Comment on “Children Creating Core Properties of Language: Evidence from an Emerging Sign Language in Nicaragua”

In a recent report, Senghas et al. (1) presented Nicaraguan Sign Language as a spontaneously developing language that was created by children who lacked exposure to a developed language. The study asserted that “discreteness and hierarchal combination are absent from the language environment” of these deaf learners, but provided no details about the role of other communicative and linguistic inputs in the language environment of this deaf community. Specifically, no information was provided about the extent of the influence of gestures of hearing people during the early stages of acquisition of the deaf learners and about the influence of spoken and written languages such as Spanish or English.

The results of recent research conducted by Fusellier-Souza (2, 3) on the emerging sign language spontaneously developed by isolated deaf individuals in Brazil shows the strong continuity between the gestures used by the hearing population and the lexicon of the emerging sign languages. Fusellier-Souza also identified some peculiar fixed strategies used by deaf adults to progressively reshape the nonlinguistic materials and transform them in discrete and combinatorial lexical items of the language.

According to Senghas et al. (1), the presence of linearity, discreteness, and hierarchal combination in the sign language of the second and third generation of Nicaraguan signers proves the existence of some innate based mechanism of language acquisition that shaped this language as it was relearned by the youngest signers. However, their hypothesis cannot be tested without assuming some important methodological preconditions.

First, Senghas et al. (1) offered no detailed information about the exposure of the signers to other communicative inputs. The way in which young signers are exposed to gestural, vocal, or written language in the first years of acquisition may strongly affect their language competence (4, 5). Differences between generations of signers may be attributable to the different communicative inputs to which they were exposed.

Second, Senghas et al. compared the elicited output from hearing participants with signed productions. They reported that hearing people speak and gesture at the same time but provided no information on the relations between the two modalities. Previous research has demonstrated that in the speech of normal adults accompanied by gestures, information is regularly partitioned into verbal and nonverbal channels (6, 7). Therefore, gestural production of hearing participants studied in (1) could have been influenced by the words produced. It also remains unclear what hearing participants would have done if requested to perform the task without using spoken language (8); it is possible that linear, combinatorial, and discrete language features might have emerged.

Third, Senghas et al. did not discuss the use of mouthing by deaf people performing the task. Recent comparative research on different sign languages emphasizes that mouthing and verbal components are important elements of the multimodal simultaneous layering of sign language productions (9, 10). How much meaningful information and sequencing is provided in the signers’ production through mouth patterns, either autonomous or derived from Spanish? How are these mouth patterns related to the discreteness and hierarchal combinations produced in signs?

If contrasted with other points of view (11), the authors hypothesis can be considered a weak claim about the innate devices of the “language faculty” (12). Without the proper methodological requirements, this kind of assumption about innateness cannot be favored against other possible hypotheses. It is not clear whether discreteness, combination, and linearity are design features of human languages that emerge as an architectural byproduct under the multimodal communicative pressure of a community of users, or whether they emerge as a result of domain-general cognitive constraints, or both.

We stress that modalities of acquisition play a very important role in the structure and development of a sign language. Deaf signers generally do not acquire their native languages from their parents, as is typical for hearing people. As a result, deaf signers may rely on many different communicative inputs in the early stages of acquiring their language. Studies on emerging sign languages must not be considered as experiments of a language “in vitro”—that is, of a completely self-developing original language. Social, pragmatic, and environmental aspects have to be carefully evaluated case by case and in each developmental stage of the acquisition of these languages.

Tommaso Russo
Department of Philosophy
University of Calabria
Via Piero Bucci
87036 Rende (CS), Italy
E-mail: t.russo@mclink.it

Virginia Volterra
Institute of Cognitive Sciences and Technologies–CNR
Via Nomentana 56
00161 Rome, Italy
E-mail: virginia.volterra@istc.cnr.it

References and Notes
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