

Does your pain feel different in English and Spanish?

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We take for granted the fact that feelings such as love, happiness, or pain are described with different words and expressions across languages. But are these differences in the ways we express these feelings in different languages also tied to differences in the sensations themselves? Would a painful event like a stubbed toe or a bee sting hurt

less if a bilingual chose to describe or think about it in Spanish as opposed to English?

These sorts of question were central to the development of a recent study by Morgan Gianola, University of Miami psychology graduate student, along with his advisor, Dr. Elizabeth Losin, director of the Social and Cultural Neuroscience lab at the University of Miami, and Dr. Maria Llabre, professor and associate chair of the Department of Psychology at the University of Miami. The study, entitled "Effects of Language Context and Cultural Identity on the Pain Experience of Spanish-English Bilinguals," is published in the journal *Affective Science* and will appear as part of the journal's special issue on "Language and Affect."

The Social and Cultural Neuroscience lab uses experimental interactions among research participants to assess how social factors, like the language one speaks or the [cultural identity](#) they express, can influence pain responses and other clinically relevant behaviors. Gianola joined this lab to research how social environments and cultural learning can be relevant to perceptions as seemingly objective and inherent as pain.

In the study, 80 bilingual Hispanic/Latino participants from the University of Miami and Miami-Dade County communities visited the lab to participate in separate English and Spanish testing sessions; during both sessions, they received a pain-induction procedure, when an experimenter applied painful heat to their inner forearm. The primary difference between the two experimental visits was the language being spoken (English or Spanish), while the painful procedure itself did not change. Participants provided subjective ratings of their pain, and their physiological responses (i.e. their heart rate and palm sweating) were also monitored.

Gianola explained that this study was inspired by previous research in the field of "linguistic relativity," which has shown differences between

English and Spanish speakers in [cognitive processes](#) like memory for specific events or categorization of objects. These cognitive differences are also seen among bilinguals when they switch between English and Spanish contexts. Gianola hoped to clarify how such psychological differences across languages might also relate to changes in physical and emotional experiences, like pain.

"All of our participants identified as bicultural," said Gianola. "After each experimental session, we had them fill out surveys about things like how often they use each language [English and Spanish] and how strongly they relate to and identify with both the Hispanic and U.S.-American sides of their cultural identity. The interesting thing we found was, rather than participants always showing higher pain ratings in Spanish, for example, they tended to report more intense pain and show larger physiological responses to pain when they spoke the language of their stronger cultural identity."

According to the study findings, participants who engaged more with Hispanic culture showed higher pain when speaking Spanish, while more U.S.-American identified participants reported higher pain in English. People who were fairly balanced in their engagement with U.S.-American and Hispanic culture had pain outcomes that didn't differ much across languages. The study also suggests that bodily responses to the pain played a larger role in determining pain ratings among more Hispanic oriented bilingual participants.

"This study highlights, first, that Hispanic/Latino communities are not monolithic, and that the factors affecting bilinguals' psychological and physiological responses to pain can differ across individuals," said Gianola. "We also see that language can influence such a seemingly basic perception as [pain](#), but that the cultural associations people carry with them may dictate to what extent the language context makes a difference."

Moving forward, the researchers are developing new experiments to further address the role [language](#) plays in influencing cognition and perception among bilinguals. As part of a dissertation project, Gianola plans to investigate the brain processes that contribute to the effects found in this most recent study.

More information: Morgan Gianola et al, Effects of Language Context and Cultural Identity on the Pain Experience of Spanish–English Bilinguals, *Affective Science* (2020). [DOI: 10.1007/s42761-020-00021-x](https://doi.org/10.1007/s42761-020-00021-x)

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