

Introduction

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The aim of this edited collection is to bring together recent research on the use of communicative gesturing in the first 2 years of life as an important step in the child's transition to a linguistic system. Ten years ago, *Action, Gesture and Symbol* (Lock, 1978) was published, reflecting the state of the art in research on the emergence of language with an emphasis on the transition from prespeech types of communication to a fully developed use of language. During the years between the publication of that volume and the present one, there was not only an increase in the number of studies examining this issue as it relates to hearing children acquiring spoken language, but there was an important new focus on the part of some researchers who began to examine the early communication of children acquiring sign language. This development was in large part due to the acceptance of sign language as a linguistic system and its entrance into the mainstream of linguistic study.

During the past decade, a number of researchers, including those whose work appears in this volume, have analyzed gestural communication, symbolic gesturing, sign language acquisition, and spoken language acquisition of deaf and hearing children. Their approaches to the investigation of early communicative gestures and their relationship to language acquisition have too often remained separate with different theoretical perspectives and questions resulting in a variety of populations studied and terminologies adopted. The intent of this collection is to provide the reader with research reports previously prepared for widely divergent audiences and representing different points of view in order to examine the possibility of outlining a theoretical position which can explain apparently different results. Our purpose is also to demonstrate that, at the present time, research on sign language acquisition and more generally on deaf children's communicative and linguistic development can shed new light on many of the basic questions regarding language acquisition in this early period. We will point out areas in which we believe this research is particularly relevant.

When hearing children acquiring a spoken language make the transition from prelinguistic gestural communication to language, a modality change occurs. Deaf children acquiring a sign language communicate prelinguistically and linguistically in the same visual-gestural modality. Thus, comparison between hearing children acquiring spoken language and deaf children acquiring sign language may help to clarify the relationship between prelinguistic communication and language. One question that can be addressed comes from the continuity/discontinuity argument, that is, whether language emerges from prelinguistic communication in a continu-

ous manner or whether there is a discontinuity between the two such that language *per se* emerges when a specifically linguistic capacity of the child is called into play.

Other questions that can be addressed by comparative studies of speaking and signing children concern the sequence of language development. Models proposing states of language acquisition have been based primarily on studies of spoken languages. Studying the acquisition of language by deaf children exposed to sign languages may help to delineate those aspects of acquisition which are universal across languages and those aspects which may prove to be modality specific. It is possible that the sequence of the stages, the timing of them, or both may be influenced by the features of the modality in which the language occurs.

An interesting difference between the signed and the spoken modality is that iconicity is present in sign language to a greater degree than it is in spoken languages (Klima & Bellugi, 1979; Mandel, 1977). While iconic characteristics of sign languages have undergone significant historical modification and grammaticalization, it is often possible to perceive a relationship between a sign and its referent. At the same time, each sign language can choose to conventionalize a particular iconic relationship in an arbitrary way. In sign languages, then, a certain degree of iconicity coexists with one of the fundamental features of language: arbitrariness. The question that immediately arises concerns whether or not this type of iconicity plays a role in acquisition. If infants acquiring a sign language exploit the iconicity of a particular language, such a language-learning strategy could be taken as evidence of a facilitating effect of iconicity in the acquisition of languages in general.

Finally, it has been claimed that there is a critical period for the acquisition of language and that the timing of linguistic input has a clear effect on the child's acquisition of language. Research on language acquisition under conditions of no or limited input can be conducted very rarely since deprivation of the linguistic environment cannot be imposed deliberately. The case of Genie (Curtiss, 1977) is one of the few examples of such a situation, but in this circumstance language was only one of the many human factors missing from her early environment. In the case of deaf children, however, hearing loss can create atypical language learning conditions apart from other circumstances. Thus, deaf children can be seen as "experiments of nature" such that the study of their linguistic development affords an opportunity to understand better (a) language acquisition in the absence of adult linguistic input that is accessible to the child; and (b) the relationship between early exposure and native fluency in a language.

Often, perhaps usually, deaf individuals are not effectively exposed to a conventional language until school age or even later. The majority of deaf children learn sign language without input from their parents. Instead, they are first exposed to sign language whenever they happen to find themselves in settings where there are other signers. In the past, the first contact with sign language users tended to be at school age among their peers, a small minority of whom had learned sign language from their parents. Teachers did not usually sign, unless they themselves were deaf and taught older children, as was often the case in resi-

dential schools in the United States. In many countries outside of the United States and in strictly oral schools for deaf children, it was likely that the children received no adult sign language input at school. The question arises as to how these sign language users organize and process language in adulthood after having acquired it late and through exposure to limited input. The answer contributes to our understanding of the significance of linguistic input and age of acquisition. Newport and Supalla (1980) have observed important differences between native and non-native American Sign Language (ASL) signers: non-native signers do not achieve the same levels of fluency in ASL, especially in the use of complex morphology. Such differences might be due to age of exposure to the language, or to characteristics of the input, or both.

During the past 15-20 years, social and political environments have changed so that in many countries there is a growing tendency to expose children to both spoken and signed input from the time of the diagnosis of deafness. Here a distinction should be made between bilingual and bimodal exposure. The bilingual situation is one in which the deaf child is exposed to the two inputs in separate settings or from separate sources. In the bimodal situation, the deaf child is exposed to both inputs in the same setting and from the same source. In the case of the bilingual situation, the child is really exposed to two languages – one spoken language and one sign language. In the bimodal situation, the child is in fact exposed to only one language, either signed or spoken, and the communication that occurs in the other modality is used as support. When signing and speaking simultaneously, an individual uses one of the two languages or a kind of inter-language. Even in those cases in which the deaf child receives intensive and formal training in spoken language only, bimodal input prevails since in everyday communication, parents and teachers do, in fact, use gesturing unconsciously with deaf children.

An important question which remains unanswered then relates to the input available to the deaf child. Just how much of the spoken language and how much of the gestural input does a deaf child take in and how is it integrated? How does the input differ when the primary language is a sign language as compared with the situation where the primary language is spoken? Other related questions are: What is the child's contribution to language learning? How much is innate, how much depends on a model, and how much originates with the child? Human children are active and creative participants in the language acquisition process, going well beyond the data to construct a working theory of their language. Deaf children give us a unique opportunity to study this human capacity.

The book is organized into five sections based on the hearing status of the children (hearing or deaf) and the linguistic input they receive (spoken or signed). Part I includes studies of hearing children with spoken language input. The first chapters present studies that have built upon the seminal work conducted in the 1970s by Bruner (1975a, 1975b, 1978), Bates (1976a, 1976b), Bates, Benigni, Bretherton, Camaioni, and Volterra (1977, 1979), Bates, Camaioni, and Volterra (1975), and Lock (1978), focusing on gestures such as ritualized requests, showing, giving, and pointing. The remaining chapters examine a different type of gesture, that is, potentially symbolic gestures produced with or without objects. These latter ges-

tures can be similar to first words not only because of their content and the fact that they can go through a comparable decontextualization process, but also because they function communicatively. In the past, studies of these two types of gestures have usually been considered separately. They are presented together in Part I so that similarities and differences between the two types of gestures might be more readily discerned.

Part II focuses on deaf children with sign language input. The studies reported here examine, in particular, the transition from communication to language which, in this case, occurs in the same modality. Part III presents research on deaf children of hearing parents who have not been exposed to a conventional sign language input. Some researchers emphasize the creative aspect of the gestures used by these children. Others focus on the emergence of these gestures within the interactional context established between the children and their hearing caregivers. The relationship between vocal and gestural communication is examined to some extent in all of these studies with all of the authors pointing out the delay and the limits of the linguistic development of these deaf children in both modalities.

Studies included in Part IV are concerned with hearing children of deaf parents exposed to both sign and spoken input. The first chapter concentrates only on sign language acquisition, comparing it with cognitive development. The second chapter examines the language development of these children from a bilingual perspective, describing the simultaneous acquisition of the two languages in the two modalities.

Part V provides the reader with three studies specifically designed to compare hearing and deaf children. While the hearing children had spoken language input, the deaf children were exposed to varying types of linguistic environments. The introduction to each section summarizes and discusses the results of the studies presented, identifying points of convergence as well as apparently disparate findings. The Conclusion suggests ways in which researchers might begin to reinterpret and compare some of the data on hearing and deaf children, asking a coherent set of questions, adopting uniform analytic criteria, and employing consistent terminology.