Human Ethology Newsletter

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SOCIETY NEWS

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This photo of some of the participants in the ISHE convention in Amsterdam last July was kindly provided by Herman Dienske.

REPORT OF VISIT TO ANDECHS BY CRIMEAN ETHOLOGISTS

By Victor P. Samohvalov and Vitality I. Egorov, Dept of Psychiatry, Crimean Medical Institute and Crimean Association of Human Ethology and Sociobiology, Simferopol, Crimea 333000, Ukraine

From Oct. 11 to Dec. 3, 1992 we had the pleasure of visiting and working at the Institute of Human Ethology of the Max-Planck Society, Andechs, Germany. We were invited by the Director of the Institute, Irenaus Eibl-Eibesfeldt.

For many years ours was the only research group studying human ethology in the former USSR (see Dec. 1991 *HEN*). The "Iron Curtain" was pierced by William D. Hamilton in 1990 and by Eibl-Eibesfeldt in 1991, who were the first foreign participants in our annual meetings. These meetings began in 1984 and had to be held in underground conditions due to prevailing political and ideological circumstances.

After surmounting numerous bureaucratic barriers we came to Andechs - the heart of human ethology. Throughout our visit we were received with great warmth and attention by all scientists working there. Consequently we were able to begin many collaborative projects. Prof. Schiefenhovel explained some of the problems in conducting cross-cultural research, using his work with the Trobriander and Eipo cultures as examples. Similarly, Dr. Herzog discussed Yanomami culture with us. Dr. Wiessner helped us to understand some cultural traditions of the !Ko Bushmen. Dr. Heunemann offered to help us work with film. Dr. Schleidt discussed quantitative ethological methods with us, and Dr. Wojtenek explained computer analysis of behavior. Drs. Sutterlin and Krell also provided valuable assistance. We also had some useful discussions of applying ethological ideas and methods to human psychopathology, especially with Prof. Detlev Ploog.

As a result of our work in Andechs, we prepared three reports for our Institute. In the first, "The Ethology of Poverty," we discussed the rapidly changing situation in the former USSR. Ontogenetic, phylogenetic, and historical models were suggested for analyzing poverty behavior, especially compensatory mechanisms. Depression and the role of information systems in social conflict were also analyzed.

The second report was "Tomalala Malubona as a Mirror of the Trobriand Islands Culture." This Trobriander, called "Tom," graciously consented to be interviewed and observed repeatedly, and to complete some projective drawings for us. We tried to understand how his behavior revealed universal laws as well as the characteristics of his homeland.

The third report was "Mother-Infant Interaction: A Cross-Cultural Perspective." Using Eibl's films, we analyzed these interactions in five cultures: Trobrianders, Eipo, Yanomami, Tasaday and Himba. Cultural similarities and differences in facial expressions, postures, gestures, and manipulatory activity were studied. Dr. Barbara Niedner helped prepare this report.

We hope to pursue further collaborative efforts with our colleagues in Andechs concerning cross-cultural methods and psychopathological behavior.

BOOK REVIEWS

We are fortunate to have two reviews of the following book.

Aggression and Peacefulness in Humans and Other Primates. Edited by James Silverberg and J. Patrick Gray (1992). New York, Oxford: Oxford University Press, 310 pages, $55.00.

Reviewed by Ronald Baenninger
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The stimulus for this book was the Seville Statement on Violence that was signed on May 16, 1986 by a group of twenty biobehavioral scientists in Seville. They concluded "that biology does not condemn humanity to war, and that humanity can be freed from the bondage of biological pessimism and empowered with confidence to undertake the transformative tasks needed . . " by a species "capable of inventing peace". Signatories included Jose Delgado, Robert Hinde, Richard Leakey and John Paul Scott, people who have devoted goodly portions of their lives to studying the antecedents and consequences of aggressive behavior. One of the

many international responses to this Statement (reprinted in the appendix of this volume) was a symposium at the 1987 meeting of the American Association for the Advancement of Science by its Anthropology Section. With some additional contributions and revisions this fascinating book is the result of that symposium.

For the past 15 years I have served as Editor of a multi-disciplinary journal called *Aggressive Behavior*. To me, one of the most fascinating things about this book *Aggression and Peacefulness in Humans and other Primates*, is how unacquainted I am with the contributors and their work: I have met only one of the thirteen, whereas I know half of the twenty signatories of the Seville Statement. That is a statistically significant difference which I mention only to emphasize how scientists live in relative isolation from each other, even when our research is on a topic of such universal importance. Most of the contributors to this book are anthropologists; I wish more anthropologists would send manuscripts to my journal (we do have a well-known primatologist on our board). These people have really interesting data to report.

My other general impression of this book is how resolutely the authors have avoided even mentioning the Seville Statement on Violence. Only the editors and Frans de Waal discuss its strengths and weaknesses, or its relevance to what we know about aggression, violence or agonistic interactions. The Statement actively asserted that aggression is *not* the inevitable result of our biology by making five statements beginning with the words "It is scientifically *incorrect*. . ." that: 1) our war-making is inherited from our animal ancestors 2) war or other violence is genetically programmed 3) our evolution selected for aggressive behavior 4) humans have a "violent brain", and 5) war is caused by "instinct". As they were stated, these negative propositions are so full of loopholes that any thoughtful scientist could probably muster some evidence for and against each one. And as Silverberg and Gray point out in their introductory chapter, the Statement appears naive because of its narrow focus on what is scientifically incorrect, rather than what is known. It gives no guidance to the public about how war and violence may be explained and possibly controlled; in a sense that is no more optimistic than the view that we are biologically destined to be violent and warlike towards each other (and towards the planet's other inhabitants).

In a chapter that is rich in data and clear thinking, de Waal deals with these issues, and with the emerging view that aggressive behavior may play a structuring role in long-term social relationships of the kinds that primates have. In the past, a great deal of research on aggression has been based on the assumption that it is A Bad Thing, something to be suppressed or mitigated whenever it appears. De Waal has argued very persuasively that more positive, prosocial consequences may also stem from aggression and fighting. Reconciliation and acts that reassure do occur in groups of chimpanzees and bonobos; such interactions do much to affirm, stabilize, and reinforce relationships that are valuable to the participants. A great many human divorces could be avoided if the participants had learned ways to end disagreements without destroying their relationships. Such behaviors are good examples of how effective negative reinforcement can be; the reduction of tension and fighting between individuals increases the likelihood of effective conciliatory behaviors. In particular, de Waal describes here some evidence that a kind of "moralistic" aggression may promote both egalitarian food sharing mechanisms and socialization of young rhesus monkeys.

Sade's chapter presents a mathematical treatment of dominance (the non-linear kind) in rhesus monkeys. Baldwin presents interesting data on squirrel monkeys from which he derives a number of hypotheses about determinants of aggression in this New World species. Belonging to male groups is apparently important because mobbing of females occurs during mating season, but females also exert a peaceable effect on males by choosing those who are less aggressive toward them. Strier describes the causes and consequences of nonaggression in woolly spider monkeys (a.k.a muriquis), a species in which individuals do not groom each other but do embrace. Pereira defends the primatologists' concern with dominance relations, and describes how they develop in cercopithecine societies prior to puberty - a topic that leads quite directly into Strayer's description of agonistic and affiliative structures (the mental kind) in preschool children. He finds linear dominance hierarchies at 1, 3, and 5 years, and in the latter two age groups affiliative acts were directed more toward dominant individuals than toward subordinates.

The remarkable variations in agonistic behavior of preschoolers occupy Lauer, whose observations reported here are from 4 daycare centers in the U.S. and 8 kibbutz groups in Israel. Teachers appear to exert a powerful force by interfering more in the agonistic interactions of boys than those of girls, who were told frequently that "girls don't fight".

Variations between two pre-industrial

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societies are reported by the Robarcheks. The Waorani of Ecuador have the highest homicide rate known (60%, although what that means exactly is not described) and are renowned for their unbridled ferocity among themselves and toward outsiders. By contrast the Semai of Melanesia, whose ecological context is similar, show almost no agonistic behavior, and even disagreements appear to be a rarity. At least to this psychologist this is fascinating material, and the Robarcheks convinced me of the overwhelming importance of cultural differences (e.g., in the form of differing world views and perceptions of individuality) between a society that lives in a state of chronic warfare, and one that is almost incredibly peaceable. A remarkable lengthy list of references brings this chapter to a close.

The final chapter by Ross examines the role of psychocultural dispositions and social structure in producing variations between modern, mainly industrial cultures in their levels of violence. Comparisons between Northern Ireland and Norway are highly instructive in understanding how violence may be persistent in the former and lower and manageable in the latter.

Where does this well-chosen collection leave us, both in general and with regard to the Seville Statement on Violence? By implication, the abolutely critical importance of culture as a determinant of aggression and violence in primate societies is clear. Modern industrial cultures have obviously devoted a great deal of effort to managing violence through formal political, econ omic and legal systems that our fellow primates do not share. Nevertheless, volence toward particular targets may still be condoned (Baenninger, 1991). Our understanding of the interaction of biology and culture is not as advanced as it might be for two reasons: the topic is enormously complex, and we tend to persist in the kind of "either/or" thinking that a casual reader of the Seville Statement on Violence might be left with. Readers trying to grasp theoretical subtleties underlying the roles of biology and culture in human violence would be well advised to read another anthropologist, Robin Fox (1989).

References

Baenninger, R. (1991) Violence, aggression, and targets: An overview. In Baenninger, R. (Ed.) *Targets of Violence and Aggression.* Amsterdam: Elsevier/North Holland.

Fox, R (1989) *The Search for Society: Quest for a Biosocial Science and Morality*, New Brunswick and London: Rutgers University Press.

Reviewed by Johan M.G. van der Dennen, Polemological Institute, University of Groningen, Parklaan 12, 9724AN Groningen, The Netherlands.

The volume contains 11 chapters with references, an appendix, and an index. In its outline, the book follows the more or less established and 'logical' structure of studies of nonhuman primates, preschool children, and preindustrial societies (exactly those domains of which a non-biologically-minded sociologist would claim total irrelevance for the explanation of the behavior of humans in contemporary societies). Most of the contributions are competent and readable summaries of the state of affairs within the respective disciplines.

It seems to be the inexorable, gloomy fate (or the self-imposed torment of the editors) of every book on aggression and violence to struggle with basic concepts and definitional hodgepodge, adding new variants to the hundreds of definitions already extant, or slightly bending, subtly distorting the concepts in order to better fit the book's contents. Such exercises often make tedious reading. They almost invariably begin with the assertion that "the

definition of aggression is a muddle" and almost invariably end with a still greater mess. It has, for instance, been shown time and again that the concept of intention - however subjective, elusive and arbitrary - is nevertheless indispensable in any comprehensive definition of *human* aggression. For comparative purposes such a concept is admittedly unsuitable. The editors' proposed definition is "Aggression might be easier to observe if we define it as *the assertiveness* (or forcefulness) *indicated by one actor's initiating toward some other(s) of an act that is higher on the violence scale than the previous act in a given interaction sequence*, i.e., a readiness to initiate acts at higher levels of violence" (p.3.) However, this introduces equally subjective elements: Whose violence scale--the violence scale of the actors or of an observing third party? What if the violence scales of the parties involved differ in scope, or do not match in content? Could there ever be a universally acceptable "violence scale"? There is not even a trace of a consensus regarding the concept and definition of violence. And is assertiveness or forcefulness really easier to observe?

There is, furthermore, a serious problem involved in identifying the *initiator* of (a sequence of) agonistic activity. Even young children soon learn the time-honored strategy of provoking the prospective victim into physical retaliation or self-defense by subtle means (and knowing that the parents will punish the wrong child for its 'aggression').

That this is not a trivial squabble is indicated by the fact that in the many greater and smaller wars in this century, it is not at all clear who the initiator was, especially if one considers the existence of a phase of diplomatic warfare preceding the actual outbreak of the 'shooting war'. If it is acknowledged that most agonistic interactions develop out of 'normal' interactions more or less organically, pinpointing an initiator of the agonistic sequence might prove to be as futile as it is impossible. Is it the actor who first uses an invective or a derogation, or the one who first insults the adversary, or the first one to add injury to insult? All in all, the way out of the conceptual quagmire the editors propose is sufficiently vulnerable to subjective elements to prove to be a blind alley.

The stimulus for this volume was a discussion about the Seville Statement on Violence in a Business Meeting of the Anthropology Section of the American Association for the Advancement of Science. The Seville Statement on Violence (SSV for short) was launched during the 6th International Colloquium on Brain and Aggression held at the University of Seville, Spain, in May 1986, with support from the Spanish Commission for UNESCO. Its purpose was to counteract the "biological pessimism" that its authors/signatories believed to afflict discussion on the possibility of eliminating, or at least controlling, war, by means of refuting - or, more appropriately, by condemning as "scientifically incorrect" - the notion that war and violence in general can be blamed on a "genetically driven preculturał human nature". Unfortunately, only one author in the present volume addresses the SSV, but that author, Frans de Waal, accomplishes this mission in a sublime manner, and, hopefully, his contribution will turn out to be the definite crushing defeat of this pseudoscientific monstrosity.

Whoever, like me, was extremely unhappy with the Seville Statement - its arrogant, self-righteous, apodictic tone; its preposterous naivete; its dubious, distorted, sometimes plainly false contents; and its rather infantile programmatic aim - will welcome and appreciate, indeed savour, de Waal's chapter. He exposes the SSV for what is: a sordid example of misinformation, a caricature of the (socio)biological approach to aggression, which, under the guise of "political correctness," actually stultifies any evolutionary analysis of aggression and violence. De Waal's criticism is a masterpiece of moral wrath and intellectual indignation (if such exists). I could not help but experience an acute attack of "Schadenfreude", a very enjoyable kind of gut reaction-cum-satisfaction.

Other authors preceded him, of course. For example, Lionel Tiger (1990) commented:

> The consequence of this style of manifesto, having decided that the cup is half full, is that anybody who concludes the cup is half empty is, by definition, some form of scientific rogue, irresponsible for sure, possibly in the pay of armaments dealers, possibly an active apologist for bellicose regimes, in all cases dangerous to the body politic because they support or at least legitimate the crudest and most dangerous enterprises of destructive people who cling to power against the broad interests of humanity. In a letter commenting on this Statement, Fox underscores its classic if unintended nature by noting 'It is ironically appropriate that this document should have originated in the sordid center of the Inquisition, Seville' (Fox, 1987) (p. 100).

De Waal eloquently reveals the warped logic,

faulty reasoning, and internal contradictions in the SSV:

> Not satisfied with the full recognition of environmental factors, the SSV tends to dismiss human nature altogether: 'Violence is neither in our evolutionary legacy nor in our genes'. Curiously, this reckless statement immediately follows a rather thoughtful paragraph discussing both the cohesive function of social dominance and the dramatic results of experimental selection for aggressive behavior. The fact that artificial selection can rapidly produce hyper-aggressive animals indicates, according to the SSV, that aggression is not maximally selected under natural conditions. This is true and important, but how can a demonstration of genetic selection for high aggressivity ever to be taken to mean that violence is not in our genes? (p. 39-40).

He also faults the SSV claim that "warfare is a peculiarly human phenomenon and does not occur in other animals" (which is only - and trivially - true when war is explicitly defined as *armed* conflict) by pointing out that technology (i.e., arms and weapons) is not the essence of war, and, if one is willing to accept that, one cannot "escape the impression that chimpanzees stand at the threshold of planned, organized intercommunity conflict"

Finally the apodictic arrogance of the SSV is attacked as follows:

> One aspect of the SSV that is particularly disturbing is its intolerant language. The document opens each of its statements with the capitalized dictum: "IT IS SCIENTIFICALLY INCORRECT to say..." In view of the elusive character of scientific truth, this language is basically unscientific. Lack of appreciation of the scientific endeavor is further indicated by attempts to obtain endorsement of the document by majority votes from professional organizations. Not surprisingly, some commentators have seen hints in the whole affair of the darkest periods in the history of science (Fox, 1988; Zenner, 1988; Somit, 1990).
>
> No one would even think of writing a manifesto similar to the SSV with the purpose of questioning a genetic substrate for patterns of attachment, sex, language, or cooperation. Most people readily accept these behavioral universals as core elements of human nature without in any way implying that this makes them immune to cultural modification. What is special about aggression is that it is the one behavioral universal that the human species does not like to see when it looks in the mirror... (p. 41-42).

After this inspired demolition derby, de Waal's chapter further emphasizes the structuring role of aggressive behavior in primate societies. Primates possess powerful mechanisms of reassurance and reconciliation that allow them to cope with most of the socially negative effects of intragroup aggression. As a result, aggression (especially so-called 'moralistic aggression') can be a well-integrated part of, and can contribute constructively to, social relationships.

In Donald Sade's chapter it is argued, based on graph theoretical modeling, that as-yet-undiscovered social and/or psychological processes must maintain the dominance hierarchy in primates, rather than resource competition alone.

John Baldwin offers a comprehensive theory of aggression in *Saimiri* (in these species of squirrel monkey virtually limited to sexual competition during the brief breeding season), interweaving data and theories on all three major determinants of behavior: evolutionary, physiological, and environmental-developmental. He discusses several social mechanisms that can reduce aggression in *Saimiri* troops, without involving group selection arguments.

Karen Strier discusses the constraints on aggression in the spider monkey (muriqui), an evolutionarily very odd species. The unique combination of low sexual monomorphism and large testis size observed in muriquis appears to reflect an extreme condition in which sexual selection pressures favoring overt agonistic competition between males are fully replaced by more subtle, nonaggressive competitive strategies. The benefits of agonistic intermale competition may, in this species, be reduced both by the costs of aggression and by the overriding effects of female choice.

Michael Pereira's chapter focuses on the substantial sex differences involved in the acquisition of dominance status in cercopithecine societies (macaques, baboons, vervets), species in which stable agonistic dominance relations typically exist. Cercopithecine females appear to follow a simple behavioral algorithm when intervening in fights between female nonkin: "Support the highborn participant".

F. Strayer's chapter reports on ethological research conducted with groups of preschool children. The findings indicate that social dominance is developmentally the earliest stable dimension of peer group social organization and that cohesive activities are increasingly coordinated with dominance rank toward the end of the preschool years.

Carol Lauer's chapter discusses the variability in male and female participation in agonistic encounters, and variability in the formation of dominance hierarchies, of day care children. Dominance matrices constructed for each of the 12 groups show that while on the average boys rank above girls, both sexes can and do hold high, low or intermediate ranks. Frequent teacher interference and inconsistent group membership can make the outcome of agonistic encounters unpredictable, in which case children do not learn dominant or subordinate roles.

Clayton and Carole Robarchek's chapter ("Cultures of War and Peace: A Comparative Study of Waorani and Semai") contrasts the (formerly) extremely warlike Waorani (or Auca) of the Ecuadorian Amazon with the nonviolent Semai of the Malay Peninsula. This might well be the most important chapter in the book for students of war and peace in preindustrial societies for its clarity of insights and surprising results. Both societies are interriverine swidden gardeners, gatherers and hunters, with virtually identical technologies. Social and political organization, descent, and residence patterns are virtually similar. Both societies are highly egalitarian without highly differentiated gender roles and strong sex dichotomies. Both societies practice infrequent polygyny. In both societies socialization of children is indulgent and affectionate. Yet, they are worlds apart in their world views, their cultural constructions of reality. Surprisingly, the Waorani case shows that, whatever the origins of warfare, neither ecological adaptation (as emphasized by ecological-functional theories) nor inclusive fitness maximization (as emphasized by sociobiological theories) is, in itself, sufficient to account for the persistence of warfare in Waorani society since, in the absence of changes in these areas, individual bands of Waorani abandoned warfare - consciously and voluntarily - in a matter of months after contact, and virtually the entire society changed, in little more than a decade, from the most warlike yet described, to one that is essentially peaceful. This may serve to remind one that human action is not primarily the determined product of external forces and factors, but rather the result of people striving to realize their objectives within the context of realities that they themselves are constructing and reconstructing.

Robert Dentan's chapter focuses on the (ecological) roots of peace, which may be even more complex than the roots of violence and war. There may be many reasons for peaceability: a response to overwhelming odds; isolation and xenophobia; or a voluntary decision to abstain from violence. As Dentan reminds us: "... peaceability is not disability, not a cultural essence unrelated to a people's actual circumstances. It should not be surprising that nonviolent peoples can become violent or vice versa. Nor does violence in a particular time and place necessarily indicate that peaceability in a different time or place is illusory" (p. 215). Violent people are quite capable of peacefulness, while peaceable people are quite capable of violence *under altered circumstances*.

'Peace', as used by Dentan and by Anglo-Saxon authors in general, refers to the absence of physical violence generally, while in most other languages 'peace' refers preferentially or exclusively to the absence of *war* (as collective, organized, violent intergroup or interstate conflict). Whether such a semantic technicality has any impact on the analysis remains an open question. The analysis may be confounded, for instance, if one assumes that the causes, conditions and dynamics of interpersonal violence (e.g., murder) are different from those of intergroup or interstate violence (i.e., warfare and feuding). Arguably, war is not just aggression on a large scale, while aggression is not just war on a small scale. There may be a level-of-analysis problem involved. Dentan seems to be aware of it by distinguishing external (intergroup) and internal (intragroup) (non)violence, but subsequently he does not actually apply the distinction.

Peaceability should not be confused with pacifism, which is only one genre of peaceability. Many peoples who value peace positively nevertheless have relatively high rates of violence. Furthermore, many peaceable communities discipline children harshly, so that enculturating nonaggression may be a relatively minor factor in the creation of peaceability. Dentan rightly concludes that "The discussion of human violence and nonviolence has suffered from historical essentialism, treating particular historical moments as if they represented universal evolutionary trends or deep-rooted manifestations of quasi-national characters... A Darwinian approach, which takes nonviolence as an adaptation to particular ecological circumstances, seems more viable" (p. 251).

Marc Ross reports on his ongoing cross-cultural investigation of political life in preindustrial

societies. He tests structural and psychocultural hypotheses using data from a worldwide sample of 90 preindustrial societies. His argument is that psychocultural dispositions, rooted in early learning experiences (e.g., socialization practices, male gender identity conflict, etc.) and crucial in creating commonly held images of the self and others, determine a society's overall level of conflict, while the structural features of the social, economic and political system are crucial in determining the people with whom one cooperates and with whom one fights, either within one's society, in another society, or both. In other words, psychocultural factors are crucial in shaping the *level* of conflict and violence, while structural determinants are crucial in the *selection of social targets*. This is a refreshingly nonparochial and integrative approach to conflict analysis.

All in all, this volume is, despite some minor bones of contention, a must for primatologists, psychologists, anthropologists, students of war and peace and in general anyone interested in the comparative and/or evolutionary study of behavior. Finally, though this is a nonscientific argument, and meant for bibliomaniacs only, the book looks, feels and smells good.

References

Fox, R. (1987) Letter. *The Harry Frank Guggenheim Newsletter*, 4 (1).

Fox, R. (1988) The Seville Declaration: Anthropology's auto-da-fé. *Academic Questions*, 1:35-47.

Somit, A. (1990) Humans, chimps and bonobos: The biological bases of aggression, war, and peacemaking. *Journal of Conflict Resolution*, 34:553-582.

Tiger, L. (1990) The Cerebral Bridge from Family to Foe. In: J. van der Dennen & V. Falger (Eds.) *Sociobiology and Conflict*. London: Chapman & Hall, pp. 99-106.

Zenner, W.P. (1988) Making scholarly decisions. *Anthropology Newsletter*, February: 2.

Kin Recognition, by Peter G. Hepper (Ed.). Cambridge, Cambridge University Press, 1991, £60 (hdbk.)

Reviewed by Jennifer Vernon, Department of Zoology, Oxford University, Oxford OX 1 3P5, England.

The field of kin recognition has come a long way since the publication of Fletcher and Michener's edited volume *Kin Recognition in Animals* in 1987, and this new, updated text on the subject is long overdue. Hepper has managed to get a huge range of ideas and information into one book by virtue of the specialised opinions and knowledge of the separate authors. (The book contains 14 chapters, plus a concise introduction by Hepper himself). However, there is considerable overlap between chapters, each having its own introductory section that deals with the theoretical issues and oft-cited empirical examples of kin recognition. Reading the book from cover to cover becomes extremely tiring because you get the same story, 14 times over, of the potential importance of kin recognition for the evolution of altruism (Hamilton 1964) and mate choice (Bateson 1983) in animals. Consequently, the book is best used as a source of reference, with each chapter being a paper in a specific aspect of the topic, rather than as a general, unifying textbook. Each chapter has extensive citations, allowing the reader to follow up the topic in more detail. This, together with the disparate nature of the separate chapters, makes the book more useful for specialists that for those, such as students, with a general interest in kin recognition. Regrettably there is still no book aimed at a more general audience, despite the central position of the topic in evolutionary biology.

This book is an advance on Fletcher and Michener's because it incorporates some of the last five years' research in the field. Much of this has been in terms of broadening the theory, refining definitions, providing more rigorous interpretation of experimental results (see, e.g., Waldman 1987, Grafen 1990, Barnard 1990), and also accumulating empirical data from previously unstudied species. Unfortunately many of the proposed changes or elaborations of the topic are confusing and unhelpful, rather than being useful clarifications. This is particularly true of definitions and categorisations. In this book, all the authors have their own ideas about what does and what does not qualify as kin recognition. Some (e.g., Halpin) insists that animals must discriminate between classes of strictly unfamiliar kin out of their normal context, whilst others (e.g., Bernstein and Hepper) maintain that so

long as there is a high probability that under natural circumstances kin are treated differently from nonkin, regardless of the mechanisms involved, functionally at least kin recognition is occurring. Unfortunately the book does not help, or even try, to bring the issue to consensus.

The first half of the book deals with functional aspects of kin recognition in animals, with chapters focusing on non-human primates, birds, hymenopterans, rodents and amphibians. The second half is concerned with the mechanisms of kin recognition, discussing the neurophysiological aspects of recognition cues, developmental processes, motivational states and learning processes.

Bernstein's chapter, "Kinship and behaviour in non-human primates", gives many examples of kin recognition which human ethologists would find particularly interesting. However, in most cases, kinship is confounded with familiarity due to past association and/or group structure: individuals being recognised as individuals, rather than as members of kin classes. How a conspecific is treated seems, in most cases, to depend upon knowledge of matrilineal relationships, rather than any independent assessment of relatedness. However, If cross-fostering is rare in nature, matrilineal genealogy provides a good cue to relatedness for females to use. It is less useful to males, who may be unsure of paternity. Interestingly, in many species of primate studied, matrilineal genealogy does correlate with preferential behaviour, but patrilineal genealogy does not. Also, females, who usually can be more sure of assessing genetic relatedness correctly, show more altruistic behaviours in general than males.

The confusion between individual recognition and kin recognition is also apparent in Halpin's chapter "Kin recognition cues of vertebrates". He discusses mother-child recognition in humans, and cities evidence that visual, auditory and olfactory cues can enable a mother to identify her child from a group. In my opinion this is a different issue from how individuals discriminate between novel conspecifics and assign them to different kin classes based on genetic relatedness. It is the latter, not the former, that is the topic of this book. The lack of a consensual definition of kin recognition means that a whole host of subjects are clustered under this one huge, unmanageable topic.

Chapters discussing kin recognition in other mammals, mainly rodents, reveal similar trends. Where possible, kin recognition seems to be based on familiarity and past association, but in cases where these causes are likely to be unavailable or misleading, discrimination can be mediated by some independent assessment of genotype. A fascinating chapter by Boyse *et al.* describes experiments using strains of congenic mice (genetically identical, but differing at specific loci of the MHC complex) which clearly demonstrate that both mate choice and pregnancy blocking are influenced by co-possession of single genes within the MHC set. Discrimination is based on odour differences, which can result from dissimilarity at a single MHC locus. Females prefer mates with different MHC genes from their own, and abortions are more common when females are exposed to a male whose MHC genes differ from these of the stud male. However, knowledge of 'own' genotype is based on learning from mother and nest mates, and across-strain fostered mice show preferences in accordance with their learned genotype, rather than their actual genotype. The major short fallings of this work are that the mice used are artificially severely inbred, and the results obtained may have little bearing on behaviours of wild mice in natural populations. Also, experiments need to be done with congenic strains differing in other small areas of the genome, to see if it is solely the MHC genes that are important, or whether single gene differences in other sites of the genome can have an effect. These two problems are also apparent in work described by Barnard and Aldhous. When two strains of inbred mice differing in MHC characteristics are crossed, the F1 hybrids clear infection faster than inbred F1 offspring however, but it is not known whether this is due to the increased heterozygosity at the MHC loci in particular or over the genome as a whole. Clearly it is extremely difficult to separate these two effects.

Perhaps most rewarding, in terms of drawing together results and ideas from many different studies, is Waldman's chapter on kin recognition in amphibians (see also Blaustein and Waldman 1992). Considering results from 21 separate experiments investigating kin recognition in tadpoles of 12 different species, Waldman suggests that the presence of sibling recognition correlates with ecology and life history of the species. For example, tadpoles that form schools are more likely to recognise kin in laboratory experiments than those that are asocial. Further, tadpoles that share habitats with tadpoles of other species tend to show sibling recognition, whereas those that are likely to have a small pond to themselves do not. Waldman also highlights the problem that we still do not know why tadpoles should be able to recognise kin. His comparative approach is a novel attempt to find an answer. The most popular explanation seems to be that kin recognition is selected primarily to allow tadpole

schooling, but the precise benefits of schooling are yet to be established. Hypotheses include: benefits from kin selection when aposematism is involved, reduced predation, and enhanced feeding success due to food location and tadpole movement to stir up the substrate. My only criticism of Waldman's chapter is that it had too much information to cope with. A schematic diagram would be helpful, but good luck to whoever tries to design one!

Hepper's book is a very mixed bag, with a few excellent chapters, a few rather dull ones and the majority being moderately interesting and readable. Presentation is good. But, price is high. At £60 a copy it is probably not a book individuals will want to buy. Hopefully reference libraries will.

References

Barnard, C.J. 1990. Kin recognition: problems, prospects and the evolution of discrimination systems. *Adv. Stud. Behav. 19:* 29-81.

Bateson, P.P.G. 1983. Optimal outbreeding. In *Mate Choice*, ed. P.P.G. Bateson, pp. 257-77. Cambridge: Cambridge University Press.

Blaustein, A.R. and Waldman, B. 1992. Kin recognition in anuran amphibians. *Anim. Behav. 44:* 207-22.

Grafen, A. 1990. Do animals really recognise kin? *Anim. Behav. 39:* 42-54.

Hamilton, W.D. 1964. The genetical evolution of social behaviour. *J. Theor. Biol. 7:* 1-52.

Waldman, B. 1987. Mechanisms of kin recognition. *J Theor. Biol. 128:* 159-85.

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Primate Politics, edited by Glendon Schubert & Roger D. Masters. Southern Illinois University Press, 1991. Carbondale, IL 62901 USA ($40.00 cloth)

Reviewed by Marcel Roele, Meeuwenlaan 111a, 1021 HX Amsterdam, Netherlands.

This volume is the result of a symposium at the Tenth Congress of the International Primatological Society in Nairobi in 1984 and contains papers first presented there as well as additional contributions. The editors are political scientists, but have a considerable knowledge of ethology, and played a central role in forming the Association for Politics and the Life Sciences (another founding father, Albert Somit, wrote the foreword to this volume).

The book is divided in three parts. The first part deals with the theories employed in the study of primates and the comparisons of animals and humans. It contains chapters on primate poli-

tics (by Glendon Schubert), on the applicability of the harem concept to the study of animals (by Thelma Rowell) and on the social link from baboons to humans (by Shirley Strum and Bruno Latour). All three papers were originally published in *Social Science Information* (1986 & 1987).

The second part contains two chapters on man's closest genetic relative, the chimpanzee. The first is a compilation of excerpts from Jane Goodall's *The Chimpanzees of Gombe* (1986), selected and introduced by Glendon Schubert. The second chapter is a paper by Frans de Waal on sex differences in the formation of coalitions among the chimpanzees in the colony living in Arnhem Zoo. It was originally published in *Ethology and Sociobiology* (1984).

The third and final part deals with ethological studies of human behaviour. It contains a chapter by Nicholas Blurton Jones on tolerated theft, a study of facial displays of political leaders (by Roger Masters and Denis Sullivan) and a study of human vocalization in agonistic political encounters (by James Schubert). Blurton Jones' and Schubert's paper were originally published in *Social Science Information* (1986 & 1987).

As Glendon Schubert rightly points out, questions of leadership and followership within small kinship groups are generally not regarded as politics by political scientists. In this sense, *Primate Politics* is about primate social behaviour and human politics. Schubert (p.51): "Clearly what Reagan does in both his verbal and nonverbal communication in a virtually worldwide televised 'news conference' functions at a different level, for their respective populations, from Luit's [alpha male from 1976 to 1980] grimacing from an electrified tree top in the Arnhem Zoo. Whatever the analogical similarities in the appearance of the two subject primates, it is naive to assume homology between events of such different scale."

However, Masters' and Sullivan's research into the facial displays that accompany Reagan's speech and their effect on the emotional responses and judgments of the contemporary television viewer shows that human politics is not exempt from the preverbal forms of social communication found among nonhuman primates. Their work is not just an example of the application by political scientists of research methods associated with ethology, but also of ethological concepts. Since humans exhibit facial displays which are similar to those of monkeys and apes, Masters and Sullivan initially decided to base their research on a hypothesis derived from primatology, namely Chance's view that dominance is associated with the capacity to focus the attention of subordinates. Masters and Sullivan gathered evidence that the displays of successful leaders are more effective than those of rivals in eliciting attention and emotional response.

Their research shows that Americans are similar to Chance's macaques in the sense that dominance is primarily signalled in terms of hedonic behaviour. However, as is demonstrated in Part I and II, there are several models of primate society to choose from when analogizing to human political behaviour. The proliferation of primate field studies in the 1960s and 1970s has provided evidence that there is enormous variation, both interspecific and intraspecific, in social organization and kinship- and mating systems throughout the primate order. For data from primate ethology to be a valuable source of hypotheses about human social behaviour, one needs to find the principle which governs this variability and a plausible scenario for the evolution of modern humans.

According to Strum and Latour (p.77) sociobiology has provided the solution to the question of the variability of primate societies. "Stable properties were not in the social structure itself but rather in individual genotypes. Groups were not selected, as earlier evolutionary formulations had implied; instead, individuals were. The society itself was a stable but 'accidental' result of individual decisions - an Evolutionary Stable Strategy (ESS) - and ESSs varied with circumstances."

The views of Glendon Schubert, who wrote almost one half (72) of the 160 pages of Part I and II and edited the remainder, are the complete opposite. He credits female primatologists with challenging "the ideology of male dominance theory as the nature of primate social structure" (p.18). Their discovery that cooperation plays an important role in primate societies has, according to Schubert, struck a blow to sociobiology (which is mentioned in one breath with Social Darwinism, the ideology of free enterprise, Adam Smith and Ronald Reagan), because sociobiology considers altruism "to be an 'unnatural' alternative, only chosen in "trade-offs for even greater ultimate self-aggrandizement"

(p.21). Schubert subscribes to "new feminist paradigms of primatology and paleoanthropology [that] strongly support cooperative attitudes in several strands of contemporary feminist thinking, in which nurturance, environmentalism, well-fareism, and the valuing and protection of life define female nature, while technocracy, militarism, and the desecration of the biosphere generally are the opposite attributes of male nature" (p.21). This view seems to suggest he supports a scenario of human evolution in which competition among females is minimal and among males very high. However, elsewhere (p.55), Schubert seems to advocate a model of human nature which regards both sexes as non-competitive by nature, when he argues that Paleolithic hunter-gatherer bands were unlike the power-hungry chimps, in the sense that they had no dominant, aggressive male bosses of status hierarchies but, instead, were egalitarian and apolitical.

While Schubert declares himself (p.33) a proponent of group selection and rejects individual selection and models based on 'selfish genes', Blurton Jones employs those very models to explain the evolution of cooperation. He asserts that individuals following their selfish cost-benefit calculations will avoid contests over portions of food when there is an asymmetry in resource value. This will often be the case when catches/finds are large but rare. If different individuals on different occasions acquire large food items, the effect will be a form of passive reciprocal exchange of food: tolerated theft. According to Blurton Jones, his model implies that the gathering of plant food would be a highly unlikely origin of sharing.

Tolerated theft is a mechanism that can account for the beginning of the evolution of reciprocal altruism in bands of hunter/gatherers. A more elaborate system of indirect reciprocal altruism is needed to enable a switch to agriculture. An individual who begins to farm in a population of theft-tolerating foragers will lose his harvest. Many leading sociobiologists believe that the principal evolutionary pressure forcing an increase of intragroup altruism has been warfare. Some of the basic preadaptations required for organized intergroup conflict are cooperative group living, group territoriality, cooperative hunting skills, and especially an inherent fear of, or aversion to, strangers, expressed by aggressive attack. In the chapter selected from *The Chimpanzees of Gombe* Goodall states that these basic preadaptations seem to be already present in chimpanzees.

When the chimpanzee community at Gombe split in two, the smaller Kahama community was, over a period of four years, completely annihilated by the larger Kasakela community. Patrols of Kasakela males systematically hunted down, attacked, and wounded individuals of the Kahama community until all had been killed or had disappeared. Goodall asserts that the sense of group identity in chimpanzees "is far more sophisticated than mere xenophobia. The members of the Kahama community had, before the split, enjoyed close and friendly relations with their aggressors. By separating themselves, it is as though they forfeited their 'right' to be treated as group members - instead, they were treated as strangers." The patterns of attack on nongroup members "differ from those utilized in typical intracommunity aggression. The victims are treated more as though they were prey animals; they are 'dechimpized' (p.136)."

Primate Politics contains interesting, opposing views on the subject of the genesis of human political behaviour, but lacks discussion of this subject. Instead, questions of terminology often take centre stage, especially the misapplication of human terms to animal behaviour. Rowell provides evidence that in guenons the analogy to human harem polygyny is misleading. Although the females stay in groups accompanied by a single male who fights incoming males in the mating season, the resident male cannot control the sexual activities of the females in the group and does not seem to copulate more often than incoming males. Rowell believes that in hamadryas baboons the harem system seems somewhat more comparable to its human namesake, in the sense that males directly control females and that the stability of the harem ultimately depends on a transaction between males. Schubert discusses the sociopolitical implications of applying the concept of harem to nonhuman primates and suggests that male primatologists do that "unconsciously in attempts to glorify machoistic male patriarchal power over primate females (and thereby, by implication), with regard to the human females" (p.23).

As I am a political scientist with an interest in the life sciences it is hardly surprising that I found Part III appealing but also quite familiar. Many prospective readers will already know the contributions by Goodall and De Waal that make up Part II. Their work reaches such a large audience that one can wonder why it had to be reprinted in this volume. I found Part I partic-

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

MEN HAVE PROPORTIONATELY LARGER BRAINS THAN WOMEN

By J. Philippe Rushton, Department of Psychology, University of Western Ontario, London, Ontario, N6A 5C2 Canada

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

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

Rushton (1992) confirmed Ankney's results in another large-scale study. Cranial capacities were calculated for a stratified random sample of 6,325 U.S. Army personnel measured in 1988. Men averaged 1442 cm^3 and women 1332 cm^3 after adjustments were made for the effects of stature, weight, rank and ethnicity.

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

Although not shown in the table, Rushton (1992) also found military rank differences with officers averaging 1393 cm^3 and enlisted personnel 1375 cm^3 after covariance adjustments for stature, weight, race and sex.

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

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

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

It is worth nothing the enormous overlap in most distributions of brain size. Only an 8% difference separated the men and women and a 4% difference separated the Asian-American from the African-American averages in the US Army. Clearly it is problematic to generalize from a group average to any particular individual. However, because there is about a .35 correlation between brain size and intelligence test scores (Johnson, 1991; Willerman et al., 1991), these systematic and possible casual relationships may be of great scientific interest.

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

With the sex difference in brain size, Ankney (1992) has pointed to a paradox. Women have smaller brains than men but apparently have the same intelligence test scores. Ankney resolved the problem by proposing that the six difference in brain size relates to those intellectual abilities at which men excel. Men do better on various spatial tests and on tests of mathematical reasoning (Kimura, 1991). Ankney suggested that the sex difference may be best understood within the context of evolutionary pressures for sexual dimorphism in the hunter-gathering society in which human brains evolved. Men roamed from the home base to hunt, a scenario that has been suggested that it may require more brain tissue to process spatial information. Alternatively, Ankney proposed, women's brains may operate more efficiently than men's. There might also be an unknown effect related to sex differences in macrophysiology, for instance, metabolic rate.

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

References

Ankney, C.D. (1992). Sex differences in relative brain size: The mismeasure of women, too? *Intelligence, 16*, 329-336.

Johnson, F.W. (1991). Biological factors and psychometric intelligence: A review. *Genetic, Social and General Psychological Monographs, 117*, 313-357.

Kimura, D. (1992). Sex differences in the brain. *Scientific American, 267* (No. 3), 119-125.

Lynn, R. (1991a). Race differences in intelligence: A global perspective. *Mankind Quarterly, 31*, 255-296.

Lynn, R. (1991b). The evolution of racial differences in intelligence. *Mankind Quarterly, 32*, 99-121.

Rushton, J.P. (1991). Do *r-K* strategies underlie human race differences? *Canadian Psychology, 32*, 29-42.

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

Willerman, L., Schultz, R., Rutledge, J.N., & Bigler, E.D. (1991). *In vivo* brain size and intelligence. *Intelligence, 15*, 223-228.

ANNOUNCEMENTS

HBES Annual Meeting

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

International Ethological Conference

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

New Anthropology Journal

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

CURRENT LITERATURE

March 1993

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

Baenninger, R. (Ed.) (1991). *Targets of Violence and Aggression*. Elsevier Science, P. O. Box 882, Madison Sq. Sta., New York, NY 10159 USA.

Barrett, L., Dunbar, R.I.M., & Dunbar, P. (1992). Environmental influences on play behaviour in immature gelada baboons. *Animal Behaviour, 44*, 111-116. (Dept. of Anthropology, Univ. College London, Gower Street, London WC1 E6BT, U.K.)

Barton, R.A. & Simpson, A.J. (1992). Does the number of males influence the relationship between dominance and mating success in primates? *Animal Behaviour, 44*, 1159-1161, (Dept. of Psy., Univ. of Sheffield, Sheffield S10 2TN, U.K.)

Bateson, P. (Ed.) (1991). *Development and Integration of Behaviour: Essays in Honour of Robert Hinde*. Cambridge Univ. Press, Pitt Bldg., Trumpington Street, CB2 1RP, U.K.; 40 W. 20th St., New York, NY 10011 USA.

Bekoff, M. & Byers, J. (1992). Time, energy and play. *Animal Behaviour, 44*, 981-982. (Dept. of Biological Sciences, Univ. of Idaho, Moscow, ID 83843, USA).

Bercovitch, F.B. (1992). Re-examining the relationship between rank and reproduction in male primates. *Animal Behaviour, 44*, 1168-1170. (Caribbean Primate Res. Ctr., Univ. of Puerto Rico, Medical Sci. Campus., P.O. Box 1053, Sabana Seca, PR 00952, USA).

---. (1992). Dominance rank, reproductive success and reproductive tactics in male primates: A reply to Dunbar & Cowlishaw. *Animal Behaviour, 44*, 1174-1175. (supra)

Berenbaum, H. & Rotter, A. (1993). The relationship between spontaneous facial expressions of emotion and voluntary control of facial muscles. *Journal of Nonverbal Behavior, 16*, 179-190. (Dept. of Psych., Univ. of Illinois, 603 E. Daniel St., Champaign, IL 61820).

Betzig, L. (1992). A little history of Darwinian history. *Ethology and Sociobiology, 13*, 303-308. (Univ. Michigan, Evolut. & Human Behav. Program, 100H Rackham Bldg., Ann Arbor, MI 48109, USA).

---. (1992). Roman polygyny. *Ethology and Sociobiology, 13*, 309-350. (supra)

---. (1992). Roman monogamy. *Ethology and Sociobiology, 13*, 351-384. (supra)

Box, H. O. (Ed.) (1991). *Primate Responses to Environmental Change*. Chapman & Hall, 2-6 Boundary Row, London SE1 8HN, U.K.; 29 W. 35th St., New York, NY 10001 USA.

Boysen, S. T., & Capaldi, E. J. (Eds.) (1993). *Development of Numerical Competence: Animal and Human Models*. L. Erlbaum Assocs., 365 Broadway, Hillsdale, NJ 07642 USA.

Bronlow, S. (1992). Seeing is believing: Facial appearance. *Journal of Nonverbal Behavior, 16*, 85-100. (Catawba Coll., Salisburg, NC 28144, USA).

Brown, D. E. (1991). *Human Universals*. McGraw-Hill, Inc., 1221 Ave. of Americas, New York, NY 10020 USA), $34.95 (hdbk.; also in ppr.). **Needs Reviewer**

Bruce, K. E., & Estrep, D. Q. (1992). Interruption of and harassment during copulation by stumptail macaques (*Macaca arctoides*). *Animal Behaviour, 44*, 1029-1044. (Dept. of Psych., Univ. of North Carolina, Wilmington, NC 28403 USA).

Burgoon, J.K., LePoire, B.A., Beutler, L.E., Bergan, J. & Engle, D. (1993). Nonverbal behaviors as indices of arousal: Extension to the psychotherapy context. *Journal of Nonverbal Behavior, 16*, 159-178. (Dept. of Comm., Univ. of Arizona, Tucson, AZ 85721 USA).

Burling, R. (1993). Primate calls, human language, and nonverbal communication. *Current Anthropology, 34*, 25-54. (Univ. British Columbia, Vancouver, BC, Canada V6T 1W5).

Bush, J.P., & Ciocco, J.E. (1992). Behavioral coding and sequential analysis: The portable computer systems for observational use. *Behavioral Assessment, 14*, 191-198. (REPRINT: Ciocco, J.E. Virginia Commonwealth Univ., Richmond, VA 23284, USA).

Cernovsky, Z.Z., & Litman, L.C. (1992). Re-analyses of J.P. Rushton crime data. *Canadian Journal of Criminology, 35*, 31-36. (St. Thomas Psychiat. Hosp., Forens. Serv., St. Thomas, Ontario, Canada N5P 3V9).

Chisholm, J.S. (1993). Death, hope, and sex: Life-history theory and the development of reproductive strategies. *Current Anthropology, 34*, 1-24. (Univ. Calif. Davis, Dept. Appl. Behav. Sci., Davis, CA, 95616, USA).

Cords, M. (1992). Post-conflict reunions and reconciliation in long-tailed macaques. *Animal Behaviour, 44*, 57-62. (Dept. Anthro., Columbia Univ., New York, NY 10027, USA).

Costabile, A., Genta, M. L., Zucchini, E., Smith, P. K., & Harker, R. (1992). Attitudes of parents toward war play in young children. *Early Education & Dev., 3*, 356-369. (Dip. Scienze dell-Educazione, Universita della Calabria, Via Brodolini 30, 87030 Roges di Rende Cosenza, Italy)

Costabile, A., Smith, P. K., Matheson, L., Aston, J., Hunter, T., & Boulton, M. (1991). A cross-national comparison of how children distinguish serious and playful fighting. *Developmental Psych., 27*, 881-887. (supra)

Cowlishaw, G. & Dunbar, R.I.M. (1992). Dominance and mating success: A reply to Barton & Simpson. *Animal Behaviour, 44*, 1162-1163. (Dept. Anthrop., Uni. College London, Gower Street, London WC1 E6BT, U.K.)

Cronin, H. (1991). *The Ant and the Peacock: Altruism and Sexual Selection from Darwin to Today*. Cambridge Univ. Press, Pitt Building, Trumpington Street, Cambridge CB2 1RP, U.K.; 40 W. 20th St., New York, NY 10011 USA, $39.50 (hdbk.). **Needs Reviewer**

Dawkins, M. S., Halliday, T. R., & Dawkins, R. (Eds.). (1991). *The Tinbergen Legacy*. Chapman & Hall, 2-6 Boundary Row, London SE1 8HN, U.K.; 29 W. 35th St., New York, NY 10001 USA. **Needs Reviewer**

Dunbar, R.I.M. & Cowlishaw, G. (1992). Incest and other artefacts: A reply to Simpson & Barton. *Animal Behaviour, 44*, 1166-1167. (supra)

Dunbar, R.I.M. & Cowlishaw, G. (1992). Mating success in male primates: Dominance rank, sperm, competition and alternative strategies. *Animal Behaviour, 44*, 1171-1173. (supra)

Dusenberry, D. B. (1992). *Sensory Ecology*. W. H. Freeman, 4419 W. 1980 S., Salt Lake City, UT 84104-9988 USA. $28 (hdbk., discounted).

Ellis, L. (1993). *Social Stratification and Socioeconomic Inequality. Vol. 1: A Comparative Biosocial Analysis*. Greenwood Publishing, 88 Post Road West, Westport, CT 06881-5007 USA. $55 (hdbk.). **Needs Reviewer**

Fedigan, L. M., & Asquith, P. J. (Eds.) (1991). *The Monkeys of Arashiyama: 35 Years of Research in Japan and the West*. State Univ. of New York Press, Albany, NY, USA. **Needs Reviewer**

Frank, M.G. (1993). Behavioral markers & recognizability of the smile of enjoyment. *Journal of Personality and Social Psych., 64*, 83-93. (Univ. New S. Wales, Sch. Psychol., POB1, Kensington, NSW 2033, Australia.)

Fridlund, A.J., Kenworth, K.G., & Jaffery, A.K. (1993). Audience effects in affective imagery: Replication and extension to dysphoric imagery. *Journal of Nonverbal Behavior, 16*, 191. (Dept. Psych., Univ. of California, Santa Barbara, CA 93106 USA).

Gandelman, R. (1992). *Psychobiology of Behavioral Development*. Oxford Univ. Press, 200 Madison Ave., New York, NY 10157 USA.

Gibson, K. R., & Ingold, T. (Eds.). (1993). *Tools, Language and Cognition in Human Evolution*. Cambridge Univ. Press, Pitt Building, Trumpington Street, Cambridge CB2 1RP, U.K.; 40 W. 20th St., New York, NY 10011-4211 USA. **Needs Reviewer**

Groves, C. P. (1991). *A Theory of Human and Primate Evolution*. Oxford Univ. Press, Walton Street, Oxford OX2 6DP, U.K. 19.50 pounds (hdbk.). **Needs Reviewer**

Hager, B.J. (1992). Get thee to a nunnery: Female religious claustration in medieval Europe. *Ethology and Sociobiology, 13*, 385-408. (SUNY Syracuse, CESF, Dept. Environm. & Forest Biol., 133 Illick Hall, 1 Forestry Dr., Syracuse, NY 13210, USA).

Hoyenga, K. B., and Hoyenga, K.T. (1993). *Psychobiology: The Neuron and Behavior*. Wadsworth, 7625 Empire Dr., Florence, KY 41042 USA. $65 (hdbk.)

Hrdy, S.B. (1992). Fitness tradeoffs in the history and evolution of delegated mothering with special reference to wet-nursing, abandonment, and infanticide. *Ethology and Sociobiology, 13*, 409-442. (Univ. Calif., Davis, Dept. Anthropol., Davis, CA 95616, USA).

Izard, C.E., (1993). 4 systems for emotion activation: Cognitive and noncognitive processes. *Psychological Review, 100*, 68-

90. (Univ. Delaware, Dept. Psychol., 220 Wolf Hall, Newark, DE, 19716, USA).

Judge, D.S., & Hrdy, S.B. (1992). Allocation of accumulated resources among close kin: Inheritance in Sacramento, California, 1890-1984. *Ethology & Sociobiology, 13*, 495-522. (Univ. Calif., Davis, Dept. Anthropol., Davis, CA 95616, USA).

Kaiser, S. & Wehrle, T. (1992). Automated coding of facial behavior in human-computer interactions with FACS. *Journal of Nonverbal Behavior, 16*, 67-84. (Univ. Zurich, Dept. Psychol., CH-8044 Zurich, Switzerland).

Kowalski, R.M. (1992). Nonverbal behaviors and perceptions of sexual intentions: Effects of sexual conatativeness, verbal response, and rape outcome. *Basic and Applied Social Psychology, 13*, 427-446. (Western Carolina Univ., Dept. Psychol., Cullowhee, NC, 28723, USA).

Koyama, T., & Smith, P. K. (1991). Showing off behaviour of nursery children. *Aggressive Behavior, 17*, 1-10. (Smith, Dept. Psych., Univ. of Sheffield, Sheffield S10 2TN, U.K.)

Kramer, M. & Schmidhammer, J. (1992). The chi-squared statistic in ethology: Use and misuse. *Animal Behaviour, 44*, 833-841. (Dept. of Statistics, Univ. of Tennessee, Knoxville, TN 37996, USA).

Krebs, J. R., & Davies, N. B. (1991). *Behavioural Ecology*, 3rd ed. Blackwell Scientific, P. O. Box 87, Oxford OX2 0DT, U.K.; 3 Cambridge Center., Cambridge, MA 02142 USA.

Leavitt, G.C. (1992). Sociobiology and incest avoidance: A critical look at a critical review critique. *American Anthropologist, 94*, 932-933. (Gustavus Adolphus Coll., Dept. Sociol. & Anthro., St. Peter, MN, 56082, USA).

Lieberman, P., Laitman, J.T., Reidenberg, J.S. & Gannon, P.J. (1992). The anatomy, physiology, acoustics and perception of speech: Essential elements in analysis of the evolution of human speech. *Journal of Human Evolution, 23*, 447-468. (Brown Univ., Dept. Cognit. & Linguist. Sci., Box 1978, Providence, RI 02912, USA).

Lore, R.K. & Schultz, L.A. (1993). Control of human aggression: A comparative perspective. *American Psychologist, 48*, 16-25. (Rutgers State Univ., Dept. Psychol., Busch Campus, New Brunswick, NJ, 08903, USA).

Lott, D. F. (1991). *Intraspecific Variation in the Social Systems of Wild Vertebrates.* Cambridge Univ. Press, Pitt Bldg., Trumpington Street, Cambridge CB2 1RP, U.K.; 40 W. 20th St., New York, NY 10011 USA.

Low, B.S., & Clarke, A.L. (1992). Resources and the life course: Patterns through the demographic transition. *Ethology and Sociobiology, 13*, 463-494. (Univ. Michigan, Sch. Nat. Resources, Ann Arbor, MI, 48109, USA).

MacDonald, K. (1992). A time and place for everything: a discrete systems perspective on the role of chidren's rough-and-tumble play in educational settings. *Early Education & Dev., 3*, 334-355. (Dept. Psych., California State Univ., Long Beach, CA 90840-0901 USA)

Maestripieri, D., Schino, G., Aureli, F. & Troisi, A. (1992). A modest proposal: Displacement activities as an indicator of emotions in primates. *Animal Behaviour, 44*, 967-979. (Dipartimento di Genetica e Biologia Molecolare, Universita' La Sapienza, 00185 Rome, Italy).

Martin, R. D. (1990). *Primate Origins and Evolution.* Chapman & Hall, 2-6 Boundary Row, London SE1 8HN, U.K.; 29 W. 35th St., New York, NY 10001 USA.

Matsumoto, D. & Assar, M. (1992). The effects of language on judgments of universal facial expressions of emotion. *Journal of Nonverbal Behavior, 16*, 85-100. (1600 Holloway Ave., San Francisco, CA 94132, USA)

Money, J. (1988). *Gay, Straight, and In-between: The Sexology of Erotic Orientation.* Oxford Univ. Press, 200 Madison Ave., New York, NY 10016 USA. $9.95 (ppr.)

Moore, J. (1992). Sociobiology and incest avoidance: A critical look at a critical

review. *American Anthropologist, 94*, 929-931. (Univ. Calif. San Diego, Dept. Anthropol., San Diego, CA 92103, USA).

Roskaft, E., Wara, A., & Viken, A. (1992). Reproductive success in relation to resource-access and parental age in a small Norwegian farming parish during the period 1700-1900. *Ethology and Sociobiology, 13*, 443-462. (Univ. Trondheim, Dept. Zool., N-7055 Dragvoll, Norway).

Segal, N. L. (1993). Grief intensity following the loss of a twin and other relatives: test of kinship genetic hypotheses. *Human Biology, 65*, 87-105. (Dept. Psych., Univ. of California, Fullerton, CA 92634 USA).

---. (1993). Implications of twin research for legal issues involving young twins. *Law & Human Behav., 17*, 43-58. (supra)

Sherman, P. W., Jarvis, J. U. M., & Alexander, R. D. (Eds.). (1991). *Biology of the Naked Mole-Rat*. Princeton Univ. Press, 41 William St., Princeton, NJ USA. **Needs Reviewer**

Siegel, S.M., Friedlander, M.L., & Heatherington, L. (1992). Nonverbal relational control in family communication. *Journal of Nonverbal Behavior, 16*, 117. (Atlanta Area Psychol., Associates, 2520 Windy Hill Rd., Suite 203, Marietta, GA 30067, USA).

Simpson, A.J. & Barton, R.A. (1992). Dominance and mating success: Avoiding incest and artefact. *Animal Behaviour, 44*, 1164-1165. (Dept. of Psy., Univ. of Sheffield, Sheffield S10 2TN, U.K.)

Smith, P.K. (1991). The silent nightmare: bullying and victimisation in school peer groups. *The Psychologist, 4*, 243-248.(Dept. Psych., Univ. of Sheffield, Sheffield S10 2TN, U.K.)

---. Hostile aggression as social skills deficit, or evolutionary strategy? *Behavioral & Brain Sciences, 14*, 315-316. (supra)

Smith, P. K., Hunter, T., Carvalho, A., & Costabile, A. (1992). Children's perceptions of playfighting, playchasing and real fighting: a cross-national interview story. *Social Dev., 1*, 211-229. (supra)

Smither, R.D. (1993). Authoritarianism, dominance, and social behavior: A perspective from evolutionary personality psychology. *Human Relations, 46*, 23-44. (Rollins Coll, Dept. Psychol., Org. Behav., Program, Winter Pk., FL, 32789, USA).

Smuts, R.W. (1992). Fat, sex, class, adaptive flexibility, and cultural change. *Ethology and Sociobiology, 13*, 523. (4011 Thornoaks, Ann Arbor, MI, 48104, USA).

Stein, B. E., & Meredith, M. A. (1993). *The Merging of the Senses*. MIT Press, 55 Hayward St., Cambridge, MA 02142 USA. $42.50 (hdbk.). **Needs Reviewer**

Tagaby, Z. (1992). Eastern Europe confronts sociobiology: Contemporary east European reaction to western social science. *Mankind Quarterly, 33*, 109-120. (Hungarian Acad. Sci., H-1361 Budapest 5, Hungary).

Tanaka, I. (1992). Three phases of lactation in free-ranging Japanese macaques. *Animal Behaviour, 44*, 129-140. (Dept. of Anthro., Univ. of Tokyo, Tokyo 113 Japan).

Tardy, C.H. (1993). Biological perspectives on language and social interaction. *American Behavioral Scientist, 36*, 339-358. (Univ. So. Mississippi, Hattiesburg, MS 39406, USA).

Tesser, A. (1993). The importance of heritability in psychological research: The case of attitudes. *Psychological Review, 100*, 129-142. (Univ. Georgia, Inst. Behav. Res., Athens, GA, 30602, USA).

Toth, N., Schick, K.D., Savage-Rumbaugh, F.S., Sevcik, R.A. & Rumbaugh, D.M. (1993). Pan the tool-maker: Investigations into the stone tool-making and tool-using capabilities of a bonobo (*Pan paniscus*). *Journal of Archaeological Science, 20*, 81-92. (Indiana Univ., Ctr. Res., Anthropol. Fdn. Technol., Bloomington, IN, 47405, USA).

Vila, B.J., & Cohen, L.E. (1993). Crime as strategy: Testing an evolutionary ecological theory of expropriative crime. *American Journal of Sociology, 98*, 873-912. (Univ. Calif. Irvine, Sch. Social Ecol., Irvine, CA 82717, USA).

Zebrowitz, L.A., Brownlow, S. & Olson, K. (1993). Baby talk tothe babyfaced. *Journal of Nonverbal Behavior, 16*, 143-158. (Dept. of Psychology, Brandeis Univ., Waltham, MA 02254).