



Mentalizing (or Theory-of-Mind) is the ability to imagine what other people might be thinking or feeling. It allows us to predict others' behavior and thus serves an important survival function. Mentalizing most probably depends on self-awareness: we first need to know how it feels to be in pain before we can conceive of others' pain. Theory-of-Mind leads to empathy, which then produces helping behaviors. Whereas some researchers believe that primates are capable of mentalizing, it most likely represents a uniquely human capacity that a number of psychiatric populations lack—notably schizophrenic and autistic patients.

In their attempts at localizing brain areas recruited during mentalizing, scientists have to rely on rather simplistic and repetitive tasks (e.g., stories, static cartoons, animations) presented on a computer screen while brain activity of participants is being recorded with PET or fMRI scans. To illustrate, volunteers may be asked to choose one of two words (e.g., "concerned" or "angry") that best describes the mental state reflected in photographed eyes. Or they can be invited to produce a fictive story about the mental state of a stranger whom they imagined meeting on a park bench. The problem of course, is that given the size of the machines used to scan the brain, subjects have to lie down and stay inactive for the duration of the scans. Spontaneous mentalizing that takes place in real-life situations is obviously much more dynamic and complex than what previous studies have been measuring. So how could researchers devise more realistic mentalizing tasks while still using PET or fMRI scans?

Some have used computer games requiring that participants guess what their "opponent" might be thinking. Hugo Spiers and Eleonor Maguire found another even more elegant solution to this problem: the use of Virtual Reality. In their recent study published in *Neuropsychologia*, Spiers and Maguire invited 20 taxi drivers to play "The Getaway," an extremely realistic simulation of a bustling Central London. Participants were asked to drive customers to specific destinations while imagining their intentions, as well as that of other drivers and pedestrians. This mentalizing brain activity was compared to non-mentalizing "coasting"—active driving and moving through the city. Mentalizing was associated with greater activity in the right posterior superior temporal sulcus. (Note that many other right and left hemisphere areas were also activated, indicating verbal, visual, and motor processing during mentalizing.) One can only hope that this innovative use of Virtual Reality will increasingly be used in conjunction with conventional brain-imaging technology.