

ALINA MACIEJEWSKA
University of Natural Sciences and Humanities in Siedlce

Intralingual Translation as A Measure of Linguistic Maturity of a Child/Student

SUMMARY

The author assesses students' abilities to create specific word-formation constructions (diminutive forms and masculine and feminine names) in sequences of proportional relations, with the use of specific paraphrases. The author makes use of the first proposal of description of lexis by Prof Jerzy Wierzchowski, which refers to the assumptions of a structural formulation of a language system and takes into account the role of a connective phrase, fulfilling the condition of an intralingual translation when establishing the relations between words based on the similarity of form and content. The material collected through questionnaires comes from primary school students – grades two to six from grades, from vocational school, secondary technical school and students with impaired hearing. The control group consists of Polish philology students. The analysis shows that in creating even the easiest word-formation constructions differences not only between younger and older students but also, more importantly, between students of the same age group, become manifest. They indicate students with language awkwardness/difficulties, students with learning difficulties with respect to reading and writing, often with speech defects. The ability to use the intralingual translation proves their problems in the sphere of metalinguistic skills, understanding of the language structure, implementing the system to express knowledge about the world without the need to experience it directly.

Key words: analogy, proportions, intralingual translation, connective phrase

INTRODUCTION

Full, comprehensive and reliable assessment of the level of language competence development (also the communicative one) and the appropriate language skills, is not an easy task, especially if we are intent on assessing the degree to

which all the language subsystems are mastered, including semantics, and revealing the extent of the limitations or the inability to master some of them. Recognizing what in a child's language development gets out of norm requires time and observations of different types of their behavior and their relations towards the environment. It also requires the accuracy of perception of what the child has mastered, how they express their intentions, how they describe fragments of reality and differentiating it from what they copy from the surrounding speech, what they leave out because it is too well known and with what language elements they experiment to find their usage and meaning. Such diagnosis allows us not only to assess the level of child's speech development, their language acquisition strategies, but also to foresee and prevent the difficulties which may appear later, even during school education, when the intensive speech development seems completed and language education becomes a task for educationists.

The ways of mastering the signs and rules of a language by a child at a certain level of development, the emergence of a semantic structure and changes in the meaning of system units have long been a subject of a many-sided analysis and research. Psychological, psycholinguistic, linguistic research proves that child's experience of language as a world in which one can act and create develops slowly and lasts much longer than building the basis of a language system. From a speech therapy practice we know that skills, usually referred to as metalinguistic skills, guarantee the development of language at a level which allows for acquiring new ranges of knowledge through language symbols, thinking about abstract subjects and phenomena, and also, or above all, master the so called school language skills. Just as the occurrence of first words is an important indicator of speech development, so the awareness of the system, relations between form/forms and meaning/change of meaning can be a measure of linguistic maturity. That allows us to describe the world and understand the description of extralinguistic reality without the need of experiencing it directly.

RELATIONS BETWEEN WORDS – DISCOVERING THE STRUCTURE

The assessment of the range of vocabulary, so important in the procedure of diagnosis of speech, focuses on determining the ability to label designations or, possibly, describing the features of designated objects, phenomena etc. The conviction that it is enough to start the mechanism of acquiring language and the rest should work on its own account, according to the rule stating that *the mind is not a container which should be filled, but a fire which should be lit*, is inscribed in our concept of speech development. Scientific reports suggest that lexical structure emerges slowly. It is beyond doubt that it is a resource of knowledge about the world and language, knowledge of connections of forms and contents as well as their mutual relations. In linguistic approach, models of a lexical system de-

scription change according to the accepted method of describing the language. Structural approach to language claims that words create a hierarchically ordered system and a change of one element causes changes in the whole system. Description of the system is possible when the singled out items (words) are described with the use of intralingual translation.

Although undoubtedly the knowledge about the extralinguistic reality is decisive about the meaning of units, full mastering of language allows us to build meanings through verbal description. Language development is based on building a system and the awareness of the relations between form and meaning, and the connections between the elements of the system, designated by the relations. The transition from forms and meanings set in familiar spaces of *here and now* to signs - units of the system, allows us to infer through analogy, abstraction, also description of the system itself.

The process starts quite early, because the child, distinguishing smaller and smaller units that inform about something, discovers – according to Smoczyński (1955) – the key to the language of adults. This happens when the child reaches the sense of the *morphological structure* of the word and starts to use that knowledge to communicate and think. Ample evidence on their mental association of those elements of words which have common characteristics in the form and substance, and the evidence of understanding by the child, that with these elements the meanings of words are modified in various ways, is the rapid development of the vocabulary and children's analogical formations. Along with the mastery of first morphemes, the child's memory frees the space for new units, because the acquired ones become the material for word-formation operations and the inference about the meanings on the basis of the acquired structures and their exponents. The child no longer needs to remember every inflected form or a word-formation modification as a separate new word (Smoczyński 1955, 157). But before they realize and remember the "order" of meanings and forms, several months, even years of experimenting, testing and the activity of the little linguist will pass

Common children's differences in the creation of new words or inflection are explained by the application of analogy. Psychologists say that thinking by analogy is one of the most enigmatic forms of human cognitive activity, and its course is closely connected with the functioning of the basic psychological mechanisms (Biela 1981). How the analogous thinking activity progresses depends on the stage of development, individual activity, also on the social and cultural environment in which they live (Tomasello 2002). In modern linguistics, by analogy we understand a proportional ratio that exists between linguistic forms; these may be forms of different words (or forms of the same word), in whose relations the similarity of form and some similarity of content can be observed. The mechanism is reconstructed according to the formula: *form X: form Y* (*Encyclopedia of General Linguistics 1993: 45*). In the literature it is assumed that in a language system

the phenomenon of analogy occurs when a number of elements are arranged in a proportional relationship (e.g. phonological pairs p: b = k: g = s: z), morphological (e.g. dom: domu = atom: atomu = bok: boku). Action, reasoning, inference by analogy are done by the discovery of proportionality between the forms. This explains not only the presence of neologisms in the development of the child's speech, but also a mechanism for the emergence of new, non-standard units in everyday language, art, etc.

In the history of linguistics, binary sequences appeared first, then the multi-element ones. The constructed proportions were used to show the lexical structure and semantic relationships, and contributed mainly to illustrating the systematic structure of the vocabulary. While organizing them the similarity of form and content was assumed, but without a real care for precise determination of the differences in meaning.

ANALOGY IN PROPORTIONAL SEQUENCES

In the material collected by me I would find proportional sequences in the utterances of four-years-old children. They were used by the little interlocutors to explain the meanings of words, identify the similarities or differentiate the meanings of word-formation or inflexion variants, or to explain non-linguistic phenomena, organize the knowledge by discovering connections between words. The experience acquired while working with hard of hearing students has convinced me that building a proportional sequence, that is, acting by analogy in the world of language, is sometimes a difficult task for them, and sometimes impossible. I attempted to check whether children of an early school age, having mastered the language system at least at a sufficient level of communication, trained in reading, writing and understanding the basics of metalanguage, can "play" formulating proportions. It was not meant to check only the perception of the proportionality of forms, but the role of awareness in recognizing the relationship between the form and content of words through a language translation. I used the method of vocabulary description proposed by J. Wierzchowski (1956).

INTRALINGUAL TRANSLATION IN GROUPS OF PROPORTIONAL RELATIONS

Referring to multi-element proportions and the semantic relation of verbal forms, Wierzchowski (1959) proposed groups of proportional relations, that is groups distinguished in proportional sequences, which included words with the same core (related by formal similarity) and specific semantic relations. Obtaining those groups allows for the use of a linking phrase, that is a type of paraphrase or

translation, which should explain a word using another of its forms. According to Wierchowski (1976: 139.143), it can be any phrase that occurs in the language, which contains a word phonetically similar in its core, of an identical or nearly identical meaning. The requirement of using the same linking phrases allows us to extract, from among traditional proportional sequences, those proportions that are similar not only formally but also repeat the same semantic distance. He calls them groups of proportional relations. An effective tool for confirming the attachment to the GPR is a linking phrase, because it allows for distinguishing words, taking into account the meaning described through the same language, without referring to extra-linguistic reality. Wierchowski's proposal appears to satisfy the requirement of a metalanguage description. For children it is a kind of game in *what words mean* and how the similarity of verbal forms indicates the meaning. Making up sequences of proportional relations requires phonological, morphological (discovering the similarity of forms) and semantic competence (recognizing the similarity of the meaning of the core, the awareness of a change of meaning, caused by the use of a word formative). The linking phrase, which is used for paraphrasing phonetically similar words, shows their formal and semantic similarity, defines relations and changes in meaning (shifts in the groups). It is an intralingual translation, because it focuses on the relations between words, it enables breaking away from the knowledge of the world (though it does not eliminate it). It is a simple way of explaining the similarity of form and content between words, creating words modeled after the existing ones. Therefore, it satisfies the requirement of handling units of language – words, perceived as part of a larger structure.

LINKING PHRASE IN A GAME WITH SEQUENCES OF PROPORTIONAL RELATIONS

In the article I use the material gathered with the use of a survey. A group of students were encouraged to take part in a game of looking for forms of words that match the given patterns and are described by specific phrases. The respondents were primary school students – grades two, three, four, five (54 persons), junior high school students (30 persons) and high school students (vocational school – 25 persons, technical college – 30 persons). The control group was made up of students of Polish philology (30 persons). The studies conducted in schools comprised all the students from the selected grades. I also used the questionnaires of a group of pupils with speech defects and / or learning difficulties, who were under a specialist care.

I chose the easiest proportional sequences generated in the child's linguistic picture of the world. The first task provoked to create diminutive words in such a way as to match the first pair, given as an example: **kot** (cat) – big, huge, old (under the fraction line) **kotek** (kitten) – small, young, cute. The next words were

separated by the equality sign. The second task required giving the linking phrases that explained the difference in meaning between the words **kot** (male cat): **kotka** (female cat). On the next page in succeeding lines the words were given for which forms were to be created (often potential ones) in the grammatical gender fulfilling the rule described by the proportion: *kot:kotka* = *pan (man):pani (lady)*. Formulas supplemented by the results obtained from the questionnaires of students of Polish philology are presented below, the words in italics were written by the young people.

Task 1

| | | | | | | | |
|-------|---------------|--------------------|-------------------|----------------------|---------------|----------------------|--------------------|
| (Cat | dog | ox | hair | balloon | threshold | blisters | shoe) |
| Kot | pies | wół | włos | balon | próg | bąbel | but |
| Kotek | <i>piesek</i> | <i>wółek</i> | <i>włosek</i> | <i>balonik</i> | <i>prożek</i> | <i>bąbelek</i> | <i>bucik</i> |
| | | <i>/ wółek (2)</i> | <i>/ włos (2)</i> | <i>/ balonek (4)</i> | | <i>/ bąbelek (2)</i> | <i>/ butek (7)</i> |

Task 2

Wieloryb to pan: pani to *wielorybica/wielorybowa*.

Nietoperz to pan: pani to *nietoperzowa / nietoperzyca*.

Krowa to pani: pan to *krów*

Koń to pan : pani to *konia/konica/koniowa*.

Pani to **owca** : *owiec* to pan.

Pani to **gwiazda** : *gwiazd/gwiazdowy* to pan.

Palec to pan : pani to *palcowa*.

Pani to **muszla** : *muszel* to pan.

Szpadel to pan : pani to *szpadlowa/szpadelka*.

Pani to **mucha** : *Much, muchowy* to pan.

Małpa to pani : pan to *małp/ pan małpa*.

The first „games” were carried out in grade II of primary school, the students completed a questionnaire at the teacher’s request before the lesson. The results of the survey showed that approximately 2/3 of them created forms of words that differed little from the formula/example derived from the college students’ questionnaires, about 1/6 of this group used identical forms, the others most frequently completed the sequences by changing one of the proportions. The regular change was creating sequences with the use of hypocoristic forms: *piesunio, wołunio, balonunio, butunio, progunio etc.* (2 persons). Other changes concerned single words, as if the students briefly changed the paraphrase, forgot about the derivation rule. They wrote:

- plural form: *wół: wóły/woły* (6); *włos: włosy* (6), *balon: balony* (2); *próg: prógi/prógy* (3).

- feminine form of the word: *wól/wóła* (2); *balon*: *balona* (1) *bąbel*: *bąbelka* (3 people).
- diminutive form with another formative of -yk (ik): *bąbelik* (1).

The fewest problems were caused by the words: *pies*, *włos*. It was more difficult to create sequences which contained probably less frequently used words, and those in which there were alternations (*wólek*: *wółek*: *wolik*; *prózek*: *próczek*: *prógek*) and spelling traps (*purzek*: *prórzek*: *prużek*). It seemed that in this age group the game of creating forms according to pattern and a semantic rule was not difficult. However, for some children it was difficult to keep in mind the morphological and/or semantic principle, and consistently implement the choice of forms.

But there was also a group of students (roughly 1/3 of a class), who formed sequences in a completely different way. In all the proportions (except for *pies*: *piesek*) they wrote usually forms different than the model, there were also more deletions, corrections. Those students had a lot of trouble with the creation of derivatives, the choice of a formative, understanding the principles of proportion, using both rules (the semantic and the formal one) simultaneously, also with spelling the words. As in the aforementioned group the changes appeared in one proportion, so in this group the changes concerned almost all of them. The characteristics that I received from educators, indicated that this group of respondents are students with reading and/or writing difficulties, some of them with speech defects, some of them have undergone and some are still in the process of speech therapy. I obtained similar results from the questionnaires filled out by third-grade students. Below I present the forms from the sequences created by primary school students – grades two and three:

- without learning difficulties and without language problems or speech defects:

pies: *piesek* (6), *piešek*, *piesunio*, *piesulek*;
wól: *wólek* (5), *wółek*, *wołunio*, *woły*, *wołowa*, *bawólek*;
włos: *włosek* (8), *włosunio*, *włoseczek*;
balon: *balonik* (7), *balonek* (2), *balonunio*;
próg: *prożek* (6), *prorzek*, *proczek*, *progunio*, *progu*;
bąbel: *bąbelek* (8), *bąbelunio*, *bąbeleczek*;
but: *bucik* (5), *butek* (3), *buteczek*, *butunio*;

- students with reading and/or writing difficulties, sometimes with speech defects:

pies: *piesek* (8), *piesik*, *piesia*, *piesio*;
wól: *wólek* (5), *wóła*, *wołyk*, *wołowa*, *wólontko*, *wóle* (?);
włos: *włosek* (5), *włos(a)(y)ek*, *włosy*, *włoseczek*, *włosianko*;
balon: *balonik* (3), *balonek*, *balon(y)ek*, *baleczek*, *balon*, *balony*, *balo(?)y*;
próg: *prożek* (3), *prorzek*, *pr(o)dżek*, *progacz*, *próg(ow)y*, *prógi*, *progi*, *prók*;

bąbel : *bąbelek* (4), *bąbelka*, *bąbella*, *bąbeleczek*, *bąbca*, *bąble*, *balon*;
but : *butek* (3), *butek* (3), *buciek*, *butik*, *butyk*, *but(?)*, *bućk*.

Also in the questionnaires filled in by older students of primary school, a group of students could be distinguished who did not create regular proportions and put in forms different than expected. Similarly, I found the most numerous quantitative and qualitative diversions in the sequences created by students with learning difficulties and speech defects. Here is a summary of forms from the sequences created by sixth- and seventh-grade students:

• without learning difficulties and speech defects:

wół : *wolek* (7), *wólek* (6), *woleczek*, *wolnik*, *woły* (3);

włos : *włosek* (13), *włoseg*, *włosik*, *włosyk*, *włosy* (5);

balon : *balonik* (11), *balonek* (2), *balonyk*, *balony*;

próg : *prożek*, *prorzek*, *prożeg*, *prózek* (3), *progek*, *progiek* (2), *progik*, *prógcik*, *progi* (4), *prugi*;

bąbel : *bąbelek* (11), *bąbeli(y)k*, *bąbelk*, *bąble*, *bąbele*;

but : *bucik* (4), *butek* (7), *buty*.

• with learning difficulties and speech defects

wół : *wolek* (8), *wólek* (6), *bawolek*, *woły* (2), *wóły*;

włos : *włosek* (14), *włosy* (5), *włoski*;

balon ; *balonik* (9), *balonek* (4), *balony* (4), *balońk*, *balanyk*, *balanik*;

próg : *prożek* (9), *prożek(g)*, *prożeg*, *prorzeg*, *prózek*, *prużek*, *prógek*, *próczek*, *prógulek*, *prógnik*, *progi* (2), *progiem*;

bąbel : *bąbelek* (14), *bombelek*, *bodelek*, *bąbly*, *bompelki*, *babeczek*, *babalek*;

but : *bucik* (11), *butek* (4), *buty*.

In both groups the most common form not meeting the requirements of the translation was the plural form, occasionally an inflected form. Quite often diminutive forms with suffix -yk (ik) were entered, such as *balonik*, *balanyk*, *balonyk*, *balanik*, *bąbelik*. Usually the same words caused students the most trouble. In the group of younger students there was more creativity in the composition of derivatives, and the search for word-forms, even experimentation, was more noticeable. In the older group there were more distinctions concerning the words whose word-formation changes introduced vowel alternations, for example: *prożek* – *prózek* / *prużek*, *wolek* – *wólek* and consonant alternations: *prożek* – *progiem* – *proczek*. The registered forms reflect difficulties with spelling: *próg* – *prorzek* – *prożeg*, *próg* – *progi* – *prugi*, *bąbel* – *bombelek*, *balońk* – *balonik*, *bąbelek* – *babalek*. Students' doubts as to the rendering of nasal vowels are observable, eg: *bably*, *bombelek*, *bompelki*, and phonological problems: *bąmalik*, *bompelki*, graphomotor difficulties: *bodelek*.

Constructing sequences proved to be a far easier task for students from secondary schools. In task 1 I registered examples of inaccurate forms only occasion-

ally. It was slightly differently in the group of students with impaired hearing. In their surveys I often recorded lack of response (gaps in the proportions), more frequent were forms that do not meet the requirement of the linking phrase: *wól – wółka, próg – proga, balon – balonka, bąbel – bąbka, but – buta*, entering plural forms: *buty, włosy*. Only two students created forms realizing the proportion: *butek, balonek*, most of them used the conventional forms: *bucik, balonik*. Just like the younger respondents' surveys, the proportion for the word *próg* had several forms: *progek, prógek, progeczek* that showed the understanding of the principle defined by the linking phrase and the knowledge of appropriate formatives, but pointed to the difficulties of the people with impaired hearing concerning the use of phonotactic rules. In this group I observed examples which demonstrated confusing the inflected form with the word-forming one. Creating proportional sequences was not an easy task for those students with impaired hearing who used mostly sign language. They often expressed disapproval and lack of interest in the game, they also said that they did not understand its purpose.

Task 2 was preceded by a request to provide at least a few phrases linking the words *kot* and *kotka*. The young people entered typical paraphrases, mainly: *kot* is a male and *kotka* is a female or man is *kot*, lady is *kotka*. Only one student wrote: *kot – zwierz, kotka – zwierzyca*, creating a potential derivative with the use of a cognitive category.

Comparisons of forms, added to the entries given in the second part of the task, allow us to conclude that the students treated them like a game of creating word-forms, coming up with forms that meet the requirements defined by the linking phrase. The collected material shows also quantitative and qualitative differences in the creation of derivatives by students of different age groups. Compared with Task 1 a novelty behavior was that in almost all cases the surveyed students produced a few other derivatives fulfilling the requirement of the linking phrase, more frequently did not participate in the game of creating proportions. In many sequences, forms which realized the paraphrase from the previous task were entered, and quite often (especially in the surveys of vocational school students) lexemes were given which were the names of specimen making up a pair, eg: male *pies* (dog) – female *suka* (bitch): female *owca* (sheep) – male *baran* (ram) etc. In this task, the students' word-forming creativity was higher.

Here are the words entered by second- and third-grade students:

- without learning and speaking difficulties:

wieloryb (whale): *wielorybka* (4), *wielorybica* (2), *wielorybcia, wielorybnica, wieloryba, wielorybowa, pani wieloryb, wieloryb;*

nietoperz (bat): *nietoperzyca* (5), *nietoperzowa* (2), *nietoperka, nietoperza, nietoperzyczka;*

krowa (cow): krówka, kruwka, krowa, krowy, pan krowa, byk (9), byck, byki; koń (horse): koniowa (3), konica/końca, konia, końka, koniczka (2), klacz (3), klacza, żrybica, pani koń;

owca (sheep): baran (8), owca (2), owiec, owieczka, pan owca, owcy, owce, owcapan;

gwiazda (star): gwiazd (4), gwiazdy (2), gwiazdka, gwiazdeczka (!), gwiazdor (3), gwiazdowie, gwiazdek (2), gwiazdacz, pan gwiazda, księżyc (!);

palec (finger): palcowa(3)/palecowa, pani palcowa, pani palec, palca, palcawa, paleczka, palecka, palcucha, paleńka, paluszka, palcica;

muszla (shell): muszla (3) muszl, muszel (5), muszlarz, muszle, muszelka, klozet;

szpadel (spade): szpadelka (6), szpadelowa, szpadłówka, szpadlica, szpadelek, łopata (2);

mucha (fly): much (11), muszek (3), muchowy, muska, muszka (2), mucha (2), muchowad, pan mucha;

małpa (ape): małpison (5)/małpison, goryl (4)/goryl, małpek, małp, małpica, małpolud/małpolut, pan małpa;

- with difficulties in reading and writing, speech defects:

wieloryb: wielorybka, wielorypka, wierorypka, wieloryba, wielorybia, wielorybowa, wierobica, wielorbiana, pani wieloryb, wieloryb; wróbelka;

nietoperz: nietoperzowa (2), nietoperzyca, nietoperz(ż)ka, nietopeszka, nietoperza, nietoperka (2), nietoperza;

krowa: byk (6); krowiec, krówek, krowior;

koń: pani koń, konica (2), końica, koninka, konia, końkowa, końć, koniczak, kobyła (3);

owca: owiec (7), pan owiec (2), owieczek, owieczor, owieczo, owieco, owieczko, owcek, owc, owcar, owcor, owciok, awciow, owciotko, owaka, owcowa, baran, owoce;

gwiazda: pan gwiazda, gwiazdor (3), gwiazdek (1), gwiazd (2), gwiazdeczek, gwiazdonek, gwiazdospad;

palec: pani palec, paleca, palcowa (3), palcawa, paleczówka, pa(v)(r)uszek, paluszka, palca, palca(?)iwa/ palow, paleczka (2), palunia (2), palka;

muszla: pan muszla, muszel, muszla, muszl(2), pan muszel, pan moszów, muszelkowy, muskan, muszle, muszli,

nietoperz: nietoperzowa (2), nietoperzyca, nietoperz(ż)ka, nietopeszka, nietoperza, nietoperka (2), nietoperza;

krowa: byk (6); krowiec, krówek, krowior;

koń: pani koń, konica (2), końica, koninka, konia, końkowa, końć, koniczak, kobyła (3);

owca: *owiec* (7), *pan owiec* (2), *owieczek*, *owieczor*, *owieczo*, *owieco*, *owieczko*, *owcek*, *owc*, *owcar*, *owcor*, *owciok*, *awciow*, *owciotko*, *owaka*, *owcowa*, *baran*, *owoce*;

gwiazda: *pan gwiazda*, *gwiazdor* (3), *gwiazdek* (1), *gwiazd* (2), *gwiazdeczek*, *gwiazdonek*, *gwiazdospad*;

palec: *pani palec*, *paleca*, *palcowa* (3), *palcawa*, *paleczówka*, *pa(v)(r)uszek*, *paluszeka*, *palca*, *palca(?)iwa/palow*, *paleczka* (2), *palunia* (2), *palka*;

muszla: *pan muszla*, *muszel*, *muszla*, *muszl(2)*, *pan muszel*, *pan moszów*, *muszelkowy*, *muskan*, *muszle*, *muszli*,

szpadel: *szpadelka* (7), *szpadka*, *szpadela*, *łopata*;

mucha: *much* (7), *mucha*, *muchor*, *mucha*;

małpa: *małp* (4), *małpek* (4); *małpison*, *małpior*;

In this task nearly all students correctly understood the principle of the intralingual translation and created the derivatives according to the rule of “phonetic similarity of words in their core” and did not care about formal proportions. The differences in the formatives used were easily noticeable: in the group of linguistically more competent students more constructions (among them the potential ones) in which formatives were used meant for the feminine forms, fewer constructions with the use of formatives from other grammatical categories. In the group of students with language difficulties the situation was different. The choice of the rule and formative caused them trouble, they often repeated the initial form. Problems with spelling were revealed to a lesser extent, but definitely difficulties in distinguishing the morphological parts were more clearly visible.

The material obtained from the surveys done by older students from primary school also shows divergences in word-formation skills, compared with their younger mates. The extent of the techniques used, playing with proportions, increased with age. Here are the examples of sequences created by fifth- and sixth-grade students:

wieloryb: *wielorybka* (8), *wielorybica* (5), *wielorybowi* (2), *wielorybia*, *wielorybiczka*, *wielorybia*, *pani wieloryb*;

nietoperz: *nietoperzowa* (5), *nietoperzyca* (8), *nietopieszka* (2) *nietoperzka*, *nietopeża*, *nietoperzyna*;

krowa: *krów* (5), *krowa* (2), *krówka* (3), *krowmen*, *krowies*, *byk* (11);

koń: *konica* (6), *końca*, *końica*, *koniowa* (2), *konia*, *klacz*, *końwomen*, *kołyba*;

owca: *owiec* (4), *owieczka* (2), *owieczna*, *owcem*, *owoc*, *koza* (2), *baran* (6);

gwiazda: *gwiazdor* (2), *gwiazd*, *gwiazdec*, *gwiazdek*, *gwiazdor*, *gwiazdeka*, *gwiezdnik*, *pan gwiazda*, *pan gwiazd*, *gwiazdem*, *gwiazda*, *gwiazdka*, *gwiazdeczka*, *księżyc*;

palec: *palcowa* (4), *palecowa* (2), *palcówka*, *palca*, *pani palec*, *paluszka*, *palica*, *palec*, *paluszek*, *paluch*, *ręka*;

muszla: muszel (5), muszl, muszol, muszlem, pan muszla, muszla, muszelka; szpadel: szpadlowa (10), szpadlica (2), szpadlówka, szpadela, szpadrowa, szpadella, szpadelka, łopata;

mucha: much (6), muszka (2), muska, muszyca, muchowy, muszek, pan mucha, muchalik, muchem, osa, komar;

małpa: małpa (5), małpison (5), małpison, małpion, małp, małpia, małpas, małpan, małpomen, szympal, goryl (3).

The comparison of sequences created by vocational school students and secondary technical schools also shows differences in the sphere of word-formation competence, in comparison with younger students. Here are examples of sequences created by vocational school students:

wieloryb: wielorybowa (4), wielorybica (3), wieloryb (3), wielorybka (2), wieloryba, wieloryka, pani ryba, rybka (5), wielka ryba;

nietoperz: nietoperzyca (5), nietoperzowa (4), nietoperka (2); nietoperz (3); nietopesz (2), nietoperzka, pani sowa (3);

krowa: krowa (2), byk (15), cielę (2);

koń: kobyła (12), konia, konica, klacz (6);

owca: owieczka, owieczce, owcowy, owiec, baran (13), pan baran, koza (2), kozioł (2);

gwiazda: gwiazda (5), gwiazdozbiór (3); gwiazdor (3); gwiazdy, gwieździe, księżyc (4), planeta (2), niebo (1);

palec: palec (5); paluszek, paluszka, palica, palcowa, ręka (7), rączka, dłoń, opuszek, opuszka;

muszla: muszla (5), muszelka (2), pan muszla, muszel, małża (3), plaża, bursztyn, ślimak;

szpadel: szpadelek (6), szpadel, szpadle, łopata (9), motyka, betoniarka;

mucha: muszka (6), mucha (3), muchy (2), much (1), bąk (4), komar (2);

małpa: małpaka (2), małpeczka (2), małpa (2), goryl (10), szympans (3), zwierzę.

Students from that group also focused on fulfilling the task determined by the linking phrase more than on creating proportions, more frequently than others included lexemes being names of the specimen from a masculine – feminine pair, repeated the entry, chose words from the same semantic range, collection, subordinate category, seldom a primary one. The play with the linking phrase meeting the requirements of the intralingual translation was for almost $\frac{1}{4}$ of them so difficult (or incomprehensible) that they gave up the search for any word-formation constructions. Just as in the youngest students' group I registered plural forms, inflected forms.

Secondary technical school students (from the same school and of the same age) fulfilled the task in a slightly different way. Here is a list of sequences from their survey forms:

wieloryb: *wielorybka* (11), *wielorybica* (7), *wielorybowi*, *wielorybowi*, *wielorybnica*; *wieloryb*;
nietoperz: *nietoperzyca* (11), *nietoperzka* (3), *nietoperzowa* (2), *nietoperka* (2), *nietoperka*;
krowa: *krow* (5), *krów* (4), *krowek* (3), *krówek*, *krowiec*, *krówsko*, *kruwka*, *byk* (3);
koń: *konica* (7), *konina* (4), *koniowa* (2), *konnica*, *kobyła* (3), *klacz* (3);
owca: *owiec* (11), *owc* (3), *owik*, *owczyk*, *owczątka*, *owieczka* (2), *baran* (2);
gwiazda: *gwiazd* (7), *gwiazdek* (4), *gwiazdor* (2), *gwieździec*, *gwieździe*, *gwieźdny*, *gwiazda* (2), *gwiazdka*, *księżyc*;
palec: *palcowa* (4), *palcowa* (2), *palcówka* (2), *palczyca*, *palica*, *palcina*, *paliczka*, *palicowa*, *palczatka*, *palcontka*, *paluszka* (2), *paluszek* (2), *ręka*, *dłoń*;
muszla: *muszel* (13), *muszl* (3), *murzl*, *muszelka* (2), *skorupiak*;
szpadel: *szpadelka* (11), *szpadlica* (3), *szpadka*, *szpadelek* (3), *łopata* (2);
mucha: *much* (8), *muszek* (3), *muszka* (6), *muszczka*, *robacznicza*;
małpa: *małpek* (7), *małpison* (2), *małpan*, *małpka* (2), *małpkowa*, *małpeczka*, *goryl* (4), *orangutan* (2).

Secondary technical school students more frequently took up the game with sequences of proportional relations, incorporated the rule of intralingual translation. In the word-formation constructions they very often used the expected formatives, created potential forms in accordance with the required meaning. Inadequate proportions were rare: the use of diminutives, plural forms. Some respondents (as in the peer group described earlier) did not take up the game of creating proportions but respected the requirement of semantic modification and displayed the knowledge of specific names and extra-linguistic reality, but it happened much less frequently than in a group of their peers from a vocational school.

Students with impaired hearing completed also that part of the questionnaire reluctantly. The obtained material is presented below:

krowa : *byk* (6), *krowiec*, *krówek*, *krowio*;
koń : *konica* (6), *końica*, *koninka*, *konia*, *kobyła*;
owca : *owiec* (7), *owieczek*, *owcor*, *baran*;
gwiazda : *gwiazdek* (8), *gwiazdor*;
palec : *palca* (3), *palcowa* (2), *palczka* (2), *palunia* (2), *palka*;
muszla : *muszel* (9),
szpadel : *szpadelka* (7), *szpadka*, *szpadela*, *łopata*;
mucha : *much* (7), *mucha*, *muchor*, *muchat*;
małpa : *małp* (4), *małpek* (4), *małpison*, *małpior*.

Almost all structures created by students with impaired hearing implement the principle of translation. The repertoire of forms obtained from the survey is much more limited, because not only was the group of respondents less numerous, but many of the respondents did not submit the answers. It seems that they used

the well tested ways to create derivatives following the indication of the linking phrase.

The next task, to create paraphrases of potential forms: *uczynnik*, *wygodnik*, *myszarium*, *prostokątowiec*, ended the questionnaire (in preparation). The obtained results also confirm that the inference about the meaning of a word based on the knowledge of its morphology depends on the student's age, their level of language skills. Playing with language translation confirmed that students with difficulties in reading and writing, speech defects continuing into the school-age have difficulties in using the rules for inference about the importance of word-formation structures.

CONCLUSION

As psychologists say, recognizing the analogy – that extraordinary instrument, the mysterious ability of the cognitive system – depends on the system of concepts, creation of generalizations and the ability to transform information represented in the mind. Noticing the similarities between words, understanding the meanings with the use of inference through analogy has been recorded by me in the conversations of 4 years-old children. The proper reasoning by analogy in solving simple conceptual tasks exists among 3 years-old children, but it must be nested in their acquired knowledge (Haman 1993), a clear goal allows them to perform conceptual operations, even without guidance based on external similarity. Explaining the principles of operation and the role of analogy at different stages of cognitive development has enabled researchers to develop many different models and to conclude that on the successive stages of conceptual development it is the basis for the restructuring of the conceptual system. Although we know little about the role of inference through analogy in language development and understanding of its structure by a child, we use it frequently in games of a diagnostic character and in speech therapy.

The game, in which the task was to demonstrate the skills of creating word-formation structures that meet the requirement of proportionality of the form and content showed that it is done slightly differently depending on the age and level of competence and language skills. Taking up the language game of creating proportional forms according to the requirement of the linking phrase, that requires the understanding of the morphological structure of words and the possibility of explaining the meaning of the word with the use of structural elements, revealed that in every school there is a group of students who can not cope adequately with implementing that knowledge. These are mainly pupils with difficulties in reading and writing and long persisting speech defects.

The presented results do not allow for a formulaion of undue generalizations. Nevertheless, they suggest that the difficulties of students in the creation of word-

formation structures defined by a linking phrase and inwritten in the sequences of proportional relations arise from the limited understanding of the fact that words coexist in the language system, that their form and meaning are determined by specific rules. The use of intralingual translation also indicates that even at that age in the development which is appropriate for formal operations, some students still remain at the stage of labeling reality, and this correlates with a lower level of metalinguistic skills, difficulties in learning reading and writing, understanding of cultural texts, as well as overcoming the difficulties with speech.

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