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August 2005 Article of the Month

This month's article selection is by Chaplain John Ehman,
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Koenig, L. B., McGue, M., Krueger, R. F. and Bouchard, T. J. Jr. "**Genetic and environmental influences on religiousness: findings for retrospective and current religiousness ratings.**" *Journal of Personality* 73, no. 2 (April 2005): 471-488.

COMMENT AND SUMMARY: These monthly pages usually focus on the particulars of the research presented in the featured articles and consider secondarily how the articles may be used for discussion in CPE. The article this month, however, will be treated primarily as an impetus for discussion, since the study of twins that it reports seems unfeasible as a model for further research by most chaplains, but its central hypothesis--that religiousness is heritable and that heritability increases from adolescence into adulthood--raises intriguing questions for CPE and Supervisory Education students and for pastoral caregivers in general.

Laura B. Koenig and her colleagues surveyed 273 twins (169 monozygotic or "identical" and 104 dizygotic or "fraternal") born between 1961 and 1964 in Minnesota (the youngest cohort of the Minnesota Twin Registry). Participants completed a nine-item religiousness scale (see below) for themselves, their co-twin, their mother, and their father; in each case *both* in terms of current religious behavior *and* recollections from the time of their childhoods.

RELIGIOUSNESS SCALE [--see p. 475.]

1. Frequency of attending religious services
2. Frequency of seeking guidance, help, or forgiveness through prayer
3. Frequency of reading scripture or other religious material
4. Frequency of reviewing/discussing religious teachings with family
5. Frequency of deciding moral "dos" and "don'ts" for religious reasons
6. Frequency of observing religious holidays
7. Membership in religious youth or study groups
8. Having friends with similar beliefs
9. Importance of religious faith in daily life

The authors note that this scale focuses on elements of religiousness and "is not meant to represent the entire concept of spirituality" [p. 484]. Also, the scale does not formally distinguish between intrinsic and extrinsic religiousness, though the items were analyzed according to their "rational parsing" [p. 484] into two subscales: external aspects of religiousness...[i.e., items 1, 4, 6, 7]...that might be most susceptible to environmental influence, ...[and] internal aspects of religiousness...[i.e., items 2, 3, 5, 8, 9]...that may be most susceptible to heritable influence" [p. 476].

Analyses of the results are thoroughly presented, though the authors seem to take for granted a level of understanding of statistics that is likely beyond that of most CPE or Supervisor Education students. The article is certainly readable, but students who are unfamiliar with statistics may need to stay especially focused on the authors' thread of conclusions.

In brief, the results indicated that the pairs of twins offered reliable reports of religiousness. Moreover, "the results were consistent with the hypothesis that genetic influences increase with age." "The current rating for the two subscales of religiousness, internal and external, were...both heritable, while the retrospective ratings were less heritable, especially for the external subscale. ...These findings suggest that the increase in heritability in overall religiousness may reflect the increasing importance of individual dispositional factors, and the decreasing importance of external factors" [p. 483]. Finally, the "results also provide further evidence that religiousness should be added to the standard list of personality variables. Like other personality traits, adult religiousness is heritable, and though changes in religiousness occur during development, it is fairly stable" [p. 487].

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

Discussion of research into the heritability of religiousness could follow along three lines. First, what is the capacity of empirical science to investigate and make claims about the nature and causes of religiousness? The researchers here have found intriguing patterns in the reported current and recollected behaviors of twins--behaviors that are associated with what is termed *religiousness*. However, students should not forget that concepts like *religion* or *spirituality* remain quite variously defined (and, for all practical purposes, ultimately undefined) in the research literature, so any conclusions from a study should be kept closely tied to the particular things that have been measured: in this study, the nine items of the Religiousness Scale. (Note, though, that item 9 on the scale shades from behaviors into attitudes.) Students should therefore seek to discuss the heritability of the behaviors enumerated in this scale before broadening the discussion to religiousness, *per se*. They should also be attentive to the authors' caution in interpreting their results (--see especially the limits of the study that are treated throughout the Discussion section on pp. 483-487).

Second, what might be some of the theological implications of the idea that religiousness may be inherited? For people who believe that one's religious life is a function of one's personal choices, the idea of the heritability of religiousness may seem disturbingly deterministic. The idea may be no less upsetting for people who believe that one's religious life is guided individually by God. What theological room is there for the role of genes? In order to gain some perspective on this aspect of the question of the heritability of religiousness, students might consider what influences of any type they see at play in people's religious lives and then think about whether the influence of genetic factors differs *theologically* from the influence of other factors. Students may also want to explore whether research that supports the heritability of religiousness could be seen to support the position of religious groups that emphasize lineage. In general, chaplaincy students should always ask themselves, when reading spirituality & health research, whether a particular study's methodology and results have theological implications, and whether the methodology itself implies some theological position.

Third, what might it mean to chaplains that the heritability of religiousness may increase with age? Does this raise special concerns when working with various age groups or when using "genogram"-type exercises? The idea of genetic disposition toward certain religious behaviors that increases with age could be significant, for instance, for older persons struggling with religious changes in their lives. (Students should stay mindful, however, that the present study has also indicated that religiousness tends overall to be, like a personality trait, fairly stable. The statistical significance of genetic factors should not be overestimated based on current research.)

A Note for Supervisory Education Students: The proposition that religiousness may be a sixth major personality trait could be important for some ACPE candidates' personality theory papers. See Other Items of Interest, below.

Other Items of Interest:

I. The idea that religiousness/religion/spirituality may be a personality trait has received some attention in the health science literature in recent years. See:

Emmons, R. A. and Paloutzian, R. F. "**The psychology of religion.**" *Annual Review of Psychology* 54 (2003): 377-402. [See especially pp. 390-391. This article was featured as the [September 2003 Article-of-the-Month.](#)]

MacDonald, D. A. "**Spirituality: description, measurement, and relation to the Five Factor Model of Personality.**" *Journal of Personality* 68, no. 1 (February 2000): 153-197.

[ADDED 12/6/06]: Nilsson, K. W., Damberg, M., Ohrvik, J., Leppert, J., Lindstrom, L., Anckarsater, H. and Orelund, L. "**Genes encoding for AP-2beta and the Serotonin Transporter are associated with the Personality Character Spiritual Acceptance.**" *Neuroscience Letters* 411, no. 3 (January 16, 2007): 233-237. [Abstract:] In several twin studies the relative contribution of genetic factors for personality traits has amounted to figures between 40 and 60%. In the present study we investigated to which degree polymorphisms in the 5-HTT and AP-2beta genes are implicated in the neural processes involved in the formation of Temperament and Character traits, as estimated by Cloninger's TCI. Considering the background of previous reports, associations with the character Self-Transcendence and its sub-scale Spiritual Acceptance in particular, were of interest. A stratified random sample of 200 individuals (total population=5173), matched for age, gender and risk behaviors, from volunteering 16- and 19-year-old adolescents students in Sweden was investigated. Cloninger's TCI inventory was used for investigation of temperament and character traits. Blood samples were used for analyses of a promoter serotonin transporter polymorphism (5-HTTLPR) and an intron 2 polymorphism in the transcription factor AP-2beta gene. Among boys individuals with presence of the short 5-HTTLPR genotype showed lower scores, whereas individuals with presence of the short AP-2beta genotype showed higher scores of personality character Self-Transcendence and its sub-scale Spiritual Acceptance. Among girls no effect of either genotype was found. Both among boys and girls, significant interactive effects were found between 5-HTTLPR and AP-2beta genotypes, with regard to Self-Transcendence and Spiritual acceptance. Boys and girls with the combination of presence of the short 5-HTTLPR, and homozygosity for the long AP-2beta genotype scored significantly lower on Self-Transcendence and Spiritual Acceptance.

Piedmont, R. L. "**Does spirituality represent the sixth factor of personality? Spiritual transcendence and the Five-Factor Model.**" *Journal of Personality* 67, no. 6 (December 1999): 985-1013. [This is part of a special issue of the *Journal of Personality* on religion and personality. The table of contents may be accessed on line at www.blackwell-synergy.com/toc/jopy/67/6.]

II. NOTE: Students interested in Bouchard, et al., "**Genetic influences on social attitudes: another challenge to psychology from behavior psychology,**" listed in Koenig's references, should be aware that the source title is listed incorrectly. The correct title of the 2004 book by Lisabeth F. DiLalla, in which the piece appears as a chapter (pp. 89-104) is *Behavior Genetics Principles: Perspectives in Development, Personality, and Psychopathology.*]