

ularly disappointing. It is chaotic, crammed with complaints over anthropomorphic terminology and alleged sexism, and fails to achieve what it set out to do: to introduce the reader to the theoretical aspects of the study of primate politics. All in all this is a rather mediocre book on a fascinating subject.

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MEN HAVE PROPORTIONATELY LARGER BRAINS THAN WOMEN

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Two large data sets support a startling conclusion: Men's brains are about 100 grams (8%) heavier than are women's brains, even after correcting is made for their difference in body size. Although it has long been known that men have, on average, heavier brains than do women, it was widely believed that this difference disappears when correction is made for their difference in body size.

C. Davison Ankney (1992) of the University of Western Ontario's Zoology Department made the initial discovery using wet brain weights gathered at autopsy. He reanalyzed published data on 1,261 American aged 25 to 80 and found that whereas 168 cm (5 ft 7 in) tall white men had an average brain weight of 1370 grams, brains of white women of the same height weighed only 1270 grams.

Rushton (1992) confirmed Ankney's results in another large-scale study. Cranial capacities were calculated for a stratified random sample of 6,325 U.S. Army personnel measured in 1988. Men averaged 1442 cm³ and women 1332 cm³ after adjustments were made for the effects of stature, weight, rank and ethnicity.

Note that Ankney analyzed wet brain weights gathered at autopsy but Rushton used external head measurements gathered by the military to guide the manufacture of helmets and clothing. Despite these different procedures, virtually identical patterns were found. As shown below, the sex difference in brain size is replicated across samples of Black and Whites by Ankney, and across Asians, Whites and Blacks by Rushton.

Although not shown in the table, Rushton (1992) also found military rank differences with officers averaging 1393 cm³ and enlisted personnel 1375 cm³ after covariance adjustments for stature, weight, race and sex.

Ankney suggested that the large sex difference in brain size went unnoticed for so long

	Ankney's (1991) autopsy data (grams)		Rushton's (1992) military data (cm ³)	
	Men	Women	Men	Women
Asian-Americans	-	-	1475 cm ³	1372 cm ³
White-Americans	1370 gm	1270 gm	1436 cm ³	1323 cm ³
African-Americans	1285 gm	1175 gm	1419 cm ³	1306 cm ³

because earlier studies used the wrong statistical techniques to correct for sex differences in body size and, thus, incorrectly made a large difference 'disappear'. Human brain-size research is also controversial and thus has not received the attention it deserves. A recent editorial in *Nature* referred to the work on brain size as "politically incorrect" and "unpalatable." However, the subsequent correspondence in that journal shows that many scientists are very interested in this topic (*Nature*, July 16, 1992 August 13, 1992; September 17, 1992, October 29, 1992; November 26, 1992).

It is worth noting the enormous overlap in most distributions of brain size. Only an 8% difference separated the men and women and a 4% difference separated the Asian-American from the African-American averages in the US Army. Clearly it is problematic to generalize from a group average to any particular individual. However, because there is about a .35 correlation between brain size and intelligence test scores (Johnson, 1991; Willerman et al., 1991), these systematic and possible casual relationships may be of great scientific interest.

The social class and racial group differences in brain size parallel those found using measures of intelligence. Lynn (1991a) reviewed much of this literature from a global perspective. Intelligence tests indicated that Caucasoids of North America, Europe and Australia generally obtain mean IQs of around 100. Mongoloids from both North America and North-East Asia typically obtain slightly higher means, in the range of 100-106. Africans from south of the Sahara and Afro-Americans and Afro-Caribbeans obtain mean IQs from 70-90. Lynn (1991a) also reviewed international studies of mental decision times which provide measure of brain efficiency. These studies show that Mongoloids have the fastest reaction times, followed by Caucasoids and then by Negroids. Lynn (1991b) and Rushton (1991) have proposed evolutionary hypotheses for why Mongoloid populations have evolved the greatest intelligence and largest brains.

With the sex difference in brain size, Ankney (1992) has pointed to a paradox. Women have smaller brains than men but apparently have the same

intelligence test scores. Ankney resolved the problem by proposing that the sex difference in brain size relates to those intellectual abilities at which men excel. Men do better on various spatial tests and on tests of mathematical reasoning (Kimura, 1991). Ankney suggested that the sex difference may be best understood within the context of evolutionary pressures for sexual dimorphism in the hunter-gathering society in which human brains evolved. Men roamed from the home base to hunt, a scenario that has been suggested that it may require more brain tissue to process spatial information. Alternatively, Ankney proposed, women's brains may operate more efficiently than men's. There might also be an unknown effect related to sex differences in macrophysiology, for instance, metabolic rate.

Regardless, recently initiated Magnetic Resonance Imaging studies of brain size, in conjunction with tests of various mental abilities, are certain to illuminate further these fascinating aspects of human biology.

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- Rushton, J.P. (1991). Cranial capacity related to sex, rank, and race in a stratified random sample of 6,325 U.S. military personnel. *Intelligence*, 16, 401-413.
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ANNOUNCEMENTS

HBES Annual Meeting

The fifth annual meeting of the Human Behavior and Evolution Society will be held at Binghamton University. The society promotes scientific discourse in all disciplines by researchers who use the theory methods of evolutionary biology to study humans. Research on nonhuman species is also welcome when it addresses general issues that are important to human evolution. Invited speakers include George C. Williams (keynote), J. Michael Bailey, Leda Cosmides & John Tooby, Martin Daly & Margo Wilson, William Durham, Harry Harpending, and Elliott Sober. Symposia include "Evolutionary approaches to cognition," "Evolutionary approaches to morality," and "Evolution and culture." Deadline for submission of abstracts is May 1, 1993. Send correspondence to David Sloan Wilson, Dept. of Biological Sciences, Binghamton University, Binghamton, NY 13902-6000 USA, tel. 1-607-777-4393, fax 1-607-777-6521, e-mail DWILSON@BINGVAXA.BITNET.

International Ethological Conference

The General Secretary of this year's IEC has informed Karl Grammer that if there are enough abstracts to warrant one, a human ethology session will be included in the official program. Therefore, if you have such a paper to present, send your abstract as soon as possible to Dr. Anna Omedes, General Secretary XXIII International Ethological Conference, Ap. 98033, Barcelona 08080, Spain. The conference will be held Sept. 1-9, 1993 at Torremolinos, Spain.

New Anthropology Journal

Evolutionary Anthropology began publication in 1992. Edited by John Fleagle, it covers areas such as biological anthropology, paleoanthropology, archeology, functional morphology, sociobiology, bone biology (including dentition and osteology), human biology, genetics, and ecology. The journal appears six times per year. Individual subscription rate: \$36 US, \$54 outside US; student rate: \$30 US, \$48 outside US. Indicate if you want your subscription to start with the first volume (1992) or the current issue. Send checks in US dollars or credit card number (Mastercard, VISA, American Express) to Wiley-Liss, 605 Third Ave., New York, NY 10158-0012 USA, tel. 1-121-850-6479.

CURRENT LITERATURE

March 1993

If you are interested in possibly reviewing one of the books below or some other book, please contact the appropriate Book Review Editor (see Editorial Staff box).

- Baenninger, R. (Ed.) (1991). *Targets of Violence and Aggression*. Elsevier Science, P. O. Box 882, Madison Sq. Sta., New York, NY 10159 USA.
- Barrett, L., Dunbar, R.I.M., & Dunbar, P. (1992). Environmental influences on play behaviour in immature gelada baboons. *Animal Behaviour*, 44, 111-116. (Dept. of Anthropology, Univ. College London, Gower Street, London WC1 E6BT, U.K.)
- Barton, R.A. & Simpson, A.J. (1992). Does the number of males influence the relationship between dominance and mating success in primates? *Animal Behaviour*, 44, 1159-1161, (Dept. of Psy., Univ. of Sheffield, Sheffield S10 2TN, U.K.)
- Bateson, P. (Ed.) (1991). *Development and Integration of Behaviour: Essays in Honour of Robert Hinde*. Cambridge Univ. Press, Pitt Bldg., Trumpington Street, CB2 1RP, U.K.; 40 W. 20th St., New York, NY 10011 USA.