

Do deaf children show language learning bias?

Linguists are still wrestling with the nature versus nurture question: Is a young child's language acquisition influenced more by environment or physiology? In search of the answer, researchers at the University of Chicago studied the gestural communication of profoundly deaf children and their hearing mothers. The recently published results seem to indicate that children can spontaneously impose linguistic structure on their communication, even in the absence of a conventional linguistic environment.

Some psycholinguists argue that maternal influences and the social nature of the child determine language acquisition. Scientists siding with the nature camp, however, view this new work as conclusive evidence that biology plays a strong role in linguistics. "It documents beyond further nay or doubt that the bulk of explanatory apparatus for language learning resides in the child, rather than in adventitious exposure conditions," says Lila R. Gleitman, a linguist at the University of Pennsylvania in Philadelphia who has collaborated with the Chicago researchers on previous work.

The young (16- to 50-month-old) children chosen by Susan Goldin-Meadow and Carolyn Mylander for their study reported

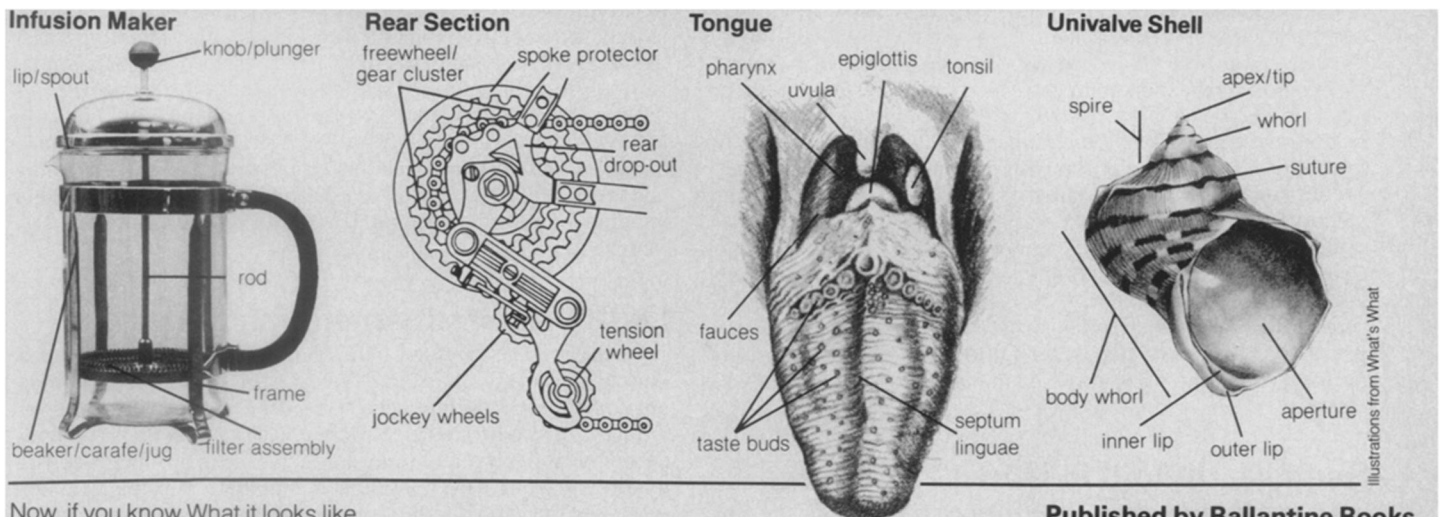
in the July 22 *SCIENCE* had normal social environments but severely restricted language environments. Their parents knew no standard sign language, and the severity of the children's hearing disability prevented them from understanding even shouted conversation. Moreover, since lip-reading is notoriously difficult to do, the deaf children and their families communicated only through the use of simple gestures.

Goldin-Meadow and Mylander studied two-sign gestures, in both the children and their mothers, and found that the children's gestures displayed many of the attributes of early childhood language. The children preferred certain syntactic constructions over others, used at least one reliable sign-ordering scheme and constructed complex "sentences" by stringing together several gestures to indicate more than one prepositional phrase. Yet their mothers did not show the same preferences for construction and sign order as their children and used single gestures almost entirely. Furthermore, there seemed to be no correlation between the child's choice of linguistic patterns and rewards through parental comprehension or approval. Oddly, adds Goldin-Meadow, very young children don't need such

structure to describe the here-and-now aspects of their world. "From my point of view," she says, "this suggests that children are biased to communicate in language-like ways, that is, in ways that are using some structural properties that are typical of natural [culturally transmitted] languages."

These structural properties do not seem to resemble those of English. The children tend to use the same word order for intransitive subjects (John in the sentence "John is sleeping") and direct objects (Mary in the sentence "John kissed Mary") and would be inclined to sign the second sentence "Mary kissed", ignoring John entirely. This emphasis that places intransitive subjects and direct objects of transitive verbs in the same grammatical category is common to ergative languages such as Samoan, Basque and Chinook. In the other class of world languages — the accusative ones, of which English is an example — intransitive and transitive subjects (John in both sentences) are treated equally. Elinor Ochs, linguist at the University of Southern California in Los Angeles, says there is controversy in her field about the relative naturalness of these two types of languages. "If Goldin-Meadow has found that children are spontaneously generating an ergative language system, that's very interesting," she says.

—P.D. Sackett



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