

## **Using the dual model in teaching Hungarian as a second language**

### **1. Introduction**

Grammar is a central issue in teaching Hungarian as a second language as the rich morphology of Hungarian places a substantial burden on students setting out to learn the language. The question comes down to deciding whether practicing (that is the frequency of exercises) or sheer memorization (that is adding items directly into the mental lexicon) is what brings success in language learning. The answer is somewhere in-between: different elements must be approached the way that is most suitable for them.

In his theory of „words and rules“ Pinker<sup>1</sup> discusses various grammatical items, more specifically regular and irregular word forms, and proposes a model which seems to solve the above-mentioned problem. The model holds that regular and irregular linguistic forms are processed by two different systems. One is the lexicon which stores words with their associated meaning in a connectionist network, and the other one is grammar, that is a system of rules, which carries out operations with the items of the lexicon. According to this theory, regular forms are created by grammatical rules, while irregular forms are stored directly in the lexicon. This dual model may be construed as a memory system in which rule-based organization works as a kind of procedural memory<sup>2</sup>.

The dual model attaches considerable importance to research on child language development as the order of acquisition (i.e. what

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<sup>1</sup> Pinker 1998.

<sup>2</sup> Gósy 2005.

word endings occur first and what mechanism controls the whole process) is a fundamental question in morphology.

The present study describes a system showing how to teach plural noun forms in Hungarian as a second language classes. The system combines the findings of child language research, the Hungarian language-specific theory of the dual model, and the morphological characteristics of Hungarian.

The next part of the study outlines the relevant theoretical background: language development stages of Hungarian children along the lines of relevant research findings; models for handling morphology; the dual model and its relevance to the Hungarian language; and finally the morphological characteristics and stem classes of Hungarian.

The third part elaborates on more practical concerns through the example of teaching plural noun forms. The unit starts with the traditions of teaching Hungarian as a second language, followed by the description of the teaching system proposed in this study. Finally, the study discusses the teaching process and its expected results. The conclusion reflects on how the method could be used in other areas of teaching Hungarian as a second language.

## **2. Rules in child language**

In their classic work on child language research, Stern and his wife called attention to the fact that the main evidence of children's language creating efforts during language acquisition is that they make mistakes. More specifically, they say word forms which they could have never heard from adults so these ill-formed words reflect their own language creating efforts. Such mistakes were classified into two categories. Certain mistakes, such as creative word formations, change the system. Others lacks innovation, they only show that the child has not fully acquired the generalisation rules of the adult system<sup>3</sup>.

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<sup>3</sup> Pléh 1986, 134.

In addition to proving that language acquisition is a cascaded process, the mistakes, according to the currently accepted views, also support the idea that children acquire a system. The most sensitive area of the process is morphology where children have to consider both content and formal word classes at the same time. Researchers examining linguistic mistakes made by children found two major principles. The first says that children learn common forms as independent lexical items, so initially they use common irregular word forms correctly. This stage is followed by overgeneralization when children apply the rules deduced from regular forms to irregular forms, even in the case of common words. Correct forms stabilize only later, in the age of 5–8 years. The second principle states that differently generalized rules are acquired in a typical order. The first rules children use correctly are the most general ones, which are followed by more specific ones<sup>4</sup>.

The particularly rich morphology of Hungarian nouns is the result of variation in the stem structure. MacWhinney<sup>5</sup> developed a detailed hierarchical model for rule acquisition in the Hungarian language. This states that first of all children create a proto-rule. This is followed by the development of a statistically comprehensive partial rule. The process of acquisition corresponds to the generality of the rules, so those rules stabilize first which are valid for multiple items<sup>6</sup>. MacWhinney proved that the order of acquisition clearly indicates the phonological difficulty of stems. In broad terms, the order is the following: initially children just add the suffix -t to the end of the noun stem. This is followed by the usage of linking vowels, then the rule of vowel lengthening and shortening, and ultimately the most difficult vowel-omitting and -v stems<sup>7</sup>.

Based on the findings of developmental screening tests, Pléh/Palotás/Lórik<sup>8</sup> argue that data specific to the Hungarian language are particularly interesting for two reasons. On the one hand, more

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<sup>4</sup> Pléh et al 2002, 13.

<sup>5</sup> MacWhinney 1978.

<sup>6</sup> Pléh/Lukács 2002, 153.

<sup>7</sup> Pléh et al 2002, 14.

<sup>8</sup> Pléh/Palotás/Lórik 2002.

diverse stem types question the absolute nature of the line between solutions building on rule storage and those building on item storage. On the other hand, as the frequency of a given word does not correspond to the saturation of the paradigm, that is the inflection pattern, the effect of these two factors may be examined independently. In other words, there is no single uniform “demarcation line” which would separate regular and irregular forms from each other, which is in line with our expectations on the basis of Pinker’s initial theory<sup>9</sup>. The way Hungarian morphology is acquired suggests a more cascaded acquisition process in the rule vs. habit debate and that the interaction between the effects of item and type frequency is an influential factor. The irregular madár type stems, which are non-productive stems involving the shortening of a vowel in the stem (hereinafter: “stem-vowel shortening stems”), do not lag much farther behind productive types than the two other irregular types of viziló and majom. The explanation lies simply in the frequency of the paradigm as a type. Children treat irregular forms belonging to highly frequent types as if they were operated by minor rules<sup>10</sup>. In the case of particularly rare stem types, such as the majom type stem, performance only stabilizes by the age of eight, or even later as in the case of -v stems. Besides stabilization processes, the frequency of stem types is also an important characteristic feature. In the development process of certain stem types there are critical age-related stages in terms of their frequency. Accordingly, by the age of four, children confidently use forms involving stem-vowel shortening (madár-madarat) but not so flawlessly as forms involving linking vowel (hal-halat) or bare stem (oroszlán-oroszlánt). In the age of five, there is a critical leap in forms involving vowel omission (majom-majmot). As another interesting research finding, Pléh/Palotás/Lőrök<sup>11</sup> observed that using multiple suffixes represent a characteristic problem for children between three and six years of age. Research has shown quite clearly how child language develops in terms of morphology: how and in what order stem types are acquired by children.

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<sup>9</sup> Pinker 1991.

<sup>10</sup> Pléh 2006b,753.

<sup>11</sup> Pléh/Palotás/Lőrök 2002.

### 3.1 Models for handling morphology

Traditionally, researchers assumed the existence of two mechanisms: the application of rules to regular forms and the repetitive learning of irregular ones<sup>12</sup>.

However, psycholinguist MacWhinney and the representatives of classic generative phonology argue that the correct approach focuses on symbol processing. This holds that, to the extent possible, everything is controlled by rules, even if they have only a narrow scope. According to this model, items and exceptions from rules are categorized into increasingly refined smaller groups. Therefore, this approach holds that language acquisition starts with rules with wider scope and gradually moves toward rules with more narrow scope.

Connectionist models are built on association, that is the spread of activation through the nervous system. This approach provides the most successful models as it assumes that automatisms are exclusively responsible for processing. Consequently, the connectionist approach explains everything with the operation of memory which has superposition and associative properties. It is quite difficult, however, to describe syntactic processing this way, so connectionists explain the wide-range validity of regular word endings with the type frequency of regular forms. More recent connectionist approaches use multi-level models in which grammar is no longer considered as a pattern of items but as a pattern of networks<sup>13</sup>.

In essence, today's debate is going on between the advocates of hybrid models, which try to revive the traditional approach, and that of network models, which assume association as a uniform mechanism. The debate results from questioning the existence of rules: not what they constitute and how they operate, but whether they exist at all in the first place. Radical associative approaches, like the parallel distributed processing model of Rumelhart and McClelland<sup>14</sup>, have emerged which eliminate the rule-base approach, while giving a positive explanatory meaning to concept of association similarly to

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<sup>12</sup> Lukács 2001, 123.

<sup>13</sup> Gósy 2005, 201–202.

<sup>14</sup> Rumelhart/McClelland 1986.

classic tradition of the theory of knowledge. This view holds that children acquire all formal connections one by one, and irregular forms only appear so early because they occur frequently. Overgeneralization, therefore, does not mean the overgeneralization of rules but is the consequence of organizational principles of networks capable of learning<sup>15</sup>.

### *3.2 The dual model*

As a structuralist response to the controversial approach discussed in Point 3.1, Steven Pinker proposed a dual model, i.e. a hybrid model which takes into account all the drawbacks of uniform models. Pinker's concept fits into the long-established tradition of dual, associative, statistical and categorical, rule-observing models advocating the duality of representations<sup>16</sup>. Similarly to other dual models, Pinker argues in favour of mental dissociation, that is two different systems of mental processing and representation, and he associates them with clinical and neurological dual dissociation. Accordingly, linguistic performance is implemented by two systems: one corresponds to grammar and rule-based organization, the other to habits and associative storage. At the same time, this approach parts with the traditional concept of rule from two aspects. Firstly, it does not assume any developmental shift from item to rule. Pinker and Prince<sup>17</sup> explain the overgeneralization phenomenon with the weakness of memory-based blocking which is based on the associative system responsible for storing items, and argue that at this developmental stage learning, in essence, would not result in shifting between the two systems but a consolidation in the balance of powers of the systems<sup>18</sup>. Secondly, Pinker's model contrasts a single main rule with the system of habits and does not assume multiple smaller rules.

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<sup>15</sup> Pléh 1992, 14.

<sup>16</sup> Pléh/Lukács 2002, 155.

<sup>17</sup> Pinker/Prince 1994.

<sup>18</sup> Pléh et al 2002.

Pinker and Pinker<sup>19</sup> apply the dual model to the management of regular and irregular forms as follows. Regular forms are managed by a symbol-manipulating rule which has the useful feature that it can be generalized to rare, unusual and new forms as well. In the new model irregular forms are stored in a memory system which can be modelled as a connectionist network. Thus, this system shows memory effects and, as a known feature of such networks, it is prone to overgeneralization on the basis of similarity in certain cases<sup>20</sup>.

The model developed by Pinker and Prince has testable predictions in several areas. First, psychological research has evidenced that only irregular forms show memory effects, regular ones do not. In turn, regular forms (asztalok–asztal) show priming effects, which is not true to irregular ones (kenyerek–kenyér). Second, irregular forms (as they are listed in the lexicon) are accessible for word formation processes, but regular ones (as they are not listed) are not. Third, as far as the mental representation process is concerned, the two methods may fail irrespective of each other<sup>21</sup>.

Pinker and Prince imagine that in reality the model works as follows. The simplest approach—which says that when we face the everyday problem of recognizing an inflected form, first we look through the items listed in the mental lexicon, and when we find the form we are looking for it blocks rule application and gives way to recalling the irregular form—must be rejected because regular forms are recognized faster than irregular ones. It is assumed to be closer to reality that the given word is admitted simultaneously to the rule mechanism and the memory storage and the latter system blocks the former system through lateral inhibition if a corresponding item is found. Memory fitting is performed sign by sign using a stochastic method; it sends continuous signals to the rule mechanism about the extent the item fits to the memory, and the signal becomes stronger with time. The signal is faster than the recalling of the irregular form,

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<sup>19</sup> Pinker/Pinker 1994.

<sup>20</sup> Lukács 2001, 124.

<sup>21</sup> Lukács 2001, 125.

so if the search yields no result it may quickly give way to rule application<sup>22</sup>.

### *3.3 The dual model applied to the Hungarian language*

Based on her examinations, Lukács Ágnes<sup>23</sup> found that irregular and regular forms are processed and stored by different mechanisms. The model of Pinker and Prince, therefore, can be applied to the Hungarian language as well, because morphological processing is divided into two separate systems along the line of regular and irregular forms, similarly to other languages. Regular forms are accessed through the stem, so these are stored in an analytical way, while irregular forms are recorded in the lexicon as whole and separate inputs.

The Hungarian-specific findings of child language research—Pléh/Palotás/Lőrík<sup>24</sup>—may offer significant new information in respect of the dual model. Research has found that, due to the diversity of stem types, the storage of items and rules is not completely separated as the frequency of items and the saturation of the inflection pattern do not correspond to each other. Thus, irregular forms are not only stored as items but are acquired among rules as well.

### *4.1 Morphological characteristics of Hungarian*

Hungarian morphology has greatly aroused the interest of psycholinguists because, as opposed to the poor morphology of the English language for instance, the agglutinative nature of the Hungarian language provides excellent research material. For this reason, contrasting English and Hungarian proved to be a key aspect in the course of examining the applicability of the dual system to the Hungarian language. As opposed to English, Hungarian is a non-configurational language so it places much more emphasis on suffixes.

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<sup>22</sup> Lukács 2001, 125.

<sup>23</sup> Lukács 2001.

<sup>24</sup> Pléh/Palotás/Lőrík 2002.



Furthermore, irregular forms are not among the most frequent word forms in Hungarian, so they are not among the first items to be acquired during language development either. However, the two languages also show similarities, for example in the field of type frequency of regular forms: much more stems belong to the productive than to the non-productive type.

Another unique characteristic of Hungarian morphology is that the input of morphological operations is typically a word. Suffixes may not be attached to phrases even if they are actually characterizing the whole phrase. In other words, the suffix always appear on the headword of a phrase<sup>25</sup>.

As we could see above, the Hungarian language has an extremely rich system of suffixes and suffixes follow each other in a predetermined order. Every suffix expresses a certain morphological or morphosyntactic category. Every morpheme corresponds to one and only one morph, and every morph embodies one and only one morpheme. Languages whose morphological forms have such properties are categorized as an agglutinative language. Hungarian is characterized by agglutination, still it may not be fully considered as an agglutinative language because neither declension nor conjugation is entirely agglutinative in nature. In declension, for example, possessive suffixes express two morphemes at the same time: person and number<sup>26</sup>.

Jel-type and rag-type suffixes also operate in a unique way: as these two types of inflectional suffixes are distinguished only in Hungarian grammar. The jel-type suffix comes after the stem or a képző-type suffix (formative suffix) and may be followed by further suffixes. By contrast, the rag-type suffix is a closing morpheme so it may not be followed by any other suffix. It is a key characteristic of the Hungarian inflectional system that suffixes can always be recognized and the stem root can be identified even if the stem itself has alternated or the length of the linking vowel has changed. This may be explained by the fact that even exceptionally rare forms have a highly transparent phonological form.

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<sup>25</sup> Kiefer 2006, 55.

<sup>26</sup> Kiefer 2006, 73.

#### 4.2 Stem classes

Hungarian nouns may be classified into different stem types based on their morphological characteristics. Not all suffixes trigger the possible alternations; this phenomenon is more typical to bound morpheme suffixes comprising a linking vowel, such as the plural marker, the accusative suffix or the possessive suffix. Bound morpheme suffixes are word endings which do not constitute an independent syllable, drop their linking vowel after a vowel and adhere to bound morpheme stems<sup>27</sup>.

Stem types are grouped into two main categories: productive and non-productive stem types. The description of stem class relied on Kiefer<sup>28</sup>, Lukács<sup>29</sup>, Nádasy/Siptár<sup>30</sup> and Törkenczy<sup>31</sup>.

##### 4.2.1 Productive stem classes

1. Stems involving open vowel lengthening. Open vowels (a, e) lengthen before the suffix (alma-almák, csésze-csészék).

2. Stems ending in a vowel other than an open vowel. This stem class drops the linking vowel which would come with the suffix (bicikli-biciklik, autó-autók).

3. Stems ending in a consonant. The vowel of suffixes which include a linking vowel is always kept after stems ending in a consonant (szék-székek, kabát-kabátok).

##### 4.2.2 Non-productive stem classes

1. Unstable (inserting) stems including stem vowel. These stems exist in two forms: The free form ends in the –VCVC (szobor, eper) sequence: the second vowel alternates with zero, so the bound forms

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<sup>27</sup> Kiefer 1998.

<sup>28</sup> Kiefer 2006.

<sup>29</sup> Lukács 2001.

<sup>30</sup> Nádasy/Siptár 1994.

<sup>31</sup> Törkenczy 1994.

of the stem end in the –VCC– sequence (szobr-, epr-). The bound form appears before certain suffixes (szobor-szobrok).

2. Opening stems. This class comprises stems which are necessarily followed by an open (or low) linking vowel. According to the rules of vowel harmony this is a after a back vowel (lábak) and e after a front vowel (székek), even if the front vowel is rounded, such as ö or ü (könyvek).

3. Stems involving stem-vowel shortening. The last syllable of the mono- and disyllabic stems in this class, which is long in the free form of the stem, becomes short before certain suffixes (víz-vizet, levél-levelet, madár-madarak). Similarly to the previous class of opening stems, stems involving stem-vowel shortening are necessarily followed by an open linking vowel.

4. v inserting stems. This class comprises monosyllabic stems ending in long vowels whose bound forms insert a v between the stem vowel and the first vowel of the suffix, and the stem vowel usually becomes short (ló-lovak, fű-füvek). A subtype of this stem class even changes its stem vowel (tó-tavak). Such stems also behave as opening stems.

5. Stems ignoring vowel harmony (“inharmonious stems”). These stems contain i, í, é as stem vowel (híd, cél). The word fiú (meaning ‘son’) is also classified into this category as it drops its last vowel (ú) and takes a back vowel suffix. The forms férfi and fi are peculiar in this respect as they vary in what suffixes they take (férfi-férfinak/nek).

6. Stems involving change in phoneme order. This group is a subclass of inserting stems as they not only insert but change the order of phonemes. This means that when the unstable vowel is not present in the surface structure of the stem, the two segments neighbouring the unstable vowel change places with each other (pelyh-pelyhek). This phenomenon is limited to very few words which have in common that they contain the phoneme h.

### *5.1 Application in teaching*

When teaching Hungarian as a second language (THL) it is very important how we teach grammar. The following part of the study will discuss how the findings of Hungarian research on the dual model could be put into practice. The grammatical approach adopted by currently used course books will be described through analyzing Hungarian plural nouns broken down by stem type. This will be followed by a presentation of potential grammatical topics where the dual model could be used. To this end, a suitable teaching order will be discussed in detail with view to the relevant major and minor rules. Finally, the benefits of the proposed methodology will be discussed in relation to teaching regular and irregular words.

### *5.2 The traditions of teaching grammar*

Grammatical topics in THL course books have long been determined by a rule-oriented approach. Morphological research, however, has made it possible for more and more fields of application to adapt the research findings of descriptive grammars to applied grammars. This improved knowledge, combined with experience in language teaching, has brought a new approach in THL as well: student-centred teaching, more efficient learning, and better fulfilment of communication needs. The currently used course books more or less agree in how they introduce and teach grammar. More or less, because course book writers have a different approach to what and how they teach in general. Syllabuses apply different methodology depending on the volume, depth and complexity of the content. This, however, does not necessarily mean that certain course books are better or worse than others because their efficiency largely depends on the target group of students. To get an idea of the differences, let us examine the above-mentioned phenomena.

The morphological characteristics of the Hungarian language, as outlined in Point 4.1 above, call for a precise application of grammatical rules in teaching, in fact teachers may not even omit the expla-

nation of the internal hierarchy of the rules. These principles are observed by the course books and grammars. The grammar handbooks examined<sup>32</sup> discuss each grammatical issue item by item, listing the major and minor rules richly illustrated with examples. Table 1 summarizes the rules of plural noun forms discussed by the course books, compared to the stem classes used by descriptive grammar. To make comparison easier, the expressions used in the course books for the rules were replaced with the descriptive categories. The table separates the rules governing productive and non-productive stem classes by a double line.

Table 1 The system of stem classes  
in the observed course books and grammars

	Stem classes <sup>33</sup>	M. Korchmáros: Lépésenként magyarul <sup>34</sup>	Szili: Vezérkönyv <sup>35</sup>	Szita/Görbe: Gyakorló magyar nyelvkönyv <sup>36</sup>
	Productive stem classes			
1.	Stems ending in a vowel other than an open vowel ( <i>bicikli – biciklik</i> )	Stems ending in a vowel other than an open vowel ( <i>kávét – kávék</i> )	Stems ending in a vowel other than an open vowel ( <i>autót – autók</i> )	Stems ending in a vowel other than an open vowel ( <i>autót – autók</i> )
2.	Stems involving open vowel lengthening ( <i>alma – almák</i> )	a) Stems invol- ving open vowel lengthening ( <i>táska – táskák</i> ) b) v inserting stems ( <i>lót – lovak</i> )	Stems involving open vowel lengthening ( <i>táska – táskák</i> )	Stems involving open vowel lengthening ( <i>táska – táskák</i> )

<sup>32</sup> Szili 2006, M. Korchmáros 2006, Szita/Görbe 2009.

<sup>33</sup> Nádasdy/Siptár 1994, Kiefer 2006, Törkenczy 1994.

<sup>34</sup> M. Korchmáros 2006.

<sup>35</sup> Szili 2006.

<sup>36</sup> Szita/Görbe 2009.

3.	Stems ending in a consonant ( <i>kabát – kabátok, szék – székek, gyümölcs – gyümölcsök</i> )	Stems ending in a consonant (words with back vowels and with both front and back vowels) a) ( <i>kabát – kabátok</i> ) b) Opening stems ( <i>ház – házak</i> ) c) Unstable stems including stem vowel ( <i>síralom – síralmak</i> ) d) Stems involving stem-vowel shortening ( <i>kanál – kanalak</i> )	Stems ending in a consonant (words with back vowels and with both front and back vowels) a) ( <i>kabát – kabátok</i> ) b) Opening stems ( <i>ház – házak</i> )	a) Stems ending in a consonant (words with back vowels and with both front and back vowels) ( <i>kabát – kabátok</i> ) b) Stems ending in a consonant (words with front vowels) ( <i>festmény – festmények</i> ) c) <i>eszköz – eszközök</i>
		Stems ending in a consonant (words with front vowels) a) <i>szék – székek</i> b) <i>kör – körök</i>	Stems ending in a consonant (words with front vowels) a) <i>szék – székek, gyümölcs – gyümölcsök</i> b) Opening stems ( <i>könyv – könyvek</i> )	One unit nouns a) Opening stems ( <i>föld – földek, tárgy – tárgyak</i> ) b) Other one unit nouns ( <i>kör – körök, nap – napok</i> )
	Non-productive stem classes			
4.	Unstable stems including stem vowel ( <i>szobor – szobrok</i> )	Unstable word a) <i>szó – szavak</i> b) <i>falu – faluk – falvak</i> c) Opening stems ( <i>könyv – könyvek</i> )	Stems involving stem-vowel shortening a) <i>nyár – nyarak</i> b) <i>út – utak</i>	Unstable stems including stem vowel ( <i>félelem – félelmek, dolog – dolgok</i> )

			c) Stems ignoring vowel harmony ( <i>híd – hidak</i> )	
5.	Opening stems ( <i>láb – lábak, könyv – könyvek</i> )	Stems ignoring vowel harmony ( <i>férfi – férfiak, fi – fiak</i> )	v inserting stems ( <i>lő – lovak</i> )	v inserting stems ( <i>kő – kövek</i> )
6.	Stems involving stem-vowel shortening ( <i>madár – madarak</i> )		Unstable stems including stem vowel ( <i>szobor – szobrot</i> )	Stems involving stem-vowel shortening ( <i>levél – levelek</i> )
7.	v inserting stems ( <i>lő – lovak</i> )		Wordlist with opening stems	
8.	Stems ignoring vowel harmony ( <i>híd – hidat</i> )			
9.	Stems involving change in phoneme order ( <i>pehely – pelyhet</i> )			

Basically, the three grammar handbooks categorize regular and irregular stems similarly. Interestingly though, these categories do not necessarily correspond to the descriptive ones. Vowel inserting stems, stems involving stem-vowel shortening and v inserting stems are discussed among the regular forms by M. Korchmáros, while they are treated as irregular forms by the authors of the other two books. Opening stems are discussed among irregular forms by Szili/Görbe and among regular forms by M. Korchmáros, as well as by Szili who also provides a list of words falling this stem type. Only Szili handles stems ignoring vowel harmony as an independent rule category (of irregular forms). The two other authors do not mention these stems. Stems involving change in phoneme order are not discussed by any of the authors. M. Korchmáros introduces two new irregular stem types: the first is termed “unstable words” (*ingadozó szavak*), such as

szó-szók-szavak, the other is the férfi and fi type of words, which could have been categorized as stems ignoring vowel harmony. The system of Szita–Görbe introduces “one-unit words” (egytagú szavak) which comprise opening stems (as they are predominantly monosyllabic) and non-opening monosyllabic stems with either back or front vowels. Stems ending in -alom/elem, -dalom/delem are categorized into the class of stems with unstable stem vowel in descriptive morphology but all three books treat them as an independent category. All four types of these endings are discussed among the irregular forms by Szili; -alom/elem is also discussed among irregulars by Szita/Görbe, and only the -alom/dalom pair is discussed by M. Korchmáros who treats them as regular endings. Szita–Görbe presents the plural form of adjectives formed from nouns with the -i suffix among the nouns, so the standard plural marker -k is completed with the -ak/-ek pair.

### *5.3 The proposed system*

Research on the dual model has found that, similarly to other languages, Hungarian also uses two systems for treating regular and irregular forms during morphological processing. Regular forms are processed by a rule system, while irregular forms are stored in the lexicon. At the same time, as a major difference compared to other languages, Hungarian morphology is acquired by children in the framework of a more cascaded process. The determination of the order of teaching stem classes also relied on the research findings relating to child language development.

The proposed system also takes into consideration the productive and non-productive stem classes defined by descriptive morphology. Table 2 shows the system of major and minor rules in detail. According to MacWhinney’s examinations, those stems are acquired first which end in a vowel other than an open vowel. They are followed by stems which are linked with a linking vowel, and only then come stems involving vowel shortening or lengthening. By contrast, in the currently used method stems involving vowel lengthening are taught before stems with linking vowel because the lengthening



phenomenon occurs in stems involving open vowel lengthening so in teaching it seemed more logical to discuss regular stems ending in a vowel together. The group of stems with linking vowel is identical with the group of stems ending in a consonant (except for opening stems), so this is the next rule taught in THL classes, distinguishing the rules governing words with back vowels or both front and back vowels from those governing only words with front vowels.

The teaching order of non-productive stems were determined on the basis of the findings of developmental screening tests carried out by Pléh, Palotás and Lőrík (2002). Research has shown that stems involving stem-vowel shortening are not acquired much later than productive stem classes during language acquisition, but they come significantly earlier than v inserting stems. Children start to use stems with unstable stem-vowel confidently during their early primary school years, while v inserting stems stabilize only later. Therefore, this acquisition order was preserved in the teaching order as well.

There are three non-productive stem classes which neither Pléh/Palotás/Lőrík<sup>37</sup> nor MacWhinney mention: opening stems, stems ignoring vowel harmony and stems involving change in phoneme order. Opening stems differ from productive stems ending in a consonant only in that the vowel following the stem becomes open. For this reason, in THL classes non-productive stem classes are introduced with opening stems, according to the rules of vowel harmony. These are followed by the above-mentioned stem classes: stems involving stem-vowel shortening, stems with unstable vowel and v inserting stems. Stems ignoring vowel harmony precedes stems involving change in phoneme order in terms frequency in the basic vocabulary so the latter class is the last item in the teaching order.

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<sup>37</sup> Pléh/Palotás/Lőrík 2002.

Table 2: Order of teaching stem classes

	The proposed system	Stem classes <sup>38</sup>
		Productive stem classes
1.	Stems ending in a vowel other than an open vowel ( <i>bicikli–biciklik</i> )	Stems ending in a vowel other than an open vowel ( <i>bicikli–biciklik</i> )
2.	Stems involving open vowel lengthening ( <i>alma–almák</i> )	Stems involving open vowel lengthening ( <i>alma–almák</i> )
3.	Stems ending in a consonant (words with back vowels and with both front and back vowels) ( <i>kabát–kabátok</i> )	Stems ending in a consonant ( <i>kabát–kabátok, szék–székek, gyümölcs–gyümölcsök</i> )
4.	Stems ending in a consonant (words with front vowels) ( <i>szék–székek, gyümölcs–gyümölcsök</i> )	
		Non-productive stem classes
	Opening stems	Opening stems
5.	Stems ending in a consonant (words with back vowels and with both front and back vowels) ( <i>láb–lábak</i> )	Opening stems ( <i>láb–lábak, könyv–könyvek</i> )
6.	Stems ending in a consonant (words with front vowels) ( <i>könyv–könyvek</i> )	
8.	Stems involving stem-vowel shortening ( <i>madár–madarak</i> ) ( <i>út–utak</i> ) ( <i>víz–vizek</i> )	Stems involving stem-vowel shortening ( <i>madár–madarak</i> )
7.	Unstable stems including stem vowel ( <i>szobor–szobrok</i> )	Unstable stems including stem vowel ( <i>szobor–szobrok</i> )
9.	v inserting stems. ( <i>ló–lovak</i> ) ( <i>szó–szavak</i> ) ( <i>falu–falvak</i> )	v inserting stems. ( <i>ló–lovak</i> )

<sup>38</sup> Nádasy/Siptár 1994, Kiefer 2006, Törkenczy 1994.

10.	Stems ignoring vowel harmony ( <i>híd–hidat</i> )	Stems ignoring vowel harmony ( <i>híd–hidat</i> )
11.	Stems involving change in phoneme order ( <i>pehely–pelyhet</i> )	Stems involving change in phoneme order ( <i>pehely–pelyhet</i> )

#### 5.4 The teaching process

The methodology of the system described in detail in Point 5.3 was developed in view of the dual model's relevance to the Hungarian language. In line with the conclusions drawn from the research findings of Lukács<sup>39</sup> and Pléh/Palotás/Lőrík<sup>40</sup>, the forms belonging to the productive stem class are created by the operations performed on the lexicon items according to the rules of the system. Students learn these rules and then apply them to already acquired lexical items. Students do not meet the name of the stem classes as they are not meant to acquire the system of descriptive categories. This knowledge forms part of the teacher's competence, the students identify the different type through examples.

Rules are acquired inductively, by the abstraction of rules from examples. Students have the opportunity during the learning process to discover the rules operating the language. Learning through own experience leads them to have a better understanding of how the system works. The process actively invokes previously learnt information: vowel harmony within the stems and between stems and suffixes. The usage of carefully selected and learnt vocabulary efficiently facilitates the process of abstracting the rules for productive stem types. To recognize the two major rules, that is the differences between words ending in a vowel or a consonant, requires students to have a solid knowledge of the stems. For stems ending in a vowel, the backness of the vowel comes as a minor rule. For stems ending

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<sup>39</sup> Lukács 2001.

<sup>40</sup> Pléh/Palotás/Lőrík 2002.

in a consonant, the operation of the minor rule is controlled by whether the back and/or front vowels in the stem applying the already learnt rules of vowel harmony.

According to the dual model, irregular forms are recorded in the lexicon in their entirety as opposed to regular forms which are stored analytically. During the learning process students have to achieve develop lexical access to irregular forms, similarly to native speakers. If they have proper access to stem variants, they will be able to attach suffixes to the stems using the appropriate rules of vowel harmony.

Non-productive stem types are acquired in the order described in Point 5.3, so they come after learning the rules governing productive stems. So this stage of the learning process utilises the suffixation rules learnt there. Using vowel harmony as a main rule is also inevitable for stems ending in a consonant, that is opening stems, stems involving stem-vowel shortening, stems with unstable stem-vowel, v inserting stems and stems involving change in phoneme order. The situation is the other way round in the case of stems ignoring vowel harmony which, as their name suggest, breach the rules of vowel harmony. Another opposing process is the change taking place in stems involving stem-vowel shortening compared to stems involving open vowel lengthening. Students discover rules by meeting each stem type and learning the relevant characteristics of suffixation.

After the introduction to the different stem types, students have to develop the lexical access described by the dual model, that is: memorization. The memory has to store two types of information: the stem and its alternated form, and the relevant suffixation rule which in turn will be applicable to the same stem type in all other suffixation paradigms. The only difference from other languages (take English as an example) is that the irregular forms stored here can be used instantly without performing any operation on them. The methodology is developed in a way that memorizing should be a cascaded process as well. Considering that the plural forms are introduced at the beginner stage, the manageable number of words for each stem type taught at this stage is no more than three to five words. This vocabulary is expanded at later stages with the adequate words which are introduced in relation to the presentation of grammatical phenomena as well as to new grammatical topics. Such topics

include new képző-type suffixes (formative suffixes) which provide ground for vocabulary building and for reinforcing already learnt words.

For the sake of success, it should be anticipated that this process is a quite slow and difficult for students due to the high number (seven) of non-productive stem classes, preceded by four productive ones. It is recommended to give some time to students before introducing newer stem classes, so that the ones already learned can become firmly rooted.

#### *5.5 Teaching outcome*

The success of the teaching method described in Points 5.3 and 5.4 depend on the separation of handling rules and irregular forms. This gives students more confidence with Hungarian morphology. A more transparent presentation of the stem types gives a more solid knowledge to students who will be emotionally encouraged to use even difficult forms confidently. Besides their affective relationship, students will be able to call down items from the mental lexicon more precisely and in a more precise morphological form. The development of these skills will also speed up speech tempo, as searching the lexicon and verbalizing the words require less time and the speech flow becomes more fluent. As a positive feedback, native speakers will understand the students better which contributes to the fluency of their conversations.

### **6. Conclusion**

The question raised in the Introduction, that is whether learning and practicing rules or memorizing lexical items is the more efficient way to acquire grammatical features, is answered by the findings of relevant research. On the basis of dual model and child language research in relation to the Hungarian language, it may be established

that regular and irregular forms correspond to different linguistic systems. The teaching system developed on the basis of this consideration shows how relevant research findings can be applied in practice.

The study discussed in detail Hungarian stem classes and related rules using plural forms as an example. However, it is important that the system can be adapted to the teaching of other grammatical phenomena as well. For example, the system can be used almost without changes for teaching the inflection of nouns, if the characteristics of the word class and the given suffixes are duly considered. For other word classes, such as verbs, the system should be adapted before integrating it to teaching practice.

## 7. Literature

- Csépe, Valéria/Győri, Miklós/Ragó, Anett (Hg.): *Általános pszichológia 3. Nyelv, tudat, gondolkodás* [Allgemeine Psychologie 3. Sprache, Bewusstsein und Denken]. Budapest 2008.
- Gósy, Mária: *Pszicholingvisztika* [Psycholinguistik]. Budapest 2005.
- Kiefer, Ferenc: Alaktan.[Morphologie] In: Katalin É. Kiss/Ferenc Kiefer/Péter Siptár: *Új magyar nyelvtan* [Neue Ungarische Grammatik]. Budapest 1998, 187–293.
- Alaktan [Morphologie]. In: ders. (Hg.): *Magyar nyelv* [Die ungarische Sprache]. Budapest 2006, 54–80.
- Lukács, Ágnes: Szabályok és kivételek: a kettős modell érvényessége a magyarban [Regeln und Ausnahmen: das doppelte Modell im Ungarischen]. In: Csaba Pléh/Ágnes Lukács (Hg.): *A magyar morfológia pszicholingvisztikája* [Psycholinguistik der ungarischen Morphologie]. Budapest 2001, 119–152.
- M. Korchmáros, Valéria: *Lépésenként magyarul. Magyar nyelvtani kézikönyv* [Schritt für Schritt auf Ungarisch. Ungarisches Grammatikbuch]. Szeged 2006.

- MacWhinney, Brian: The acquisition of morphophonology. In: *Monographs of the Society for Research in Child Development* 174 (1978), 1–123.
- Nádasdy, Ádám/Siptár, Péter: A magánhangzók [Die Konsonanten]. In: Ferenc Kiefer (Hg.): *Strukturális magyar nyelvtan. 2. Fonológia* [Strukturelle ungarische Grammatik. 2. Phonologie]. Budapest 1994, 42–181.
- Pinker, Steven: Rules of language. In: *Science New Series*, Vol. 253, No. 5019 (1991), 530–535.
- Pinker, Steven: Words and Rules. In: *Lingua* 106 (1998), 219–242.
- Pinker, Steven: A nyelvi ösztön [The Language Instinct]. Budapest 2006.
- Pléh, Csaba (1986): A gyermeknyelv fejlődésének és kutatásainak modelljeiről [Über die Modelle der Forschung und der Entwicklung der Kindersprache]. In: *Pszichológiai tanulmányok* [Studien über Psychologie] 16 (1986), 105–188.
- Az asszociáció reneszánsza a kognitív pszichológiában [Die Renaissance der Assoziation in der kognitiven Psychologie]. In: *Janus* 9 (1992), 12–22.
  - A magyar morfológia pszicholingvisztikai aspektusai [Die psycholinguistischen Aspekte der ungarischen Morphologie]. In: Ferenc Kiefer (Hg.): *Strukturális magyar nyelvtan. 3. Morfológia* [Strukturelle ungarische Grammatik. 3. Morphologie]. Budapest 2000.
  - Pszicholingvisztika [Psycholinguistik]. In: Ferenc Kiefer (Hg.): *Magyar nyelv* [Die ungarische Sprache]. Budapest 2006a, 725–752.
  - A gyermeknyelv. [Die Kindersprache] In: Kiefer, Ferenc (Hg.): *Magyar nyelv* [Die ungarische Sprache]. Budapest 2006b, 753–788.
  - /Lukács, Ágnes: A szabályok és a kettős disszociációs elv a nyelv agyi reprezentációjában [Die Regeln und das Prinzip der doppelten Dissoziation in der Repräsentation der Sprache im Gehirn]. In: Szilveszter E. Vizi/Ferenc Altrichter/Kristóf Nyíri/Csaba Pléh (Hg.): *Agy és tudat* [Gehirn und Bewusstsein]. Budapest 2002, 153–168.

- /Palotás, Gábor/Lórik, József: *Nyelvfejlődési szűrővizsgálat (PPL)* [Untersuchung der Sprachentwicklung]. Budapest 2002.
- Rumelhart, David/McClelland, James: On Learning the past tenses of English verbs. Implicit rules of parallel distributed processing? In: James McClelland/David Rumelhart/the PDP Research Group (Hg.): *Parallel distributed processing: Explorations in the micro-structure in cognition*. Vol.3. Cambridge 1986, 217–271.
- Szili, Katalin: *Vezérkönyv a magyar grammatika tanításához* [Handbuch für den Unterricht der ungarischen Grammatik]. Budapest 2006.
- Szita, Szilvia/Görbe, Tamás: *Gyakorló magyar nyelvtan. A Practical Hungarian Grammar*. Budapest 2009.
- Lengyel, Zsolt/Navracsics, Judit (Hg.) *Tanulmányok a mentális lexikonról. Nyelvsajátítás – beszédprodukción – beszédpercepción* [Studien über das mentale Lexikon. Sprachaneignung – Sprachproduktion – Sprachperzeption]. Budapest 2009.
- Törkenczy, Miklós: A szótag [Die Silbe]. In: Ferenc Kiefer (Hg.): *Strukturális magyar nyelvtan. 2. Fonológia* [Strukturelle ungarische Grammatik. 2. Phonologie]. Budapest 1994, 273–393.