninsular Stove Factory, Detroit Graphite Manufacturing Company, etc.

(a) those who were able to preserve their former prestige, standards of living and professions, partially by avoiding communication with their countrymen;

(b) those “who were unable to capitalize their previous occupational experience” within the Hungarian colony;

(c) those “who were able to maintain themselves occupationally only through the protection of the foreign language colony”, i.e. outside of the Hungarian community (Beynon 1934, 605).

A greater part of professionals intended to integrate into the American society as soon as possible, thus they either refused to settle down in Delray, or left quickly for more prestigious American environments. Beynon presented data from the Detroit City Directory of 1931–2 on occupational distribution within the Hungarian colony and outside of it. 27.8% from a sample of 3,682 persons belonged to the occupational class labelled “professionals, public service (except labor), and clerical” within the colony, while outside of the community this rate of Hungarian professionals was 72.2% (Beynon 1934, 606). Soon arose a dichotomy of “we and they” together with a bi-directional stigmatization: “intelligentsia” looked down on the way of life as well as the language usage of lower-class Hungarians living in Delray, while working class group members, emphasizing separation and reinforcing internal coherence, wanted to adopt manners of the professionals which resulted in self-stigmatization.

Due to the open discrimination of the postwar period, all community members obtained American citizenship. Socio-economic differentiation among non-professionals caused a significant outflow from Delray in the 1960s: Delray became a symbolic center for the Detroit Hungarian minority instead of a place to live. In the case of the second generation, after having finished their education, the major part did not return to Delray. This group is socially more heterogeneous, often having mixed marriages. Although there were many unskilled laborers among the American-born, a large number were also in the professional, public service, and clerical occupations.

### 3. The speech community: language choice and attitudes

#### 3.1. The history of language compartmentalization

Domains of Hungarian and English were completely separate in the first few decades of the settlement’s history. Hungarian was the primary language of everyday social interactions and had some institutional status on the local level. Immigrant workers in Delray had personal ties only with each other.



Professional, middle-class people lived outside of Delray and even those who had to stay there due to their poor financial backgrounds did not associate with the lower-status, peasant-origin guestworkers<sup>3</sup> (Beynon 1934; Dégh 1992; Bartha 1995b). The direct relationship between economic aspirations and language use is shown in the following section of an interview with a middle-class Hungarian:

“I was a graduate engineer in Hungary. When I came to America, I tried to avoid Hungarian colonies in order to learn the English language more quickly. It was purely for economic reasons that I chose to mingle only with Americans. Otherwise I would have started in unskilled labor at the bottom. After a few weeks study in an English class, I mastered the language well enough to secure a job as a draughtsman and tooldesigner. After I settled in Detroit, I once thought that I would like to meet some other Hungarians. I went to a Hungarian restaurant once and met some laborers there. I never went back.” (Beynon 1936, 429)

The workplace could have been the main territory of interethnic communication, as well as of the daily practice of English, but there was no strong motivation to learn it in this transitional phase. Having given these characteristics of the linguistic situation, it is possible to consider that until the end of World War I immigrants developed their own networks of internal communication, trying to keep themselves in relative isolation from the English-speaking environment and even from other ethnic groups.

Even though Hungarian was the exclusive language of intraethnic communication, the linguistic situation was complex. Community members not only constituted a diverse mixture of habits and cultural customs from all regions of Hungary; they also brought a variety of Hungarian local dialects (cf. Dégh 1992). Due to their socio-economic background, most of these immigrants did not speak standard Hungarian. (On one extreme were individuals who were able to get some education in Hungary; on the other were those who arrived as illiterate peasants.) For these reasons, and since the period of this settlement has long passed, to define strict boundaries between variants or a set number of styles would be arbitrary or impossible.

<sup>3</sup> The following section from an interview conducted by Beynon is characteristic of middle-class attitudes toward Hungarian workers: “..When I came to America, I heard that I could enter American professional circles. I haven’t yet made the grade. So I have to stay here among these laborers of Delray. I don’t have the money to associate with the people I want to meet, but the people around here are too dumb for me to associate with. So I don’t associate with anyone at present” (Beynon 1936, 427).

As I stated above, by the postwar years Hungarian social and cultural institutions had been completely established. There were Hungarian-language churches for all relevant denominations. Hungarian newspapers, voluntary associations, as well as local political and religious societies became prominent. There were Hungarian movies and even a Hungarian theater, the so-called Hungarian Show, for which theater companies or famous actors were invited from Hungary to perform. Sometimes local groups put on similar shows. At the same time, the churches founded Hungarian elementary schools for the second generation, which became weekend schools in the 1920s due to changes in education laws. The use of Hungarian was central to all these institutions.

Churches and schools, as the most important domains of the institutional use of Hungarian and of language preservation, had a crucial role in creating and transmitting the sense of national culture (Dégh 1992) and the loyalty to the Hungarian ethnic heritage wherein the mother tongue was a highly valued symbolic capital.<sup>4</sup>

As I noted above, the Hungarian minority lived within at least two language markets. Within the dominant market, “good English” has a high value; it can be used for getting jobs, gaining acceptance, and generally acquiring status outside Hungarian circles. As a group with low status in the dominant market, largely because of the lack of English language skills, the Hungarian language field became a market in which the immigrants could gain high status. Making Hungarian highly valued—that is, giving it high symbolic capital—was therefore a defensive measure. As the group’s English language skills increased, the need for this alternative form of symbolic capital declined. While this was the case for the first generation, the shifting importance of each language was especially true for the second. Not only were they more comfortable speaking in English than in Hungarian, making the dominant market more attractive; their first-generation parents also encouraged them to learn better English than themselves. The importance for the American-born generation changed from language to secondary symbols of Hungarian identity, like the food they

<sup>4</sup> The high symbolic value of language had been and still has remained a central factor of national identity in Hungarian political thought since the nineteenth century, which stems from European nationalism, where, as Benedict Anderson declares, “in almost all of them [i.e. European states] ‘national print-languages’ were of central ideological and political importance, whereas Spanish and English were never issues in the revolutionary Americas” (Anderson 1991, 67). For better understanding the roots and components of ideologies which constitute the symbolic role national language played in the nineteenth century’s scientific and political thought in Hungary see Gal’s excellent analysis on the interplay of linguistic theories and national images (Gal 1995).

ate, the clothing they wore on special occasions, and the traditional Hungarian events they attended.

The decline of the symbolic value of the Hungarian language can be shown in concrete changes in the community. The school of the Holy Cross Roman Catholic Church was extremely important in the primary education of the second generation. The school had been founded in 1907 teaching 42 children. In 1923 it had 500, and in 1925–6 it had the maximum of 622 pupils. In 1970, due to lack of pupils and funds, it was closed.

The image of land and small-holder peasant life was no longer highly valued; rather being a well-paid worker as well as owning one's own car and new house became a sign of upward social mobility and economic success. In the 1950s people started to move out from Delray and now live in the ethnically heterogeneous suburbs of the Detroit metropolitan area. The basic language of both inter- and intraethnic communication became English.

Attitude responses provided the major source of evidence that in the community's ideologies 'language' is directly related to personal career. These findings are very similar to what Gal found in Oberwart (cf. Gal 1979, 103–8). Local forms of Hungarian are strongly stigmatized and are identified by both first- and second-generation speakers as the language of the past, of peasantness and poverty, while English is seen as the source of prestige, education, and higher status, etc.

Since the mid-80s only a few Hungarian churches and voluntary associations exist in the Detroit area. Both languages appear in church services, social events, and Hungarian ethnic radio, and English is continuing to become more predominant. This evidence of language shift is reinforced by my field research.

### 3.2. Language choice

The result of the language usage questionnaire, and more productively, my daily experiences during my weeks of observation in Detroit constituted a model of the patterns on language choice.

The questions relating to language choice on the language usage questionnaire sought information about which language the speaker would choose in a given situation and setting with a particular interlocutor. Table 1 represents the unmarked choices of each informant in different domains (a set of prototypical role of interlocutors, situations and locales). The letters "H", "E" or "HE" are shown in this table if the informant used Hungarian exclusively, English exclusively or both languages, respectively. Table 1 does not indicate a speaker's strategy to express momentary intent and social meanings by

*Table 1*  
Language choice in different sociolinguistic domains

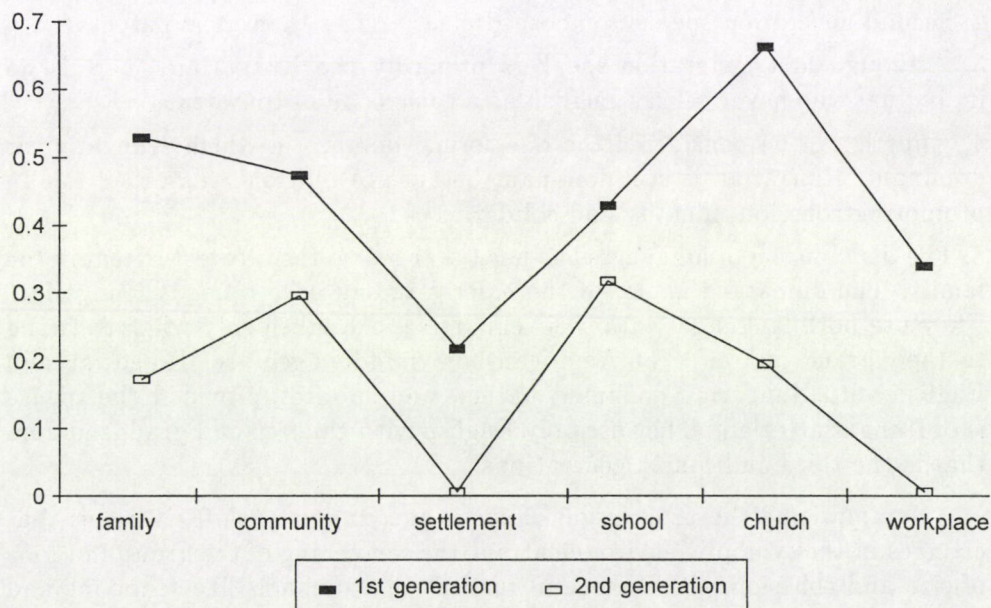
Generation	G <sub>1</sub>						G <sub>2</sub>			
Age of speakers	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.
Sociolinguistic domain (Situations)	(92)	(87)	(85)	(85)	(89)	(91)	(59)	(61)	(63)	(57)
<b>FAMILY</b>										
with children	H	HE	H	HE	HE	HE	E	E	E	E
with grandchildren	HE	E	E	E	HE	E	E	E	E	E
parents among each other	H	H	HE	HE	HE	H	E	E	H	H
<b>HUNGARIAN COMMUNITY</b>										
a) informal										
Hungarian picnic	HE	HE	H	HE	HE	HE	HE	HE	HE	E
feasts	HE	HE	HE	HE	HE	HE	HE	HE	E	HE
b) formal										
organizational meetings	E	HE	-	HE	HE	HE	-	HE	E	-
<b>NEIGHBORHOOD</b>										
neighbors	HE	E	HE	E	H	E	E	E	E	-
local shops	H	E	E	E	E	E	E	E	E	-
<b>SCHOOL</b>										
elementary	H	HE	H	H	H	H	H	H	HE	-
secondary	-	E	-	E	-	-	E	E	E	-
<b>CHURCH</b>										
church service	H	H	H	HE	H	E	E	HE	E	HE
prayer	H	H	HE	H	H	HE	E	E	HE	E
talking to priest (+confession)	H	HE	HE	HE	H	E	E	E	E	E
parishioners	HE	HE	HE	HE	HE	E	E	HE	HE	HE
<b>WORKPLACE</b>										
with the boss	E	HE	HE	E	E	E	E	E	E	E
with co-workers	HE	HE	HE	E	HE	E	E	E	E	E

conversational code-switching. Instead, it demonstrates where conversational code-switching can occur at all.

The relationships between generations, domains, and language choices are important for our understanding of language shift. The first and most obvious question, as has been discussed above, is the degree to which the second generation uses English more than the first generation. A second question is whether this difference in language choice is determined by situation; to what

degree is language choice compartmentalized by domains. In other words, do the American-born speak Hungarian in fewer domains, and are they more likely to speak Hungarian in informal than formal settings? Finally, is the relationship between language choice and generation affected by domain?

The unmarked language choices of the ten informants in Table 1 were broken down by situation (and interlocutor) in each of six domains: family, Hungarian community, neighborhood, school, church, and workplace. For example each informant received three scores on the family and two scores on the school domain. The choice of each individual in each situation was given a score of 1, 0.5, or 0. The individual who spoke exclusively Hungarian or English was given a score of 1 or 0, respectively. The individual who used both languages was given a score of 0.5. The sample is too small for specific generalizable statements—such as to say what percentage of the American-born population in the Detroit area uses both languages in church—but it is enough to demonstrate tendencies through means statistics like the T-test and ANOVA.



*Fig. 1*  
Correlation between language choice and generation by situation

As one might expect, the second-generation informants spoke significantly more English than the first generation. While the American-born informants received an average score of .16, their immigrant parents received an average score of .43. The most interesting finding, as Fig. 1 demonstrates, is that the variation in language use is not determined by situation. An analysis of variance test showed that the relationship between generation and language choice was not significantly effected by situation. However, it is important to note that the second generation speaks no Hungarian in the most important formal domain, the workplace. (The test indicates that Hungarian was used in another formal domain, school, but this can be deceiving. The second-generation informants were all approximately sixty years old; they had attended school many years before.)

A number of general statements related to Table 1 and Fig. 1 should be emphasized:

1. There is no sociolinguistic domain where Hungarian comes to be used exclusively.
2. Second generation speakers choose Hungarian less than their parents.
3. Although first generation speakers primarily use Hungarian, there is no individual who never selects English as a basic code of conversation.
4. Church can be considered the one formal domain in which Hungarian is dominant. Hungarian is still dominant because of religion's historical role in promoting cohesion, identity and solidarity.
5. The distribution of languages has been changed to the greatest extent in the family. The unmarked choice of the elderly among each other is Hungarian. They use both languages with their children and English only when speaking to their grandchildren. The American-born middle-aged use Hungarian and English with Hungarian-dominant parents and spouses, provided the spouse is of Hungarian origin. They use only English with children and grandchildren, that is the third and fourth generations.

Summarizing the progression of social and linguistic shift, it seems that changes in the symbolic environment, i.e. the weakening of the group in terms of size and cohesion, the absence of institutional domains like schooling and mass media, and the lack of social monitoring (cf. Gonzo-Saltarelli 1983, 184) as well as purist ideologies have led to a rapid, functional reduction where the Hungarian language is employed only for communication within a restricted social network. At the same time, as Campbell and Muntzel (1992, 185) describe these kind of situations, the dominant language, in this case English,

comes to be used "by an ever increasing number of individuals in a growing number of contexts where the subordinate language was formerly used. This situation is characterized by a proficiency continuum determined principally by age (but also by attitudes and other factors). Younger generations have greater proficiency in the dominant language and learn the obsolescing language imperfectly, if at all."

#### 4. Bilingual individuals: symptoms of L1 loss

##### 4.1. Functional and structural loss

Researchers describe the process of language loss in terms of functional reduction and/or simplification in the linguistic system. These universal quantitative and qualitative changes are interrelated; they show variation in their distribution according to the linguistic situation and generation as well as individually.

In the speech of the Detroit Hungarians the process of **functional loss** can be equated with the individual process of loss mentioned above when the use of L1 is reduced and at the same time substantial functional and stylistic simplification takes place. The process should be investigated on two levels:

- (1) **on the individual level:** The number of situations decrease gradually over time among the first generation. As I have demonstrated above, even in those situations in which the Hungarian language appears, it is not used exclusively.
- (2) **intergenerationally:** The second generation uses Hungarian much more rarely and only when situational constraints require it.

Reduction in function and extensive use of English results in changes in the structure of the ethnic language. We can call these changes, which are overwhelmingly the result of simplification, **structural language loss** (cf. Huls-de Mond 1992, 103). There are two sources for the attrition process (see Seliger-Vago 1991, 7): (1) **Externally induced changes** are those which are attributable to the direct influence of the dominant language (e.g. transfer, interference, convergence). My data indicate that the most common strategies are rule generalizations, semantic extension and syntactic calquing. (2) **Internally induced changes** are based on the principle that unmarked forms are better preserved than marked ones (see also Dressler 1991; Seliger-Vago 1991; Andersen 1982; Campbell-Muntzel 1992). The strategies that embody this principle include analogical leveling, overgeneralization, category switch, etc.

In the case of American Hungarians internally and externally induced processes influence the L1 of both immigrants and their American-born offspring. Nevertheless, it is apparent that English has caused the changes in

the language use of Old Americans where lexical changes are predominant, while at the same time grammatical modifications (internally induced) are most evident in their children.

Applying the proficiency continuum (Dorian 1981, 114–20) I would claim that first-generation speakers are Hungarian-dominant bilinguals, while their children are English-dominant, possibly L1 semi-speakers. Depending on the extent to which the acquisition of L1 was complete, American-born bilinguals can be divided into two groups: (1) those who were fluent speakers of L1 in childhood but gradually lost their competence, (2) those who did not ever fully acquire their parents' language in their youth, thus the starting point of their language loss is different ("lower") than that of the former group. Another problem is that incomplete acquisition and loss may lead to similar superficial phenomena.

The fundamental difference, however, between the first and the second generation is that the former group learned the L1 in a native Hungarian environment, while the latter one acquired it in an L2 immigrant setting. This means that the L1-input is completely different for the two groups of speakers (Gonzo–Saltarelli 1983).

It is also obvious from the previous sections that the second generation have never been exposed to the standard form of Hungarian. Their input, therefore, is their parents' dialect which, we must assume, is not identical to the corresponding dialect variant in Hungary for two reasons:

- (1) It has developed in isolation in a non-native environment, so those historical changes (particularly convergence towards the standard) which have taken place in the regional variants of Hungary, are absent.
- (2) Due to the dialectal composition of the Hungarian community in Delray, the dialects had a mutual influence on each other, which is identifiable in the speech of the second generation.

Last but not least, the parents' language loss produced an L1 variant (or variants) which differed to some degree from their initial L1 use. Gonzo and Saltarelli use the foregoing feature to place the language use of speakers born in an immigrant environment on a so-called emigrant language continuum.

#### **4.2. The emigrant language continuum**

Table 2 presents the change taking place in the emigrant language at both the individual and generational levels. The left-hand column shows several factors according to which the changes in an individual's language can be



Table 2  
The continuum of emigrant languages

	Stage			
	0 Standard	I Fading	II Pidgin	III Fragment
Generation	1	1	2	3
Linguistic setting	L1	L1 emigrant	L1 emigrant L2 emigrant	L2 emigrant
Lexicon (memory)	Full	Loss	Restrictive	Selective
Rules (process)	Full	Fading	Restrictive	Selective
Function (communicative)	Full	Reduced	Restrictive	Occasional
Monitoring (normative)	Strong	Weakened	Weak	Weakest
Interference	Minimal	Substantial	Considerable	Overwhelming
Evolution	Simplification Complicated	Simplification	Simplification Restructuring Replacement	Simplification Restructuring Replacement

Based on Gonzo-Saltarelli (1983, 182), Table 1

analyzed. The following four columns represent the main characteristics of the community's language use across generations.

The first and second (0, 1) stages characterize the Old Americans. Stage 0 depicts the immigrating generation whose speakers still possess the linguistic and communicative competence of a native Hungarian speaker. This corresponds historically to the transitional period in which speakers retain normative linguistic intuitions that control their language usage. The influence of language contact is not yet present.

It is impossible to determine when, during the initial coalescence of the immigrant community, the first-generation speakers cross over to the fading stage. My data and the attrition literature show that language loss never stops in the first generation. Weakening tendencies are evident at every linguistic level; the most pronounced, however, is the reduction of lexical competence leading to a significant loss of the L1 lexicon. Dorian (1983, 163) considers lexical reduction in dying languages to be a universal. Gonzo and Saltarelli, on the other hand, find it the most typical feature of the emigrant language continuum (Gonzo-Saltarelli 1983, 185).

### 4.3. Symptoms of L1 loss

Instead of aiming for a comprehensive analysis of the process in individuals and attempting to provide a complete taxonomy, in the next section I would like to present a few examples of symptoms of language attrition.<sup>5</sup>

In interviews with the Old Americans the average frequency of loanwords was around 8 per cent. There are several reasons for massive borrowing from English.<sup>6</sup> In Stage I speakers had to acquire lexical items referring to new cultural and technological artifacts with which they were unfamiliar (Weinreich 1953, 57; Clyne 1982, 25): e.g. *erkondisõn* (< air conditioner), *ejszbakszi* (< ice-box), *vilcsér* (< wheel-chair), *nõrszinghóm* (< nursing-home), *kokó/kók* (< coke). A large amount of loanwords have also their Hungarian "equivalents" in the bilinguals' lexicon but speakers often make a distinction between them when they use the English form referring to their American environment and, inversely, they find the Hungarian equivalent more appropriate in topics related to Hungary: e.g. *porcs* (< porch vs. *veranda*), *sztór/stór* (< store vs. *bolt*), *sztrít/strít* (< street vs. *utca*), *bucser* (< butcher vs. *hentes*), *bészment* (< basement vs. *pinca*), *ticser* (< teacher vs. *tanár*), *szkül* (< school vs. *iskola*), *ártbisop* (< archbishop vs. *érsek*) etc.<sup>7</sup> They also had to differentiate lexically similar items that already existed in the emigrant lexicon but with different meaning: e.g. *konvenció* (< convention 'assembly' vs. *konvenció*

<sup>5</sup> We can find a large number of deviations from standard Hungarian in the language usage of South Bend and McKeesport Hungarians in the works of Kontra (1990) and Fenyvesi (1994), respectively.

<sup>6</sup> The large scale borrowing of English elements into Hungarian utterances is a very common strategy of older people's everyday conversations. However, it is difficult to distinguish between (1) 'established' loanwords (Poplack 1980) that are part of the community's lexicon; (2) words that are used by most and so are in the process of becoming elements of the community's repertoire; and (3) nonce borrowings that are used occasionally to fill momentary gaps or to express special intents or social meaning during conversation.

In the distribution of grammatical categories I have found that, as one would expect, nouns were used the most, followed by verbs. Frozen expressions and adjectives were used with relatively lower frequency (cf. Poplack-Sankoff-Miller 1988, 63). Identifying borrowed verbs was problematic because they seemed to be the most integrated elements in Hungarian discourse. Accommodating to the rules of verb-adaptation into Hungarian inflectional morphology, speakers take an element from the closed-class of verb endings, the so-called adoptive suffixes *l* or *z*, and add it to the borrowed verb stem followed by tense and mood markers and personal endings, along with or without phonological integration. For example, *pick* - *pik(k)-ol*; *retire* - *ritájer-oz/ol*. The free-morpheme constraint in distinguishing single-word code-switches and borrowings, proposed by Poplack (1980) had not been supported by my corpus. For this reason I applied other strategies (Pfaff 1979; Myers-Scotton 1993) to identify borrowed items.

<sup>7</sup> With reference to the Turkish-Dutch contact in the Netherlands similar findings can be found in Boeschoeten-Verhoeven (1985, 354).

'custom, agreement'), *kompánia* (< company 'firm' vs. *kompánia* 'a group of people') (for other examples see Kontra 1981; 1990). Lexical gaps were also created by lexical loss resulting from forgetting or "reduction in accessibility" (cf. Olshtain-Barzilay 1991, 140).<sup>8</sup>

There is a high frequency of integrated L2 core vocabulary elements whose borrowing cannot be explained as lexical loss:<sup>9</sup> e.g. *madör* (< mother vs. *anya*), *bradör* (< brother vs. *fivér/báty*), *vájf* (< wife vs. *feleség*), *meridol* (< to get married vs. *házasodik*), *femili* (< family vs. *család*), *cseszt* (< chest vs. *mellkas*), *förszt* (< first vs. *első*), *szekend* (< second vs. *második* in the construction of *szekend vélemény* 'second opinion'), *pripérol* (< to prepare vs. *csinál, elkészít*) etc. Hungarian-dominant bilinguals use core borrowing as a strategy to express different social meanings and style shifts. In contrast, these loanwords are absent from the interviews with the English-dominant second-generation speakers, even if they are part of the bilingual lexicon, because they use code-switching for the same purposes (cf. Myers-Scotton 1993).

Analyzing the interviews of second-generation speakers, linguistic change is apparent on every linguistic level, affecting phonology, morphology, syntax, semantics, lexicon, and styles. Most of these features are absent from the usage of their parents. The vast majority of internally induced changes

<sup>8</sup> Vázsonyi's dictionary (Vázsonyi-Kontra 1995) is an excellent summary of the borrowed lexicon of Hungarians in the Calumet region. Comparing this corpus with findings on the language use of other Hungarians in North America, we can suggest that borrowing patterns of Old Americans show strong consistency. One reason might be that, regardless of settlement location, the typological differences of the languages in contact are by and large the same; similar linguistic constraints direct the interplay between the languages. The socio-historical settings and relative status of the Hungarian language in America do not vary greatly; because of this, the differences in the use of Hungarian are mostly quantitative, besides the dialect differences brought from Hungary. We cannot speak of distinct Hungarian American languages. However, taking into account the language ecological differences that influence the dynamics of language shift, we can say that there are indeed different Hungarian American language variants.

<sup>9</sup> The bilingualism literature rarely deals with this problem. In this literature one often finds the argument that bilinguals do not borrow core vocabulary elements (Gonzo-Saltarelli 1983, 185). Cf. for example Schmidt's (1991, 119) statement about lexical reduction in Dyrbal: "Some items appear more resistant to dropping than others, e.g. islands of lexemes referring to body parts, human classification, and well-known animates form zones of resistance." At the same time, Mougeon and Beniak's Canadian French study had results that counter this argument. Ontario French working-class speakers had less positive attitudes towards the French language and its maintenance than their upper-class counterparts. In parallel, the working-class bilinguals used significantly more core elements from English (Mougeon-Beniak 1991, 207). This finding is consistent with my own according to which although core borrowing is not a result of lexical attrition but it is a very important device to express social status and communicative strategies (see also Scotton-Okeju 1973; Scotton-Ury 1977; Romaine 1989, 64-5).

are reductions, while some of those which can be explained by multiple causation can be considered simplification compensating with elaboration elsewhere (see Dressler 1991, 108–9).

Many grammatical and syntactic rules have been partially lost by second-generation speakers. The inappropriate use of indefinite/definite conjugation is very common in their speech. In Hungarian personal endings on the verb indicate definiteness or indefiniteness according to whether the verb has or does not have an object or its object is indefinite. (For subcategories see Ben-cédy *et al.* 1982, 183.) In most of the cases indefinite conjugation was used where standard Hungarian would require the definite one.

- (1) (a) Akkor *megvettünk* az új kocsit, azt muszáj törleszteni.  
 perf.buy.past.3pl.indef  
 ‘Then we bought the new car, we have to pay that off’  
 S(tandard) H(ungarian): megvettük
- (b) Az olyan durva egy ember volt, nem *tudott*, hogy kellett foglalkozni  
 az asszonyokkal. know.past.3sg.indef  
 ‘That was such a rude man, he didn’t know how to deal with women’  
 SH: tudta
- (c) Kinyituk a fiókot, oszt *beteszünk* mindegyikbe az ötcenteket, tízcenteket.  
 put.1pl.indef  
 ‘We opened the drawer, and put the five-cent, ten-cent pieces in’  
 SH: betesszük
- (d) Hát ű *kérdezett* tőlem, hogy hol születtem.  
 ask.past.3sg.indef  
 ‘So he asked me where I was born’  
 SH: kérdezte
- (e) Erzsi meg *dugdostott* nekem a mikrofont.  
 upon.press.past.3sg.indef  
 ‘And Erzsi pressed the microphone upon me’  
 SH: dugdosta
- (f) *Nézek*, hogy ott áll, aztán mondom neki...  
 watch.1sg.indef  
 ‘I’m watching him standing there, then I tell him...’  
 SH: nézem

This phenomenon is a natural case of an internally induced change, called category leveling, when speakers “neutralize categorical distinctions by extending the domain of one category to another” (Seliger–Vago 1991, 11). The

loss of the definite/indefinite distinction and the overgeneralization of the unmarked feature is also supportive for the markedness proposal (Andersen 1982, Campbell–Muntzel 1992, Dressler 1991). Nevertheless, the process is not systematic in this stage:

- (2) (a) Nekem akar adni pénzet, hogy ne *beszéljem*.  
   speak.1sg.imp.def.  
       ‘He wants to give me money so that I won’t speak’  
       SH: beszéljek
- (b) Senki se *tudta* mit gondolni.  
   know.past.3sg.def.  
       ‘Nobody knew what to think’  
       SH: tudott

Beside their preposition-like meaning or functioning as a particle (cf. Fenyvesi 1994, 61) a large part of Hungarian preverbs are used to express perfectivity or duration. In English tenses and other kinds of lexical means are used to express these meanings. First-generation speakers seem to have maintained the rules for preverb-verb constructions which can also be supported by the fact that they attach the appropriate Hungarian verbal prefixes to the borrowed verb stems: e.g. *megszévol* (< save; SH: *megtakarít, megspórol*); *elmuffol* (< move out; SH: *elköltözik*), etc. On the other hand, partial breakdown of the standard Hungarian rules can be registered in the speech of the American-born bilinguals. In addition, their repertoire, compared with monolingual Hungarians’ or Hungarian-dominant bilinguals’, is not so varied. The most frequently used preverbs are *meg-*, *el-* and *ki-* which are the most productive and oldest elements of the Hungarian preverb system. Second-generation speakers overuse verbal prefixes on the one hand, and create innovative forms<sup>10</sup> on the other:

<sup>10</sup> Although, according to the attrition literature, structural loss often goes along with simplification, it is impossible to consider them equal. We can find counterexamples indicating that complex forms and innovations can also appear (in comparison with the forms of the initial stage) in the speech of younger people in transitional stages of the process. Language loss and innovation are not mutually exclusive, because less dominant speakers of the minority language are able to apply grammatical and communicative rules they know more productively according to cognitive, acquisitional factors as well as the interactional and symbolic significance they create for their languages (Gal 1992, 330; see also Dorian 1982, 56 f.; Dressler 1991, 100–1). This is also influenced by the lack or existence of purist language ideologies in their communities (Woolard 1992, 361).

- (3) (a) Nem gondolják, hogy mennyi pénzt fognak *bekapni* .  
in.get.inf  
‘They did not know how much money they would *in-get*’  
SH: kapni
- (b) Ilyen huncutságokat *el* próbált volna *csinálni*  
away make.inf  
‘They tried to *away*-pull these kinds of pranks’  
SH: csinálni

Convergence tendencies are also common in the second generation's L1. Substitution of synthetic forms for analytic ones may be a visible index of structural loss (see also Maher 1991, 68). Since Hungarian with many agglutinative characteristics may be considered as a language of the synthetic type, its intensive contact with an analytic language like English can strengthen tendencies in which those morphological and syntactic functions that formerly were expressed by suffixes have been gradually replaced with analytic or periphrastic constructions. The extent of this kind of substitution correlates with a gradual decrease in the productivity of word-formation devices. One of these phenomena is the high degree of Hungarian personal pronouns in the interviews which is characteristic for almost all Hungarian groups living in the United States (see also Kontra 1990, 82). In the following examples personal pronouns are redundant, because, according to the rules of Hungarian inflectional morphology, the verb endings can express this information by having an element from the closed class of personal endings.

- (4) (a) Nem akarok dicsekedni, most is mikor *én* bemegyek, *én* bujkálva megyek oda.  
‘I don't want to boast, but when I go in, I go secretly’  
SH: ...most is mikor bemegyek, bujkálva megyek oda
- (b) Mindég *ő* viccelt, még azon napon, amilyen meghalt, még akkor is.  
‘He was always joking even on the day he died, even then’  
SH: Mindig viccelt, még azon a napon is, amelyiken meghalt, még akkor is.

Another evident example of convergence is the substitution of the “potential” *-hat/het* with modal auxiliaries. However, category switch can be stimulated by both languages. On the one hand, although *-hat/het* is used more frequently for expressing different modalities, according to capability or possibility, depending on epistemic, dispositional or circumstantial features

(Kiefer 1985, 131), modal auxiliaries are also capable of expressing the same meanings. On the other hand, there may be the result of a strong English influence.

- (5) (a) Mikor én kicsi vótam, *ki lehetett menni nekünk* az utcára.  
 'When I was a child it was possible for us to go out to the street'  
 SH: Mikor (én) kicsi voltam, *kimehettünk* az utcára.
- (b) Mikor az van rajta ... nem *szabad* a gyerekeknek *beszélni*.  
 'When that [radio program] is on children are not allowed to speak'  
 SH: Mikor az van (rajta), a gyerekek nem *beszélhetnek*.
- (c) Én is néztem, *tudok menni* valahová.  
 'I also checked if I could go somewhere'  
 SH: Én is néztem, *elmehetek-e* valahová.
- (d) *Meg lehet mondani*, mit gondol róla.  
 'It is possible to tell what he thinks about him'  
 SH: *Megmondhatja*, mit gondol róla.

### 5. Concluding remarks

This article did not present all the concrete changes within the language shift in Detroit. Instead, the three-level approach used in this study is presented as a general procedure for investigating this social and linguistic process. It might be obvious from this overview that the Hungarian-Americans in question are in the final stage of language shift and the so-called emigrant language continuum. The question of how the minority language reorders itself in an immigrant contact situation in parallel with the acquisition of a new language and the gradual loss of the old during a transitional phase needs further investigations. Nevertheless, it would also be important to study whether certain phenomena (e.g. vowel shortening, analytic processes) are characteristic only for the Hungarian-American (or other minority) variants due to intensive contact or the attrition process, or whether some of these phenomena also appear, if sporadically, in standard Hungarian.

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## BOOK REVIEWS

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**Ilona Kassai (ed.): Kétnyelvűség és magyar nyelvhasználat. A 6. Élőnyelvi Konferencia előadásai** [Bilingualism and Hungarian language usage. Proceedings of the 6th Colloquial Language Conference]. MTA Nyelvtudományi Intézete, Budapest 1995. 318 pp.

The present volume contains the papers presented at the Sixth Conference on Colloquial Language held at Budapest from October 14th to 15th, 1993. These conferences have been organized annually since 1988<sup>1</sup> and have the goal of furthering research on the various forms of Hungarian colloquial language usage both directly through the papers submitted and indirectly by bringing together researchers from different countries interested in the same topic. I translate the Hungarian word 'élőnyelvi' with 'colloquial', as the more direct translation 'living language' means very little in English. Upon reading the papers it becomes readily apparent that it is indeed the colloquial language which is being examined, a language variant of overwhelming importance to every speaker which, however, is neglected to a large degree in linguistics, most studies dealing either with the standard, literary language or with the various dialects. The topic of the conference in 1993 was 'Bilingualism and Hungarian language usage' and it must be said that a topic of great current interest was chosen here which in the intervening two years has only gained in topicality. When dealing with bilingualism and its influence on the spoken Hungarian language we are at the same time dealing primarily with Hungarian as spoken in the countries surrounding Hungary proper, i.e. with the Hungarian minorities above all in Slovakia, the Ukraine, Rumania, and Yugoslavia. The members of these minorities are of necessity bilingual (in varying degrees) and are also threatened in varying degrees by assimilation, by the prospect of losing their native language and, at the same time, their national identity.<sup>2</sup>

The book consists of a foreword written by Ilona Kassai, the editor of this volume, followed by 28 papers. As Kassai points out, a limit of 15 minutes was set for the presentation

<sup>1</sup> As no information on the previous conferences is given in this volume, but would be of interest to its readers I would like to list them here. 1. 1988: Budapest, 2. 1989: Újvidék (Yugoslavia), 3. 1990: Budapest, 4. 1991: Kolozsvár (Rumania), 5. 1992: Nyitra (Slovakia), 6. 1993: Budapest, 7. 1994: Nagymegyer (Slovakia), 8. 1995: Ungvár (Ukraine). The proceedings of the first, second, third, fifth, and sixth conferences have been published, but are unfortunately difficult to obtain.

<sup>2</sup> It would give me great pleasure to be able to report that the political situation of the Hungarian minorities in these countries is excellent, satisfactory, or at the very least improving, but this is not the case now in 1995. Despite great hopes after the downfall of the oppressive Communist regimes Slovakia, Rumania, and Yugoslavia (Serbia) continue to regard their Hungarian-speaking minorities as alien elements in their national states, as second-class citizens who must be assimilated, who in spite of all international agreements cannot be accorded equal treatment and equal rights. It is no wonder that these countries have a long road ahead of them if they wish to join the community of modern, democratic states. Mečiar, Iliescu, Milošević and their associates are at present still leading their countries away from Western Europe.

of these papers, meaning that one must not expect the exhaustive treatment of any one topic. The authors were not able to go into great detail, and in most cases the papers leave us with a desire for more information on a particular topic. Instead of specifying particular themes to be treated the conference participants were given a free hand in choosing their subjects. Thus, a great many different topics and aspects of bilingualism are touched upon. This results in less cohesiveness as a whole, but more liveliness and spontaneity within the general framework of 'bilingualism and Hungarian language usage'. The papers can be divided into the following groups: 1. General aspects of bilingualism (6 papers), 2. Bilingualism and its effects in Slovakia (5 papers), 3. Bilingualism and its effects in the Ukraine (4 papers), 4. Bilingualism and its effects in Rumania (4 papers), 5. Bilingualism and its effects in Yugoslavia [Vajdaság] (5 papers), and, interestingly enough, 6. Bilingualism of linguistic minorities in Hungary (German minority—2 papers, Slovakian minority—1 paper, Rumanian minority—1 paper). The volume is concluded with a name and subject index.

In the following, I should like to comment on various papers contained in this book. Due to reasons of space it is not possible to deal with all of them, which by no means should be interpreted as a reflection on their quality or worth.

In an introductory study Juliet Langman gives a short summary of newer tendencies in the study of bilingualism. Her study does not examine aspects of Hungarian bilingualism, but sets the background for the remaining papers. Csilla Bartha examines aspects of language change and language loss in the case of emigrants (thus departing to some extent from the set topic of the conference). An interesting observation in this paper regards the linguistic competence of the second generation of emigrants. As pointed out here, their competence, although acquired from native speakers, never reaches the highest level since the linguistic competence of their parents has suffered through living in a foreign linguistic environment. In an interesting article Lajos Göncz writes on the various possibilities of combining first and second languages of instruction at school, depending on the desired goals. The choice of language used in instruction will have great consequences on the future linguistic competence of the pupils. Both Alexandr Jarovinskij and Ilona Kassai report on the linguistic behavior of bilingual children (Hungarian–Russian and Hungarian–English). These two papers offer insights in an anecdotal manner on how language functions. Finally, Miklós Kontra offers methodological observations on a study conducted by him into the intonational patterns of Hungarian emigrants. Of even greater interest will be the results of this study (to appear soon?).

Contributions to the linguistic situation regarding Hungarian–Slovak bilingualism were offered by Szabolcs Simon, Ildikó N. Császi, István Lanstyák, Lajos Cs. Nagy, and Anna Sándor. Lanstyák's study on Slovak–Hungarian teenagers' slang was of great interest as it also addresses the question as to whether Hungarian speakers in Slovakia are as fully competent as the Hungarians in Hungary or whether bilingualism leads to a reduction in their native-language performance. The report on given names in Nagyker would have offered more insights into bilingualism if the question had been more directly put as to the influence of Slovak on names chosen for children, both in the past and in the present.

István Csernicskó, Péter Lizanec, Lajos Balogh, Anikó Debrececi, and Katalin P. Csige write on Hungarian–Ukrainian/Russian bilingualism whereby Csernicskó's article offers an excellent historical summary of the linguistic situation in Sub-Carpathia. In Csige's article an interesting contrast is offered with two Hungarian translations of the same Russian text, one from the "Népszabadság", the other from the "Kárpáti Igaz Szó".

As regards Rumania, two papers were submitted on the Csángó minority and two on the "dominant" Székely Hungarian minority. Katalin Fodor's article summarizes well the linguistic situation of the Csángós, whereas Ádám T. Szabó's is of an interesting anecdotal nature. János Zsemlyei examines translation loans in Székely Hungarian and Ildikó Posgay addresses the intriguing question of exaggerated (?) purism in the Hungarian usage of Székely intellectuals.

Melánia Mikes, Ferenc Junger, György Papp, Edit Katona, Edit Andrić, and Ilona Rajsli all submitted papers reflecting questions of Hungarian–Serbian bilingualism. The importance of Hungarian-language school instruction for linguistic competence was demonstrated and various sorts of interference phenomena analyzed.

Finally, and quite interestingly, although not strictly belonging to the topic of bilingualism and Hungarian language usage, the volume contains four reports on linguistic minorities in Hungary (German: György Szépe, Claudia Zimmermann, Zsuzsanna Fagyal; Slovak: Anna Gyivicsán; Rumanian: Anna Borbély) touching on their present situation and their attitudes towards their mother tongue and Hungarian.

All in all, the quality of the papers in this volume is high and they offer valuable insights into the problems of bilingualism in the countries surrounding Hungary. This topic could and should be pursued further. The inclusion of a name and subject index was a good idea. In my opinion, it would also have been useful to add a short index with information on the authors as well as to arrange the articles thematically in accordance with the groups distinguished above.

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**Andrew Vázsonyi: Túl a Kecegárdán, Calumet-vidéki amerikai magyar szótár** [Beyond “Kecegárda”: An American Hungarian dictionary of the Calumet Region]. Edited and introduction by Miklós Kontra. (A magyarságtudatás könyvtára XV.) Teleki László Alapítvány, Budapest 1995. 242 pp.

As we learn on pp. 105–6, in the body of the dictionary, already forecast in the English versions of the title page and the introductory chapters, “Kecegárda” is one of the six versions of “Hungarianizing” the English name “Castle Garden”, one of the control stations set up in New York by the Immigration and Naturalization Service between the 1820s and 1890 to check people arriving in or departing from New York, the direct predecessor of the better known Ellis Island. I don’t know if there has ever been a systematic and extensive study of how foreign words colloquially used in a language are modified to “sound better” and fit the phonetic structure more appropriately. In this specific case, this is not merely the adoption of those words into a new dialect of Hungarian. There was no “standardization” to be expected, variants were always allowed. The main point was to pronounce these words more or less in a way that caused no articulatory problems to these people and sounded “familiar” within the system of their Hungarian. Actually, some of the speakers had a good mastery of English (p. 127).

Thus, this posthumous volume of A. Vázsonyi deals with a very ephemeral topic: a loosely organized dialect of Hungarian in America which was doomed to die with its first speakers. Therefore the compiler was lucky enough to find the last speakers, and the sociolinguist interested in this domain is lucky to have had a competent scholar to collect this corpus before it disappeared.

The book begins with a bilingual Preface and two somewhat similar, yet distinct Introductions (Hungarian 8–18 and English 19–24), all by the editor, M. Kontra. The body of the book fills pp. 27–125. This is followed by a “substantial study by Linda Dégh [Vázsonyi’s wife, now widow, RH] on the culture and language of the Calumet Hungarian-Americans and the theoretical and methodological foundation of the research”, pp. 126–155 (quotation from p. 7). This chapter is only in Hungarian. It is a subjective text, giving the text a “human face”. We learn more about Vázsonyi, the circumstances of the research, the difficulties, with names of the participants mentioned along with some information about them. Historical

background of the Hungarians in Calumet is next and their everyday life. A reference list closes this interesting chapter.

Dégh and Vázsonyi provide a short biography of the informants (156–180). Next, a vividly written interim report by Vázsonyi is reprinted (181–196, originally published in 1980): *A főburdos és a csodaszarvas* “The star boarder [the leader in the boarding house, in intimate relation with the landlady, p. 184] and the Miraculous Deer [originally a figure of Hungarian mythology, here a nickname for the cuckold]”. The chapter also contains excerpts of poetry written by the Calumet Hungarians.

The appendices contain texts with reference to the language (200–205), an index of the English words and their Hungarianized version (206–220), with a brief introduction both in Hungarian and English, and, finally, illustrations and pictures (221–242).

We have here a valuable volume, the cooperation of two highly qualified scholars. It will mainly benefit those who know Hungarian, it is the memorial to a group of people who had a hard life but finally managed to survive.

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**Zsigmond Zalabai (ed.):** *Mit ér a nyelvünk, ha magyar? A „táblaháború” és a „névháború” szlovákiai magyar sajtódokumentumaiból 1990–1994* [What is our language worth if it is Hungarian? A selection from the Hungarian press documents in Slovakia concerning the “place-name sign war” and “personal-name war”, 1990–1994]. Kalligram Könyvkiadó, Pozsony 1995. 352 pp.

This book is a collection of 252 reprints of newspaper articles and pieces of official correspondence, as well as the text of laws, law proposals and official reviews documenting the legal and civil rights tug-of-war that occurred in Slovakia in the early 1990s over the official use of Hungarian place-names and personal names in the southern part of the country, where Slovakia’s ethnic Hungarians live.

After a brief preface by the editor (pp. 5–8), 183 short newspaper articles and other documents relate the issues and course of events concerning the use of place-names (pp. 9–234), and 69 tell the story of personal name use (pp. 235–313). In the Appendix the texts of three laws of the Slovak Republic are published in the Slovak original and in Hungarian translation, together with four other law proposals and other statements put forward by political parties in Slovakia, as well as a statement by the European Council on the matter (pp. 317–344).

The intention behind the book, as spelled out by the editor in the preface, is to provide a documentary record about the Hungarian minority’s struggle for their rights in these two questions, and to serve as a source of inspiration for the community’s continuing effort for minority rights.

The issues of the “place-name war” concerned, on the one hand, the use of informative signs set up parallelly with the official, Slovak language road signs, marking the official limits of towns and villages with their traditional Hungarian names, and, on the other hand, the official restoration of the old, pre-communist names of towns and villages, a process which after the fall of communism in Czechoslovakia in 1989 touched on hundreds of place-names, Slovak and Hungarian alike. The restoration of names turned out to be a fairly problematic process if the former name of a place was a name of non-Slovak origin, and thus long legal battles followed motions to rehabilitate them. The question of personal names touched on the spelling and use of Hungarian names in their original, unaltered Hungarian forms in official city records, birth certificates and other documents, as well as the rendering of minority women’s last names without the Slovak feminine suffix *-ová*, the use of which was



compulsory until this time. The legal and civil rights struggle which unfolds in the book was fought in practically all venues and spheres of everyday life—in the Slovak Parliament, the various administrative and political offices, and in private encounters of individuals—and was carried out amidst considerable confusion about what existing laws and regulations exactly said and how they were to be understood and interpreted.

The vast majority of the newspaper articles in the volume originally appeared in *Új Szó* (New Word), the only daily newspaper of the Hungarian minority in Slovakia. They range from objective interviews with members of the parliament and other officials reporting about sessions of the Slovak Parliament where the laws concerning the use of place- and personal names were discussed, to fact-based relating of events as they happened “in the streets” when place-name signs were forcibly removed, and passionate accounts of incidents and subjective speculations about the ‘why’ and ‘what for’ of events. Such a wide range of approaches is quite understandable considering the core question of the battles was naming: the naming of places, the public preservation of historical, centuries old names of places which are themselves monuments to local and national history, and the naming of people, their private identification as individuals and public identification as members of their communities.

These two struggles ended successfully in 1994, with the granting of the language rights in the personal name usage and bilingual marking of names of most places where at least 20% of the population belongs to a minority, and with the legal establishment of democratic (referendum-based) avenues of place-name restoration. As we now know, however, in November, 1995, a new chapter opened in the struggle of minorities for their linguistic and human rights with the passing of a new and discriminative language law in Slovakia which codifies the spheres and domains of official Slovak language use without containing any legal guarantees for minority language use, restricting the latter in unprecedented ways and instituting heavy fines on violations. We can only hope that a few years from now a similar volume will herald the end of a “language law war” which at this point is just beginning.

The book is a worthwhile read but not easily accessible for somebody not already familiar with the issues and events since they unfold in strict temporal order and often without necessary commentary that could aid in contextualizing the readings. (Perhaps a short summary of the legal situation and the events in the preface would have solved the problem for the uninformed reader of the present as well as the reader of the future.) By the end, luckily, everything falls into place like the pieces of a mosaic, the collection provides a full, if somewhat disjointed, picture. This lack of orderliness, however, lends the book a kind of (probably unintended) postmodern touch, well reflecting the web-like nature of the somewhat chaotic situation it depicts.

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**When East Met West: Sociolinguistics in the former socialist bloc.** Ed. by Jeffrey Harlig and Csaba Pléh. (Contributions to the sociology of language, 68.) Mouton de Gruyter, Berlin–New York 1995. VII + 207 pp.

The collection of papers contained in *When East Met West* discusses the development of sociolinguistics as it has evolved over the past several decades in the former socialist countries of Central and Eastern Europe. The papers present the picture of a developing discipline and the social, political and economic forces which shape it. In this way, many of the issues raised in this volume are not necessarily specific to Eastern and Central Europe alone, but can be found in other contexts as well.

After an introduction by Harlig, which looks at the impact that socialism had on sociolinguistics in the eastern bloc in general, seven papers and an appendix discuss the development of sociolinguistics in the following countries: the former Soviet Union, Belarus, Bulgaria, the former Czechoslovakia, Hungary, Poland and Romania. The authors of the papers present in many cases a personal account of sociolinguistics from their own country, or the country which they have done work in. Harlig points out in the introduction that due to the lack of documentation concerning many of the larger contextual issues, the authors of the chapters consulted those people who were active in the establishment of the field, and also reflected on their own work and experience. In this way, the book is not necessarily a systematic review of sociolinguistic research done in these countries, but is a kind of "oral history" of sociolinguistics in the area.

Several common themes reverberate throughout all of the papers in the volume. Each author touches to some degree on the impact that the official government policies and ideology have had and continue to have on the development of the field. Though official socialist ideology influenced research in the area to varying degrees, governments in general have never been too keen to hear or promote research results which may go against the prevailing ideology. Thus, for example, as several authors mention, the study of the language of national minorities has been a controversial topic before and also after 1989: though there are now perhaps greater opportunities for research than before, the rise of nationalism in many areas of Eastern and Central Europe does not present a friendly climate for the sociolinguistic study of minorities. It is important to point out, though, that this book is not primarily about the effect that official political ideologies have had on the development of sociolinguistics. There are other factors consistently mentioned by the authors. One of these is the traditional emphasis on normative and prescriptive linguistics which has existed and continues to exist. According to many authors, this traditional view of language often held by members of the linguistic establishment has been just as serious an obstacle to the development of sociolinguistics as has any overt or covert governmental policy. A final theme which is found in all papers is the recognition that the severe economic hardships which are faced in the region today are a serious threat to the continuation of sociolinguistic research. While in the past there was funding available for large-scale research projects and for institutes or programs, the financial situation today is very grave. In the end, each author in *When East Met West* sees the current negative financial situation as one factor which may make irrelevant the expanded research possibilities which have emerged since 1989.

Through the general discussion of the development of sociolinguistics, the authors in *When East Met West* present some interesting glimpses into the kinds of sociolinguistic research that has been carried out to date in these countries. Allen Grimshaw discusses the development of large-scale (and highly politically charged) research into bilingualism done in the former Soviet Union. In the chapter on Belarus, Curt Woolhiser presents a rare look at the issues of language contact, bilingualism and language planning which are faced there. Concerning Bulgaria, Lydia Dachkova presents an outline of research trends there, with special emphasis on methodological issues, particularly the development of quantitative methods. In the chapter on the former Czechoslovakia, Louise Hammer discusses, among other things, the relationship between the Prague Linguistic Circle and the development of sociolinguistics. Csaba Pléh discusses sociolinguistic research on education and social class in the 1970s in Hungary, inspired by the studies of Basil Bernstein. Also in Hungary, in order to "reconstruct" the intellectual and social environment of the late 1980s, Miklós Kontra discusses the development of the Budapest Sociolinguistic Survey, which was carried out at that time. In the chapter on Poland, Karol Janicki looks at the relatively long history of sociolinguistic research in that country—a sociolinguistic journal having been established in the mid 1970s. Finally, in an appendix to the book, Anna Borbély briefly outlines the kinds of sociolinguistic research that has been carried out in Romania. Some chapters are more developed than others in the book, though together they present a good taste of the kind

of research that has been done in Eastern and Central Europe. Hungarian sociolinguistics is particularly well represented.

In the end, *When East Met West* presents a valuable look into the development of sociolinguistics in the former socialist bloc. Much of the information presented in the book has not been available to a more general audience before, or, in many cases, has not been available at all. This book will be of interest to those specifically interested in the state of sociolinguistics in Eastern and Central Europe, as well as to those who are interested in the history of linguistics, or intellectual history in general.

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## RESPONSE TO SIPTÁR'S REVIEW

MAGNUS OLSSON

The main reason for me to go through the time-consuming task of making a response to this review (Siptár 1994b) of my dissertation (Olsson 1992) is simply that the prospective reader may get the wrong picture of basic facts about the book. There is a need for some justification. At the same time, I will be able to give corrections to the book and also some information on my work apart from the dissertation.

Siptár writes (p. 121) that "[Olsson's] notation incorporates much of the insight that underlies current autosegmental formalisms". It would be more appropriate to talk about nonsegmental insights, as both Firthian phonology, Griffen's (1985) dynamic phonology and my own investigations have been instrumental in the development of the formalism. Later on (p. 124), Siptár writes that "The second chapter [...] is where Olsson's notational innovations are at their best" and then quotes a number of rules that "are all superior (simpler, more revealing) than the corresponding rules in Vago (1980), even if most of the formal simplicity is due to the undercurrent of autosegmental insights incorporated in Olsson's formalism". The serious point here is that the quote might give the impression that the importance of the rules is due largely to this alleged single influence. But the formalism does not in any of the cases give a key to the improvements. One may compare with Siptár's (1984) review of Vago (1980) where it is stated (p. 144) that the "faults [...] are mainly inherent in the framework: classical [...] generative phonology, whereas most of its merits are Vago's own"—with far greater accuracy it can be said that my work goes beyond the self-evident solutions provided by mainstream phonology of the day. As for Glide voicing assimilation, the real improvement is that two rules may be collapsed. Vago had on the one hand *j*-voicing assimilation, where word-final *j* is devoiced after a voiceless segment, and on the other hand *h*-voicing assimilation, where *h* is voiced between two voiced segments. It occurred to me that the two rules are collapsible, as to me pause implies [-voice]. This had nothing to do with autosegmentalism, however, but derived exclusively from my own thinking. Glide voicing assimilation can be found already as rule (5) in Olsson (1989), then clad in traditional SPE-outfit. The major part of the simplification that lies behind Liquid assimilation, including a collapse of two rules, is likewise visible already in SPE terms (Olsson 1987). Comparing my formalism to the autosegmental notation, Siptár expresses that "it lacks the formal rigour and often the elegance of the latter" and finds in it "a rather eclectic and virtually unconstrained system". Such a criticism is hardly surprising, when it comes to a new notation which has hardly been put to test. At first, the rule system in generative syntax was for instance quite unconstrained. Refinement usually comes later. And I do not have a staff of students at hand to find examples from languages all over the world. What I was looking for when making the notation was further something that would make the rules more fruitful without constraining my thinking—a system in which I personally could be creative. In Olsson (1992, 8), I state that a "certain model has, however, surfaced—but [...] I still regard the dealing with problems (often not perceived before) as the most interesting thing in this work."—and this is also my present view. Finally, Siptár (1994a) refers to and makes use of some of my solutions and it is evident that his reasons for doing so are unconnected to formalistic issues.

In Siptár's (1994b) point (iv) on p. 122 there is a criticism of my alternatives to Vago's adjustment rules as being "extraphonological". This is a too harsh criticism, in my view. Anyhow, I have afterwards made a third alternative, presented in Olsson (1994). This latter solution is based on underspecification theory and completely escapes the criticism levelled at my other solutions, as the theory behind it is generally acknowledged in the phonology of today.

The fact that I take into account the mid front unrounded  $\bar{e}$  is questioned by Siptár on p. 123. It supposedly "complicates the discussion without any gain in explanatory power". Of course, the vowel is not part of the system in e.g. Budapest. However, it is evident that it forms part of the short mid vowel series, a fact which is interesting as regards vowel harmony. In the seven-vowel dialects, the rounded mid vowels form a series with low  $e$ —which must be seen as a complication. Also, the number of disharmonic roots is smaller in the eight-vowel dialects, because  $\bar{e}$  is a neutral vowel unlike  $e$ .

As to phonotactics, Siptár (p. 124) is right in assuming that by 'limit' I mean a consonant that is next to a syllable boundary. The criticism of the rule Limit sonorant sequence specification—apparently for its alleged unapt titling—does not hold. The rule says that when a sonorant that is a limit is part of a consonant sequence, it is final and preceded by a sonorant. It is thus a rule specifying a sequence where a sonorant is the limit and not a specification of a sonorant sequence which is a limit. So, it is simply a question of scope—an ambiguity (and no more) has arisen, but this is resolved by logical thinking. Stating the rule as the cumbersome "Specification of a sequence where a sonorant is the limit" would mean a too big reverence for the system of giving names to the rules.

There is a simplification of one of the rules that should be pointed out. The change concerns Syllable-final syncope (p. 173), where version (i) should be replaced with version (ii).

(i)

- syll +cont - lab - son: <+strid>a	] [	+syll - low + ↓ ∅	] [	t <t> +	b
---	-----	-------------------------------	-----	---------	---

Condition: a|b.

(ii)

- syll - lab [<- son>a:] +cont	] [	+syll - low + ↓ ∅	] [	t <t> +	b
---	-----	-------------------------------	-----	---------	---

Condition: a→-b.

The statement in words should therefore be restated as follows.

(A mid epenthetic vowel that precedes the final past tense suffix  $tt$  or the accusative suffix  $t$  is syncopeated after an illabial consonant which is continuous if not a sonorant. If the preceding consonant is an obstruent, the past tense suffix does not follow.)

A number of misprints are reported by Siptár; these may be explained as more or less a direct consequence of the way the system works. A certain date is agreed upon when the disputation is going to take place and the dead-line for the thesis is set to a time shortly before that. There might not be enough time for scrutinizing the manuscript, especially as money is often involved. Often competent reviewers are furthermore not easy to find to a great extent, when a rather exotic subject is at hand (this includes Hungarian grammar, in Sweden). This is not meant as an excuse but as an explanation.

Actually, Siptár does not mention the major improvement in my general (presuffixal) epenthesis rule (5.31)—the fact that I manage to state the quality of the vowel as a consequence of the word-class. Meszoly (1983) complains about the multitude of Vago's (1975)

rules—for instance, that there are seven rules of vowel epenthesis. In Vago (1980) the number of such rules is reduced to six, whereof four with the epenthetic vowel in directly presuffixal position. Epenthesis after adjectives is not treated in the latter work either—unlike in my book.

It should finally be emphasized that Olsson (1992) (including the papers that are its direct predecessors) does not cover what I have written on Hungarian phonology and morphology. In Olsson (1989), the standard dialect is compared to various other dialects (in the traditional geographical sense). The rules that together describe the sound inventory are presented in Olsson (1993). In this work, there is furthermore a study of fast-speech processes and marginal phonemes. As Siptár (1991) states, these two phenomena seem to be related. They may be described in the same manner—using a normed vowel system, where the vowel qualities of standard Hungarian are unspecified for length and so may be realized both long and short. Olsson (1994) has already been referred to.

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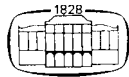
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- (1) (a) A sólymaid            elszálltak  
         the falcon-gen-pl-2sg away-flew-3pl  
         'Your falcons have flown away.'

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