

Human Ethology Newsletter

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MEMOIR

HUMAN ETHOLOGY - ORIGINS IN THE U.K.

By: Peter K. Smith, Dept. of Psychology,
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My own interest in human ethology started in 1967. I had just arrived at Sheffield University to start research for my doctoral thesis. Having recently read Lorenz's book *On Aggression* (the English translation was published in 1966), I was interested in researching human aggression. I had just come from Cambridge University as a psychologist, but had found the most rewarding lectures to be Robert Hinde's lectures on animal behaviour, in the Zoology Department. I clearly knew that Lorenz's work was controversial, but the topic seemed important.

My supervisor in Sheffield was Kevin Connolly. Kevin had recently returned from the International Ethology Conference in Sweden, at which Tinbergen had given his (later published) address 'On War and Peace in Animals and Man', and he was enthused with the possibility of applying ethological methods to human behaviour. At about the same time, I also read Desmond Morris's edited book, *Primate Ethology* (1967). This had nine interesting chapters on behaviour in non-human primates; and a final chapter by Nick Blurton Jones with the very English title 'An ethological study of some aspects of social behaviour of children in nursery school'.

Nick Blurton Jones had studied with Tinbergen - his doctoral thesis had been on threat displays in the great tit. Now at the Institute of Child Health in London, he was one of the first to apply these ethological techniques systematically to humans. I soon went to visit Nick. As a newcomer, I expected somehow to meet a man of venerable age, but was pleasantly surprised to meet an informal person only a few years older than I (at the time, quite young!).

As I read into the area and met more people, it became apparent that human ethology was 'in the air'. Other people in Britain were interested. At Oxford (later, Keele), Corinne Hutt and Bill McGrew had been studying effects of density on children's behaviour, and characteristic patterns of social behaviour in autistic children (later taken up by John Richer). At Cambridge, Martin Richards and his group, and in Birmingham, Chris Brannigan and colleagues, were interested in the approach. Uniting us was an interest in using observational methods in natural surroundings, a technique which most of us were applying to the study of peer-peer interactions. At the time, John Bowlby was developing attachment theory, drawing in ethological ideas, and this formed

another strand of ethological application.

Some informal meetings in London soon followed, organised by Nick, and much of the work presented there appeared in his edited volume *Ethological Studies of Child Behaviour* (1972). Apart from Mel Konner's work, this had entirely U.K. contributors. It has, I think, been something of a seminal work, establishing clearly at the time the potential of a new discipline. Although many colleagues of mine had been sceptical of 'just watching' children, this book showed that human ethology was here to stay. In the same year, Bill McGrew published his own book, *An Ethological Study of Children's Behaviour*. The Hutt's had meanwhile published *Direct Observation and Measurement of Behaviour* (1970).

The first three international Human Ethology workshops were held in the U.K.; the first two in London (1973, 1974), and the third hosted by me in Sheffield (1975), in collaboration with Don Omark and Bob Marvin from the USA. By this time, the meetings had involved human ethologists from Germany, the USA. By this time, the meetings had involved human ethologists from Germany, the USA, and other countries. However, the British strand of human ethology continued. Robert Hinde was starting to move from primates to an interest in research with humans, and edited *Non-Verbal Communication* (1972), a book which spanned primate and human work. I contributed a chapter on *New Perspectives in Child Development* (1974).

My own work, which had initially intended to look at aggression in children broadened out. I researched into observational methods (discovering the extensive child development literature of the 1930's in North America), and became more interested in social behaviour generally, and play. I was watching children in nurseries, and, fortunately for human nature, play is more frequent than aggression. I was also interested in environmental influences on behaviour. After completing my Ph.D., I carried out some investigations of this with Kevin Connolly, published as *The Ecology of Preschool Behaviour* (1980). This combined observational techniques with experimental procedure.

The ethological contribution continued in the 1980's though inevitably in changed ways. Observational methods as such became re-integrated into the mainstream of research techniques for

studying behaviour. The influence of sociobiology reinvigorated the focus on natural selection and functional aspects of behaviour, and led to new directions for research which seem to have been pursued less vigorously in the U.K. than in North America. Corinne Hutt's tragically early death cut short the work of her research group. Bowlby's attachment theory matured, and Hinde's group at Madingley developed detailed studies of children's behaviour, some of it influenced by attachment theory perspectives. To some extent, it became more difficult to distinguish research in the human ethology tradition from much research in developmental psychology - perhaps no bad thing. If not now so distinct a discipline, human ethology has had some success in having its aims incorporated into a wider body of research. In his recent book, *Ethology and Human Development* (1992), John Archer gives an excellent overview of what human ethology has contributed in his respect.

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SOCIETY NEWS

PROPOSED CHANGE IN OFFICES

At the Amsterdam convention in July, the Board recommended that the office of Vice-President be changed to Vice-President/President-Elect. The membership has voted on the proposal. That amendment to the by-laws has now passed. Therefore, each Vice-President will serve a three-year apprenticeship on the Board before automatically assuming the Presidency. We now need to elect a new Vice-President this academic year, as well as a new President and Treasurer.

Please see the call for nominations for these three positions in this issue of the newsletter. Members are encouraged to submit names of nominees to Nancy Segal now for the offices of President, Vice-President/President-Elect, and Treasurer. Self-nominations are welcome. There are no limits on the number of terms that a given individual may serve.

<i>Year</i>	<i>Whose Terms Begin</i>
1991-92	Vice-President
1992-93	Secretary, Membership Chair
1993-94	President, Treasurer, and Vice-President/President Elect
1994	Newsletter Editor (Vice-President for Information)

MEMBERSHIP RENEWALS

Nancy Segal wishes to request that payment sent to her from abroad be in checks made out in US dollars. Payment in other currencies entails exorbitant exchange fees. Most Europeans will, of course, pay Herman. Please follow the instructions for payment on the last page of the newsletter. Most members have been very good about this.

CALL FOR NOMINATIONS

Nominations for President, Vice-President/President-Elect, and Treasurer should be sent to Nancy Segal, Membership Chair, as soon as possible, at Dept. of Psychology, California State University, Fullerton, CA 92634 USA, fax 1-714-773-2209. Self-nominations are encouraged.

BOOK REVIEWS

Individual development and evolution *The genesis of novel behavior*, by Gilbert Gottlieb. New York, Oxford: Oxford University Press, 1992.

Reviewed by Jerry Hirsch

Professor of Psychology and of Ecology, Ethology, and Evolution, University of Illinois, Urbana-Champaign, IL, USA

This is a fascinating book, in which Gilbert Gottlieb challenges *successfully* the establishment (i.e., population genetic) interpretation of evolution -- the so-called synthetic theory of evolution (the "modern synthesis") that had emerged from the 1930s through the 1950s when the ideas of Darwin and Mendel were combined in the writings of Fisher, Wright, Haldane, Huxley, Dobzhansky, Mayr and others. For them, evolution results from a change gene (allele) frequencies. Sociobiologist E. O. Wilson (1975 p. 145) carried their line of thought to the absurd when he argued "...such phenomena as the hormonal mediation of behavior, the ontogenetic development of behavior, and motivation ... are really only sets of adaptations keyed to environmental changes of different durations. They are not fundamental properties of organisms around which the species must shape its biology ..." Gottlieb's highly persuasive argument is diametrically opposed to Wilson's.

Gottlieb called the population-genetic approach the "unfinished synthesis" and he presents "a new theory of 'behavioral neophenogenesis' (how extra -- or supragenetic developmental change produced in individuals can eventually lead to genetic evolutionary change" (p. viii). In 14 chapters, starting with an enlightening discussion of "the much-maligned French thinker Jean Baptiste Lamarck" to whom "it is appropriate to pay intellectual homage" (p. 9), Gottlieb reviews the history of our ideas about two topics: evolution (phylogeny) and the development of the individual (ontogeny), paying particular attention to the history of the competing theories -- preformationism and epigenesis. In fact, 11 of his 14 chapters present a history of the key ideas and their scientist advocates (usually with a photograph). Despite my criticisms (see below), I praise his scholarship, his discussion and his

presentation as excellent and informative. The reader is shown how the ideas and issues emerged over two centuries. Gottlieb knows well the literature on embryology and development and his choice of people and topics to consider is excellent: Darwin on evolution and embryological development; Haeckel and the biogenetic law (the enduring misconception that ontogeny recapitulates phylogeny); Francis Galton on nature vs. nurture; Weismann, Roux, His and Driesch and their early (pre-Mendelian) attempts to include embryonic development in the approach to heredity; Karl Pearson vs. William Bateson and the clash between the biometricians and the early Mendelians; Garstand, de Beer, Goldschmidt and Schmalhausen and their post-Mendelian attempts to introduce developmental events into evolutionary thought; Fisher, Wright, Haldane, Dobzhansky, Huxley, Mayr and the Modern Synthesis sans development.

The foregoing, almost 75% of the book, prepares the stage for the central thesis which is Gottlieb's powerful case for the role of environmentally dependent changes in development which *subsequently* may exert strong selection pressure for genes (alleles) favoring those very changes in development. The key idea is that, rather than awaiting changes in genetic structure to permit changes in development, environmentally (a habitat difference) induced changes in development (norm of reaction) exert selection pressure on the gene pool, favoring changed genetic structures that facilitate the continued appearance of the new developmental outcome (phenotype) in several environments. This occurred in Conrad Waddington's elegant study of the crossveinless phenotype in *Drosophila melanogaster* demonstrating the genetic assimilation of an acquired character -- he showed how an apparent Lamarckian effect (the inheritance of an "acquired" character) could occur in a manner fully consistent with Mendelian genetics (p. 131).

Clearly I praise and recommend this book, because Gottlieb's arguments are cogent and largely correct. He is not without fault, however, so readers should be advised to do their own homework on the details. He knows neither genetics nor the work on evolution and its history as well as would be desirable for the task he has undertaken. For example, he asserts "no one has yet succeeded in bringing into existence a new species..." (p.104). But, two of his own references quite explicitly report: "What makes polyploids of outstanding interest to

evolutionists is the possibility, not only of *creating new species* experimentally, but also of tracing the phylogeny of existing polyploid species, and sometimes of re-creating them (Dobzhansky, 1970, p. 384; also see Stebbins, 1950, Chapter viii, my emphasis)." The best known case is the radocabbage (*Raphanobrassica*) a polyploid hybrid. It "not only is fully fertile with itself, but also produces sterile triploid hybrids when crossed to its ancestors, radish and cabbage" (Dobzhansky, 1970, p 384). Gottlieb also seems aware that evolution may occur in several ways. No, Galton was not Darwin's full "first cousin" (p. 48); they were half cousins, sharing Erasmus Darwin as a grandfather but being descended from him through two different wives and therefore themselves the children of half-siblings. The title of I. M. Lerner's (1958) important treatise is *The genetic basis of selection* (not of "evolution"), etc.

The discussion of heritability is incorrect because of Gottlieb's misconception that "most evolutionary biologists believe there is a dichotomy in the 'source' of phenotypic traits so that some traits ... are thought to be heritable and others nonheritable..." (pp. 146-147). Unfortunately he projects his own misunderstanding onto the practitioners of evolutionary biology. Several of us have repeatedly emphasized that heritability is a property of populations and *never* of traits. Gottlieb believes "that if one selectively breeds for a trait, one will promulgate that trait ... and this holds for any and all traits" p. 147 "Promulgate" is an inappropriate term; he means something like "increase the frequency of certain trait expression(s) in the selected population". The all-important distinction (too often ignored) between the level of the phenotype and the level of the genotype remains an everpresent challenge for both authors and readers to distinguish and always to clarify which level is being discussed at any given time. He fails to appreciate that the success or failure of selection depends *not* on the phenotype but on the extent of phenotype relevant allelic diversity in the particular population, and that different populations can have differing distributions of allelic diversity (at one or more loci). That is why heritability is a property of the population and not of the trait. For example, bidirectional selection for high and low expression of central excitatory state (CES) in both of two population of *D. melanogaster* succeeded in producing from one population a high, but not a low, CES line, and from the other a low, but not a high, CES line (Vargo & Hirsch, 1985). There appear to be several gene correlates of CES,

alleles of some of which had become homozygous in a noncomplementary manner in the two populations. That is (probably) why we could select only in one direction from one population and in the opposite direction from the other.

Nevertheless, the book has much to offer readers.

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Evolution and Individual Behavior: An Introduction to Human Sociobiology, by Christopher Badcock. Basil Blackwell, Oxford, 1991. Pp. xv + 303. ISBN 0631174281 £35 (hb), 063117429X £12.95 (pb).

Reviewed by Ian Vine

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Christopher Badcock's interest in Freudian psychoanalysis as well as in evolutionary theory make his latest book a unique sociobiological text. However - and in my view fortunately - the bulk of the chapters are relatively immune from the former influence. In most respects they give an admirably succinct and clear introduction for students, albeit at the cost of not stressing how cautiously some of the more specific claims about our thoughts and actions should be read.

A brief historical chapter highlights essential advances in genetics and evolutionary thinking, including the centrality of the individual rather than group level of natural selection. More detailed exposition of strategies for reproductive success begins with prisoner's dilemma games and Axelrod's valuable analysis of reciprocity, followed by the standard Hamiltonian account of kin selection. Accounts of altruistic self-sacrifice as an evolutionary reality are completed by discussing the phenomenon of manipulated sacrifice, or 'induced altruism' ('selfishness of the actor from the point of view of

the victim", p.92).

One reason for my reluctant decision that this book has too many dangers to stand alone (as a much needed first introduction to sociobiology) relates to Badcock's continuing use of a potentially misleading definition of biologically 'altruistic' behaviour. Following Trivers, he takes this as "any behavior which promotes the reproductive success of the recipient at a cost to the reproductive success of the altruist" (p.25). As I have argued before (HEN vol.5 no.10, 1989; cf. reply by Badcock in vol.5 no.11), more usual sociobiological definitions which refer to survival prospects rather than reproductive success are preferable. This is because one can then say unequivocally that altruism can evolve up to levels compatible with the altruist's overall inclusive fitness. The Trivers/Badcock definition, in its unqualified form, is ambiguous as between inclusive and narrower individual fitness. Taken literally, it does not allow costly parental care to qualify as altruism in most circumstances. And it is unclear whether aid to other close relatives qualifies or not. In practice, Badcock does refer elsewhere to altruism on behalf of offspring or other 'near kin' (e.g. p.63) - thereby revealing how he is obliged to make inconsistent use of his confusing definition.

The significance of sociobiological theory for our own species is seen in terms of evolved constraints upon our powers of conscious self-determination - including being guided by a generally adaptive 'pleasure principle', and being susceptible to the self-deception concerning exploitative cheating which he effectively relates to the concept of unconscious 'repression'. Badcock also stresses a third process with Freudian roots - namely 'identification' with others - as resulting from the phenotypic matching which discriminates suitable targets for human altruism and co-operation. Here, as elsewhere, I would have welcomed more reference to other sociobiologists' analyses of phenomena such as social awareness (as in Byrne & Whiten's Machiavellian Intelligence collection), and to relevant non-Freudian psychological research. In the absence of a more detailed causal account of how we make our social affiliations, readers may be sceptical when told that the evolutionary paradox of directing altruism towards non-kin with whom one has identified is largely just an incidental product of living in large urban societies.

Morality too is approached from an uncompromisingly individualistic perspective, in that

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theoretical interest, and can make sense of various pieces of correlational data cited. My worry is that sometimes their empirical foundation amounts to little more than analysts' 'clinical experience'; and innocent readers could all too readily mistake the author's seductive yet speculative hypothesizing for definitive sociobiological explanation. There are clearly significant hypotheses to be explored by bringing a psychoanalytic viewpoint into human sociobiology. But in view of the problematic nature of the former conceptual framework, and its dangerous tendency to show disregard for normal scientific canons of rigorous testing and empirical evidence, I regard it as unwise to deploy Freudian assertions so confidently in a text primarily aimed at beginning students.

What Badcock's treatment of human nature in individualistic terms reveals (apart from how far he has evidently rejected his own background as a sociologist) is the thinness of his gestures towards acknowledging autonomous elements in human mentality (and the cultural selection which it sustains). He professes to be open-minded on the tightness of biological pressures (the 'id') and cultural injunctions (the 'superego'), and thus to take seriously our ego-mediated choices. Yet his strong Freudian commitment to the primacy of unconscious forces is very clear. It all too often appears to imply that we rarely (if ever) actually do escape from the evolutionary imperatives which first shaped our hominid ancestors' distinctive traits. He scarcely alludes to anything which cannot be seen as being unconsciously directed towards one's own inclusive fitness.

There is undoubtedly much of great interest in Badcock's book, for the researcher as well as the student. And in many respects it conveys basic principles of the sociobiological perspective vividly (making particularly good use of computer metaphors at times), and alerts readers to ways of misunderstanding evolutionary processes. Yet in the end too many controversial assumptions and conceptual issues are fudged over - with negligible attention to the trenchant attacks that over-enthusiastic sociobiologizing about the human species has partly deserved. We are left with a variant of human sociobiology which still remains vulnerable to charges of 'adaptationism' and 'biological

determinism'. It is arrogant not to acknowledge openly that it probably is humanly possible (if typically very difficult) to act from authentically moral motives and deliberate benevolence towards strangers in need.

We surely know nothing like enough about the specificity of the human genome to assert from sociobiological theory alone that we lack the power willingly and knowingly to transcend fitness-maximizing dispositions in motivationally authentic ways. Such issues must be a matter for rigorous empirical enquiries of kinds to which the author regrettably devotes negligible attention. So for all its attractions, Badcock's book does not bridge the credibility gap which has dogged human sociobiology

since its inception, undermining widespread acceptance of the profound relevance of an evolutionary view of human nature. It does deserve to sell widely; but it is not the definitive introduction which we are still urgently awaiting.

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CALL FOR NOMINATIONS

for President

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and Treasurer

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REMINDER!

PLEASE REJOIN ISHE
NOW IF YOUR MEMBERSHIP
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Nature-Nurture Interaction

By Nancy E. Aiken, P. O. Box 27, Guysville, OH 45735 USA

Both of the mini-communications articles in the June 1992 edition of HEN addressed the nature-nurture issue as have many other articles in past issues. Although HEN contributors recognize that nature/nurture is not an either/or situation when one discusses causes of behaviors, many others tend to see an either/or relationship; thus nature or nurture has been a hotly debated issue for several years. Soon, perhaps, this "issue" will cease to be a cause for debate and will become an area of study for behaviorists who understand the interaction between nature and nurture rather than who have polarized themselves on one side or the other of the "issue."

Although my dissertation, *A Biological Basis for the Emotional Impact of Art* (1992, Ohio University), concerns a problem in aesthetics (How does art evoke emotion.), the solution is found in ethology. Explaining the solution involved not only a reevaluation of the old releaser-IRM-fixed action pattern model, but a discussion of the nature-nurture issue. Consequently, I thought that I might "kill two birds with one stone" by (1) announcing the availability of my dissertation (University Microfilms) and (2) adding to the previous comments made on the nature-nurture issue.

Marianne Jakus (June, 1992 HEN) suggests that genes and environment are best discussed in terms of interaction. This is a very enlightening way of considering the nature-nurture issue. To describe one behavior as "innate" and another as "learned" is to limit ourselves to a simplistic and erroneous view of behavior. To describe behavior in terms of an interaction between genes and environment or among innate, experience, and learning enables us to understand how animals behave.

An example of how this interaction works is illustrated by the deprivation experiments by Greenough et al. (1987). Newborn primates begin life with many overlapping axonal branches in visual cortex. Normal development requires equal "pruning" of the branches for each eye. However, if one eye is deprived of visual experience, the axons supporting that eye will not be pruned as they should be and the

Membership Renewals for 1993

It is time to renew your membership for 1993 if you have not already done so. Membership is by calendar year, so dues are to be paid by the first of the year. If the date on your mailing label is earlier than the current year, it is time to renew your membership. For economic reasons, renewal notices are not sent. No more than two warnings are given on the mailing label; thereafter you are removed from the membership list. Please report any errors, change of address, etc. to the editor.

Current dues and directions for payment are given on the last page.

end result of maturation will be reduced vision for the individual. Greenough and fellow researchers found that even small amounts of experience can protect against the loss of normal vision. In this instance, normal visual development depends on the interaction between physical maturation and visual experience. Normal visual behavior is not caused by either genes or environment; it is the result of an interaction between the two.

One of the main points of discussion within the nature-nurture issue is how much of a behavior is "innate" and how much is "learned." If one looks beyond a simple interaction of genes and environment or innate and learned to a question of how much of the behavior is innate and how much of the behavior is learned, one finds oneself polarized again. However, if behavior is seen as an interaction between genes and environment, the question becomes, as Jolly (1972) suggested: How much latitude for variation is given this behavior? In the case of primate infants beginning life with many overlapping axonal branches for each eye, the stage is set for normal vision if visual experience occurs. Variability occurs only if normal visual experience is denied the animal; therefore, not a lot of latitude for variation is given this behavior. On the other hand, a behavior such as tap dancing has a lot of latitude for variation since one does not simply mature into a tap dancer, one must study and practice the steps over and over again. Even tap dancing, however, begins with physical attributes (walking, etc.) on which the behavior is built. These qualities provide parameters within which a behavior becomes manifest. Perhaps

the parameters could be thought of as a box. The size of the box determines the variability of the behavior. A very small box constrains the behavior to heavy reliance upon the genes such as is illustrated by the example of axon pruning in visual cortex; a large box has more room for environmental interactions of various sorts as is illustrated by the tap dancing example.

As the nature-nurture issue becomes the nature-nurture interaction in the minds of researchers, associated terms will be redefined in terms of interaction rather than polarity. Innate, learned, experience, genes (in behavioral terms), and environment will need refined definitions. Also, as Ms. Jakus pointed out, the word "cause" will have to be considered in terms of a process. Then, real progress in the study of human behavior will be made.

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Newsletter Submissions

Anything which might be of interest to ISHE members is welcome: Society Matters, suggestions for Forum topics, essays for the Growing Points feature, Mini-Communications, Announcements of meetings, journals or professional societies, etc. These sorts of submission should be sent to the editor. Book review suggestions should go to the appropriate book review editor. Submission should be in English, on paper or on these disc formats: ASCII (preferred), Wordperfect (IBM), or Microsoft Word (MAC).

No material in the newsletter is selected by critical peer review and thus material is presented only to foster free and creative exchange of (even outrageous) ideas between scholars. The fact that material appears in the newsletter never implies the truth of those ideas, ISHE's endorsement of them, or support for any policy implications that might be inferred from them.

ANNOUNCEMENTS

Journal Resumes Publication

The French-language journal *Ecologie Ethologie Humaines* is resuming publication after a two-year hiatus (1990-91). The journal is published by ADRET (Association pour le Developpement des Recherches en Ecologie et en Ethologie humaines). The president of ADRET is ISHE member J.-C. Rouchouse. The journal publishes research, general essays, and methodological articles on human ethology and human ecology. Of particular interest is research on the effects of urban, industrial and agricultural environments on the conditions of human existence and human behavior. However, a diversity of articles is also desired. Subscriptions are 160 FF per year (250 for institutions). Outside the Franc Area, payment can be made by (1) international money order, (2) personal check + 120 FF for bank commission, or (3) banking transfer paid in francs to ADRET, Credit Lyonnais, compte no. 0000005184 Z, cle RIB 45, code banque 30002, code guichet 00636. Send name and address to ADRET, Laboratoire de Sociologie Animale, Centre Universitaire de Clichy, 106 quai de Clichy, 92110 Clichy, France, tel. 33-42-70-70-40.

Next Crimean Meeting

An International Conference on the Biological Roots of Human Behavior will be held in the Crimea June 1-4, 1993. Principal topics will be (1) cross-cultural studies of normal behavior and psychopathology, (2) the biology of symbolic systems, (3) developmental and comparative aspects of normal and psychopathological behavior, and (4) sociobiological issues in psychopathology. The entire conference will take place aboard the "Izumrudnyi," which will ply the Crimean coast. Registration is \$70 US if before March 1, \$80 before May 1, and \$90 after. Payment will be by cash on arrival. Payment includes a broad cultural and recreational program. Single rooms cost \$90 per night, \$150 for doubles, including all food and local transportation. Send one-page abstracts and registration information to Dr. Vitaliy I. Egorov, Dept. of Psychiatry, Crimean Medical Institute, Simferopol, Crimea 333000, Ukraine.

The abstracts from the last Crimean Conference, or the Ethology and Evolution of Human Behavior, are available from Dr. Egorov at the address above. The price is \$5 US, preferably in cash.

CURRENT LITERATURE

December 1992

If you are interested in reviewing any of the books cited below (especially those designated as needing a reviewer), please contact the appropriate Book Review Editor.

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