

A DYNAMIC MODEL OF MULTILINGUALISM: DEVELOPMENTAL  
CHANGES IN L<sub>1</sub> MORPHOLOGY OF POLISH STUDENTS OF ENGLISH

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**1. Bilingualism, the native speaker, and multi-competence**

Bilingualism is a concept that eludes precise definition. In the popular view, as exemplified in Webster's dictionary (1988), a bilingual is 'a person with complete mastery of two languages'. This view was upheld by Bloomfield (1933: 56), who defined bilingualism as 'the native-like control of two languages'. This traditionally linguistic approach viewed degree of language mastery as the most distinctive characteristic of bilingualism and turned to be insufficient for describing bilingualism-related phenomena. A plethora of definitions has been proposed since Bloomfield's time, their detailed discussion being beyond the scope of the present paper.

Degree of proficiency in each of the bilingual's languages seems to be the most problematic in most attempts to define what bilingualism is. Bloomfield's requirement of native-like control of the L2 was relaxed by Haugen (1953: 7), who posited that ability to 'produce complete meaningful utterances in the other language' was sufficient to consider someone to be a bilingual, and by Macnamara (1967), to whom a minimal competence in any of the four language skills sufficed for the purpose. Problems with determining the degree of proficiency necessary to consider someone as a bilingual speaker inclined authors such as Weinreich (1953) and Mackey (1962) to consider bilingualism as the practice of alternate use of two languages by the same individual. Furthermore, Mackey (1962) stresses that the point at which a person becomes bilingual is impossible to determine unequivocally and has to be specified arbitrarily.

The native speaker concept, brought to bear by Bloomfield, creates difficulties of its own. It is nowadays widely recognised that L1 acquisition does not stop at puberty but continues throughout lifetime (e.g. Aitchison 2001, Jessner 2003), that not all native speakers achieve the same level of L1 proficiency, and that the native speaker's knowledge of the L1 is often far from ideal as measured against the norm reference (e.g.

Davies 2003) due to either incomplete learning of the L1 or acquisition of a non-standard instead of a standard form.

Cook (1993, 1996, 2003) avoids the perplexities of defining where bilingualism starts by introducing the term multi-competence to denote the knowledge of two or more languages in one mind, i.e. the L1 and the developing interlanguage(s). The multi-competence concept emphasises the dynamic nature of the developing L2 and its changing relation to the L1. In a sense, it may be viewed as an intermediary stage between monolingualism and bilingualism. Hence, Cook refers to people who use more than one language for any purpose as L2 users.

Cook (2003) posits that the two languages in the speaker's mind may be totally separated, interconnected or fully integrated, depending on a number of factors. The separation model of linguistic representation in the bilingual mind is referred to by Grosjean (1989) as the monolingual view, according to which a bilingual person behaves in the same way in each of their languages as a respective monolingual and any interlingual influence is by definition ruled out. Grosjean argues that a bilingual person is not two monolinguals in one giving evidence of processing the two languages separately or together, depending on the selected language mode, and takes this as evidence for an integrated representation. Grosjean (2001) argues that, depending on whether the bilingual or monolingual mode is selected for a particular task, the degree of simultaneous activation of both languages will vary. Cook (2003) acknowledges that parts of the linguistic system may remain separated while others are integrated to varying degrees and proposes an integration continuum of possible relationships in multi-competence. The degree of integration may vary depending on the particular subsystem, level of proficiency, individual L2 user characteristics and other factors. Moreover, the degree of integration should be subject to change over time, depending on an individual's changing linguistic experience. Dewaele and Pavlenko (2003: 137) see multi-competence as a 'never-ending, complex, non-linear dynamic process' that takes place in an L2 user's mind. In other words, L2 user's both languages are in a constant state of flux and change in linguistic input, or what Weinreich (1953) called patterns of language use, may lead to widespread restructuring in both systems.

Cook's multi-competence hypothesis and integration continuum presuppose bidirectional influences between an L2 user's L1 and L2. The occurrence of such L1-L2 and L2-L1 crossinteractions is considered indicative of integrated representation within a specific area.

Transfer from L1 to L2 has been well researched and there is no need to discuss this evidence here. Recent years have brought a number of studies of L2 effects on L1, which can be taken as evidence for multi-competence. Balcom (2003) shows that French dominant bilinguals differ from French monolinguals in grammaticality judgements and tend to use more passives and fewer middle constructions than monolinguals. Pavlenko and Jarvis (2002) and Pavlenko (2003) found L2 influence on L1 morphosyntax of Russian/English bilinguals in the area of tense and aspect, subcategorisation, case marking and prepositional choice, as well as in the area of linguistic framing and lexicosemantics. While Balcom's subjects came from a minority language community in Canada and

Pavlenko's subjects from Russian diaspora in the United States, Jarvis (2003) carried out an extensive case study of a Finnish immigrant in the United States who has never lived in an L1 community in the United States and maintained close ties with her family in Finland. Jarvis's subject showed L2 influence on L1 in the area functional morphology, subcategorisation frames, lexicosemantics and idiom. Jarvis also notes that the L2-influenced structures seemed to be limited to specific morphemes, words and phrases, thus item-specific rather than system-level. The only possible system-level change in her speech may have been a preference for SVO order elicited on a metalingual judgement task. All of the L2-influenced structures produced by Jarvis's subject occurred with varied frequencies in natural speech but never totally replaced the conventional L1 patterns, which suggests an addition to the system rather than replacement. It is also interesting to note here that all of the L2-influenced structures were considered unacceptable by older Finns living in Finland but some of them were considered perfectly acceptable by younger Finns living in Finland who were also proficient in English. This may indicate an L2-induced change taking place in Finnish. Both Balcom (2003) and Jarvis (2003) emphasise that their subjects show no signs of language attrition, hence the language of those bilingual subjects should not be considered a 'poorer' or 'contaminated' version of the L1 but simply qualitatively different from the language of their monolingual counterparts.

Traditionally, all research on interlingual effects has been limited to what can be broadly defined in psycholinguistic terms as transfer. However, this picture of multi-competence may be in fact incomplete. According to Cummins's (1978, 1991) Developmental Interdependence hypothesis, a learner's competence in L2 is partly dependent on the level of competence achieved in L1. Cummins's (1980) model of Common Underlying Proficiency, in turn, allows for transfer of skills from one language to another. This theoretical framework stresses the role of metalinguistic knowledge which both facilitates language acquisition (e.g. Lasagabaster 2001) and increases with language learning experience (e.g. Pinto 2004). Pinto (2004) showed that bilinguals' metalinguistic abilities are on the whole higher than those of monolinguals and their metalinguistic awareness may differ in terms of quality depending on the context in which the L2 was learned.

Cummins's (1980) Common Underlying Proficiency constitutes a kind of a central operating system, i.e. both knowledge base and processing mechanisms, which are common for both languages. What follows is that some specific skills practised in one language may actually be transferred to another language. Such application of task-specific skills to new tasks has been long known in psychology as transfer of training and can have either a facilitative or detrimental effect on a subject's performance (e.g. Thorndike & Woodworth 1901, Dechert 2003).

Herdina and Jessner (2002) and Jessner (2003) incorporate Grosjean's (2001) and Cook's (2003) view of bilingual linguistic functioning in their dynamic model of multilingualism (DMM), applying dynamic systems theory to multilingual systems. Jessner (2003) stresses that earlier models of bilingual development ignore diachronic language change and individual variation. Hence, Herdina and Jessner (2003) adopt Hylltenstam and Viberg's (1993: 3-4) definition of language change in psycholinguistics as

the totality of the dynamic phenomena observed in the competence of individuals across the lifespan, i.e. language acquisition, loss, and language contact phenomena. This approach emphasises the dynamic aspect of bilingual development, seen as interplay of the systems involved. Jessner (2003: 236) points out that the development of one linguistic system influences the development of the other system in a non-additive way. Thus, bilingual development is seen as interplay of variables that mutually affect each other over time and each of the variables, by affecting others, affects itself as well. This view of relationships between an L2 user's two languages goes far beyond the traditional concept of interlingual transfer as effect of one language on another. Herdina and Jessner (2002:29) introduce the notion of crosslinguistic interaction (CLIN) for all the phenomena related to interaction between two or more language systems. Cross-linguistic interaction includes all the existing transfer phenomena (i.e. structural and non-structural) as well as 'non-predictable dynamic effects which determine the development of the systems themselves'. What follows logically is that the very presence of a developing L2 system in the bilingual mind may affect L1 development by speeding up or retarding developmental tendencies which exist independently in the language of monolingual native speakers. Some of these L1 developments originating in multi-competence will be inherent in the system of L1, others may result from L2 users' changed metalinguistic knowledge and transfer of specific language learning skills developed in L2 classroom contexts to L1 contexts.

In view of the research discussed above, the theoretical orientation adopted in this paper acknowledges that the boundary between language learners and bilinguals is fuzzy. Hence, such persons will be further on referred to interchangeably as L2 users or bilinguals. The second important assumption is that both languages of an L2 user are in a constant state of flux. Language change, understood here as competence change in any of the languages, is brought about by changes in the input, i.e. shifting patterns of language use, as well as by differences in the subjects' individual language learning experiences and other dynamic interactions between the two systems involved. The subjects' linguistic performance in L1 will be compared against the prescriptive norm and will be expected to contain deficiencies and deviant forms resulting both from imperfect acquisition of the L1 and from substitution of non-standard for standard forms. Norm-referenced forms are expected to appear side by side with non-standard forms in the output, language change is expected to be item-specific rather than system-specific and should manifest itself as a change in frequency of appearance of a given form in the output.

The aim of the research presented below is to examine L2-induced change in L1 that is not overtly induced by transfer, but rather by factors such as changing patterns of language use, transfer of training and system-developmental factors. All in all, the present author aims to describe stages in L1 development and pinpoint developmental tendencies in L2 users' L1 in L1 environment.

## 2. The present study: subjects and method

The subjects for this study are two groups of 57 Year 1 and Year 4 students of English at Adam Mickiewicz University. The researcher's aim was to obtain two maximally big

correlated samples of a relatively homogeneous population, as it is believed that sample size can provide a more reliable verification of the observed processes than statistical analysis itself.

Both groups of subjects are considered to be functionally bilingual. However, since they are still students of English, the term L2 users seems to be the most expedient in relation to this particular population. The principal difference between both groups is believed to be the length of their stay at the university, and in particular the period of intensive exposure to the L2, resulting in different levels of L2 proficiency and, at least quantitatively, different L2 learning experiences.

The subjects were administered an L1 morphology test, which consisted of two parts: inflections and word formation (see Appendix). In both the subjects were asked to complete sentences by providing an appropriate form, given a written cue at the end of the sentence. For the purpose of the present study, the data from both morphology subtests will be discussed jointly.

## 3. Expected results

Four predictions have been made with regard to the differences between the two groups:

*Hypothesis 1 (H1): An increase in accuracy* resulting from acquisition of relevant L1 forms. It is assumed here that some students may not know the required form and provide a multitude of different incorrect forms instead, therefore no single competing form can be distinguished in the responses given. The predicted results may be summarised as follows:

$$\Sigma Y_{4C} - \Sigma Y_{1C} > 0,$$

where  $\Sigma Y_{4C}$  and  $\Sigma Y_{1C}$  represent the number of correct responses given by Year 4 and Year 1 students respectively.

*Hypothesis 2 (H2): Non-standard for standard substitutions.* As it has been observed in the preliminary report (Ewert, Fliciński, Sloboda 2003), the Year 4 students show a pronounced tendency to use non-standard variants instead of the desired standard form, which suggests a pattern of language change in progress, as identified in sociolinguistics as well as in transitional competencies as described by Jarvis (2003). Thus, two or more forms can be distinguished in the responses given, the standard, correct form and the non-standard, erroneous form from a prescriptive point of view, form or forms. This prediction can be summarised as follows:

$$\Sigma Y_{4C} - \Sigma Y_{1C} < 0 \quad \text{and} \quad \Sigma Y_{4E} - \Sigma Y_{1E} > 0,$$

where  $\Sigma Y_{4E}$  and  $\Sigma Y_{1E}$  stand for the number of competing forms given by the two groups respectively.

*Hypothesis 3 (H3):* It has also been observed (Ewert, Fliciński, Sloboda 2003) that a number of incorrect forms appears consistently in the responses which cannot be categorised as non-standard and have to be simply referred to as erroneous. The origin of these forms is clearly different than of those referred to in *H2* – they may be developmental errors resulting from language learning processes. Some, if not all, of these forms are erroneous analogical creations, probably formed to fill in a competence gap. The number of such forms is expected to decrease, thus they will be referred to as *residual forms*. Hence, the actual prediction is:

$$\Sigma Y_{4C} - \Sigma Y_{1C} > 0 \quad \text{and} \quad \Sigma Y_{4E} - \Sigma Y_{1E} < 0.$$

*Hypothesis 4 (H4): Attrition.* Though Ewert, Fliciński, Sloboda (2003) claim that language attrition does not take place in the examined population, it cannot be ruled out that with respect to some forms the following pattern of responses will be observed:

$$\Sigma Y_{4C} - \Sigma Y_{1C} < 0$$

with no distinguishable competing form.

It should be noted here that all of these hypotheses, except *H4*, concern language acquisition rather than loss. *H1* and *H3* predict an increase in the number of correct responses in Year 4. *H3* predicts an increase in the number of non-standard forms, which should be viewed as a special case of language acquisition, i.e. acquisition of a non-standard, possibly innovating form often used by other native speakers of Polish, and often frequently appearing in the media.

#### 4. Results and discussion

All the data obtained were classified according to the conditions specified above. Instances where the differences in the number of correct responses between the groups was lower than 3 (i.e. less than 5% of the sample) have not been included in the present analysis, as such a small difference between the two groups as well as an equal number of correct responses given by both groups were interpreted as pointing to relative stability of the form. *t*-test was carried out to see if the inter-group differences on each of the four categories under analysis were statistically significant. The results are presented in Tables 1-4.

Table 1  
Increase in accuracy (*H1*) – number of correct responses

Form	Year 1	Year 4	Difference
zemnij	27	35	-8
załgał się	25	34	-9
Mean	26	34.5	-8.5

$$t = -17.0000 \quad p < .05$$

Table 2a  
Non-standard for standard substitutions (*H2*) – number of correct responses

Form	Year 1	Year 4	Difference
(grę) Citki	18	6	12
(w) Liverpoolu	53	49	4
(zawiazał) but	40	31	9
pani prezydent	46	40	6
nienawidzić	40	27	13
zaadaptowano (strych)	39	21	18
Mean	39.33	29	10.33

$$t = 4.976750 \quad p < .005$$

Table 2b  
Non-standard for standard substitutions (*H2*) – number of innovating forms

Form	Year 1	Year 4	Difference
(grę) Citko	38	50	-12
(w) Liverpool	3	6	-3
(zawiazał) buta	17	26	-9
prezydentowa	8	12	-4
nienawidzić	17	29	-12
zaadoptowano (strych)	10	19	-9
Mean	15.5	23.67	-8.17

$$t = -5.17080 \quad p < .005$$

Table 3a  
Residue (*H3*) – number of correct responses

Form	Year 1	Year 4	Difference
czworo (skrzypiec)	22	35	-13
kalk (językowych)	11	26	-15
migocze, migoce	43	47	-4
(kwas) mlekowy	53	57	-4
upór	32	48	-16
Mean	32.2	42.6	10.4

$$t = -3.91409 \quad p < .05$$

Table 3b  
Residue (H3) – number of analogical creations

Form	Year 1	Year 4	Difference
cztery pary ( <i>skrzypiec</i> )	23	15	8
cztery ( <i>skrzypce</i> )	10	6	4
kalek ( <i>językowych</i> )	45	31	14
migota	6	2	4
( <i>kwasy</i> ) mleczny	3	0	3
upartość	24	9	15
Mean	18.5	10.5	8

$$t = 3.677108 \quad p < .05$$

Table 4  
Attrition (H4) – number of correct responses

Form	Year 1	Year 4	Difference
przeciągnąłem, przeciągnęłam	55	49	6

The data confirm hypotheses 1-3. The numerical criterion was sufficient to identify non-standard variants (Table 2b). However, it must be noted that no available literature identifies the form *zaadoptowano* as a non-standard variant of *zaadaptowano*. Hence, it will be safer to categorise this form as an erroneous analogical creation, similar to those listed in Table 3b. A consistent increase in the number of *zaadoptowano* responses is even more surprising considering the fact that the cue word to elicit this response was *adaptacja*. Both forms have cognates in English which are frequently confused by L2 learners, thus this particular increase should rather be attributed to transfer of training.

The remaining forms in Table 2b correspond to developmental tendencies in Polish described by different authors, e.g. a tendency not to inflect surnames ending in *-o* (Satkiewicz, 1981; 1986) or a tendency not to inflect foreign place names (Markowski 1981), or are listed in dictionaries as frequently used incorrect or outdated forms (e.g. Doroszewski 1958-1969, Doroszewski & Kurkowska 1973, Markowski 1999). Hence, they are clearly instances of language change already in progress in Polish, possibly facilitated by contact with a language that has fewer inflectional forms (blending of case forms) or by general cognitive factors unrelated to linguistic transfer phenomena.

It can easily be shown that all the forms in Table 3b are analogical creations: *cztery* 'four' or *cztery pary* 'four pairs' instead of the required collective numeral *czworo*, *kalek*, i.e. genitive of *kaleka* 'cripple' instead of *kalk*, i.e. genitive of *kalka* 'calque', *mleczny* 'milky' for *mlekowy* 'lactic'. The form *migota* is obviously analogous to *migotać* 'flicker'. The most interesting is the form *upartość* for *upór* 'stubbornness', where a more productive suffix *-ość* is added to form the noun (Buttler, 1981; Satkiewicz, 1981; Waszakowa, 2001), even though, at least to the best of the present author's knowledge, the form itself is not recorded in the available literature on developmental tendencies in Polish. Similar forms occur in the production of Polish monolingual teenagers (Ewert, Słoboda &

Fliciński 2004), where they display varied paths of development, e.g. *cztery* (for *cztery pary*) is on the increase while *mleczny* (instead of *mlekowy*) is disappearing, which suggests developmental origin of these forms. Notably, *upartość* (for *upór*) is also on the increase in the production of Polish/French bilingual teenagers and on the decrease in the production of Polish/English adult bilinguals. This suggests that the developmental path taken by such analogical forms in L2 users' competence may be affected by the very experience of learning another language, irrespectively of whether it is French or English. It seems that at different stages of multi-competence development the L1 is affected differently by different processes.

The problems with categorising the two forms mentioned above – *zaadoptowano* and *upartość* – suggest that, as a matter of fact, the two psycholinguistic processes – analogical creation and choice of non-standard instead of standard form – are in a competing relation, with analogy clearly losing ground in the examined population to the more mechanical, memory-based process of choosing between two competing variants.

The data presented in Table 4 is definitely insufficient to confirm Hypothesis 4, especially that most of the incorrect forms were tense and person errors, so that it is even impossible to say whether they result from an avoidance strategy or absentmindedness.

## 5. Conclusions

The results of the present study confirm the views expressed in recent psycholinguistic literature that if a norm-referenced test is used, even the native speaker will not demonstrate a full level of attainment (Davies 2003). This remark is particularly true with regard to L2 users where crosslinguistic interaction leads to a number of non-predictable dynamic developmental phenomena, which Herdina and Jessner (2002: 29) interpret as synergetic. It seems that the L1 growth phenomena in the population under study are quite complex and consist of a number of competing processes:

1. acquisition of rare forms;
2. creation of developmental, analogical forms, which may later be abandoned;
3. preference for non-standard over standard forms, which can be induced by change in patterns of language use (e.g. limited contact with formal varieties of L1).

The first two of these developments can be easily explained in psycholinguistic terms as manifestation of regular language learning processes. What can be deduced from the data is overgeneralisation leading to appearance of erroneous developmental forms which are later abandoned, giving way to the expected regular variant via the operation of memory-based processes (Palermo & Howe 1970). The last of these developments leads to loss in prescriptive terms, however, from a psycholinguistic point of view, it should be considered as acquisition of another variant, i.e. a gain.

The qualitative differences between the two groups in this study make it impossible to state which of the groups of L2 users knows the L1 better. Similar differences may have to be accounted for while comparing the L1 of bilingual *versus* monolingual subjects.

The observed patterns of language change, as expected, resemble those described in sociolinguistic studies of language change in progress or in transitional learner competencies. Norm-referenced forms appear side by side with non-standard forms in the output (e.g. Labov 1972) and the implementation of language change seems to be item-specific (e.g. Wang 1969, 1977, Hsieh 1977).

All in all, it can be said that the L1 of bilingual students is in a state of flux, displaying two complementary tendencies: a tendency to simplify and regularise (e.g. *cztery skrzypce, upartość*) and a tendency to acquire new forms, both standard and non-standard, used by other speakers of Polish (e.g. *zawiązał buta, zemińj*). The former dominates in the younger group of subjects, while the latter in the older one. Further research is needed to see how the language of bilingual students differs from that of their monolingual counterparts.

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## APPENDIX

## L1 (Polish) morphology test

## 1. Wpisz w luki podane w nawiasach wyrazy (cyfry podaj także w formie wyrazów).

**Przykład: Nigdy nie widziałem tak olbrzymiego długopisu. (DŁUGOPIS)**

Nie udało się znaleźć ..... (8 DZIECI)

Nauczyciel muzyki kupił swoim uczniom ..... (4 SKRZYPCE)

Student nie potrafił zrozumieć procesu tworzenia tych ..... (KALKA JĘZYKOWA)

W ..... oglądaliśmy dobrą grę Marka ..... (LIVERPOOL\CITKO)

Uroczystości zaszczytli swoją obecnością ..... (BISKUP)

Ktoś ..... przed nami światełkiem. (MIGOTAĆ – czas teraźniejszy, 3 os., 1 pij.)

Politycy dobrze ..... sytuację. (ROZUMIEĆ – czas teraźniejszy)

Masakra w kopalni skończyła się po ..... (11/2 h)

..... ten papier i wyrzuć do kosza. (ZMIĄĆ – tryb rozkazujący, 1. poj.)

..... Marka na swoją stronę. (PRZECIĄGNAĆ – czas przeszły, 1 os., 1. poj.)

..... wystąpienie prezydenta. (PRZEKONYWAĆ)

Jan zawiązał ..... (BUT)

## 2. Z podanych w nawiasach leksemów utwórz wyrazy i wpisz je w luki.

**Przykład: Franek wykorzystał swój czas efektywnie. (EFEKT)**

..... staruszka nie mogła pogryźć jabłka. (ZĄB)

Janowi nie udało się ..... urzędzenia do stawiania baniek. (MYŚLEĆ)

Prześwietne wystąpienie ..... (PREZYDENT, rodzaj żeński)

Kwas ..... jest jednym z powodów próchnicy u dzieci. (MLEKO)

..... to cecha każdego osiołka. (UPARTY)

Od tej pory Jan zaczął ..... (NIENAWIŚĆ SWOJA) ŻONA)

..... był ubrany w czerwone rybaczki. (ZAMACH)

..... się do tego stopnia, że stracił poczucie tego, co w ogóle może być prawdą. (ŁGĄĆ)

..... strych kamienicy na mieszkanie dla powozian. (ADAPTACJA)

..... staruszka dokarmiła gołębie we wtorki. (86½ \ ROK)