

“¡Bienvenidos, a la clase de español estudiantes!” are the words that started it all back in eighth grade. My introduction to the Spanish language led me to recognize the diversity within today’s world, as a universal object can have several labels. Simply, a fruit named “apple” in English is “manzana” in Spanish. Yet, as a young student, I found it hard to put into words what I loved about Spanish, until I recognized language itself fueled my academic interests.

I entered my undergraduate career as a first-generation college student with intentions to become a secondary Spanish teacher. The scarce promotion of language-focused careers led me to believe this was the only path that would satisfy my academic craving. However, when I stumbled upon speech, language, and hearing sciences (SLHS), I realized I could study language with many other perspectives. For this reason, I began my SLHS studies with a double major in Psychological Sciences to study the relationships between the brain, environment, and behavior, while also preparing for a clinical career as a speech-language pathologist or audiologist.

The comprehensive focus on language development within my new course load appeased my initial fascination surrounding this diverse, yet uniquely human, communication tool. But after observing many therapy sessions, I began to question whether I wanted to deliver evidence-based practice, or rather focus my efforts into creating the evidence behind the clinical methods. Therefore, I turned back to what I knew I loved for a sense of direction: Spanish. Thankfully, UConn’s status as a Tier I research university propelled me to join Dr. Adrian Garcia-Sierra’s laboratory that utilizes electroencephalography (EEG) and behavioral paradigms to explore how specific acoustic environments influence Spanish-English bilinguals’ speech perception and later language abilities. Though only a sophomore, I was immediately captivated by the ability to explain how bilinguals can perceive acoustically identical speech signals as different speech sounds in each native language. I further thought how this knowledge could contribute to understanding how the brain adapts when learning a second language. Little did I know; the journey had just begun.

Serving as the undergraduate laboratory manager since my second semester in the lab increased my role within Dr. Garcia-Sierra’s research over time. First, I analyzed acoustic properties of monolingual and bilingual caregivers’ speech, in which the project end results showed that larger acoustic spaces between vowel frequencies promote larger expressive vocabularies in the language(s) infants are exposed to. I presented this project as a poster at university conferences, such as Frontiers in Undergraduate Research and Language Fest, in which the lab was awarded Best Undergraduate Poster. Overall, my involvement with this project increased my awareness of environment’s integral role in shaping language use; I began to wonder its impact on the differences in phonological representations between Spanish-English bilingual speakers and monolingual speakers. In hopes of shedding light on this question, I chose to continue my work in Dr. Garcia-Sierra’s lab, alongside developing clinical knowledge through my coursework and serving as a member of Dr. Cienkowski’s Aural Rehabilitation Laboratory.

The current investigations within Dr. Garcia-Sierra’s lab aim to understand the neural processes implicated in bilinguals’ speech perception by analyzing electrical brain potentials (ERPs) collected from EEG, in response to speech sounds embedded within varying phonetic contexts. My enduring leadership role, along with the expertise I gained from working in Dr. Cienkowski’s lab, led me to execute and train incoming members on all aspects of the EEG procedure and auditory testing. My flourishing interest pertaining to language’s representation within the brain drove me to refine my procedural skills and understanding behind ERPs, like the mismatch negativity response (MMN). Moreover, my dedication fueled successful data-blitz and full poster presentations to all Language Fest attendees, in which I described frontal brain

activation differences among bilinguals when perceiving English speech sounds within a Spanish context versus an English context. The consequent interactions with other researchers enriched my curiosity in how the brain optimizes itself to acquire, then manage, multiple languages, as well as the comparisons that can be drawn to the disordered language population.

My excitement towards my research engagements allowed me to ignore notions of anxiety when applying to graduate clinical programs last fall. Despite this, I committed to attend the highly prestigious and competitive clinical audiology program on scholarship at The University of Texas at Dallas. Yet, on commencement day, I felt as though I was closing the door to my future, rather than entering the door to more opportunities. That is when the true reason behind my built-up anxiety surfaced: I wanted to pursue a research career instead of a clinical career.

Once I freed myself from the pressure to adhere to my prior career intentions, I knew the research laboratory and specifically continuing my work with Dr. Garcia-Sierra, would be the best environment for me to construct my own path directed towards how the brain balances two languages. Therefore, I currently volunteer as a full-time research assistant in which I continue my prior duties, but also learn ERP data analysis techniques like source localization, and analyze literature in effort to compose a review paper for publication. In addition, I supplement students' understanding in the undergraduate course titled "Speech and Language Acquisition" by attending class and holding office hours, to prepare for a similar position during my course of graduate studies. Lastly, in this past semester, I have developed a project aimed at understanding how bilinguals use their diverse acoustic knowledge when processing ungrammatical structures in one native language that are otherwise grammatical in the other. Furthermore, my eagerness drove me to propose this idea in an application for the National Science Foundation's Graduate Research Fellowship Program. My ultimate goal is to better understand the course of typical language development by drawing parallels and differences between cross-linguistic grammar processing in bilingual, monolingual, and atypical populations. My transformative research involvement, from collecting preliminary data to analyzing final data results, continues to prepare me to overcome the potential challenges imposed by the nature of research. In all, my experiences as a volunteer research assistant, and beyond, allow me to say without hesitation that I am now pursuing the correct path for me.

Language's expansive influence across departments, from psychology to anthropology, characterizes UConn as a hub for language research. My detailed involvements at UConn have shaped my interdisciplinary approach to language, and further invigorated my career interests of speech and grammar processing. Therefore, I would be grateful to continue to be an active member in UConn's impactful collaborative community through the pursuit of a doctorate in Speech, Language, and Hearing Sciences complemented by a Cognitive Science Graduate Certificate. In addition to Dr. Garcia-Sierra, other investigators affiliated with the Neurobiology of Language (NBL), such as Dr. Skoe, Dr. Myers, and Dr. Altmann, study the environment's impact on the brain, which further secures my confidence towards future integrative investigations. Furthermore, engagement opportunities, such as the Science of Learning and Art of Communication program and weekly NBL Talk Shops, create endless opportunities to extend the implications of my future research into other domains; thereby, fortifying my interdisciplinary approach to understanding speech, language, and hearing in my future career.

I thank the committee for considering my application, and I am confident that I will continue to succeed and represent UConn well if given the opportunity.