



# **The SAGE Deaf Studies Encyclopedia**

## **Nativism**

Contributors: Deborah Chen Pichler & Diane Lillo-Martin

Edited by: Genie Gertz & Patrick Boudreault

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Nativist approaches to language acquisition maintain that humans are born with complex, innate linguistic knowledge, often referred to as a language acquisition device containing universal grammar (UG), which constrains and facilitates the process of language learning, depending on appropriate language input. Generally concomitant with this approach are assumptions that linguistic knowledge is domain specific and therefore not derivable from general cognitive knowledge and, furthermore, that language acquisition is subject to a critical period and is compromised in cases of degraded or delayed input. Current acquisition research within the nativist tradition stems from Noam Chomsky's landmark criticism of B. F. Skinner's behaviorist proposal, which characterized language learning as a process of stimulus and response. Chomsky argued that behaviorist approaches fail to account for the fact that children understand and produce sentences they have never heard before, as well as the observation that adults typically respond to grammatically incorrect utterances produced by young children without providing negative feedback. Chomsky proposed that these facts are more consistent with the view that children learn language by actively constructing and testing grammatical rules, based on analysis of patterns in the input and guided by UG. These rules generate all and only grammatical utterances in the target language, a central tenet of generative linguistics; nativist approaches to language acquisition are thus largely synonymous with generative approaches.

Sign language research has played an important role in testing nativist predictions. For instance, if universal grammar is truly universal, it should be available regardless of language modality. Accordingly, a major area of sign language research investigates the degree to which the underlying principles observed for spoken languages apply to sign languages, and vice versa. Sign language research also informs the development of linguistic theories to account for language acquisition, organization, and interaction in either modality. Finally, if UG is subject to a critical period, as are other innate systems such as vision, then delayed exposure to usable language input should result in atypical developmental patterns. Deaf children with normal intelligence who are raised in nonsigning environments have long been studied as test cases for this proposal, because their access to usable linguistic input is degraded, absent, and/or severely delayed.

### **Universality and Comparisons Across Modalities**

The Chomskian view of language and language acquisition dominated linguistic research through the 1970s and 1980s, so many early sign language researchers during that period tacitly assumed a nativist view but focused mainly on demonstrating the striking similarities between natural sign languages and spoken languages. Studies by Ursula Bellugi and others argued convincingly that sign languages are organized in fundamentally the same way as spoken languages, displaying common phonological, morphological, lexical, and syntactic processes. Research on the acquisition of sign languages during this period focused heavily on native first-language (L1) acquisition by deaf children receiving early and consistent exposure to a natural sign language from Deaf families. Some researchers, such as Laura-Ann Petitto, concluded that the basic course of language acquisition is largely unaffected by modality, confirming the amodal and universal nature of the human language faculty. The developmental trajectory of these native signing children largely paralleled that of hearing children learning spoken languages, consistent with the view that UG guides language development regardless of modality. These early studies, which emphasized the

universal and amodal nature of the language faculty, were instrumental to establishing sign languages as fully complex natural languages, equivalent to spoken languages in every way.

Whereas early sign language research emphasized the similarities between sign languages and spoken languages, current research increasingly focuses on features of sign language grammar that appear to have some influence from the signed modality. Potential modality effects include prominent exploitation of space for reference and other discourse-related functions, phonology expressed through paired semiautonomous articulators, the expression of prosody through visual means such as nonmanual signals, and pervasive effects of iconicity beyond what is typically observed in spoken languages. While these modality effects are cited by some as evidence of fundamental differences between sign language and spoken language organization, nativist researchers view them as possible options within UG, warranting modification rather than rejection of existing theoretical models. This approach maintains the possibility that what appear now to be modality effects exclusive to sign languages may turn out to be relevant for spoken languages as well. Indeed, some features that have played a central role in analyses of sign languages, including intonation and gestures that accompany speech, are now being considered more seriously in the analysis of spoken languages.

### **Sign Language Acquisition and the Architecture of Grammar**

Language acquisition studies have traditionally occupied a central position in nativist approaches on the premise that effects of innate linguistic knowledge should be evident from the very earliest stages of development. Patterns of language production, comprehension, and errors by language learners at various stages of development provide valuable insight for deducing how grammars are constructed and organized in the brain. Sign language acquisition research offers additional potential as a window for understanding how modality affects grammar. As noted earlier, many aspects of L1 sign acquisition parallel L1 acquisition of spoken languages, but there are also notable effects of modality. Phonological development, for example, is significantly influenced by whether the target language is produced by a single, relatively small articulator that cannot be seen by the speaker, as is the case for spoken languages, or a pair of relatively large, external articulators, as is the case for sign languages.

Recently, nativist research on bimodal bilingualism, or bilingualism involving one sign language and one spoken language, has engendered fruitful debate over how grammar is organized, especially when two or more languages in different modalities are involved. Of particular interest are code-blended utterances, which simultaneously display features of both the signed and spoken languages (we take code-blended utterances to be distinct from simultaneous communication (SimCom) in that they occur naturally in mixed Deaf/hearing families and are accessible to Deaf interlocutors, while SimCom is an English-based artificial system that is accessible only if one can hear the English). While blending is comparable in many ways to code-switching, the former is unique to bimodal bilingualism and offers insights into languages' organization and interaction that are not available from unimodal bilingualism. Nativist models of the architecture of human grammar must be able to account for code blending and other modality effects, regardless of the motivation for their production.

### **Informing the Critical Period Debate**

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Sign acquisition studies have played a major role in the debate over whether or not language acquisition is subject to a critical period. Comparisons of deaf signers with early exposure to sign language (before 4 years of age) with deaf signers with very late exposure to sign language (after puberty) reveal significant gaps in performance on a variety of linguistic tasks, with early-exposed signers consistently outperforming their late-exposed counterparts, particularly in the area of morphology. Performance gaps persist even when late-exposed signers have accumulated the same number of years of experience using sign language as their primary language as the native-signing comparison group. Rachel Mayberry and her collaborators have demonstrated that the grammatical deficits in the ASL of late-exposed deaf signers are more severe than those observed for second language (L2) learners who already have an established L1 (e.g., late-deafened English speakers who began learning ASL as adults). These results point to the critical importance of early and [high-quality] language input, in any modality, to optimal development of a first language. Yet there is also evidence that some aspects of a universal language faculty emerge even in the absence of early language input. Studies of deaf children who are not exposed to any conventional sign language report that they may develop home sign systems, gestural systems that display varying degrees of linguistic organization. Susan Goldin-Meadow and her colleagues have noted striking similarities in the home sign systems used by deaf children around the world. These results are compatible with the interpretation that at least some aspects of UG guide the development of home sign systems when a full linguistic system is not available.

Nativist approaches to sign language acquisition are beneficial in two ways. First, research on sign languages is crucial for building a truly universal understanding of the nature of language and its acquisition. This is due both to the particular effects of language in the visual modality and the fact that sign language users are (unfortunately) often learners in atypical environments, revealing important connections between innate learning mechanisms and input. Second, the nativist approach is highly formal and allows researchers to set up and test specific grammatical hypotheses.

*Deborah Chen Pichler and Diane Lillo-Martin*

**See also** Language Acquisition and Development; Linguistics: Generativism; Linguistics: Gestures and Homsigns; Linguistics: Syntax; Psycholinguistics, Milestones in

### Further Readings

Chen Pichler, D., Kuntze, M., Lillo-Martin, D., de Quadros, R. M., & Stumpf, M. R. (2014). *Sign language acquisition by deaf and hearing children: A bilingual introductory digital course*. Washington, DC: Gallaudet University Press.

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Deborah Chen PichlerDiane Lillo-Martin

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