Brain activity levels affect self-perception

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(PhysOrg.com) -- The less you use your brain's frontal lobes, the more you see yourself through rose-colored glasses, a University of Texas at Austin researcher says.

Those findings are being published in the February edition of the journal NeuroImage.

"In healthy people, the more you activate a portion of your frontal lobes, the more accurate your view of yourself is," says Jennifer Beer, an assistant professor of psychology, who conducted the research with graduate student Brent L. Hughes. "And the more you view yourself as desirable or better than your peers, the less you use those lobes."

The natural human tendency to see oneself in a positive light can be helpful and motivating in some situations but detrimental in others, Beer says.

Her research, conducted at the university's Imaging Research Center, gives new insight into the relationship among brain functions and human emotion and perceptions.

It may help scientists better understand brain functions in seniors or people who suffer from depression or other mental illnesses. It could also have implications for recovering methamphetamine addicts whose frontal lobes are often damaged by drug use and who can overestimate their ability to stay clean.

As part of the study, 20 subjects answered questions about how they compared to their peers on such positive traits as tact, modesty, likability and maturity and such negative traits as materialism, messiness, unreliability and narrow-mindedness. As the subjects answered those questions, a magnetic resonance imaging (MRI) machine scanned their brains.

The subjects who viewed themselves in a very positive light across those disparate areas used their orbitofrontal cortex less than the other subjects. This region of the frontal lobe is generally associated with reasoning, planning, decision-making and problem-solving

Some subjects who had accurate views of themselves showed four times more frontal lobe activation than the most extreme "rose-colored glasses" wearer in the study.

Among a separate set of subjects who were asked the same questions, those who were required to answer quickly saw themselves in a far more positive light than those who had unlimited time to answer. Those findings suggest that processing information in a more deliberate manner may be the way in which frontal lobe activation permits people to come to more realistic conclusions.

"Subjects made unrealistically positive judgments about themselves more quickly, suggesting these judgments require fewer mental resources," Beer says. "Perhaps, like the visual system, the social judgment system is designed to give us a quick 'good enough' perception for the sake of efficiency."

Beer is a leader in the emerging field of social neuroscience, which studies people's emotions, how they think about themselves and what's going on in the brain when they do.