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February 2008 Article of the Month

This month's article selection is by Chaplain John Ehman,
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Flannelly, K. J., Koenig, H. G., Galek, K. and Ellison, C. G. "**Beliefs, mental health, and evolutionary threat assessment systems in the brain.**" *Journal of Nervous and Mental Disease* 195, no. 12 (December 2007): 996-1003.

[*Editor's Note: See the [Winter 2008 Newsletter](#) (\$1) for comments on the article by Kevin Flannelly.*]

COMMENT and SUMMARY: Kevin Flannelly and Kathleen Galek from The HealthCare Chaplaincy (New York) have here teamed with Harold Koenig from Duke University and Christopher Ellison from the University of Texas to consider how "beliefs about the world can moderate psychiatric symptoms" [p. 996, abstract]. They focus on evolutionary theories of the structure of the brain to explain how beliefs may affect a person's sense of *threat* and, in turn, mental health. The article should be valuable not only to mental health chaplains but to any pastoral care professional interested in the ways that we humans make assessments of threats --a process pertinent to a great range of pastoral interactions. [Note: For other Articles-of-the-Month that have highlighted brain research, see the Related Items of Interest section, below.]

The authors describe in some detail what they identify as the Evolutionary Threat Assessment Systems (ETAS) of the prefrontal cortex, the limbic system, and the basal ganglia [--see pp. 996-999]. This part of the article is quite technical, but it is well written and can be easily followed with careful reading. The three systems are said to constitute successive developments in the brain, with innate threat assessments that are rooted in the basal ganglia having become supplemented by emotional assessments from the limbic system (e.g., especially through the amygdala) and cognitive assessments from the prefrontal cortex. While the combined effect of these various systems may give humans a capacity for a wide range of threat assessments, they may also create problems if they each produce different and conflicting assessments or inaccurate and inappropriate ones, which could be a cause of psychiatric disorders [--see p. 999].

Each of the three ETAS work with *sensory input* and the *experience* of a person (along with other cortical input), but the prefrontal cortex may also work with a person's *beliefs* and bring those beliefs to bear upon the whole system of threat assessment, though the effect would likely be more upon those assessments made through the limbic system than through the basal ganglia [--see p. 1001]. A diagram of the interaction of the ETAS is given on p. 998. The authors propose that "political, cultural, religious, and other beliefs" [p. 1001] affect the *threshold* of sensitivity to threat, and so they could serve to alter dysfunctional threat assessments and thereby help to moderate some psychiatric symptoms.

Beliefs, like all internal representations of the world, bias our interpretations of situations and events, including our assessments of potential threats.... We propose that beliefs affect psychiatric

symptomology primarily by changing the sensitivity or threshold of the threat assessment systems that underlie them. [p. 1000]

The authors continue:

Thus, the belief that "human nature is basically evil" would be expected to increase paranoia, social anxiety, and related kinds of symptoms, because one would "see" social situations as being more threatening. On the other hand, the belief that "human nature is basically good" would decrease such symptoms because one would see social situations as being less threatening. [p. 1000]

The article does not specifically elaborate on religious beliefs, though there are references to two studies [p. 1000 --see Related Items of Interest, below] and the role of religious beliefs in the aftermath of the national tragedy of September 11, 2001; but there is plenty here for chaplains to contemplate in relation to clinical work. For instance, might an understanding of threat assessment systems help chaplains to see clearer connections between patients' mental health and pastoral discussions of beliefs, and thus encourage the development of specific pastoral interventions? How might this research inform pastoral work not only with psychiatric patients but with general patients struggling with a sense of threat from such things as illness, treatment, the clinical setting, religion, and God? How significant might it be to patients who are disappointed or anguished by the fact that they feel anxious (and so may feel a failure of faith) amid health crises to understand that their anxiety might be conceived as purely part of their humanness and the way that the brain is made? Might this sort of research foster new and creative relationships between chaplains and psychiatrists?

Neuroscience is increasingly a topic in pastoral circles. Our [Spring 2006 Newsletter](#) [§6] included an announcement of the creation of a Center for Spirituality and the Mind at the University of Pennsylvania and noted the brain imaging work of Andrew Newberg, author of *Why God Won't Go Away: Brain Science and the Biology of Belief*. Our [Winter 2008 Newsletter](#) further notes the receipt of a grant by Chaplain Kyle Johnson for the purpose of conducting research using fMRI brain scans. This highly technical work may well turn out to be not so much on the margin of the field of spirituality & health as it is on the horizon, and particularly for this reason chaplains should find the current article of great interest.

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

This month's article will probably seem esoteric to most chaplaincy students, and it may well be best suited for advanced students and those in supervisory education (for whom it may be pertinent for some of their theory papers). It should be quite readable, however, by any student. Discussion could generally explore on how a chaplain's knowledge of the mechanisms of the human body affects pastoral practice. Does a theory of the overlapping functions of brain structures that assess threats influence a chaplain's perspective on a patient's sense of threat that emerges during pastoral interaction. Does the possibility that religious beliefs may increase or decrease the threshold of a patient's sense of *being threatened* suggest a special need for close attention to the *content* of beliefs? Students may wish to talk about their own experience of patients whose theologies seemed to engender a sense of the world as either safe or dangerous. CPE students are often interested in psychology, and that interest could easily carry over into the realm of the present article. Discussion might involve a psychiatrist or psychologist as a guest to talk about how developments in neuroscience in recent years have influenced practice in their fields. Of course, for students intrigued by neuroscience, the article could be discussed straightforwardly in its details. However, discussion leaders should be alert for any theological tension among students concerning assertions about *evolution*.

Related Items of Interest:

I. Kevin Flannelly has offered some personal comments on this research in our [Winter 2008 Newsletter](#) (§1).

II. This month's article cites the following two recent studies indicating that religious beliefs may affect psychiatric symptomology:

Flannelly, K. J., Koenig, H. G., Galek, K. and Ellison, C. G. "**Images of God and psychopathology: an evolutionary analysis.**" Paper presented at the Meeting of the American Psychological Association, New Orleans, LA, August, 2006. [The paper presents the finding (summarized on p. 1000 of our featured article) that "US adults who believed in an afterlife scored lower on several measures of psychopathology, including general anxiety, social phobia, paranoia, obsessive-compulsive disorder, and depression."]

Flannelly, K. J., Koenig, H. G., Ellison, C. G., Galek, K. and Krause, N. "**Belief in life after death and mental health: a national survey.**" *Journal of Nervous and Mental Disease* 194, no. 7 (July 2006): 524-529. [(Abstract:) The present study examined the association between belief in life after death and six measures of psychiatric symptomology in a national sample of 1403 adult Americans. A statistically significant inverse relationship was found between belief in life after death and symptom severity on all six symptom clusters that were examined (i.e., anxiety, depression, obsession-compulsion, paranoia, phobia, and somatization) after controlling for demographic and other variables (e.g., stress and social support) that are known to influence mental health. No significant association was found between the frequency of attending religious services and any of the mental health measures. The results are discussed in terms of the potentially salubrious effects of religious belief systems on mental health. These findings suggest that it may be more valuable to focus on religious beliefs than on religious practices and behaviors in research on religion and mental health.]

III. Other Articles-of-the-Month that have highlighted brain research: [October 2006](#) (on Neuroscience and Emotion), [April 2007](#) (on Cerebral Blood Flow During Glossolalia), and [October 2007](#) (on Forgiveness). See also particular citations in the Related Items of Interest sections for [May 2006](#) (i.e., articles by French, Greyson, and Parnia, et al. on Near-Death Experiences) and [December 2006](#) (i.e., Moll, et al., regarding moral judgment and disgust). The featured article for [December 2006](#) touches upon the phenomenon of patients feeling threatened, but it does not take a neuroscientific approach --and the same can be said for the [January 2008](#) Article-of-the-Month.

If you have suggestions about the form and/or content of the site, e-mail Chaplain John Ehman (Network Convener) at john.ehman@uphs.upenn.edu .

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