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[Sabbatical Report]

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Sabbatical Report

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The purpose of my sabbatical leave was to develop an independent research program I could implement upon returning to full-time faculty status beginning in the fall 2014 semester after a nearly 12-year term as department head. My intent was to develop a research program that would utilize the University's recently acquired EEG/ERP equipment to explore neural correlates of reward based and error driven learning. Although this would be a new direction for me, it would also be a logical extension of my research background and training in the psychology of learning and physiological psychology, both of which were productive research areas for me prior to my term as department head.

During my sabbatical leave, I read extensively in a subarea of the ERP literature related to EEG waveforms called the event-related negativity (ERN), the feedback-related positivity (FRP), and the feedback-related negativity (FRN). The ERN is tied to errors made during learning. The ERN and FRP are occasioned by feedback about correct and incorrect responses, respectively. I also read the book "An Introduction to the Event-Related Potential Technique," by Steven Luck which is something of a bible on how to analyze and interpret ERP waveforms. In addition, I spent considerable time thinking about research questions to address and possible experimental designs.

The outcome of this endeavor for me is mixed. On the one hand, reading the ERP literature actually caused me to lose some of my fervor for becoming involved in it. In part, this is because it is such a technologically challenging field that I think it would take years to become sufficiently proficient in it to be productive. Equally discouraging, however, is the fact that little seems to be known about the brain regions that generate particular ERP waveforms and what they mean. The literature is replete with experimental results showing that a particular ERP waveform is reliably associated with some aspect of behavior. However, this is generally where it stops; most of the literature simply reports these relationships, and the occasional attempts to interpret what the relationships mean are highly speculative. On the positive side, what I learned from reading the ERP literature will certainly help me do a better job covering this material in the behavioral neuroscience class I teach. In addition, I am a member of the Department of Psychological Sciences ERP Research Group. I plan to continue collaborating with this group and the experience gained from my sabbatical should allow me to make positive contributions to our research efforts.

In addition to conducting an extensive review of the ERP literature related to learning, I also read extensively in the area of the psychology of art. I am particularly interested in the psychological processes involved in judging the quality of art works. I am designing a series of experiments that would manipulate both the experience of the juror and the professionalism of the juried art work that I am confident will contribute to the psychology of judgment and decision making. I will pursue this line of research upon returning to the faculty in fall 2014.