

Edmund P. Russell

Neurohistory

This project will test the hypothesis that neuroscience can help humanists understand the relationship between people and environments. The brain lies at the center of this relationship because it (a) processes sensory information about the environment and (b) guides responses to this information. Until now, humanists have relied on external products of brain activity, especially words and art, to understand how and why people have responded to environments in certain ways. Brain imaging has the potential to help us understand the cognitive, emotional, and physiological bases for human ideas and actions in a way previously unattainable. It also can show us the impact of the environment on brain anatomy.

One possibility is to examine the impact of environmental perception on the function of the brain. According to the nineteenth century theory of the sublime and the beautiful, human beings respond to sublime landscapes with awe and fear and to beautiful landscapes with pleasure and comfort. If we show subjects images of classic landscapes of the sublime (e.g., Alpine peaks) and the beautiful (e.g., English countryside), do the parts of the brain involved in fear (such as the amygdala) and pleasure (such as the nucleus accumbens) respectively respond most strongly, supporting the theory? Or do they remain quiet while the prefrontal cortex, which handles abstract reasoning, do the most work, indicating that the reaction was more cognitive than emotional, which would falsify the aesthetic theory?

Munich is an excellent place to carry out this project because two new centers have brought together relevant expertise: the Rachel Carson Center for Environment and Society and the Munich Center for Neurosciences–Brain and Mind. During the fellowship period, I will learn more about neuroscience, seek to do collaborative research with neuroscientists, and perhaps organize a workshop to which historians, psychologists, neuroscientists, and others would be invited.