

CRLA Brain-Compatible Teaching and Learning SIG

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Be sure to mark your calendars now and plan on attending CRLA's Annual Conference Oct. 31-Nov.3 in Portland, Oregon!

I'm sure the recent tragedy at Virginia Tech has caused all of us to wonder how a person could commit such a heinous crime. I decided to do a little research to see what information about the brain of a violent person was available. Obviously the explanations are complex and theoretical, but several points seemed to be reiterated by various sources. Among the common research findings on violent behavior are these:

1. A multitude of complex factors (both genetic and environmental) appears to be the cause of such behavior.
2. Deficits in the frontal cortex may cause severe emotional control problems. Blood flow to this area is usually significantly decreased.
3. Information between the hippocampus and the amygdala may not be processed correctly or efficiently. The hippocampi often appear asymmetrical and of different size between the 2 hemispheres.
4. Brain chemicals are usually out of balance causing increased aggression. Low levels of serotonin and higher levels of testosterone are common.
5. Brain trauma and toxic exposure are often implicated in violence.
6. Male gender is the biggest risk factor for violence; although there is a marked increase in the number of women being arrested on assault charges.
7. There are differences in the prefrontal cortices of "*successful psychopaths*" (those who commit crimes but are careful planners and able to evade law enforcement) and "*unsuccessful psychopaths*" (who overreact in violent rages and are apprehended). (Study by Adrian Raine, University of So. Calif.)

For additional information, see "The Violent Brain" by Daniel Strueber, et al., in *Scientific American MIND*, Dec. 06/Jan. 07 issue (pp. 20-27)

Book Review: An Alchemy of Mind by Diane Ackerman

**The Brain-is wider than the sky-
For-put them side by side-
The one the other will contain-with ease
-and You –beside.**

Emily Dickinson

Diane Ackerman successfully combines her naturalist, scientific interests with her talent for prose and poetry in her fourth novel, *An Alchemy of Mind*. Her previous work, *A Natural History of the Senses*, serves as a prelude to this new work. *An Alchemy* bridges the span from science to literature as Ackerman analyzes the innermost workings of a mind.

Far from a dry, scientific treatise, *An Alchemy of Mind* provides multiple images and reflections to help the reader grasp complex concepts, such as 'the mind's eye' and 'one's image of self'. Ackerman examines research on creativity, gender differences, memory, and personality with imagery and powerful text.

In the chapter "The Pursuit of Happiness", Ackerman writes:

We have the peculiar fate to be living beings made of up non-living chemicals, and there's the heart of the problem. Both mind and matter, we learn as infants that if we don't mind something, it doesn't matter. If we do mind, a fear can loom to the size of a supercomputer in a sci-fi story I once read, a gleaming hunk of computer circuitry that took decades to build, and which eager scientists switched on for the first time and asked: "Is there a God?" A booming voice answered: "There is now." (p. 190)

Ackerman, Diane. *An Alchemy of Mind: The Marvel and Mystery of the Brain*. 2004: Scribner, New York ISBN 0-7432-4672-1

Resource Suggestion

If you are not familiar with the periodical *Scientific American MIND*, you may want to consider taking a look. The bimonthly magazine offers articles by leading neuroscientists and other researchers on a wide variety of subjects. The last few issues have included material on the criminal mind, the adolescent brain, emotions, mirror neurons, and burnout.

Comments? Questions? Suggestions for the next newsletter? Ideas welcomed!!

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