FUTURE takes
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Brain Research Shakes Up Assumptions[1]

Falling prices for brain scanners, such as the MRI, computer-enhanced EEG and PET scans make it easier for researchers to gain intriguing views of the brain working. What happens when somebody meditates? Or takes a fix of heroin? Or goes into a rage? Or converts the rage to a feeling of compassion? Emerging answers speak to more than just the biochemistry of large numbers of neurotransmitters and the neural networks that make various kinds of thought processes happen.

The new research supports some very old ideas. Freud and Jung appear to have been right, for example, that there is an unconscious mind that powerfully affects us. Buddhists are also proving to be right about meditation techniques they have been studying for over 2000 years. Recent neuroscience findings showing remarkable plasticity in the brain have created great interest in the Buddhist techniques among a large group of western scientists. Combining these old and new ideas into mental disciplines to help reshape the brain could give us better control of emotions.

The notion that intelligence is a single dimension is now challenged by a wider view seeing multiple intelligences. Emotional intelligence (EQ) is widely seen to be as important a dimension as cognitive skill for success in academic, social, and business contexts. This larger view could shake up education, healthcare and perhaps even religion in the not so distant future.

Brains do not fit the industrial paradigm of standardization now dominant in education. Genetic and environmental factors conspire to make one child ready to learn specific tasks, such as writing, either earlier or later than another child. The school, teacher, or even parent who attempts to force a child to conform to a standard curriculum designed for a specific age may be acting in ignorance of what neuroscience is showing. They may actually create a lifelong barrier to the very learning that they introduce prematurely.

Healthcare also may have to overthrow an old idea that objective science can ignore subjective realities, especially when healing is involved. The mind is engaged in health in ways that are both obvious and subtle. Anybody can see that behaviors create the burden of diseases ranging from AIDS to Type 2 Diabetes. Yet the neural pathways that take us from a happy meal to ravenous hunger and on to

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obesity are neither obvious nor fully charted. These pathways may well provide scientists what they need to offer a better medical option for the morbidly obese than today's gastric bypass surgeries.

The neurosciences could pose challenges for religion as well. The relationship between the cognitive functions of the neocortex and the emotional responses of the limbic system is under increasing scrutiny. "The biology of belief may reveal the neural pathways connecting fanatical views to emotions like hate," said IAF Vice President Jonathan Peck. "One day this scrutiny may become so widespread that underlying beliefs that motivate people may become far more transparent. Hidden beliefs could become an impossible secret to keep." For example, the rise of fundamentalism that is evident across Christian, Jewish, Islamic and Hindu populations may be shown through brain scans to have less to do with religion than with differences in how certain brains function. Similarly, the mystic traditions that can be found in these different religions may also share a common neurological profile. Thus the underlying beliefs may prove less an aspect of religion than of biology.

POINTS FOR THE CLASSROOM *(send comments to forum@futuretakes.org):*

- *It's "your serve," as they say in sports! How will the new research in brain scanning and neurosciences impact education? Religion? Social behavior? Law enforcement? Classroom discipline?*
- *What are the implications for people with "learning disabilities"?*
- *What types of intelligence will be valued in the year 2020?*
- *To what extent, if any, will these advances bring Eastern and Western cultures together?*
- *What else do you see possible as a result of advances in neuroscience?*

If you like, think in terms of a futures wheel, with "advances in neuroscience" as the event, or try brain-writing if you prefer.