

Human Ethology Bulletin

VOLUME 11, ISSUE 4

ISSN 0739-2036

DECEMBER 1996

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SOCIETY NEWS

Report on ISHE Business Meeting

By Karl Grammer, Secretary

At the business meeting of the Society at the Vienna congress a number of items were discussed. The Secretary gave a brief report on the finances of the Society and the number of members. Basically finances look good. The number of members is stable at 300 whose dues are current and 115 members who have lapsed memberships. (Reminder: Renew your membership, or you might miss the many interesting things that are coming up in ISHE.)

The President gave a report on ISHE's financial status as a "tax-exempt corporation." This problem has arisen with the transfer of the ISHE treasury from Europe to the US. A decision on this status is pending. For this reason the members voted in favor of a change in wording of Articles 2 and 3 of the Constitution, which now makes an explicit statement about ISHE being a not-for-profit organization.

We also discussed possible changes in the *Bulletin*, such as including short versions of empirical articles. No decisions were taken. The discussion touched on the issue of if and how ISHE might establish a formal relationship with a journal. The alternative of making a research journal out of the *Bulletin* was rejected.

In the near future several positions will become vacant in the Society. Nancy Segal

will remain Membership Chair for another year, and Glenn Weisfeld will stay on as *Bulletin* editor for the next two years. If you feel that you could assume one of these positions, contact the Secretary.

The Secretary gave a report on the status of the WWW Server. At the moment there are 300-900 hits a day, with a rising tendency. The possibility was discussed of giving each member a personal page. This would mean that we would have to reorganize the server, which could be done in the spring of 1997. If this is a possibility, we will announce it in the *Bulletin*. We will at least try to post a membership list, with the possibility of direct e-mail. The Secretary also pointed out that the ISHE server has a feature that is not used very often by the members. This is the "Forum," which is arguably the only forum remaining for unedited speech on evolutionary theories and issues. For more information check <http://evolution.humb.univie.ac.at/forum.html>.

The next ISHE biennial congress will take place in August 1998 at Simon Fraser University in Vancouver, British Columbia, Canada. It is being organized by the next President, Charles Crawford. The millenium congress will take place at the University of Salamanca, Spain and hosted by Francisco Abati.

Finally, issues regarding students of human ethology were discussed. The members agreed to encourage more students to study human ethology and that the Society should take the initiative in this endeavor. The Young Investigator Prize was a first step in this direction.

Election Results

Linda Mealey was elected Vice-President/President-Elect of ISHE. She will continue to serve as Chief Book Review Editor for the time being.

Charles Crawford assumes the Presidency, replacing Bill Charlesworth.

Barbara Fuller was re-elected Treasurer.

All are three-year terms beginning in January 1997.

Congratulations to all.

Editorial

On behalf of the Society, I wish to thank Bill Charlesworth for his service to ISHE as President for the last three years. He has been a very active President, performing many tasks unknown to most of the members but benefiting us greatly nevertheless.

Bill has represented ISHE to other groups and figures in the field. Whenever possible, he has consulted with other officers and members, to ensure that his views were representative of Society sentiment. He has kept things going, and doubtless has extended our influence. Bill's knowledge of German has helped keep our far-flung membership feeling united. His formal and informal leadership at our conventions has been greatly appreciated. In particular, he has alerted us to the decline in the use of naturalistic observation in recent years, and has advocated renewed use of this essential methodology.

One excellent example of Bill's dedication to ISHE and human ethology has been his tireless and patient efforts to gain us not-for-profit status. This has been extremely tedious and prolonged, but he has stuck with it.

A little-known provision in the Society allows former officers to remain involved in Board matters. Bill may have forgotten that his labors will not end with the new year. We will continue to harass him with requests for favors and

ARTICLE

INBREEDING AND MALE WARFARE: Gene Selection and Cultural Transmission

By Mark Nelissen, Behavioural Biology, University of Antwerp (RUCA), Groenenborgerlaan 171, B-2020 Antwerpen, Belgium.

In his excellent book Matt Ridley (1994) gives a very good exposition about the relation between the origin of warfare and the abduction of women, but gives no explanation with regard to selection pressure, adaptation and so on. Wilson and Sober (1994) claim that human behaviour can no longer be explained when the forces of group selection are ignored. Here, as a mental exercise, I want to present a hypothesis about the evolution of warfare and try to explain it without using group selection.

Evolution of Xenophilia

From paleontological, archeological, primatological, and anthropological data, we know that the ancestors of modern humans lived in well structured but isolated groups. Most probably these groups were restricted to some tens of individuals and were characterized by substantial individual recognition.

If reproduction was confined to the group, a lot of inbreeding resulted. Groups with too much inbreeding developed an impoverishment of their genetic constitution. Too many recessive detrimental alleles were brought together in homozygous combination, and thus expressed their phenotype. Moreover, too little variation in the gene pool resulted in reduced resistance to parasites. Groups with such a constitution were condemned to disappear. On the other hand, groups that evolved mechanisms against inbreeding could grow and split up into smaller groups, each of them getting the same anti-inbreeding mechanisms and thus also the possibility of growing, splitting up, dispersing, and so on. This could only happen if those mechanisms were transmitted from one generation to the next. This transmission can be explained by two complementary systems:

- The existence of a gene, or set of genes, coding for a phenotype that is expressed as sexual aversion to individuals with whom one grew up, generally brothers and sisters. Indeed, nowadays such a gene is considered to reduce incest, as suggested by Westermarck (1891);

- the existence of a gene, or set of genes, coding for a phenotype that is expressed as an increased sexual attraction to strange individuals, meaning individuals not belonging to the same group. A gene for such a xenophilic attraction can be called 'XEN'. The existence of such a gene is not unlikely: there is a genetic basis for sexual attraction released by the external stimuli of another individual, and outsiders can be distinguished from group members. If enough time is available, these factors could be linked genetically. If this phenotype leads to extra-group fertilizations, inbreeding can be countered by sufficient fresh genetic material being added to the group.

The first mechanism, the aversion gene, can work in any isolated group. This is not true for the second mechanism, the XEN: it only has power when contact is established with individuals of other isolated groups. Such contact requires one of two conditions: either the two groups must be close to each other at least temporarily, or there must be direct physical contact between individual males of one group and females of the other. The first condition can easily be fulfilled in a nomadic existence. For the second condition there are at least two possible solutions:

- Males and females can leave their own group and emigrate to another group, and find sex partners there. This kind of migration introduces genetic innovation and occurs in several monkeys and apes, whereby, depending on the species, young males or females leave the group in which they were born.
- Individuals of one group can kidnap sexual partners from another group. As we know from fossil material, most females were less muscular than most males, so the number of female abductors stealing male partners must have been small. However, it would not have been easy to kidnap females, because the males of the target group would have guarded their women intensively.

Abduction of Women by Coalitions of Men

Successful abductions by only one man are

very unlikely. Instead, abductions were probably performed by several males acting cooperatively. Such coalitions could perform raids on neighbouring groups to abduct one or more women.

The number of abducted women was probably smaller than the number of male raiders, so the question arises why men were prepared to contribute their services to other men in such a risky enterprise. There are two possible explanations, both assuming that all men joining the raid were XEN carriers:

The raiding men may have been relatives, which is likely in an isolated group: the inbreeding that was the selective pressure to seek new genetic material may have also caused the spread of XEN within the population. Close kinsmen may have engaged in cooperative raids out of kin altruism.

Alternatively, perhaps all of the men, each with the XEN genotype, discovered, accidentally or through insight, the advantages of cooperative abductions. This practice would then have spread by cultural transmission. In fact, this discovery may have been an offshoot of the evolution of cooperative hunting, which was also performed by early humans.

Various observations support the notion of a genetic basis for male cooperation in abducting females:

- The same behaviour can be found in other species. Coalitions of male chimpanzees sometimes conduct violent campaigns against males of another troop. Males and old females are killed, and young females are captured (Goodall, 1986).
- The Yanomamö Indians in Venezuela only make war on neighbouring tribes to capture women (Chagnon, 1986). This has been reported for other peoples too.
- In many cultures the number of female prisoners of war is much higher than would be expected on the basis of pure military considerations.

Thanks to these factors, XEN and abduction behaviour could have spread at the beginning in the original group. Later in groups that were split off. Spreading was made possible by inheritance of XEN,

and so of the strong motivation to copulate with strange women, and by cultural transmission of the formation of alliances among several men to perform raids on a strange group. However, group selection would not have been involved.

It should be remarked that XEN can only spread when the right circumstances for it exist, namely the practice of abduction behaviour that was developed by the group initially and later passed on. This is the so-called Baldwin effect. If a group was isolated for a long time from other groups, making abduction behaviour and its cultural transmission impossible, the behavior could have been reinvented in later generations and reinforced by selective benefit, as the inheritance of XEN would not have been stopped by isolation of the group.

Evolution of Xenophobia and Warfare

The further XEN was spread, the more abductions of women took place. This behavior may have led to the evolution of aggression toward raiding groups: xenophobia. Groups that did not resist raids of alien men would have suffered a shortage of reproductive capacity. Here again, a gene for xenophobia could only spread if it were expressed in multiple men and women who defended their group cooperatively. Group defence may have been developed by insight and passed on to later generations by cultural transmission. And again, we are not dealing with group selection but with natural selection of a gene (or set of genes) and cultural transmission.

Group defense would have been intensely aggressive. Inhibition of aggression, which is common in communities of relatives, would not have been advantageous. Alien groups would have constituted sources of competing genes.

During later periods of human evolution, isolated groups must have grown into larger entities, making isolation less severe. By exchanging a nomadic life for a sedentary, agricultural life, people founded settlements in places rich in natural resources. These favourable places also attracted other groups, leading to large, neighbouring settlements. As groups grew, the magnitude of raids and abductions grew and, by coevolution, of defence strategies. Large-scale warfare had been born.

Modern Conditions

The effects of XEN and wife stealing have not disappeared. XEN is still inherited, even though the selection pressure by which it could spread more than a million years ago has gone: in our technological world there are very few isolated groups. Societies overlap more and more, and there is much international migration. The danger of inbreeding has been greatly reduced. However, a gene does not disappear that easily.

The existence of XEN in our genotype can be confirmed by the fact that many men are sexually attracted to unfamiliar women. Today, these women are no longer to be found in neighbouring, isolated groups, but rather in other races. Indeed, television and travel prevent us from defining groups in the way our ancestors did, and so unfamiliar 'neighbours' are no longer recognized. The definition of being unfamiliar now refers to having a different racial identity. For instance, Asian women are often more attractive to white men than white women are. White slavery is a painful example of this phenomenon. Perhaps romances during foreign vacations are a less dramatic manifestation of XEN.

Raids and abductions of women are gone, as far as their original basis is concerned. The behaviour became unnecessary, and it was condemned by human sense, another product of natural selection and the actual motor of cultural evolution. However, warfare which evolved from the phenotype of XEN is not gone. It has been retained by cultural transmission. In fact, it was enhanced by additional benefits: warfare became a means to acquire things that increased reproductive potential, such as material goods, land, and knowledge. Warfare became an economic phenomenon. On top of that, warfare enabled the expression of the xenophobic gene. And so warfare also became an ethnic and racist phenomenon. The fact that material gains are merely a secondary function of warfare is indicated by conflicts between groups of apes that do not expand their territory or home range.

Evolution often leaves vestigial structures or behaviors that have lost their function. This holds for extra-group or stolen fertilizations such as occur in every war. These are useless as a mechanism to prevent

inbreeding, but their ubiquity indicates the existence of XEN in our genotype and the possibility that they acquired a new function. Rape could have become a weapon of war. The enemy's fitness was reduced by raping his women. Perhaps this behaviour can be eradicated by enlightening men everywhere about the dreadful emotional and psychological consequences of this war weapon.

Looking to the Future

Lastly, if we are looking for mechanisms that prevent inbreeding in isolated groups, should we not consider the possibility of cooperation between groups? Is it possible for groups A and B to at least temporarily unite into one group C both to increase their reproductive potential and to prevent inbreeding? This is very unlikely because of two objections:

- in group C inbreeding can arise again, albeit after a longer time than in A and B, as its critical mass is larger; but sooner or later a new fusion of C+D to form E would be necessary;
- men of group A have to yield their women to B and vice versa, which offers them no fitness gain. For both groups, increasing the number of women in the own group is advantageous, not sharing them.

This reasoning is valid for the men in a group. Women do not gain from raids and abductions of men, because they need be fertilized by only one man at a time. Women can, however, gain from cooperation between or fusion of groups. Increasing the number of men increases a woman's possibilities for mate choice, and hence her chance of finding better genes. Perhaps this underlies the universal fact that women are less warlike than men.

References

- Chagnon, N. (1988). Life histories, blood, revenge and warfare in a tribal population. *Science*, 239, 935-992.
- Goodall, J. (1986). *The Chimpanzees of Gombe*. Cambridge, Mass.: Harvard University Press.
- Ridley, Matt. (1994). *The Red Queen. Sex and the evolution of human nature*. New York: Penguin Books.

Westermarck, E. (1891). *The History of Human Marriage*. New York: Macmillan.

Wilson, D. S. & Sober, E. (1994). Reintroducing group selection to the human behavioral sciences. *Behavioral & Brain Sciences*, 17, 585-654.

KILLERS AND VICTIMS

Interview of Martin Daly and Margo Wilson on homicide

By Frans Roes

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Martin Daly and Margo Wilson worked for much of their careers with monkeys and mice, but nowadays they are mainly known for their research on homicide. Among their many publications is *Homicide* (Aldine de Gruyter, 1988). The following interview took place at the 1996 conference of the Human Behavior and Evolution Society in Evanston, Illinois, USA.

Why did you investigate murder?

MW: We had different ideas and hypotheses about interpersonal conflicts, for instance marital conflict, sexual conflict, parent-offspring conflict, and conflicts in a competitive setting too. We were trained in animal behaviour, and we have maybe an innate distrust of what people say.

About sexual conflict, a long time ago I thought, well, maybe we can go to shelters of battered women and talk to the women, but then we thought: No, who is using these facilities? It is a very biased sample. If you know before what way the bias is going, then you can deal with it, but we did not know.

One day we were moving from California to McMaster in Canada and came through Detroit, and we thought, my God, the murder capital of America*, why don't we use homicide? All cases get reported and investigated, so there is no bias in the sample.

We contacted the chief of police in Detroit; he had a Ph.D. in sociology and was very interested in research, and he said "Yes, come!" So we went there (the first time in our life we were in a police station), looked at the information he had, and realized we could do a ton of things.

In your book you give statistical data on victim-killer relationships, for instance how often men kill other men, how often parents kill offspring and the other way around, how often males kill females, females males, etc. You write in your book that you were amazed to discover that no one had ever compared an observed distribution of victim-killer relationships to what was expected in the light of any sort of theory of interpersonal conflict. Are you saying that, except for your own theory, there actually is no theory of homicide?

MD: Homicide research has been dominated by sociologists who are interested in what they call 'macro-social determinants of variation in gross homicide rates'. Another group of homicide researchers has been psychiatrists interested in 'abnormal perpetrators'. But there has been very little attention to the demography and epidemiology of homicide, that is, to questions like: "Within the married population, what are predictors of who is likely to kill whom?" I think it fair to say there has been essentially nothing, except for statements like: "People in bad circumstances might be more likely to kill their children".

So why are males more violent than females?

MW: Females don't have the same potential for reproductive success as males do. A woman can only have a child once every few years until menopause, so, in contrast to males, there is a finite possibility. Compared to a man there is no payoff for being dangerously competitive.

It's a zero-sum game among males, and competition among males for access to females, a form of sexual selection, has designed the male mind to be both more confrontational and dangerously risk-taking. Some men will have a lot of access to women, others will have very little, and this may have to do with attributes like how many resources they have, how powerful they are, and how good they are in keeping other men away from their females.

MD: The general notion that seems to apply

across the animal kingdom is that high variance in outcomes and high rewards for being a winner, and high probability for being a total loser, in combination select for higher risk competition tactics. Perhaps it is worth saying, in trying to explain this argument, that the woman who stays out of trouble and keeps her nose clean is likely to have successful pregnancies; a male who merely keeps out of trouble is likely to die celibate, and dying celibate is no better than dying young trying harder from a natural selection perspective.

You show that co-offenders are six times more likely to be blood relatives than victim-killers. Why is this something you would expect?

MD: The prevailing criminological model, insofar as there was an explicit one for who is likely to kill whom, is an opportunity model. Obviously you are not going to get into conflict with people you don't interact with. The more often and intensely you interact with them, the more opportunity for conflict to arise. We wanted to say, yes, obviously there is a lot of truth to that, but over and above that, given a certain level of opportunity or interaction, there is differential likelihood of conflictual versus cooperative motives to arise in relation to relatedness. Your kin are, to use the jargon of evolutionary theory, the vehicles of your fitness—your offspring the most obviously, but collateral kin as well. So we thought it would be interesting to investigate the victim-killer versus co-killer relationship. We don't know how much people interact with relatives and nonrelatives. But whatever that distribution is, if the opportunity to form cooperative alliances in dangerous endeavours is distributed according to interaction frequency, the opportunity to come into conflict is similarly distributed. By a pure opportunity-model these two things ought to be similar. But it doesn't work like that. People tend to collaborate with their relatives and they tend to do damage to nonrelatives.

Step-children seem to be a special case. You show that step-children are a hundred times more often fatally abused than genetic children.

MW: Parental investment is a valuable resource that you could allocate to different activities. It takes a lot of time and effort and self-sacrifice, so you would expect that selection

would have shaped both mothers and fathers in a biparental species to allocate that investment to own offspring, because otherwise you would be contributing to rivals. Children that are not yours, or not your kin, you would expect the psychology to be such that you would discriminate against them, and you would be more reluctant to invest in them. The emotional experience would be that perhaps you love them less.

A year or so ago we published a paper on qualitative characteristics that are different for when genetic parents kill their children versus stepparents. It looks like the emotional context where the genetic parent kills is in sort of sorrow, not in anger, while in stepparents it is in anger. The stepparent is more likely to assault to death, beat it to death, while in the genetic parent it is smothering or maybe it is shooting. Also, the genetic parent is more likely to kill self in the same episode, and the stepparent doesn't. So there are cues from the context of the homicide that sort of betray us that there is a very different background that is causal to this outcome. But killing is a rare outcome, the tip of the iceberg.

MD: You may have heard of the sexually selected infanticide phenomenon, the phenomenon of a new male who takes over a troop of langurs or pride of lions and more or less routinely kills off his predecessor's offspring. This terminates, from his perspective, the female's wasted investment in his predecessor's young and gets her on to breeding with him sooner. At a very distal level there is an analogy, but we do like to stress in this context that it seems pretty clear that there is not anything like a sexually selected infanticide adaptation in the human animal, certainly not like in a lion or a langur. Humans don't routinely do that anywhere. And for everyone who kills or dramatically mistreats a stepchild, there are many who make some degree of parental-like investment in the stepchild, and actually do it a favour.

Couldn't the behaviour of the stepchild be responsible for the aggression of the stepparent?

MW: That is something you would expect with older children, who are talking, walking and are annoying to the parent. But I know of nothing that would give you the expectation that a small infant treats a stepparent

differently than a genetic parent. And we found that the biggest risk is for the youngest, under three years.

In Holland when someone treats you badly, they sometimes call this a 'stiefmoederlijke behandeling'. That is, you are treated as badly as a stepmother supposedly treats you. Why a stepmother and not a stepfather?

MD: We looked at a sort of cross-cultural compendium of folklore, and a 'stiefmoederlijke behandeling' is apparently worldwide. These stories are everywhere, and stepmother stories are apparently much more prevalent than stepfather ones. When you think about stories, folktales and those sort of things, you have to ask: Why do these things exist? They have to fulfil the social purposes of the people who tell them, and they have to be interesting to the people who hear them. My take on cruel stepmother stories is that the people who tell them are genetic mothers; they tell children how awful stepmothers are, and the secondary message is: The worst thing that could possibly happen to you is for me to disappear and your father replace me.

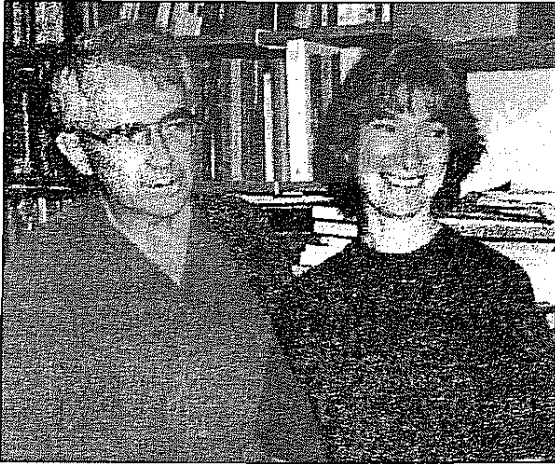
But why is the father not telling the same thing about stepfathers?

MD: He probably doesn't tell anything to the kids, but if he does, he is more likely to tell cruel stepfather stories. But whether stepmothers are more risky to kids, we don't have actual information about that. Our best estimate is that the risk is similar.

Nowadays very young children almost never live with stepmothers. The 'Snowwhite,' 'Cinderella' and cruel-stepmother stories probably originate from the times when stepmotherhood was not all that rare, because of high mortality of young mothers.

Why do husbands kill their wives, and why do wives kill their husbands?

MW: One situation that is associated with men using violence against their wives is that of sexual jealousy, that is, the man thinks or fears his woman is having an affair with another man. Another situation that may turn dangerous for the woman is when he thinks she intends to terminate the relationship. In both situations the man is at risk of losing control of his wife's reproductive capacity and is hence



losing ground in the reproductive competition between men. Men use violence and threats against their wives in an attempt to regain this control, and an extreme outcome is the man who kills his wife.

MD: The motivations for women who kill their men appear to be completely different. The dominant theme here is a struggle to resist coercion. Most commonly, women kill in self-defence against husbands who are abusive against them, their children, or both. Regardless of which spouse ends up dead, the husband is usually the instigator of violence.

When people think of biologists, they often imagine someone putting rings on the legs of birds, or looking through a microscope. Your proposal that the social sciences should consider themselves branches of biology probably sounds surprising to these people.

MW: We mean by the word biology what the dictionary says, which is the study of life. And since people in the social sciences say they are also studying 'life', then, of course, we are all in the same business. We have different specialisations [which have] to do with what aspects of life, or the kinds of perspectives we bring to bear, or the kinds of explanations we are interested in. People, including biologists, often misuse the word biology. When they should be talking about physiology or endocrinology or genetics, they should say that. Biologists sometimes say about a cultural phenomenon: "This is not my subject, because I am a biologist." But cultural phenomena are by definition biological phenomena.

* Detroit can no longer make this claim.--
Editor.

ESS MEETING

The European Sociobiological Society held its first US meeting 23-26 July 1996 at Alfred University, Alfred, New York. ISHE member Steve Peterson hosted. The conference theme was 'Sociobiology and Politics.' A total of 32 participants attended. The papers:

Nancy E. Aiken*, P. O. Box 27, Guysville, OH 45735 USA: *Power through art.*

Robin Allott*, 5 Fitzgerald Park, Seaford, E. Sussex BN25 1Ax, U.K.: *Toward the antheap the drugged society or?*

Howard Bloom, National Coalition of Independent Scholars, USA: *Group selection and the social sciences: a new evolutionary synthesis.*

Peter A. Corning*, Institute for the Study of Complex Systems, 119 Bryant St., Ste. 212, Palo Alto, CA 94301 USA: *Holistic Darwinism: synergy and the bioeconomics of evolution.*

Johan M. G. van der Dennen*, Center for Peace and Conflict Studies, University of Groningen, The Netherlands: *The politics of war and peace in preliterate societies.*

Valeri Dinev, Sofia University, Department of Philosophy, 15 Ruski Bd., 1000 Sofia, Bulgaria: *Revolution and violence.*

Vincent S. E. Falger*, Department of International Relations, University of Utrecht, The Netherlands: *Dangerous ideas in Dutch politics: evolutionary theory as a political issue in The Netherlands.*

James H. Fetzer, Dept. of Philosophy, University of Minnesota, Duluth, MN 55812 USA: *Group selection and the evolution of culture.*

Pierre Jaisson, LEEC, URA CNRS 2214, Université Paris-Nord, 93430 Villetaneuse, France: *'Nouvelle droite' and 'Neo-Lamarckisme': The French flavour of the debate.*

Timothy Z. Keith, Division of School Psychology, Alfred University, Alfred, NY, USA: *Confirmatory factory analysis and validation of the DAS: issues in assessing intellectual ability.*

Ada Lampert, Ruppin Institute, Israel: *Evolution and development of feminine and masculine values in Israeli kibbutz children.*

Kevin MacDonald*, Dept. of Psychology, California State University, Long Beach, CA 90840 USA: *Creating evolutionarily significant groups: Judaism as a case study.*

Edward Miller, *Evolutionary explanations for racial differences in intelligence.*

Alexander V. Oleskin, Section for Biopolitics and Biosociology, Biology Dept., Moscow State University, Moscow 119899, Russia: *Non-hierarchical network social structures from a biopolitical perspective.*

Patrick Pretore, University of Auckland, Auckland, New Zealand: *Levels of analysis and biological theory.*

J. Philippe Rushton*, Dept. of Psychology, University of Western Ontario, London, Ontario N6A 5C2, Canada: *The American dilemma is an international dilemma.*

Frank Salter*, Max Planck Research Center for Human Ethology, D-82346 Andechs, Germany: *Sex differences in cross-racial mate choice in the U.S.: an evolutionary model.*

— and Kirsten B. Kruck: *Family resemblance and mother's facial beauty.*

Ullica Segerstråle*, Dept. of Social Sciences, Illinois Institute of Technology, Chicago, IL 60616 USA: *Truth and consequences in the sociobiology debate and beyond.*

Irwin Silverman* and Danielle Case, York University, 4700 Keele St., Toronto, Ontario M3J 1P3, Canada: *Ethnocentrism vs. pragmatism in the conduct of human affairs.*

David Smillie*, Dept. of Zoology, Duke University, Durham, NC 27708 USA: *Group processes and human evolution: the various roles of social forms.*

Dorothy Tennov*, RD 9, Box 251, Millsboro, DE 19966 USA: *The public image of sociobiology and evolution.*

*ISHE member; additional address information may be found in the Membership Directory.

Report on Ciba Foundation Conference

By Linda Mealey

The Ciba Foundation sponsored its 208th conference 29-31 October 1996 in London: Characterizing Psychological Adaptations. The foundation supports cutting-edge science by funding bursaries, sabbatical research, publications, and several small, by-invitation-only, annual international meetings. In this instance, 27 psychologists and animal behaviorists were invited to discuss current issues surrounding the philosophy and methodology of evolutionary psychology.

Fifteen talks were presented: **Randy Thornhill** on how to identify an adaptation, **Roger Shepard** on perceptual mechanisms, **Anders Møller** on the meaning of honest signalling, **Alex Kacelnik** on optimal decision-making, **Geoffrey Miller** on models of sexual selection, **Marc Hauser** on theory of mind in nonhuman primates, **Leda Cosmides** on social cognition, **Steven Pinker** on language, **David Sherry** on cross-species comparisons, **Steve Gaulin** on cross-cultural comparisons, **Steve Gangestad** on individual differences, **Alan Rogers** on time preference, **Margo Wilson** on kin relations, **Mike Beecher** on song learning in birds, and **John Tooby** on models of coalitions and friendship. After each talk there was an extended period of discussion, during which it was hoped that some of the philosophical and methodological issues currently being debated would be addressed.

In my opinion, while the presentations and discussions were interesting in their own right, they did not really advance debate over significant issues. This is partly because the participants had been specifically selected by the organizer, Ciba Deputy Directory Dr. Gregory Bock, so that they would get along. While this tactic certainly resulted in an openness and lack of hostility that most of us have come to appreciate, it also resulted in a somewhat homogeneous set of perspectives, undercutting the possibilities for serious disagreement. I also believe that the participants themselves were somewhat disinclined to debate issues. This was, I think,

unfortunate, in that ideas and data can be presented at professional meetings (such as ISHE, ESS, and HBES), whereas debates cannot usually be successfully conducted in large forums. In this regard the Ciba conference was more a mini-meeting than a special forum for debate.

I think the reticence of the participants to address some of the more serious disputes amongst evolution-minded thinkers stemmed from a truly unpleasant history of criticism from outside. But the mutual support that was provided, however needed it may have been, did not solve any problems or answer any questions. This became clear at the press conference at the end of the meeting when, after selected participants had made their public statements, one indignant reporter asked: "What? You mean you haven't made any important advancements? You all just came here to chat?"

While clearly valuable for the participants, it is not yet clear how useful this conference will prove to have been for furthering research in, or public understanding of, the field. Edited transcripts of the presentations and discussions will appear in a book to be published by John Wiley in 1997; perhaps this will be the most important product of the conference.

Report on Violence Conference

A "Conference on Ethological and Developmental Approaches to Male Violence" took place at Wayne State University, Detroit, USA on 15 November 1996. It was sponsored by a grant to the University's Center for Peace and Conflict Studies from the Hewlett Foundation, and was open to the public. The Center is headed by Frederick Pearson, who did most of the planning of the event. The goal of the conference was to highlight and discuss some of the outstanding biological and developmental research on male violence appearing in the literature, with a view toward the ultimate integration of this interdisciplinary research. The proceedings may be published in some form eventually. A recent book features similar approaches to the same topic, *Male Violence*

(Routledge, 1994), edited by ISHE member John Archer. The presentations at this day-long conference were:

Bryan Vila (Dept. of Criminology, Law & Society, University of California, Irvine, CA 92697 USA) argued from evolutionary ecological theory that a balanced approach to male criminality was desirable. Both preventive, nurturant approaches and punitive, criminological measures are needed. Advocates of these two approaches tend to be political adversaries in the U.S., however, with the deterrence camp often holding sway over advocates of child welfare and educational measures. See Vila's article "Human nature and crime control" in a forthcoming issue of *Politics and the Life Sciences*.

C. Ray Jeffrey (School of Criminology, Florida State University, Tallahassee, FL 32306 USA) pointed out the importance of environmental design factors in crime prevention, as well as the concentration of criminality in a small proportion of repeat offenders. Certain architectural features of urban environments, such as high-rise public housing, increase criminal behavior. See Jeffrey's book *Criminology, an Interdisciplinary Approach*.

ISHE member Alan Mazur (Maxwell School, Syracuse University, Syracuse, NY 113244 USA) reviewed research on testosterone levels and various morphological and behavioral measures. Since anticipating a competitive situation increases testosterone, the "culture of honor" environment may help explain young black males' higher levels. Also, as men approach their wedding dates, testosterone declines, consistent with a fall in mate competition. But as men near divorce, testosterone rises. Testosterone is higher in divorced than married men, especially right after the divorce, consistent with the notion that confrontation with the wife/ex-wife is responsible. For a related article, see Mazur's Biosocial models of deviant behavior among army veterans, *Biological Psychology*, 1995, 41, 271-293.

George R. Fleming (Dept. of Community Medicine, Wayne State University, Detroit, MI 48202 USA) reported on an emergency room series of repeat victims of violence. In this rather common pattern, these victims often act as perpetrators themselves, and so might be

counseled in order to change their risky behavior. See Fleming's Manchild in the technological land, *Ebony Man*, 1987, 2, 12-20.

Robin J. H. Russell (Dept. of Psychology, University of London Goldsmiths' College, London SE14 6NW, U. K.) stated that there is no sex difference in frequency of physical spousal abuse, but wives are more likely to be retaliating and to be hospitalized. Risk factors include husband's alcoholism and sexual jealousy, wife's unattractiveness, and couple's low scores on partnership but high scores on love. Newer relationships between younger couples, such as cohabitators, are at risk. Incidentally, jealousy was not correlated with actual infidelity as reported by either spouse. See Russell and Wells, Predictors of happiness in married couples, *Personality and Individual Differences*, 1994, 17, 313-321.

Adrian Raine (Dept. of Psychology, University of Southern California, Los Angeles, CA 90089 USA) reported that the combination (only) of perinatal problems and maternal rejection was significantly associated with violence of U.S. males at age 18. Also, violent offenders pleading incompetence to stand trial or insanity tend to have low glucose metabolism in lateral and medial prefrontal cortex. This may be related to violent individuals' somewhat low levels of sympathetic arousal, although other explanations are possible. See Raine et al., *Biosocial Bases of Violence*, Plenum, in press.

Patrick Tolan (Institute for Juvenile Research, University of Illinois, 907 S. Wolcott, Chicago, IL 60680 USA) summarized data indicating that violent (but not nonviolent delinquent) urban youths are often poorly monitored and treated harshly by parents. Positive family factors can mitigate the effect of exposure to violence. Community political economy and social resources predict neighborhood safety and functioning, which then predict aggression; however, family factors do not significantly moderate risk due to stress in inner city U.S. neighborhoods. Relationship violence is tied mainly to family and parental characteristics, whereas predatory violence reflects neighborhood traits. See Preventing serious antisocial behavior in inner-city children: an empirically based family prevention program. *Family Relations*, in press.

ISHE member Donald M. Aytch (Dept. of

Psychology, University of Detroit Mercy, 8200 W. Outer Dr., Detroit, MI 48219 USA) described retrospective research based on Bowlby's suggestion that maternal rejection leads to criminality. Among felons, childhood maternal punitiveness and paternal neglect were associated with anxious attachment. Anxious (particularly ambivalent) attachment was correlated with number of felony convictions and disdain for the law. Anxious attachment is known to predict unstable romantic relationships and, presumably, low consanguinity with siblings in the next generation. In this cross-race sample of felons, having half siblings was common, and was associated with maternal punitiveness. Thus, low consanguinity may lead to maternal punitiveness, paternal neglect, and hence anxious attachment, which in turn may predispose to criminality and unstable romances, and transmission of the pattern across generations. See Weisfeld and Aytch, Biological factors in family violence, *Michigan Family Review*, 1996, 2, 25-39.

Editor's Note: A slightly different version of this report will appear in the fledgling Politics and the Life Sciences newsletter.

Harry Frank Guggenheim Foundation

This foundation provides support for "research for understanding and reducing violence, aggression and dominance." Although it now funds research in a wider range of fields than formerly, it still is receptive to ethological approaches. The Foundation expressly recognizes that the "[c]auses of violence are both innate and contextual" (1995 Report of the Foundation, p. 6).

Research priorities include youth, media, family, crime, biology, war and peace, terrorism, and religion, ethnicity, nationalism. Applications are evaluated by a neuroscientist, a political scientist, an historian, and two anthropologists. Some awards have been made to non-Americans.

Most grants are in the range of \$15,000 to \$30,000 per year, for one to three years.

Contributions are not made to institutional overhead. Applications are due 1 August of each year; decisions are announced 1 December. One-time fellowships are also granted to students completing their doctoral dissertations. These pay \$10,000. Applications are due 1 February for the following academic year, and decisions are announced in June. For additional information, see the Announcements in the December 1995 *Bulletin*, or telephone the Foundation at 1-212-644-4907, fax 1-212-644-5110.

Here are some projects, recently funded by the Foundation, that may be of interest:

A. Susan Clarke, University of Wisconsin-Madison: *Effects of prenatal stress on social competence and aggressive behavior in young rhesus monkeys*. Female rhesus monkeys were stressed by exposure to mild noise in mid-pregnancy. Their offspring subsequently exhibited less prosocial behavior and more aggression than controls. Effects persisted into adolescence.

Robert Emery, University of Virginia: *Mothers' aggression before marriage and children's aggression after divorce*. Delinquent adolescents were nearly twice as likely to divorce ten years after reporting their aggression than controls. Their children subsequently were almost twice as likely to be aggressive if their parents had divorced. Parental divorce, but not parents' history of aggression, raised children's risk of aggression.

Robert Jackall, Williams College: *Drug-related violence in Washington Heights, New York City*. In this major drug trafficking center, drug-related violence was largely trade-related, and not the product of drug use. A symbiotic economic relationship was found to exist between illegal and legal business networks. Drug traffic and violence became entrenched within the community, creating an institutional dependency on its economic benefits. Young drug traffickers often developed a desperation and fatalism that led to the escalation of violence.

Michael Lewis and Margaret W. Sullivan, University of Medicine and Dentistry of New Jersey: *Development and socialization of anger in human infants*. The earliest anger responses

in infancy were evoked by violation of an expected outcome. Infants who expressed anger under these circumstances at four months were subsequently in better control of their anger by two years of age than were those who did not express anger.

Michael McGuire, University of California at Los Angeles: *A model of aggressive, violent and alternative behavior among individuals, and Social context, serotonin responsivity, and aggression in vervet monkeys*. Increasing CNS serotonin activity reduces aggressive behavior, increases affiliative behavior, and increases tolerance of the behavior of other animals. Increasing CNS norepinephrine activity increases aggressive activity but not dominance. Dominant animals are less aggressive than subordinates. The smaller the group, the more aggression. Dominance hierarchies reduce the frequency of aggression. All of these findings generalize to humans. In addition, among vervets, reducing the number of females decreases male-male aggression. An indication of the complexity of aggression is provided by these observations: Increasing serotonin reduces aggression in the treated animal and also reduces its aggressive signalling. However, the latter may result in the animal being attacked by others. Enlarging the group does reduce aggression.

Xandra Breakefield, Massachusetts General Hospital: *Possible association between deficiency of monoamine oxidase type A and episodic violent behavior*. Previous work in The Netherlands had discovered a family in which many males possessed this metabolic condition. In the present study 400 aggressive men were screened for it. No evidence of MAO-A deficiency was found.

ISHE Web Site

The ISHE electronic bulletin board is on the World Wide Web at <http://evolution.humb.univie.ac.at>. It is operated by our Secretary, Karl Grammer, e-mail karl/grammer@univie.ac.at.

BOOK REVIEWS

Emotional Development: The Organization of Emotional Life in the Early Years

By L. Alan Sroufe. Cambridge University Press, 40 West 20th St., New York, NY, 10011-4211, USA, 1996, \$49.95 (hdbk.).

Reviewed by Peter LaFreniere, Department of Psychology, University of Maine, Orono, ME 04469 USA (Peterlaf@Maine.Maine.Edu).

Over the past two decades there has been a surging interest among social and behavioral scientists in the study of emotion, a topic long neglected beginning with the rise of logical positivism in the early part of this century. Human ethologists and primatologists, mindful of Darwin's seminal work on the expression of emotions, were somewhat exempt from this general influence and more aware of the critical functions of emotions in promoting biological fitness. Indeed this counterpoint provided one of the sources for the current renaissance of interest in the study of emotions. In developmental psychology, an ethological perspective on attachment provided a fresh alternative to behaviorist reductionism, which had considerable difficulty in accounting for the universality and dynamic complexity of this behavioral system. After the work of Harlow, Bowlby and Ainsworth, the behaviorist account of attachment was in full retreat. By the 1970's, the tables were turned. As with the cognitive revolution that preceded it, it was no longer "more scientific" to write about human behavior as if emotions did not exist. Ignoring the vital functions of the emotions in organizing behavior and development, and the importance of emotional bonds reflective of our primate heritage, was no longer paradigmatic, even for behaviorists. During the period from 1976 to 1996 there has been a 300% increase in the number of publications using emotion as a key word, with approximately 500 books and articles currently published per year on some aspect of emotion.

Not all of this is worth reading. However, one work that I have recently read is not to be missed. L. Alan Sroufe's *Emotional Development* provides a summation of some of

the most important work published on the topic over the past 25 years, including his own influential body of work. Arguing with developmentalists that a complete developmental viewpoint embraces each of Tinbergen's four levels of analysis, Sroufe provides a mature account of the emergence of human emotions and the patterns of their regulation in social life, the former emphasizing normative development and the latter stressing individual differences. Echoing Tinbergen (and Sroufe), I would argue to human ethologists that a complete ethological perspective entails a sophisticated understanding of ontogeny. Viewing evolution as a series of progressive or punctuated transformations of the adult phenotype across historical time misses vital information about the process of human adaptation across the life span, particularly the "how" question concerning development of the adult form. In this sense the concepts of development and adaptation are necessary to one another and neither can be understood fully in isolation.

Sroufe's book is organized in three parts dealing with (1) the nature of emotional development, (2) the unfolding of emotions, and (3) emotional development and individual adaptation. The book jacket states that it is written to "appeal to professors, graduate students, and clinicians who study developmental, cognitive, and social psychology." Ethologists should be prepared to decenter; you will find no speculations on inclusive fitness or mathematical models of parent-offspring conflict. Absent as well are well-worn nature-nurture disputes regarding the universality or relativity of facial expressions. Instead, you will find precisely detailed descriptions of the emergence of fundamental emotions (particularly joy, fear, and anger) in infancy and the self-conscious emotions (pride, shame, guilt) in early childhood, with an account of their specific and immediate functions during each developmental period. From these details based on painstaking observational research, the author explores the nature of development itself, elaborating his central themes concerning the biological unity of development and the unfolding of the complex from the simple:

[W]hat emerges derives in a logical, though complex way from what was present before as

a precursor. The "emergent" is qualitatively different from the precursor and at a new level of complexity; yet the precursor serves as a prototype for the emergent, embodying an important core essence of that which is to come (p. 235).

Throughout the book the reader is compelled to deal with the twin aspects of development: normative patterns of growth, and the emergence and consolidation of individual differences. Sroufe argues that these should be viewed as complementary parts of the whole of emotional development, and that individual differences should be defined in terms of deviations in normative processes. Thus, an understanding of emotional development also serves as an important foundation for the study of individual adaptation and psychopathology.

Those readers who have already tuned into developmental psychology will be on familiar ground, as Sroufe's newest offering is largely a synthesis of previous pieces of this general thesis introduced in discrete articles during his 25 years of research at Minnesota's Institute of Child Development. In Part 1 he introduces a developmental perspective and discusses the major conceptual and methodological issues underlying the study of emotion. Defining emotion as "a subjective reaction to a salient event, characterized by physiological, experiential, and overt behavioral change" (p. 15), Sroufe lays the groundwork for an integrative discussion of emotion in relation to neurological, cognitive and social development. In his dynamic tension model, a dynamic threshold range for affective response is hypothesized in which tension is viewed as a natural by-product of actively engaging the environment. The critical feature of the tension model is that thresholds for inciting a given emotional response are not stationary but vary as a function of the meaning of an event in context, which changes with age. This model differs from arousal models by distinguishing between physically produced arousal and arousal that has a psychological basis, being dependent on evaluation of the meaning of an event.

In Part 2 Sroufe develops these ideas further in his well-known organizational perspective, illustrating the tension model by detailed discussions of the ontogeny of smiling

and laughter, and the development of fear. Although Parts 1 and 2, on general development, are interesting in their own right, they set the stage for the discussion of individual adaptation that is set forth in Part 3. Consistent with a Darwinian emphasis on discrete, universal emotions, Sroufe's differentiation theory lays the groundwork for the analysis of adaptation in the final section. In his view, an understanding of the developmental processes underlying the emerging affect systems is directly relevant to the analysis of individual differences in emotional development. Without this background of general theory, there would be no guide as to which phenomena require careful scrutiny in the assessment of individual differences. Thus, empirical assessments utilize developmental theory for pinpointing the crucial qualitative turning points that will provide markers for the current developmental/adaptational status of the infant, as well as predictors for the future.

The chapters in Part 3 are organized chronologically and provide an exciting description of an organizational perspective of the development of the self. The transformation of a physiological organism that maintains an organized state solely in the context of the regulation provided by the caregiver to a young child with the capacity for self-regulation is the gist of this fascinating story. Citing authors as diverse as Kierkegaard, Vygotsky, Mahler, Piaget and Darwin, Sroufe weaves together a coherent tapestry emphasizing this central point of human development, and integrates it with the best work of our present generation of developmental scientists. But no paragraph will capture this part of the story, so I will leave the task of acquainting yourself with a developmentalist's contribution to human ethology to you.

A general feature of this book that I found most appealing was the author's ability to draw upon a long and active career at the forefront of this subfield. This quality, I believe, sets this work apart from other books that have been recently published on the same general topic. Critical of the short memory span of a discipline constantly searching for novelty, moving from buzzword to buzzword, Sroufe notes in the preface that

even current research in emotional development seems at times to move along without sufficient regard for the solid work of the past. Currently, a major focus is emotional regulation. But this work too rarely makes contact with the descriptive work on the development of the specific emotions, in part because much of this work is now decades old. It is important to bring forward the lessons of the past and at the same time redraw them with an eye on current problems and current understanding (p. xii).

This book accomplishes just that. It is well suited for advanced scholars who wish to keep a sharp edge on their expertise. But it is even more useful for the young scholar in order to build a broad, well balanced perspective as an antidote to the cycles of fad and fashion that plague the social sciences and ultimately render them theoretically barren and non-cumulative of knowledge.

Feral Children and Clever Animals

By Douglas Candland, Oxford University Press, 198 Madison Ave., New York, NY 10016 USA, 1993 (hdbk.), 1994 (ppr., \$23.95).

Reviewed by Linda Mealey, Psychology Department, University of Queensland, Brisbane 4072 Australia

From the title I wonder, "Is this a book about psychology or ethology or both?" As I read, I realize that it is less either of those than it is a historical account and philosophical critique of the human frailty surrounding our efforts to understand the minds of others.

In Part 1 of 5, Candland recounts the stories of one so-called "closet child" (Kaspar Hauser, who was first brought to the attention of authorities in 1828, when he was approximately 16 years old), and four feral children (Peter, found in 1724 at the approximate age of 12; Victor, the famed "Wild Boy of Aveyron", found in 1799 at approximately age 14; and Kamala and

Amala, the "wolf children" discovered in 1920 at ages approximately 8 and 2). To me, this was the most interesting part of the book, as I had always wondered what was fact and what fiction about these stories. Candland has taken great effort to track down original sources and present them without elaboration. "I tell the stories, as much as practical," he says, "in the words of those who knew the children, for only the exact tone of the times can help us appreciate the subtle expression that says more than the author intends to be known" (p. 15).

Despite my intense interest in the "outcomes" of these well-told stories, Candland's goal is not to report the "results" of the investigations of such children. He says in the introduction:

I examine not so much the dramatic aspects of the children, but why we human beings selected these forms of life for study in the expectation of reaching an understanding of what, precisely, inheritance gives and what society and socialization contribute. These children would be oddities in any age, but different times would want to know different things from them" (pp. 3f).

Candland presents the case histories in chronological order, restricting his analysis to a deconstruction of the assumptions and methods of the various investigators/teachers at different times in history. One of his reasons for picking these particular cases, I suppose, is that they cover a 200-year period spanning four approximately 50-year intervals; thus, he is able to tell his own tale about the evolution of the scientific approach to study of mind.

In Part 2, Candland presents what he calls the "four psychologies," or paradigms, used to study the mind: the "Mental Ladder" of the 18th and 19th centuries, then psychoanalysis, behaviorism, and phenomenology, wherein he includes ethology. In this section Candland goes into the details of two more recent case studies (Freud's "Little Hans" and Oskar Pfungst's "Clever Hans") in order to demonstrate "how the observer comes to be part of the observation, just as [the observers] found themselves somehow changed by their experiences with the subject of their investigations" (p.74). This part of the book I found uninteresting: 120 pages is barely

sufficient to document the cases, let alone provide a thorough analysis of either psychoanalysis or behaviorism. Whether one has prior familiarity with the cases or not, one comes away feeling that the author has provided only his own, perhaps enlightened but perhaps arguable, interpretation of the beliefs and intentions of the observers (Freud and Pfungst). Indeed, as the book progressed, I progressively lost interest as the author became freer with his criticism and seeming intolerance of what were reasonable - even extraordinarily insightful - ideas for their time.

In Parts 3 and 4, Candland examines the unfolding of human study of the ape mind over the past century. Except for a historical replay of the four-month wilderness experience of Richard Garner in 1893, he restricts himself to laboratory studies. This is a significant error of omission, as Candland's analyses of the mental testing of apes and, especially, attempts to teach them spoken or gestural language lead him to conclusions about the investigators, their methods, and their assumptions that simply do not generalize to those studying apes in the wild. Candland seems to think that all investigators of the ape mind have tried to learn about that mind by testing what can be put into it (via learning) rather than by observing what comes out of it (in the wild, in the form of naturalistic behavior). Based on this (apparently foregone) conclusion, he criticizes research and researchers as only an outsider might do:

The Cemetery of Misinformation is replete with experiments and experimenters whose arrogance has lead [sic] them to believe that they, not the animal, are in control of the associations being made (p. 340).

Part 5 consists of a single 15-page chapter in which Candland summarizes his major points. Graciously, he refrains from too much further criticism, and instead lists a series of questions for thought. They are good questions. But in a kind of turnabout-is-fair-play, I might point out that the kinds of questions Candland says we should be asking are severely constrained by the limitations, omissions and biases of his own research. Perhaps he would appreciate this irony; I do not know.

Overall, Candland's critical approach, while a bit arrogant in itself, is not thereby inaccurate, and indeed is sometimes quite informative. At the beginning of the book, while he was discussing feral children, I was reminded of the US public television NOVA episode "The Wild Child" about "Genie", the girl who was discovered at age 12. Like Candland's book, the episode was designed not so much as a report on the "outcome" of the story and what it tells us about the nature and nurture of the mind. Instead, like the book, the program dealt with the scientific, philosophical, political, and ethical controversies surrounding Genie's "testing". While every Introductory Psychology student has read about Genie's role in furthering our understanding of language and critical periods, until viewing the documentary, I had no idea of the extent of psychological and even physical abuse that Genie experienced in the hands of the scientists and social workers into whose care she was entrusted. Even more appalling, once funding for research ran out, Genie, like the feral children before her, was relegated to an institution, where she now resides, essentially ignored and unwanted.

As I write this, I realize, too, that the famous signing (and typing) apes about which we all have heard are, too, mostly languishing ignored and unwanted in "old chimps' homes" as they get too difficult to handle (at approximately age twenty in what can be as long as a fifty-year lifespan) and as research funds run out. And whereas those scientists who have lived with apes and observed them in the wild have supported their right to life and liberty even at the cost of their own lives (in the case of Dian Fossey), the rest of us have allowed them to reach the brink of extinction before we have even begun to really know who they are.

Candland's book, while tedious and condescending in some places, is a good source book, particularly for those who want an objective review of the history of feral children or of Clever Hans. It also provides a good think.

The Thinking Ape: Evolutionary Origins of Intelligence

By R. Byrne. Oxford: Oxford University Press, 198 Madison Ave., New York, NY 10016 USA, 1995, £13.50.

Reviewed by Maxwell Roberts, Department of Psychology, University of Essex, Colchester CO4 3SQ, U. K.

The study of animal intelligence is a minefield; definitions are difficult and evidence elusive. Nonetheless any findings are potentially important, not only for understanding animal behaviour but also because of the insights that they may give into human intelligence and how it evolved. This ambitious text attempts all of these, and is quite breathtaking in the range of material that it brings together in a relatively small space. The approach taken is cognitive; the author is trying to decide which mental processes must be inferred in order to understand animal behaviour, and whether these resemble human cognitive processes. Despite the title, the material draws upon many examples of mammalian and avian behaviour.

The book is arranged in four parts. The first sets the scene by discussing the limitations of what fossil evidence can tell us about behaviour and then goes on to explain cladistics and the evolutionary history of primates. The first part ends with a discussion on the nature of intelligence.

The second part surveys recent developments in our understanding of animal learning and imitative behaviour.

The third part discusses animal problem solving; the overall finding being that insightful, intentional, goal-directed activity such as the potential to use language, make and use tools, and deceive or co-operate with others is largely confined to the closest relatives of humans; evidence of this elsewhere is patchy, and practically non-existent in non-primates. Furthermore, for the great apes, the ability to manipulate and interpret the behaviour of other members of the same group (whether the outcome is co-operation or deception) – Machiavellian intelligence – appears to be at least as important to their day-to-day existence as the ability to use tools and to gather food.

The fourth part of the book draws these various strands together in order to decide whether the need for Machiavellian intelligence or the need to find food was the evolutionary driving force that led ultimately to human intelligence. Correlations between the ratio of neocortex size to the rest of the brain and various measures of behavioural complexity such as size of social group and foraging range are used to resolve the issue. These pretty well conclusively point to the need for Machiavellian intelligence as the primary driving force (although since human data are not used for any of the correlations, it would be unwise to extrapolate these results to our species). The author ends by extrapolating what is known about the current cognitive abilities of primates back to their ancestors. He concludes that the basic component processes of human cognition were present in the ancestors of great apes and were hence fine-tuned (rather than created) after the split between the human line and the chimpanzee line of ancestry.

Much of the discussion is very good indeed. The chapters discussing social intelligence, intentionality, and deception are particularly fine. However, probably inevitably given the breadth of material drawn upon, the coverage of some topics was rather weak.

To begin with, it would have paid dividends to have devoted much more space to the discussion of the nature of intelligence because many later arguments depend upon this. As things stand, it is never completely clear exactly which behaviour is intelligent and which is not. One problem is that Byrne wishes to use a unitary model of intelligence (it is not clear whether this is the best model even for humans) and then rank order species on this scale (e.g., p. 52). Later, he suggests that intelligent behaviour in humans is largely a matter of being in possession of relevant domain-specific knowledge despite the fact that knowledge-based accounts of human skilled behaviour deny the importance of a unitary intelligence. Another problem is that, given that different species are genetically channelled to learn different things through different sensory modalities with different motivators, a single ranking would seem to be impossible. Byrne thus excludes channelled learning abilities from the domain of intelligent behaviour, but this can create its own problems in that humans' ability to learn language is almost certainly genetically channelled.

The two unhappiest chapters are those which cover thought and language. The chapter on thinking is not helped by the fact that the definition of thought appears to vary from paragraph to paragraph. Moreover, the argument that computers and human brains (and also possibly other primate brains) are equivalent because they all manipulate symbols oversimplifies one of the most heated debates in cognitive science. Even if certain primate brains are equivalent to Turing machines, the ability to process symbols might be necessary but is certainly not sufficient for thought and intelligence (even the most intelligent of current computers lack the common sense of a three-year old child). It is certainly not obvious why some brains might be equivalent to Turing machines but not others (since they all have the same basic building blocks). And if all brains are equivalent to symbol processors, then there is little point in singling out the brains of great apes for this theoretical analysis.

Similarly, regarding language, the author wholeheartedly supports the view that humans and the rest of the great apes differ quantitatively rather than qualitatively. However, given the controversy surrounding the studies in which humans have supposedly taught primates to use various languages, and the great disagreements as to what the animals have actually achieved, a neutral stance might have been preferable.

From time to time, the author is too happy to make bold statements which go beyond current conceptions. Thus, the entire literature on the relationship between language and Broca's and Wernicke's areas is dismissed with a single reference (p. 163). There are many sweeping statements which either oversimplify matters or are unsupported by any evidence. For example, we are told that "When humans want to acquire a new and complex skill without excessive effort, they watch and imitate a skilled performer" (p. 54). Surely it is not being suggested that in order to learn to play the piano or the violin, all that is required is to watch someone else. More care would have resulted in fewer of these irritations, and the implication (p. 171) that abandoned children being brought up by wolves is an accepted and well-documented phenomenon can only be described as a lapse in scholarship, particularly since this dubious phenomenon is used as a source of evidence for a critical period in human language learning.

Despite these criticisms, this is an important contribution and will be required reading for my undergraduates. Books on animal cognition are rare, good books doubly so. I found the book fascinating, challenging, stimulating and well-written, although sometimes very irritating too. Overall, this is a very good book but there are too many flaws to make it a classic text.

The Naturalist

By Edward O. Wilson. Island Press, 1718 Connecticut Ave., N.W., Ste. 300, Washington DC 20009-1148, USA, 1994, \$24.95 (hdbk.), \$11.99 (ppr.).

Reviewed by Iver Mysterud, Division of Zoology, Department of Biology, University of Oslo, Box 1050 Blindern, N-0316 Oslo, Norway.

Few academicians are neutral towards Edward O. Wilson: In general, biologists admire him, while social scientists hate him. And I, growing up in a country far from the American battleground, wondered "why"? While I was still being nursed, Wilson was conducting important research on island biogeography (The Florida Keys Experiment); and in the 1970s, as I grew up in a biologist's family, I heard only good about E.O. Wilson. Later, I talked to social scientists and discovered a completely different impression of the person I so admired. When I became a biologist myself, keenly interested in humans and evolution, I eventually began to understand why Wilson was both admired and disliked. Reading his autobiography, *The Naturalist*, (and Robert Wright's 1988 portrayal as well), I finally got a chance to get a solid glimpse of the man and the fascinating life behind the name.

The Naturalist is divided in two parts. The first gives us young Wilson as a student of Nature's wonders ("Daybreak in Alabama"), and the second, the adult Wilson as a professional biologist ("Storyteller"). In the former, we are told how and why Wilson became a biologist, and how he developed his

fascination with ants. Wilson's parents were divorced when he was eight years old, after which he moved frequently. The only stable part of his life was his fondness of nature; it was a source of inspiration and adventure wherever he lived geographically, and it remained independent of what happened in his social arena. Wilson lost full sight in one eye and suffered partial hearing loss (the uppermost registers) as a young boy. With characteristic humor, he puts it: "I was destined to become an entomologist...by a fortuitous constriction of physiological ability" (p. 15).

In part two, the reader can follow the merits of this outstanding scientist as the science of evolutionary biology emerged and grew as a discipline. Wilson is no doubt brilliant. At the age of twenty-nine, he had 55 technical articles published or in press. Later on he produced a number of additional contributions, including several important books known to every student of biology: *Sociobiology* (1975), *Genes, Mind and Culture* (with Charles Lumsden, 1981), and *The Ants* (with Burt Holldobler, 1990). To cite the dust jacket: "As the narrative of Wilson's life unfolds, the reader is treated to an inside look at the origin and development of ideas that guide today's biological research. Theories that are now widely accepted in the scientific world were once untested hypotheses emerging from one man's broad-gauged studies." Examples are the phenomenon of character displacement and the theory of island biogeography.

One chapter I found of special interest is called "The molecular wars". It starts: "Without a trace of irony I can say I have been blessed with brilliant enemies. They made me suffer..., but I owe them a great debt, because they redoubled my energies and drove me in new directions" (p. 218). One such "enemy" was James Watson (the codiscoverer of the structure of DNA), who arrived at Harvard "with a conviction that biology must be transformed into a science directed at molecules and cells and rewritten in the language of physics and chemistry" (p. 219). Watson apparently accused the rest of biology of being "infested by stamp collectors" (belonging only in museums) who lacked the wit to transform their subject into a modern science. Despite the ad hominem flavor of Watson's criticism, Wilson and other

colleagues felt troubled by the "plain fact that the evolutionary biologists could point to no recent great advances comparable with those in molecular and cellular biology swelling the pages of *Nature*, *Science*, and the *Proceedings of the National Academy of Sciences*" (p. 229). Eventually, out of this standoff came a split of the department. Indeed, the term "evolutionary biology" was actually coined at Harvard in this process as a way to distance Wilson and his collaborators from the molecular biologists. Yet at the time of writing of this book, Wilson can be happy to declare that "the passage of thirty years has done much to close the divide between molecular and evolutionary biology" (p. 230).

Of special interest to readers of this *Bulletin* are two chapters on sociobiology. The first describes how sociobiological theory emerged, with Hamilton and Trivers as central players in addition to Wilson. The second describes the sociobiology controversy: what actually happened and how Wilson views it in retrospect. Here we are exposed to the second of Wilson's "brilliant enemies": Richard C. Lewontin. Anybody who is interested in the emergence of the main sociobiological principles (e.g., kin selection) and the ensuing controversy will benefit from reading these two chapters--especially those of us who are too young to have experienced the turmoil of the 70s and early 80s. (See also Segerstråle 1986, 1990).

The Naturalist describes a man who has witnessed fundamental changes in our view of Nature: from a planet thought of as infinite in its bounty to one which is limited, and which suffers from problems of a steadily increasing human population and a deteriorating environment. As a naturalist and professional biologist, Wilson followed these changes closely, and his view of the world shifted in concert with the advances of evolutionary biology and the decline that practitioners of this science perceived to be occurring in natural environments.

Having followed Wilson's career as a naturalist through the earlier chapters of the book, it then comes as no surprise that he joins the movement to halt the extinction of species due to human activity. Preservation of biological diversity has been the central

guiding principle in his scientific productivity and activism during recent years. The idea of "biophilia" - the inborn affinity humans may have for other forms of life - emerges from this work. According to Wilson, "the most important implication of the existence of an innate biophilia is the foundation it lays for an enduring conservation ethic. If a concern for the rest of life is part of human nature, if part of our culture flows from wild nature, then on that basis alone it is fundamentally wrong to extinguish other life forms" (p. 362).

Bulletin Submissions and Duplication

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 (Linda Mealey, the chief book review editor, covers books in English). Submission should be in English, on paper and, if possible, also on diskette (MS Word 5.0 preferred). Shorter reviews are desirable (less than 1000 words). **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. There usually is not time to consult with reviewers about editorial changes, but most of these are minor.

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 *Bulletin* never implies the truth of those ideas, ISHE's endorsement of them, or support for any policy implications that may be inferred from them.

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The Naturalist is a well-written and sincere autobiography. While it presents one man's personal journey into biology, it also helps to explain, in retrospect, what biology was like at a particular time in its development. This makes it particularly interesting for the younger generation of biology researchers.

References

Holldobler, B. & Wilson, E. O. (1990). *The ants*. Cambridge, MA: Harvard University Press.

Lumsden, C. & Wilson, E. O. (1981). *Genes, mind and culture*. Cambridge, MA: Harvard University Press.

Segerstråle, U. (1986). Colleagues in conflict: An "in vivo" analysis of the sociobiology controversy. *Biology and Philosophy*, 1, 53-87.

-- (1990). The sociobiology of conflict and the conflict about sociobiology: science and morals in the larger debate. In J. van der Dennen & Falger, V. (Eds.), *Sociobiology and conflict* (pp. 273-284). London: Chapman & Hall.

Wilson, E. O. (1975). *Sociobiology: The new synthesis*. Cambridge, MA: Harvard University Press.

Wright, R. (1988). *Three scientists and their gods: Looking for meaning in an age of information*. New York: Times Books.

ANNOUNCEMENTS

International Association for Cross-Cultural Psychology

This organization aims to facilitate communication among those interested in cross-cultural psychology. Contact Dr. J. C. Naidoo, Dept. of Psychology, Wilfrid Laurier University, Waterloo N2L 3C5, Canada. Annual membership between US\$6 and 25, depending on income.

Changes of Address

Noldus Information Technology, which manufactures equipment for recording and analyzing behavioral data, has opened a branch office in the US. This address should be added to their entry in the Membership Directory:

Bart van Roekel
Noldus Information Technology, Inc.
6 Pidgeon Hill Drive, Ste. 180
Sterling, VA 20165 USA
tel. 1-800-355-9541
fax 1-703-404-5507
e-mail info@noldus.com

In The Netherlands:
tel. 31-(0)317-497677
fax 31-(0)317-424496
e-mail info@noldus.nl
WWW: <http://www.diva.nl/noldus>

Thomas Shellberg's telephone number at work is 1-313-845-6302.

Please report changes of address to the Treasurer, Barbara Fuller, who maintains the mailing list, and to Nancy Segal, Membership Chair.

Missing Addresses

Please inform Barbara Fuller of the current address, if you have it, for:

Larry Aslanian, formerly of Harrison Twnshp., Michigan, USA.

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Request for Books

A new member from Russia has asked for donations of books, articles, and papers to his university. Please send anything that is available to Dr. Yaroslav I. Koryakov, Gottwald St. 11-33, Ekaterinburg 620034 Russia.

Gruter Institute Faculty Seminar

The fourth annual seminar on biological perspectives in the social sciences and humanities will take place 2-8 August 1997 at Dartmouth College. A limited number of grants for room and board will be available for those who teach courses or conduct research in this field. Applications for a grant to cover room, board, and registration fee should indicate the course(s) taught or planned, and/or the topics of research which relate the biological sciences to the study of human social behavior. Graduate students should submit two letters of reference from faculty members, one from a thesis advisor. For applications and inquiries, contact Ms. Suzanne Saxton, Gruter Institute for Law and Behavioral Research, c/o Dept. of Government, Silsby 6108, Dartmouth College, Hanover, NH 03755-3514 USA, tel. 1-603-646-1029, fax 1-603-646-2152, e-mail gruter.institute@dartmouth.edu.

Down House Restoration

Down House, Charles Darwin's home and workplace, is being restored. Darwin lived there the last 40 years of his life, and wrote *On the Origin of Species* there. A half million pounds is still needed for the project. Checks should be written to 'The Natural History Museum Down House Appeal'. Credit card donations can be made by telephone to 44-(0)171-938-8976, or mailed to Nancy Giles, The Down House Appeal, The Natural History Museum, Cromwell Road, London SW7 5BD, U.K. The European Sociobiological Society has also sent out an appeal to its members. The Society toured Down House at its 1995 convention.

HBES Contract with Elsevier

The journal formerly known as *Ethology and Sociobiology* will, as most members are aware, change to *Evolution and Human Behavior* with the first 1997 issue. The contract dispute has now been resolved, and the editors, Margo Wilson and Martin Daly, in conjunction with the editorial board, will exercise sole editorial responsibility for journal content.

International Ethological Congress

This large biennial meeting will be held 20-27 August 1997 in Vienna. It will be hosted by the hosts of the ISHE congress last August, Karl Grammer and his staff. For information, contact Karl (see Officers Box).

Membership Renewals

It is time to renew your membership for 1997 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 1997, 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. Be sure to inform her if you move; the U.S. Post Office no longer returns undelivered *Bulletins* with the recipient's new address.** 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.

Delwart Foundation Award

The Jean-Marie Delwart Foundation \$10,000 award in Chemical Communication was won by Jeremy N. McNeil of the University of Laval, Québec and by Ashok K. Raina of the U. S. Department of Agriculture at Beltsville, Maryland for their studies of communication by means of sex pheromones in *Lepidoptera*.

HBES Conference

The Human Behavior and Evolution Society will hold its annual meeting 4-8 June 1997 in Tucson, Arizona, USA. Local hosts are Aurelio José Figueredo and David Rowe. Abstracts deadline is 1 March. Aurelio, an ISHE member, can be reached at University of Arizona, Tucson, AZ 85721 USA.

Evolution of the Psyche Conference

This conference was held at Texas A&M University 13-14 September 1996. Scheduled speakers were:

- David Buss*, Desire, status, and conflict.
- Jeffrey Simpson, Within-sex variation in sexual behavior and mating strategies: An evolutionary perspective.
- John Price*, Understanding schizophrenia from an evolutionary perspective.
- Russell Gardner*, The biology of leadership.
- David Rosen, Evolutionary memory.
- Constantine Sedkides & John Skowronski, Evolution of the symbolic self.
- William Graziano, Historicity and evolution of the mind.
- Seven Smith & Tom Ward, The evolution of creativity.
- Jyotsna Vaid, The evolution of humor.
- Benton Pierce, The evolution of insight.
- Margaret Bruchez, Evolution of a creation myth.
- Carolyn Boyd, Evolutionary history of symbolic art.
- Allen Lloyd, Dreaming, psychoanalytic theory, and evolution.
- Holly Huston, The evolutionary significance of archetypal dreams.
- Brett Cooke, Evolution of interest.
- Michael Luebbert, The survival value of forgiveness.

*ISHE member listed in 1996 Directory.

For more information, contact David Rosen at tel. 1-409-845-0477, fax 1-409-845-4727, e-mail dhr@psyc.tamu.edu.

International Society for Humor Studies

The eighth annual conference of the ISHS will take place 8-13 July 1997 at the University of Central Oklahoma. For information, contact Amy Carrell, Dept. of English, University of Central Oklahoma, 100 N. University Dr., Edmond, OK 73034 USA, tel. 1-405-341-2980, ext. 5609, fax 1-405-341-3823. To join the society, contact D. L. F. Nilsen, Dept. of English, Arizona State University, Tempe, AZ 85287 USA. Annual dues are \$60 (\$50 for students); includes the journal *Humor*, a free sample of which is available on request.

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International Society for the Study of Behavioural Development

ISSBD promotes the discovery, dissemination, and application of knowledge of human developmental processes at all stages of the life span. The Society has a particular interest in promoting the application of findings from behavioural development research to the improvement of people's lives. Membership is open to individuals who have completed postgraduate training in one of the biological, behavioural, or social sciences, and who are engaged in behavioural research on human developmental processes; there is also a student membership grade. Contact C. B. Kopp, Dept. of Psychology, University of California, Los Angeles, CA 90024-1563 USA. Annual membership \$72 (\$32 for students).

Book authors: be sure to send us a review copy.

International Society for Applied Ethology

This group aims to encourage basic and applied research into the behavior of animals as related to the use of animals by humans. This includes domestic, laboratory, zoo, pest, captive, and managed wild animals. The Society encourages links between applied animal behavior science and other disciplines, and actively promotes the teaching of animal behavior and welfare in courses of veterinary, agricultural, and companion animal studies. Contact Dr. J. Eddison, Department of Agriculture and Food Studies, University of Plymouth, Newton Abbot TQ12 6NQ, U.K. Annual membership £10.

HBES-L

In August, HBES-L discontinued its role as an electronic discussion medium available to everyone. Instead, it is now restricted to members of the Human Behavior and Evolution Society.

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Altman, I., & Ginat, J. (1996). *Polygamous Families in Contemporary Society*. Cambridge University Press, 40 W. 20th St., New York, NY 10011 USA, \$54.95 (hdbk.), \$27.95 (ppr.).

Anderies, J.M. (1996). An adaptive model for predicting !Kung reproductive performance: A stochastic dynamic programming approach. *Ethology & Sociobiology*, 17, 221-246. (Univ. British Columbia, Inst. Appl. Math., Vancouver, BC V6T 1Z2, Canada).

Archer, J. (1996). Attitudes toward homosexuals: An alternative Darwinian view. *Ethology and Sociobiology*, 17, 275-280. (Univ. Central Lancashire, Dept. of Psych., Preston PR1 2HE, Lancashire, England).

Archer, J. (1996). Attitudes toward homosexuals: A rejoinder. *Ethology & Sociobiology*, 17, 285. (see supra)

Berezkei, T., & Csanaky, A. (1996). Evolutionary pathway of child development: Lifestyles of adolescents and adults from father-absent families. *Human Nature*, 7, 257-280. (Univ. Pecs., Sch. Med., Inst. Behav. Sci., Szigeti U12, H-7624 Pecs, Hungary).

Bjorklund, David F. (1996). Parental investment theory and gender differences in the evolution of inhibition mechanisms. *Psychological Bulletin*, 120, 163-188. (Dept. of Psych., Florida Atlantic University, Boca Raton, FL 33431, USA).

Blum, K., & Noble, E. P. (Eds.) (1996). *Handbook of Psychiatric Genetics*. CRC Press, 2000 Corporate Blvd., N.W., Boca Raton, FL 33431 USA, \$110 (hdbk.).

- Calvin, W. H. (1996). *How Brains Think: Evolving intelligence, then and now*. Basic Books, 10 E. 53rd St., New York, NY 10022 USA, \$20 (hdbk.). Needs reviewer.*
- Camras, L.A., Lambrecht, L., & Michel, G.F. (1996). Infant "surprise" expressions as coordinative motor structures. *Journal of Nonverbal Behavior*, 20, 183. (Dept. of Psychology, DePaul Univ., 2219 N. Kenmore Ave., Chicago, IL 60614, USA).
- Casey, M.B. (1996). Understanding individual differences in spatial ability within females: A nature/nurture interactionist framework. *Developmental Review*, 16, 241-260. (Boston Coll., Dept. Counseling Dev. & Educat. Psychol. & Res. Method, 201 Campion Hall, Chestnut Hill, MA 02167, USA).
- Cheney, D.L., Seyfarth, R.M., & Palombit, R. (1996). The function and mechanisms underlying baboon 'contact' barks. *Animal Behaviour*, 52, 507-518. (Dept. of Biology, Univ. of Pennsylvania, Philadelphia, PA 19104, USA).
- Chirkov, A. M., Chirkova, S. K., & Tsuliya, M. G. (1995). *Emotional Stress in Monkeys*. Nova Science Publishers, Commack, NY, USA.
- Daly, M., McConnell, C., & Glugosh, T. (1996). Parents' knowledge of students' beliefs and attitudes: An indirect assay of parental solicitude? *Ethology & Sociobiology*, 17, 200. (McMaster Univ., Dept. Psychol., Hamilton, ON L8S 4K1, Canada).
- Depew, D. J. (1996). *Darwinism Evolving: Systems dynamics and the genealogy of natural selection*. MIT Press, 55 Hayward St., Cambridge, MA 02142 USA, \$20 (ppr.).
- DiLalla, L.F., & Clancy Dollinger, S. M. (1995). *Assessment of Biological Mechanisms across the Lifespan*. Lawrence Erlbaum, 10 Industrial Ave., Mahwah, NJ 07430, \$18 (hdbk. sale price).
- Dong, Q., Weisfeld, G., Boardway, R., & Shen, J. (1996). Correlates of social status among Chinese adolescents. *Journal of Cross-Cultural Psychology*, 27, 476-493. (REPRINT: G. Weisfeld, Dept. Psych., Wayne State Univ., Detroit, MI 48202 USA)
- Felson, R.B. (1996). Big people hit little people: Sex differences in physical power and interpersonal violence. *Criminology*, 34, 433-452. (SUNY Albany, Albany, NY, 12222, USA).
- Freidenberg, B.M., & Cimbalo, R.S. (1996). Human ethology: Eating, security, and curiosity. *Perceptual & Motor Skills*, 83, 489-490. (REPRINT: Cimbalo, R.S., Daemen Coll. Dept. Psychol., 4380 Main St., Amherst, NY 14226, USA).
- Gallup, G.G. (1996). Attitudes toward homosexuals and evolutionary theory: The role of evidence. *Ethology & Sociobiology*, 17, 281-284. (SUNY Albany, Dept. of Psych., 1400 Washington Ave., Albany, NY, 12222, USA).
- Goldberg, S., Muir, R., & Kerr, J. (Eds.) (1995). *Attachment Theory: Social, developmental, and clinical perspectives*. Analytic Press, Hillsdale, NJ, USA.
- Gollwitzer, P. M., & Bargh, J. A. (Eds.) (1996). *The Psychology of Action: Linking cognition and motivation to behavior*. Guilford Press, 72 Spring St., New York, NY 10012 USA.
- Gottman, J. M. (1995). *The Analysis of Change*. Laurence Erlbaum, 10 Industrial Ave., Mahwah, NJ 07430 USA.
- Gregory, R., et al. (Eds.) (1995). *The Artful Eye*. Oxford University Press, 198 Madison Ave., New York, NY 10016 USA.
- Hames, R. (1996). Costs and benefits of monogamy and polygyny for Yanomamo women. *Ethology & Sociobiology*, 17, 181-200. (Univ. Nebraska, Dept. Anthropol., Lincoln, NE 68588, USA).
- Hammel, E.A. (1996). Demographic constraints on population growth of early humans: Emphasis on the probable role of females in overcoming such constraints. *Human Nature*, 7, 217-256. (Univ. Calif. Berkeley, Dept. Demography, 2232 Piedmont Ave., Berkeley, CA, 94720, USA).
- Hrdy, S.B., (1996). The evolution of female orgasms: Logic please but no atavism. *Animal Behaviour*, 52, 851-852. (Dept. of Anthropology, Univ. of California, Davis, CA 95616, USA).

- Hudson, L., & Jacot, B. (1995). *Intimate Relations: The natural history of desire*. Yale University Press, P. O. Box 209040, New Haven, CT 06520 USA.
- Itakura, S. (1996). An exploratory study of gaze-monitoring in nonhuman primates (Short Report). *Japanese Psychological Research*, 38, 174. (OITA Prefectural Coll. Arts & Culture, Dept. Commun., 1-11, Uenogaoka Higashi, OITA 870, Japan.)
- Jamieson, J.W. (1996). Intellectual ability, evolution and eugenics. *Mankind Quarterly*, 36, 381-392.
- Jones, S.E., & Brown, B.C. (1996). Touch attitudes and behaviors, recollections of early childhood touch, and social self-confidence. *Journal of Nonverbal Behavior*, 20, 147-164. (Dept. of Communication, Univ. of Colorado, Campus Box 270, Boulder, CO 80309, USA).
- Klaus, M. H. (1995). *Bonding: Building the foundations of secure attachment and independence*. Addison Wesley Longman, 1 Jacob Way, Reading, MA 01867 USA.
- Knutson, B. (1996). Facial expressions of emotion influence interpersonal trait inferences. *Journal of Nonverbal Behavior*, 20, 165-182. (Dept. of Psych., Bowling Green State Univ., Bowling Green, OH 43402, USA).
- Lalumiere, M.L., Quinsey, V.L., & Craig, W.M. (1996). Why children from the same family are so different from one another: A Darwinian note. *Human Nature*, 7, 281-290. (Penetanguishene Mental Hlt. Ctr., Res. Dept., 500 Church St., Penetanguishene, ON L9M 1G3, Canada).
- Lavie, P. (1996). *The Enchanted World of Sleep*. Yale University Press, P. O. Box 209040, New Haven, CT 06520 USA, \$27.50 (hdbk).
- Mace, R. (1996). When to have another baby: A dynamic model of reproductive decision-making and evidence from Gabbra pastoralists. *Ethology & Sociobiology*, 17, 263-274. (Univ. London Univ. Coll., Dept. Anthropology, Gower St., London WC1E 6BT, England).
- Mackey, W.C. (1996). *The American Father: Biocultural and Developmental Aspects*. New York: Plenum Press, \$42.50 (hdbk.). Needs reviewer.
- Mackey, W.C. (1996). The 'Demographic Transition' in relation to cultural evolution: A candidate for paradigmatic imperialism. *Mankind Quarterly*, 37, 61-75. (Townshire Manor, Apt. #6, 401 Lake Street, Bryan, TX 77801, USA).
- Masters, R. D. (1996). *Machiavelli, Leonardo, and the Science of Power*. University of Notre Dame Press, P. O. Box L., Notre Dame, IN 46556 USA, \$32.95 (hdbk.). Needs reviewer.*
- Matsuzawa, T., Kojima, S., & Jitsumori, M. (1996). A brief note on the historical background of the study of cognition and behavior in nonhuman primates by Japanese researchers. *Japanese Psychological Research*, 38, 109-112. (Kyoto Univ, Kyoto, Japan).
- Mesquida, C.G., & Wiener, N.I. (1996). Human collective aggression: A behavioral ecology perspective. *Ethology & Sociobiology*, 17, 247-262. (REPRINT: Wiener, N.I., York Univ., Dept. Psychol., 4700 Keele St., N. York, Ontario M3J 1P3, Canada).
- Miller, E.M. (1996). Concealed ovulation as a strategy for increasing per capita paternal investment. *Mankind Quarterly*, 36, 297-332. (Univ. New Orleans, New Orleans, LA, 70148, USA).
- Nakajima, T., & Taketoshi, O. (Eds.) (1996). *Emotion, Memory and Behavior: Studies on human and nonhuman primates*. CRC Press, 2000 Corporate Blvd., N.W., Boca Raton, FL 33431 USA, \$95 (hdbk.).
- Nakamichi, M. (1996). The left-side holding preference is not universal: Evidence from field observations in Madagascar. *Ethology & Sociobiology*, 17, 173-180. (Int. Inst. Appl. Syst. Anal., Environmentally Compatible Energy Strategies Proj., A-2361 Laxenburg, Austria.)
- Ottoni, E.B. (1996). EthoLog 1.0: Ethological transcription tool for Windows. *Behavior Research Methods, Instruments, & Computers*, 28, 472-473. (Univ. Sao. Paulo, BR-05508 Sao Paulo, Brazil).

- Paul, L., Foss, M.A., & Baenninger, M. (1996). Double standards for sexual jealousy: Manipulative morality or a reflection of evolved sex differences? *Human Nature*, 7, 291- . (Temple Univ., Dept. Psychol., Philadelphia, PA 19122, USA).
- Petrinovich, L., & O'Neill, P. (1996). Influence of wording and framing effects on moral intuitions. *Ethology & Sociobiology*, 17, 145-172. (415 Boynton Ave., Berkeley, CA 94707, USA).
- Roitblat, H. L., & Meyer, J.-A. (Eds.) (1995). *Comparative Approaches to Cognitive Science*. MIT Press, 55 Hayward St., Cambridge, MA 02142 USA.
- Ruusuvirta, T., Korhonen, T., Arikoski, J. (1996). A simple Windows program for coding fast-changing events in observational situations divided into variable intervals. *Behavior Research Methods, Instruments, & Computers*, 28, 470-472. (Univ. Jyväskylä, SF-40100 Jyväskylä, Finland).
- Salter, F. (1996). Carrier females and sender males: An evolutionary hypothesis linking female attractiveness, family resemblance, and paternity confidence. *Ethology & Sociobiology*, 17, 211-221. (Max Planck Res. Ctr. Human Ethol., Von Der Tann Str. 3-5, D-82346 Kloster Andechs, Germany).
- Schorr, A., & Saari, S. (Eds.) (1995). *Psychology in Europe: Facts, figures, realities*. Hogrefe & Huber Publishers, Seattle, WA, USA.
- Segal, N. L., Connelly, S. L., & Topoloski, T. D. (1996). Twin children with unfamiliar parents: Genotypic and gender influences on cooperation. *Journal of Child Psychology & Psychiatry*, 37, 731-735. (Dept. of Psych., California State Univ., Fullerton, CA 92834 USA).
- Silk, J.B., Cheney, D.L., & Seyfarth, R.M. (1996). The form and function of post-conflict interactions between female baboons. *Animal Behaviour*, 52, 259-268. (Dept. of Anthropology, Univ. of California, Los Angeles, CA 90095, USA).
- Spence, M.J., & Freeman, M.S. (1996). Newborn infants prefer the maternal low-pass filtered voice, but not the maternal whispered voice. *Human Factors*, 38, 199-212. (Univ. Texas, School of Human Dev., Box 830688, GR 41, Richardson, TX 75083, USA).
- Sperber, D. (1996). *Explaining Culture: A naturalistic approach*. Blackwell, 238 Main St., Cambridge, MA 02142 USA, \$19.95 (ppr.). **Needs reviewer.**
- Stanley, S. M. (1996). *Children of the Ice Age*. Science News Books, 1719 N Street, N.W., Washington, DC 20036 USA, \$27 (hdbk.).
- Sulloway, F. J. (1996). *Born to Rebel: Birth order, family dynamics, and creative lives*. Pantheon Books, New York, \$30 (hdbk.).
- Thompson, E. (1996). *Colour Vision*. Routledge, 29 W. 35th St., New York, NY10001 USA, \$65 (hdbk.), \$34.95 (ppr.).*
- Thornhill, R., & Gangestad, S.W. (1996). Human female copulatory orgasm: A human adaptation or phylogenetic holdover. *Animal Behaviour*, 52, 853-855. (Dept. of Biology, Univ. of New Mexico, Albuquerque, NM 87131-1091, USA).
- Valenza, E., Simion, F., Cassia, V.M., & Umiltà, C. (1996). Face preference at birth. *Journal of Experimental Psychology*, 22, 892-903. (REPRINT: Simion, F., Univ. Padua, Dipartimento Psichol Sviluppo & Socializzaz., VIA Venezia 8,I-35131 Padua, Italy).
- Wawra, M. (1996). The Observer 3.0, a software package for behavioural observations. *Ethology*, 102, p. 702. (Univ. Tübingen, Klin Genet ABT, Tübingen, Germany).
- Wion, F. (1996). Facially impaired man versus chimpanzee: A within-primate differentiation effect. *Perceptual & Motor Skills*, 83, 691-700. (Univ. Québec, Dépt. Sexol., POB 8888, Stn. A, Montréal, PQ H3C 3P8, Canada).
- Zeman, J., & Garber, J. (1996). Display rules for anger, sadness, and pain. It depends on who is watching. *Child Development*, 67, 957-973. (Univ. Maine, Dept. of Psych., 5742 Little Hall, Orono, ME 04469).

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