

wind out of the sails of animal activists. Second, some animal protection organizations have shifted strategies away from the barricades and toward courtrooms and statehouses. A report by the United States Department of Justice on terrorist activities by animal activists indicated that the frequency of incidents such as the theft of laboratory animals and harassment of researchers increased steadily between 1976 and 1988, but it has subsequently shown a consistent decline (U.S. Department of Justice, 1993). Clearly, fire bombings are more likely to attract media attention than subcommittee hearings.

Finally, as evidenced by the 1994 elections, the mood of the public has become decidedly more conservative. The contemporary animal liberation movement is the direct descendant of the civil rights and women's movements (Singer, 1975). It is no surprise that animal protectionism, like other social causes based on liberal political principles (in a broad sense), may have a harder time attracting attention and public sympathy in the Gingrich era.

There is no doubt that the animal protection movement has had a major and possibly permanent impact on how people perceive other species and our moral obligation to them. A 1990 survey of Americans found that 80% of the public agreed with a statement indicating that animals have rights that should limit the way they are used (Orlans, 1993). And the movement continues to generate controversy and significant, albeit reduced, media coverage. Increasingly, the battle for the "hearts and minds," particularly with regard to the use of animals in research, is being played out in educational settings as partisans on both sides attempt to sway the opinions of young people (Blum, 1994), and the long-term effect of the debate over the moral status of animals remains to be seen. Recent trends in media coverage, however, suggest that animal rights activism may be following the cyclical pattern that is characteristic of other social movements.

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Race Differences in Brain Size

Michael Peters
Department of Psychology,
University of Guelph

In the recent interchange on race differences, Rushton (1995) suggested that the weights of brains of Mongoloids, Caucasoids, and Negroids average 1,416, 1,380, and 1,359 cm³, respectively. The classification of races into these three groups represents an operational definition not uncommon in psychology, and such definitions may or may not prove useful, depending on supporting evidence. In this case, the marked differences in brain size between the three groups appear to support the usefulness of such a sweeping classification. However, when one looks at how the brain size values were determined, questions arise.

Rushton (1995) relied on cranial measures of these groups to produce estimates of brain size. He then corrected the obtained brain size estimates by controlling for body size, guided by the assumption that brain size is scaled to body size. In comparing brain and body sizes of different orders of animals, the slope of the line obtained by plotting log/brain weight against log/body weight approximates .66 (Jerison, 1973). Thus, brain weight increases with body weight, but at a lesser rate. However, with a change in the taxonomic reference group, slopes change. For instance, when comparing primates, each

drawn from a different genus, the slope is shallower than when comparing at the subfamily level. When comparisons are made between individuals from the same species, the slope relating brain to body weight is close to zero (Harvey, 1988). A slope close to zero suggests that body weights of individuals who are drawn from the same sex and species do not allow meaningful predictions of brain weight. What is the situation in humans? Reed and Jensen (1993) calculated the slope for a sample of White American men and arrived at a value of .08 (close to horizontal). Wickett, Vernon, and Lee (1994) concluded that the size of the brain is largely independent of body size for their sample of White women. Jerison (1979) found no significant association between body weight or height and brain weight for men within an age range of 29 to 41 years. When such studies are conducted, the possibility of confounding, introduced by the inclusion of younger individuals whose brains are still growing and older individuals whose brains are beginning to lose mass, must be controlled for. The best evidence available suggests that there is no justification for scaling brain size to body parameters, within comparable samples of men or women. In those cases where scaling is indicated, as when comparisons of men and women are to be made, we do not know what parameters should be used for scaling (Peters, 1991).

Why does this matter? When no correction for body parameters is performed, the brain size comparisons change. The previously marked differences in brain size become much smaller and the rank order changes, with Caucasoid brains showing up as somewhat larger than Mongoloid brains (on the basis of Rushton's own 1992 values). Where does that leave the race/IQ/brain size comparisons? Rushton would have to state that Mongoloids, on average, do not have larger brains but do have higher IQs than Caucasoids. Once it is recognized that groups with absolutely smaller brains can have larger IQs than groups with absolutely larger brains, the entire argument of relating IQ differences to brain size differences across race groupings, as defined by Rushton, fails.

An additional comment may be useful. Much of the current debate revolves around brain size estimates based on cranial measures. These are not necessarily close to the mark and may be of different validity for men and women. For instance, Willerman, Schultz, Rutledge, and Bigler (1992) found a positive correlation between head perimeter and brain volume for women but no significant relationship for men. To confuse things further, Wickett et al. (1994) failed to find a

significant correlation between head perimeter and brain volume for women. Both studies were able to compare the estimates derived from cranial measures to MRI-generated values and suggested that further work in this area must be cautious when using brain volume estimates based on cranial measures.

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