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## April 2007 Article of the Month

This month's article selection is by Chaplain Kyle D. Johnson,  
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Newberg, A. B., Wintering, N. A., Morgana, D. and Waldmanb, M. R. "**The measurement of regional cerebral blood flow during glossolalia: A preliminary SPECT study.**" *Psychiatry Research: Neuroimaging* 148, no. 1 (November 22, 2006): 67–71.

**INTRODUCTORY COMMENT:** This study has valuable pastoral care and counseling implications, since glossolalia (speaking in tongues) is an important practice to many religious and spiritual persons, especially those in the charismatic and holiness traditions. The research offers a new perspective on the practice and should help pastoral care providers broaden their thinking about a phenomenon that is little understood except by those who have experienced it.

**SUMMARY:** This summary will not focus on the technical aspects of the study, and areas of the brain will be referred to by their function (e.g., "the decision-making area") rather than by their anatomical designation (e.g., the superior parietal lobe). The Related Items of Interest section (below) contains references that delve into the more technical aspects.

Five women (ages 38 to 52) were studied while singing and practicing glossolalia. Each woman claimed to be Christian in a Charismatic or Pentecostal tradition and had practiced glossolalia for more than five years.

The study had two phases: in the first, the women underwent a SPECT (Single Photon Emission Computed Tomography) scan of blood flow in the brain after a period of singing; and in the second they were scanned after practicing glossolalia. (A good non-technical explanation of SPECT scanning may be found on the Silicon Valley Brain SPECT Imaging, Inc website at [http://braininspect.com/spect\\_faq.php](http://braininspect.com/spect_faq.php).) The scans that followed singing indicated nothing unusual in brain blood flow. However, the scans that followed the practice of glossolalia showed decreased blood-flow activity in the conscious and decision-making areas of the brain, and areas associated with nonconscious or unconscious activities became more active. Among the findings of the study is evidence confirming the claim often made by glossolalia practitioners that they do not feel in *control* while "speaking in tongues."

[One interesting finding relates to the brain area responsible for coordinating a multilingual person's speech, which would be active, for instance, while translating English into Spanish. It is known from medical evidence that damage to this area causes a person to use words from more than one language at a time without being able to control which language is used, as in mixing English and Spanish words together in the same sentence. In one case, a woman who spoke four languages could not speak in just one language at a time after suffering damage to this specific brain area. She used words from all four languages in each sentence without being able to control which language she was using.]

**COMMENT:** The authors admit that five women practicing glossolalia do not constitute a representative sample, yet the study does offer at least two some useful lessons.

The first is confirmation of the claim by those who practice glossolalia that they do not know what they are saying. The women's brain area responsible for coordinating multilingual speech tended to shut down. The language the women *did* know, which was English, was cut off from the "speaking in tongues" language they *did not* know.

The second is very important for pastoral care providers. Practitioners of glossolalia who claim that they lose control during the experience have scientific support that they are indeed not in full control. The women's conscious and decision-making brain areas showed greatly reduced activity while nonconscious or unconscious areas became more active. In light of this, I am reminded of a case whereby a chaplain once complained with considerable anger that some visitors to a patient in an Intensive Care Unit were too loud during their practice of glossolalia and that he considered these visitors to be simply rude and insensitive to the other patients and staff. Newberg's study indicates that these visitors would not have been in much control of themselves during glossolalia.

A dilemma for pastoral care providers is this, "How might one facilitate the practice of glossolalia for ICU patients who regard it as an important and necessary part of their faith during medical crises?" If practitioners--including visiting ministers--have little or no control over their expression of glossolalia, and if this is disruptive to others in a setting like an ICU, the task of a chaplain may be both to negotiate with patient/family/visitors as well as to interpret to the ICU staff something of the religious importance *and* the neurophysiology of the activity. The practical aspects of dealing with such a situation are worth advance planning by chaplains working with specific ICUs.

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

1. How does the pastoral care provider provide for a glossolalia ministry while respecting the rights of other patients and staff?
2. What ministry options are available for patients from charismatic or holiness traditions in ICU-like settings?
3. What personal prejudices or biases might pastoral care providers who are not from charismatic or holiness traditions need to address when ministering to persons from those traditions?
4. What responsibilities do pastoral care professionals have in staying abreast of studies such as Newberg's?
5. How do studies such as Newberg's integrate into CPE training?
6. What role do studies of the brain have in the study of religion and spirituality?
7. What role do studies of the brain have in the study and practice of ministry?

### **Related Items of Interest:**

I. News stories on Newberg's study available on the Internet:

"**Speaking in Tongues: Alternative Voices in Faith**," *Nightline* (American Broadcast Corp., 2007). This is a five-minute newscast on Newberg's study. The story and a video clip may be accessed at <http://abcnews.go.com/Nightline/story?id=2935819&page=1>.

"**Decreased Brain Activity When Speaking in Tongues**," *Almanac* (University of Pennsylvania) vol. 53, no. 11 (November 6, 2006). This brief summary may be accessed at <http://www.upenn.edu/almanac/volumes/v53/n11/rr.html>.

"Language Center of the Brain Is Not Under the Control of Subjects Who 'Speak in Tongues,'" *Penn Medicine News Release* (October 30, 2006). This summary may be accessed at [http://www.ups.upenn.edu/news/News\\_Releases/oct06/glossolalia.htm](http://www.ups.upenn.edu/news/News_Releases/oct06/glossolalia.htm).

"Scientists Bridging the Spirituality Gap: Center Studies the Physical Effects of Religious Experience," *MSNBC* (January 27, 2007). This story originating from the Associated Press may be accessed at <http://www.msnbc.msn.com/id/16842848>.

II. Earlier publications by Newberg available from his own website at <http://www.andrewnewberg.com/pub.asp> include:

Lee, B. and Newberg, A. "Religion and health: a review and critical analysis." *Zygon* 40 (2005): 443-468.

Newberg, A. and Lee, B. "The neuroscientific study of religious and spiritual phenomena: or why God doesn't use biostatistics." *Zygon* 40 (2005): 469-489.

Newberg, A. B., LaRiccia, P. J., Lee, B. Y., Lee, L. and Alavi, A. "The cerebral blood flow effects of pain and acupuncture: a preliminary SPECT imaging study." *Journal of Neuroimaging* 15, no. 1 (2005): 43-49.

III. One of Newberg's books, dealing specifically with brain imaging and religion:

Newberg, A.B., d'Aquili E. G. and Rause, V. P. *Why God Won't Go Away: Brain Science and the Biology of Belief*. New York: Ballantine Publishing Group., 2001. (This book contains studies on Tibetan monks and provides an evolutionary and biological explanation for the prevalence of religious and spiritual beliefs.)

IV. The [Center for Spirituality and the Mind](#) at the University of Pennsylvania. This center is led by Newberg. The website is highly informative regarding current scientific research into religion and spirituality. [The Center was also noted in the Network's [Spring 2006 Newsletter](#) (--see §6).]

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

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