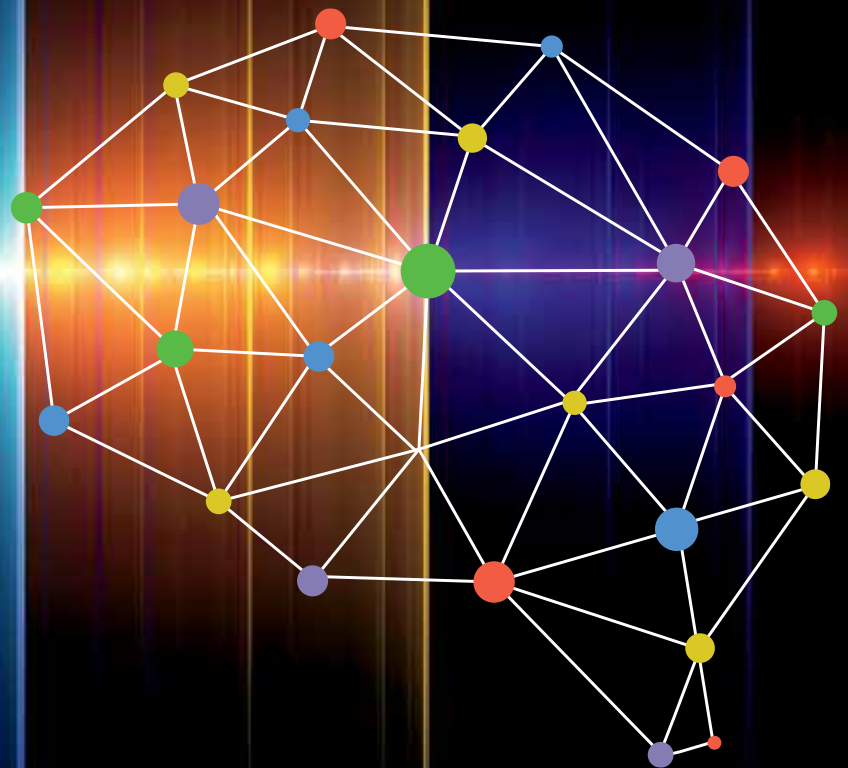


Northwestern | SCHOOL OF COMMUNICATION

# Dialogue

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**DESIGN**  
**FOR HEALTH**  
**AND HUMAN**  
**WELFARE**

with language and empowerment to stand up for their children.”

Walter, too, has found the personal-narrative approach to be a helpful tool. His research uses it to design more effective public service announcements about the dangers of tobacco use. Earlier methods have been roundly dismissed as ineffective.

“If we think about the traditional public service announcement, it usually starts with something very scary: Tobacco can kill you. Drugs can kill you.” Noting that users are well aware their behavior is risky, he says, “We propose an alternative mechanism: reverse this. Instead of starting with fear, start with a self-affirming message.”

In one study, Walter composed a personal narrative about a college student using e-cigarettes and then distributed it to research subjects who vape. The story involved a roommate confronting the student about the dangers of e-cigarettes and the student receiving a prestigious scholarship. In half of the stories, the scholarship preceded the confrontation.

“When we manipulate the order of the events, we’re able to show that when the award comes before the threat, people are much more receptive to the risk information,” says Walter. “Those who were first exposed to the affirming event, then the threat, scored their personal risk much higher. They also had to say how likely they were to use e-cigarettes in the next three years, and we were able to show it would reduce the likelihood they’d use e-cigarettes.”

Walter was pleased to find that the positive effects persisted two weeks later and, when compared with a traditional PSA, were far more likely to make an impact. He hopes to design film versions of these narratives, which would be easier to share and might reach more people.

## SEEING THE WORLD THROUGH A BILINGUAL BRAIN

Current estimates predict that the United States will become a majority-minority country around the year 2040, and the number of children speaking a language other than English at home is predictably on the rise: 12 million in 2016, a 2 percent jump from the previous decade, according to the Annie E. Casey Foundation.

From a scientific perspective, bilingualism is a boon to brain health. But the addition of more languages into American households can have profound social and health implications, says **Viorica Marian**, the Ralph and Jean Sundin Endowed Professor of Communication Sciences and Disorders.

“We know that the language you speak impacts decision-making, memory, perception, and almost every area of our life,” says Marian, who speaks six languages. “There isn’t as much research trying to understand the mechanisms of how language changes our cognitive neuroprocesses.”

To explore this further, Marian and colleagues designed a questionnaire that provides a comprehensive assessment of respondents’ language experience across a lifetime, including when they became proficient, when they learned to read and write, and whether they have an accent. “There wasn’t an immediately available comprehensive tool that very quickly allowed us to index different linguistic experience measures when you try to understand how language works,” she says of the questionnaire, which has been used in hundreds of studies worldwide.

While this work focused on the human element—the language learner, the language user—she dove deeper to develop CLEARPOND (Cross-Linguistic Easy Access Resource for Phonological and Orthographic Neighborhood Densities), a database tool for focusing on the input aspects: language properties, word frequency, etc., in English, Spanish, French, Dutch, and German.

“It does such things as computing the likelihood of two letters occurring together or two sounds occurring together across two different languages,” she says. “In every language, some letters or sounds are more likely to happen together than others. For example, English is not likely to have four consecutive consonants, but Dutch is, with words like *slechtstschrijvende* and *zachtstschreiende* having a whopping nine consecutive consonants!”

Marian posits that by comparing and contrasting language patterns, we might be able to understand how long it may take someone to become fluent in a new language or to predict how a person fluent in another language might process the world differently.

“In the United States, we tend to look at the world through a monolingual prism, which is often incomplete,” she says. “We can’t really understand how the mind works, how the brain works, if we just have a monolingual approach.”

She adds, “Our brain can accommodate multiple languages, and understanding the capacity for this can help unravel the limits of human cognition.”

