

## **The Separate Development Hypothesis: method and implications**

This paper starts with a general overview of the main findings of a recent longitudinal case study of a young Dutch-English bilingual child (De Houwer, 1990). This case study provides strong support for the Separate Development Hypothesis (SDH), but the Kate study alone does not offer entirely sufficient nor necessarily generalizable evidence for it. It is the primary purpose of this paper to explore how the SDH can be further investigated. In this exploration due attention is given to methodological considerations. Finally, suggestions are made concerning the relevance of the SDH for child language studies in general.

### **Case study of a Dutch-English bilingual child: an overview**

#### **Subject and method**

The mini-bilingual referred to in the title of this paper is a little girl, Kate, who was tape-recorded in her home during 19 spontaneous interaction sessions in the 8 month period between the ages of 2;7 and 3;4. The recordings mostly took place while Kate was interacting with her mother and the investigator, although there are also a few (parts of) recordings made while Kate was alone with one adult. Occasionally Kate's father was present during recording.

From birth onwards Kate was addressed in Standard American English by her American mother, and Kate's Flemish father always spoke to her in standard Dutch. Kate's case, then, is one of Bilingual First Language Acquisition or BFLA (Meisel, 1989; De Houwer, 1990: 3).

The investigator addressed Kate in a fairly standard colloquial variety of Dutch. Kate lived in Antwerp, Belgium, at the time of the recordings. Whereas the 'street environment' was Dutch speaking, Kate had a lot of contact with English outside the home through a thriving English speaking community which included a church, a playgroup and a small school, all of which Kate visited regularly. All in all, the amount of Dutch and English that Kate heard from the various people around her was fairly balanced for both languages.

Kate's two languages were clearly separated in the input, i.e., the people around Kate usually addressed her in one of two languages only. Thus, Kate grew up in a one person/one language environment.

All the recorded material was transcribed in full in normal spelling. The child utterances were then entered on computer disks, coded along various dimensions and analysed using specially designed programs. Detailed methodological information can be found in De Houwer (1990: 71-85).

## **Analyses and findings**

### *Main points*

Kate's linguistic portrait around the age of three, as it emerges from the various analyses performed, can be sketched as follows: Kate was a child who could equally well function in English as in Dutch, and she could at least partially be described as being two monolinguals in one. In effect, Kate's language production for each language closely resembled that of her monolingual peers. In addition, however, Kate was a competent code-switcher, and the relatively few utterances with lexical material from both languages were mostly well-formed according to the grammatical rules of either Dutch or English. Kate also showed quite a few signs of metalinguistic awareness.

The conclusions mentioned above were arrived at on the basis of highly detailed analyses of the following aspects: most of the morphosyntactic characteristics present in the material, those aspects in the material that were directly related to the language contact situation, and signs of metalinguistic awareness.

### *Morphosyntax*

Apart from one area, namely syntagmatic relations within noun phrases, all the morphosyntactic subsystems analysed are quite distinct and different from each other in adult English and Dutch. Hence it becomes possible to investigate whether the child is acquiring these subsystems within each language, or whether, conversely, there is any influence from one language on the other. After all, one can only approach the issue whether development proceeds intra- or interlinguistically on the basis of areas that are quite different from one another in the respective input systems (see also Meisel, 1989).

The particular subsystems investigated in the Kate study concern both paradigmatic and syntagmatic relationships within noun phrases and verb phrases, the use of sentential word order, and the nature and complexity of sentences. More specifically, the following areas were studied:

- the marking of gender by means of pronouns, determiners and the <∂> morpheme as used on Dutch modifying adjectives
- plural formation
- the use of diminutives
- noun phrases with an adjective as head
- paradigmatic and syntagmatic characteristics of verb forms

- the conjugation of finite verbs (lexical verbs; HEBBEN/HAVE; ZIJN/BE; modals; auxiliary DO)
- syntagmatic relationships within verb phrases
- the expression of past time reference by means of verbs
- the expression of future time reference by means of verbs
- the order of subject, finite/non-finite verb, and object in declarative main clauses
- word order in clauses with a multi-component VP
- word order in subordinate clauses
- word order in questions
- question words in WH-questions
- sentence types
- clause types
- the use of clause connectors
- the type and frequency of clause constituents.

The analysis of the morphosyntactic characteristics of Kate's language production showed that each of Kate's two languages developed separately from the other: Kate's two languages at the time of investigation constituted two distinct, structurally closed sets. There was no evidence of structures, patterns or rules of the one language being applied to the other. This major finding led to the formulation of what I have called the Separate Development Hypothesis, which will be discussed in more detail later in this paper. Detailed comparisons of the data with published reports on language usage by monolingual pre-schoolers around the age of three showed that, at least as far as morphosyntax was concerned, Kate's English data were highly similar to those reported for English speaking children, while her Dutch data were highly similar to those reported for Dutch speaking children. My impression is that Kate's phonology was 'native'-like (see Davies, 1991 for a discussion of this notion) for both of her languages, but no comparisons were made with data from her monolingual American English and Flemish Dutch speaking peers to further substantiate this claim.

#### *Language choice and mixed utterances*

A second main focus of analysis were those aspects in the material that were directly related to the language contact situation, namely language choice and the linguistic characteristics of mixed utterances. Mixed utterances are here defined as utterances containing lexical material from both languages.

It was found that Kate's language choice was mainly determined by the interlocutor: Kate addressed each person in her environment mostly in the language that that person tended to address her in. On those relatively few occasions when she did not, Kate apparently took into account language behaviour of the interacting person that was not directly addressed to her. More precisely, she allowed herself to be quite 'relaxed', in a sense, about her language choice with persons that she knew to be fluent bilinguals, such as the investigator and her father. These individuals

spoke English and Dutch frequently and with great ease and fluency in Kate's hearing range: they would often use English with Kate's mother and with English speaking visitors. With Kate, however, they would use mostly Dutch. Kate largely accommodated these bilinguals by mostly addressing them in Dutch, too, but in about 10 per cent of the cases she addressed them in English, which, as she probably assumed, would not hamper communication. Kate was rather less inclined to use the 'wrong' language with persons that she knew to be basically monolingual (her mother and her paternal grandparents). In both her willingness to lean on two linguistic systems alternatingly in interactions with known bilinguals and her reluctance to do so in conversations with monolinguals, Kate strongly resembles older bilinguals (see, e.g., Romaine, 1989). Mixed utterances occur throughout the Kate study and constitute an average of 7 per cent of all child utterances in the material.

A formal analysis was made of mixed utterances that could clearly be described as consisting of a 'guest' and a 'host' language. The 'host' language is considered the main language of the utterance, i.e., if more than 50 per cent of all the morphemes in an utterance are in language X, then X is the host language. Any morphemes from language Y are defined as insertions from the guest language. It was found that the 'guest' language insertions in the Kate data typically consisted of single nouns.

Both the finding that language choice is mainly determined by interlocutor and the finding that in mixed utterances it is most frequently a noun that is inserted from the guest language are confirmed by many other studies of very young bilingual children (see, e.g., Kielhöfer & Jonekeit, 1983; Saunders, 1982; Swain & Wesche, 1975; Taeschner, 1983).

### *Metalinguistic awareness*

As a third major strand in the analysis of the corpus the data were scanned for possible signs of metalinguistic awareness. These signs were found in spontaneous and elicited repairs, explicit metalinguistic statements, hesitations and self-repetitions. The main reason for the investigation of these possible signs of metalinguistic awareness, apart from the fact that they are inherently interesting in the study of child language (see, e.g., Cazden e.a., 1984), was the finding that in both languages Kate made a dramatic jump in morphosyntactic development after her third birthday. Until then, she had been relatively stagnant, but after her third birthday many new forms appeared, while old forms were used more appropriately and more frequently. This development was clearly noticeable in many areas of morphosyntax at the same time, regardless of what language Kate was using. Following Clark (1982), it was hypothesized that such a striking development that was going on in both languages at once might be due to a general increase in metalinguistic awareness.

Signs of metalinguistic awareness were indeed quite noticeably on the increase after Kate's third birthday, both in terms of frequency and in terms of type, and this again regardless of what language Kate was using. However, the existence of a

causal relation between metalinguistic awareness on the one hand and morphosyntactic development on the other could unfortunately not be proven. On the positive side, though, empirical evidence was provided for the hypothesis that there is a language-independent mechanism, namely the monitor (in the sense of, e.g., Clark & Andersen, 1979 and Marshall & Morton, 1978 rather than Krashen, 1978), which provides a basis for the development of language awareness. The language-independent nature of this mechanism had hitherto not been empirically proved, since it had only been investigated in monolingual speakers.

## **The Separate Development Hypothesis**

### *Definition*

The Separate Development Hypothesis claims that ‘the morphosyntactic development of a pre-school child regularly exposed to two languages from birth which are presented in a separate manner proceeds in a separate fashion for both languages’ (De Houwer, 1990: 339; the SDH is not to be confused with the Independent Development Hypothesis as defined by Bergman, 1976).

Although the SDH does not specifically refer to any age range, it was intended to apply to normally developing bilingual children between the ages of, more or less, two to four. It cannot be predicted what happens once a bilingual child’s two languages are firmly established as far as basic morphosyntax goes. In the field of BFLA so far, the issue of separate development on the morphosyntactic level has only been approached for subjects under the age of four. Because of the greater level of competence in both languages at around the age of four and the concomitant great expansion of linguistic knowledge and capabilities on all levels, it may become harder for the bilingual child to keep both rule systems apart. Contact with bilingual speakers who do not keep their languages systematically apart might also trigger interference phenomena in the hitherto ‘double monolingual bilingual child’. These intriguing possibilities are well worth pursuing.

### *Evidence for the SDH until now*

The results of the Kate study certainly fit the Separate Development Hypothesis (SDH). There is ample evidence in the Kate corpus that clearly shows the existence of two separate, morphosyntactically closed linguistic systems. Furthermore, the very fact that detailed comparisons with comparable data for English and Dutch speaking children showed Kate to be highly similar to monolingual children in each of her languages gives further strong support for the SDH. The one element in the definition of the SDH that is less straightforward is the element referring to the role played by the input.

Kate happened to be a child who heard her two languages from separate input sources. In formulating the SDH this fact had to be taken into account. It would not have been profitable to state the SDH as: ‘the morphosyntactic development of a

pre-school child regularly exposed to two languages from birth proceeds in a separate fashion for both languages'. Such a hypothesis would implicitly and, I believe, wrongly deny the possible role of the type of input that the bilingual child is receiving. In the final formulation of the SDH, therefore, the role of the input was strongly emphasized.

However, although the SDH as it stands now does in fact explain the data for Kate, it goes far beyond those data, since it is stated in a very general fashion. This begs the question of how generally applicable the SDH actually is. To the best of my knowledge, there have so far been no methodologically sound reports in the Western literature on children growing up with two separate languages from birth who do not develop these two languages separately as far as morphosyntax goes. In fact, the little evidence that is available fully supports the SDH, but the data base for this evidence is quite small, since it concerns only a handful of bilingual children (outside the Kate study, see mainly Meisel, 1985, 1986, 1989, 1990; Parodi, 1990; Schlyter, 1990).

In the following we shall explore ways of finding more positive evidence that could further substantiate the SDH.

### **Ways to further explore the SDH**

Additional evidence for the Separate Development Hypothesis could be gained primarily from more case studies of bilingual children acquiring two languages from birth that are separated in the input (i.e., of children growing up in a one person/one language situation).

#### *Selection of subjects*

Morphosyntactic development can be studied in children from quite a young age. From monolingual acquisition data it appears that there is quite a wide variation in the onset of productive morphosyntactic markers, depending both on the individual child and the particular language being acquired (see, e.g., Mills, 1986; Peters, 1983; the papers in Slobin, 1985, Volume I; Wells, 1985). Thus, it is not inappropriate to suggest that bilingual children be studied from the age of approximately two and a half years onwards, at which time they should be at the end of the two-word stage and/or in the beginning (or even the middle) of the multi-word stage (see, e.g., Ingram, 1989, Schaerlaekens & Gillis, 1987).

In choosing a young bilingual subject one must, of course, be fairly sure that one is dealing with a child who has no hearing impediment or other noticeable dysfunction. If, for instance, by the age of two and a half years one's possible bilingual subject is still only producing mainly single word utterances, there can be serious doubt as to whether the child's hearing is normal. In this case the child should not be studied to approach the SDH, since the SDH, if not explicitly so, was formulated to capture a reality for children who are developing normally.

Another point is that in the search for further evidence for the SDH the language pairs that young bilingual subjects are learning should be as diverse as possible. Obviously, the more linguistic variety there is in the total body of data from young bilingual children that fit the SDH, the greater the chance is that the SDH captures a general acquisition principle in young bilingual children. After all, if only a small number of languages are investigated, there might still be a chance that any apparent confirmation of the SDH is in fact an effect of the specific languages in one's sample.

Although longitudinal studies are still sorely needed in the field of BFLA in general, in order to specifically address the SDH I think it is important that many different children learning many different languages be studied, rather than that the focus be solely on longterm individual case studies, which are very time-consuming. Though these long-term case studies can, of course, be used to test the SDH, they are not necessarily the only possible way to approach it or the most efficient one.

### *Data base and analysis*

The SDH can be approached as soon as one has available a substantial number of utterances in each language that the child is exposed to. These utterances should be longer than a single word. After all, syntax or internal phrase structure do not show up in single word utterances, and bound morphemes only minimally so.

The question is what counts as a substantial number of utterances in each language. The answer here is not straightforward, but I would think that for one child about 300 fully transcribed, fully clear utterances in each language would give one a sufficiently large basis to work from. These 600 utterances would have to be collected in a relatively short time span, say one to one and a half months, so as to produce internal consistency. The central issue when addressing the SDH is, after all, not developmental processes over time, but the relationship between the child's two languages at any given moment within the age range indicated earlier (approximately from two to four).

In analysing the data one can look only at those cross-linguistically comparable areas that are clearly different for the two languages (cf. also Meisel, 1989). If the SDH is correct, the child data should show a difference for those different areas, and there should be no clear influence from the one language on the other. There will be ambiguous cases, however, in which the child produces forms that could be interpreted as being either the result of transfer or the result of development. One way of getting around this interpretative problem could be to look at data from monolingual acquisition: if the bilingual child uses ambiguous forms similar to a monolingual peer there is a possibility that the forms are developmentally, i.e., intralinguistically, determined. However, such a comparative approach can never entirely settle the issue since a similarity of form does not necessarily indicate a similarity in processing. Hence, intrinsically ambiguous forms in the bilingual data will have to remain just that, and their source(s) will have to remain unresolved.

For the SDH to be found valid, all or most of the morphosyntactic elements used

by a particular bilingual child must be shown to be primarily intralinguistically determined. Hence, I think it is important in exploring the SDH further that one looks at all or most of the morphosyntactic features that are present in the data. After all, it is possible that there is separate development in one area of language functioning (e.g., subject-finite verb agreement) but heavy use of transfer in another one (e.g., the use of sentential word order). Should one find this to be the case, it is not obvious what the conclusions would be with regard to the SDH.

### *Interpretation*

Suppose, then, that all or most of the morphosyntactic features present in a particular bilingual child's data have been analysed. If it is established that in the majority of the areas studied there is indeed a separate development, and that there are only a few ambiguous areas whose interpretation is not straightforward (and there normally will be a few areas like these), one has indeed found strong evidence for the SDH.

If, on the other hand, most of the material analysed is uninterpretable, and only some of it is straightforward, i.e., shows separate development, then there is clearly less strong support for the SDH. In this case, further analyses could be carried out based on morphosyntactic elements that are highly similar for the two languages involved, in the hope that these will reveal differences in the child data. These differences would, I expect, more often than not show up in the absence of a particular form in the one language while it is clearly present in the other. If indeed differences could be found there would be more of a basis to tilt one's former interim conclusion in favor of the SDH. In interpreting the analyses for the features that are similar in the input languages one would however have to tread very carefully indeed.

Finally, it is clear that the more children of widely diverse bilingual and socio-psychological backgrounds there are whose data fit the SDH, the more positive evidence there is for it, more so than if one has found many bilingual children of very similar backgrounds learning the same set of languages whose data fit the hypothesis.

### **Why further explore the SDH?**

Any attempt to find supportive evidence for the SDH will be quite time-consuming and involve a great deal of effort. Apart from the obvious benefit from such attempts, in the sense that they would contribute to a greater knowledge of the bilingual acquisition process, the question can be asked whether the SDH is relevant within the larger framework of child language acquisition studies.

In the field of child language acquisition the search for explanations of the language development process continues steadily (see e.g. Gleason et al., 1989; Ingram 1989; Kuczaj 1985/86). Many different and interacting factors are obviously

involved in this process. Depending on the school of thought that a particular researcher identifies with, or depending on one's training as a researcher (Bennett-Kastor, 1985/86), the most important factors are identified as being either cognitive, social, psychological, language-specific, language-universal, interactive or input-related.

In trying to gauge the weight of specific factors in acquisition, different children must be compared with each other. Lately, there have been many cross-linguistic studies which attempt to isolate differences or similarities in acquisition patterns across monolingual children from different language backgrounds (see, e.g., Simon & Fourcin, 1978; Slobin, 1985). In these studies, however, it is extremely difficult, if not impossible, to control for extralinguistic characteristics such as level of cognitive, emotional, and social development, and to ensure that the only variable is the feature 'language'.

It is notoriously difficult to fully match young children to each other. Identical twins come the closest to being a fully matched pair, but if they are brought up monolingually, it is impossible to investigate the relative importance of linguistic vs. non-linguistic factors in acquisition. It is rather young bilingual children that offer the ideal laboratory for studying this issue. The main variable in their case is the factor language. The use of bilingual subjects to approach theoretical issues in the study of child language acquisition in general can thus be seen as a highly recommendable methodological step (see, e.g., Levy, 1985 for a similar line of argumentation).

What, then, is the significance of the Separate Development Hypothesis for explanations of child language acquisition in general? The repeated confirmation of the SDH would, I think, provide very strong evidence for the importance of the input-related nature of the language learning task as far as morphosyntax is concerned. After all, the young bilingual child who shows evidence of the SDH clearly approaches his or her two languages as distinct, closed sets. This highly language-specific development is only possible on the basis of the existence in the input of two closed linguistic systems, and the child's subsequent perception and processing of these systems as being separate.

If more universal processes were strongly at work in the acquisition of morphosyntax, one would expect these universal processes to be able to override any input-related, and hence language-specific, strategies in acquisition. Thus, one would expect to see forms in the data that were clearly the result of the transfer of patterns from the other language. A confirmation of the SDH would clearly go against this, and hence also against the importance of universal strategies as a *primary* explanation for morphosyntactic development.

Universal strategies may play an important role in the acquisition of morphosyntax, but these universal strategies must be held captive, so to speak, by the particular language that is being acquired. Within the separate acquisition of each of a bilingual child's two languages, similar processes may be at work; however, there are no comparison procedures going on between the actual forms that are being acquired. These forms are relatable only to the specific input that the child is recei-

ving in each of his or her languages. It appears to me that for a better understanding of morphosyntactic development in both monolingual and bilingual children we would do well to find out more about the specific characteristics of that input.

## **Conclusions**

This paper started off with a review of the main findings from a case study of a young bilingual girl, Kate, who developed her two languages, English and Dutch, in an entirely language-specific manner as far as morphosyntax is concerned. Kate grew up in a one person/one language situation.

On the basis of the findings from the Kate study the Separate Development Hypothesis was formulated. This hypothesis claims that in the pre-school acquisition of two separate languages from birth the morphosyntax of each language develops independently from the other. As such, the SDH draws a direct link between the nature of the input in bilingual acquisition and the nature of morphosyntactic development.

Since the current evidence for the SDH is quite limited, suggestions were made for ways to further explore its validity. It was argued that in order to do this many short-term but highly detailed studies focusing on morphosyntactic development are needed of young bilingual children between the ages of two to four growing up with two separate languages from birth. These languages should be as diverse as possible. The main emphasis in studies addressing the SDH should be on those aspects in the two languages under investigation that are structurally different.

It was further argued that the confirmation of the SDH has theoretical repercussions for explanations in the field of child language acquisition in general. Language is part of socialization. This social aspect of language becomes much more foregrounded when bilingual children are studied than when one is dealing with monolingual children. With monolingual children it is easy to disregard this social dimension, and to concentrate solely on, for instance, cognitive factors. In addition, with monolingual children it is easy to overlook the input-related, language-specific nature of the acquisition process. It is my hope that more researchers in the field of child language research will start to turn their attention to the study of bilingual children, who can furnish us with a better basis to look for explanations in acquisition.

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## References

- Bennett-Kastor, T., 1985/86. The two fields of child language research. *First language*, 6, 161-174.
- Bergman, C., 1976. Interference vs. independent development in infant bilingualism. In: G. Keller, R. Teschner and S. Viera (eds), *Bilingualism in the bicentennial and beyond*, 86-96. New York: Bilingual Press/Editorial Bilingüe.
- Cazden, C., S. Michaels & T. Patton, 1984. Spontaneous repairs in sharing time narratives: the intersection of metalinguistic awareness, speech event and narrative style. In: S. Freedman (ed.), *The acquisition of written language: revision and response*. Norwood, N.J.: Ablex.
- Clark, E., 1982. Language change during language acquisition. In: M. Lamb & A. Brown (eds), *Advances in developmental psychology. Volume 2*, 171-195. Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Clark, E. & E. Andersen, 1979. Spontaneous repairs: awareness in the process of acquiring language. *Papers and reports on child language development*, 16, 1-12.
- Davies, A., 1991. The notion of the native speaker. *Journal of Intercultural Studies*, 12, 35-45.
- De Houwer, A., 1990. *The acquisition of two languages from birth: a case study*. Cambridge: Cambridge University Press.
- Gleason, J., D. Hay & L. Cain, 1989. Social and affective determinants of language acquisition. In: M. Rice & R. Schiefelbusch (eds), *The teachability of language*, 171-186. Baltimore: Brookes.
- Ingram, D., 1989. *First language acquisition. Method, description, and explanation*. Cambridge: Cambridge University Press.
- Kielhöfer, B. & S. Jonekeit, 1983. *Zweisprachige Kindererziehung*. Tübingen: Stauffenberg Verlag.
- Krashen, S., 1978. Individual variation in the use of the monitor. In: W. Ritchie, (ed.), *Second language acquisition research*, 175-183. New York: Academic Press.
- Kuczaj II, S., 1985/86. General developmental patterns and individual differences in the acquisition of copula and auxiliary *be* forms. *First Language*, 6, 111-117.
- Levy, Y., 1985. Theoretical gains from the study of bilingualism: a case report. *Language learning*, 35, 541-554.
- Marshall, J. & J. Morton, 1978. On the mechanics of Emma. In: A. Sinclair, R. Jarvella & W. Levelt (eds), *The child's conception of language*, 225-239. Berlin: Springer-Verlag.
- Meisel, J., 1985. Les phases initiales du développement de notions temporelles, aspectuelles et de modes d'action. Étude basée sur le langage d'enfants bilingues français-allemand. *Lingua*, 66, 321-374.
- Meisel, J., 1986. Word order and case marking in early child language. Evidence from simultaneous acquisition of two first languages: French and German. *Linguistics*, 24, 123-183.
- Meisel, J., 1989. Early differentiation of languages in bilingual children. In: K.

- Hyltenstam & L. Obler (eds), *Bilingualism across the lifespan. Aspects of acquisition, maturity and loss*, 13-40. Cambridge: Cambridge University Press.
- Meisel, J., 1990. INFL-lection: Subjects and subject-verb agreement. In: J. Meisel, (ed.), *Two first languages – early grammatical development in bilingual children*, 237-298. Dordrecht: Foris Publications.
- Mills, A., 1986. *The acquisition of gender. A study of English and German*. Berlin: Springer-Verlag.
- Parodi, T., 1990. The acquisition of word order regularities and case morphology. In: J. Meisel, (ed.), *Two first languages – early grammatical development in bilingual children*, 157-192. Dordrecht: Foris Publications.
- Peters, A., 1983. *The units of language acquisition*. Cambridge: Cambridge University Press.
- Romaine, S., 1989. *Bilingualism*. Oxford: Blackwell.
- Saunders, G., 1982. *Bilingual children: guidance for the family*. Clevedon: Multilingual Matters.
- Schaerlaekens, A. & S. Gillis, 1987. *De taalverwerving van het kind. Een hernieuwde oriëntatie in het Nederlandstalig onderzoek*. Groningen: Wolters-Noordhoff.
- Schlyter, S., (1990), The acquisition of tense and aspect. In: J. Meisel, (ed.), *Two first languages – early grammatical development in bilingual children*, 87-122. Dordrecht: Foris Publications.
- Simon, C. & A. Fourcin, 1978. Cross-language study of speech-pattern learning. *Journal of the Acoustical Society of America*, 63, 925-935.
- Slobin, D. (ed.), 1985. *The cross-linguistic study of language acquisition*. Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Swain, M. & M. Wesche, 1975. Linguistic interaction: case study of a bilingual child. *Language sciences*, 37, 17-22.
- Taeschner, T., 1983. *The sun is feminine: A study on language acquisition in bilingual children*. Berlin/Heidelberg: Springer.
- Wells, G., 1985. *Language development in the pre-school years*. Cambridge: Cambridge University Press.