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SOCIETY NEWS

Report on ISHE Convention

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The Fourteenth Biennial ISHE Conference at Vancouver, B. C., 19-23 August 1998 was hosted by Simon Fraser University. Perched on a mountain top, with the spectacular Fraser River valley and mountains disappearing to the north, participants had a splendid setting in which to meet, renew old acquaintances, share stories, debate, console, and update each other on research and ideas. It was a "human-sized" group of about 60, so participants had an opportunity to talk with almost everyone.

The first day's keynote address was by autism researcher Simon Baron-Cohen. Autism is a disorder of social development. While most people with autism also have other learning difficulties, 25% are only impaired in what Baron-Cohen calls folk psychology, the ability to infer intentional states to others. Baron-Cohen believes these "pure" cases of autism are also characterized by an intact or even superior folk physics. Although people with autism rarely marry and have children, their first degree relatives often show lesser variants of autistic traits. Testing of their parents should show impaired folk psychology and superior folk physics. In his research subjects in Cambridge, England, Baron-Cohen found support for this hypothesis. Among the fathers and grandfathers of his subjects, 12.5% were engineers, compared with 5% for controls. Baron-Cohen speculated that this asymmetry

reflects an extreme case of the discrepancy between folk psychological and physical intuition that exists for most males.

Also on 20 August was an intriguing talk by Lisa Goos which won the ISHE Young Investigator Prize. Goos and her advisor, Irwin Silverman, showed photos depicting various emotions, including anger and sadness, to college males and females. Goos was interested in how well the sexes can identify emotions tachistoscopically presented and whether changes in testosterone levels affect males' competence. Goos' research affirmed what many women know experientially: Men are not so good at correctly identifying anger in women, but they do easily recognize sadness and fear. Goos also found that men do a better job of identifying emotions, in general, when their testosterone levels are higher.

Thursday was a full day culminating in a commemorative symposium on the contributions of Nobel Prize winning ethologists Karl von Frisch, Konrad Lorenz, and Niko Tinbergen by people who had known them well and had worked with them. Agnaldo Garcia remembered von Frisch, William Charlesworth talked about Tinbergen's legacy, and Eibl-Eibesfeldt described Lorenz's contributions and added his thoughts about the present situation in the field. Finally, Karl Grammer took us into the next generation.

Friday commenced with a comprehensive review of work on sex differences in human cognition by a leading researcher, Doreen Kimura. In 90 minutes she took us through her remarkable research program. Kimura is interested in how abilities are influenced by prenatal and current exposure to sex hormones. As we know from previous work, males are better at spatial abilities and

math reasoning, while females excel at verbal fluency, verbal memory, and fine motor skills, differences that are found across cultures. These sex differences are the result of exposure to androgens during prenatal development, but also vary with seasonal and diurnal fluctuations of sex hormones. Interestingly, the optimal level of androgens for spatial ability appears to be in the lower half of the normal male range. High estrogen in women is associated with enhanced fine motor and articulatory efficiency, while low estrogen (occurring at menstruation) is associated with enhanced spatial ability.

Saturday's invited talk was by Harvard geneticist David Haig. Entitled "The Divided Self," this was arguably the most startling talk in a conference full of provocative, original, cutting-edge research and ideas. Haig suggested that some of our subjective experience of conflict within ourselves may derive from genomic competition. Geneticists used to assume that a gene plays the same role in an offspring no matter which parent contributes it. But now Haig and others are finding that the sexes have ways to mark particular genes so that these genes get special treatment, biasing genetic inheritance. This is called genetic imprinting and represents a battle between the mother and father for control of the growth rate of the fetus. When it comes to the growth of the offspring, the parents have different interests. The male wants the female to invest as much as possible in his offspring, whereas she needs to spread investment among several young. In mammals, females need to control fetal growth, because the fetus is a virtual parasite on the mother. Haig suggested that some of the internal conflict we experience may reflect real "disagreement over ultimate ends between different agents that contribute to mental activity."

On Saturday we were also treated to a soulful talk by Daniel Freedman on East-West differences in philosophy and art. Freedman extended E. O. Wilson's call for consilience between biology and social sciences to the humanities and asked if Western spiritual seekers could give up their highly prized individualism to experience the Hindu-

Buddhists' notions of egolessness.

It was an extremely rich and full conference, and we participants had much to think about on our trips home.

Election of Officers

The ballot for election of the following two officers appears below: Secretary and Membership Chair. Please complete it (or a photocopy) and send it to the ISHE President, Charles Crawford. Deadline is 15 December. No nominations were received other than those that appear on the ballot. However, members are free to write in the name of someone else. Terms of office are three years, beginning in 1999.

BALLOT FOR ISHE OFFICERS

Membership Chair

Astrid Jütte, Ludwig-Boltzmann-Institute for Urban Ethology, Vienna, Austria

Other (please include name and affiliation)

Secretary

Karl Grammer, Ludwig-Boltzmann-Institute for Urban Ethology, Vienna, Austria

Other (please include name and affiliation)

Outstanding Paper Award

The award for the best paper at the 1998 ISHE convention goes to Farhad Dastur and Richard Brown, both of the Department of Psychology, Dalhousie University, Nova Scotia, B3H 4J1, Canada. The award consists of a certificate, an ISHE T-shirt, and a copy of the ISHE book *New Aspects of Human Ethology*.

Their presentation was entitled "Olfactory Perception and Pregnancy Sickness: A Test of the Pregnancy Sickness as Maternal Adaptation Theory." The abstract:

Increased first trimester olfactory sensitivity is a key prediction of Profet's theory that pregnancy sickness--food/odor aversions, nausea, retching, and/or vomiting--evolved as a maternal adaptation to prevent the ingestion of embryotoxins commonly found in foods. This prospective, controlled, and longitudinal study assessed 19 pregnant and 18 nonpregnant women on the following variables:

- olfactory perception
- food aversions and cravings
- food intake
- nausea, retching, and vomiting

Increased first trimester olfactory sensitivity was found, thus lending support to Profet's theory. The study's other findings are also generally consistent with an adaptive view of PS.

Young Investigator Award

The outstanding young investigator at the 1998 ISHE convention was judged to be Lisa Goos, a student of Irwin Silverman, Department of Psychology, York University, Toronto, Ontario, M3J 1P3, Canada. Lisa will receive a certificate, an ISHE membership renewal, free registration at the next ISHE meeting, and a book.

Lisa and Irwin's paper was entitled "An Evolutionarily Based Study of Facial Expression Recognition." The abstract follows.

A series of photos depicting anger, disgust, fear and sadness were tachistoscopically presented to male and female university students at two intervals during the day, when testosterone levels were expected to be high and low. An original questionnaire designed to measure monogamous vs. polygamous mating strategies was also administered to male subjects, and information about menstrual cycle phase was taken from female subjects as an indicant of estrogen levels. Findings, in part, were that anger and sadness were more frequently correctly identified overall by female than male subjects. However, both sexes were better at identifying anger posed by males rather than females, and sadness and fear posed by females rather than males. Males tended to better recognize female emotions, in general, when they were in the high testosterone phase of the diurnal cycle. These and other analyses are discussed from perspective of sex specific adaptive mechanisms.



Report on ISHE Business Meeting

By Karl Grammer, Secretary

The ISHE officers met at the biennial convention in Burnaby, B.C., Canada in August 1998.

The report from the Treasurer and the Membership Chair showed that ISHE is financially stable and growing. Nevertheless, it was decided that a promotional campaign for the Society will be started.

The next meeting is in Salamanca, Spain at one of the world's oldest universities, the third week in August 2000. Sites discussed for the 2002 meeting included São Paulo, Brazil and the University of Maine, USA. The

decision will be made at the meeting in Salamanca. The problem of the expense for students to attend our conventions was discussed; the problem stems mainly from the cost of international travel. It was decided that the Society should pay special attention to the needs of potential student members.

ISHE members are asked to promote our Website, as by linking to us on your individual site. At the moment we have about 1500 hits per day. You can also send us links that you think are suitable, by e-mail to karl.grammer@univie.ac.at.

It was noted that the Membership Directory needs updating.

Glenn Weisfeld will retire as *Bulletin* editor in 1999.

Open positions for the next election are Secretary and Membership Chair.

1998 ESS Papers

The following papers were presented at the Annual Meeting of the European Sociobiological Society (ESS), Russian State University of the Humanities, Moscow, 31 May – 3 June 1998. The full abstracts of the papers can be found on the [ESS website](http://jurix.rechten.rug.nl/rth/ess/ess.htm): <http://jurix.rechten.rug.nl/rth/ess/ess.htm>.

Robin ALLOTT (5 Fitzgerald Park, BN25 1AX, East Sussex, U.K.). Group Identity and Nation Identity.

Konstantin BANNIKOV (Institute of Ethnology and Anthropology, Moscow, Russia). Ritual and Social Structure of the 'Extreme Groups'.

Bergljot BORRESEN (Department of Small Animal Clinical Sciences, The Norwegian College of Veterinary Medicine, Oslo, Norway). Rituals Could Influence a Hypothalamic 'Main Switch' for Social Emotions.

Michael BUJATTI-NARBESHUBER (Department of Archeobiology and Anthropology, Natural History Museum, Vienna, Austria). Meta-meme Rituals Teleonomically Change Meme-rituals and a Gene-ritual: Syntactic Symbol Conditioned 5-HT/NA.

Socio-neuro-modulation in Culture-cult Co-evolution: Double Niche Transition-theory of *Homo*.

Marina BUTOVSKAYA (Institute of Cultural Anthropology, Russian State University of Humanities, Moscow, Russia). Gender Identity as a Basis for the Fundamental Social Opposition.

Valery CHALYAN (Institute of Medical Primatology RAMS, Sochi, Russia). Behaviour of Free-ranging Hamadryas Baboons on Meeting.

Johan M.G. van der DENNEN (Center for Peace & Conflict Studies, University of Groningen, the Netherlands). Ritualized 'Primitive' Warfare and Rituals in War: Phenocopy, Homology, or...?

Margarita DERIAGINA (Faculty of Biology, Moscow State University, Moscow, Russia). Social Behaviour and Communication of Neotropical Monkeys.

Harald A. EULER, Sabine HOIER & Elizabeth POLITZ (Department of Psychology, Kassel University, Germany). Kin Investment of Aunts and Uncles: Why Is the Matrilateral Bias Stronger in Women?

Vladimir FRIEDMANN (Biological Department, Moscow State University, Russia). Ritualized Demonstration Effectiveness as Supporting Mechanism for Integrating Some Different Individual Social Life Strategies in Steady Social Structure Framework: An Experimental Great Spotted Woodpecker Study.

A.A. GLISKOV & M.G. SADOVSKY (Krasnoyarsk State Technical University). On the Existence and Duration of Social Norms.

Natalia HALDEYEVA (Institute of Ethnology and Anthropology, Moscow, Russia). The Role of Human Appearance and the Concept of Anthropological Autoidentification.

Sabine HOIER (Department of Psychology, Kassel University, Germany). Accelerated Menarche of Women from Non-regular Family Environments: How to Find an Explanation.

Alexander A. KAZANKOV (Moscow, Russia). Factors of the Inter-community Conflicts among the Hunter-gatherers of the Arid Zones

William KITCHIN (Loyola College, Baltimore, Maryland, USA). Law as Anti-ritual.

Alexander KOZINTSEV (Museum of Anthropology and Ethnography, St. Petersburg, Russia). On the Adaptive Value of Laughter: Tickling and the Origins of Humour.

Natela MEISHVILI (Institute of Medical Primatology RAMS, Sochi, Russia). Intergroup Differences of Parental Behaviour in Macaques.

Peter MEYER (Department of Sociology, Augsburg University, Germany). Peculiarities of Human Rituals: A Borderline for Homologies?

Balaji MUNDKUR (University of Connecticut, USA). The Migration of Rituals and Sexual Symbols in Folk Religion.

A.V. OLESKIN, I.V. BOTVINKO, T.A. KIROVSKAYA & E.R. KARTASHOVA (Sector for Biosocial Studies, Cell Physiology and Immunology Dept., Biology Faculty, Moscow State University, Russia). Primitive Human Social Structures and Modern Society: An Ethological Perspective.

Zhanna REZNIKOVA, Tatyana NOVGORODOVA & Elena DOROSHEVA (Institute of Animal Ecology, Novosibirsk;

Novosibirsk State University, Russia). How Ants Identify Their Symbionts and Competitors: Special Ways for Special Mates.

Zhanna REZNIKONVA & Noris RYABKO (Institute of Animal Ecology, Novosibirsk; Siberian Academy of Telecommunication and Computer Sciences, Novosibirsk, Russia). Using Ideas of Information Theory to Reveal Analogies of Ant and Human Languages.

M.G. SADOVSKY & A.A. GLISKOV (Institute of Biophysics SD of RAS, Krasnoyarsk State Technical University, Russia). Towards the Biology of Law.

Osamu SAKURA (Institute of Human Behavioural Science, Faculty of Business Administration, Yokohama National University, Japan). The Reception of Sociobiology in Japan, with a Preliminary Comparison to Germany and Korea.

Stephen K. SANDERSON (Dept. of Sociology, Indiana University of Pennsylvania, USA). Extending Sociobiology's Explanatory Power: Synthetic Materialism--An Integrated Theory of Human Society.

Valdimir N. SHINKARYOV (Institute of Ethnology and Anthropology, Moscow, Russia). The Khasi Procreation Ideas: Aristotle or Galen?

Marina VANCHATOVA, Leonid FIRSOV & Nina SAVINA (Primate Research Group VUFB a.s., Konarovice, Czech Republic; Primate Research Center, St. Petersburg, Russia; Leningrad Zoo, St. Petersburg, Russia). Introduction of the Group of Hamadryas Baboons from the Leningrad Zoo to the Island: Individual Changes of Behaviour.

Tatu VANHANEN (University of Helsinki, Finland). Roots of Group in Ethnic Nepotism?

Oleg V. YEGORUNIN (Moscow, Russia). Ethnonyms of Tai-speaking Peoples and the Problem of Their Self-identification.

ZHANG Boshu (Institute of Philosophy, Peking, China). Biological and Social Perspectives of Human Group Identity: A Case of Chinese Culture.



ARTICLES

Why Academic Humanists Resist Contemporary Darwinism

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At least twice in twenty years E. O. Wilson (1978, 1998) has predicted that evolutionary explanations for human behavior would so influence other fields of inquiry,

ISHE Web Page:

<http://evolution.humb.univie.ac.at>

including the humanities, that a "consilience" of knowledge would emerge. In this brief essay I will discuss the obstacles to such a consilience. They are formidable. Because the intellectual tendencies in the humanities, especially the literary humanities, are not widely varied, my generalizations are valid.

The obstacles which prevent humanistic acceptance of the New Darwinism are principally three. Each one builds, logically if not always chronologically, on the previous one.

(1) *While evolutionary psychologists emphasize behavior, humanists in literary and philosophical fields emphasize language almost exclusively. The focus on language is*

related to what Terry Eagleton (1983) calls "the rise of English": that English literature as a field of study originated in order to domesticate English laborers through exposure to the King's English—which in its complexity of meaning and nuances of feeling would make the rough-hewn classes more "gentle." In this sense poetry, as Matthew Arnold hoped, became a substitute for religion. Since the late 19th century the humanistic emphasis on language has taken other, well-known forms: the intense attention to grammar and style, the method of "close reading" in order to discover thematic profundity; and the most recent offshoot of close reading, deconstruction, with its premise that language is a system of opposing social constructs which ultimately undoes itself. Earlier humanists such as Elder Olson (1952) once argued that even in poetry "diction" was less important than other elements, such as "choice," "thought," and "character," that language was simply a medium by which poets argued something, examined choices and portrayed character. Olson's viewpoint is now subdued, and has been replaced by the current consensus that language *controls* meaning in all its forms. As a result of all these trends, literary humanists view behavioral decisions made by a character in a novel to be less important than the style of the author. A quick and dirty way to put the matter: to humanists today, literature and philosophy are about language, not life.

(2) *The emphasis on language is also expressed in a strong affinity implicitly anti-Darwinian—between today's humanists and the premises of cultural and linguistic anthropologists.* It is not merely that these humanists largely ignore behavior. To the extent that they are interested in behavior, they also believe that language determines it. Some humanists have taken this premise so far as to believe that the individual "author" is dead—in the sense that "authors" are merely a tangle of the various social and linguistic codes they have inherited. The possibility that some human behavior might be rooted in fitness-beneficial tendencies—which might have arisen even before the capacity for language did—is either beyond these humanists or distasteful to them. For instance, Melvin Konner (1982) has stated that to varying degrees "Human males in every society

are more aggressive than human females, and the former account for the overwhelming majority of homicidal violence in all human groups. . . Only men commit rape. . ." (pp. 274f). Konner of course suggests that this cross-cultural phenomenon indicates natural selection is at work. Today's humanist would, on the contrary, be sure that the intricate linguistic codes of a culture, and these alone, determine male violence by subtle "male privileging."

(3) *The emphasis on language, and on linguistic determinism, is linked with humanists' implicit devotion to a moral agenda of acculturation.* The historical roots of this agenda run deep—at least back to Plato's preoccupation with the links between the Good and the True and Beautiful, and with the well-established historical connections between the humanities and Judeo-Christian religious traditions. The nature of the moral good has long and constructively been debated in the humanities, but today's academic humanists in the United States have reached a consensus that goodness equals radical equality, diversity and tolerance. The approaches to morality often found in today's Darwinian thought, however, are quite different. Morality, rooted deeply in kinship and reciprocity, is often viewed as another fitness-beneficial trait, and not exclusive to human animals alone. Despite humanists' beliefs that they are modern, and even radical, thinkers, they would find deeply alien the idea that morality might be an adaptive feature, rather like upright walking or peripheral vision. This is another way of saying that modern humanists take evolved tendencies seriously when it comes to physical traits, but not when it comes to behavioral ones—an idea greatly encouraged by their favorite (and only) Darwinian, Stephen Jay Gould. Because they believe that their own ethical/linguistic agenda can change language and culture and thus change morality, they are cultural and linguistic determinists, but not biological determinists. For them, that morality might be even partly "in our genes" is an inconvenient idea.

Once we understand these three tendencies in contemporary humanistic practice—an emphasis on language, a premise of linguistic determinism, and a moral agenda

rooted in changing language—we will have placed in context other well-known features of humanistic thought:

- their affinity for what anthropologist Clifford Geertz approvingly calls "thick description"—a discourse in which cultures are characterized as a series of signs and symbols: complex, multi-layered, ambivalent and overlapping;
- their preference for a sometimes incomprehensible complexity over the more elegant and simple explanations of the sciences and some of the social sciences—explanations which humanists sometimes dismiss as "reductionist."
- their attraction to scholarship in the service of a politics which champions egalitarianism in race, class and gender.

None of the above is to suggest that human beings do not make meaning through language, or that language does not sometimes influence human perception and social construction, or that egalitarianism is not a good idea. It is to suggest, however, that humanists, who claim to be contemporary and well-educated persons, are missing what Daniel Dennett (1995) has called "the best idea anyone has ever had." They will miss developing and well-tested theories of human nature. They will miss the possibility that language as a cause of behavior may sometimes be overrated. They will miss an encounter with the possibility that, for all their emphasis on thick complexity, they too are reductionist. They will miss exciting possibilities of synthesis: For instance, Steven Pinker's *How the Mind Works* (1997) contains fascinating implications for the humanistic study of rhetoric and persuasion; and the work done by Gordon Orians and Judith Heerwagen (1992) on evolved responses to landscapes offers fertile implications for explaining human aesthetic preferences.

For now, however, forget "consilience." It would be an amazing advancement if Darwinians and humanists could just achieve dialogue.

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Plurispeciation and Its Influence on Human Behavior

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"*Homo sapiens sapiens* is one single zoological species." In terms of behavioral ecology, this is even more than just a commonly accepted truth: In the "global village" of our times it simply is no longer possible for any human population to live in almost complete isolation for any length of time, certainly not long enough to evolve physical adaptations to an extreme environment, as Pygmies, Eskimos,

et al. once did. Panmixis has cut short the process of the biological speciation of humans, suspended it until further notice.

The members of this peculiar species are, above all, mental beings, endowed with free will and with capabilities no other living creature ever possessed. But this beautiful soul dwells in an animal body and this body still is equipped with innate dispositions for behaviors and reactions that were useful in the relatively simple environment of life in the wild but now are apt to counteract reason and humaneness (Hassenstein, 1986).

Furthermore, not just racial differences--the visible remnants of former biological speciation processes--are in evidence almost everywhere; the societies of modern Man are also the outcome of two parallel processes of cultural evolution. Each of these is, in certain respects, analogous to speciation. Both were described decades ago, but have always been discussed separately.

Hostility between Groups

Since the dawn of history, originally territorial groups of humans tended to differentiate themselves from one another, not only by their skin color but also by their integuments (i.e., clothing), traditional habits, and communication signals (i.e., languages). Alas, these are the same characteristics by which animals belonging to different species set themselves apart. Accordingly, Erikson (1966) termed this process "cultural pseudospeciation."

However, it had one fatal consequence. If people look as if they belong to another species, they may be perceived, at least in situations of conflict, as being nonhumans. This, in turn, may trigger reactions that are typical for interspecies confrontations--which are usually more vicious than those of intraspecies strife (Eibl-Eibesfeldt, 1975). Indeed, xenophobic cruelties are easiest to evoke among groups of people who look different. Since most Jews do not look unlike other Europeans, the Nazis, at their time, marked them with a yellow star. But it is well known that marking anybody or any group as nonhuman can also be

achieved by indoctrination.

Proliferation of Group Identities

Simultaneously, and increasingly so since the onset of urbanization, people became specialized in the occupations by which they make their living (Anderson, 1973). Tribal territories and, later, states became ecosystems with niches--trades and professions--in which different people earn their livelihood in different ways. But, again, these adaptations also characterize animals belonging to different species. And this too had peculiar consequences.

Each profession or trade now has not just one socioeconomic or sociocultural function, as postulated by functionalist sociology, but another, more elementary one: It serves as the source of livelihood for all those engaged in it. In any conflict of interest between these two functions, the biologically conditioned drive for securing a livelihood--including the convenience and profitability of one's job--will supersede any other consideration, such as professional ethics. Parliamentarians voting for cuts in social services and simultaneously raising their own salaries serve as an illustration; Parkinson's law is another.

People also tend to band together outside the natural spheres of subsistence and territoriality. They form clubs, societies, and associations for every conceivable purpose, even the weirdest ones. Furthermore, people create institutionalized congregations because they hold and share ideological, political, religious, and other magical beliefs. On the other end of the scale are urban gangs, formed by young males out of joblessness, boredom or sheer frustration.

However, this whole multi-layered and multi-faceted result of what I propose to term "human polyspeciation" is only the basic structure, inside which each of the groupings mentioned above reacts opportunistically, according to biologically conditioned rules of primate behavior, especially in one blatant pattern: If someone or something is perceived as endangering the group, then fear, discrimination against outsiders, and the urge

for solidarity combine into an unholy, synergistic trinity. This in turn always triggers the same reaction: closing ranks, standing shoulder to shoulder, focusing attention on the leader (the alpha animal) and then "follow him, forward, onto them."

This holds true not just for baboons. For humans there is not even a need for real threats to be evident; it suffices that anyone who can focus attention on himself and proclaims that danger is present evokes the same reaction. The most horrid example was the reactions of the Germans in the 1930's to the enticements of Hitler, Goebbels & Co. But similar reactions could be observed a mere 20 years earlier in all the capitals of Europe on the outbreak of World War I (Hassenstein, 1986). And they are evident everywhere today, from the congeries of Islamic fundamentalists to many a football stadium.

For the sake of accuracy it should be emphasized that professional soldiers are not an unnatural phenomenon--consider the soldier castes of social insects. However, neither ants nor baboons have mercenaries, general staffs, and weapons industries that enable their employees to make their living from making war.

Suspension of International War

A recent development regarding all these dire circumstances is remarkable: Lately there have been almost no wars between solidly established national states. All recent bloody conflicts have been civil wars, some among factions competing for power, most between ethnic groups that have not yet sorted themselves out spatially into separate nation states.

By contrast, the United Nations has adopted the principle of peaceful coexistence "within secure and recognized borders." This has long been the formula for eventual solution of the Arab-Israeli conflict, and the Gulf War was waged in its name. It may well be that pluralistic national states that dwell in peace beside each other are the solution for humans' pluralistic ecological status, which results from our polyspeciation. If so, this will be an

example of a purely culturally conditioned behavior coming to correspond with some rule of nature. In any case, the current worldwide networking of knowledge and production, together with convergence of styles of architecture and clothing, are conducive to this trend.

Still, the current peaceful coexistence of states was achieved only after 3 or 4 millennia, during which the size and control of states was determined almost exclusively by warfare. And it would be foolish to presume that all the other ecological, demographic and social problems of the world will also solve themselves by sociocultural evolution. In fact, the colossal acceleration of sociocultural evolution itself is so affecting the biosphere that the global ecosystem no longer has time to avoid capsizing.

Intensified Global Competition

Furthermore, as the world economy becomes increasingly polyspecific, the more it is regulated by a single factor: maximization of profits. The resulting concentration of financial, and therefore political, power in the hands of multinational corporations enables them to thwart legislation to protect the environment. This consumer economy is depleting nonrenewable resources, while at the same time the population explosion in developing countries is creating environmental pressures and people who cannot be expected to be sensitive to these abstract problems.

Global regulatory mechanisms are sorely needed, but how can they be developed in our polyspecific world? Behold the USA, largest producer of greenhouse gases, whose founding fathers based their constitution on a system of checks and balances but who refuse to join an international convention to reduce these emissions.

Need for Interdisciplinary Analysis

In addressing these dilemmas, the traditional academic disciplines remain encapsulated. They lack breadth for considering all relevant levels of analysis. For example, the eminent sociologist Dahrendorf

(1998) addresses the social consequences of globalization but fails to come to grips with the problem of reconciling unlimited growth and waste with limited resources.

Behavioral biologists are "adapted" to bridge such gaps. The sciences of Man should pay more attention to the basic fact that humans behave as though they belong to innumerable different species and now live in ever more deregulated and virtual environments. Although it is usually the other side that has difficulties with multidisciplinary thinking, ethologists should spare no effort to initiate and to join cooperative ventures that attempt to produce practical proposals. Ecology and behavioral biology have already offered many sound suggestions; it is time to advise political bodies and the media on how to restore regulatory control over the system. If the present trend continues unchecked, the biological speciation of *Homo s. sapiens* will soon be reactivated. Natural selection will leave only those who are physiologically able to survive in the changed biosphere. Whether or not our polyspecific groups will behave in a more reasonable, spiritual, and humane fashion remains to be seen.

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Report on APLS Meeting

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The Association for Politics and the Life Sciences (APLS) held its 18th annual meeting 3-6 September 1998 in Boston. The meeting was the first held independently of the American Political Science Association. There were about 200 participants from universities, institutes, the health care sector, and government who represented a wide array of disciplines and interests. The meeting in my judgment was a great success. This was due in large part to the work of Gary Johnson, Executive Director of the Association, and his assistants.

The keynote address was by Edward O. Wilson. Using examples from his recent book *Consilience*, Wilson argued that social scientists should direct their attention to the discovery and study of epigenetic rules.

Other lectures included George Annas (cloning), Lynton Caldwell (environmental degradation), Richard Butler (arms control), Patricia Gowaty (evolutionary feminism), Patricia King (race and class), James Q. Wilson (evolutionary explanations of human behavior), and Richard Wrangham (violence in the shaping of human society). The panels included presentations on biological weapons, genetics and public policy, bioethics, biomedical policy and health, environment and population, and political behavior and theory.

The 1999 meeting will be held in Atlanta in early September. ISHE members who want to learn more about the APLS, its journal *Politics and the Life Sciences*, and the next meeting should access the APLS web page: <http://www.lssu.edu/apls>.

Officers of the Society

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BOOK REVIEWS

Coalitions and Alliances in Humans and Other Animals

Edited by Alexander H. Harcourt and Frans B. M. de Waal. Oxford University Press, 2001 Evans Road, Cary, NC 27513, USA, 1992, \$89.00 (hdbk.).

Reviewed by Penny Anthon Green, Box 814, St. Edward's University, 3001 South Congress Avenue, Austin, TX 78704, USA.

Coalitions and Alliances aims toward integrating different approaches to the study of the cooperative strategies for which it is named. It does this by bringing together data and theoretical insights provided by scientists in disciplines ranging from zoology to the social sciences. The book comprises eighteen papers, divided into three substantive parts, plus an introductory and concluding chapter.

The introductory chapter (de Waal and Harcourt) provides an historical overview of ethological research on coalitions and alliances, and defines key terms. A "coalition" is defined as cooperation within a competitive context, in which the interests of the cooperating parties are advanced at the expense of a third party. The term "alliance" is reserved for enduring cooperative relationships.

Part One of the book, entitled "Coalitions, Alliances, and the Structure of Society," elucidates the reciprocal relationship between individuals and their society. More precisely, the papers in this section attempt to show (a) how individuals' efforts to form coalitions and alliances influence the structure of their society, and (b) how structural arrangements affect the formation of coalitions and alliances. Chapter titles include "The role of alliances in social inheritance of rank among female primates" (B. Chapais), "Effects of availability of allies on female dominance structure" (S. B. Datta), "Conflict intervention behaviour by adult male macaques" (C. L. Ehardt and I. S. Bernstein), "Coalition formation

in a colony of prepubertal spotted hyaenas" (C. J. Zabel, S. E. Glickman, L. G. Frank, K. B. Woodmansee and G. Keppel), "Segmentary 'warfare' and the management of conflict: comparison of East African chimpanzees and patrilineal-patrilocal humans" (C. Boehm), and "The effects of intragroup cooperation and intergroup competition on in-group cohesion and out-group hostility" (J. M. Rabbie).

Part Two of the book, entitled "Cooperative Strategies in the 'Political' Arena," examines some of the more immediate causes of coalitions and alliances. Although the contributors consider various levels of proximate causation, most focus in one way or another on the payoffs that derive from pursuing cooperative strategies in competitive situations. These payoffs include defeating or stalemating political rivals, gaining access to desirable resources (including mates), and securing advantages for one's offspring. Chapter titles include "Patterns of intervention in agonistic contests among male bonnet macaques" (J. B. Silk), "Coalitions as part of reciprocal relations in the Arnhem chimpanzee colony" (de Waal), "Intervention in conflicts among children" (K. Grammer), "Alliance formation among male baboons" (R. Noe), and "Cooperation in conflict: alliances in international politics" (V. S. E. Falger).

Part Three of the book, entitled "Coalitions and Alliances: Evolutionary Considerations," focuses on more distant or evolutionary causation. Some of the influences examined include evolutionary consequences of inter and intragroup competition, the differing nature of the resources typically pursued by males and females, the evolutionary advantages accruing to primates able to compete successfully as immatures, and the relationship between polyadic interactions and the evolution of information processing capabilities. Chapter titles include "Cooperation in competition: the ecology of primate bonds" (J. A. R. A. M. van Hooff and C. P. van Schaik), "Sex differences in alliances, and the acquisition and maintenance of dominance status among immature primates" (P. C. Lee and J. A. Johnson), "Dolphin alliances and coalitions" (R. C. Connor, R. A. Smolker, and A. F. Richards), "Coalitions and alliances: are primates more complex than non-primates?" (Harcourt), and "The evolution of reciprocity when conditions vary" (R. Boyd).

The concluding chapter (Harcourt and de Waal) addresses some important theoretical questions that recur throughout the book. The

first concerns the economics of cooperation as a competitive strategy. The authors note that certain patterns of cooperation are found in many species, including humans. Examples include the tendency for group members to cooperate under conditions of intergroup conflict, the observation that kin and similarly positioned individuals are often one other's most common coalition partners, and the fact that levels of intergroup competition frequently correlate with the steepness of the dominance orders within the competing groups. The authors argue that at the functional level (i.e., the level of payoffs of consequences of action), explanations provided by diverse scholars who study these phenomena are often very similar. Each emphasizes that individuals cooperate for the mutual advantages that cooperation can bring. Since functional explanations can be applied to both human and non-human behavior, the potential is present for integrating insights from different disciplines.

A second recurring issue concerns the question of how cooperating individuals reap the benefits of their cooperation. Do these benefits arise more or less immediately from the advantages gained through successful cooperation or do they arise later because of reciprocation? In other words, under what conditions are coalitions examples of mutualism rather than reciprocation?

A third recurring question involves the complexity of the cognitive processes required for multi-level coalitions. Stated differently, how much relevant information do animals, including humans, need to process before forming coalitions and alliances? The authors suggest that primatologists may have too quickly posited the existence of very complex cognitive processes, when considerably less complex mechanisms might achieve the same result. To illustrate their point, the authors note that ants, chimpanzees, and humans all stage cooperative "raids" into neighboring territory. No one is suggesting that ants process information in the same manner as do either chimpanzees or humans, but the behavioral similarity questions the necessity of complex information processing mechanisms.

I found *Coalitions and Alliances* to be very informative. Although most of the chapters focus on non-human primates, other species, including humans, are also considered. And while there is some disagreement between the contributors on important theoretical issues, these questions are addressed in a thoughtful,

well-reasoned manner, with an eye toward finding common ground. Perhaps most important is Harcourt and de Waal's effort to stimulate a dialogue between scholars who study non-human behavior and their colleagues in the social sciences. Interdisciplinary volumes such as this are essential if intellectual cross-fertilization is to occur. This book is essential reading for any academic interested in understanding the evolutionary foundations of cooperative behavior.

Social Intelligence and Interaction

Edited by Esther N. Goody. Cambridge University Press, 40 W. 20th St., New York, NY 10011 USA, 1995, \$59.95 (hdbk.), \$19.95 (ppr.).

Reviewed by Peter K. Smith, Department of Psychology, Goldsmiths' College, New Cross, London SE14 6NW, U.K.

This is an ambitious book, bringing together some unlikely bedfellows. It juxtaposes Richard Byrne, writing about 'the ape legacy' and the continuities to be drawn from primate to human intelligence with sociologists, anthropologists, and ethnomethodologists who quote approvingly the Berger and Luckmann text *The Social Construction of Reality* (1966), which denies any biologically based human nature. The book actually includes a chapter by Thomas Luckmann (and it would appear he has somewhat modified his views over the last 30 years).

What draws different contributions together is the idea of 'Anticipatory Interactive Planning', or AIP, proposed by Esther Goody in her very interesting initial chapter. Goody takes the argument (espoused by Byrne and others) that social intelligence is a vital adaptation in the primates. She unpacks this as being the need to anticipate the actions of others, calculate short- and long-term costs and gains, and pay close attention to signals about the consequences of one's own behavior. Modeling this at the cognitive level constitutes AIP. AIP was an evolutionary response to social living among primates, and in turn set challenges which progressively increased intelligence in the hominids.

A lot of Goody's chapter is taken up with the interrelationship between language and intelligence. She sees language as facilitating AIP in several ways, making it more powerful. The mental representations which language allowed permitted an awareness of intentionality and a representation of AIP as internal dialogue; AIP structures of thought became a model for reciprocity in social relations, and subsequently the emergence of social rules and roles.

The next chapter, by Byrne, summarizes the recent knowledge on ape intelligence which was given a much more detailed treatment in his book *The Thinking Ape* (1995). There follows a chapter by Hutchins and Hazlehurst on a computer simulation of how a shared lexicon may develop--promising, but at some distance yet from the complexity of real-life social interactions. An example of shared use of lexical terms comes with kinship terminology, explored by Bird-David from hunter-gatherer studies, with the issue being the extent to which such terms actually influence behavior.

There then follow a number of chapters which are mainly on the detailed analysis of conversations and social encounters, in the style of ethnomethodologists and psycholinguists. They examine such aspects as the use of preparatory components in interactions (Streeck); sequential patterns and strategies (Drew); anticipation and tactics (Good); politeness and irony in conversations (Brown); and communicative genres (Luckmann). These are all interesting contributions in their own right, especially for ethnomethodologists and psycholinguists. All also pay at least some lip service to the theme of AIP. In a sense, one can see these detailed observations of verbal (and sometimes nonverbal) behavior in social interactions as exemplars of AIP in action; they lay bare the workings of AIP in contemporary humans. However, there are unanswered questions about the level of conscious awareness at which these strategies emerge, and in themselves they tell us little if anything about the possible co-evolution of language and intelligence and the role of AIP. Rather, we are looking at the endpoint of the process.

The final section of the book is quite varied. Two chapters (Zeitlyn, and Goody) consider divination, and prayer, as dialogue

processes. Dialogue is taken as a constant feature of individual social cognition (given the role of AIP in modeling, as described above); the cross-cultural dialogic nature of divination, and prayer, are taken as exemplars consistent with this view.

A particularly interesting chapter is by Levinson, on interactional biases in human thinking. He discusses the kinds of 'irrational' behavior in humans described by Tversky and Kahneman, and by Dorner, and makes a reasonably convincing case that they can be interpreted in terms of the nature of an intelligence forged by social interaction and AIP. This chapter is thought-provoking and innovative, and does address some of Goody's fundamental assumptions. Surprisingly, Levinson does not cite Cosmides' work on the Wason selection task, surely the best-known example, to evolutionary psychologists, of social biases in cognition.

Finally, Carrithers discusses the social interactive nature of stories and narratives as told in traditional societies. The relevance to AIP is less evident here. Indeed, altogether the attempt to give a unitary framework to the collection, which Goody tries to do valiantly in her opening chapter (with a review of each contribution in this context), is only partially successful. The chapters cover contributions from a variety of disciplines and include much anthropological detail, minutiae of interaction sequences, and discourses on social rules and processes (as well as some evolution and some cognitive science). It is a fascinating collection to dip into, and some chapters, notably the opening one by Goody and that by Levinson, advance the argument in an excellent, thoughtful way. Much of the remaining collection provides raw material on social intelligence in action in modern humans, but does rather little to relate this to the fundamental questions of language, cognition and social intelligence which will be of interest to a readership adopting an evolutionary perspective.

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Sexual Orientation: Toward Biological Understanding

Edited by Lee Ellis and Linda Ebertz.
Greenwood Publishing, P. O. Box 5007,
Westport, CT 06881, USA, \$65 (hdbk.).

Reviewed by Vern L. Bullough, 17434 Mayall
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This book includes a number of papers given at the First International Behavioral Development Symposium on the Biological

Basis of Sexual Orientation and Sex-Typical Behavior held at Minot, North Dakota, USA in 1995. The symposium was organized by Lee Ellis, a professor at Minot State University, and his former student, Linda Ebertz. The papers deal primarily with sexual orientation. A second book based on the conference and focusing on sex-typical behavior is scheduled for publication this year by Praeger under the title *Males, Females, and Behavior*. A third set of papers was published in the *Journal of Sex Research*, 34(2), 1997. The conference seems to have been a path-breaking one.

The authors of this volume identify themselves as biopsychologists, research physicians, physiologists, neuropsychologists, animal scientists, neurobiologists, or brain researchers--in short, they have a strong biological bent. The social and cultural, however, are not entirely ignored since Ellis himself is a sociologist and criminologist, albeit a biologically oriented one. He wrote a general chapter summarizing research on perinatal influences on behavior and health. Also writing a general chapter were Diane F. Halpern and Marciana Crothers, "Sex, Sexual Orientation and Cognition," based on their own and others' research. All the other contributors were more narrowly focused within their own specialty, but they were encouraged to write for the general reader, and for the most part do so.

The book is divided into two sections: "Genetic and Perinatal Influences on Sexual Orientation," and "Neurological and Physiological Aspects of Sexual Orientation." Included are nearly 50 pages of references, and a comprehensive index.

The contributors include Martin S. Grobert ("Neuroendocrine Foundations of Diverse Sexual Phenotypes in Fish"), Craig Howard Kinsley, Kelly Gurley Lambert & Hendree Evelyn Jones ("Experimental Alterations of Prenatal Determinants of Sexual Orientation and Sex-Typed Behavior in Nonhuman Mammals"), Heino F. L. Meyer-Bahlburg ("Sexual Behavior and Sexual Orientation in Females with Congenital Adrenal Hyperplasia"), John Bakker & A. Koos Slob ("Sexual Differentiation of the Brain and Partner Preference in the Male Rat"), Dick F. Swabb, Jiang-Niang Zhou, Mariann Fodor &

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Michael A. Hofman ("Sexual Differentiation of the Human Hypothalamus: Differences According to Sex, Sexual Orientation, and Transsexuality"), David W. Holtzen ("Sexual Orientation and Handedness"), and Anna Herman-Jeglinska, Stanislaw Dulka & Anna Maria Grabowska ("Transsexuality and Adextrality").

One of the more fascinating chapters which in my mind raises questions for the more rigid social constructivists is Ann Perkins and James A. Fitzgerald's study on 2100 rams, many of which clearly prefer to mount a partner of the same sex. The authors found that 25% of the rams were not sexually active, and that some of the sexually active rams preferred males to females, even during the rutting season. A minority of rams seemed to have nearly unlimited capacity for mounting estrous females, while others had more limited capabilities. Interestingly, many of the males that were mounted by other males preferred to mount estrous females themselves. The findings have the potential of challenging basic ideas about animal sexuality. Perhaps Ferdinand the mythical bull who preferred flowers to bull fighting might also have had other interests than mounting females as well.

Guns, Germs, and Steel: The Fates of Human Societies

By Jared Diamond. W. W. Norton & Co., 500 Fifth Ave., New York, NY 10110, USA, 1997, \$27.50 (hdbk.).

Reviewed by William R. Charlesworth, Stockholm, WI 54769, USA.

This is a geographical, anthropological, archaeological, botanical, zoological, epidemiological, historical tour de force that attempts to answer the question asked by Yali, a New Guinea friend of the author: "Why is it that you white people developed so much cargo and brought it to New Guinea, but we black people had [sic] little cargo of our own?" (p. 14). Diamond's answer is scholarly, voluminous, nuanced, and convincing,

but only up to a point. Then doubt creeps in for reasons noted below.

Diamond's interdisciplinary scope covers not only New Guinea but also the majority of the world's have-not cultures, cultures that exemplify gross inequalities in people's material well-being. His have-nots include Aboriginal Australians, Africans, and Native Americans, as well as historically earlier groups such as the Aztecs and Mayans. Such breadth of scope makes a detailed and comprehensive review difficult. So I will limit the present review to three points.

(1) Diamond does an excellent job in covering such topics as how geography molded Polynesian societies (including Australia and New Guinea, Inca and Mayan culture); farmer power as the generator of guns, germs and steel; the unconscious development of ancient crops; plant and animal domestication; and the evolution of writing, technology, government, and religion. He even answers the questions of "How China became Chinese" and "How Africa became black."

In all of this Diamond maintains a steady course. Environmental factors and chance events, both ultimate and proximate, are dealt with systematically and artfully in great detail. What is especially pleasing is that he draws on very extensive field experience, and couples it with an enormous grasp of literature (29 pages of references close the volume).

(2) Diamond concludes that geography and chance, not people themselves, are destiny; environmental differences and accidents of any variety are ultimately responsible for determining the fates of peoples.

This conclusion is backed by an impressive identification and integration of many factors derived from archaeological, linguistic, (some) genetic, climatic, and geographical evidence. Diamond argues that (a) certain environments support extensive farming and plant and animal domestication, (b) farming produces more food than foraging, (c) more food results in larger populations than that of hunter/gatherers, (d) increased

population size requires and ultimately leads to greater division among and organization of members, which in turn puts pressure on producing a common language and standardized means of communication, (e) farmers attract and, because of their larger number, easily repel food-seeking competitors, (f) farming also releases males for military purposes which include attacking, destroying, and subjugating non-farmers, (g) the increased population size of farmers also releases individuals for technological and organizational jobs that make centralized government necessary as well as possible, (h) increased population size also increases the number of human and animal hosts to disease-producing bacteria, (i) immunity to diseases develops among farm populations faster than among non-farmers, and (j) non-farmers are therefore gradually exterminated by the combined effects of the farmers' superior numbers, technology (weapons and metals), organizational/communicative expertise, and disease.

In short, environmental factors and consequent food production are the bottom-line causes of differences in survival. What environment a particular population inhabits is determined by chance. Yali has his answer. The white man's superiority in having so much cargo "was due to accidents of geography and biogeography in particular, to continents' different areas, axes, and suites of wild plant and animal species" (pp. 400f).

(3) Perhaps, but two major aspects of the story have been left out--population genetics and human cognition. Diamond directs much of his effort to eliminating genetics, especially genetics of intelligence. In his argument he includes his own experiences with those tribal peoples he knows well. In this respect, I go along with him. I, too, have met very bright "tribal" people (like Yali) whose only misfortune (if one's misfortune is not having lots of cargo) is having been born in the wrong place at the wrong time. Their cognitive skills appear to me to be focused on specific environmental demands but are clearly adequate, in my estimation, to succeed in European settings. But, unlike Diamond's, my sample of such persons is small and most likely unrepresentative.

Diamond's assertion of the non-importance of genetic differences would be more convincing if he paid attention to two evolutionary phenomena--the founder effect and genetic drift. As evolutionary scientists well know (voir Mayr, 1970), founders of new animal colonies "contain only a small fraction of the total genetic variation of the parental population (or species)" (p. 417). This means that it is possible that colonies may differ genetically by chance--on more traits than just blood groups.

The extent to which genetic variation is responsible for variation in certain traits such as aggressivity may account in part for the violent destruction of the Moriori by the Maori, a depressing example that Diamond vividly discusses. The overwhelmingly uninhibited and sustained lust for destruction manifested by the Moriori may have been due exclusively to cultural values and early socialization practices. But then maybe not; genetic differences may also have played a role. More likely, genes and culture interacted.

Diamond's dismissal of a genetic effect would be more convincing if he would present evidence that both the Maori and the Moriori were equivalently nonaggressive or aggressive, and that they split off from one another. He of course does not have such evidence; no one does. Instead, he resorts to an argument based on the concept of natural experiment, a concept he ends his last chapter defending.

Diamond's defense is that since historians cannot conduct experiments, they are compelled to "take advantage of natural experiments, by comparing systems in the absence or presence (or in the strong or weak effect) of some putative causal factor" (p. 424). Fair enough: the comparative method is important. But it is never decisive in throwing the balance heavily toward one causal hypothesis or its rival.

As I understand it, the term "natural experiment" is an oxymoron. Experiments are consciously planned, contrived, and controlled manipulations of conditions aimed expressly at isolating variables that are usually confounded in nature. Nature does not experiment; only conscious scientists do.

As biology amply shows, nature is permeated with individual variation, some of which contributes to such phenomena as polymorphism and speciation. Humans are no different. It is plausible that tough, warlike individuals choose to follow a tough, warlike leader to colonize Island X, and gentle individuals colonize Island Y. Deep-seated temperamental traits are very frequently the basis for decision making, especially when one must select a group to spend one's life with. For this reason a possible founder effect should not be discarded.

Nevertheless, it is difficult to contest Diamond's argument that the results from a wide array of comparative studies weaken claims of genetic differences between populations. His reliance on Cavalli-Sforza's et al. (1994) monumental compendium of human gene frequencies worldwide gives strength to his conclusion.

Independent of the latter, however, his conclusion that chance environmental conditions dominate human behavior neglects a major variable--the human mind. A dominant feature of human behavior is that it is heavily influenced by cognitive processes--in fact, so much so that it is impossible to write a satisfactory description or history of any group of humans without concentrating on their beliefs, attitudes, perceptions, reason--all cognitions.

In searching for reasons to support his answer to Yali, Diamond becomes a historian. However, as professional historians (voir Collingwood, 1956) well know, "Unlike the natural scientist, the historian is not concerned with [natural events] as such at all. He is only concerned with those events which are the outward expression of thoughts, and is only concerned with these [events] as they express thoughts" (p. 217). Collingwood may be exaggerating: events are critical in writing history, but so are the reasons behind them. Historians must attempt to infer the cognitions of past individuals and the shared thoughts of their communities. Otherwise, they will end up writing histories of complex machines.

It has taken some time for scientists

interested in human evolution to realize that the mind is an important factor in natural selection. Today, a whole subdiscipline, evolutionary psychology, is emerging to address the problem of the evolution of the human mind (voir Pinker, 1997). This subdiscipline faces a very difficult task but is clear about what its task is--to study the evolution of cognitive operations and functions that allowed humans to solve particular adaptational problems. This task is just as important as enumerating sequences of behavioral events and environmental contingencies that characterize human history.

Diamond's construal of his evidence bypasses human decision making and problem solving as major forces in history. He concentrates on outside forces that drive humans to do what they do...as if they were puppets sans mind, sans stable individual differences. His final equation of environment and chance determining behavior lacks two essential factors--genes and mind. He has a good case for a necessary cause (in the creation of haves and have nots), but he is a long way from providing a sufficient cause. That cause will implicate genes and minds as well as environments.

As for Yali's question which propelled this book into existence, it would be interesting to hear his own answer to it. He must be aware of the nature of white people, so obtaining his views on black-white relations is certainly not irrelevant to our arrival at a better answer.

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Psychobiology of Personality

By **Marvin Zuckerman**. Cambridge University Press, 40 W. 20th St., New York, NY 10011 USA, 1991, \$39.95 (ppr.).

Reviewed by **George Kocan**, 27 W. 179 Galusha Rd., Warrenville, IL 60555 USA.

Consistency of Personality

Early in this book, in the second chapter, Zuckerman tackles a tricky problem for psychobiology. Without having a positive answer to this question, psychobiology as a serious research endeavor has no future. The question is, do personality traits really exist? There is a school of thought among psychologists, of the anthropological or sociological persuasion, which maintains that traits depend more on context than on constitutional features of the human organism.

Mischel (1968), for example, challenged the theory that personality is consistent over different situations. He found that "trait relevant" behaviors showed a correlation of .30 or less across situations. Accordingly, personality is an "illusion fostered by the similar appearances of persons and beliefs of observers" (p. 45). He argued that all personalities are idiosyncratic, since all persons have unique life experiences.

Shweder (1979a, 1979b) continued this argument, concluding that "method variance is

greater than person variance" (1979a, p. 259). Traits do exist but only within a specified context. He also challenged the idea of the childhood origins of personality. Shweder (1979a) reported, for example, that correlations between childhood and infancy tend to be poor.

Zuckerman takes issue with these "radical situationists." Without mentioning by name any Freudians or Jungians, Zuckerman distances himself from this imposing segment of modern psychology. "Psychologists," he observed, "tend to make conceptual generalizations about the behaviors they study without empirical justification" (p. 1). And later, he declares, "Without a foundation in biological science, psychology is doomed to an endless exchange of one set of faddish hypothetical constructs for another" (p. 427).

Zuckerman's book presents a wealth of data supporting the idea of consistency of traits over the lifetime of an individual. For instance, in Sweden hyperactivity, aggression and impulsivity manifested consistency between ages 13 and 27; the *r*'s ranged from .33 to .37. Extraversion, anxiety, and sociability show even greater consistency among observers and over similar intervals in the life span of the subject.

Models of Personality

Zuckerman critically reviews the major models germane to the subject of psychobiology: the "top down approach of Eysenck and the bottom up approach of Gray" (p. xi). Gray's work addresses the neuropsychology of anxiety, impulsivity, and aggressivity, all deemed major personality traits associated with fundamental biological systems. Eysenck's three-factor model features E, the introversion-extraversion dimension; N, neuroticism or emotional stability; and P, psychoticism involving "tough-minded, antisocial tendencies" at one end and "socialized humanness" at the other.

Much of Zuckerman's experimental research focuses upon the personality trait of sensation seeking. The research itself involves mostly pencil and paper tests of personality

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greater than person variance" (1979a, p. 259). Traits do exist but only within a specified context. He also challenged the idea of the childhood origins of personality. Shweder (1979a) reported, for example, that correlations between childhood and infancy tend to be poor.

Zuckerman takes issue with these "radical situationists." Without mentioning by name any Freudians or Jungians, Zuckerman distances himself from this imposing segment of modern psychology. "Psychologists," he observed, "tend to make conceptual generalizations about the behaviors they study without empirical justification" (p. 1). And later, he declares, "Without a foundation in biological science, psychology is doomed to an endless exchange of one set of faddish hypothetical constructs for another" (p. 427).

Zuckerman's book presents a wealth of data supporting the idea of consistency of traits over the lifetime of an individual. For instance, in Sweden hyperactivity, aggression and impulsivity manifested consistency between ages 13 and 27; the *r*'s ranged from .33 to .37. Extraversion, anxiety, and sociability show even greater consistency among observers and over similar intervals in the life span of the subject.

Models of Personality

Zuckerman critically reviews the major models germane to the subject of psychobiology: the "top down approach of Eysenck and the bottom up approach of Gray" (p. xi). Gray's work addresses the neuropsychology of anxiety, impulsivity, and aggressivity, all deemed major personality traits associated with fundamental biological systems. Eysenck's three-factor model features E, the introversion-extraversion dimension; N, neuroticism or emotional stability; and P, psychoticism involving "tough-minded, antisocial tendencies" at one end and "socialized humanness" at the other.

Much of Zuckerman's experimental research focuses upon the personality trait of sensation seeking. The research itself involves mostly pencil and paper tests of personality

such as Eysenck's Personality Inventory (EPI), Cattell's 16 Personality Factors, the Minnesota Multiphasic Personality Inventory (MMPI), and Zuckerman's own Sensation Seeking Scale (SSS).

Sensation seeking is associated with extraversion. The trait is also related to Eysenck's P dimension of psychoticism, which is marked by an insufficiency of behavioral inhibition (disinhibition). Sensation seeking has four components: Thrill and Adventure Seeking, Experience Seeking, Disinhibition, and Boredom Susceptibility, all measured by subtests of Zuckerman's SSS.

What makes Zuckerman's scale particularly interesting is the Disinhibition component, which appears to track the levels of plasma testosterone and to be related to aggression. Kreuz and Rose (1972) and Ehrenkranz et al. (1974), as well as follow-up studies, show a positive relationship between aggression and testosterone in criminals. Boys who had committed violent crimes exhibited higher testosterone levels than boys who had committed nonviolent crimes. Testosterone correlated positively with verbal and general aggression. Female prisoners who initiated violent attacks showed significantly higher levels of testosterone than those confined for defensive violent crimes or theft.

However, Zuckerman asserts that testosterone is related more to sensation seeking, sociability and sexual interest than to aggression and impulsivity. He cites reports that incarcerated delinquents with high scores on the General Sensation Seeking Scale had more fights, escape attempts and punishments than those with low scores. He notes, furthermore, that psychopaths score high on sensation seeking scales, and devotes an entire chapter to "antisocial personality and other disinhibitory disorders." Men tend to score more highly than women on tests of sensation seeking.

Attention Deficit Disorder (ADD)

Testosterone, therefore, is implicated in a set of behaviors that Zuckerman terms anti-social. These include hyperactivity and attention problems at one end and violent

criminal behavior at the other. Attention Deficit Disorder (ADD) is diagnosed mostly in boys. Zuckerman cites research indicating that a third of the persons who displayed hyperactivity and impulsivity while young became criminals as adults. In another study, hyperactive adolescents were arrested more often than controls: 50% vs. 10%.

Anti-Social Personality Disorder (APD)

Antisocial Personality Disorder (APD) has been called "mania without delusion" and "moral insanity," according to Zuckerman. APD is associated strongly with alcoholism and drug abuse. Sensation seeking tends to be very high in APD's. APD criminals are more dangerous and unpredictable than other prisoners. They make more escape attempts, experience more punishments and get into more fights. APD's tend to be low on anxiety and depression.

APD's often regard the school environment as a "jail." They frequently have trouble in school and are segregated into special education and behavioral disorders classes (Block, 1976).

Zuckerman addresses the question of the etiology of ADD and APD. Are they born different? Is there something wrong with their biochemistry? Were they brought up differently?

Perhaps the research question should be turned around. That is to say, why don't "normal" persons act out on their impulses? Don't normal people have a desire to take risks, attack those who frustrate them, ignore social conventions and the punishments for breaking them? Maybe it is the physiology or biochemistry of the "normal" person which is really impaired. Or perhaps the psychopath or the APD is really misclassified as abnormal.

An analogy may clarify this argument. The American Psychiatric Association has removed homosexuality from its list of disorders. Yet homosexuality is not adaptive, either biologically or psychologically. The homosexual is not likely to pass on his genes to the next generation; furthermore, homosexuals

themselves complain that their sexuality makes them targets for social criticism, rejection and persecution. Their lifestyle exposes them to and renders them vectors of numerous deadly diseases. Homosexuals are prone to suicide and early death. On the other hand, APD's tend to be low on anxiety and depression. Compared to an APD, it could be argued, it is homosexuality which excessively deviates from normality.

What is being proposed here, as an alternative to Zuckerman's analysis, is the theoretical existence of an optimally functioning human organism--the ADD/APD. Such an organism remains physiologically stable in the face of environmental challenges, for instance in lacking wild fluctuation in epinephrine and norepinephrine in response to stress, and showing normal EEG's. While awaiting trial, nonpsychopathic prisoners showed normal rises in epinephrine and norepinephrine, but "psychos" revealed little change. The ADD/APD appears to focus on goals without regard for personal risk. He seems to possess "a 'strong' nervous system that can function well in overstimulating stressful conditions such as battle" (p. 408). As Zuckerman puts it, "in a situation in which psychopaths expect a reward, based on prior experience, they become oblivious to cues for punishment or a change in contingencies" (p. 395).

In this context, then, Zuckerman's generalization makes sense: "Psychopaths show either an inability or unwillingness to restrain their behavior within the rules of society or accepted norms of social behavior" (p. 376). Of course! The real question is, what makes people conform to social norms? This is an answer which Zuckerman did not answer directly. The answer is, it seems, an unstable physiology which is likely to fail in providing endocrinological support to the pursuit of goals.

The above excursion into personality disorders should give the reader a sampling of the many interesting lines of research which Zuckerman discusses and analyzes. Omitted from this book review were Zuckerman's discussions of neurophysiology, behavioral genetics, psychopharmacology and learning theory.

Readability

This is an important book for the student of human behavior. It constitutes an heroic effort at integrating the diverse areas of information and theorizing. The undertaking succeeds to the extent that the research allows.

The breadth and depth of knowledge presented are responsible for both the strong and weak points of the book. Its strength lies in its thoroughness. The weakness rests in the difficulty the reader will encounter in keeping all these facts and mind and following the arguments.

Certainly the weakest section of the book is the index. It is most stingy, being only 8 pages long. It simply does not allow the reader to access efficiently the diverse amount of information contained in the book.

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ANNOUNCEMENTS

Job Opening in Personality Psychology

The Department of Psychology, Haverford College invites applications for a tenure-track, assistant professor position, beginning in the 1999-2000 academic year, in personality psychology, with emphasis on integrating biological perspectives into the study of personality and temperament. Possible research interests include but are not restricted to: individual differences in personality, temperament, or abilities; human emotion and motivation; and psychopathology. The five course per year teaching load will include courses selected from among the following: a half semester personality/temperament unit in an introductory course; a half semester unit on personality research methods in an intermediate research course, intermediate or advanced courses on topics related to the candidate's interests, and an introduction to psychological statistics. The successful candidate will be expected to conduct significant research engaging advanced undergraduates, for which teaching credit will be granted. Applications should include a curriculum vitae, explicit statements about research plans and teaching interests, and three letters of recommendation. For full consideration, send applications by November 20 to: Prof. Joseph Russo, Chairman, Psychology Search Committee, Haverford College, Haverford, PA 19041, USA. Haverford College is an equal opportunity/affirmative action employer. (submitted by Sid Perloe)

Social Networks Conference

The 19th International Sunbelt Social Network Conference will take place in Charleston, South Carolina, USA 18-21 February 1999. This is a major forum for social scientists, mathematicians, computer scientists, and others interested in social networks. Sponsors

are the International Network for Social Network Analysis (INSNA) and the Department of Sociology at the University of South Carolina. One of the session topics will be "Biological Networks." Abstracts of no more than 200 words should be submitted by e-mail or in an ASCII file on diskette for DOS Platforms and a hard copy to John Skvoretz, Dept. of Sociology, University of South Carolina, Columbia, SC 29208, USA, skvoretz-john@sc.edu, tel. 1-803-777-4968, or Katherine Faust, same address, faust@garnet.cla.sc.edu, tel. 1-803-777-6848. For further information, contact the INSNA web site: <http://www.heinz.cmu.edu/project/INSNA>. (submitted by Devon Brewer)

Conference on Animal Behaviour

The Winter Conference of the Association for the Study of Animal Behaviour will take place 3-4 December 1998 at the Zoological Society of London, U.K. Major theme is genetic analysis of behaviour. For information contact Dr. M. G. Ritchie, fax 44-1334-463600, e-mail mgr@st-andrews.ac.uk, Website <http://www.hbuk.co.uk/ap/asab/conferen.htm>.

Conference on Ethnicity and Altruism

A conference on "Welfare, Ethnicity, and Altruism: Bringing in Evolutionary Theory" is scheduled for 10-13 February 1999 in Bad Homburg (near Frankfurt a. M.), Germany. For information contact Dr. Frank Salter at franksalter@compuserve.com.

European Society for Evolutionary Biology

The seventh congress of the European Society for Evolutionary Biology will be held at the Universitat Autònoma de Barcelona, Spain 24-28 August 1999. Proposals for symposia should be sent to Dr. Lluís Serra, Departament de Genètica, Facultat de Biologia, Universitat de Barcelona, Av. Diagonal 645, 08071, Barcelona, Spain, fax 34-3-4110969, e-mail sympeseb@porthos.bio.ub.es.

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September 1998

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