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BOOK REVIEWS

How Twins Learn to Talk. A Study of the Speech Development of Twins From One to Three. *Svenka Savić* (Vladislava Felbabov, Translator). New York, Academic Press, 1980, 195 pp.

TWO MAY BE DIFFERENT BUT EQUAL TO ONE

Very little is known about how variations in discourse opportunities affect the course and outcome of language acquisition. In her book, Svenka Savić exploits the differences in discourse opportunities found naturally when twins (versus singletons) are learning to talk. Savić begins with the assumption that both twins and singletons have similar learning capacities; it is their circumstances of learning that differ. The goals of the book, then, are to describe how discourse opportunities differ for twins and singletons and to assess whether these result in different acquisition patterns for the two groups.

Toward these ends, Savić selected twins and singleton controls from educated, middle-class families with no known developmental problems. Thus, her consideration of the twinship situation per se differs from several earlier studies of twins (notably that of Luria & Yudovich, 1959) in that, unlike the earlier work, there is no other reason to expect developmental delay or difficulty in Savić's subjects. Three twin pairs and three singletons, all learning Serbo-Croatian as a first language, were audiorecorded at home for 2-hour weekly sessions throughout most of their 2nd and 3rd years. The data set consisted of more than 28,000 child utterances, with contextual notes clarifying the recorded conversations. Data were recorded in the children's usual discourse settings; in the twins' cases, both twins and one or more familiar adults were present.

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Savić argues that language acquisition by twins is cut from the same cloth as acquisition by singletons. She supports this argument with discussions of three issues often cited in support of twin differences in acquisition: language delay in twins, choices of interlocutors, and the development of ideoglossia.

Shorter mean lengths of utterance are often reported as evidence of language delay in twins. Savić noticed that twins often jointly construct utterancelike units of discourse, and she uses this to argue that MLU differences reflect usage, not competence. In discourse, twins frequently contribute words or phrases that might be joined with the partner's contribution to build one proposition or utterance across two speakers. To the extent that twin utterances are jointly constructed, the MLU of an individual twin would be reduced. Unfortunately, except for several examples, Savić does not use her data to determine whether such an account explains any difference.

Savić also analyzes first person singular markings on pronouns and verbs to address the delay question. Her focus on such markings is relevant because developmental delay in the emergence of self-concept and its expression in language has been claimed for twins (e.g., Lezine, 1951; Winestine, 1969). Savić's twin pairs began acquiring first person markings later than her singletons but finished earlier.

Absence of genuine delay in self-reference is corroborated by a recent study by Waterman and Shatz (1982), who reported on all expressions used to refer to self and twin partner by one pair of twins. Appropriate pronoun use appeared at the normative time. In addition, these twins invented a referring expression, "gaga," which initially identified self, twin, or the twin dyad. This term appeared before the given names, served a decreasing array of functions as it was replaced by standard terms, and eventually dropped out. Waterman and Shatz argue that the name's primary function was to mark the unique social relationship in which the twins participated. This argument for difference but not delay fits well with Savić's claim that language is learned the same way by twins and singletons, but under altered interactional circumstances.

However, even some of the interactional patterns reported by Savić show similarities between twin and singleton acquisition. The most detailed data in the book, a tally of choices of interlocutors, are provided on this topic. These data show that twins initiate conversation more frequently with an adult than with the twin, that they prefer an available older sibling to a twin as a partner, and that triadic conversations are quite rare. Thus, conversational preferences are for the more sophisticated partner, not the twin, and these choices look more like the singleton situation than

the triadic opportunity would suggest. One difference between twins and singletons is that twins have a higher proportion of speech that is clearly directed to a listener.

As for ideoglossia, Savić is committed to explaining it as an incorporation of baby-talk terms originated by adults. Evidently, in her data, all the nonstandard forms seemed derivable from adult expressions. The bulk of Savić's argument rests, however, on a reanalysis of Luria and Yudovich's reported ideoglossia. She suggests that the puzzling, nonstandard expressions they observed were distortions and baby-talk derivatives. Furthermore, it was the lack of adult feedback and the speech impairments of the available adults that caused these terms to persist long after baby talk should have dropped out. Certainly the discourse opportunities for the pair were far from ideal, and this most likely contributed to their delay. It is less clear that their idiosyncratic expressions were solely the result of corrupting adult forms and did not include genuine inventions.

However, other recent work lends support to Savić's contention. Waterman and Shatz suggest that their subjects' use of "gaga" may have derived from the boys' early unsuccessful attempts to say "Douglas," the name of one of the twins. Newport (personal communication) reports that a set of twins studied in San Diego who were thought to have created their own language were actually found to have incorporated their modified versions of a grandmother's German into their novel tongue. Thus, if one generalizes Savić's argument to include the possibility of a variety of "corrupting" inputs, from foreign speech to mispronunciations of the twins themselves, then it appears that a great deal of ideoglossia is explainable as the incorporation and modification of both standard and nonstandard input.

Much of the data forming the bases of the arguments outlined above are contained in one chapter with four sections on the distribution of conversational partners, on discourse structures, on the development of self-reference, and on autonomous speech. There are additional descriptive data here that are also noteworthy, particularly in light of other recent work on twin language and interaction. For example, Savić suggests that repetition serves several discourse functions, primarily as a means of marking shared attention and as an easy, default way of participating in an interaction. Although she does not give information on the frequency with which repetition occurs, her discussion implies it was frequent. If so, this is a striking finding, for it suggests remarkable consistency among twin pairs studied in three separate investigations. Keenan (1977) and Billman and Shatz (1984) have also noted the prevalence of repetition

in twins. Billman and Shatz argue from sequential analysis of their data that repetition does indeed function to maintain interaction, and it serves these functions better for the twin pair they studied than for the pair of familiar singletons who served as a control. Twin repetitions developed into repetitive chains of interaction more often than did singleton repetitions. Billman and Shatz considered both verbal and action components of interaction and found a similar pattern for both. Savić also suggests that twin verbal repetition is related to earlier action repetition and gives anecdotes for both sorts. It is striking that repetition emerges so uniformly in all five of the recently studied twin pairs.

The data Savić presents on corrections are also very interesting. One of the most intriguing findings is that the type of correction seems to change depending on who is correcting whom. Adults correct twins frequently on lexicon, occasionally on inflection and morphology, but never on word order. Twins self-correct on word order most frequently and also on lexicon, phonology, and morphology. Twins correct each other frequently on lexicon, occasionally on morphology, inflection, and phonology, but not on word order. Again, no frequencies for the types of corrections are given, so the reader has no idea of the consistency among pairs, the relation to singleton corrections, or whether the differences among types are real or just the by-product of variability in rare events. A more detailed analysis, particularly of self-corrections, would provide valuable information on the acquisition of word order and morphology of a language with relatively free word order.

Savić's book presents a first look at a very interesting data set and presents some intriguing findings. However, it lacks the depth of analysis that would allow an evaluation of the significance of the findings and interpretations. Savić frequently suggests explanations for twin and nontwin differences but then fails to extract the relevant evidence from her data. For example, if twins' MLU is low because they produce jointly constructed utterances, then such a multispeaker unit should be identifiable, and coding with the new unit of analysis should remove any difference. If twins self-correct less than singletons because the twin partner supplies a correction before the twin can, then measures combining self- and partner corrections should show equivalence. In general, Savić makes very modest use of her singleton controls. Many comparisons that could be done directly are left as plausibility arguments. Comparative statistics are never used, and the data presentation is more commonly by example than by reporting the distribution of events.

It is also regrettable that Savić did not analyze more aspects of the syntactic development of her subjects in detail—for example, by develop-

ing measures based on the occurrence of particular syntactic constructions rather than MLU. Particularly close to Savić's communication interests would be the examination of other syntactic constructions besides first person singular marking that are closely related to discourse variables. Are twins faster to learn forms marking questions and imperatives? Would use of future markings emerge earlier due to their usefulness in developing plans for play? What sorts of syntactic devices should be advantaged or delayed, given an altered conversational context that relies more on repetition and shared construction? Without answers to such questions, Savić's claims of no delay for twins carry less force than they might, especially given the potential richness of her data set. Moreover, the questions of how variations in discourse opportunities affect the course of language acquisition is left largely unanswered.

Despite these criticisms, *How Twins Learn to Talk* is a valuable contribution to the literature. It provides some clarification of what is special about the twin situation and how this might affect the course of acquisition. It also contributes to the growing evidence that healthy twins from normal homes demonstrate conversational competence appropriate to their age and status. We suspect that future research will show that twin development may be a bit different but not necessarily disadvantaged compared to singletons. Savić's material holds promise for more precise analyses of discourse that would contribute to this picture. Her data could also provide a valuable contribution on the acquisition of Serbo-Croatian. Given the potential wealth of information in this data set, we hope to see additional reports on it in the future.

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Psychologische Effekte sprachlicher Strukturkomponenten (Psychological effects of components of linguistic structure). (Patholinguistica, 9.) *Manfred Bierwisch, (Editor)*. Munich, Wilhelm Fink Verlag, 1980, ix + 489 pp.

As noted in Bierwisch's preface (v-vi), this book grew out of a symposium on psycholinguistics at the Fourth Congress of the Psychological Society of the German Democratic Republic held at Leipzig in 1975, where problems of language behavior formed an autonomous complex of study for the first time at a congress of East German psychologists. Seven of the 10 articles brought together in this volume present research done in the German Democratic Republic on topics of language and memory and aphasic language disturbances. The papers are as follows: Manfred Bierwisch, "Strukturen und Prozesse im Sprachverhalten. Einleitende Bemerkungen" (Structures and Processes in Language Behavior. Introductory Remarks); Manfred Bierwisch, "Sprache und Gedächtnis: Ergebnisse und Probleme" (Language and Memory: Results and Problems); Friedhart Klix, Friedrich Kukla, and Rosemarie Kühn, "Zur Frage der Unterscheidbarkeit von Klassen semantischer Relationen im menschlichen Gedächtnis" (On the Ability to Distinguish Classes of Semantic Relations in Human Memory); Joachim Hoffmann, "Klassifizierung und Übertragbarkeit semantischer Relationen im menschlichen Gedächtnis" (Classification and Transfer of Semantic Relations in Human Memory); Joachim Hoffmann and Friedhart Klix, "Zur Prozesscharakteristik der Bedeutungserkennung über sprachlichen Reizen" (On the Process Character of Meaning Recognition of Linguistic Stimuli); Egon Weigl, "Neurolinguistische Untersuchungen zum semantischen Gedächtnis" (Neurolinguistic Studies on Semantic Memory); Irina Weigl, "Interdependenz neuropsychologischer und psycholinguistischer Faktoren in

der Aphasie'' (On the Interdependence of Neuropsychological and Psycholinguistic Aspects of Aphasia); Wolfgang Ulrich Wurzel and Renate Böttcher, ''Konsonantenkluster: Phonologische Komplexität und aphasische Störungen'' (Consonant Clusters: Phonological Complexity and Aphasic Disorders); Renate Böttcher, ''Sprachliche Strukturfaktoren und aphasische Störungen'' (Elements of Linguistic Structure and Aphasic Disorders); and Erika Metze and K. M. Steingart, ''Wechselbeziehungen im Funktionssystem der Sprache'' (Interdependency Relations in the Functional System of Language).

Although Bierwisch advocates a systematic connection of linguistics and psychology and explicitly recognizes that, in order to reach explanatory power, linguistic description must draw on external principles, such as those of cognitive psychology, his review of (mostly American) research on language and memory and on aspects of language acquisition instead seems to demonstrate the degree to which the theory of generative transformational grammar is actually trapped in autonomous linguistic thinking and thus unaffected by empirical language phenomena.[1] Given the predominance of autonomous thinking in modern linguistics, it comes as no surprise that most of the empirical research presented in this book is directed more toward problems of cognitive psychology and neuropsychology than toward those of linguistics. The only exception is the paper on consonant clusters, where the authors—a linguist and a psychologist—try to evaluate the respective merits of two types of linguistic explanations of aphasic language disturbances.

As the book is written entirely in German, I shall give short summaries of the experimental research results presented.

Klix, Kukla, and Kühn found evidence for the differentiation of the classes of ordering relations within and among cognitive structures (ordering based on semantic features and on real-life situations, respectively). The authors conclude that relations of the latter type probably represent primary memory structures, while those of the first type are more likely derived and possibly procedural ones.

Hoffmann studied the psychological reality of the classification of ''semantic relations'' according to differential features (word list reproduction). Semantic relations, as conceived of in this study, are of a cognitive, rather than linguistic, nature, however: As a result of informa-

[1]This becomes especially evident in the passages on ''surface'' and ''deep structure'' (pp. 58 ff *et passim*) and in the discussion of the syntactic position of the verb in German first language acquisition (pp. 100 ff).

tion processing, "they mirror and store objectively real structural relations" (p. 148). The author interprets his experimental results in reference to a preliminary model of the differentiation of components of information processing in the storage and reproduction of lists of semantically organized concepts.

Hoffmann and Klix report on experiments showing the mutual relationship between feature-specific logical representation of concepts and holistic-concrete information storage in sentence comprehension (sentence-picture comparison tasks). The results suggest that sentences and pictures are compared not only on a common "abstract" level of representation but also on a concrete one. As far as the componential analysis of sentence comprehension is concerned, the authors found evidence for the psychological reality of sequential, self-interrupting comparison processes of sentence and picture rather than for the recursive ones assumed by Carpenter and Just (1975).

E. Weigl's contribution is concerned mainly with disturbances of word retrieval in semantic-amnestic aphasia (object-naming tasks). Employing the method of deblocking the connection between meaning and sound structure (cf. Weigl, 1969), insights were gained into the storage and reactivation of lexical units in long-term memory. Special attention was paid to the problem of homonymy. The results suggest that disturbances of word retrieval in object-naming tasks are due, not to difficulties of meaning or concept retrieval, but rather to the evocation of the stored connections between sound and meaning structures. According to the author, one of the main differences between naming processes under pathological and normal conditions lies in the role played by short-term memory, which seems to be vital under pathological conditions only.

I. Weigl studied the interrelation of neurological transcoding processes (cf. Weigl & Fradis, 1977) and of psycholinguistic processes in motor and sensory aphasics (oral repetition, expressive reading, dictation). She found that both types of aphasics are more successful with lexical than with function words in the reproduction of single lexical items and syntactic structures. This evidence from speech reproduction shows that the classic classification of aphasic speech disorders based solely on the study of spontaneous speech must be relativized when speech reproduction is taken into consideration.

Wurzel and Böttcher found that the difficulties experienced by aphasics in the reproduction (repetition, expressive reading) and reception (auditive comprehension, receptive reading) of single lexical items

(nouns and verbs) depend on their phonological complexity as defined by pre- and postvocalic consonant clusters. The authors claim that their results are more adequately explained by the theory of natural phonology (cf. Stampe, 1969; Dressler, 1974) than by Chomsky and Halle's theory of markedness (Chomsky & Halle, 1968, chap. 9).

Böttcher found that grammatical category and phonological and morphological complexity of stimulus words all play a role in receptive and expressive reading performance of aphasics. Contrary to common belief, length is not the most important factor in determining word complexity. While word meaning is of utmost importance for the recognition of grammatical category, "degree of abstractness" (Goldstein, 1948) does not seem to play a major role in aphasic speech performance. Capitalization of word-initial graphemes is much less important for lexical decoding than has often been assumed. The semantosyntactic, phonological, and morphological parameters studied should contribute to the elaboration of more differentiated clinical diagnosis and therapy and prove helpful in syndrome research.

Metze and Steingart report on studies of language acquisition in congenitally deaf children. Their results indicate that the physiological mechanisms underlying speech are fundamentally the same in deaf children and in those with normal hearing ability.

The research results on aphasiology show more similarities than differences in the speech disorders characteristic of different types of aphasia. They thus make it clear that classification in this domain must be based on a variety of criteria rather than on a single one, such as spontaneous speech only.

Although this book will be of interest primarily to cognitive psychologists and aphasiologists, the linguist striving for empirical adequacy in his field should feel challenged to make empirical phenomena, such as those of speech performance, more relevant for linguistic theory than they have been so far.

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Aphasie. Eine Einführung in die Patholinguistik. *Günter Peuser.* Munich, Fink Verlag, 1978.

G. Peuser is a professor of *Sprachheilpädagogik* at Cologne. He has edited several books on aphasia and aphasia therapy as well as a bibliography on neurolinguistics. This volume on aphasia is subtitled *An Introduction to Patholinguistics*. In the first of the seven chapters, patholinguistics is described as closely related to theoretical linguistics, psychology, communication research, medicine, and "diagnosis and therapy of language disorders." According to Peuser, the scope of patholinguistics is wide: It would include all organic and nonorganic deficits of language acquisition and language use, and thus it would be quite difficult to establish valid models or theories for such a wide field. Also, the pattern of patholinguistic classification, as suggested by Peuser, does not sufficiently differentiate between major language and speech disorders. Within this pattern of classification, speech disorders in Parkinson's disease, multiple sclerosis, dysarthria, and common slips of the tongue would fall into the same group.

The following chapters of the book are devoted exclusively to aphasia. The second chapter contains a brief outline of aphasia research in medicine and presents a taxonomy of aphasic syndromes as developed by Professor Leischner, the former director of the Rheinische Landesklinik für Sprachstörungen in Bonn. Leischner distinguished 13 types of aphasia, according to the different degrees of disorder displayed in various language modalities.[1] Peuser reduces these to five: "amnesic aphasia," "motor aphasia," "sensory aphasia," "mixed aphasia," and "total aphasia."

[1]In Leischner (1979) the author mentions only 10 types of aphasia.

In the third and central chapter, Peuser surveys in detail the research on aphasia, including a great number of investigations published in France, West Germany, the USSR, and Rumania. His presentation does not follow the customary orientation along the lines of clinical syndromes but rather is according to different "performances": phonemic-expressive, phonemic-receptive, written-expressive, and written-receptive. Here Peuser reports on some of his own work—for example, his Three-Figures Test, a short test somewhat inspired by the well-known Token Test but aimed at discriminating subgroups of aphasic syndromes. Because of the wealth of information it contains, this chapter is probably the most useful of the book.

In the following chapter, Peuser discusses the question of whether aphasia is a disorder of language performance or language competence. According to Peuser, some types of syntactic and semantic speech errors exhibited by aphasics are too severe to be explained by disturbances of language performance. However, a basic language ability in the sense of *faculté de langage* is to be found even in the most severe cases of aphasia. Thus, Peuser believes that a more elaborated model of language competence would be desirable. More detailed than other authors, Peuser deals with aphasia in polyglots, giving examples from a wide variety of languages and language families, including Turkish, Japanese, and Bantu.

In the next chapter, the author treats aphasia therapy. He describes Leischner's concept of "syndrome change": The different types of aphasia represent special configurations of modality-specific disorders and different degrees of severity. According to this concept of the fluent aphasias, "sensory aphasia" is classified as more severe than "amnesic aphasia." Within the nonfluent aphasias, "total aphasia" is classified as the most severe impairment, followed by "mixed aphasia" and "motor aphasia." A change of severity may thus cause a change of syndrome (when a certain degree of restoration has been achieved): A "sensory aphasia" becomes "amnesic," a "total aphasia" becomes "mixed," and later may be "motor."

On the basis of this concept, Peuser reports in Chapter 6 on the change of syndromes in 291 aphasics, but all "amnesic aphasics" remained "amnesic" and all "sensory aphasics" remained "sensory." Apparently no clear-cut change of syndrome could be demonstrated within this sample. Of the "total aphasics," 64 remained total after a certain time of therapy, 18 were "mixed," and 17 were "motor aphasics." "Motor aphasia" appeared to be more stable: 95% remained "motor aphasics," 2 became "amnesic," and 3 had (more severe) "mixed apha-

sias." No explanation for these changes is provided by Peuser. In the opinion of this reviewer, these data do not provide sufficient support for the validity of the concept suggested by Peuser. As this concept is based on the severity of disorders in different language modalities (e.g., naming, repetition, writing), nonstandardized tests appear to be of limited usefulness. At the time when Peuser's book was published, such tests were not available in German. This has changed with the publication of the *Aachener Aphasie Test* (Huber, Poeck, Weniger, & Willmes, 1983). Clinical experience with this test does not support Peuser's notion that global aphasics sometimes turn into Brocas. It appears, rather, that each syndrome is related to a specific form of recovery: A syndrome change does not seem to take place (cf. Poeck, 1982).

In conclusion, it may be said that the main chapters of the book contain a wealth of information on various investigations in the field of aphasia, most helpful for anyone interested in the linguistic aspects of aphasia. However, the linguistically based approach suggested by Peuser appears to need more theoretical and empirical research.

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