

Past Research Experience Statement

In the summer of my freshman year of college I had an opportunity to get my first “hands-on” research experience working as a research assistant for a graduate student from the London School of Economics. The research project focused on people’s perception of the air pollution problem in Mexico City from an environmental justice perspective, aiming to determine if a correlation existed between the socioeconomic background of the participants and their perception of the air pollution problem. In working as a research assistant, I provided feedback about the format of the interview tool, conducted interviews, collected the results, and collated the findings. I was able to obtain additional research experience during the fall semester of my sophomore year, when I was involved in a study examining the incidence of bike lane blockages in Manhattan as part of an upper-level research practicum course from the Sociology and Urban Studies department. To approach this research question, we conducted meticulous field observations and learned how to analyze the collected data statistically. Even though not directly related to my research interests, these experiences allowed me to familiarize myself with how an actual research project is designed and conducted. I came to appreciate how research has implications for future study, and how the findings obtained provide the creative stimulation to seek the answers to new questions. Working with a mentor provided me with knowledge about the research process that I did not possess; it also taught me necessary skills that enabled me to become a contributing member of the research team. This initial training prepared me to pursue research experiences in my area of interest.

In the Summer of 2010 I sought out ways to be involved in research in my area of interest outside of my home institution. I applied and was accepted into the Summer Research Opportunity Program at the University of California, Berkeley. As part of the program, I worked as a research assistant in Dr. Alison Gopnik’s Cognitive Development Lab on a project studying children’s conceptions of their autonomy over their decisions and actions. As a result of my interest in the relationship between cognitive development and language, I analyzed the explanations that participants provided when asked about their ability to choose to act against their desires in order to determine if a correlation existed between the content of their explanations and their conception of autonomy. Under the supervision of the Principal Investigator and a graduate student, I was assigned to work on this project independently. My role was to analyze previously collected data, propose a coding scheme, prepare the materials to train coders, and analyze the findings statistically in order to present them as a poster presentation, an oral presentation, and a research paper. This intensive research experience exposed me to multiple aspects of the research process, as it entailed not only conducting research, but also presenting an end product. Furthermore, obtaining research experience in the field of psychology helped me to refine my research interests.

The project I worked on at the Gopnik Cognitive Development Lab sparked an interest in the role that language plays in the development of cognitive processes. As a result, I sought out opportunities to be involved in research in this area at my home institution. Since the Fall of 2010, I have been working as a research assistant in Dr. Sandeep Prasada’s Language and Concept Development Lab. I am working on a project looking at the role that specific generic and non-generic linguistic cues play in the acquisition of generic knowledge about kinds of novel objects. The initial phase of this study consisted of examining adults’ responses to different types of linguistic cues to design a study to be conducted with preschool children, with the aim of

tapping into one of the possible mechanisms that young children might rely on to categorize information and develop concepts. I am undertaking this second phase of the study for my honors thesis project. As the person in charge of this study, my responsibilities include designing the paradigm, collecting, analyzing and interpreting data, training and supervising other research assistants working on the project, and taking care of administrative matters. Being so closely involved in a project has required me to develop additional skills and abilities to meet the demands that such a position entails. The experience has exposed me to the frustrations that are an inevitable part of the scientific endeavor, but also to the gratification that it elicits. The research focus of this lab, along with conducting studies in preschool settings, made me interested in the learning process and the applications of empirical investigation in this area to educational practice. Furthermore, I became interested in looking at the neural correlates of the cognitive processes I have been studying.

I had the opportunity to integrate the cognitive approach to studying learning processes with a neuroscience approach by working as a research assistant in Dr. Bruce McCandliss' Educational Cognitive Neuroscience Lab as part of the Vanderbilt University Summer Science Academy during the Summer of 2011. I worked on a project examining the development of native language expertise by looking at the sensitivity to discriminate native and non-native speech sound contrasts across development using psychophysical and electrophysiological measures. I received theoretical and practical training in neuroscience techniques to examine the event-related potentials elicited by phonetic contrasts. I worked closely with a research team to finalize the design of the paradigm for the study and adapt it to be used with children. I was involved in recruiting and running adult and children participants, creating and editing the auditory stimuli used, and assisting in data analysis. This experience increased my interest in neuroscience, as I was able to appreciate how its techniques may be used as tools to gain a deeper understanding of cognitive processes.

In order to gain more experience in the cognitive neuroscience of learning and obtain further training in neuroscience techniques, I joined Dr. Jennifer Mangels' Dynamic Learning lab in the Fall of 2011. In this lab I am assisting a doctoral student on his dissertation project examining the relationship between rumination and attention allocation during the processing of learning-relevant information, with the aim of testing interventions designed to mitigate any ill effects rumination may have on learning. I am receiving additional training in the use of electroencephalography to record brain activity, as well as in analyzing and interpreting data obtained using this technique. By being exposed to the various projects being carried out in the lab I have been able to see other approaches to study the multiple facets of learning, as well as the potential applications that these may have to education. This has increased my motivation to pursue the academic formation that will enable me to conduct research with practical applications that bridges cognitive neuroscience and education.

Having the opportunity to be involved in multiple labs, along with the chance to work with diverse research teams and be engaged in various stages of the research process, has allowed me to gain a comprehensive understanding of what conducting research entails. Attending and presenting at undergraduate and national conferences, and interacting with heterogeneous groups of researchers, has unveiled that science is a collective endeavor that has paramount broader implications outside of the lab. Together, these experiences have made it

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possible for me to confirm that this is an endeavor I want to be part of, and have started to prepare me to be able to do so.