

Human Ethology Bulletin

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SOCIETY NEWS

Congress of Vienna

The Thirteenth Congress of the International Society for Human Ethology will take place at the Ludwig-Boltzmann-Institut für Stadtethologie, Institut für Humanbiologie, in Vienna, Austria 5-10 August 1996. Our Secretary, Karl Grammer, is the Coordinating Officer. Katrin Schäfer is Administrative Officer, Klaus Atzwanger is Executive Officer, and Alain Schmitt is Program Chair.

The general topic of the Congress will be "Cognition, Communication and Evolution." The conference will emphasize direct observation of human behavior, as well as other methodological and theoretical issues. There will be special features on gender advertisement, mate selection, nonverbal communication, ontogeny, and human-environment interactions. Keynote addresses will cover evolution and cognition, behavior genetics, and hormonal control of human behavior. Several workshops are planned on epistemological issues in ethology and sociobiology, digital image processing, computer-aided methods for recording behavior, and advanced methods of behavior analysis.

For the first time, ISHE will award a prize for young researchers. Gail Zivin is in charge of working on the rules for the award. Details will follow.

For additional information, watch this space or telephone the Institute at 43-1-31-336-1253 (fax 43-1-31-336-788, E-mail karl/grammer@univie.ac.at.) or use the World Wide Web at <http://evolution.humb.univie.ac.at>. (Note: in the last issue of the *Bulletin*, this URL for the ISHE electronic bulletin board was given incorrectly at one point. Remember, for access you need a direct Internet connection and either the Mosaic or Netscape program.)

Convention News

If you receive a notice of a forthcoming conference of interest to our readers, please inform the editor about it. I have no systematic way of keeping informed about these meetings other than to rely on you members; the international directory of conferences arrives by surface mail from Belgium, usually too late to be of much help. Also, it would be greatly appreciated if you would send a report on any such conference to me; you may wish to first ask me if such a report is still needed, to avoid duplication. Alternatively, you might just send a copy of the program. A report on the August International Ethological Conference in Hawaii would be most welcome.

Financial Report, Jan. 1994 to July 1995

By Barbara Fuller, ISHE Treasurer

DATE	ITEM	<u>CREDITS</u> AMOUNT	ITEM	<u>DEBITS</u> AMOUNT	<u>BALANCE</u>
Nov 1993	monies from N. Segal	\$1,000.00	bank acct. set-up	\$ 19.00	
Jan 1994			payment to Segal	13.50	
Mar 1994			check order	11.00	
Sep 1994	Sage Publications	191.80	Sep & Dec 1993 newsletters	1,124.00	
			Mar & Jun 1994 newsletters	1,455.00	
			Convention poster	390.00	
			Photo in convention packets	26.00	
Dec 1994	Total 1994 dues	6,365.00	Editor's convention attendance	753.00	
			payment to W. Charlesworth	55.16	
			bank and bankard fees	172.97	
			member's bad check fee		3.00
			postage	14.00	
Dec 31, 1994					
	\$4,036.63				
Feb 1995			postage	5.46	
			credit card fees		73.04
Jul 1995	1995 dues thru July	3,590.00	Sep 1994 newsletter	636.00	
	transfer European funds	<u>2,341.66</u>			
			Dec 1994 newsletter	700.00	
			Mar 1995 bulletin	671.00	
			June 1995 bulletin	729.00	
			Editor's convention attendance	<u>1,000.00</u>	
July 1, 1995					
	\$12,637.33				
TOTALS		\$20,488.46		\$7,851.13	

Group Selection and Human Ethology

By David Sloan Wilson, Dept. of Biological Sciences, Binghamton University, State University of New York, Binghamton, NY 13902-6000 USA

The concept of group selection was recently discussed by Frans Roes (1994) in this newsletter. Roes expresses the majority view of group selection during the 60's and 70's, which is still commonly held. However, support for instances of group selection began to appear in the 70's and is rapidly expanding today. Elliott Sober and I recently published an extensive review (Wilson & Sober, 1994) which addresses the current state of the subject and its relevance to human ethology. The article is

followed by commentaries from over thirty evolutionary biologists, psychologists and anthropologists. A few summary statements follow.

(1) The positive literature on group selection now includes over 100 empirical and theoretical papers.

(2) The rejection of group selection during the 60's and 70's was based on a misplaced emphasis on genes as "replicators" which is in fact irrelevant to the question of whether adaptations can evolve at the group level. The fundamental question is whether groups and other higher-level units can be "vehicles" of selection. All participants in the controversy now agree on this point (e.g., Dawkins, Williams, Grafen, Maynard Smith). When we "take vehicles seriously," group selection emerges as an important and

empirically well documented force in nature.

(3) The negative view of group selection is based on the early work of Williams (1966) and Hamilton (1963, 1964). More recent papers by these same authors have had much less impact than their original works. For example, Williams now accepts at least two empirical examples of group selection, female-biased sex ratios (Williams, 1992, p. 49) and the evolution of avirulence in disease organisms (Williams & Nesse, 1991). Hamilton (1963; 1964a, b) originally envisioned inclusive fitness theory as an alternative to group selection but then was among the first to see that they are different ways of describing a common process of evolution in structured populations (Hamilton, 1975, 1987). In other words, Hamilton (1975, 1987) does not regard inclusive fitness and group selection as alternative theories, unlike most biologists who quote Hamilton. Nevertheless, it almost seems as if inclusive fitness theory became frozen in the minds of most evolutionary biologists during the 1960's and thereafter lost its capacity for fundamental change--even at the hands of its own creator. An analysis of Science Citation Index entries reveals that during 1994, Hamilton (1964) was cited 115 times in journal articles, but Hamilton (1975) was cited only 4 times.

(4) Group selection has almost certainly been an important force in human evolution. Intuitively, it is obvious that human society is often highly organized at the group level. Individualistic explanations of human sociality succeed only by defining self-interest so broadly that it includes the benefits of group-level functional organization that are shared by individuals within the group. This concept of self-interest is very different from Williams' (1966) conception, which is based on relative fitness within groups. More generally, "taking vehicles seriously" makes it obvious that many aspects of human behavior evolved because they increased the fitness of some social groups relative to others.

The rejection of group selection during the 1960's was warranted because the theoretical models were not very plausible and the empirical support was weak. Unfortunately, group selection then became a bogey-man that was avoided without careful thought, even after more robust theoretical models were developed and supported by solid empirical data. I hope that readers of the

Bulletin Submissions

Anything that might be of interest to ISHE members is welcome: Society matters; articles; replies to articles; suggestions; announcements of meetings, journals or professional societies; etc. These sorts of submission should be sent to the editor. Book review inquiries should go to the appropriate book review editor (the British editor covers English-language books published in Europe). Submission should be in English, on paper and, if possible, also on diskette. Please include complete references for all publications cited. For book reviews, please include publisher's mailing address and the price of hardback and paperback editions.

Bulletin submissions are usually reviewed only by the editorial staff. However, some submissions are rejected. Political censorship is avoided, so as to foster free and creative exchange of (even outrageous) ideas among scholars. The fact that material appears in the newsletter never implies the truth of those ideas, ISHE's endorsement of them, or support for any policy implications that may be inferred from them.

Bulletin will familiarize themselves with the "new" group selection. I think that they will be surprised by the insights that it offers.

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RACE, IQ, AND TESTOSTERONE

By George Kocan, 27 W 179 Galusha Rd.,
Warrenville, IL 60555 USA.

Charles Murray and Richard Herrnstein argue in *The Bell Curve* that low intelligence is linked to crime, poverty, illegitimacy and welfare dependency. Furthermore, since intelligence is linked to heredity and race, their thesis portends a gloomy scenario not only for blacks but also for society as a whole, because various educational experiments have not done much to improve the IQs of disadvantaged persons. However, this issue requires consideration from another angle: how conventional schooling interacts with sex to affect academic performance and, ultimately, IQ.

Twenty-five years ago, Patricia Cayo Sexton published the results of her sociological research of education in *The Feminized Male*. She investigated the personalities and academic efforts of 14- and 15-year old boys in an entire public school district in an industrialized, urban area. She found that those boys who did best in school were the most like girls, as indicated by various measures of masculinity. Sexton found that the boys that exhibited the greatest fear of bodily harm as pre-adolescents manifested the greatest involvement in academics as adults. Furthermore, boys that did well in school were

in general socially isolated and incompetent in athletics. Also, high school boys with high scores on verbal tests scored highly on femininity, hysteria, hypochondria and neurotic tendency.

Consistent with this analysis, sex differences in various behaviors render the modern classroom tailor-made for girls and antithetical to the healthy development of boys (McGuiness, 1979; Block, 1976). Boys tend to be rebellious and inclined to impose their dominance on others. They like to express themselves physically and have higher activity levels than do girls, yet boys are compelled to sit for long periods of time in class. Girls, on the other hand, do not mind sedentary activities. Boys show less dependence than girls, and less conformity, suggestibility, nurturance, anxiety, and desire for affiliation. Teachers, 72% of whom are female, tend to favor girls because, unlike boys, they tend to be polite, neat, cooperative, and obedient. Because many boys have difficulty adapting to an environment having feminine norms of behavior and achievement, they have problems acquiring the kinds of skills that are needed to do well on IQ tests.

In recent years US society's attention has been directed mainly at the problems of girls in school. For example, in 1972 the Congress passed the Education Amendment, which included Title IX banning sex discrimination in any program receiving federal funds (AAUW, 1992). This was clearly an effort to make schooling better for girls, not for boys. Yet girls get better grades than boys do, and boys often hate school and become disciplinary problems. Many male drop-outs are on a career path to the penitentiary.

Since the appearance of Sexton's book, supporting evidence for her analysis has emerged from research on sex hormones and behavior. Kreuz and Rose (1972) found that adult prisoners who exhibited high blood testosterone levels while incarcerated had had a high number of encounters with the police when adolescents. Testosterone has been found to promote aggression in a wide range of animals. Other research showed a positive correlation between testosterone levels and aggression among prisoners (Ehrenkranz et al., 1974; Dabbs et al., 1987).

Dabbs (1992) studied a sample of more than 4000 Vietnam veterans. He found that testosterone levels varied with occupation. Men in socially high ranking professions such as lawyers and physicians possessed lower testosterone levels than men from blue collar occupations such as carpenters and mechanics. And the men that had the highest testosterone levels were the unemployed! High testosterone men also had records of experiencing various personal troubles and doing poorly in school. Dabbs further reported that intelligence was found to be negatively related to testosterone levels. Consistent with this picture is Wilson and Herrnstein's (1985) observation that a large proportion of men in prison are "andromorphs," sporting a highly muscular and athletic physique.

Thus, Sexton's sociological findings have been vindicated by biopsychology. The men in white collar jobs, the intellectual elite described in *The Bell Curve* who did well in the feminized school system, are men with low testosterone. Men with high testosterone, having had great difficulty adapting to the school environment, failed to do much better competing with a feminized elite outside of school. The modern school prefigures the modern work place. As Sexton put it, "Schools prepare boys for those emasculating white collar jobs by confining them to deodorized hothouses."

In order for this argument to have any relevance to the issue of IQ and race, the biopsychology research would have to show that black men have higher testosterone levels than white men. And that is what Ellis and Nyborg reported in 1992.

The implications are compelling. The evidence indicates that black men are more masculine than white men in today's society. The evidence confirms a common stereotype about black men which does not necessarily make them look bad. It also points to testosterone—masculinity—acting as an obstacle to academic performance.

The racial implication of *The Bell Curve* is that blacks inherit some kind of cognitive deficiency, some kind of lesser competence tied up with brain organization. But the more basic problem with the modern school may be that many boys, both black and white, experience a mismatch between

masculine psychology and institutionalized, female pedagogy.

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BOOK REVIEWS

Separate Lives: Why Siblings are so Different

By Judy Dunn and Robert Plomin. New York: Basic Books, 10 E. 53rd St., New York, NY10022 USA, 1990, 210 pp., \$12 (pprbk.).

Reviewed by Michael G. Livingston, Psychology Dept., P.O. Box 3000, Saint John's University, Collegetown, MN 56321-3000 USA.

In graduate school I read Darwin and fell in love--with Darwin's project of placing psychology on an evolutionary-biological foundation. I have not been alone in my madness. Other developmental psychologists have also sought to realize the Darwinian vision, but they have been few. As Charlesworth (1992) has noted, Darwin's work has had little impact on the actual historical development of developmental psychology.

All that may be changing, or at least slowly evolving. One sign of change is the 1991 Society for Research in Child Development presidential address by Sandra Scarr (Scarr, 1992) and the spirited and healthy debate it provoked (Baumrind, 1993; Jackson, 1993; Scarr, 1993). Scarr and her colleagues have conducted twin and adoption studies over the last 20 years in an effort to tease apart the genetic influences on development. They are part of a small but growing group of behavioral geneticists, human ethologists, and developmental psychologists who are trying to fulfill the promise of Darwin's viewpoint.

Unfortunately, much of this work has been confined to specialist journals which are rarely read by most clinicians, let alone by the public at large. With their book, *Separate Lives: Why Siblings Are So Different*, Judy Dunn and Robert Plomin have made an important contribution to the changes taking place. By presenting research from behavioral genetics and developmental psychology in an accessible, captivating fashion, they have made this work and its implication accessible to a broad public. The two authors are well qualified to present this material. Judy Dunn

was a pioneer in the study of sibling relations and is still one of the pre-eminent researchers in this area. Robert Plomin is a leader in the field of behavioral genetics. What's more, they write well!

The book begins with a puzzling observation: Siblings who share genetic material and a common family are strikingly different. Identical twins, for example, only share about 50% of their personality characteristics. Dunn and Plomin start with an analysis that seeks to explain differences and similarities between siblings. From there they expand their analysis "to consider the origins and development of differences between [all] people" (p. 3).

Dunn and Plomin review the kinds and extent of physical and psychological differences between siblings. In doing so, they marshal and clearly present overwhelming evidence of sibling differences. Then they proceed to partition, using twin and adoption studies, the extent to which genetic and environmental factors contribute to these differences. Their conclusions about the role of both kinds of factor are significant--"heredity significantly and substantially affects many aspects of behavior" (p. 37), and "nongenetic factors are at least as important" (p. 38).

Data from twin and adoption studies that show the importance of nongenetic factors also lead the authors to a startling conclusion about the environment: "nearly all environmental influences operate to make siblings growing up in the same family different, not similar" (p. 40). Similarities, the research suggests, result mostly from genetic factors. Differences result from genetic factors and from the environmental influences that sibs do not share.

The authors rightly suggest that this notion of the nonshared environment is a radical one that turns much of our conceptualization of the environment on its head. Their estimates of nonshared environmental influences for common psychological traits often exceed the estimates for genetic influences and always exceed the estimates for shared environmental influence. For instance, they estimate (based on behavioral genetic studies) that as much as

35% of the variance in many personality characteristics results from nonshared environmental influences. By way of comparison, the shared environment is estimated to account for 5% and genetic factors for 40%. (The remaining variance is attributed to error.)

Dunn and Plomin devote much of the rest of the book to an analysis of environmental factors. In chapters 4, 5, and 6 they provide clear summaries of (mostly their own) research on the impact of parents, siblings, and peers on the development of individual differences. While I enjoyed these chapters and this work is certainly valuable, they would have been improved by discussing the important and extensive work done by others, especially in the areas of parental and peer influences on development.

Dunn and Plomin devote a chapter to the role of chance in the development of individual differences. Any discussion, especially one geared to a broad readership, of chance factors in human development is welcome. The chapter also emphasizes how different siblings within a family can be affected quite differently by the "same" external event. In their discussion of chance, they make use of the concept of epistasis. Developed within genetics, epistasis refers to the effects of higher order combinations of many genes. Dunn and Plomin suggest that environmental epistasis influences development. They describe environmental epistasis thus:

We drift through life in a sea full of possible environmental influences. There are some major events analogous to single-gene effects, but most effects are minor. Like additive genetic variance, many environmental perturbations affect people similarly. However, chance alignments of environmental elements can lead to unique combinations that have extraordinary effects (p. 147-148).

They enrich their definition of environmental epistasis and chance influences on development with case descriptions from their own research. While the chapter on chance effects is rewarding reading, it would have been strengthened by reference to work outside of the behavioral genetics tradition.

For instance, Bandura's (1982) germinal paper on chance and life paths would have fit well with the content of the chapter.

The last chapter presents some of the implications of the work for researchers, clinicians, and parents. The implications for researchers are, to my mind, significant. Dunn and Plomin feel that their research strongly points to the role of environmental influences on development. In particular, they feel that the concept of the nonshared environment can be incorporated into research based on diverse theoretical frameworks. "The key is to study more than one child in each family" (p. 160).

Dunn and Plomin hope that work in behavioral genetics will revitalize work on environmental influences on development. I would argue that developmental psychologists, focusing as they do on the individual, rarely study the environment. They more often assume its influence or use marker variables such as social class which are thought to "stand for" concrete causal factors. The exceptions, such as Diana Baumrind and Gerald Patterson, are justly recognized as significant figures in the field. Given my critique of the field, I share Dunn and Plomin's hope that behavioral genetics will revitalize the study of environmental influences that will focus on both the nonshared and the shared environment.

For researchers, their analysis also implies the need for new measures: measures of the environment that are sensitive to experiences specific to each child, measures of the child's perception of the environment, and measures of the child's active engagement and selection of her environments. Taken seriously, the combination of behavioral genetics research with the renewed analysis of the nonshared and shared environment and the development of new measures of the environment will take us a considerable way towards realizing Darwin's dream. Of course we would still need to address questions of distal causation, but at least we would be examining both environmental and biological proximate causes.

The implications for clinicians are not as clear-cut. Dunn and Plomin's work strongly challenges the view of the family as a single system, as little more than a set of metaphors that guide therapists and, far less frequently,

researchers.

Instead, the family is a unique system for each member. Therapists must thus shift from a family-by-family frame of reference to an individual-within-the-family by individual-within-the-family perspective.

For parents the message is a reassuring one: They are not to be blamed or credited for every one of their children's characteristics. Many of the characteristics are simply a consequence of the genetic inheritance. More important are the two general guidelines their analysis suggests. First, parents should try to treat all of their children equally. Unequal treatment, their data suggest, does not benefit the favored sib, but it does harm the unfavored sib. Second, parents should actively intervene to help create fair relationships between their children.

Dunn and Plomin have written an engaging book clearly intended for a broad readership of parents, students, and professionals. In addition to the extensive research findings that they present in a clear and accessible fashion, they use biographical material from famous people and their siblings, real examples taken their research, and personal experiences. Their book can be read profitably by parents and undergraduates.

They have included notes and references that contain much of the information that clinicians, social workers, and graduate students would be interested in knowing about. These notes and references are good but could have been strengthened by the inclusion of more detailed information on the methodology employed in the key studies they cite. This makes the book somewhat less useful for clinicians and researchers, but on the whole it is still a valuable introduction to an important area. I would also have liked to see in the notes some discussion of criticisms of the behavioral genetics approach.

Many clinicians, social workers, and researchers are going to react strongly against this book. This should surprise no one, as most of psychology is dominated by an environmental determinism which pays lip service to biology but ignores biology in both theory and method.

Membership Renewals for 1995

It is time to renew your membership for 1995 if you have not already done so. Membership is by calendar year, so dues are to be paid by the first of the year. **If the date on your mailing label is earlier than the current year, it is time to renew your membership.** For financial reasons, renewal notices are not usually sent. Those who do not renew their memberships will be removed from the membership list. **Please report errors, changes of address, etc. to the treasurer.** Current dues and directions for payment are given on the last page. Please allow four weeks for recording changes of address or payment of dues.

I recommend this book for parents, advanced psychology undergraduate, beginning graduate students, social workers, and clinicians. Each of these groups will find the work of value, albeit for somewhat different reasons. Given the ferment within developmental psychology since the book was published, I hope that the authors will write an updated second edition.

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Darwinism Applied: Evolutionary Paths to Social Goals

By J. H. Beckstrom. Praeger Publishers, P. O. Box 5007, Westport, CT 06881 USA, 1993, \$45 (hdbk.).

Reviewed by Frank Kemp Salter, Forschungsstelle für Humanethologie, von der Tann-Strasse 3-5, D-8138 Andechs, Germany.

Applying Darwinism can be hazardous, even for authors who avoid evaluative comment or policy advice. In some academic circles it is considered a grave sin to publish or even discuss biological ideas that can be interpreted in a policy direction. By this standard Beckstrom is daring indeed, since he uses Darwinism to provide direct advice on public policy.

This is a short book: 104 pages of text, 47 pages of notes worth reading in their own right, and 280 odd references. It is part of the "Human Evolution, Behavior, and Intelligence" series edited by Seymour W. Itzkoff. Its main value lies in the precedent it sets and in the structure of its argumentation, rather than in its modest and often tentative policy proposals. Beckstrom, an academic lawyer at Northwestern University outside of Chicago, presents his arguments in language free of jargon and emotiveness. The text is directed to the "educated person who has little natural science background." With this readership it is especially incumbent on writers to avoid presenting biology as a panacea, and Beckstrom is laudable in this regard, inserting numerous caveats and competing interpretations. Among the suggestions offered are some for reducing the incidence of child abuse, rape, property crime and sibling incest; for distributing the property of people who die intestate; and for increasing payment of child support.

An underlying theme is that evolved predispositions are triggered and expressed through discrete behavioural mechanisms. Behaviour is thus conceptualized as an input as well as an output of social and physiological processes. It is only one step further to suggest methods for manipulating inputs to achieve desired outputs, a step Beckstrom takes. The

idea is resonant with the modern ethological concept of behavioural tools which lies at the heart of a theory of politics developed by Eibl-Eibesfeldt (1970/1972), Tiger and Fox (1971) and others. According to this theory institutions deploy methods of mass social control which play on evolved social patterns. Elaborations of this theory designate these methods "social" or "political technologies" (Caton, 1988), and aus. However, a reinvented wheel is still a wheel, and the hub of inclusive fitness might support some novel spokes.ggregations of these technologies in traditions shaped by cultural evolution "control infrastructures" (Salter, 1995). This theory is not employed in *Darwinism Applied*, perhaps due to its sociobiological foc

Foil One: A Tendency to Cite Recent Authors

Certain pertinent work is not cited by Beckstrom. I have already noted the noncitation of political ethology. Another example is the failure to cite critiques of Karl Popper's ideas on falsifiability, evolutionary epistemology, and induction--and not, incidentally, acknowledging him by name. Citing recent authorities who accept Popper's ideas does not improve the plausibility of the notion that empirical knowledge has not increased in the last 400 years or that no amount of observation permits inferences about the unobserved (see fn. 22, p. 109). It is equally annoying to have to admit that Beckstrom's argument is not weakened by his preference for recent sources, that the bibliography is appropriately named and contains a rich sample of the sociobiological classics, and that this makes the book all the more attractive for professionals and students.

Foil Two: An Overly Strong Position for Sociobiology in Formulating Public Ethics

Richard Alexander (1987, p. 222) has invoked the fact-value distinction to reduce the importance of evolutionary theory in formulating ethics. Beckstrom shares Alexander's respect for the is-ought gap, but if Beckstrom means that evolutionary learning allows us to predict whose interests people serve (see Chapter 4 and p. 104), he goes far beyond Alexander's conservative position. One need only add moral premises in tune with democracy or individualistic freedom to a theory allowing the prediction of typical moral feelings, and one has more than advice

for government, one has qualified prescription. *Darwinism Applied* thus argues for the importance of sociobiology in governing human affairs. Despite having cited situations in which evolutionary learning is not applicable to social planning, Beckstrom's epilogue argues that species-typical behaviour is a basis for predicting future human action.

Thus Beckstrom raises the status of evolutionary theory to that of a necessary tool for solving certain social problems. Yet he distances himself from others who believe that natural science can resolve ethical disputes (e.g., Wilson, 1978; Masters 1990), on the argument that they commit the naturalistic fallacy. He takes care not to cross the is-ought gap himself but effectively skirts it by arguing that sound predictive science is necessary for achieving many social goals, and then presenting sociobiology as the most sound science dealing with certain issues. This strikingly resembles the modern defence of ethical naturalism which begins by noting that ought statements cannot be deduced from statements of fact, but which adds that in the absence of empirical propositions ethical assertions are hollow (see Arnhart 1992, especially pp. 177f). One might add that ethical statements of any kind are impossible without empirical content.

For those who find ethical naturalism unexceptional, there is still considerable room for criticism of Beckstrom's reliance on sociobiology. This reliance leads the author to underestimate the potential contribution to government and business of other naturalistic disciplines that also belong to the Darwinian tradition. Darwin was interested in proximate as well as ultimate causes, and made seminal contributions to the study of emotional expression. In his search for cross-cultural universals, Darwin was acting as an ethologist rather than a sociobiologist, and it is this ethological approach rather than sociobiological heuristics that provides Beckstrom with his strongest argument for introducing biology to public policy. Much scientific progress has been made since the mid-19th century, and it is premature to write off behavioural biology's relevance to such matters as "getting the stock market to go up or persuading people to buy a newly published

book", on the assumption that these activities are "far from the core experience of Pleistocene life" (p. 99). Selling, for example, exercises humans' evolved repertoire of social behaviours, whether attracting and holding the customer's attention, building trust through the promise of reciprocity, attaching status to the item on offer, using aggressive or aid-releasing demeanour with individuals judged submissive or sympathetic, and so on.

Foil Three: A Tendency to Set up Fitness as a Moral Objective, Combined with a Touch of 'Genetic Cognitivism'

Beckstrom indicates that he judges it objectively good to increase people's inclusive fitness. For example, in formulating his first piece of advice, he defines child abuse in terms of reproductive fitness: "[C]onduct toward a child is "abuse" if it is likely to decrease the child's "fitness"--that is, decrease the likelihood of the child's genes being proliferated in future generations" (p. 23). Beckstrom recognizes problems for this definition, but thinks it is good enough to direct discussion and is "somewhat measurable". The problems are in fact fatal for at least two reasons. First, the definition bypasses the child's pain and injury that actually incite a moral response. In the absence of suffering, who cares if someone has his or her fitness reduced? Second, the definition leads to a series of *reductiones ad absurdum*. Is the United Nations behaving immorally by attempting to lower birth rates? In Western societies the fitness definition would lead us to classify as abuse any action tending to increase a child's future wealth and status, since average reproduction rates decrease as socio-economic class is ascended. In secular Western societies, wealthy couples do not replace themselves let alone maximize their fitness, and this is seen as a problem for the explanatory and predictive power of sociobiology by Vining (1986) and others. Certainly it is a problem for any definition of invidious social behaviour that has fitness as its criterion.

A second reason to interpret Beckstrom as equating fitness with moral goodness is his favourable report of one sociobiological view of motivation: "[T]he basic unconscious motivation behind most (nonpathological) human behavior is the proliferation of each

individual's genes . . ." (p.93). This is Sociobiology Mark I, which bypasses proximate causes and implies a motivation directed towards the gene, an entity only discovered in the 20th century.

Beckstrom also implies that fitness-enhancing behaviour is deliberate in discussing the impact of rape on a victim: "The trauma she experiences has evolved to alert her to the fact that what has happened may have serious consequences for her reproductive process, so avoidance action is desirable" (p. 49). Defence of reproductive processes is not self conscious at every level. Just as the mind is not aware of all its thoughts, neither is the human organism wholly aware of its functions. This quotation again indicates a form of what might be called 'genetic cognitivism' that provides a convenient detour around proximate mechanisms.

But despite an over-cognitivism, it is clear Beckstrom does not mean to equate fitness and moral goodness. Indeed, he explicitly states that the value of sociobiological reasoning is its ability to predict individuals' priorities in distributing wealth. This view is clear in the fourth chapter, which discusses the problem of distributing the property of someone who dies intestate. Beckstrom argues that without information as to the deceased person's wishes, the property should be distributed in a manner most likely to maximize the deceased's fitness. Fitness might be a useful broad guide, though again it separates values from their eliciting conditions.

When I had finished reading this book it occurred to me that something was missing, something that, these days, usually accompanies any calm, reasoned application of Darwinism to social issues. Where were the savage reviews of *Darwinism Applied*? To the best of my knowledge they are yet to emerge. The stillness may be due to Beckstrom's achieving a dispassionate neutrality in the vexed tug-of-war over possession of the Darwin myth. The evolutionary camp is sharply divided between those who believe phylogeny (and perhaps continuing selection) play important roles in contemporary human society, and those who champion Darwin while ridiculing every attempt to apply his theory to

humans. Predictably it is the former group that risks attempts to advance biological understanding of man and society, and the latter that is engaged in fault finding.

The No-Man's Land between these lines of Darwinians can be a dangerous place to plant a lectern, yet Beckstrom even pursues his approach into the exposed terrain of ethnicity. Perhaps he trusts that the combatants respect value-neutrality. He does not advocate particular values but suggests how different political actors can practically achieve their goals, such as increasing or decreasing patriotism. By doing so he avoids providing unambiguously good news for the political left or right. The multicultural left and nationalist right will be cheered to hear his suggestion that the predisposition for ethnic chauvinism has a basis in an evolved predisposition to favour kin. And many will warm to the proposal that intercultural conflict be solved through global assimilation, though multiculturalists and nationalists could well be horrified by the same. All positions would be threatened by some of the methods proposed or implied by Beckstrom for redirecting or intensifying kin favouritism (see pp. 6, 86-95). For example, one method he suggests for promoting universal brotherhood is the old ideal of a universal language (p. 95). Does this mean we must choose between peace and cultural diversity?

I recommend *Darwinism Applied* as a model of the way the science should be presented to policy makers: arguments transparently clear, recognition of limitations, and an avoidance of case making.

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Social Stratification and Socioeconomic Inequality. Vol. 1: A Comparative Biosocial Analysis

Edited by Lee Ellis . Praeger, 88 Post Rd. West, Westport, Connecticut & London. 1993, \$55 (hdbk.).

Reviewed by Andreas Paul, Institut für Anthropologie, Universität Göttingen, D-37073 Göttingen, Germany.

In the foreword to the present volume, Lionel Tiger outlines its central program: "At issue here is how successfully an approach to human stratification grounded in and influenced by biological science yields robust and useful insights into the nature of human social organization." Needless to say, few animal and human ethologists will have doubts that such an approach is indeed useful, robust--and important. The fact that social inequality, status differences, or dominance relations are far from being "unique to our

species" (Ellis) cries out for an integrative theoretical framework that has explanatory value not only for the human animal. There is little doubt also that sociologists - apparently the main target for this book - will find much to think about. However--and this is my main reservation about the book, or at least some of its chapters-- behavioral ecologists will find several shortcomings, making it difficult to follow some central arguments.

In the preface Ellis outlines his understanding of a "biosocial perspective": "a biosocial perspective .. assumes that both biological and social environmental factors are important for explaining variations in human behavior" (p. xiii). By "biological factors" Ellis means (a) "evolutionary or genetic factors", and (b) "physiological factors". Darwinian psychologists would add that the social environment as well is part of the evolutionary history of an organism and therefore an evolutionary factor, too (e.g., Pratto et al., this volume). In any case, the sharp separation between "social" and "biological" factors appears reminiscent of rather old-fashioned controversies between "culturists" and "biologists".

Ellis starts the book with two introductory chapters on conceptually and operationally defining social stratification in human and nonhuman animals" - a worthwhile goal, because even in animal behavioral biology the concept of social dominance is a highly ambiguous one (e.g., Bernstein, 1981, Drews, 1993). He concludes that, at least conceptually, human social status and nonhuman dominance are essentially the same phenomenon. Both terms refer to varying degrees of access to and control over nonplentiful resources. This makes sense in and of itself. Unfortunately, however, the reasoning too often tends to be circular: Operational definitions equate dominance with priority of access to resources, just as the conceptual definition does (see Hand, 1986). Although "resource-free indicators" of dominance are also presented, a clear structural definition, like that recently proposed by Drews, would have been much more helpful:

"Dominance is an attribute of the pattern of repeated, agonistic interactions between two individuals, characterized by a consistent

outcome in favour of the same dyad member and a default yielding response of its opponent rather than escalation. The status of the consistent winner is dominant and that of the loser subordinate" (Drews, 1993:308).

However, as Ellis notes, such an observational measure may rarely help students of human status differences very much, who usually rely on measures of socioeconomic status (SES), such as wealth, occupational prestige, and education.

Let me briefly consider some other problematic aspects of these introductory chapters:

While it is certainly not unusual to regard conspecifics as resources - especially in the context of sexual selection (females as critical resources for male reproductive success) - it appears rather unusual to regard "generic relatives, especially offspring" (page 8), as conspecific resources. The reasoning behind this statement remains unexplained.

Ellis distinguishes the "primary aspect of social status" - called wealth - from two other aspects - generosity and group protection (p. 10). These "secondary expressions of dominance" in Ellis' belief are "for the group as a whole". Meat sharing by chimpanzees is presented as one example of "generosity" - "resource sharing particularly by animals who are highest in rank" (p. 13). Aside from the fact that among chimpanzees - as a rule - dominant partners are more likely to receive food than subordinate ones (with the exception of offspring and estrous females), alternative explanations based on reciprocity, cooperation (i.e., individual selection), or kin selection are not even mentioned (see, e.g., de Waal, 1989; Nishida et al., 1992; Stanford et al., 1994). Nishida and Hiraiwa-Hasegawa (1987:176), Ellis' primary source, explicitly refer to the importance of alliance partners for high-ranking chimpanzees.

Ellis regards the "unique human ability" of linguistic communication and written symbolic language as the causal reason for the increasing complexity of social stratification in human societies, especially in comparison with the less sophisticated

dominance patterns exhibited by other primates. Here too, obvious alternatives appear to be ignored. A continuum between egalitarian and despotic societies has also been found in nonhuman primates, and it seems most likely that this is a consequence of the mode of competition within and between social groups (van Schaik, 1989). Similar arguments based on the insights of evolutionary ecology have been applied to human societies (Boone, 1992), where the accumulation of wealth and increasing group size undoubtedly contribute to the complexity of social stratification (including complex alliance systems, which may very well be enhanced by symbolic communication).

In his last, concluding chapter, a possible reason for Ellis' failure to acknowledge the importance of allies for the acquisition and maintenance of rank and social status suggests itself. After a short review of twin and adoption studies, he concludes that "genes are responsible for significant human variation in social status" (p. 161). He has in mind the concepts of r/K-selection and pro/antisociality (the involvement in property and violent crimes), both "assumed to be genetically influenced (but not determined)". The basic point of Ellis' biosocial theory is not that all these variables - socioeconomic status, reproductive decisions, and certain forms of criminality - are to some extent interrelated, but that all corresponding differences between individuals and even racial groups are more or less directly caused by genetic variation.

Although sociobiology and evolutionary ecology are clearly genetic theories of behavior, and although there is indeed a lively debate about the inheritance of dominance (e.g., Dewsbury, 1990 and comments in *Animal Behavior*, vol. 48), few sociobiologists would agree that social inequality is primarily a consequence of genetic differences. Dewsbury (1993:598), for example, noted that "my guess is that for nonhuman primates such aid may be more important than genetic differences" (see also Chapais, 1992). In fact, most human sociobiologists have adopted Irons' (1979) view that most behavioral differences within and between populations are flexible responses of similar genotypes to different environments. Thus,

sociobiology and behavioral ecology are much more "environmentalist" approaches (Crawford & Anderson, 1989) than Ellis seems to acknowledge.

Although not all of the remaining five chapters (Betzig on "Sex, Succession and Stratification in the First Six Civilizations"; Weisfeld on "Social Status and Values in Traditional Arab Culture"; Behrman & Taubman on "Intergenerational Links in Earnings, Income, and Wealth in the United States"; Pratto, Sidanius & Stallworth on "Sexual Selection and the Sexual and Ethnic Basis of Social Hierarchy"; and Hoyenga on "Sex Differences in Human Stratification") contain new material, they are interesting and valuable to read. The chapters by Betzig and by Pratto et al. provide useful insights into the connections between sexual selection and social stratification. For example, Pratto et al. convincingly demonstrate fundamental sex differences in "social dominance orientation" and status oriented mate preferences, leading to the selection of group-based dominance, especially in males. Partly as a result of these personal preferences, they conclude, ethnic-based status hierarchies persist.

In conclusion, it is questionable whether this book will make a significant contribution to the bookshelf of human behavioral biologists. Some of its features are clearly fascinating, some others are clearly not.

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***The Evolution of Lateral
Asymmetries, Language, Tool
Use, and Intellect***

By John Bradshaw and Lesley Rogers,
Academic Press, 1250 Sixth Avenue, San Diego,
CA 92101-4311 USA, 1993, \$72 (hdbk.).

Reviewed by Barbara J. King, Dept. of
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This book offers its readers fascinating information about the many kinds of lateral asymmetries known to biologists--from differentiation of function in lobster claws, to the phenomenon in birds and mammals in which only one brain hemisphere sleeps at a time, to the dextrality (right handedness) found as early as *Homo habilis* in our own evolutionary lineage. Psychologist Bradshaw and physiologist Rogers have produced a masterful synthesis of research on their topic, but the book succeeds as far more than a compendium of curious facts. Findings on lateral asymmetry are set in clearly articulated contexts to help the reader understand their significance, and the book as a whole coheres nicely around two key themes.

The first is the issue of human uniqueness, that is, whether humans are set apart qualitatively from other animals: "If we can hazard a guess, (new) discoveries will continue to narrow any remaining Rubicons between ourselves and other species in such hotly contested issues as the uniqueness of language, tool use, and consciousness" (p.xii). The authors present evidence pertinent to this theme in a way of particular value to ethologists. Unlike most writers who attack the 'Rubicon concept' (myself included), Bradshaw and Rogers extend the idea of the behavioral continuum beyond primates to other taxa. They clearly explain why understanding lateral asymmetries in birds is important to the overall picture, for instance (p. 96). On the subject of brain evolution, they write that lateralization "seems to have occurred very early in evolution and the basis for its manifestation in primates was already present in rats" (p. 225), and later note "there is no *a priori* reason to think that the primate solution is necessarily the most advanced one" (p. 363).

The second theme is that lateral asymmetries result from a complex mix of genetic and environmental factors. This point is consistently integrated into topical discussions rather than merely stated. A good example comes with the discussion (pp. 116f) of research results showing that handling of rats by humans unmasks dominance of the right hemisphere for certain spatial abilities in the rats.

The first four of the book's nine chapters deal with lower vertebrates: birds; rats and mice; and nonprimate mammals, respectively. The final five chapters, devoted entirely to primates, cover manual asymmetries; cognitive/brain asymmetries; hominoids and hominids; culture, tool use and art; and brain, language, intellect, and the evolution of the self.

As a biological anthropologist, I am qualified to evaluate only the primate-oriented chapters. I found them uniformly accurate, timely, and easy to read. My quibbles with the book were trivial, e.g., I thought that at times the continuity theme was not taken far enough. For example, discussing the appearance of modern humans, the authors write that "information could now be culturally transmitted across generations" (p. 260). At other times, they go too far: Describing a complex sequence of tool use by chimpanzees, they claim that "this sequential use of a range of tools by animals in the wild is in principle almost indistinguishable from our own toolusing behavior" (p. 284).

The final chapter's ambitious synthesis holds particular appeal for anyone interested in origins of language, art, music, and other aspects of human culture. Data are related directly to questions of lateral asymmetry. For example, it is shown that not all aspects of language, art, music or imagery are lateralized to a single hemisphere; instead, each consists of "a number of discrete components all differentially lateralized to the left and right, and differentially localized in an anterior and posterior direction" (p. 358). The implications of this fact are intriguing, as is the authors' conclusion (citing Jerison) that, given how much of the human brain is involved in language, "language plays more than just a communicatory role, [and] may help in the cognitive construction of modern reality" (p. 319).

Contentious topics in human origins are treated in this chapter in an unusually balanced manner. Consider this passage about ape language research: "[S]ome critics...say that, in the final analysis, rather than tapping language per se, the studies address capacities for categorization, association, problem solving, and communication. Others might reply to this criticism that this is itself a fair description of language!" (p. 325). Similar treatment is extended to evaluation of the 'Machiavellian intelligence hypothesis' and a wide variety of other topics. Bradshaw and Rogers solidly reject ideas at the heart of late-origins scenarios for evolution of language, such as those of William Noble and Iain Davidson, seeing language instead as "having a long evolutionary tradition continuous with primate communicatory systems. It has 'bootstrapped' to its present level of sophistication via autocatalytic multifactorial feedback" involving tool use, social relations, consciousness, and intellect (p. 383).

In short, Bradshaw and Rogers show how a complex, multi-disciplinary topic can be treated compellingly by two authors expressing their knowledge and ideas in one strong voice. Their decision to write a book such as this rather than editing a conference volume (seemingly a more popular route in ethology) is to be commended. This impressive book deserves a wide readership within ethology and related disciplines.

ANNOUNCEMENTS

The Nature of the Sexes

This book, subtitled *The Sociobiology of Sex Differences and the 'Battle of the Sexes'*, edited by ISHE member J. M. G. van der Dennen, is now available at a special price for ISHE members: Dfl. 42.50 (approx. US\$ 27 or £16 or DM38) plus shipment (Dfl. 9). It includes chapters by Weiert Velle; Hal Daniel & Robert McCabe; Johan van der Dennen (3); Tore Bjerke; Peter Meyer; Robin Russell, P. A. Wells, G. E. Weisfeld & C. C. Weisfeld; Bobbi Low; Vincent Falger; and Ullica Segerstråle. Give credit card (VISA or Euro/Mastercard) information, or use one of these bank accounts: Giro ESS Amsterdam: 5274110; or Bank ESS Utrecht: 64.25.23.258. Mail payment to V. S. E. Falger, University of Utrecht, Janskerkhof 3, 3512 BK Utrecht, The Netherlands.

ISHE Electronic Bulletin Board

The ISHE electronic bulletin board began in March. It can be reached under this URL: <http://evolution.humb.univie.ac.at>. For access you need a direct Internet connect and either Mosaic or Netscape; the latter is preferred. When you have installed the program, use "open location" and type in the URL.

Festschrift for Dan Freedman

As announced in the last issue, this event, sponsored by the American Psychological Association, will be held from 7PM Fri., 27 October to 1PM Sun., 29 October at the University of Chicago. The conference is entitled "Genetic, Ethological and Evolutionary Perspectives on Human Development." Registration (preferably by 15 Oct.) is \$25 (\$15 for students and post-doctoral fellows). Apply to Betty Cawelti (ATTN: FEST), University of Chicago, Committee on Human Development, 5730 S. Woodlawn, Chicago, IL 60637 USA, fax 1-312-702-0320. Contrary to the previous announcement, credit card payment is **not** acceptable--checks and money orders only. Include address, phone, fax and E-mail numbers. Single hotel rooms are \$73 per night for a single, \$83 for a double at the Ramada Lake Shore. Contact Betty Hunt (tel. 1-312-753-2270, fax 1-312-753-2310) and mention the "Freedman Conference." For further information, contact Nancy Segal (principal organizer and ISHE membership chair) at 1-714-773-2142 (tel.), or 1-714-449-7134 (fax), or nsegal@fullerton.edu (E-mail).

International Association for Cross-Cultural Psychology

IACCP held its XIIth biennial congress in Pamplona-Iruña, Spain during July 1995. IACCP was founded in 1972 and has over 600 members from 65 countries. Contact William Gabrenya for additional information at School of Psychology, Florida Institute of Technology, Melbourne, FL 32901 USA, tell. 1-407-768-8000 (ext. 8104).

New Journal from Konrad Lorenz Institute

Evolution and Cognition begins publication this year. The semi-annual journal is the official organ of the Konrad Lorenz Institute for Evolution and Cognition Research. Several ISHE members are on the editorial board, including Donald T. Campbell, Irenäus Eibl-Eibesfeldt, Klaus Grossmann, and Wolfgang Schleidt. The journal will publish research centered on communication, concept formation, linguistics and epistemology. The journal grew out of a concern with the problematical consequences of human reason, and a desire to improve understanding of our species' place in nature. Various theories are envisioned as fruitful in this endeavor, such as systems theory (including feedback causality and evolutionary epistemology), synergetics, chaos theory, game theory, artificial intelligence, neuronal networks, and fuzzy logic approaches. Empirical and synthetic contributions are welcomed from fields such as evolutionary biology, ethology, anthropology, psychology, sociology, comparative linguistics, and the arts. *Evolution and Cognition* is published by Vienna University Press. Orders should be addressed to: Konrad Lorenz Institute, A-3422 Altenberg, Adolf-Lorenz-Gasse 2, Austria, tel. 43-22-42-323-90, fax 43-22-42-323-90-4, E-mail sec@kla.univie.ac.at. Price is US\$50, DM 70, £25, or ATS 500.

The Konrad Lorenz Institute was founded by private donors in 1990 to honor him, to maintain his mansion, library, and collections for use by scholars, and to support research in evolutionary epistemology. Projects and lectures are concerned primarily with evolutionary epistemology, but also with research areas on which it is based, such as ethology, evolutionary biology, cognitive psychology, anthropology, and ethnology. The contributions of evolutionary epistemology to theories of logic, mathematics, language, and law are also recognized and encouraged by the Institute. The goals of the Institute will be pursued by means of symposia, university courses, seminars, book publication, and the journal. Projects of postgraduate students are supported, and visiting professors are invited for intellectual exchanges. The Institute hopes to sponsor researchers from different fields

simultaneously in order to foster interdisciplinarity.

Journal of Social and Evolutionary Systems

This quarterly began publication 18 years ago. It features studies dealing with relationships between biological factors and technology, economics, politics, ideologies, literature, art, customs and culture. It embraces such disciplines as theoretical biology, evolutionary theory, developmental psychology, artificial intelligence, cognitive and physical anthropology, paleontology, philosophy of science and technology, evolutionary epistemology, history of ideas, literary and film criticism, media theory, sociology, cosmology, and systems theory. Articles range from 80-page pieces to theoretical notes of a page or two. Book reviews, critical essays, and symposia also appear. The journal has recently published articles by ISHE members Donald T. Campbell (an associate editor), Vilmos Csányi, Roger Masters, and Glendon Schubert. Editor is Paul Levinson. Individual subscriptions are \$75 for first-time subscribers; add \$20 for non-US surface mail and \$40 for airmail. There is a reduced student rate. Contact JAI Press, 55 Old Post Rd., No. 2, P. O. Box 1678, Greenwich, CT 06836 USA, tel. 1-203-661-7602, fax 1-203-661-0792; or The Courtyard, 28 High Street, Hampton Hill, Middx TW12 1PD, U.K., tel. 44-181-943-9296, fax 44-181-943-9317.

Society for Cross-Cultural Research

The new President-Elect and Program Chair of SCCR is Lewellyn Hendrix, Sociology Dept., Southern Illinois University, Carbondale, IL, USA. Society membership for 1994 was 196. SCCR meets annually. The 1996 meeting will take place in Pittsburgh, Pennsylvania, USA, probably in February.

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