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***Covariance in the Human Brain***

The goal of this research is to better understand brain functions of individuals engaging in shared activities. The data that is collected from our research will better help us understand covariance in the human brain. We will compare participants' brain waves by using an Electroencephalography (EEG) which measures brain oscillations. The shared activities will range from reading a book, watching a video, or reciting text from a theater play. Covariance is measured by the joint inconsistency of two variables when they are at random. The brain oscillations of interest are known as Alpha, Beta, Theta, Delta, Gamma, and mu oscillations. Each oscillation is represented by various frequencies, which are measured in Hertz. To determine the different frequencies of the oscillations, subjects will be asked to take part in a shared activity. Subjects will perform multiple activities, and the data being produced from the subject's brain oscillations will be recorded by the EEG. After data has been recorded, researchers will examine which waves or collection of waves best capture covariance when people are sharing an experience. This research has the potential to broaden our understanding of the human brain, and may lead to future developments in the field.