Published: 1995

Bilingualism

K. Hakuta

Bilingualism has been investigated from the perspectives of language acquisition, cognition, and social psychology. An important additional perspective comes from the sociological circumstances where bilingualism may be found: the learning of the majority language by a minority group (e.g., Turkish immigrants learning Dutch in Amsterdam); the learning of the minority language by the majority group (e.g., anglophone Canadians learning French); and the study of a foreign language (e.g., Japanese students learning English in Japan). This entry addresses understanding of bilingual development, bilingual cognition, individual differences, and language attrition.

1. Development of Bilingualism

The early literature on the language development of bilingual children was dominated by the study of immigrant children in the United States, and was steeped in the question of whether bilingualism was a handicap. In his textbook on child psychology, Thompson summarized the early literature as follows: "there can be no doubt that the child reared in a bilingual environment is handicapped in his language growth. One can debate the issue as to whether speech facility in two languages is worth the consequent retardation in the common language of the realm" (Thompson 1962 p.367). The literature to which he referred stemmed from the psychometric movement of the early part of the century, coupled with empiricist characterizations of language learning, such as those of Watson and Skinner.

More recent theory about the development of bilingualism is found in the literature of second language acquisition, and parallels that of first language acquisition in being deeply influenced by Chomsky's characterization of language as a generative and universal form of human competence. The complexity and abstractness of this characterization has often led to the conclusion that these aspects of language are not learnable, and therefore are innate. Although researchers in bilingualism draw a distinction between whether the two languages are learned simultaneously (such as through family environments in which the two parents speak different languages) or learned successively (such as through exposure to immigration to another country after the first language is established), the assumption is that both types of bilingual development are guided by similar principles of development. Emphasis is placed on the structure, particularl those structures with levels of abstractness significant enough to constitute evidence of innate constraints on learning. Empiricist factors such as frequency and intensity of exposure, or even surface characteristics of the particular languages that coexist within the learner, are viewed as marginally relevant.

Empirical evidence generally supports this view of the importance of abstract characterizations of language. There is broad agreement on major weaknesses in early studies that compared the effects of specific, concrete aspects of the native language on the way in which the second language is learned (e.g., whether it matters that the word-order patterns of the native language are the same as, or different from, that of the target language). Many second language learners of a given language who differ in these characteristics in their native languages nevertheless make similar errors; furthermore, many errors predicted by such comparisons are not found. Current research focuses on the question of whether second language acquisition is guided by more abstract properties of language, known as "universal grammar" (White 1989). This approach is yielding greater promise for understanding ways in which properties of the native language influence the learning of the second language.

A major area of inquiry is whether the process of second language learning is constrained by the age of the learner. This question was provoked by early speculations in the context of arguments for a nativist view of language. The question can further be divided into whether age effects, if any, are describable as quantitative or qualitative in nature. Most of the work has focused on the question of overall quantitative differences, such as on performance tests or judgments on scales by native speakers of the language. The literature was reviewed by Long (1990), who concluded that there were indeed age effects, particularly in pronunciation. However, there are major methodological issues in the conduct of such research, not the least of which is the natural confounding between age of initial exposure and length of exposure that occurs whenever age of observation is held constant. The qualitative question has centered on whether certain aspects of language, particularly those related to the abstract properties of language, become inaccessible for older learners. This question is still unanswered.

Another area of contention is the nature of the relationship of bilingual development with the development of other domains such as general cognition and the social functioning. Paralleling the study of language acquisition from Chomskyan perspectives, and often in conflict, the 1980s saw the revival of the characterization of language as a social act. This conception defined the study of language development as consisting of units larger than the utterance,

that is, social interaction. Additionally, movements within cognitive psychology witnessed the rise of general cognitive models, such as connectionist theory and related interpretations of language acquisition. The question then becomes one of the degree to which bilingual development can be viewed as a self-encapsulated phenomenon (which the views of the current second language acquisition literature implies), or as something that must be understood within a broader sociolinguistic framework. As of 1995 the answer to this question is less a matter of data than one of theoretical orientation.

2. *Bilingualism and Cognition*

The question of the relationship between bilingualism and cognition, much like the question of the nature of bilingual development, was raised in the United States in the early part of the twentieth century as a central question in the study of IQ differences between immigrants (who were bilingual) and citizens (who were presumably monolingual). Unless one took a genetic interpretation, this implied that bilingualism affected cognition (Hakuta 1986). This literature, which argued for negative consequences of bilingualism on general mental processes, was discredited on methodological grounds by Peal and Lambert (1962) who found positive effects of bilingualism on factors that they interpreted as "cognitive flexibility" in their Canadian bilingual sample. Their findings have been replicated and extended in a variety of international contexts, with the additional generalization that the effects of fully developed bilingualism is positive while the effects of partial bilingualism is harmful (Cummins 1976). A general weakness in this literature is the absence of sophisticated theories. There are major differences of opinion about the definition of cognition, ranging from information processing to Vygotskyan social interactional models.

Bialystok offers the most promising view of bilingualism from the cognitive perspective through her model of analyzing effects with regard to the parameters of knowledge and cognitive control. These parameters may be varied independently in experimental settings. This analytic scheme can be applied to the more cognitive aspects of language as well as to its communicative aspects (Bialystok 1990). If this model is correct, then the research strategy shifts from one of looking for main effects between domains (i.e., differences between language and cognition) to one of seeking main effects within domains (i.e., differences between processing parameters) and their interactions with domains.

Another large area of research under this heading is the nature of bilingual memory. The key questions are whether the two languages are organized independently or interdependently, and what relationship there is between verbal and visual memory. The literature generally points to support for interdependence, t not without convincing demonstrations of indepen ence. It is also generally difficult to separate out t effects from the specific experimental tasks used a the criteria employed for selecting bilingual subjec

3. *Individual Differences*

Questions of individual differences arise both in bil gual development and in the nature of bilingual cog tion. With respect to bilingual development, the ma issues are the roles of aptitude, attitude, motivati and personality factors. In the area of bilingual cog tion, a persistent question is whether there are differ organizations of memory as a function of experien

The main conclusion regarding individual diff ences in the likelihood of becoming bilingual is t aptitude, attitude, and personality can all play a ro but that their contribution to the total variance deper on the learning situation. Put another way, there considerable generality of findings that can be m across similar settings. For example, Gardner (19 has demonstrated robustness in his findings showi relatively strong contributions of attitude and m vation in the learning of French among high sch students in English-speaking parts of Canada. Hc ever, attitude is usually not a predictor of the learn of a new language by immigrants, presumably beca their motivation for learning the new language very high. In such settings, much of the variance predicted by aptitude in the native language. The c tributions of personality and learning style are quit bit more tentative, in large measure due to the fragil of the constructs and measures.

The question of different memory organization different types of bilinguals was first introduced b linguist, Weinreich (1968). The major distinction highlighted was between compound and coordin bilingualism, in which compound bilingualism ent a single concept being associated with the lexi representations in the two languages, whereas coo nate bilingualism entails different concepts for e lexical representation. The difference in organizat is theorized to be a function of distinct histories exposure, such as being exposed to both langua at home (compound) versus being exposed to language at home and another at school (coordina The empirical evidence for this distinction is not pr ising, despite vigorous effort. The failure of such obviously appealing idea may be an instance whe reasonable conclusion might be the acceptance of null hypothesis that such a distinction, appealing might be, does not exist.

4. *Language Attrition*

Finally, a relatively new area of investigation is phenomenon of attrition in either of the two langua This situation is usually found in the loss of a for

language (Weltens 1987) or of the native language in the case of immigrants (Extra and Verhoeven 1993). In the case of foreign language attrition, the major contributing factor is the level of proficiency attained. For immigrants, the situation is somewhat more complex because of large variations in sociolinguistic settings, including attitude toward the native language. Most studies of native language attrition in immigrants focus not just on intraindividual language loss, but on loss in the ethnolinguistic community across generations as well. Communities vary a great deal in their approaches toward language maintenance, and seem to provide the greatest source of variance in degree of language loss.

See also: Cognition and Learning

References

Bialystok E 1990 *Communication Strategies: A Psychological Analysis of Second-Language Use*. Blackwell, Oxford

Cummins J 1976 The influence of bilingualism on cognitive growth: A synthesis of research findings and explanatory hypotheses. *Working Papers on Bilingualism 9*. Ontario Institute for Studies in Education (OISE), Toronto

Extra G, Verhoeven L 1993 *Immigrant Languages in Europe*. Multilingual Matters, Clevedon

Gardner R C 1985 *Social Psychology and Second Language Learning: The Role of Attitudes and Motivation*. Edward Arnold, London

Hakuta K 1986 *Mirror of Language: The Debate on Bilingualism*. Basic Books, New York

Long M H 1990 Maturational constraints on language development. *Studies in Second Language Acquisition* 12(3): 251–85

Peal E, Lambert W E 1962 The relation of bilingualism to intelligence. *Psychological Monographs* 76: 1–27 (Whole No. 546)

Thompson G G 1962 *Child Psychology: Growth Trends in Psychological Adjustment*, 2nd edn. Houghton Mifflin, Boston, Massachusetts

Weinreich U 1968 *Languages in Contact: Findings and Problems*. Mouton, The Hague

Weltens B 1987 The attrition of foreign-language skills: A literature review. *Applied Linguistics* 8(1): 22–38

White L 1989 *Universal Grammar and Second Language Acquisition*. Benjamins, Amsterdam

Further Reading

Bialystok E, Hakuta K 1994 *In Other Words: The Science and Psychology of Second-Language Acquisition*. Basic Books, New York

Hamers J F, Blanc M H A 1989 *Bilinguality and Bilingualism*. Cambridge University Press, Cambridge

McLaughlin B 1984 *Second-Language Acquisition in Childhood: Volume 1. Preschool Children*, 2nd edn. Erlbaum, Hillsdale, New Jersey

McLaughlin B 1987 *Theories of Second-Language Learning*. Edward Arnold, London

Romaine S 1995 *Bilingualism*, 2nd edn. Blackwell, Oxford

Cognition and Learning

L. B. Resnick and A. Collins

What does it mean to know something? How do people use what they know? How do they learn it? Answers to these questions—central to a broadly defined field of cognitive research—will deeply influence choices about what is taught, how classrooms and other environments for learning are organized, and what is expected for educational institutions. This entry examines the implications of three major themes in cognitive theory. It begins with constructivism, a point of broad consensus among cognitive researchers with profound and still unresolved implications for what and how to teach. It turns next to recent conceptions of learning and cognitive change, considering especially how learning abilities arise, whether and how they can be taught. Finally, there is a discussion of the idea that thinking may need to be understood not just as an individual act but also as a process that is distributed among people and between people and tools.

1. Constructivist Dilemmas

Students of cognition generally agree on the *constructive* character of learning. The theoretical framing varies—from Piaget (1970) to Vygotsky (1978), from social discourse to schema theory, from symbolic processing to situated cognition—but virtually all concur that learners are the builders of their own knowledge. The implications of the constructivist turn for education are profound. Put most simply, teaching cannot be construed as putting information into students' heads. Rather it must be construed as arranging for students to construct knowledge for themselves.

For many years, particularly under the influence of Piagetian interpretations of cognitive development, constructivism was taken to mean that there should be no "didactic" teaching. Instead it was proposed that educators should arrange rich exploratory environments for children. In such environments, students