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My interest in perception was initially shaped by the question: how does the human mind form mental representations of the external world? This broad, philosophical question unraveled more detailed scientific questions that I could address with methodological clarity, and technological tools such as neuroimaging. My PhD application to New York University's Cognition and Perception Program is motivated by my plan to further differentiate stages of visual processing, particularly in the cortical processing of time and space, as well as the interaction between the two. Additionally, I am looking to better understand the role of attention and memory in these processes. I believe that these interests are relevant in identifying the fundamental perceptual mechanisms of our most basic experiences. Upon completing my Bachelor's Degree in Psychology and Philosophy, I decided that pursuing a path in neuroscience would allow me to focus on these questions experimentally. Ever since, I have been preparing for a career as a neuroscientist, with much self-directed effort in becoming proficient in data science and computation.

After graduating, I worked at the Active Perception Laboratory at Boston University, to study the role of oculomotor behavior in perception. During this period, I acquired skills in several programming languages, data acquisition using custom eyetrackers, and psychophysical analysis. I found that crucial to understanding our mind's relation to the world is the idea that perception takes an active rather than a passive role in seeking out environmental information. For example, previous findings indicate that microsaccades temporally modulate retinal input, enhancing spatial sensitivity and edge detection. Similarly, attention has proven to be highly dynamic, supporting the idea that neural processes are generally adaptive in response to external constraints or top-down goals. These concepts served as the basis for my projects investigating the role of microsaccades in the perception of color, and expanding on Dr. Marisa Carrasco's work on exogenous attention in the parafovea and periphery to the 1-degree foveal scale. I then transitioned to a neuroimaging laboratory to broaden my skills in imaging and to gain a more holistic understanding of the brain's structural architecture and functional networks.

At the Saxe Laboratory at the Massachusetts Institute of Technology, I worked on a multi-site study analyzing differences of fMRI activity between individuals with autism and neurotypicals in

response to face stimuli. While at the Saxe Lab, I gained experience using imaging software, time series analysis, and several machine learning techniques. This work shaped my view of the brain as a system of regional networks, and that differentiating function can take place on several levels. Combining my experience at both labs, I developed an interest in retinotopic mapping with fMRI, and using the time series data to investigate how temporal processing characteristics compare within the visual hierarchy.

At the Dickerson Laboratory, I currently work on a multi-site longitudinal study on early-onset Alzheimer's Disease to identify signatures of memory impairment. I have also been investigating how atrophy patterns of language-aphasic patients affect the functional integrity of the language network. Working with an extremely interdisciplinary team of scientists, I have gained much knowledge about the advantages of cross-domain work; this gives me confidence that my past and present experience studying vision, the social brain, memory, and language equips me for graduate school in psychology.

My plans for the future have been shaped by my background and insight about the relevant methods in neuroimaging as well as a background in current debates related to perception and cognition. At New York University, several faculty members are conducting research related to my graduate school plans. I am interested in Dr. Jonathan Winawer's work on sub-additive summation, which is directly relevant to my interests in differentiating high level and low level processing in vision. I am also highly interested in the work of Dr. Carrasco. My ideal graduate experience at NYU would involve collaboration between both labs, to look further into the comparison of spatial and temporal sub-additivity, and how these perceptual properties are influenced by attention.

I believe New York University's Perception and Cognition program presents me with several opportunities for me to further enhance my experience in neuroimaging and computation. I am particularly interested in the quantitative track, as computational training would be advantageous for my career in academia. Lastly, I maintain a commitment to Open Science and hope that I can contribute largely in the practice of better utilizing and sharing data to increase access and expedite scientific investigation in the scientific community.

Thank you for your time in considering my application.