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The Spectrum of Innateness

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(Guest Eds.)

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The fact that all known human groups (even those incapable of hearing) have developed language is reason enough to consider the possibility that language learning is innate. The real contribution of this volume is that this possibility is considered from a broad range of perspectives—from the biological to the cultural. This range brings with it not only a variety of definitions of the term *innate* but also a variety of definitions of *language* itself.

For some of the contributors, the phenomenon under study is the acquisition of the structure of language, that is, the production of grammatically correct strings in humans (Wexler; Morgan) and in birds (Marler). However, for others, the phenomenon is broadened to include the use of strings in socially and culturally appropriate contexts in humans (Harkness) and in birds (West, King, and Duff). In general, the more narrowly defined structural aspects of communication appear to be less dependent on particular

kinds of input—and, in this sense, are more innate—than the more broadly defined social aspects.

One might naively have thought that if learning is involved in the development of a behavior, that behavior cannot be considered innate. However, the definition of *innate* used by many of the contributors is more subtle: The issue is not whether learning has occurred but whether learning is guided by the organism as much as, if not more than, by the environment. Marler's study best exemplifies the point. Two closely related species of sparrows were raised from the egg in identical environments and exposed to an identical collection of songs typical for both species. The two species learned different songs, thus appearing to highlight different aspects of the input. Similarly, Locke argues that, to a certain extent, human infants select the sounds they learn, often learning frequently heard phonemes relatively late and infrequently heard phonemes quite early.

Thus, the range of possible outcomes in the learning process appears to be narrowed by the organism itself. This narrowing, or canalization, is often attributed to genetic causes (cf. Waddington, 1957). In Marler's study, there is good reason to believe that genetic differences are behind the narrowing process, and I would suspect little disagreement among the contributors that the behavior is, in this sense, innate, although others have argued that innateness should not be tied to a genetic base (cf. Wimsatt, 1986).

However, canalization can also be caused by the environment. For example, Gottlieb (1991) has shown that exposure to a particular stimulus at one point in development not only makes the organism susceptible to that stimulus at later points in development but also buffers the organism against other stimuli. Thus, for any given behavior, one must investigate the causes of canalization rather than assume a genetic base. In human studies, one cannot freely engineer organisms and environments, and developmental histories are quite complex. It is, therefore, difficult to attribute canalization to either genetic or environmental causes. Does this render the notion innate without explanatory value, as some of the contributors argue?

I suggest that the sense of innate as "developmentally resilient" (Alcock, 1988, p. 52) or "developmentally buffered against certain kinds of experience" (Goldin-Meadow, 1982, p. 630) remains a viable notion—one that focuses the enterprise on specifying the range of environments in which language learning can take place. Although there are indeed limits on the process of language development (i.e., children raised without human interaction do not develop language), the process can proceed even in the face of radical deviations from the typical learning environment (e.g., children raised in the company of humans but not exposed to a conventional linguistic input can, on their own, develop a communication system with many of the properties of language). What researchers have shown in exploring this resilience is that language is central to the organism—so central that its development is virtually guaranteed, not necessarily by a particular gene but by a variety of combinations of genetic and environmental factors. It is, in this sense, innate.

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