

# The Language of Safety

AN OU GRADUATE STUDENT'S RESEARCH IS BRIDGING THE GAP FOR SPANISH SPEAKERS FACING THE DANGERS OF SEVERE WEATHER.

By Chip Minty



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**NO ONE LIKES TO BE IN THE** crosshairs of a tornado-bearing thunderstorm, but for Joseph Trujillo Falcón, the experience was especially traumatic. The dark clouds, the sirens, the weather forecasters with their maps and foreign jargon left an impression that lasted a lifetime.

Trujillo Falcón was only 5 when his family moved from Lima, Peru, to the Dallas-Fort Worth area, where he got his first taste of Tornado Alley.

“Peru doesn’t even receive an inch of rain annually,” says the 24-year-old, now a graduate research assistant at the National Weather Center on the University of

Oklahoma’s Norman campus. “To go from there to seeing all these storms pop up, it scared me. It scared a lot of my family members and my community.”

Staring down tornadic storms is stressful enough for English speakers, but for the millions of people in the United States who don’t speak the language, severe weather

can be especially terrifying—and even more deadly. Trujillo Falcón is dedicating his career to improving severe weather communications on a national scale.

After earning his Bachelor of Science degree in meteorology from Texas A&M University, Trujillo Falcón came to OU, where he is completing a Ph.D. in communications.

“To this day, there’s no English-to-Spanish dictionary for weather and climate terminology,” he says. “And there are terms that we haven’t translated over to Spanish. If we can’t even describe the hazard to somebody, how can we expect them to respond or take it seriously?”

Trujillo Falcón says that revelation led him to drop plans to pursue a career in television meteorology and focus on research and advocacy for multilingual issues in meteorology.

“I’m just a firm believer that lifesaving information should be accessible to everyone,” he says.

That journey began in January 2020, when Trujillo Falcón presented a paper at an American Meteorological Society conference in Boston. He started with a story about the devastating EF-5 tornado that struck El Reno, Okla., on May 31, 2013, killing seven Spanish speakers. The El Reno family heard tornado sirens, but because there was no Spanish-language information, they didn’t understand proper safety procedures and sought shelter in a storm drain. The family also missed a flash flood warning. Tragically, flood waters swept them away.

“This sort of thing has happened time and time again,” he says. “That’s why I initially wanted to be a broadcaster. I wanted to help these communities. But as I went through college, I realized there wasn’t a long-term solution.”

Trujillo Falcón’s paper proposed developing a uniform vocabulary of Spanish-language terms to describe the level of risk associated with severe storms. The vocabulary also would address the reality that even minute differences in dialect can have an impact on interpretation.

“That day in Boston, people were open to hearing more and wanted to get involved. Honestly, I felt like it was a new chapter in how we approach these communities and how we can benefit them in the future.”

Trujillo Falcón says the conference led to federal research grants and wide buy-in from the National Oceanic and Atmospheric Administration (NOAA), academia and television broadcast stations across the country.

A team of researchers and other graduate students quickly formed around his initiative, resulting in a NOAA-endorsed vocabulary of Spanish-language terms for weather risks. Previous attempts to translate words such as “tornado” and “hail” only caused more confusion because they were not universally understood across all dialects, Trujillo Falcón says. But the team’s use of linguistics experts helped break through those barriers, and the vocabulary currently is being put into practice nationwide.

“Joseph is at the forefront of the effort to do a better job of getting information about hazardous weather to the immigrant population,” says Justin Reedy, OU associate professor of communications and Trujillo Falcón’s co-adviser. “He’s already doing great work, and he’s going to be making many more contributions to this field in coming years.”

Now, Reedy, Trujillo Falcón and other team members are focusing on NOAA-funded field research in western Kansas and the Houston area, as well as a national, online survey to learn more about cultural barriers disrupting weather awareness.

“This is a big, three-year research effort to gather field information on communication and language connections across communities,” says Reedy, who is leading the project involving people from Spanish-speaking communities around the country.

Trujillo Falcón says the work they are doing was a dream that originated when he was growing up, watching his family and friends struggle to understand the English-language media when severe weather rolled through. This long-term career goal wasn’t something he expected to begin while still in graduate school.

But strong affirmation from the meteorological community has shown how seriously experts regard the issue.

“It’s heartwarming,” he says. “The reason I do this work isn’t for national recognition or for accolades. It’s for those immigrant communities that I was raised in.”

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Joseph Trujillo Falcón on the roof of the National Weather Center on OU’s Norman campus.