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Where and How to State Some Generalisations in Morphology

... How long ago was it? 31 or 32 years? My memories are blurred. Where did they go, these memories? And where does the hole of a bagel go when the bagel has been eaten? But no, this is not quite the same. The memories are gone - but they have left a deep warmth in my heart; it is this warmth and pleasure of the meeting that I remember now. After all, what does it matter - whether it was 32, or 31, or maybe only 30 years back? I clearly see a delapidated log cabin somewhere in the woods, not far from Moscow, where we (a few then-still-young researchers from the Institute of Linguistics of the Academy of Sciences of the USSR) came to ski one Sunday morning. And a friend of ours entered and showed someone new into the cabin:

- Please meet my friend Ľubomír Ďurovič, from Czechoslovakia!

Well, Ľubo was also young then; most of all, I remember his charming, warm, open smile - a little ironic, or so I thought, his friendliness and calm. And as a completely unnecessary detail, his ski-mask, of a light beige color, rolled up, with a protruding visor. And, of course, his tufty eyebrows - slightly raised, as if by a constant query, reminiscent of two circumflex signs. However, I cannot remember a word of what he said or was told. If only I had known that many years later, seated at my computer, I would be writing a paper for Ľubo's *Festschrift!*

There have been other meetings as well, but in quite different settings and in different cities. For instance, here is Ľubo, waving to me, as I step down from a Danish ferry onto the Swedish shore (1978?). A Slovak and a Russian, two colleagues and friends who had lost their countries, meeting in Sweden; it seems to be a symbol, but the symbol of what? ... Here we are driving in Southern Sweden, on a look-out for old Gothic churches. And once again, we sit down together in green and quiet Lund. And then I write letter after letter after letter to Ľ. Ďurovič, the editor of *Russian Linguistics*. And... But let me stop here and turn to more serious and solid things - to linguistic morphology, where Professor Ďurovič is such a renowned specialist. May the following remarks be my modest birthday gift to him.

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1. The Problem Stated. The problem that I would like to discuss here is a well-known one. It is the PROBLEM OF STATING GENERALIZATIONS in a formalized linguistic description. I proceed from two theses, one very general, the other more specific:

1. ALL general relations (≅ regularities) observed in a language $\mathcal{L}$ should be stated explicitly in a linguistic description of $\mathcal{L}$.

2. The morphology of $\mathcal{L}$ is supposed to be described in terms of FORMAL MODELS OF THE MEANING-TEXT TYPE. I will presume, on the part of the reader, a sufficient knowledge of such models (for Meaning-Text models in general, see, e.g., Mel'čuk 1988, 43-91; morphological Meaning-Text type models are presented in Mel'čuk 1967, 1968, 1973, 1976, 162-257, and 1990; for the main concepts, see Mel'čuk 1982). Therefore, I restrict myself to a minimum of explanations. Two main postulates should be borne in mind, though:

1. A Meaning-Text type morphological model is a set of rules that ESTABLISH CORRESPONDENCES between two formal representations of a wordform, namely between a Deep-Morphological (or categorial) Representation and a Deep-Phonological (or phonemic) Representation:

$$\{\text{DMorphR}\} \Longleftrightarrow \{\text{DPhonR}\}.$$

A DMorphR is written basically in terms of **grammemes** and **quasi-grammemes** (= elementary inflectional meanings).

2. This correspondence is established using an intermediate representation, namely Surface-Morphological (or morphemic) Representation, so that the whole picture appears as follows:

$$\{\text{DMorphR}\} \Longleftrightarrow \{\text{SMorphR}\} \Longleftrightarrow \{\text{DPhonR}\}.$$

A SMorphR is written in terms of **morphemes**, a morpheme being a set of synonymous morphs, which are (roughly) in complementary distribution within a wordform.

2. Examples of Systematic Identities in Language. As has been pointed out many times, languages show some important systematic identities among their units. As typical examples of the phenomenon I have in mind, let me quote the following three:

• In Russian, the form of the accusative case of masculine and neuter nouns, as well as of feminine nouns in the plural, is always identical with either the form of the nominative (for inanimate nouns) or with that of the genitive (for animate nouns):

(1)	DED 'grandfather' [masc, anim]		LËD 'ice' [masc, inanim]	
	sg	pl	sg	pl
nominative	*ded*	*dedy*	***lëd***	***l'dy***
genitive	***deda***	***dedov***	*l'da*	*l'dov*
accusative	***deda***	***dedov***	***lëd***	***l'dy***

In all Slavic languages which possess declension the picture is almost the same: the accusative is identical either to the nominative or the genitive as a function of slightly different morphological factors.

In Russian itself, we find another very similar situation: the partitive (or the second genitive, as it is often called) is always identical to the dative; e.g., *nemnogo* ***supu*** [part] 'a little soup' ~ ***k supu*** [dat] 'to the soup' or *Daj mne* ***čaju*** [part]! 'Give me some tea!' ~ ***k čaju*** [dat] 'to the tea', etc. This is what Zaliznjak (1973, 69-74) has dubbed a "non-autonomous case" (see also Mel'čuk 1986, 66ff.) - a case such that all of its markers coincide with the markers of another case which can be formed from the same stem.

• In Latin, the active future participle in -**ūr**(-*us*) is built from the form of the supine (= one of the four basic grammatical forms traditionally cited for each verb in the dictionary; its meaning is ≅ 'in order to X'). That is, the suffix -**ūr** ∈ {ACT. FUT. PART} is added to the stem of the supine FOLLOWING the supine's own suffix -t, which becomes empty in this context. If there are any (mor)phonological modifications in the supine form, they are most faithfully retained in the future participle. Thus we have:

(2)	ORNARE 'adorn'	MORDERE 'bite'	VINCERE 'win a victory'
infinitive	*ornā+(re)*	*mord+(ere)*	*vinc+(ere)*
supine	*ornā+***t***+(um)*	*mor+***s***+(um)*	*vīc+***t***+(um)*
active future participle	*ornā+***t+ūr***+(us)*	*mor+***s+ūr***+(us)*	*vīc+***t+ūr***(us)*

P. Matthews (1972, 86), who analyzed this formation, aptly called it "parasitic": the future participle parasitizes, so to speak, the supine.[1]

A basically similar phenomenon is widespread in the nominal case formation in Daghestanian languages, where we find a large variety of what are called **secondary** or even **tertiary** cases (Mel'čuk 1986, 63): the suffix of case $\mathbf{c_1}$ is added to an already complete form of another case, $\mathbf{c_2}$, in this way making the suffix of $\mathbf{c_1}$ empty. For instance, in Dargwa we find the following:

(3) ŽUZ 'book' [singular]

	primary cases	secondary cases (built on the ergative)	tertiary cases (built on the allative)
nominative	*žuz+***∅**	———	———
ergative	*žuz+***li**	———	———
dative	———	*žuz+***li+s**	———
allative	———	*žuz+***li+či**	———
comitative	———	———	*žuz+***li+či+l**
discussive	———	———	*žuz+***li+či+la**

All secondary and tertiary cases are also parasitic formations in the sense of Matthews 1972.

The essence of the phenomenon in question here is what we might call ***replacive signifieds***. The signified of the active future participle suffix -**ūr**, instead of being simply added to the signified of the stem to which the suffix is attached, REPLACES part of this signified:

'SUPINE' ⇒ 'ACT. FUT. PART'

The same happens with the signified of a secondary (or tertiary, for that matter) case: it replaces the signified of the primary case.

• In the French conjugation, the radical morph used to build the imperfect subjunctive form is always identical to the preterite indicative radical morph, be the latter regular (*excuser*: /ekskyza-/ ~ /ekskyza(s)-/, irregular (*devoir*: /dy-/ ~ /dy(s)-/ or completely suppletive (*être*: /fy-/ ~ /fy(s)-/; defective verbs, such as *extraire*, which have no preterite radical morph also have no imperfect subjunctive radical morph (Morin 1990). In the same vein, the radical morph of the French conditional is always identical to that of the future indicative.

To sum up: We have seen three major types of important linguistic identities:

1) A form expressing a grammatical meaning, or a grammeme, IS IDENTICAL to another form expressing a different grammeme. This is HOMONYMY or POLYSEMY of grammatical forms.

2) A form expressing a grammeme INCLUDES another form that, generally speaking, expresses a different grammeme but does not mean anything at all within the form in question. This is a PARASITIC FORMATION (in the sense of Matthews 1972), or a case of REPLACIVE MEANING (the grammeme of the including form replaces the grammeme of the form included, so to speak, emptying the latter).

3) A form expressing a grammeme INCLUDES the same radical morph as another form expressing a different grammeme. This is RADICAL-SHARING by grammatical forms.

3. **Describing Systematic Identities**. As soon as such identities are (more or less) systematic in a language, they must be stated in its description. The question is only how and/or where.

As it turns out, the three types of systematic identities mentioned, i.e., specific cases of grammatical homonymy, of parasitic formation or of radical-sharing, have to be accounted for in different ways and in different divisions of a full-fledged linguistic description.

- **Type 1**. A systematic identity of expression for different grammemes cannot be explicitly stated WITHIN a morphological model of the type considered, although such an identity is necessarily shown in the model. Thus in a model of the Russian declension we must have the following

morphemes-to-morphs, or allomorphy, rules (for masculine nouns of the 2nd declension):

$$\begin{array}{ll} \{\text{SG.NOM}\} & \Leftrightarrow \text{-}\emptyset \\ \{\text{SG.GEN}\} & \Leftrightarrow \text{-a} \\ \{\text{SG.ACC}\} & \Leftrightarrow \text{-}\emptyset \mid \text{with an inanimate noun} \\ & \Leftrightarrow \text{-a} \mid \text{with an animate noun} \end{array}$$

The identity of the exponent of the accusative and either that of the nominative or that of the genitive is immediately seen here; but in order to STATE it, i.e. to write an explicit equality, we must transgress the borders of the model and switch to what may be called a META-MODEL.[2]

Generally speaking, we propose to distinguish in a general description of a language, in this specific case, Russian, two major sections:

- on the one hand, a **model** of Russian, which states facts about the language;

- on the other hand, a **meta-model** of Russian, which states facts about the model. It is in this meta-model that we put statements like this one:

> In Russian, the form of the accusative of nouns (of such and such type) is identical in inanimate nouns to the form of the nominative, and in animate nouns, to that of the genitive.

The failure to distinguish carefully between linguistic models and meta-models, while trying to squeeze all relevant information into the model itself, can create (and actually has created) various theoretical difficulties. (Cf., in this connection, interesting remarks in Nichols 1979, 265-266.)

Type 2. A systematic inclusion by one grammatical form F_1 of another grammatical form F_2 is stated in the GRAMMEMES-TO-MORPHEMES RULES of the model, i.e. within the model as such. Namely, the grammemes of F_1 entail not only the morpheme of F_1 but also the morpheme of F_2, which in this way is automatically emptied of its meaning.[3] Thus:

(4) For the Latin active future participle, the grammemes-to-morphemes rule looks as follows:

act, fut, participle $\Longleftrightarrow$ **{SUPINE}**, {ACT. FUT. PART}

(5) For the Dargwa dative, the grammemes-to-morphemes rule looks as follows:

dat $\Longleftrightarrow$ **{ERG}**, {DAT}

The emptied morpheme, which the "actual" formation parasitizes, is printed in boldface.[4]

Let me emphasize that the use of emptied morphemes in parasitic formations is parallel to the use of lexemes in idioms, where the former lose their original meaning, i.e., become emptied. For instance, the lexeme BUCKET in *to kick the bucket* $\cong$ 'to die' does not preserve its "inherent" meaning. Thus parasitic formations can be conceived of as a kind of morphological phrasemes.

-**Type 3**. A systematic inclusion by one grammatical form F_1 of the radical morph of another grammatical form F_2 is, once again, only shown in the morphemes-to-morphs rules of the model, but has to be explicitly stated in the META-MODEL. Namely, the radical morpheme of the lexeme in question includes a morph which is marked - in its syntactics - as serving both for F_1 and F_2. Thus:

(6) For French verb radicals, the morphemes-to-morphs rules look as follows:

{DEV(-OIR)}	$\Longleftrightarrow$	/dwa/	ind. pres. sg
	$\Longleftrightarrow$	/dəv/	ind. pres. 1-2 pl, ou ind. imperf, ou ind. fut, ou subj. pres. 1-2 pl, ou cond, ou inf, ou pres. part
	$\Longleftrightarrow$	/dwav/	ind. pres. 3 pl ou subj. pres. sg /3 pl
	$\Longleftrightarrow$	/dy/	ind. pret, ou subj. imperf, ou past part

However, it is not and cannot be indicated in these rules that, e.g., the use of the same radical morph is:

- exceptionlessly systematic for the preterite indicative and imperfect subjunctive, as well as for the future indicative and the conditional;

- fairly systematic for the 3rd person plural present indicative and present subjunctive (*ils dis+ent ~ que je dis+e, ... , ils mett+ent ~ que je mett+e , ... ,* etc; but *ils peuv+ent ~ que je puiss+e , ils doiv+ent ~ que nous dev+ions*, etc.);

- non-systematic (= characteristic of some verbs only) for the imperfect indicative and the future indicative (e.g., *ils dev+aient ~ ils dev+ront;* but *ils dis+aient ~ ils di+ront , ... , ils pouv+aient ~ ils pour+ront*, etc.).

Thus, to the problem raised in Morin 1990 ("How to indicate such facts?"), I give the following answer:

> A statement about the systematic use of the same radical morph for two different grammatical forms must be put into the meta-model.

I do not see any way of including such a statement directly in the rules of a morphological model (of the Meaning-Text type).

4. Closing Remarks. What is, then, the main lesson to be drawn from our cursory considerations? In my opinion, it is the necessity of strictly distinguishing, in a linguistic description of $\mathcal{L}$, a MODEL of $\mathcal{L}$ as opposed to a META-MODEL of $\mathcal{L}$. Only a meta-model is able to accomodate, in a natural way, explicit generalizations concerning the homonymy/polysemy of grammatical forms and the systematic use of the same radical morphs for different grammatical forms. (As for parasitic formations, these, as we have seen, are naturally described by the model itself.)

Notice as well that it is the morphological meta-model where should go, first, all REDUNDANCY RULES, which state correlations between different features in the rules of the model (of the type of "All or most of human nouns in $\mathcal{L}$ have - or tend to have - such and such case forms", etc.); second, all DATA ABOUT THE PHRASEOLOGIZED STRUCTURE OF LINGUISTIC$_1$ UNITS appearing in the model (of the type of "All or most of lexicalized agentive nouns in $\mathcal{L}$ have - or tend to have - such and such submorphemic structure", etc.); and third, all EXPLANATIONS AND JUSTIFICATIONS we choose to provide for the rules of the model. Such

justifications can be (and very often are) linguistically more interesting than the rules themselves; this fact emphasizes once more the outstanding role the meta-models have to play in linguistic descriptions.

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Notes

1 In fact, Matthews (1972) describes the Latin active future participle as built on the form of the passive past participle, with which description I disagree. My two main reasons are as follows:

- Semantically, the ACTIVE future participle is much closer to the active supine, which denotes intention or goal to be attained in the future, than to the PASSIVE past participle.

- Formally, there is indirect evidence of a closer link of the future participle to the supine than to the passive past participle. In most cases, the stem of the supine and that of the passive past participle are identical. But, e.g., for the verb MORI 'die' the past participle *mortuus* is irregular, and the active future participle *morītūrus* is built not from it (it is not **mortuūrus*) but from the (unfortunately unattested) perfectly regular supine **morit+um*. There are more verbs like this one:

Infinitive	Past Participle	Supine	Future Participle
nāscī	*nātus*	**nāscitu*	*nāscitūrus*
orīrī	*ortus*	**orītu*	*orītūrus*
fruī	*fructus*	**fruitu*	*fruitūrus*
juvāre	*jūtus*	*jūtu /juvātu*	*juvātūrus*
stāre	*stătus*	*stătu /stātu*	*stātūrus*

I do not know of even one case where the future participle would be built on a past participle different from the attested supine. (For the Latin data, I am grateful to E. Tiffou.)

It is obvious, however, that these remarks affect in no way the theoretical essence of the phenomenon presented by Matthews: parasitic formations.

2 Interestingly enough, The Meaning-Text framework as applied in morphology, does not allow for what A. Zwicky (1985a, b) calles *rules of referral*, i.e., rules which "stipulate that certain combinations of features [≅ our grammemes - I.M.] have the same realization as certain others" (1985a, 372). Strictly WITHIN a Meaning-Text model of Russian, we cannot write a rule which would "refer" the 'accusative' grammeme (or, for that matter, the cluster 'singular, accusative') to the 'genitive' grammeme or to the {SG.GEN} morpheme: something like

*'accusative' $\Longleftrightarrow$ 'genitive'
or
*'singular, accusative' $\Longleftrightarrow$ {SG.GEN}

does not make any sense at all. Each rule of this level (in a Meaning-Text model) has to specify, for a given grammeme, the corresponding **morph** - an elementary segmental sign expressing this grammeme (maybe via the corresponding morpheme). We can, of course, and we even must, write for Russian something like the following:

‖ The exponents of 'accusative' are identical to the exponents of 'genitive';

but such a Zwicky-type "rule of referral" should be placed in the META-model of Russian, see immediately below.

3 A morph **m** - or *par abus de langage*, the corresponding morpheme - is said to be "automatically emptied of its meaning" if and only if, in the constructed wordform, **m** appears not because its signified has been chosen in accordance with the Deep-Morphological Representation of this wordform, but rather because a morphological wellformedness rule prescribes the appearance of **m** quite independently of its signified.

[4] This type of rule was already considered by Matthews, who saw the necessity of having "two sorts of morphemic representations: a representation for syntactic purposes [of the form *lātūrus* - I.M.]:

FER- + Future Participle

whose elements are both syntactically and semantically compatible, and a representation for morphological purposes:

FER- + Past Participle + Future Participle

in which an INTRUSIVE (and strictly incompatible) element Past Participle is inserted between the root and the 'true' participial morpheme" (Matthews 1972, 84). Except for terminology, I fully agree with Matthews' description. (For me, the first representation is not morphemic: it is categorial, or grammemic, - our DMorphR; the second one is morphemic - SMorphR.) The same way out of the problem had been used even before, in particular, in Chafe 1970, 41.

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