

care was focused largely on chronic and severe cases. The international mental-health response was more heavily weighted towards meeting the immense needs of traumatised people who had previously been well. The intractable issue of what to do with the region's densely populated psychiatric and psychogeriatric hospitals received little attention, yet these were some of the neediest victims of the war. The conflict presented an opportunity to review the whole approach to mental health, yet many of the international aid programmes, driven by short-term goals and limited mandates, ignored the existing system. An imbalance was created when local people, trained by and working for aid agencies, could earn a living wage counselling clients while psychiatrists and nurses got paid late and little if at all.

International attention and aid dollars are now focused on the emergency needs of Kosovo and it is difficult to obtain funding for psychosocial support programmes in Croatia or Bosnia, yet the mental-health needs still exist. Perhaps the most useful of the international programmes were those that acknowledged their own short lifespan and emphasised capacity building and strengthening of local services.

We can be confident of the outcomes of any set of actions only across a short time-frame. There are three outcome horizons in primary health care (and we argue that most emergency relief can be classified as this): outcomes for today (measurable health gains), outcomes for tomorrow (improved health care or health-promotion delivery), and outcomes for the day after tomorrow (enhanced institutional, professional, and community capacity).<sup>3</sup>

The footprint of the emergency aid phase is persistent. Local capacity building in the form of true partnerships with local people, joint planning, skill transfer, and long-term investment in the human capital of the region must be an integral part of the emergency response. International agencies should always plan for when they will no longer be around.

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- 1 de Jong K, Ford N, Kleber R. Mental health care for refugees from Kosovo: the experience of Médecins sans Frontières. *Lancet* 1999; **353**: 1616-17.
- 2 Agger I. Psychosocial support programmes in Bosnia and Croatia. London: European Community Humanitarian Organisation, 1993.

- 3 Legge D. The evaluation of health development: the next methodological frontier? *Aust N Z J Public Health* 1999; **23**: 117-18.

## Auditory hallucinations and the bicameral mind

Sir—Jay Goldstein,<sup>1</sup> a foresighted thinker in the field of neurosomatic disorders, such as chronic fatigue syndrome, recently made me aware of an important book from 1976 by Julian Jaynes: *The origin of consciousness in the breakdown of the bicameral mind*.<sup>2</sup> According to Jaynes' daring hypothesis, man had no consciousness until 1000 BC. Before that time, language had developed slowly for a long period: commands from 40 000 BC, nouns from 25 000 BC, and names from 10 000 BC, at the time of the emergence of agriculture. Language, the speech areas, evolved in the left hemisphere (in right-handed) which, as Jaynes underlined, is a mystery since most human structures are bilateral and a neurological organisation necessary for language also exists in the right hemisphere, but with no observable function.

Jaynes proposes that the bicameral mind in man operated between 10 000 BC and 1000 BC. The left hemisphere was the site for speech, the right for hallucinations, which expressed voices and commands of gods and demons. The breakdown of the bicameral mind was according to Jaynes caused by "the weakening of the auditory by the advent of writing, the inherent fragility of hallucinating control, the unworkableness of gods in the chaos of historic upheaval, the positing of internal cause in the observation of differences in others . . . and a modicum of natural selection". Then consciousness and self-awareness evolved—and (hopefully) still does.

Jaynes founded his theory on psychohistorical analysis and on such neurobiological knowledge that was available around 1970. As a psychologist, an important part of Jaynes' theories were based on observations of schizophrenic patients. Neuroimaging techniques of today have illuminated and confirmed the importance of Jaynes' hypothesis. Belinda Lennox and colleagues (Feb 20, p 644)<sup>3</sup> used spatial and temporal mapping of neural activity in a right-handed schizophrenic patient to show that his auditory hallucinations occurred in various parts of his right hemisphere, but not in his left which

"could explain why the activations are misinterpreted as alien". Similar findings were reported by Dierks and co-workers.<sup>4</sup> Thus, Jaynes' bold hypothesis on schizophrenia has been revived. But, in a broader context, his theories might be important with regard to two questions. Can differences in the evolution and the transition of the unicameral to the bicameral mind to present man with consciousness explain the horrors of our civilisations? What will, as evolution inevitably proceeds, the fourth "camera" contain?

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- 1 Goldstein JA. *Betrayal by the brain*. New York: Haworth Medical Press, 1996.
- 2 Jaynes J. *The origin of consciousness in the breakdown of the bicameral mind*. Boston: Houghton Mifflin Company, 1976.
- 3 Lennox BR, Bert S, Park G, Jones PB, Morris PG. Spatial and temporal mapping of neural activity associated with auditory hallucinations. *Lancet* 1999; **353**: 644.
- 4 Dierks T, Linden DE, Jandl M, et al. Activation of Heschl's gyrus during auditory hallucinations. *Neuron* 1999; **22**: 615-21.

## DEPARTMENT OF ERROR

Indications for cholesterol-lowering medication: comparison of risk-assessment methods—In this article by Prof P N Durrington and colleagues (Jan 23, p 279), the vertical axis in figure 1 was incorrect. The corrected figure is shown below.

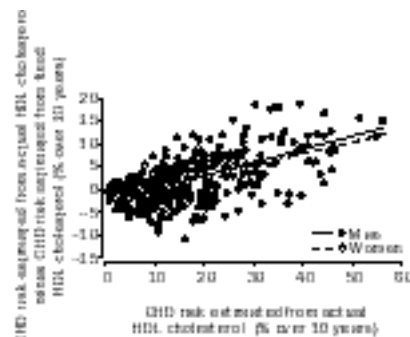


Figure 1: Regression analysis of difference in CHD risk (% over 10 years) between that calculated from actual HDL cholesterol concentration and that calculated from standard value for HDL cholesterol (1.15 mmol/L in men, 1.4 mmol/L in women) plotted against CHD risk calculated from measured HDL cholesterol

Men: SE=0.03, r=0.60, p<0.001. Women: SE=0.03, r=0.57, p<0.001.

Occupational asthma in Europe and other industrialised areas—In this article by M Kogevinas and others, and the European Community Respiratory Health Survey Study Group (May 22, p 1753), the *Fundacion Mapfre Medicina* should have been included as one of the granting agencies for the Spanish component of the international study.