September 2008 Article of the Month

This month's article selection is by Chaplain Kyle D. Johnson,
Visiting Professor, Jarvis Christian College, Hawkins TX
kdjohnson@suddenlink.net

[*Editor's note: Chaplain Johnson is currently engaged in brain imaging research, as reported in the Winter 2008 Newsletter (§2).*]

Mohandas, E. "**Neurobiology of spirituality**." In: *Medicine, Mental Health, Science, Religion, and Well-being* (Singh, A. R. and Singh, S.A., eds.), *MSM: Mens Sana Monographs* 6 (2008): 63-80. Available online via Mens Sana Monographs at www.msmonographs.org.

SUMMARY: This month's article is from a monograph series that is "devoted to the understanding of medicine, mental health, man, and their matrix" [--from the MSM website]. While the publication is out of Mumbai, India, it contains a broad range of authors and perspectives (and the current issue includes articles by a number of American authors). E. Mohandas, M.D., is Chief Consultant Psychiatrist at the Elite Mission Hospital in Kerala, India.

The article contains a fair amount of technical terminology and abbreviations. The author notes regretfully that there is a "paucity" of research in the neurobiology of spirituality [p. 65].

Mohandas begins by describing/defining *spirituality* and distinguishing it from *religion*:

> Spirituality is defined as that relating to or consisting of or having the nature of spirit. The nature of spirit is intangible or immaterial. …The spiritual realm deals with the perceived eternal realities regarding man's ultimate nature, in contrast to what is temporal or worldly. Spirituality involves as its central tenet a connection to something greater than oneself, which includes an emotional experience of religious awe and reverence. Spirituality is therefore an individual's experience of and relationship with a fundamental, nonmaterial aspect of the universe that may be referred to in many ways -- God, Higher Power, the Force, Mystery and the Transcendent and forms the way by which an individual finds meaning and relates to life, the universe and everything. Religious experience and religion forms only a part of a person's spiritual quest. Religion is an organized belief system promulgated and sustained by a human institution, ethnic group, tribe or culture and involves definite rules of behavior, practices and rituals. [pp. 63-64]

Turning to the neurobiology perspective, the author says that the brain areas associated with personality and social function are active during religious experiences. These brain areas prepare a person for religious experiences while providing the reflective resources to appreciate that experience. A major portion of the article details how meditation operates in the brain: how the process begins in the brain's forward region, affecting

those areas associated with relaxation and stress reduction. A table [--see pp. 66-67] summarizes fifteen neuroimaging studies on meditation.

Mohandas spends the final pages looking at research into how meditation affects psychiatric issues: how it can help with depression and anxiety, but also how it can induce psychotic states. He ends by citing research indicating that meditation may affect the physical structures of the brain, such as the very thickness of the Prefrontal Cortex. In keeping with the fairly standard format for Mens Sana Monograph articles, Mohandas identifies a "Take Home Message":

> Meditative practices have a positive impact on mental health. The neurobiological correlates during meditation partly explain the beneficial role. Meditative practices may augment psychotherapeutic interventions.

COMMENT: One interesting aspect of the article is the author's heavy reliance on Western medical research. Much of the piece appears to be based on Andrew Newberg's neuroimaging work at the University of Pennsylvania.

Mohandas raises an important issue: spirituality is not just an otherworldly phenomenon. A person's spirituality and religion have important implications for one's brain and physical wellbeing. The body is not isolated from one's spirituality but is an active participant in it. Chaplains may find that in considering the physical/physiological aspects of spiritual experience, the implications of their practice of ministry are deepened and expanded.

One implication of Mohandas article, as it may relate to professional chaplaincy, lies in the example of emerging research in the behavioral and medical sciences. For decades, religion and science had an antagonistic relationship, but that antagonism has eroded greatly over the last ten years. Behavioral and medical researchers are conducting detailed examinations of how spirituality and religion work in the brain. Religion and spirituality are no longer the exclusive purview of chaplains and clergy. Science has entered our professional arena as never before.

Suggestions for the Use of the Article for Discussion in CPE:

The article may at first appear intimidating to some students, because of its technical terminology and the somewhat esoteric nature of the subject matter. Nevertheless, a principal characteristic of the Mens Sana Monograph series is that articles are intended to be read easily, with as little technical jargon as possible (--as claimed on the Mens Sana Monograph website). So, the piece should be well within the range of typical CPE students.

Consider the following general questions about the potential role of neuroscience in chaplaincy:

1. What responsibility do chaplains have for staying abreast of behavioral and medical research into spirituality and religion?
2. Neurobiology is very complex. How far should chaplains go in learning the workings of the human brain?
3. What role does theological integration play in utilizing behavioral and medical research into spirituality and religion?
4. What impact should behavioral and medical research into spirituality and religion play in the formation of CPE Level I, Level II, and Supervisory training?

Discuss this scenario, which plays upon the potential role of neuroscience for chaplains: A group of people are praying loudly in tongues around a patient's bed. A physician complains to the chaplain that the visitors are disturbing others and asks the chaplain to intervene to stop their "rude" behavior. The physician says, "There is

no reason that they can't do that very quietly." The chaplain responds by noting, “But that is not how glossolalia works in the brain.” (Note: The reader may want to consult the April 2007 Article-of-the-Month: *Cerebral Blood Flow During Glossolalia*.) In general, how might the interjection of the perspective of neuroscience affect such a chaplain-physician interaction?

Mohandas also includes at the end of his article the following six questions about the content, though these seem to have more the character of "quiz" items than discussion starters.

1. What are the neural changes brought about by the different spiritual practices (meditation and others)?
2. Can all the beneficial effects of meditation be solely explained by the proposed neurochemical alterations?
3. What are the confounding variables that influence the neuroimaging study of meditation?
4. Is it possible to do real time neuroimaging studies on meditative/spiritual practices on a large sample of practitioners?
5. Is the right brain more important than left in spiritual practices?
6. What is the contribution of the left-brain as far as spiritual experience is concerned?

Related Items of Interest:

I. Some articles on behavioral and medical research into spirituality and religion are listed below. While the authors generally come from disciplines outside the pastoral care and counseling, note the article by Kevin Flannelly, who is at The HealthCare Chaplaincy in New York.

Flannelly, K. J., Koenig, H. G., Galek, K. and Ellison, G. E. "**Beliefs, mental health, and evolutionary threat assessment systems in the brain**." *Journal of Nervous and Mental Disease* 195, n. 12 (December 2007): 996-2003.

Illes, J., De Vries, R., Cho, M. K. and Schraedley-Desmond, P. "**ELSI priorities for brain imaging**." *American Journal of Bioethics* 6, no. 2 (March/April 2006): W25-31.

Harris, S., Sheth, S. A. and Cohen, M. S. "**Functional neuroimaging of belief, disbelief, and uncertainty**." *Annals of Neurology* 63, no. 2 (February 2008): 141-147.

Azari, N. P. , Nickel, J., Wunderlich, G., Niedeggen, M., Hefter, H., Tellmann, T., Herzog, H., Stoerig, P., Birnbacher, D. and Seitz, R. J. "**Neural correlates of religious experience**." *European Journal of Neuroscience* 13, no. 8 (April 2001): 1649-1652.

Snyder, S. H. "**Seeking God in the brain: efforts to localize higher brain functions**." *New England Journal of Medicine* 358, n. 1 (January 2008): 6-7.

II. Kyle Johnson has an article in press: "**Neuropastoral care and counseling**," It is set to be published in the October 15, 2008 issue of *PlainViews* (www.plainviews.org), an online newsletter by the HealthCare Chaplaincy in New York. The article offers a model for using behavioral and medical research into spirituality and religion in pastoral care and counseling.

III. A "**Field analysis of the neuroscientific study of religious and spiritual phenomena**" [PDF], by Andrew Newberg, is available online from the Templeton Advanced Research Program.
