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## Dynamism of Successive Childhood Bilingualism

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The paper presents two theoretical models of multilingual/bilingual development – Dynamic Model of Multilingualism (DMM) and Thresholds Theory (TT). The data from a case study of a successive Croatian (L1) – English (L2) bilingual development are presented in the light of DMM and TT. The author concludes that the mentioned models have a significant explanatory power but are not yet refined enough to present a multitude of aspects and interacting components in the development of successive childhood bilingualism.

### 1. Introduction

Successive childhood bilingualism is a term which denotes the acquisition of a second language by children who already have one language system (the first language) fairly established. The age of three is usually taken as a border line between successive and simultaneous bilingualism since it is considered that by that age children acquire basic linguistic and communicative competence in the first language. It is believed that the acquisition of a new language after the first language has been fairly established differs from the simultaneous acquisition of two languages from birth, or from the types of acquisition when children

get exposed to another language at some point between the age of 0 – 36 months (also labeled simultaneous bilingualism). However, it has to be stressed that the mentioned border line is partly arbitrary since, by the age of three, different children reach somewhat different levels of linguistic and communicative competence. Therefore, maybe the distinguishing factor between the two types of bilingualism should be more of a cognitive nature, depending on whether the acquisition of two languages parallels the basic conceptual development, or whether the acquisition of a second language starts after the basic concepts have already been established through the medium of the first language. The distinction might also be of a psychological nature: maybe it is easier for children to accept another code of communication and problems it brings along while they still experience communication problems and cannot completely rely on their first language (because of its immaturity). Whatever the exact or best reason, the mentioned border line is accepted by the majority of researchers and therefore the acquisition of a second language around and after the age of three is studied by both researchers on bilingualism and second language acquisition researchers. This position will also be reflected in this paper which will draw on the theories, models and findings from both disciplines.

## **2. Second language acquisition and bilingual research - theories, models, hypotheses**

The last 20 years have seen the emergence of many hypotheses, models and theories trying to account for the process of bilingual development and second language acquisition (henceforth SLA). In addition to the difference in scope, these different levels of explanation start from different epistemological stances and have different focuses. Some still rely on the concept of universal grammar and language specific acquisition mechanisms - e.g. learnability theory (Pinker 1994), minimalist programme (Chomsky 1995), optimality theory (Sorace 2003); some put the focus on the brain's general cognitive and processing capacity – e.g. competition model (MacWhinney 1987), cognitive grammar (Langacker 1987, 1991), connectionism (Ellis 2003); some try to combine the two - e.g. the most recent Truscott and Sharwood Smith's MOGUL model (2004).

The most prominent SLA researchers, although mostly of cognitive orientation, are still cautious in siding up fully with either formalist or functionalist theories of language. They stress (e.g. Bialystok 2001) that such a complex phenomenon as language acquisition is, and a phenomenon so much dependant on the extralinguistic, contextual factors such as second language acquisition is, will likely need interaction and integration of different theories for the purposes of a more widely accepted explanation. Therefore, in trying to put together pieces of the SLA puzzle, researchers diligently focus on different aspects and contexts of second language acquisition, processing and use (for a very comprehensive and extensive account of current thinking on SLA see Daughy and Long 2003).

As for the research on bilingualism, it has traditionally been more sociolinguistically and pedagogically than psycholinguistically oriented. The researcher who always tried to combine all three orientations is Cummins, and his work (e.g. 1979, 1984, 2000) is the landmark of any research on bilingualism. However, the most recent works on bilingualism (and multilingualism) are becoming increasingly psycholinguistically and neurolinguistically oriented (Nicol 2001; Herdina and Jessner 2002; Cook 2002, 2003; Deweaele, Housen, and Wei 2003).

In this paper the author will try to combine two sources, Cummins' Thresholds Theory (2000) and Herdina and Jessner's Dynamic Model of Multilingualism (2002), in order to theoretically contextualize the data from a case study of successive childhood bilingualism.

### 3. Cummins' Thresholds Theory and its refinements

One of the hottest debates related to bilingualism has been the question of cognitive advantages or disadvantages of bilingual children. For a long time the prevalent opinion was the second one, i.e. that bilingual children are linguistically, cognitively and emotionally disadvantaged (for an overview of these positions see Baker 2001:134-61), while nowadays research dominantly supports the idea of life-long positive effects of bilingualism (see Bialystok 2001; Bialystok et al. 2004). However, the answer to this question is not a straightforward one. According to Cummins, the

answer will depend on the level of development of a bilingual's two languages, and on the type of language proficiency developed.

Cummins (2000) distinguishes between two types of language proficiency: Basic Interpersonal Communication Skills (BICS) and Cognitive/Academic Language Proficiency (CALP). BICS is a type of language proficiency that, for example, immigrant bilingual children quite easily develop – it is a proficiency needed to communicate with peers in the playground or to follow the first years (1-2) of school curriculum when the majority of tasks are still very much context embedded and not very much cognitively demanding. CALP is a type of language proficiency a child needs in order to function in context-reduced communication, for example, in order to follow cognitively demanding school curriculum where teachers, when conveying meaning, rely more on words alone than on the use of non-linguistic elements such as objects, illustrations, concrete examples. If a child does not have CALP in the language of schooling, s/he will probably face underachievement. This is something that happens quite often with immigrant children when, on the basis of their BICS, they are put in the mainstream classes and do not receive adequate support in the language of education. If, at the same time, a child's first language becomes neglected (e.g. the child's family wants very much to integrate into the new society and reduces the communication in the native language), this child is probably facing negative cognitive consequences of his bilingual situation because he has no language in which to develop his cognitive potential.

According to Cummins' Thresholds Theory (TT), the just mentioned child is at the ground floor of a 'bilingual house'. To clarify: in order to picture the effects of bilingualism on cognition, Cummins uses the image of a house with three floors (ground, middle and top) and two thresholds – first and second. The first threshold is found between the ground and the middle floor, and the second threshold is found between the middle and the top floor. As already mentioned, children with low levels of competence in both languages (Cummins calls them 'limited bilinguals'), and because of that likely to experience negative cognitive consequences, are found at the ground floor. The first threshold is reached and passed when children have age-appropriate competence in one, but not in both of their languages ('less balanced bilinguals'). These children are at the middle floor of the bilingual house and they are unlikely to experience either positive or negative consequences of their bilingual

situation. However, if children reach and pass the second threshold, that is, if they become similarly and age-appropriately proficient in both of their languages ('balanced bilinguals'), they are at the top floor of the bilingual house and will probably experience positive cognitive effects. Not all bilinguals reach the top floor. Cummins' threshold theory certainly helps to clarify the debate about the effects of bilingualism on cognition. The main problem in his theory lies in precisely defining (i.e. describing in terms of linguistic and communicative competence) the thresholds in language proficiency (Baker 2000). The distinction between BICS and CALP is only a partial solution of this problem.

#### 4. Dynamic Model of Multilingualism

In their Dynamic Model of Multilingualism (DMM) Herdina and Jessner (2002) go a step further in trying to account for sometimes confusing and seemingly contradictory phenomena in multilingual and bilingual speakers. Drawing together first and second language acquisition theories, bilingual research, and relying very much on the dynamic systems theory, the authors present a highly complex and potentially all-embracing psycholinguistic model of multilingualism (it has to be stressed that the authors themselves pronounce that their model can also be applied to bilingual development). DMM tries to bring insight and order into the present theoretical inconsistencies and offer a framework that can serve as a basis for future theoretical research and practical applications. It redefines terms such as transfer, interference, interlanguage, reexamines contrastive analysis hypothesis, universal grammar, code-switching and borrowing phenomena, and the above presented Cummins' ideas. It can be said that as one of the starting points it uses Grosjean's (1989) idea that a bilingual person is not a sum of two monolinguals, and Cook's (2003) multicompetence model. Multicompetence model also argues against interpreting bilingual development in relation to two monolingual standards and stresses that as much as the first language influences the development of the second language, the second language also affects the processing of the first language. DMM emphasizes positive achievements of multilinguals: improved metacognitive strategies; cognitive flexibility, divergent thinking, creativity, originality; metalinguistic and sociocultural

awareness, crosscultural pragmatics, interactional competence, communicative sensitivity; enhanced knowledge for further language learning. However, DMM also stresses the difficulties that bilingual and multilingual speakers face and the fact that some language processes which are not very significant in the language processing of monolingual speakers can be very pronounced in multilingual speakers (partly because of so many interacting components). One of such processes is the growth and decay of (a) language system(s) within a multilingual speaker. Factors that slow down language growth and increase language loss are interference and language maintenance. Language maintenance is one of the key factors of Herdina and Jessner's model. It is an effort required to guarantee homeostasis (i.e. a dynamic steady state) within a linguistic system and this effort increases with the accumulation of linguistic knowledge. The general language effort is a function of language acquisition effort and language maintenance effort. As multilingual competence increases, general language effort also increases.

In order to facilitate the understanding of their concepts, the authors illustrate their ideas with numerous graphs. They stress that despite the dynamism within the system (i.e. positive and negative growth), there is a general stability of the whole system. This stability is largely due to the general language effort influenced very much by the language user's communicative needs. The authors also stress that personal and psychosocial factors that affect multilingual proficiency include motivation, aptitude/metalinguistic abilities, perceived language competence, self-esteem, anxiety.

The author of this paper feels that there is a significant explanatory potential in the DMM, but in order to become more widely accepted, the model has to be 'filled in' with empirical data.

## 5. Dynamism of successive childhood bilingualism

### 5.1 Aim and sample

The aim of this section is to present the data gathered during a 15-month-long study of successive childhood Croatian – English bilingualism

in the light of the dynamic model of multilingualism and the thresholds theory.

The study in question is presented in details in one of the previous issues of this journal (Medved Krajinović 2002-2003), so here it is only repeated that the subject of the study is a boy who acquired Croatian as his first language (L1) and who at the age of 2 years and 10 months started acquiring English as his second language (L2). The acquisition happened in a natural context, i.e. during the 15-month-long data collection procedure the subject mostly lived in Ireland. Visits to Croatia were regular (every 3-4 months) but short (3 weeks on average).

The data gathered during the study include:

- . description of the linguistic and extralinguistic context the boy was exposed to during different stages of his bilingual development;
- . examples of the development of the subject's linguistic competence in L1 and L2
- . examples of the development of the subject's communicative and strategic competence
- . examples of the development of the subject's metalinguistic competence.

## 5.2 Results and discussion

In the interpretation of the results one could focus in detail on any set of the data mentioned above (linguistic, communicative, strategic, metalinguistic, extralinguistic) and then interpret them in isolation of each other (which most studies do), or try to interpret them in their mutual interaction. The latter is rather hard and does partly rely on subjective interpretation (e.g., how can one scientifically prove that a 3-year-old child is emotionally disturbed and cognitively stagnating because of the attrition of the linguistic and communicative competence in his first language and still insufficient development of these abilities in his second language, especially if this is a very short and transient stage, often realized only in retrospect). However, a degree of subjectivity is allowed for in any case study research (Platt 1988; Mildner 2003), in order not to overlook possible hypotheses, potentially testable in some future research. This is exactly what Herdina and Jessner allow themselves to do – a part of their model



does rely on conjectures and observation of different dynamic systems (linguistic and non-linguistic). Cummins' Thresholds Theory also partly relies on the author's intuition. In the presentation of the results of the above mentioned case study and in the discussion that follows, the author will give support to both DMM and TT.

The focus of the discussion will be the dynamism of the subject's language production in his two languages (see Figure 1).

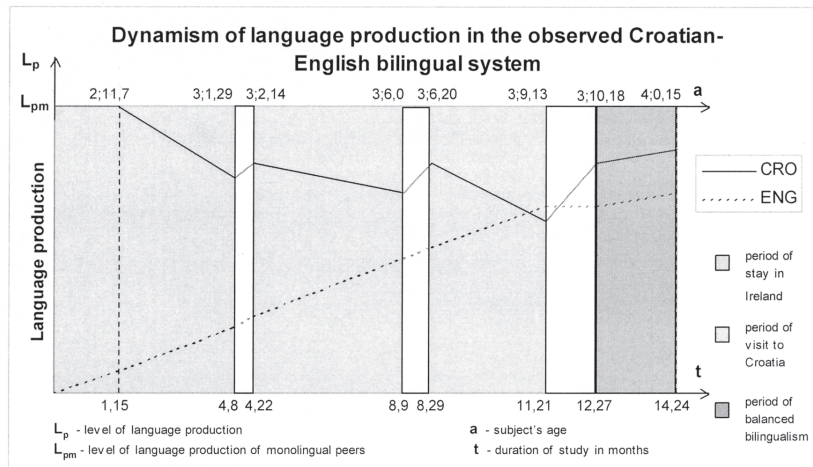


Figure 1. *Dynamism of language production in the observed Croatian-English bilingual system*

The results in Figure 1 show a steady growth of the linguistic and communicative competence in the subject's L2 (the dotted line), and a slight but very chaotic overall decline in the subject's L1 (the full line).<sup>1</sup> The overall result is predictable. On the basis of the linguistic (the subject is mostly exposed to English) and extralinguistic factors (the subject is mostly living in Ireland), one can expect a continuous advancement in English and a decline in Croatian. What could come as surprising is the unsteady nature of the decline in Croatian and the speed with which gains and losses

<sup>1</sup> The lines of growth and decline are based on the subject's language performance data gathered during the described case study. (For a detailed lists and samples of the data see Medved Krajinović 2004).



in the first language interchange. However, this is exactly what DMM predicts – changes in one component of the dynamic system (and here it is the change in the dominant language context because of the subject's visit to his home country) can reshuffle the whole system. This is specially notable in the third light-grey column which presents a 5-week-long visit to Croatia. This visit changed the whole course of bilingual development that might have been expected after the situation in the third dark-grey column when the dotted and the full line intersected and when, for a short while (see the end of the third dark-grey column and the beginning of the third light-grey column) the second language became the dominant language. If we put it in Herdina and Jessner's terms, at that particular point the second language system became the primary language system and the first language system became the secondary language system. This regular course of bilingual development from incipient to stable dominant bilingualism is presented in the following figure.

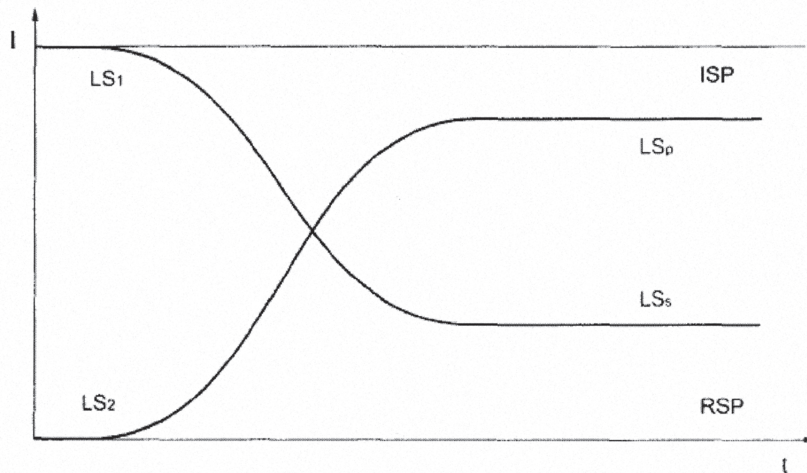


Figure 2. *Stable dominant bilingualism*

LS1 = first language system; LS2 = second language system; LSp = primary language system, LSs = secondary language system; ISP = ideal native speaker proficiency; RSP = rudimentary speaker proficiency; t = time; l = language level

(Herdina and Jessner 2002: 122)

However, although the above presented course of bilingual development was interrupted by the mentioned visit to Croatia, the author of this paper has to add that the subject continued living in Ireland after the cessation of the research, and that the final, general picture of his bilingual development resulted in a figure very similar to Figure 2 (only, this part of the subjects bilingual development was not systematically and extensively recorded and therefore there are no rich enough data to support the author's conclusion).

As for the Thresholds Theory and the picture of the 'house of bilingualism' with the ground, middle and top floors representing limited, unbalanced and balanced bilingualism (see section 3), we must conclude that the data from the study support the picture. The subject in the study moved from incipient bilingualism through a stage of limited bilingualism that lasted through the second part of the first dark-grey column. The full line in that column clearly shows a decline in the subject's L1 and the dotted line shows only a very basic growth in the subjects L2. If we take into account that we are talking about a three-year-old child, it can be concluded that a decline in a yet not fully developed language system (L1) can cause significant problems in communication. During that stage of the child's bilingual development his personality changed – an extroverted talkative child became an introverted individual, partly uninterested in some cognitive activities that prior to that time used to give him a lot of pleasure (e.g. story telling and retelling). It might be concluded that this psychological and emotional change was due to his limited bilingualism (as Cummins suggests). After this stage of limited bilingualism the child visited his home country. A few days' stay in Croatia (the first light-grey column in Figure 1) resulted in the revival of the first language system, and interestingly enough, in the further development of the subject's second language system. After that revival (and we denote it as the first threshold), stages of decline that followed in the months to come did not produce negative emotional or cognitive effects. The reason might lie in the fact that the child moved to the middle floor where, at different stages, either his first or his second language, or a set of communicative strategies that he in the meantime developed<sup>2</sup> enabled him to function competently in everyday life situations (pre-

<sup>2</sup> For the extensive list of these strategies see Medved Krajnović 2004.

school, playground, home). In the observed period, the subject also reached and passed the second threshold. This threshold can be placed at the beginning of the last column when the child started communicating in his both languages confidently, with a competence very similar to the one his monolingual peers (Croatian or English) possessed. At this stage advancements in the subject's metalinguistic awareness (comparison of the two systems, questions about the arbitrariness of language systems), in the ability to control his two systems (controlled code-switching), and in the sociolinguistic awareness (awareness of the appropriate use of his two linguistic codes) became very pronounced. Cummins would certainly conclude that the child reached the top floor and started experiencing positive consequences of his bilingualism.

## 6. Where to from here?

The author thinks that both the Dynamic Model of Multilingualism and the Thresholds Theory are good theoretical explanations of some aspects of the bilingual development she observed and recorded in her case study. However, she is also fully aware that more refined explanatory tools have to be developed in order to encompass the full complexity of a bilingual/multilingual development. For example, in the observed study the course of development in language production differed significantly from the course of development of language comprehension. Furthermore, growth and decay in different linguistic subsystems of the subject's two language systems showed different dynamics and were not equally influenced by the linguistic and extralinguistic context, or the parents' 'intervention measures'. For example, attrition in the subject's L1 lexical competence was stopped by the parents' insistence on the use of L1 lexical elements that started attriting, but the parents' attempts to stop the attrition in the morphosyntactic system proved useless. Also, how could one explain a sudden burst in the L2 competence in a situation when the subject is taken out of the L2 context. And, last but not least, how can one say that a short decline in a child's L1 is the result of his/her bilingual development and not a normal course in the first language development (e.g. part of the regular stages of development of every grammatical system, Ellis 1997).

These are still open questions. Nevertheless, the author is quite optimistic that the intensity of bilingual and SLA research and theoretical thinking will, in the years to come, provide us with more and more plausible and wide-ranging answers.

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## DINAMIČNOST NAKNADNE DJEČJE DVOJEZIČNOSTI

U radu se prikazuju dva teorijska modela višejezičnoga/dvojezičnoga razvoja – Dinamični Model Višjezičnosti (DMV) i Teorija Praga (TP). U svjetlu spomenutih modela, autorica interpretira podatke dobivene praćenjem jednoga slučaja naknadnoga hrvatsko (J1)- engleskog (J2) dvojezičnog razvoja. Autorica zaključuje da spomenuti modeli imaju znatnu objasnidbenu snagu, ali još nisu dovoljno razrađeni da bi mogli predočiti/objasniti svo bogatstvo različitih vidova naknadnoga dvojezičnoga razvoja te međudjelovanje različitih sastavnica tijekom istoga.

*Key words:* bilingualism, second language acquisition, dynamic model of multilingualism, thresholds theory, multicompetence

*Ključne riječi:* dvojezičnost, usvajanje drugoga jezika, dinamični model višejezičnosti, teorija praga, višestruka kompetencija

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