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Evolution and the brain

With all deference to the sensibilities of religious people, the idea that man was created in the image of God can surely be put aside.

The vast majority of scientists, and the majority of religious people, see little potential for pleasure or progress in the conflicts between religion and science that are regularly fanned into flame by a relatively small number on both sides of the debate. Many scientists are religious, and perceive no conflict between the values of their science — values that insist on disinterested, objective inquiry into the nature of the Universe — and those of their faith.

But there are lines that should not be crossed, and in a recent defence of his beliefs and disbeliefs in the matter of evolution, US Senator Sam Brownback (Republican, Kansas) crosses at least one. Senator Brownback was one of three Republican presidential candidates who, in a recent debate, described himself as not believing in evolution. He sought to explain his position with greater nuance in a 31 May article in *The New York Times*, in which he wrote: "Man was not an accident and reflects an image and likeness unique in the created order. Those aspects of evolutionary theory compatible with this truth are a welcome addition to human knowledge. Aspects of these theories that undermine this truth, however, should be firmly rejected as atheistic theology posing as science."

Humans evolved, body and mind, from earlier primates. The ways in which humans think reflect this heritage as surely as the ways in which their limbs are articulated, their immune systems attack viruses and the cones in their eyes process coloured light. This applies not just to the way in which our neurons fire, but also to various aspects of our moral thought, as we report this week in a News Feature on the moral connotations of disgust (see page 768). The way that disgust functions in our lives and shapes our moral decisions reflects not just cultural training, but also biological evolution. Current theorizing on this topic, although fascinating, may be wide of the mark. But its basis in the idea that human minds are the product of evolution is not atheistic theology. It is unassailable fact.

This does not utterly invalidate the idea that the human mind is, as Senator Brownback would have it, a reflection of the mind of God. But the suggestion that any entity capable of creating the Universe has a mind encumbered with the same emotional structures and perceptual framework as that of an upright ape adapted to living in small, intensely social peer-groups on the African savannah seems a priori unlikely.

In Brownback's defence, it should be acknowledged that these are deep waters. It is fairly easy to accept the truth of evolution when it applies to the external world — the adaptation of the orchid to wasps, for example, or the speed of the cheetah. It is much harder to accept it internally — to accept that our feelings, intuitions, the ways in which we love and loathe, are the product of experience, evolution and culture alone. And such acceptance has challenges for the unbeliever, too. Moral philosophers often put great store by their rejection of the 'naturalistic fallacy', the belief that because something is a particular way, it ought to be that way. Now we learn that untutored beliefs about 'what ought to be' do, in fact, reflect an 'is': the state of the human mind as an evolved entity. Accepting this represents a challenge that few as yet have really grappled with.

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It remains uncertain how the new sciences of human behaviour emerging at the intersections of anthropology, evolutionary biology and neuropsychology can best be navigated. But that does not justify their denunciation on the basis of religious faith alone. Scientific theories of human nature may be discomforting or unsatisfying, but they are not illegitimate. And serious attempts to frame them will reflect the origins of the human mind in biological and cultural evolution, without reference to a divine creation. ■

Academic diversity

US universities must act to recruit and retain minority faculty members.

The diversity of the typical American research university is widely admired, but is fashioned mainly on the basis of students and staff recruited from abroad. The universities have done less well at harnessing the talents of the racial minorities within the US population.

So-called under-represented minorities — African Americans, Latinos and Native Americans — formed more than a quarter of the American population in 2000, and are projected to account for more than 40% of it by 2050. Yet according to a 2005 study of 50 élite universities, undertaken by Donna Nelson, a chemist at the University of Oklahoma, they account for only 3% of tenured or untenured faculty in mathematics, physics, chemistry, biology and astronomy. Numbers are only slightly higher in engineering (4.6%).

Sharp economic divisions between whites and minorities in the United States makes it unlikely that any solutions confined to academia itself will ever achieve parity. It remains the case, however, that universities and their science departments could be doing more to enrich the diversity of their faculty.

Departments often pin the blame for the lack of minority recruitment on the small 'pipeline' of minority PhD holders, saying that universities compete for the few qualified minority candidates available. That line of thinking has contributed to the emphasis on boosting the flow of minorities through PhD programmes, and several laudable mentoring and fellowship initiatives, such as the Ford fellowships, exist to do that. But studies show clearly that faculty diversity has