

# What causes language switching in bilinguals?

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The proficiency that a bilingual person has of both languages, the context in which he speaks them or unconscious changes in their use are the factors that make people who speak Spanish and Catalan switch from one language to another. The group of Cognition and Brain Plasticity at the Bellvitge Biomedical Research Institute (IDIBELL), led by Antoni Rodríguez-Fornells, has designed a questionnaire that allows understanding individual differences among bilinguals when they change the language (switching).

The study was conducted on a sample of 566 college students Spanish-Catalan bilingual and has been published in the latest issue of the journal *Frontiers in Psychology*.

This questionnaire has already begun to be used in bilingual individuals in Montreal, Canada, who speak English and French, in Finland (Finnish and Swedish), in France and also in India. Antoni Rodríguez-Fornells warns that "it is necessary to consider that bilingualism depends on the sociolinguistic situation in each area or region where it occurs. For example, the situation of the Catalan in Catalonia is not now the same as 60 years ago, in the Basque Country there are not many situations of language switching because Euskera is not spoken as often as Catalan in Catalonia and, in Belgium, for political reasons, French and Flemish don't coexist in the same way."

Having made this clarification, the study identifies several factors that make individuals changing the language they use. One factor is the

proficiency that each person has for each language. When the bilingual speaks Catalan sometimes uses a word in Spanish because he doesn't know the right word in Catalan, and vice-versa. Another factor is the context in which they are: the characteristics of the interlocutor or the chosen topic will make them speak one language or another. And, finally, the unconscious changes from one language to another. These are changes that cannot be explained by linguistic or sociolinguistic grounds.

"This unintentional and unconscious switching", suggests Rodríguez-Fornells, "may be related to a lack of cognitive brain control. Sometimes, bilinguals change automatically from one language to another, with no apparent reasons."

Cognitive control is one of the most important skills and it refers to the ability we have to monitor our behavior, to predict errors, plan actions and inhibit them if necessary and be aware of the changes and conflicts that appear on our environment. Therefore, this skill requires a system that constantly monitors our behavior and the effect it has on the environment. In some cases, language switching goes unnoticed and it could be hypothesized that these aspects are related to cognitive control.

A second paper on this subject was published last December in the same journal, also using this questionnaire on language switching between languages, this time in bilingual Finnish-Swedish (Soveri, Rodríguez-Fornells, Laine, 2011).

## **Bilingualism and cognition**

The group led by Antoni Rodríguez-Fornells in IDIBELL try to find out whether the knowledge and use of a second language, bilingualism, may enhance cognitive abilities, how it can change the brain and whether it can be positive or not as a strategy for neurorehabilitation, among other issues.

Rodriguez-Fornells explains that "for some authors, switching between languages observed in some groups, such as between siblings in bilingual families may be negative in the sense that linguistic wealth is lost, but for others, the ability to change from one language to another (switching) very quickly may even be positive (some even say that creative), and could be transferred to other cognitive functions and make the brain more flexible in cognitive control."

Among those who see the positive component of bilingualism, Rodriguez-Fornells highlights the research group of Ellen Byalstock, "who had published some papers suggesting that using a second [language](#) can be a [cognitive](#) reserve that makes us having more resources against aging or disease processes."

In any case, the researcher warns that "we are still beginning to study the effects of bilingualism in the human brain and we must keep in mind that according to languages, societies and political environment, bilingualism is different and it is expected that this will have differential effects on brain development in children".

Provided by IDIBELL-Bellvitge Biomedical Research Institute

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