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978-0-521-35998-6 - Bilingualism Across the Lifespan: Aspects of Acquisition, Maturity, and Loss

Edited by Kenneth Hyltenstam and Lorraine K. Obler

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1. Bilingualism across the lifespan: an introduction

KENNETH HYLTENSTAM AND LORAIN K. OBLER

The large variety of questions dealt with in current research on bilingualism provides a rich potential for insights into human language processing. Research within the field has created a number of subdisciplines taking as their core specific issues, such as “early bilingual development”, “code-switching”, “second language acquisition” etc., with a broad range of methodologies and a diversity of assumptions and theories. The picture we get of bilingualism is thus one of a dynamic, rapidly developing field. No single researcher can hope to encompass more than a few aspects of bilingualism, leading to the necessity for specialization and concentration.

Thus, as usual, the other side of specialization is increasing isolation between those who work in different subdisciplines; cross-reference between the different fields is relatively rare. Therefore, a moment for reflection on the interrelationships between these subdisciplines would seem desirable at this point, stimulating researchers to pool their specialist knowledge on points of common interest. Ultimately, this should lead to a cross-fertilization of the whole field and new perspectives on specific topics.

The primary impetus for this book – and for the conference that motivated it – was a long-felt need to gauge how newer developments in bilingual research bear on the classical questions of how the bilingual’s two (or more) language systems interact with each other and with other higher cognitive systems, neurological substrata and the social environment. Furthermore, we were curious as to how the frontier of research was being moved forward, how new theoretical frameworks were being applied to questions of long-standing interest, whether new questions were being formulated and whether alternative methodologies were being made available. We therefore invited researchers with various theoretical and disciplinary backgrounds to focus on central topics in their respective fields of expertise. Our purpose was to

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provide a comprehensive overview of the diversity of the field and stimulate researchers to extend their thinking beyond their own specialties.

Three dimensions, which we consider especially pertinent, were used to structure the discussion of the book:

- (1) bilingualism at the various phases of the lifespan
- (2) bilingualism under healthy and pathological conditions, and
- (3) the development and loss of bilingualism.

Language across the lifespan

Firstly, then, we believe a fruitful approach to the issues involved in bilingualism might be to consider them in the context of research on language across the lifespan generally. Research on age-related variation in adult language behavior is a comparatively recent endeavor (see Obler, 1985), and the resources that have been expended on this topic are minimal in comparison with the massive work that has been carried out on early child language. The implicit assumption seems to have been that nothing of particular interest happens with an individual's language once it has been "fully" acquired, and thus nothing of interest for linguistic theory would be gained from studies of linguistic change in the adult individual. Considering the fact that linguistic changes in the earliest phases of childhood are so dramatic that no one can avoid observing them, while changes in later phases of childhood and in the adult are much less apparent, it is only natural that researchers have focused their endeavors on uncovering patterning in the child's early language acquisition. Pedagogical and clinical needs for information on normal and abnormal language development have likewise been an important incentive for this research.

The earlier research neglect of later lifespan language change has recently turned into a decisive interest in this question. In particular, there have been strong practical and theoretical motives behind the investigation of linguistic characteristics of the latest phase of life. The practical need for knowledge of what is normal language behavior in old age is evident in clinical diagnostic and therapeutic work with patients suffering from the various kinds of diseases that affect neurological functioning such as dementia, strokes, tumors, or head trauma. Theoretically, new knowledge about human linguistic capacity and its interaction with other cognitive capabilities can be gained from the results pointing to quantitative and qualitative differences in language between older and younger speakers (Obler and Albert, 1980).

In particular, differences have been documented between younger and older healthy monolinguals in their performance on naming and comprehension tasks, which declines with increasing age, and (arguably) on oral discourse,

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which may become less complex with extremely advanced age (Obler, 1980; Kemper, 1987) No age-related changes, however, are seen for automatic language tasks, and metalinguistic tasks. On written discourse an increased elaborateness with increasing age has been recorded (Obler, 1980), although there are possible social explanations. It would seem that brain changes associated with aging, even healthy aging, can be linked to the language changes of age. Such changes are even more striking, of course, and even qualitatively different, in the language and communication changes associated with strokes and dementia in late adulthood.

In the case of bilingual speakers, the lifespan variation in linguistic behavior is, of course, often quite spectacular. A large number of factors surrounding the acquisition and use of each language and the interplay between them at various phases of the individual bilingual's life conspire to determine the individual's linguistic "status" at any given point in time. Of obvious importance in this respect is, for example, whether both languages initially developed simultaneously, or whether one was acquired prior to the other, whether both languages were used throughout the lifespan, or whether there were periods when there was no need for one of them or no possibility of using it – or its use was socially problematic. Further important factors are whether the second language was learned in a formal classroom setting or acquired in an informal communicative situation, whether one of the languages was eventually lost or retained in modality or domain specific uses. (See Vaid, 1983, for a review of these factors as they affect lateral brain organization for the bilingual's languages.)

Language in health and pathology

The healthy–pathological dimension has a long tradition in research on bilingualism. To mention but one aspect of this multifaceted research tradition, cases of bilingual aphasia have contributed substantial data relevant to earlier and current hypotheses on cerebral organization in bilinguals, in particular on lateralization patterns (see Paradis, 1977 and Vaid, 1983). As regards other pathologies affecting language, these have hitherto not been systematically investigated with respect to bilinguals, although there is a large body of results from monolingual schizophrenics (e.g. Andreasen, 1979; Rochester and Martin, 1979; Chaika, 1982; and Schwartz, 1982) and demented patients (e.g. Irigaray, 1973 and Obler, 1983). Studies of the various language disabilities in children (see Ingram, 1976 and Crystal, 1982), likewise, constitute an area of intense research in monolinguals. The clinical diagnostic and therapeutic issues related to language disorders and bilingualism, such as whether an aberrant item in a bilingual's production is a second language feature or a pathological

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deficit, have lately been discussed in the literature, for example in Miller, 1984.

As in all behavioral research, the exceptional cases of bilingual behavior help us see the general patterns in bilingualism, and ultimately in language as such. In this respect, the healthy-pathological comparison seems to have much to offer for future research. This book aims to contribute to the expansion of the systematic investigation of this area.

The methodological and practical difficulties inherent in the study of pathologically related language variation – as well as the variation we find across the lifespan – are manifold. The most striking of these, perhaps, is the fact that the researcher generally has no knowledge of his/her subjects' premorbid – or earlier – linguistic functioning. Our current knowledge does not allow us to make conclusive judgments about the previous behavior from what we see in the present. Similarly, we are not very good at predicting plausible future linguistic fates from what we know about a person's present linguistic behavior and his/her linguistic history. Given such individual differences in language as can be seen in talkative as compared to uncommunicative normal speakers, in speakers who exhibit different degrees of communicative empathy with their interlocutors, and in speakers who are more and less sensitive to linguistic form, one would expect to find that these variables, among others, would have an influence on the individual's language development and on what happens in the case of damage to their linguistic capacities.

Language acquisition, maturity and loss

In the field of second language acquisition, empirical research on learner language has generated a large body of results during the past fifteen years or so (see, for example, the work discussed in McLaughlin, 1987). These results concern such things as how the learner's system for the target language – or subsystems of this – unfolds, and how learners solve communicative tasks in a language where they have fewer expressive resources than in their native language. In other words, the results are concerned with matters such as which communicative strategies they use, what role is played by simplified and/or finely tuned input, what the reasons are for the non-nativeness of the ultimate state of second language acquisition, or what the influence is of various situational and socio-psychological factors in the learner's environment.

Studies of mature stage bilinguals have to date not constituted a subfield within bilingualism on a par with, for example, second language acquisition. Although we do find a plethora of studies on mature bilinguals in neuro-, psycho- and sociolinguistics (for example studies on code-switching by

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Poplack, 1980; Perelman, 1984; and articles in Vaid, 1986), little work has actually focused on the characteristics of "steady state" bilingualism as such. Recent studies that would fall within this area can be found in research that has uncovered differences between bilinguals' and monolinguals' processing of the same language at various levels – differences that are imperceptible for native speakers but which come to light after close scrutiny. Topics that have been considered in such studies are perception/production of phonemes (Obler, 1982), intuitional judgments of grammaticality (Coppetiers, 1987), lexical decision latencies (Mägiste, 1986), distribution of error types (Hyldenstam, 1988), and narrative and pragmatic structuring (Stroud, forthcoming).

One reason why mature bilinguals have not received the research attention they deserve is in line with the lack of interest in adult language skills generally: linguistic characteristics that are not readily apparent are likely to be ignored.

In contradistinction to this, the investigation of language loss has developed into a recognized subfield of bilingualism during the last ten years. This is evident from the flow of articles and state of the art collections that have made their entrance on the linguistic scene during the 1980s (Lambert and Freed, 1982; Veltens, De Bot & Van Els, 1986; and Berko Gleason's *Applied Psycholinguistics*, vol 7, no. 3, 1986). In this development we find various approaches to the study of language loss, from psycho- and neuro-linguistic studies of individuals (Sharwood Smith, 1983), to sociolinguistic studies of the extinction of whole speech communities (Dorian, 1981), and typological linguistic studies of language attrition (Schmidt, 1985).

Among questions treated in the language loss area that are especially relevant for the present volume, are those dealing with possible parallels between healthy language loss ("forgetting") and pathological linguistic breakdown. The questions are concerned with the quality of language loss, as evidenced by errors and avoidance of certain structures and items.

Overview of papers

It has not been possible to structure the book rigidly along our three dimensions of lifespan, health-pathology, and acquisition-maturity-loss, as three-dimensional work does not lend itself to linear ordering, and the different chapters intersect in various ways. Therefore, we have chosen to place those studies that deal with "becoming bilingual", that is with acquisition, in the initial part of the volume and those dealing with loss at the end. In between these two blocks we have arranged the chapters dealing with mature "steady state" bilingualism. (Poplack, Wheeler and Westwood on a

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healthy population and Obler on developmental dyslexia studied in adulthood.)

Naturally enough those studies considering acquisition focus on the earlier part of the lifespan and deal with non-pathological conditions. They do range, however, from pre- to post-puberty, although there is little focus on the topic of critical age, which is well-documented elsewhere. There is some analogous correspondence between those studies dealing with linguistic loss and later phases of life or pathology. Because there is still so little work on the complementary topics, we find no study in this volume dealing with language acquisition in elderly speakers, interesting as this would undoubtedly be, and only one (Obler) deals indirectly with acquisition of two languages under pathological conditions. (We have recently learned of an autistic adult who was exposed to German in his grandparents' store when he was a child, and had no other contact with German. His development of English was appropriately slow for an autistic child, and as an adult he produces little speech. The family was shocked to discover that when he met a German speaker, his German was markedly more fluent than his English.) One chapter that clearly goes beyond this general convergence of research topic and choice of subject category is the chapter on first language loss in childhood (Seliger), especially since he investigates non-pathological circumstances for this loss.

The first two chapters consider bilingual development in children. Meisel treats the interaction/independence of cognitive and linguistic systems in the early development of children through a longitudinal study of their simultaneous acquisition of French and German. Meisel concludes, in contrast to other current views, that the children have developed a separate syntactic system for each language from the very earliest phases of language development and that a specific linguistic component – separate from the general cognitive system – needs to be postulated to account for the acquisition of functionally unmotivated parts of each language.

Humes-Bartlo compares unsuccessful and successful child L2 learners via a neuropsychological approach, using Geschwind and Galaburda's model of unusual brain organization (Geschwind and Galaburda, 1985) for individuals with especially good or especially poor skills. She reports that poor child L2 learners in fact show mild deficits in their L1, despite the fact that only those within the normal range for L1 were selected for this study, and are markedly better as a group on mathematical and visuo-spatial skills. More specific measures of the Geschwind and Galaburda hypothesis, however, were not borne out in her sample.

With Yorio's chapter, we move from early school years to late adolescent acquisition. Yorio reports on the use of conventionalized language among a variety of college students, demonstrating that even fairly proficient writers

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make grammatical errors when using conventionalized language. The term “idiomaticity” here goes beyond idiom *per se* to include appreciation of the appropriateness of collocations and sentence stems. The high correlation Yorio finds between good use of conventionalized language and linguistic proficiency indicates that at this stage of language learning his subjects are using more patterns, in apparent contradiction to the Bolander chapter. In her chapter, error and frequency data from adult Swedish L2 learners, at both low and high proficiency levels, indicate the employment of specific word collocations as well as specific sentence frames in the incipient learners. We suspect that both Yorio and Bolander are correct in that subjects *will* indeed employ patterns learned or acquired as such, but in the course of advancing and acquiring more propositional language forms, will lose some of the apparent skills as they try to abstract the syntactic rules implicit in conventionalized language and sometimes make errors in their abstractions (so called U-shaped learning processes, Kellerman, 1985).

In his contribution to this volume, Kellerman focuses on advanced Dutch learners of English, to determine what motivates their incorrect usage of the *if-then* English conditional, which seems to be a candidate for fossilization with these learners. He demonstrates that learners have a strategy of preferring to disambiguate tenses, and to create a symmetrical morphology in the verb forms of both *if* and *then* clauses. This results in their lack of appreciation of the subtle differences between Dutch and English conditionals, although, interestingly from a typological point of view, it makes their English interlanguage parallel in structure with what is preferred in several natural languages.

As has been done in the previous two chapters, Flynn performs an error analysis on a specific linguistic structure, in this case restrictive relative clauses. Her frame for explanation is Universal Grammar, and it is L2 parameter setting in particular that interests her. Her three groups of language learners (Spanish, Japanese, and Chinese) are matched with each other for overall English proficiency. They differ in terms of the match, or lack thereof, of head direction as compared to English, which is head-initial. Quantitative and qualitative analysis of learners with low, middle, and high proficiency in English all point to the facilitation of language acquisition when parametric values are the same in L1 and L2, and the difficulty in assigning a new value to the parameter when L2 differs from L1.

With the chapter by Poplack, Wheeler and Westwood we move on to study mature language use in bilinguals. Poplack’s chapter and that of Obler deal with adult language use. While Poplack’s chapter studies speakers of Finnish and English, Obler’s chapter is concerned with a dyslexic adult speaker of Hebrew and English.

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Poplack, Wheeler and Westwood address the question of language contact phenomena, specifically code-switching and borrowing, in a language pair as typologically distant as Finnish and English. They are led to conclude that the grammatical incompatibility between the two languages (Finnish being a postpositional and English a prepositional language) makes code-switching unproductive. Instead, nonce borrowing, i.e. a speaker's casual and adapted use of a word from the other language, becomes more prevalent. Poplack's general hypothesis, then, is that the grammatical constraints on language-mixing predict that bilingual speakers of typologically proximate languages have code-switching available to them, while speakers of typologically distant languages must employ different means if they wish to use the resources from both languages in one discourse, namely nonce borrowing. Whether speakers will use these possibilities or not depends on the social value that is given to language mixing generally in the community.

Obler studies the steady-state reading abilities of a single case, a 42-year-old Hebrew–English dyslexic. Most striking is the contrast between her reading error types in English, where inflexional endings are substituted for, added, or omitted, as compared to Hebrew, where although such errors are structurally possible, they are in fact rare. These cases are evaluated in the light of the literature on Hebrew–English bilingual reading as laterality tests have studied it, and in the few other cases of adult onset reading disturbance in Hebrew. It would appear that characteristics of the Hebrew orthography – among them the fact that it is read from right to left, as compared to English – influence the modes of processing in brain-damaged as well as in healthy readers.

The section on language loss opens with the case study by Seliger on a child who emigrated from an English-speaking environment to Israel at the age of six (her seventh year). She was studied longitudinally, starting two years later, for a period of three years. Relative clauses provide the most striking evidence that the subject, S, simplifies the English relative marker *that*, and transfers the rule of pronominal copy. Seliger concludes that sociolinguistic and functional variables cannot explain why some elements of a first language are more liable to be lost than others. Rather, it would appear that subjects unconsciously employ a strategy which replaces L1 rules that serve a similar semantic function across the languages but are linguistically more complex, with simpler L2 rules.

Sharwood Smith builds a complementary theoretical model in considering cross-linguistic influence in language loss. He treats both competence and processing control, and compares his framework with that of Andersen (1982) and Preston (1982). For Sharwood Smith a conspiracy of factors, including, most prominently, typological proximity, structural similarity, and cross-

linguistic support, influence the transfer of structures or representations from the L2 to the L1 during attrition, a point in accord with Seliger's analysis of L1 attrition in the case of S. A twelve-feature model like that of Sharwood Smith clearly indicates the complexity of factors involved in attrition since it includes not only linguistic structural comparability but also a number of processing features such as coding efficiency and comprehensibility as well as, perhaps more strictly, psycholinguistic features such as familiarity and iconicity.

Language loss through brain damage rather than non-use is considered in the final two chapters, those of Hyldenstam and Stroud, and Perecman. Hyldenstam and Stroud report two cases of language loss among demented patients. Both subjects, reported to be premorbidly high proficiency bilinguals (German–Swedish and Swedish–Finnish), showed significantly altered patterns of language behavior in dementia. Interestingly, the subjects also differed between themselves with regard to patterns of code-switching, language choice and availability of each language. On the basis of their results, the authors hypothesize that the differences observed result from conspiring factors such as age of L2 acquisition, stage of dementia, and the typological relationship between the language pairs. Furthermore, the fact that code-switching, when it occurred, followed regularities proposed for normal populations by other researchers, leads Hyldenstam and Stroud to point to the essential automaticity and integrity of code-switching skills as a consequence of competence in each grammatical system. Also, language choice and code-switching may be subserved by separate neuropsychological systems.

Converging evidence on system mixing among bilinguals is brought to bear in developing a neurolinguistic model of language processing in the bilingual by Perecman. Various mixing phenomena from a series of cases in the aphasia literature are reviewed, and mixing in normals is considered as well. Perecman assumes on the basis of much of the literature that in healthy individuals it is never the case that one language is entirely “turned off”. Changes in threshold influence whether languages will be mixed or not, and in the brain-damaged patient these thresholds may be permanently altered.

Methodologies and theoretical frameworks

As the reader will see, in addition to the diversity of languages covered across the chapters of this book, and the variety of linguistic structures treated in some detail, there is also a diversity of methods employed to study the bilingual processes in question. These range from case studies, as in the chapters by Meisel, Yorio, Hyldenstam and Stroud, Obler, and Seliger, to group studies, as in the work by Poplack, Wheeler and Westwood, Flynn,

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Bolander and again Yorio. They include techniques of linguistic error analysis, both quantitative and qualitative, as well as arguments from a neuropsychological battery as in the chapter by Humes-Bartlo. Data of course came from brain-damaged as well as normal subjects, as was the intent for the entire book; Perecman incorporates both sources of data to build her arguments. Techniques involve the study of both learners and acquirers, with the somewhat different methods associated for studying each group. (In certain cases, of course, this distinction is hard to make, as in the case Obler reports, because in the real world people may be both learners and acquirers during the same period of their life, alternatively across periods.) Different modalities are treated, as when Yorio treats the writing modality, and Obler that of reading. Flynn discusses comprehension as well as production, but the majority of studies cover production in various ways.

Furthermore, various theoretical frameworks serve the authors. Seliger, Sharwood Smith, and Kellerman use a framework incorporating the notions of transfer and linguistic universals whereas Flynn specifically discusses these notions in the terminology of the Universal Grammar model. Bolander uses the notion of hemisphericity, while Humes-Bartlo speaks of neurocognitive style. Perecman incorporates the microgenetic model developed by J. Brown.

Running through the diversity of methodology which we included in the book to illustrate the various ways related questions can be addressed, there are certain common features that can be extracted from groups of chapters even when the chapters are not contiguous. Both Bolander and Yorio treat related questions of idiomaticity and formulae. Several chapters (those of Meisel, Poplack, Perecman, and Hyldenstam and Stroud) deal with phenomena of language-mixing under different conditions. The language-typological approach is also included across a number of studies, in particular those of Seliger, Sharwood Smith, Kellerman, and Obler.

The diversity we have deliberately included in methodology and theory is also reflected in a greater than usual variety of terminology. Rather than impose a fixed terminology on our contributors, we decided to include the rather broad variety that currently exists to discuss the issues of acquisition, mature proficiency, and language loss. Indeed, we spent many months debating exactly how to term the subtitle of the book. Should acquisition include learning? Should loss be considered as deterioration, or worse, pathology or deviance? Indeed, would our use of the triad "acquisition", "maturity", and "loss", cutting across the lifespan as we emphasize that they do, be considered to imply an inevitability of loss and deterioration that we do not subscribe to? We determined, as the reader will no doubt note, that rather than attempt to resolve fully all these terminological issues now, we would encourage a certain variety in usage to mirror the wide range of the field.