I have always straddled the purported divide between the sciences and the humanities. I entered college thinking I'd study either math or English but was hesitant to commit to either. Taking "Introduction to Cognitive Science" that fall taught me about an interdisciplinary field that I had never even heard of. The very next semester, I was working in Dr. Sheila Blumstein's lab, assisting with experiments that investigated the cognitive neuroscience of language and shortly thereafter designing my own. While it all sounds serendipitous, it was really more apropos, a natural blending of my quantitative proclivity with a long-standing love of words. Since graduating, I have worked as a research assistant for Dr. Blumstein and Dr. Emily Myers, an experience that has expanded my skillset and introduced me to the UConn community.

Throughout my undergrad and post-baccalaureate research experiences, I have become increasingly interested in exploring the cognitive and neural basis of language: how language is represented, how the activation patterns of these representations change as we recognize a word, and how these changes are instantiated in the brain. Because multiple perspectives are needed to truly delve into these questions, I am looking for a graduate school experience that emphasizes multifaceted research and encourages crossing disciplinary boundaries. UConn has made a considerable investment – whether through its IGERT program, the opening of the BIRC, or the launch of the Institute for Brain and Cognitive Science – in uniting a community of cognitive scientists who approach questions from a variety of perspectives, and I would love to be a part of this community.

While many topics in language excite me, one has consistently caught my attention because it is instantly relatable, broadly applicable and yet poorly understood. It is the notion that when trying to access a word, we partially activate words that are related in sound and meaning. This seemingly simple concept has a variety of consequences. It can make it easier to process related words – hearing the word *lions*, for instance, might prime a listener to recognize *tigers* and *bears*. But the presence of related words can also make it harder to access the one we need. It's the reason why Lindsay Lohan's character in "Mean Girls" confuses *cool* and *great*, inadvertently saying *grool*, and it's the reason why we might hear Boy George singing *come on, Camellia* instead of *karma chameleon*.

It is not entirely clear when mental representations – whether of sounds or of words – cooperate and when they compete. It is also unclear how other factors – whether contextual knowledge about sentence meaning or perhaps our experience with the way a particular individual produces speech sounds – might affect speech perception and production. These are issues that have been central to many of my research projects. My honors thesis, for instance, investigated how the identity of a talker producing a word might affect the activation of related words. In my work with Dr. Myers, we are using fMRI and eye tracking to examine how competition between sounds affects a listener's ability to access word representations. Such questions are also at the forefront of much of Dr. Jim Magnuson's work, as in his investigation of how semantic distance affects the way in which neighboring representations interact with a target word.

Admittedly, questions about how mental representations interact tend to be rather broad.

This is perhaps understandable – compared to most physical and life sciences, the cognitive neuroscience of language is a relatively young field, and even some of the more basic questions are still being investigated. Indeed, the vast range of possible questions is what makes the topic even more exciting to the aspiring young scientist who took "Introduction to Cognitive Science" and was taken by how far-reaching this field is.

Of course, the vast expanse of uncharted territory means that the possible applications are numerous. Given the neurobiological constraints on how mental processes must be carried out, it is likely that much of the language machinery is shared with – or at least similar to – the machinery of other cognitive faculties. In this way, investigating how we cognitively resolve competition between language representations may provide insight into the underlying dynamics of mental representations more generally. Beyond potentially advancing our basic understanding of cognitive processing, investigating these questions also has a wide range of potential utility. For instance, several accounts have posited that the behavior of patients with aphasia may be a consequence of impaired activation dynamics, possibly realized as differences in baseline activation, in rate of activation change, or in the ability to select between activated representations. Detailed accounts of activation dynamics may thus eventually lead to improved understanding of and therapy for situations in which these dynamics are affected. Similarly, investigating how language representations interact with each other might lead to an understanding of how to most effectively restructure the language system; such knowledge could be harnessed to promote language learning, whether for individuals with language delays or for adults looking to learn non-native speech sounds.

The fact that there are so many possible applications for this research means there are many different, relevant perspectives; one of the resultant challenges is that experts might therefore have different perspectives about what is relevant. One of the first things an undergraduate will learn in a course on the cognitive neuroscience of language is that there are two classic types of aphasia. But that distinction is often irrelevant to clinicians and pathologists, who may instead make distinctions based on task performance. Likewise, researchers using different tools – computational modeling, behavioral experiments, or neuroimaging, for instance – may have a different sense of what is important, even if their underlying research questions are similar. This problem is particularly heightened for investigating activation dynamics, which requires combining clearly defined computational models that can capture changes in activation, sensitive measures of online processing, and neuroimaging approaches that can highlight how neural substrates interact and the consequences of brain damage. In order for us to make good on our promise that the knowledge we acquire have real benefits, we have to understand each other's priorities – to speak, as it were, a common language.

I am particularly drawn to the way UConn works to achieve this end, promoting collaboration and maximizing the impact of its scholarship by employing multiple complementary approaches. For students in the IGERT program, this is encouraged via breadth advisors and weekly talk shops. Dr. Myers's lab facilitates this by bringing together students from the psychology program and from the speech, language and hearing sciences program. In

Dr. Magnuson's lab, this comes about from a combination of approaches – genetics, neuroimaging, modeling, behavioral experiments, and many others. Indeed, a recurring theme in my interactions with UConn faculty and students has been that while the specific questions being asked may differ, our interests and approaches work well in tandem. For instance, while Dr. Yee's recent investigations on semantic memory have focused on visual or motor aspects of word meaning, she and I are both fundamentally interested in what information can interact with (and is possibly part of) mental representations. This harmony of interests is key for creating an environment where it is encouraged to bring together different perspectives to explore common questions. As a UConn student, I would learn to think about a problem from many different angles. I would learn how those perspectives might inform each other, what advances each can offer and how each is limited.

In graduate school, I hope to immerse myself in a variety of perspectives and to gain experience with a myriad of experimental tools. Such an approach has served me well thus far – my undergraduate coursework spanned a variety of fields, and I made it a point to complement my academic research experience at Brown with a more clinically oriented summer at Boston University. In my current research assistant position, I have added new technical skills to my repertoire: using various software packages to manipulate auditory stimuli, programming experiments, conducting eye tracking and fMRI studies, and employing advanced statistical methods to optimally analyze my data. I have made a conscientious effort to practice communicating knowledge to others, whether to explain the research I have conducted or to pass along skills I have learned – this is something I plan to continue in graduate school, whether by mentoring undergraduates, by working with fellow graduate students, by discussing scientific ideas with peers within and outside the field, or by communicating research advances to the public at large.

Put simply, I've worked to expand my knowledge of the field and develop my analytic, technical and communication skills, with the goal of becoming an independent researcher who can unite other perspectives. These tenets have motivated my goals for graduate school and represent ways through which I can measure the impact of my teaching, mentorship and research when I become a professor. I want to use research to improve our knowledge of language and then use language to share that knowledge with others. I see graduate study at UConn as an exciting possible next step in this journey.