

Infants have a basic knowledge of the role and limitations of language

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Marc Colomer and Núria Sebastián Gallés, members of the Speech Acquisition and Perception (SAP) research group of the Center for Brain and Cognition (CBC) at UPF have investigated whether 14 month-

old infants understand that language is a communication tool for transmitting information between speakers of the same language. The study is published in the advanced online edition of the journal *Cognition*.

"Before the study, we knew that [infants](#) at this age already see [language](#) as a conventional system, that is, a way of conveying information that is agreed upon and shared by a group of people. For example, when you learn the word 'hammer,' you not only learn a way to refer to a certain kind of tool but also presuppose that any speaker of your language will use the same word to refer to a hammer," Colomer and Sebastián Gallés explain. According to the authors, this knowledge is the basis of communication. Even when we see two people who speak a language we do not know, we expect them to share the same conventions and, therefore, be able to communicate. But if the people speak different languages, then language will not be an optimal system of communication.

"The question we posed in this study is whether 14-month-old infants understand that to communicate, the communicator and the recipient must speak and/or understand the same language. In addition, we investigate whether the infants' experience interacting with people who speak only one language, or more than one language, influences their predictions on who can communicate with who." Hence, the researchers tested a group of infants with a monolingual background and a group of infants from bilingual environments.

In the first study, infants who grew up in environments where only Catalan and/or Spanish was spoken watched videos of two [girls](#) speaking different languages (Hungarian and Catalan/Spanish) targeted sentences at them. In the second study, the infants saw that the two girls spoke the same foreign language (Hungarian). After the presentation, the infants watched a scene in which there were two toys on a table and one of the

girls (Hungarian) showed her preference for one of them. In a second scene, this same girl could not reach the toys because there was a wall preventing it. In this scene, the second girl was present and could reach the toys. At that moment, the first girl (in Hungarian) asked the second to pass her her object of preference.

"The question we posed was whether the infants would expect the girl who was speaking in Spanish/Catalan to understand the message in Hungarian, and thus give her the toy she wanted," explains Colomer, first author of the study. "To investigate the infants' expectations, we use the 'Violation of Expectation' paradigm. This paradigm is based on the presupposition that infants look for longer at a scene when what happens in it is unexpected and, therefore, more difficult to process," Colomer adds.

Infants' expectations according to the results of the experiments

What the researchers were able to observe was that the participants expected the two girls who spoke the same language, even when it was totally unknown to them, to understand each other. However, under the condition where the two girls spoke [different languages](#), only the infants growing up in a bilingual [environment](#) expected the girl who spoke Catalan or Spanish to understand the phrase in Hungarian.

This suggests, first, that infants expect language to communicate information even among people who speak a foreign language. Second, infants understand that communication depends on the use of a shared language. In other words, they expect two people to be able to communicate verbally only if they speak and/or understand the same language. Finally, the results indicate that infants that grow up in bilingual environments expect people to be able to understand more than

one language (even Hungarian). However, infants that grow up in monolingual environments expect others also to be monolingual.

Understanding that language is a tool for communication, and understanding under what conditions it enables conveying information, is essential to develop the capacities that babies need to start to communicate and understand their environment. This study demonstrates that even at 14 months, infants have a complex knowledge of the role and limitations of language as a [communication tool](#). In addition, the study shows that the infants' environment (monolingual or bilingual) influences their predictions about who can communicate with who.

More information: M. Colomer et al, Language background shapes third-party communication expectations in 14-month-old infants, *Cognition* (2020). [DOI: 10.1016/j.cognition.2020.104292](https://doi.org/10.1016/j.cognition.2020.104292)

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