

Human Ethology Bulletin

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Convention Update: INDIVIDUAL PAPERS NOW ACCEPTED AND DEADLINE EXTENDED

There have been two important changes in the procedure for submitting abstracts for the ISHE convention in Vancouver. Individual paper submissions will now be accepted, not just papers that are part of symposia. Also, abstracts for all submissions now have a deadline of **1 May 1998**.

The convention will take place at Simon Fraser University, British Columbia, Canada, **19-23 August 1998**. It will follow the American Psychological Association convention in San Francisco. If you are considering attending, **complete the Preliminary Registration Form** contained in the convention brochure you should have received, and submit it by **1 May 1998**. You will then receive the detailed Conference Registration and Accommodation brochure. To have your name added to the conference mailing list, contact: Conference Services, Halpern Centre, Simon Fraser University, 8888 University Drive, Burnaby, B.C. V5A 1S6, Canada, tel. 1-604-291-4910, fax 1-604-291-3420, e-mail Conference_Services@sfu.ca.

The conference focus is "Integrating proximate and ultimate explanations in the study of mind and behavior." Plenary speakers include David Haig, "Genetic Imprinting, Conflicts of Interest, and Development"; Doreen Kimura, "Biological Contributions to Sex

Differences in Human Cognitive Abilities"; and Simon Baron-Cohen, "Evolution, Autism, and Theories of Mind." An event will commemorate the 25th anniversary of the awarding of the Nobel Prize in Medicine/Physiology to ethologists von Frisch, Tinbergen and Lorenz.

Proposals for **symposia** should include four copies of a 250-word description of the symposium theme and of abstracts of four or five related papers. **Individual papers** that are submitted independently of symposia proposals will, if accepted, be grouped into suitable sessions at the convention. Proposals for evening **workshops** should be 1-2 pages long; four copies are requested. **Poster** proposals are also invited, but only from conference registrants.

Abstract format for all papers and posters (including symposium papers): Line 1: authors' names, last name first. Line 2: institutional address(es). Line 3: title of presentation in capital letters. Provide one camera-ready copy in a 3.5 X 4.5 inch (8.89 X 11.43 cm) rectangle, plus three additional copies. Type font should be 10 point Times. Provide text on Macintosh, Windows, or IBM disk with the name of the operating system and word processing program.

The **conference website** has been connected to the ISHE website: <http://evolution.humb.univie.ac.at/ishe.html> or may be reached directly at <http://www.sfu.ca/cstudies/conf/humanwww/>. The URL has also been posted on the HBES website. The **conference organizer** is our President, Charles Crawford: Dept. of Psychology, Simon Fraser University, Burnaby, B.C., Canada V5A 1S6, tel. 1-604-291-3660, fax 1-604-291-3427, e-mail crawford@sfu.ca.

Housing: participants will be housed in university townhouses accommodating four persons in single rooms with kitchen, living room and two bathrooms. Cost per person is Can\$ 43.70 (US\$ 30.59) per night and includes Continental breakfast. Accommodation in hotels within driving distance is an option.

Registration fee is approximately Can\$ 350 (US\$ 245) and includes the abstract book, welcome reception the evening of the 19th, salmon barbeque (worth the price of admission by itself), and conference banquet. Participants will have to forage independently for lunches and the last dinner, the 22nd.

The **Young Investigators Award** competition is open to any graduate student whose degree will not have been awarded by 1 July 1998. Applicants are to submit three copies of a paper not to exceed five double-spaced pages, plus the usual abstract (marked with a "Y" in the upper right hand corner). The student will present the paper orally at the conference. Papers will be judged on substance and clarity. The winner(s) will receive a free ISHE membership renewal, free registration at the subsequent Biennial Congress, a book, and a certificate. Further details or amendments will follow as necessary.

ISHE Book on Sale

Late in 1997 Plenum Press published the proceedings from the 1996 ISHE convention held in Vienna. *New Aspects of Human Ethology* is edited by Alain Schmitt, Klaus Atzwanger, Karl Grammer and Katrin Schäfer. The 239-page volume includes the 73 abstracts from the convention, author and subject indices, plus these chapters by featured speakers:

Irenäus Eibl-Eibesfeldt, Human Ethology: Origins and Prospects of a New Discipline

Glenn Weisfeld, Research on Emotions and Future Developments in Human Ethology

Peter K. Smith, Play Fighting and Real Fighting: Perspectives on Their Relationship

Karl Sigmund, Games Evolution Plays

R. I. M. Dunbar, Groups, Gossip, and the Evolution of Language

Karl Grammer, Valentina Filova, and Martin Fieder, The Communication Paradox and Possible Solutions: Towards a Radical Empiricism

Thomas J. Bouchard, Jr., Twin Studies of Behavior: New and Old Findings

C. Sue Carter, Hormonal Influences on Human Behavior

R. Robin Baker, Copulation, Masturbation, and Infidelity: State-of-the-Art.

ISHE has ordered 40 copies of the book, which we are selling for the usual purchase price of \$45, shipping included. To order a copy, please send payment, made out to ISHE, to Glenn Weisfeld (see Editorial Box for address). You may pay by check drawn on a US bank, VISA, Mastercard or Eurocard; please provide credit card number, expiration date, and your signature. If you pay by check drawn on a non-US bank, please add \$10. Please do not order the book directly from the publisher, at least until we sell the 40 copies. If the book is adopted as a course requirement, a bulk order will be sent on consignment and the extra books may be returned.

A New, Disturbing Trend for Human Ethology?

By **Bill Charlesworth**

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The recent change in the title of the journal *Ethology and Sociobiology* to *Evolution and Human Behavior*, along with other indicators to be discussed below, suggests that human ethology may be in a bit of trouble. The new editors of the journal note that they welcome cross-species comparison and have "an unabashedly anthropocentric focus." They also aver that the scope of the journal is "not limited to any single methodological or

theoretical approach" (p. 2), despite the fact that evolutionary theory is the *raison d'être* for the journal's existence. One wonders if they will welcome theoretical approaches that challenge evolutionary theory, or ethogram-like descriptive studies of human adaptation that have no explicit relevance to current theorizing but could very well be relevant in the future.

Personally, I am disappointed with the decision to drop the terms "ethology" and "sociobiology," although I don't disagree completely with the rationale behind it. Both labels represent contrasting as well as complementary views of behavior. Ethology is a well-established discipline with a history and rationale of its own that reached a productive epitome in the ideas of Tinbergen and Lorenz, and evolved into special concentration upon humans under the initial impetus of Eibl-Eibesfeldt and others.

Sociobiology, as we all well known, is much younger than ethology and a product of E. O. Wilson's audacious ideas expressed in *Sociobiology: The new synthesis* (1975). Wilson's view of ethology, however, may have launched the present trend. He predicted that sociobiology and behavioral ecology (on one end of a continuum) and neurophysiology and sensory psychology (on the other) would cannibalize ethology as well as comparative psychology. As can be imagined, many ethologists were not impressed by this prediction.

From what I can gather, one reason for the journal's name change is that the label "sociobiology" is perceived by many as a professional kiss of death--at least for a young U.S. investigator applying for a job. As for "ethology," I have been told by some leading evolutionary behaviorists that it is an outworn discipline that has seen its day. More disturbingly, I have been told it is identified with Konrad Lorenz whose name connects its many minds with Nazi ideology. Both reasons, of course, have little or nothing to do with doing good science. But many respectable scientists, department chairs, journal editors, and concerned students apparently feel (as the HBES poll revealed) that both terms have become politically incorrect, dangerous, or whatever. Even if such reasons are not totally

convincing, the name change has practical implications for many of our colleagues and therefore has to be respected.

The problem goes deeper, though. For me, first recognition of it began when I read the account of ethology in Richard Milner's *The Encyclopedia of Evolution: Humanity's search for its origins* (1990). Ethology was described as a refreshing revival of Darwinian ideas against psychologists' "rats, mazes and puzzle boxes" and as quite successful for several decades in "studying the interaction between innate species-specific behavior and learning" and as penetrating "animal signal systems to an unprecedented extent, gaining new understanding of animal communication" (p. 156). So far so good-- but then in the following paragraph: "ethologists got tangled up in their own theories of 'drive,' 'motivation,' and 'releasing mechanisms,' and built an intellectual structure that collapsed under its own weight." Okay, that may be so, although I am not so convinced about the "collapse."

Further down in the description, ethology "became discredited by a spate of facile books applying their theories of fish and bird behavior directly to humans," and enjoyed "tremendous vogue" through attempts at "pop ethology" in the 1960s and 1970s. Milner then concludes that "the concepts of ethology have been all but abandoned as investigators of animal behavior re-label themselves "behavioral ecologists" (p. 156).

One can agree with parts of this sketch, but there is much with which to disagree. The volume (itself pop sensational in many places) is not a purely happy publishing event since inadequate or misleading depictions of a major topic are not scholarly enough for an encyclopedia. Encyclopedias carry special weight, at least for the nonprofessional. One can imagine them having significant implications for future research--in this case turning off a new generation of researchers who may be inclined to apply ethology to humans.

The problem of the status of ethology, of course, goes back beyond Milner. As a colleague, Peter Verbeek, reminded me, George Barlow grappled with the issue in his paper "Has sociobiology killed ethology or trivialized it?" that appeared in Bateson and

Klopfer's (1989) *Perspectives in Ethology*
8: *Whither ethology?*

That the problem won't go away emerged very recently in correspondence with an eminent evolutionary biologist whose exposition of evolutionary ideas and their relevance for studying humans I have always admired and publicly supported when such ideas were hardly popular. My correspondent noted that some of Lorenz's ideas (for example, his hydraulic model and concept of instincts) are no longer accepted. Fair enough, but Lorenz had many more concepts than this, as do Tinbergen, Thorpe, Hedigger, Rensch, Heinroth, Crook, von Holz, Baerands, von Frisch, Whitman, Leyhausen, Hinde and others who helped build modern ethology. Surely their contributions should not be rejected or forgotten simply because a new trend has appeared on the scene.

My correspondent's identification of ethology with Lorenz is especially peculiar given that Tinbergen and von Frisch were co-winners with Lorenz of the Nobel Prize and that most human ethologists usually define ethology in terms of Tinbergen's four questions. The four questions include evolutionary considerations along with strong emphasis upon ontogeny, an area my correspondent sees as the wave of the future. Apparently, he is not aware of early ethology's concentration on imprinting, which is a developmental phenomenon, or of John Archer's recent *Ethology and Human Development* (1992).

My correspondent continues: "Scarcely anyone in evolutionary biology, outside of human studies, uses the word 'sociobiology' any more—or ethology for that matter." He goes on to say, "I think it's because they have simply integrated the useful concepts from each in their work and are moving on from there." Actually, these two terms are still very much alive, and are used with reference to research on animals and humans. For example, at least two journals have the word "ethology" in their names. The International Ethological Congress features papers on animals and humans, and attracts about a thousand scholars from around the world. The European Sociobiological Society has been growing steadily. Perhaps the term "ethology" is more entrenched in Europe (witness the Danish Society for Human

Ethology) because the field began there and this history remains alive. Nevertheless, past and current ethological research is frequently cited in North America as well as elsewhere. Examples are the work of Bowlby on attachment, Lorenz on the infant schema, van Hooff on facial expression, McGuire on dominance and serotonin, de Waal on reconciliation, Mazur on dominance contests and testosterone, Rapoport on obsessive-compulsive disorder, and Grammer on human pheromones.

Despite my negative reaction to such an assessment of ethology's demise, I recognize that my correspondent may be making an important substantive point. Times may have changed about attitudes toward ethology and, whether human ethologists like them or not, such attitudes have to be understood and grappled with. This, then, may be a good time for self-analysis and dialogue.

Actually, I am skeptical about most dialogues ever influencing behavior, but perhaps one more won't hurt. At the 1996 Human Ethology Congress in Vienna (not to be confused with the IEC mentioned above), John Richer, Wolfgang Schleidt and I held a workshop on the epistemological aims of ethology and how distinctive such aims were. While many of the participants made good points, the workshop, in my estimation, was pretty much a failure. Some attending seemed to find the workshop theme irrelevant—they were already doing good human ethology, so what was the point? Others appeared so overwhelmed by jet lag and the rich hospitality that they couldn't concentrate on such a weighty charge.

Whatever the truth of the matter, in my mind the issue is still important for the field. Members of ISHE, in my opinion, ought to think about it. If it is a non-issue, I would like to hear why. If it is an issue, in what specific way is it and what can be done about it? I understand that grappling with the issue can take time away from empirical research, and young investigators perhaps should not jeopardize themselves with what may turn out to be idle talk. Hopefully, though, some members of ISHE will think about it and share their thoughts in the *Bulletin*.

Below is a paraphrase of some of the major ideas presented by the three organizers of this ISHE workshop on the epistemology of human ethology. The ideas were aimed at stimulating questions concerning the kinds of knowledge ethologists can and should seek in order to make a distinctive contribution to understanding human behavior.

Wolfgang Schleidt: "I see the epistemological significance of human ethology" in its opportunity to allow us to recognize "the full complexity of human behavior, its components and settings." Ethology "allows us to meet the needs for the observation, description, and documentation (ethograms and ecograms) required for the understanding of human behavior. "We need more advanced methods in recording and analysis, not new theories. Let theory emerge from the data, stop inventing simplistic 'hypotheses' (sociobiology) and filling journals with culled examples which support them. We must invest much more effort in collecting elementary data on behavior and on the environment in which it occurs within the full spectrum of humanity--cross-cultural ethograms and ecograms. And we must...check the paradigms from artificial intelligence and artificial perception, search among mathematicians for a Hilbert for ethology, and accept the smartest students we can get!" We should also develop a field of "archeo-ethology" so we need two kinds of knowledge: (1) knowledge of the essential components of "normal behavior" within a given framework of space and time--the types of behavior, probability of each behavior, and behavioral sequences for each individual human (stimulus releasers, courses of action, decision points); and (2) recognition and understanding of specific disorders of behavior, or behavioral pathology (e.g., attention deficit disorders, panic attacks, impotence).

John Richer: Like psychology, human ethology "is a *reflexive* subject in that we study ourselves and communicate our results to our subject matter, ourselves...The (subjective) *content* of consciousness is treated in the same way as any other property of behaviour...It is studied and discussed in the same way as we would discuss courtship, dominance hierarchies, hedonically ordered primate societies or the function of the hippocampus....This carries a danger to which

many psychologists have succumbed, and of which human ethologists must be continually aware." Many psychologists subscribe to the subjectivist view that we must include in our study of humans what they are feeling, thinking and so on. However, "this subjectivist view misses the point....When we as a community are trying to assemble a body of knowledge it is not each person's knowledge or experience that is important, but how two or more people can *agree* ." Richer then proceeded to discuss the distinction between the points of view of "onlookers" (trained observers) and "agents." Connecting both points constitutes the phenomenon of "intersubjectivity," "ascribing agency and subjective experience to others," an activity similar to imitation and one that ethologists engage in during observation. But, unlike most anthropologists who take the "emic" point of view (inferring the meaning of behavior by assuming a subjective role), the human ethologist adopts "a thoroughly 'etic' and passive approach...taking the study of human behavior away from anthropocentrism." This is "a most difficult step" but is necessary to avoid the failures of psychology and other social sciences. Traditional ethology has successfully adopted "the lateral thinking inductive approach" in its study of animals, and "may be contrasted with the deductive approach of psychology and its disdain for facts for their own sake" (taken from Blurton Jones). Human ethologists can escape the failures of psychology by careful, systematic, and comprehensive observation of humans in their natural habitats. "All the reliability tests in the world are wasted when we cannot (or at least do not try) to describe exactly what we observe in pure onlooker terms."

Bill Charlesworth: "Human ethologists (HEs) derive their truth claims about human behavior primarily from objective (observable) facts. Subjective impressions (as obtained from interviews, questionnaires, etc.) are used only secondarily to direct attention to relevant facts and to amplify the meanings of behavior. Given their commitment to evolutionary theory, HEs aim to explain facts in terms of proximate as well as ultimate 'causes,' which means investigating phenomena with Tinbergen's four questions in mind. Given that animal ethology made great progress as a science by observing and describing animal

behavior in free and semi-constrained stimulus conditions, HEs are faced with the labor-intensive and challenging task of constructing human ethograms (or partial ethograms) as well as possible under normal human circumstances. This also means acknowledging the efforts of colleagues in anthropology, sociology, etc. and recognizing many so-called nonbiological facts (subjective reports of feelings, cultural meanings, etc.) that can be used to amplify that which is observed, with the ultimate goal of interpreting the ultimate product in terms of evolutionary theory. While HEs subscribe to evolutionary theory, they are not obligated to view every research effort in terms of specific hypotheses deduced from the theory, or to ignore behaviors and behavioral situations that do not have any known reference point in the theory. HEs can explore unknown areas in as theoretically-unbiased a manner as possible, but are always prepared to see evolutionary implications wherever the

opportunity arises. HEs are required to subscribe to two claims to truth: correspondence of observation statements to objective fact, and the degree to which facts cohere with other facts. That is, the truth of a statement consists in the extent to which it is a member of a relevant body of other statements. Like Darwin's theory which relied on the concatenation or coherence of a massive abundance of disparate facts, so must the HE rely on the coherence of various facts about individuals, giving primacy, of course, to those observed and agreed upon by trained observers. Such demanding requirements constitute HE's distinctive (and clearly labor-intensive) contribution to the behavioral sciences."

Editor's Request: Please submit responses to these contributions or other comments on the topic of the epistemological aims of ethology and their distinctiveness, and the future of human ethology, to the *Bulletin*.

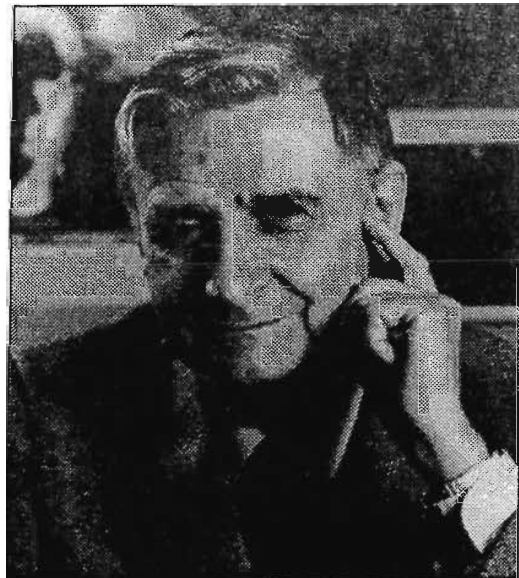
An Interview of Edward O. Wilson

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Among many other things, Edward Wilson is a myrmecologist and two-time Pulitzer Prize winner. Following the publication in 1975 of his book *Sociobiology: The new synthesis*, he became both to opponents and proponents the living symbol of the application of evolutionary theory to social behavior. In this vein, he has taken a photo of an ant holding between its mandibles a banner with the words: 'Onward Sociobiology!' This interview took place at Harvard University, 27 March 1997.

Konrad Lorenz wrote that animals of the same species sometimes accidentally kill one another, but they never do it on purpose. Humans supposedly are the exception. What is your comment?

Well of course the mass of evidence over the last thirty years shows that this is not true.



Killing of members of the same species, including deliberate killing during contests for dominance, killing of territorial rivals and invading males, infanticide and even cannibalism are commonplace. This has been shown in many different groups of animals. We always hope that what Lorenz had said would be true, so we could use the animal kingdom as an example of how human beings should conduct

themselves.

Are humans more murderous than other animals?

No. The data from long-term behavioral studies of groups such as lions, hyenas and chimpanzees show that the per capita murder rate in animal societies that do engage in murderous aggression is much higher than in human beings. It is just that we have much more alert media that report murders whenever they occur. Some time ago I calculated all this, and I believe that is true even if you throw in the rate of mortality due to direct aggression during war in the modern era. Even there, in a few episodes during this century where we saw the highest mortality in modern history, the percentage of people killed out of the entire population of Europe was still relatively small. As horrendous as it was, a couple of tens of millions, it was still only a small percentage, whereas a larger percentage of an entire clan of aggressive social animals sometimes is killed. And when you go down to ants, they are genuinely the most warlike of the animals, and the mortality rates there of individuals and colonies can be truly staggering.

But animals often do show some restraint, as Lorenz claimed. There is ritualized fighting, and the losing party is often not killed. Why not, as he may live and fight another day?

Lorenz was basically correct in pointing out that most animal aggression is ritualized. Explanations of why animals take so much time to threaten, rather than attack directly, have been discussed many times. I believe that the prevailing explanation is that it is often advantageous to both parties to work out some communication whereby the duel is settled by display rather than direct aggression. One of the reasons for this is that even the stronger individual is frequently killed or badly hurt. For the same reason a winner may refrain from killing the loser, because the loser may still do damage. And the winner may have to face yet another rival. Also, for a social animal it may not pay to kill off a subordinate animal, because this last animal may be vital for the dominant animal's success, particularly in hunting or combating rival groups. Yet another explanation is kin selection; closely related rivals may have a genetic interest in keeping

one another alive. As to male rivals of a species with lethal weapons, such as poisonous snakes, use of such a weapon by one side would almost certainly meet with immediate retaliation. So I believe there are several reasons why rivals often refrain from full-blown aggression, but instead use complex rituals which are often quite conspicuous and elaborate.

Nevertheless, animals of the same species often kill one another. How could Lorenz have been so completely wrong?

Lorenz was a great naturalist, but he himself studied only a very limited number of species. The information that has produced a newer picture was forthcoming for the most part only after field studies of many animals that had not been studied in Lorenz's time. It was not a case of his ignoring information, he just did not have the information. But I also believe that the great success of his book *On Aggression*, was due in part to the fact that it was a message people wanted to hear, namely, nature tells us that it is a mistake to be aggressive and carry out war. I slightly knew Konrad Lorenz, who was one of my sources of inspiration when I was a young student. One of the reasons that he was annoyed by me was that I showed, by bringing together a large amount of information in the 1960s from insects, that not only were many insects murderous in their aggressive interaction, but aggression was totally lacking in large numbers of other species. So in fact, aggression was not a general instinct spread throughout the animal kingdom as Lorenz had thought, but it occurred only in species in which aggressive behavior evolved as a density-dependent factor. In other words, when densities of populations are not regulated by predators, emigration or disease, then you will find territorial and other forms of aggression, which can be interpreted as specialized responses to favor individuals competing for limited resources. Not all species do have individuals growing to densities and numbers that they even get to compete. And therefore there is never a situation in which there is any advantage in being aggressive.

There are about 9,500 known species of ants, many of which you have studied, but there is only one species of *Homo*. Why?

I think I have the answer for that. That is because we are so big. We are giant animals. The bigger the animal, the larger the territory and home range that the animal needs. Ant species, consisting of very tiny organisms, can divide the environment up very finely. You can have one species that lives only in hollow twigs at the tops of trees, another species that lives under the bark, and yet another species that lives on the ground. Human beings, being giant animals and particularly being partly carnivorous, cannot divide the environment up finely among different *Homo* species. There have been episodes in which there were multiple hominid species, probably two or three species of *Australopithecus*, co-existing perhaps with the earliest *Homo*. But it is evidently the tendency of hominid species and particularly of *Homo* to eradicate any rivals. It is a widespread idea among anthropologists that when *Homo sapiens* came out of Africa into southern Europe about a hundred thousand years ago, it proceeded to eliminate *Homo neandertalensis*, which was a native European species that had survived very well along the fringe of the advancing glacier.

You write that ants often share food among themselves. Why, and how did you find out?

Back in the fifties Tom Eisner, a colleague of mine, and I did, I believe, the first experiments tracing radioactive-labeled sugar water through colonies of ants. We were able to estimate the rate at which the food was exchanged, and the volume that was exchanged. Not only do many colonies exchange food with fanatic dedication, but in the colonies of many ant species the workers regurgitate food back and forth at an extraordinarily high rate. Now we understand that the result of this is that at any given time, all the workers have roughly the same food content in their stomach. It is sort of a social stomach, so that an ant is informed of the status of a colony by the content of its own stomach. It therefore knows what it should be doing for the colony. If you only had a small number of extremely well-fed ants and the rest were hungry, the workers would go out hunting for more food, whereas in fact it might be a bad time to hunt for food.

Why doesn't this sort of communism exist

among humans?

What I like to say is that Karl Marx was right, socialism works, it is just that he had the wrong species. Why doesn't it work in humans? Because we have reproductive independence, and we get maximum Darwinian fitness by looking after our own survival and having our own offspring. The great success of the social insects is that individual genes are invested in the success of the colony as a whole, and especially in the reproduction of the queen, and thus through her the reproduction of new colonies. This was I think one of the main contributions of the idea of kin selection. We now understand quite well why most species of social insects have sterile workers, and therefore can have communist-like systems, in which the colony is all, the individual is only a part of the colony, and the success of the whole community is what counts far above the success of the individual. The behavior of the individual social insect evolved with reference to what it contributes to the community, whereas the genetic fitness of a human being depends on how well it can individually use the society. We have become insect-like only by extreme contractual arrangements.

You write that a major difference between humans and ants is that we send our young men to war, while they send their old females. Why is that?

Well, first of all, all the worker ants are female. In the bee, ant and wasp societies, sisters are extremely closely related to one another, and therefore it pays to be altruistic toward sisters, whereas brothers do not benefit by giving anything to sisters. So the females are the ones who are fanatically devoted to one another. Why are they old? Once again it comes down to this matter of what is best for the colony. As the workers grow older, they put in more and more of their time outside, and as they become quite old or injured or sick, they spend their time either outside of the colony or right at the edge. The advantage of this is that the individuals that are going to die soon anyway, having already performed a lot of service, are the individuals that sacrifice themselves. It is the cheapest for the colony, whereas in humans, not only are the young males the strongest, but by being mammals in a

competitive society young males tend to be greater risk takers, braver and more adventurous. They are moving up the ladder of status, rank, recognition, and power. And to be a member of the warrior class when it is needed has always been a rapid way of moving up. So that appears to be the main reason why we send young men out, and they are willing to go.

Nowadays not only the word sociobiology is used, but also words such as evolutionary psychology, Darwinian anthropology and others. Why so many names?

The classical Lorenzian, ethological tradition recognized that characters evolve in behavior just as they do in anatomy. You cannot appreciate what a great advance that was intellectually in the forties and the fifties, unless you lived that time. Now we take it for granted. In the seventies I realized that we needed to have a new body of theory that would incorporate the best elements of ethology, but it would be directed at the study of societies, in particular complex societies, and that would use natural selection theory to explain relationships within a society. Sociobiology was to be the study of the biological basis of all forms of social behavior, in all kinds of organisms, including human beings. Sociobiology then came under attack by critics all over the place because of its use in studying human behavior. It was regarded as biological determinism, which was not acceptable for the social sciences. Any idea that human behavior of any kind had a biological basis was not acceptable in the seventies. And then there were Marxist critics like Gould and Lewontin who felt that it was injurious to the progress of human beings toward a socialist society, which they considered the most just and inevitable society. You won't get Gould admit that today, but that was how he talked in those days! So the word sociobiology was under heavy attack in the late seventies and early eighties. The subject of sociobiology, however, flourished; it became the dominant way of thinking in animal behavior studies. But in humans it was so controversial and there were so many misunderstandings and attacks! Then a new generation entered the field of human sociobiology. Some of them are very capable; they have been coming up with really new ideas. And they started avoiding the word sociobiology, and use words like evolutionary

psychology and Darwinian anthropology. There is also the expression: A scientist would rather use another scientist's toothbrush than his terminology.

This famous incident in 1978, where an anti-sociobiologist threw a bucket of water over your head, did it perhaps unconsciously motivate you to devote more time to biodiversity?

Leave sociobiology and no more buckets of water? The answer is no. The reason I went into biodiversity was that it was my lifelong passion. I was trained to study biodiversity. I had been to the tropics and was well aware of all of the conservation problems around the world. I realized that the time had come for biologists who knew about biodiversity and ecology and extinction to become active in this field. So I moved in that direction. And I think it was the right decision to make, because I consider that, for the immediate future, to be involved in that, help spread information, get policies, and so on, is more important than even this business of understanding human behavior. And furthermore, I just loved the work. This is what I do naturally, study biodiversity.

BOOK REVIEWS

Introduction to Theory of Mind: Children, Autism, and Apes

By Peter Mitchell. Arnold, 338 Euston Road, London NW1 3BH, UK, & St. Martin's Press, 175 Fifth Ave., New York, NY 10010, USA, 1997, \$22.95 (ppr.).

Reviewed by Thomas Suddendorf, Dept. of Psychology, University of Auckland, Private Bag 92019, Auckland, New Zealand.

Peter Mitchell has taken on the difficult task of writing an introduction to one of the most exciting, productive and controversial areas of current psychological research. Hundreds of researchers (comparative, developmental, evolutionary and cognitive psychologists, as well as primatologists, ethologists and philosophers) are publishing on the issue of theory of mind - the understanding of one's own and other

people's mental states. This is a very fast-paced field and Mitchell's review does a good job at representing much of the extant research in a fair and accessible manner. However, he does not quite succeed in bringing new structure or clarity to this very diverse area and this is reflected in the organisation of the ten chapters of the book.

Mitchell begins his introduction appropriately by discussing the utility and evolutionary significance of attributing mental states. The first chapters are particularly concerned with the understanding of mind in our closest relatives, the other great apes. The reader is introduced to the findings on ape communication ranging from the controversial ape-language studies to Povinelli's (Povinelli & Eddy, 1996) latest ingenious attempts at investigating what chimpanzees know about seeing and knowing. All major lines of evidence for theory of mind in great apes are explored and presented in a stimulating fashion - albeit without adding any new insights to the debate. Anyone interested in the diversity of scholarly opinion on the issue of ape theory of mind should have a look at the commentaries to an upcoming *Behavioral and Brain Sciences (BBS)* article by C.M. Heyes on the issue.

In passing, Mitchell mentions the seminal *BBS* target article that some twenty years ago sparked the great research effort on theory of mind. Premack and Woodruff (1978) reported results of studies with their chimpanzee Sarah that suggested that chimpanzees are mentalists: in particular, they appear to attribute intentionality. Sarah was presented with short videos of a human actor facing a problem and then with a selection of photos of which one depicted something crucial to achieving the man's goal. Sarah reliably selected the correct solution. This suggested to the authors that she attributed an intention to the actor in the video and that she therefore possesses a theory of mind.

A philosopher among the commentators on that article (Dennett, 1978) pointed out that to prove that someone has a theory of mind, one needs to show an understanding that people act according to their mental representations of the world. Such understanding can become evident when one predicts behaviour that is based on a false belief. When someone holds a false

belief, say, about the location of an object, then that person will act according to this representation and will search for the object where he or she thinks it is rather than where an observer knows it is. In 1983 Wimmer and Perner published their influential work on such false-belief understanding in children. Their study and the dozens that followed showed that by about age four most children appreciate that people act upon their representations of the world (whether these are correct or not). That is when we have proof that they have a representational theory of mind. While chimpanzees may have some appreciation of mind, there is no convincing evidence to date showing that they understand this basic axiom of a mental world view.

Not all humans appreciate that people act upon their representations of the world. Autistic people generally fail false-belief and other theory-of-mind tasks and researchers such as Simon Baron-Cohen (e.g., 1995) have thus advanced the hypothesis that autism is characterized by a lack of theory of mind, or "mindblindness". Mitchell's book goes straight from the ape debate to a nicely written description of the autistic syndrome in chapter four and the theory-of-mind hypothesis for autism in chapter five. In chapter six he then qualifies the claims that lack of theory of mind can explain autism and describes alternative explanatory approaches such as deficits in executive control. These chapters succeed in providing a broad and insightful summary of research in the area.

Eventually, in chapters seven and eight, Mitchell comes to the issue of how clinically normal children acquire a theory of mind. He briefly outlines the various tasks that measure false-belief understanding and other aspects of theory of mind. Some of the information was of course already introduced earlier in the book in the discussions of autism and apes. He mentions the issue of cultural differences in theory of mind development but fails to acknowledge that many cultures arrive at very distinct conceptions of mind and its relation to behaviour (consider beliefs in telepathy, voodoo, god, etc.). For those interested, Lillard (in press) provides an interesting account of different ethnopsychologies.

Mitchell does, however, review in detail many of the studies on (Western) children's developing understanding of mind. Of paramount importance seems to be the issue of whether children younger than four might have been underestimated in regard to their conception of mind. It seems that developmental psychologists have an inherent obsession with investing a great deal of effort into reducing the chronological age at which one or the other task might be passed (recall the issue of Piagetian stages in the seventies). Numerous ingenious experiments are described, introducing the reader to many of the current scholarly debates. The author's own contributions feature naturally high in this discussion.

Paradoxically, the studies of Mitchell and his colleagues seem to prove that most of the earlier theory of mind work was incorrect. Three-year-olds understand a lot about mind, theory-of-mind acquisition is gradual, and failure on classic false-belief tasks reflects an attentional magnetism to reality rather than a lack of theory of mind. This may well be largely correct. But this work and the criticism of the theory-of-mind hypothesis in autism leaves the reader wondering why one should be concerned with all these theory-of-mind tasks. Indeed, the reader might question why the author has bothered writing this introduction. It seems that the author, while wrangling with the intricate details of interpretations and experimental designs, somehow loses sight of the very point of it all. The point was *not* to show that three year olds are lacking a theory of mind, or whether acquisition of a theory is gradual or abrupt. The point that Dennett (1978) made was to find a way of showing that the child has a representational theory of mind! When children reliably pass false-belief tasks, we know that they understand that people act according to their representations of the world.

The final two chapters in Mitchell's book concern the specific issues of deception, pretence and communication. All three are important aspects of theory of mind development, and the chapters cover most of the diverse research that has been conducted on these issues. Not surprisingly then, the focus is again on possible under- or overestimations of the capabilities of preschoolers. It is not

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entirely clear why these two chapters stand alone at the end of the book. But these additions provide for a happier ending than chapter eight.

To his credit it has to be said that Mitchell writes in a very engaging and fascinating style and manages to present dozens of sophisticated studies in an accessible manner. The book is written on a level appropriate for interested people from other fields and contains plenty of food for thought. The rapidly growing field is in dire need for a good textbook, but the controversial nature of many of the issues may mean that the time is not yet ripe for it. Mitchell's introduction is probably the best there is for now, and scholars from adjacent fields may want to have a look to find out what all that theory-of-mind hype is all about.

References

- Baron-Cohen, S. (1995). *Mindblindness: An essay on autism and theory of mind*. Cambridge: MIT Press.
- Heyes, C.M. (in press). Theory of mind in nonhuman primates. *Behavioral and Brain Sciences*.
- Dennett, D. (1978). Beliefs about beliefs. *Behavioral and Brain Sciences*, 4, 568-70.
- Lillard, A. (in press). Ethnopsychologies: Cultural variations in theories of mind. *Psychological Bulletin*.
- Povinelli, D.J., & Eddy, T.J. (1996). What young chimpanzees know about seeing. *Monographs of the Society for Research in Child Development*.
- Premack, D., & Woodruff, G. (1978). Does the chimpanzee have a theory of mind? *Behavioral and Brain Sciences*, 4, 515-26.
- Wimmer, H., & Perner, J. (1983). Beliefs about beliefs: representation and constraining function of wrong beliefs in young children's understanding of deception. *Cognition*, 13, 103-28.

Biosociology: An Emerging Paradigm

By **Anthony Walsh**. Greenwood Publishing Group, 88 Post Road West, Westport, CT 06881 USA, 1995, \$59.95 (hdbk.).

Reviewed by **Patrick Peritore**, University of Missouri-Columbia, Political Science Dept., Columbia, MO 65201, USA.

Anthony Walsh has produced a highly competent and clear summary of the biology of human behavior that should prove of use to undergraduates, graduate students, and social scientists interested in this field. The initial four chapters on genetics, the brain, and the emotions are grand summaries which pull together the principal points in the literatures. They make a solid review even for professionals in these fields.

Chapters 5-9 concern two different topics: human sexuality--including dimorphism and sex roles, grounded in differential parental investment--and intelligence and criminality (Walsh's specialty). These subjects are curiously interleaved so that the discussion jumps from intelligence, to sexuality, to criminality, to the family. They should have been separated into two subsections of the book as they are distinct topics.

Issues raised in his first chapter make a case for biosociology: the belief that the social and behavioral sciences are continuous with biology in the same way that biology is continuous with chemistry and physics. Walsh argues that the disciplines of behavioral and social science should make themselves consistent with natural science. In this process of de facto adaptation, biology would not replace traditional social science thinking, but inform and enhance it.

It is hard to understand why Walsh does not embrace the option of rebuilding social science from a biological ground, since he recognizes that 50 years or more of research has produced a Babel of research so tied to different theoretical contexts as to be incommensurate and non-cumulative. He notes that in the social

sciences we still study the great men instead of the latest data. He is somewhat apologetic about his proposed paradigm shift, opting for a complementarity of reductionist and holistic explanations even though holism in social sciences has led to a levels-of-analysis model in which each level has its own definition of reality, methodology, methods, and emergent properties (a notion tinged with vitalism), so that no unified explanation is possible. Walsh argues for a weak version of reductionism as a probabilistic connection between biological and social factors. Recognizing that political correctness will stop most sociologists from accepting the vertical integration of sociology and biological science, he hopes to make biological knowledge a supplement to the standard literatures.

Given the balanced and masterful summaries of human biology which follow, Walsh is doing his discipline a disservice. Kuhnian conventionalism is an inaccurate description both of science and scientific change; science is not propelled by anomalies, but is built on key adductions which form a network of primary concepts, methods, methodologies, and problematics. The consistency of this net of adductions forms the scientism of the enterprise, and guarantees the coherence of data collected on its basis. For example, no one doubts that the theory of sexual selection and complementary dynamics--Fisherian, indicator, and Red Queen processes--provide adequate accounts of behavior in different species, without requiring a decisive experiment to choose among them.

Sociology and political science need no paradigm shift because they are prescientific, having no central definitions of what they study, no proven adductions or theories, no incontrovertible data or generalizations. Adaptation to the principles of biology would require a sea change in training and methodology, and the complete rejection of 50 years of confused discussion more akin to Medieval scholasticism than science.

Thus, I think Walsh wrong when he argues that every science has its central concepts (e.g., atoms, ions, genes, IQ [sic], social class) and tries to elucidate their nature. Apparently the central concept of social science

is human nature. But science is not a conceptual enterprise; no amount of conceptualization will ever elucidate realities, and most likely it will produce more of the false pointings which make up most social science literature. Many scientific results are strongly counter-intuitive, which is why they demand penetrative theory (often produced by geniuses) backed by voluminous experimental and field evidence.

Walsh illustrates the biological approach by defining love as a proprioceptive stimulus released by one or more encounters with a person whose unique characters have an anabolic effect on the hypothalamic-pituitary-gonadal axis, a crisply scientific definition open to testing and capable of sparking research. It is wonderfully annoying to undergraduates, but certainly not your standard social science. Yet, Walsh argues, even a complete description of the genetic, hormonal, and neurological basis of complex behavior does not elucidate the motives, purposes, and phenomenology of the individual actor, of terms such as love, hate, justice, good, and evil.

Now, phenomenology is neither an adequate method nor an end of a science. Love, hate, justice, good and evil happen to be meaningful within Western Christian culture but are certainly inadequate coordinates for understanding human universals, which are, or should be, the goal of behavioral science. For example, sociology could usefully talk about the differences attributable to culture, environment etc., thereby reclaiming much of its rich fieldwork and participant observation tradition, but only within the framework of these biological universals.

In general, Walsh gives too much away, in his account of biosociology, to the culturalists. He need not apologize for the rigorous account which he gives of biological universals, and should insist that biology represents a revolutionary change in orientation and one long in coming.

Chapter 5, *Intelligence and Society*, is a clear and workmanlike summary of a large literature. It raises the question, however, of what IQ measures. Walsh argues that Intellectual behavior is phenotypical

behavior, the outcome of genotypes interacting with all sorts of physical and social stimuli. Genes influence intelligence but do not determine it in any completely prescribed way. Intelligence is the principal component derived from factor analysis of a variety of mental tests (Spearman's *g*), but factor loadings are only correlations between a test and a factor, so how can they represent a behavioral universal which can be accounted for by ultimate or proximate causation?

Anthony Walsh has done us a service by producing a clear, useful, and well-written basic text applying biological knowledge to some central issues in the social sciences. This book is quite useful and, except for its price, would be excellent supplementary classroom reading. His application of biological arguments to criminology is interesting indeed, and many will find it a useful survey of the field. Walsh has produced a fine book, and need not apologize to sociologists (and political scientists) for attempting to save them from endlessly repeating their catalog of errors.

Reinterpreting the Unspeakable: Human Sexuality 2000

By John Money, The Continuum Publishing Company, 370 Lexington Ave, New York, NY 10017, USA, 1994, \$29.95 (hdbk.).

Reviewed by Jay R. Feierman, Department of Psychiatry, University of New Mexico School of Medicine, 2400 Tucker, N.E., Albuquerque, NM 87113, USA.

John Money is the Linnaeus of sexology and his greatest contribution is his ability to organize and classify sexual behavior in varying ways, many of which will be of interest to human ethologists. Money is also a gifted writer, e.g., "Inside the fortress of our skins we human beings have remarkable defenses against enemy intrusions, but we are not impregnable"(p. 1). The effects of this impregnability manifest themselves in what Money calls "The Unspeakable Monsters in Our Lives," by which he means the (sometimes painful) variations of expression of human sexuality.

One of Money's taxonomies, which applies to what he calls "exigency theory," is that there are five universal exigencies of being human: (1) Pairbondance, (2) Troopbondance, (3) Abidance (being sustained in one's ecological niche or dwelling place), (4) Ycleptance (phylogenetic recognition of similarities and differences), and (5) Foredoomance (the state of awareness of being inexorably doomed). Money argues that there is natural biological variation in the expression of these exigencies and that humans have developed three main coping strategies for dealing with the extremes of variation. These three coping strategies are Pragmatics (mapping and programming), (2) Scissilics (disconnecting and dissociating) and (3) Praxics (doing and taking action).

As an example of Scissilics, Money argues that in the service of being able to disconnect carnal lust from affectional love, humans have developed seven "grand stratagems," which when expressed in their extremes, give rise to the paraphilias. The seven "Grand Stratagems" are as follows:

- Sacrificial/Expiatory
- Marauding/Predatory
- Mercantile/Venal
- Fetishistic/Talismanic
- Stigmatic/Eligibilic
- Solicitatorial/Allurative
- Understudy/Subrogational

To this writer, the above is a descriptive list rather than a taxonomy. If taxonomy is the systematic classification of variations on a naturally occurring theme, it is beyond the ability of this writer to see the naturally occurring theme around which this taxonomy was based. Were such a theme easily recognizable, Money most certainly would have used it. As a result, a natural taxonomy of the human paraphilias, based on variation on a naturally occurring theme, has yet to be developed.

I will cite some of the more ethologically interesting parts of the book:

... a person for whom homoerotic attraction constitutes not a variation like left handedness, but an unspeakable monster in his or her life, may have been born with a prenatally, neurohormonal programmed

biopotential for either homoerotic or heteroerotic orientation, whereas the ultimate outcome was contingent on early postnatal socialization experiences (p. 2).

Developmentally, the bonding of the infant to the mother serves the dual purpose of being also preparatory for, and prototypical of the bonding of that same infant, when older, to a mating partner . . . In the case of baby boys, it is possible to see that there is at times a genital component of being suckled, namely, erection of the penis (p. 13).

Religious mysteries, as in the Eluesinian mysteries or the Dionysian ecstasies of ancient Attica, or in the Christian Pentecostal rapture of being possessed by the Holy Spirit, are in large part the mysteries of crowd hypnosis, so called; more specifically, they are the mysteries of the hypnotic power of rhythmicity of motion and chanting to bond an assembly of individuals into a cohesive group (p. 33).

There are remnants of the rite of sacrifice evident today in such practices as deforming or mutilation of parts or organs of the body, as in circumcising the penis, infibulating the vulva, piercing the flesh, and scarifying or tattooing the skin . . . A paradigm of extremely ancient vintage is a paleodigm. Paleodigms as ideological formulas are incorporated into sacred narrations, folklore, and parables and rhymes recited to children (p. 53).

Like the paleodigms of atonement and forfeiture, there is a third one for which the human species has an age-old memory. It is the paradigm of reiteration, according to which an offended spirit can be placated by the reiterations of rituals and chants . . . Repetition is the fish trap of memory. That which it captures it preserves intact, resistant to mutation (p. 59).

From an ethological point of view, many autisms are adaptations of an innate releasing mechanism at work in the absence of a key stimulus or sensory cue that normally is necessary for its release. For example, twisting or pulling the hair and bunching it under the nostrils is a form of

nuzzling, just as the infant nuzzles against the breast. The releaser stimulus of someone to nuzzle up to is, however, missing (p. 61).

In human development, an overloaded system reacts in three ways or modes. One is to become mentally deranged and thought disordered. One is to succumb to internal suffering, neurosis, and incapacitation. The third is to become externally directed toward doing something, however futile or antisocial. Usually, one of the three predominate[s] (p. 146).

In the disease of sadism, the brain becomes pathologically activated to transmit messages of attack simultaneously with messages of sexual arousal and mating behavior (p. 153).

Shyness is a manifestation, variable in degree, of introverted ineptitude in troopbonding. It represents a partial impairment of the phylism for becoming a full-fledged, back-slapping, extroverted participant in the primate troop (p. 186).

In the absence of any alternative, there is a highly speculative evolutionary hypothesis that one of the prerequisites of the development of a primate with a brain capable of processing syntactile [sic] language and generating heretofore unknown conceptual formulations was the concomitant loosening in the brain of the ancient mammalian heritage of robotic heterosexual proceptivity (p. 202).

There is no evidence that a paraphilia is preformed or ready made in the brain at birth except perhaps as diffusely as a predisposition. Rather, their details are the outcome of displacements, deletions, or inclusions in the developmental coding of the lovemap in infancy and prepuberty (p. 203).

The above quotations were meant to whet the appetite of human ethologists. Because Money is such a prolific writer (over 25 books and several hundred articles), it is difficult to say what is new in this book that

he has not said before. The book is enticing for its ideas although it is admittedly weak on evidence. What Money has left for posterity is words, literally millions of them and many of them new. The "spell checker" on my word processor can attest to this. The degree to which some of these new words survive over generations, rather than being lost to "mutation," is yet to be determined. Because Money has been heavily influenced by ethology, I believe that most human ethologists would find this book, as well as many of his other books, quite interesting.

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Bittersweet Destiny: The Stormy Evolution of Human Behavior

By Del Thiessen. Transaction Publishers, Rutgers - The State University, New Brunswick, New Jersey 08903, USA, 1996, \$44.95 (hdbk.).

Reviewed by Walter Lehmann. Marcus Thranes gate 13, N-0473 Oslo, Norway.

Bittersweet Destiny is Del Thiessen's highly personal and sometimes speculative account of the evolutionary perspective on humanity. The author states that it combines a discourse on the evolution of human behavior with a philosophical perspective. The author's dark prose is reminiscent of Loren Eiseley's essays, and the reader is warned that this is not an ordinary book.

There are two themes in this book: one is that there is something happenstantial about our existence, the other is that natural selection has produced cognitive adaptations whose function is to limit negative contingencies. Thiessen sets out to tell the story of the contingencies that led to our existence as a species; at the same time, he tries to describe some of the psychological mechanisms designed to cope adaptively with these contingencies.

The individual chapters do not necessarily build upon each other; they can be read as separate essays on particular topics. Unfortunately, Thiessen indicates the relevant references neither in the text nor in footnotes. Instead, there is a separate list of references at the end of each chapter.

The first two chapters deal with the emergence of evolutionary theory. Darwin is portrayed as a cautious inductivist, while Wallace, according to Thiessen, reached almost identical conclusions mostly by intuition and deduction. Most of Thiessen's history of science account is probably not news to evolution-minded readers, but some of his inferences are controversial.

In chapter 3 Thiessen examines certain myths that continue to surround ideas of

evolution, and concludes that evolution is neither teleological nor inherently progressive, nor does it give rise to attributes (such as consciousness) which set humans qualitatively apart from other animals. Again, Thiessen seems preoccupied with evolution's chance qualities, its capriciousness. Mass extinctions, as well as more localized varieties of evolutionary "bad luck," have made all living species equally improbable, including humans.

A summary of current attempts to trace our evolutionary ancestry, based on fossil, molecular, and archaeological evidence, is followed by a discussion of the complex interrelatedness of body size, brain size, energy consumption, diet, maturation rate, reproductive strategies (*r* versus *K*), and extended cooperation. General trends in hominid behavioral evolution are considered to be risk-reducing strategies for coping with rapidly shifting environmental contingencies.

Thiessen gives a fascinating account of the tremendous evolutionary impact of pathogens. Sexual reproduction, the immune system, avoidance of contamination, mate preferences, and mating systems are considered adaptive responses to invading microorganisms. Thiessen cautions that more plagues are in the offing for our species.

Thiessen's meditations on science, evolution, and knowledge are somewhat peculiar. Although Kant's idea of "inborn" (synthetic a priori) knowledge about the nature of the world is mentioned, Thiessen seems unaware of evolutionary epistemology (e.g., Campbell, 1974; Lorenz, 1977; Riedl, 1984; Wuketits, 1984, 1990). Instead, he talks about "the intuitive knowledge of our genes" and "visions of the DNA carried over of Africa". I am afraid that some of his readers will be more confused than enlightened by such phrases.

I have similar reservations about his discussion of the proximate/ultimate distinction. Thiessen includes only endogenous (psychological) factors in his proximate causes, thus apparently ignoring other sources of behavioral variation (ontogeny and immediate environmental stimuli).

Much less controversial is his treatment

of the concept of cognitive and emotional "rules of the mind" - psychological mechanisms designed by natural selection to solve adaptive problems. Recent brain research, evolutionary theorizing, and cross-cultural and experimental data all suggest that the human mind is a collection of domain-specific algorithms.

Chapter 9 is a very mixed bag. It starts out with a rationalist evolutionary interpretation of irrationality, including such diverse phenomena as magical reasoning, subjective evaluation of risks, preferring ignorance over knowledge, gambling, and biophilia. For Thiessen's adapted mind, the case is clear enough: Irrational cognition must be as adaptive as rational cognition, or it would have been selected out. Such bold statements will certainly reinforce the widespread belief among social scientists that evolutionary psychologists are adamant proponents of a Panglossian paradigm.

What will surprise some readers even more is Thiessen's treatment of human learning. After discussing Mayr's classic distinction between "closed" and "open" programs, he argues that "open" cognitive systems are merely characterized by *many* specific adaptations (a point frequently made by Konrad Lorenz), and are thus under numerous innate constraints. Learning, from this perspective, is really a filtering process which leads to the innate response that best matches the environment. Standard social scientists will not be enthusiastic about Thiessen's conclusion that we are now stuck with the mental repertory of our evolutionary past, and cannot 'learn' ourselves out of it.

When Thiessen raises the unresolved issue of the ultimate causes of hominid brain growth, he cites three major brain increases, each of them representing punctate changes followed by long periods of evolutionary stasis. Glacial cooling seems to be the key, but it remains unclear how the Pleistocene challenges resulted in bigger brains. Another puzzling fact is that complex cultural features (as in the Upper Palaeolithic and Neolithic) appeared much later in the archaeological record than the final spurt in brain size (see Kuper, 1994 and Mithen, 1996). Thiessen suspects that

developmental changes (neoteny) resulted in a higher survival rate of neurons into the adult stages of hominid individuals, and that climate somehow played a major role in this juvenilization of our species.

Basic features of the human mind, underlying such complex tasks as concept formation and language acquisition, are also explored. In accordance with Piaget's developmental theory, Thiessen argues that motoric and kinesthetic experiences are crucial in the formation of mental concepts. Based on anatomical evidence, true language must have evolved only in modern *Homo sapiens*, about 125,000 years ago, facilitating cooperation, reciprocity, and cultural transmission.

Thiessen tries to illuminate the elusive quality of consciousness from an evolutionary perspective. He starts by cautioning that we were not designed to understand ourselves or our origin, or to contemplate the universe. Then he presents data from brain research suggesting that consciousness is associated with an individual's attention, which in turn triggers at least two different systems of neural activity: one focusing on target location, the other on color, form, and movement. We are never simply conscious, but always conscious of something, and that something constitutes only a tiny fraction of what we know at any one time. The task of consciousness is to update our brains periodically. It facilitates the evaluation and anticipation of critical environmental features, and makes self-reflection possible, and Thiessen is convinced that individuals who were better at these things left more offspring in our evolutionary past.

But what is the role of culture and history in shaping human consciousness? Thiessen reveals, once again, his uncompromising evolutionary stance: We can create technological innovations and read Shakespeare, but we will never change the nature of consciousness, our basic needs, or the strategies to satisfy them. Thiessen asserts that culture, in the sense of learned content, is overrated as the mother of behavior.

Thiessen's attempts to evolutionarily

deconstruct what cultural anthropologists and sociologists defiantly consider their proper domain (human culture and sociality) are problematical. I agree with his propositions that the behaviorist legacy, Marxist ideology, postmodernism and politically correct wishful thinking have created the current hostile academic environment evolution-minded scholars are struggling with. Likewise I concur with Thiessen that the standard social science model, as described by Tooby and Cosmides, is based on unsound assumptions and flawed arguments about human nature and culture. But I consider it misleading to cast the controversy mostly in terms of nature/nurture arguments: behavioral genetics is *not* the same as evolutionary psychology. Clearly, cultural anthropology is not Thiessen's specialty; his presentation would have benefited from the qualifying statements of authors such as Boyd & Richerson (1985), Barkow (1989), Durham (1991), and Sperber (1985,1996), anthropologists who combine evolutionary insights with the analysis of rich cultural complexity.

When Thiessen summarizes the extensive body of evolutionary research on human mating strategies, he is on safe ground. The theoretical background for the explanation of sexual dimorphisms is Trivers' parental investment theory, but other approaches are mentioned too, sometimes without due credit to their originators. Thiessen stresses the facts that males and females are still more similar than different, and that the dimorphisms scrutinized by evolutionary psychologists find their expression mostly in statistical tendencies and psychological inclinations. But he makes it clear that he considers it useless and misguided to regard these sexual differences as social constructions due to socialization, politics, or culture; hence they should not be referred to as "gender" differences.

Of course, the origin of violence, crime and war cannot be missing from an evolutionary account of our species. Thiessen emphasizes three contributing factors: individual differences (behavioral genetical and physiological correlations of violent criminality), universal psychological adaptations (calibrated to environmental and life-history cues), and social control mechanisms (constituting the "cost" of violent

or criminal acts). He discusses proximate causes of individual criminal susceptibilities, such as psychopathy, attention deficit disorder, mesomorphy, testosterone levels, and various neurotransmitter imbalances. He also points out that adoption and twin studies reveal a substantial genetic influence on behavioral differences in crime-proneness. At the same time, he makes it clear that there are no "criminal genes". But he argues that there is evidence for genes that predispose individuals for psychological attributes and physiological conditions that make erratic, careless, reckless and aggressive acts more likely.

Bittersweet Destiny is indeed not an ordinary book, at least not in the flourishing genre of advanced adaptive story-telling and psychological hypothesis-testing, based on evolutionary heuristics. It is full of interesting bits of information on proximate and ultimate causes of human behavior. However, human *ethology* (e.g., Eibl-Eibesfeldt, 1989) is conspicuously absent from Thiessen's presentation. Nor are the contributions of anthropology, political science and sociology, evolution-minded or anti-evolution, paid due respect. The author's personalized, sometimes poetic style, interspersed with literary citations of great thinkers and writers, will appeal to many who want to find some relief from overly technical articles and books on the subject. I do not think, however, that this book is well-suited for an *introduction* to evolution-mindedness in the study of human affairs.

Thiessen is well aware of the fact that evolutionary accounts are often criticized on political grounds, but he does little to comfort the "judges of appropriateness," as he calls the advocates of political correctness: Things are as they are no matter what one might wish. Besides, he notes, *any* scientific theory can be misapplied. Evolutionists are getting increasingly tired of criticisms and accusations based on extra-scientific considerations, and Thiessen is no exception. Unfortunately, his book will not contribute to a better understanding of evolutionary research among those who regard the study of human psychological adaptations with deep suspicion.

Towards the end of the book, Thiessen paints a gloomy picture of imminent world

crises, due to overpopulation, competition for dwindling resources, and ethnic strife. He mentions Africa as our first major example of near-total social collapse, but he also laments the increasing savagery and brutality in American cities. Surprisingly, after trying to convince the reader of the powers of natural selection in determining our destiny, Thiessen suddenly draws attention to a third source of behavioral variance, neither genetic nor environmental: the chaotic origin of new features arising from dynamic brain processes, the chance fluctuations of self-organizing, emergent complexity. Perhaps this recent insight is the reason why Thiessen appeals to "personal courage" in finding alternative solutions to the current problems of our species.

References

- Barkow, J. H. (1989). *Darwin, Sex, and Status: Biological Approaches to Mind and Culture*. Toronto: University of Toronto Press.
- Boyd, R. & Richerson, P.J. (1985). *Culture and the Evolutionary Process*. Chicago: University of Chicago Press.
- Campbell, D.T. (1974). Evolutionary epistemology. In P. A. Schilpp (Ed.), *The Philosophy of Karl Popper* (pp.413-463). La Salle, IL: Open Court.
- Durham, W. H. (1991). *Coevolution: Genes, Culture, and Human Diversity*. Stanford, CA: Stanford University Press.
- Eibl-Eibesfeldt, I. (1989). *Human Ethology*. Hawthorne: Aldine.
- Kuper, A. (1994). *The Chosen Primate*. Cambridge, MA: Harvard University Press.
- Lorenz, K. (1977). *Behind the Mirror: A Search for a natural history of human knowledge*. New York: Harcourt Brace Jovanovich.
- Mithen, S. (1996). *The Prehistory of the Mind*. London: Thames and Hudson.
- Riedl, R. (1984). *Biology of Knowledge*. Chichester: Wiley.

Sperber, D. (1985). *On Anthropological Knowledge*. Cambridge: Cambridge University Press.

Sperber, D. (1996). *Explaining Culture: A Naturalistic Approach*. Oxford: Blackwell.

Wuketits, F. M. (Ed.) (1984). *Concepts and Approaches in Evolutionary Epistemology: Towards an Evolutionary Theory of Knowledge*. Dordrecht: Reidel.

Wuketits F.M. (1990). *Evolutionary Epistemology and Its Implications for Humankind*. New York: State University of New York Press.

Membership Renewals

It is time to renew your membership for 1998 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 1998, it is time to renew your membership.** For economic reasons, renewal notices are not usually sent. Those who do not renew their memberships will be removed from the membership list. **Please report errors, changes of address, etc. to the Treasurer. Be sure to inform her if you move; the U.S. Post Office no longer returns undelivered *Bulletins* with the recipient's new address.** Current dues and directions for payment are given on the last page. Please allow four weeks for recording changes of address or payment of dues.

ANNOUNCEMENTS

Cross-Cultural Psychology Congress

The 14th annual congress of the International Association for Cross-Cultural Psychology will take place 6-9 August 1998 in Bellingham, Washington, USA (not far from Vancouver, site of the ISHE congress two weeks later). For details contact <http://www.wvu.edu/~lonner.congress.html>.

Conference on Behavioral Research Methods

The second International Conference on Methods and Techniques in Behavioral Research is scheduled for 18-21 August 1998 in Groningen, The Netherlands. (Unfortunately it conflicts with the ISHE Congress in Vancouver.) *Measuring Behavior '98* will focus on the integration of advanced behavioral research with non-invasive physiological measurements. For information, contact Nicole Beaujean at P. O. Box 268, 6700 AG Wageningen, The Netherlands, tel. 31-(0)317-497677, fax 31-(0)317-424496, e-mail n.beaujean@noldus.nl. Deadline for submission of abstracts is 1 April. The proceedings of the first conference can be accessed at <http://www.noldus.com/events/mb96htm>.

Evolutionary Psychology Papers Needed

David Buss is finishing the final revision of his undergraduate textbook on evolutionary psychology, and asks that researchers send their latest publications (out or "in press") immediately to ensure that the text is maximally up to date. Please send them to: David M. Buss, Dept. of Psychology, University of Texas, Austin, TX 78712 USA, e-mail dbuss@psy.utexas.edu.

Request for Human Ethology Articles and Books

ISHE member Marina Butovskaya, who is hosting this year's meeting of the European Sociobiological Society (see December issue), would like to receive any literature on human ethology. The Russian State University for the Humanities has started a teaching program in human ethology. Materials to be donated should be sent to Prof. Marina Butovskaya, Institute of Cultural Anthropology, Russian State University for the Humanities, Miusskaya 6, 125267 Moscow, Russia, fax 095-2506109, e-mail marina@carabus.msk.ru.

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Ethology Journals

ISHE member Tamàs Bereczkei and colleagues recently published an article on human mate choice in the journal *Ethology*. Its publication serves to remind us that ethology journals do publish research on humans. Additional possible target journals include *Ethology*, *Ecology & Evolution*; *Journal of Ethology*; and *Aggressive Behavior*. The article: Bereczkei, T., Voros, S., Gal, A., & Bernath, L. (1997). Resources, attractiveness, family commitment: Reproductive decisions in human mate choice. *Ethology*, 103, 681-699.

CURRENT LITERATURE

March 1998

Compiled by Johan van der Dennen

If you are interested in reviewing one of the books listed in this section or some other suitable title, please contact the General Book Review Editor, Peter LaFreniere (see Editorial Staff Box).

Aitken, K.J. & Trevarthen, C. (1997). Self/other organization in human psychological development. *Development and Psychopathology*, 9, 4, 653-677 (Dept. Clin. Psychol., Univ. Edinburgh, Edinburgh EH8 9Yl, Midlothian, Scotland)

Allan, S. & Gilbert, P. (1997). Submissive behaviour and psychopathology. *British Journal of Clinical Psychology*, 36, 4, 467-488 (SO Derbyshire Mental Health Trust, Derby DE22 3LZ, England)

Arsenio, W.F. & Lover, A. (1997). Emotions, conflicts and aggression during preschoolers' freeplay. *British Journal of Developmental Psychology*, 15, 4, 531-542 (Yeshiva Univ., Albert Einstein Coll. Med., Ferkauf Grad. Sch. Psychol., 1300 Morris Pk. Ave., Bronx, NY 10465, USA)

- Barber, N. (1998). Secular changes in standards of bodily attractiveness in American women: Different masculine and feminine ideals. *Journal of Psychology*, 132, 1, 87-94 (Dept. Psychol., Box 549037, Arkadelphia Rd., Birmingham, AL 35254, USA)
- Bastone, L.M. & Wood, H.A. (1997). Individual differences in the ability to decode emotional facial expressions. *Psychology*, 34, 2, 32-36 (SUNY Coll., Purchase, Div. Nat. Sci., Purchase, NY 10577, USA)
- Belsky, J. (1997). Attachment, mating, and parenting: An evolutionary interpretation. *Human Nature*, 8, 4, 361-381 (Penn State Univ., S 110 Henderson Bldg., University Pk., PA 16802, USA)
- Bender, D. & Losel, F. (1997). Protective and risk effects of peer relations and social support on antisocial behaviour in adolescents from multi-problem milieus. *Journal of Adolescence*, 20, 6, 661-678 (Dept. Psychol., Bismarckstr 1, D-91054 Erlangen, Germany)
- Bernhardt, P.C. (1997). Influence of serotonin and testosterone in aggression and dominance: Convergence with social psychology. *Current Directions in Psychological Science*, 6, 2, 44-48 (Univ. Utah, Dept. Educ. Psychol., MBH 327, Salt Lake City, UT 84112, USA)
- Birchenthal, C., Kastrinos, N. & Metcalfe, S. (1997) Genetic algorithms in evolutionary modelling. *Journal of Evolutionary Economics*, 7, 4, 375-393 (Metcalfe, S; Sch. Econ. Studies, Prest, Oxford Rd, Manchester M13 9PL, Lancs; England)
- Blute, M. (1997). History versus science: The evolutionary solution. *Canadian Journal of Sociology*, 22, 3, 345-364 (Univ. Toronto, Mississauga, ON L5L 1C6, Canada)
- Born, M., Chevalier, V. & Humblet, I. (1997). Resilience, desistance and delinquent career of adolescent offenders. *Journal of Adolescence*, 20, 6, 679-694 (Dept. Psychol., B-33 Sart Tilman, B-4000 Liege, Belgium)
- Brenner, E. & Smeets, J.B.J. (1997). Fast responses of the human hand to changes in target position. *Journal of Motor Behavior*, 29, 4, 297-310 (Vakgrp. Fysiol., Postbus 1738, 3000 DR Rotterdam, Netherlands)
- Bridges, L.J., Grolnick, W.S. & Connell, J.P. (1997). Infant emotion regulation with mothers and fathers. *Infant Behavior and Development*, 20, 1, 47-58 (3900 Edmunds St. NW, Washington, DC 20007, USA)
- Burle, B. & Bonnet, M. (1997). Further argument for the existence of a pacemaker in the human information processing system. *Acta Psychologica*, 97, 2, 129-143 (CNRS, Ctr. Rech. Neurosci. Cognit., Chemin Joseph Aiguier 31, F-13402 Marseille, France)
- Buysse, W.H. (1997). Behaviour problems and relationships with family and peers during adolescence. *Journal of Adolescence*, 20, 6, 645-659 (Ctr. Special Educ. and Child Care, POV 9555, 2300 RB Leiden, Netherlands)
- Calafate, L.C. (1997) Biologia do ensino: Contribui^ço para uma anlise etologica das interrac^ões verbais professor-aluno. *O Professor*, Revista Bimestral, 57, 19-31 (Instituto de Botflorinnica Dr. Gonnalo Sampaio, Universidade de Porto, Porto, Portugal)
- Carlson, C.L., Tamm, L., & Gaub, M. (1997). Gender differences in children with ADHD, ODD, and co-occurring ADHD/ODD identified in a school population. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 12, 1706-1714 (Dept. Psychol., Mezes 330, Austin, TX 78712, USA)
- Cervantes, C.A. & Callanan, M.A. (1998). Labels and explanations in mother-child emotion talk: Age and gender differentiation. *Developmental Psychology*, 34, 1, 88-98 (Dept. Psychol., Santa Cruz, CA 95064, USA)
- Church, A.T., & Lonner, W.J. (1998). The cross-cultural perspective in the study of personality: Rationale and current research. *Journal of Cross-Cultural Psychology*, 29, 1, 32-62 (Dept. Educ. Leadership and Counseling Psychol., Cleveland Hall, Pullman, WA 99164, USA)

- Clark, A. (1998). *Being There: Putting brain, body, and world together*. MIT Press, 5 Cambridge Center, Cambridge, MA 02142 USA, \$15 (ppr.).
- Coccaro, E.F., Kavoussi, R.J., Trestman, R.L., Gabriel, S.M., Cooper, T.B. & Siever, L.J. (1997). Serotonin function in human subjects: intercorrelations among central 5-HT indices and aggressiveness. *Psychiatry Research*, 73, 1-2, 1-14 (Sch. Med., Dept. Psychiat., 3200 Henry Ave., Philadelphia, PA 19129, USA)
- Coney, N.S. & Mackey, W.C. (1997). Fatherhood as a deterrent against female promiscuity: A time to refurbish the Electra Complex. *Mankind Quarterly*, 38, 3-23 (Reprints: Wade C. Mackey, Townshire Manor, Apt. #6, 401 Lake Street, Bryan, TX 77801, USA)
- Coney, N.S. & Mackey, W.C. (1998). Motivations toward fathering: Two minority profiles within the majority's context. *Journal of Men's Studies*, 6: 169-188 (see supra)
- Crawford, C.B. & Krebs, D.L. (Eds.) (1998). *Handbook of Evolutionary Psychology: Ideas, issues, and applications*. Lawrence Erlbaum, 10 Industrial Ave., Mahwah, NJ 07430, USA, \$75 if ordered from publisher (hdbk.).
- Curren, H.V. (1997). Psychopharmacological perspectives on memory. *Brain and Cognition*, 35, 3, 289-290 (Univ. Coll. London, Mortimer St., London, England)
- Deacon, T.W. (1997). What makes the human brain different? *Annual Review of Anthropology*, 26, 337-514 (Boston Univ., Dept. Anthropol., Boston, MA 02215, USA)
- DeCastro, J.M. (1998). Genes and environment have gender-independent influences on the eating and drinking of free-living humans. *Physiology and Behavior*, 63, 3, 385-395 (Dept. Psychol. Neuropsychol. and Behav. Neurosci. Program, Atlanta, GA 30303, USA)
- DePaulo, B.M. & Kashy, D.A. (1998). Everyday lies in close and casual relationships. *Journal of Personality and Social Psychology*, 74, 1, 63-79 (Dept. Psychol., Gilmer Hall, Charlottesville, VA 22903, USA)
- Dickson, K.L., Walker, H. & Fogel, A. (1997). The relationship between smile type and play type during parent-infant play. *Developmental Psychology*, 33, 6, 925-933 (No Arizona Univ., Dept. Psychol., Flagstaff, AZ 86011, USA)
- Dimberg, U. & Karlsson, B. (1997). Facial reactions to different emotionally relevant stimuli. *Scandinavian Journal of Psychology*, 38, 4, 297-303 (Dept. Psychol., Box 1225, S-75142 Uppsala, Sweden)
- Dopfner, M. et al. (1997). Behavioral and emotional problems in children and adolescents in Germany. Results of a representative study: Age, gender and rater effects. *Zeitschrift fuer Kinder- und Jugendpsychiatrie und Psychotherapie*, 25, 4, 218-233 (Klin. und Poliklin. Psychiat. und Psychotherapie Kindes, Robert Koch Str 10, D-50931 Cologne, Germany)
- Eaves, L.J. et al. (1997). Genetics and developmental psychopathology: 2. The main effects of genes and environment on behavioral problems in the Virginia twin study of adolescent behavioral development. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 38, 8, 965-980 (POB 980003, Richmond; VA 23298; USA)
- Ellis, L. (1998). Neodarwinian theories of violent criminality and antisocial behavior: Photographic evidence from nonhuman animals and a review of the literature. *Aggression and Violent Behavior*, 3, 1, 61-110 (Div. Social Sci., Minot Univ., ND 58707, USA)
- Emery, N.J., Lorincz, E.N., Perrett, D.I. & Oram, M.W. (1997). Gaze following and joint attention in rhesus monkeys (*Macaca mulatta*). *Journal of Comparative Psychology*, 111, 3, 286-293 (Univ. St Andrews, Sch. Psychol., St Andrews, Scotland)

- Feldman, R., Greenbaum, C.W., Mayes, L.C. & Erlich, S.H. (1997). Change in mother-infant interactive behavior: Relations to change in the mother, the infant, and the social context. *Infant Behavior and Development*, 20, 2, 151-164 (Bar Ilan Univ., Dept. Psychol., 52900 Ramat Gan, Israel).
- Ferguson, T.J. & Crowley, S.L. (1997). Measure for measure: A multitrait-multimethod analysis of guilt and shame. *Journal of Personality Assessment*, 69, 2, 425-440 (Utah State Univ., Dept. Psychol., UMC 2810, Logan, UT 84322, USA)
- Fidelman, U. (1997). The three components of intelligence: Evolutionary specialization in mental abilities. *Cybernetica*, 40, 2, 103-126 (Technion Israel, Inst. Technol., Dept. Gen. Studies, 32000 Haifa, Israel)
- Fonagy, P. & Target, M. (1997). Attachment and reflective function: Their role in self-organization. *Development & Psychopathology*, 9, 4, 679-700 (Subdept. Clin. Health. Psychol., Gower St, London WC1E 6BT, England)
- Fontaine, B, Moisson, P.V. & Wickings, E.J. (1997). Observations of spontaneous tool making and tool use in a captive group of western lowland gorillas (*Gorilla gorilla*). *Folia Primatologica*, 65, 4, 219-223 (Ctr. International de Recherches M,dicales de Franceville, Dept. Primatology, Franceville, Gabon)
- Fortey, R. (1997). *Life: An Unauthorised Biography*. HarperCollins Publ., 10 E. 53rd Street, New York, NY 10022, USA.
- Fukada, H., Fukada, S. & Hicks, J. (1997). The relationship between leadership and sociometric status among preschool children. *Journal of Genetic Psychology*, 158, 4, 481-486 (Dept. Psychol., Kagamiyama 1-1-2, Higashihiroshima 739, Japan)
- Gabrielidis, C. et al. (1997). Preferred styles of conflict resolution: Mexico and the United States. *Journal of Cross-Cultural Psychology*, 28, 6, 661-677 (New Mexico State Univ., Dept. Psychol. 3452, Box 3001, Las Cruces, NM 88003, USA)
- Gasteiger-Klicpera, B. & Klicpera, C. (1997). The influence of social status within the peergroup on the development of children. *Zeitschrift fuer Kinder-und Jugendpsychiatrie und Psychotherapie*, 25, 4, 234-246 (Univ. Vienna, Inst. Psychol., Abt. Angew. & Klin. Psychol., Neutorgasse 13, A-1010 Vienna, Austria)
- Gilbert, P. (1997). The evolution of social attractiveness and its role in shame, humiliation, guilt and therapy. *British Journal of Medical Psychology*, 70, 2, 113-147 (Univ. Derby, Derby, England).
- Godoy, R., Jacobson, M. & Wilkie, D. (1998). Strategies of rain-forest dwellers against misfortunes: The Tsimane' Indians of Bolivia. *Ethnology*, 37, 1, 55-69 (Univ. Florida, Gainesville, FL 32611, USA)
- Goldsmith, H.H., Buss, K.A. & Lemery, K.S. (1997). Toddler and childhood temperament: Expanded context, stronger genetic evidence, new evidence for the importance of environment. *Developmental Psychology*, 33, 6, 891-905 (Univ. Wisconsin, Dept. Psychol., 1202 W Johnson St., Madison, WI 53706, USA)
- Goldstein, J.M. (1997). Sex differences in schizophrenia: Epidemiology, genetics and the brain. *International Review of Psychiatry*, 9, 4, 399-408 (Harvard Univ., Sch. Med., Massachusetts Mental Hlth. Ctr., Consolidated Dept. Psychiat., 74 Fenwood Rd., Boston, MA 02115, USA)
- Hale, W.W., Jansen, J.H.C., Bouhuys, A.L. & van den Hoofdakker, R.H. (1998). The judgment of facial expressions by depressed patients, their partners and controls. *Journal of Affective Disorders*, 47, 1-3, 63-70 (Acad. Hosp., Dept. Biol. Psychiat., Hanzeplein 1, 9713 GZ Groningen, Netherlands)

- Hall, S. & Oliver, C. (1997). A graphical method to aid the sequential analysis of observational data. *Behavior Research Methods Instruments and Computers*, 29, 4, 563-573 (Oliver, C; Sch. Psychol., Birmingham B15 2TT, W Midlands, England)
- Hangland, A. & Cimbalo, R.S. (1997). Human ethology: Age and sex differences in mall walking. *Perceptual and Motor Skills*, 85, 3, Part 1, 845-846 (Cimbalo, RS; Dept. Psychol., 4380 Main St., Amherst, NY 14226, USA)
- Hess, U., Blairy, S. & Kleck, R.E. (1997). The intensity of emotional facial expressions and decoding accuracy. *Journal of Nonverbal Behavior*, 21, 4, 241-257 (Dept Psychol, CP 8888, Stn A; Montreal; PQ H3C 3P8; Canada)
- Hill, E.M., Ross, L.T. & Low, B.S. (1997). The role of future unpredictability in human risk-taking. *Human Nature*, 8, 4, 287-326 (Univ. Detroit Mercy, Dept. Psychol., 8200 W Outer Dr., Detroit, MI 48219, USA)
- Holliday, T.W. (1997). Postcranial evidence for cold adaptation in European Neandertals. *American Journal of Physical Anthropology*, 104, 2, 245-258 (Univ. Cent. Florida, Dept. Sociol. & Anthropol., POB 25000, Orlando, FL 32816, USA)
- Holtzworth-Munroe, A., Stuart, G.L. & Hutchinson, G. (1997). Violent versus nonviolent husbands: Differences in attachment patterns, dependency, and jealousy. *Journal of Family Psychology*, 11, 3, 314-331 (Dept. Psychol., Bloomington, IN 47405, USA)
- Howe, M.J.A. (1997). *IQ in Question: The Truth about Intelligence*. Sage Publ. Inc., 2455 Teller Road, Thousand Oaks, CA 91320, USA.
- Jacob, T. & Johnson, S.L. (1997). Parent-child interaction among depressed fathers and mothers: Impact on child functioning. *Journal of Family Psychology*, 11, 4, 391-409 (3801 Miranda Ave, Mail Code 151J, Palo Alto, CA 94304, USA)
- Jacobsen, T., Huss, M., Fendrich, M., Kruesi, M.J.P. & Ziegenhain, U. (1997). Children's ability to delay gratification: Longitudinal relations to mother-child attachment. *Journal of Genetic Psychology*, 158, 4, 411-426 (Inst. Juvenile Res., Dept. Psychiat., 907 S Wolcott, Chicago, IL 60612; USA)
- Jensen, P.S. et al. (1997). Evolution and revolution in child psychiatry: ADHD as a disorder of adaptation. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 12, 1672-1679 (Child and Adolescent Disorders Res. Branch, Parklawn Bldg., Room 18c-17, 5600 Fishers Lane, Rockville, MD 20857, USA)
- Kalick, S.M., Zebrowitz, L.A., Langlois, J.H. & Johnson, R.M. (1998). Does human facial attractiveness honestly advertise health? Longitudinal data on an evolutionary question. *Psychological Science*, 9, 1, 8-13 (Univ. Massachusetts, Dept. Psychol., 100 Morrissey Blvd, Boston, MA 02125, USA)
- Kasen, S., Cohen, P, & Brook, J.S. (1998). Adolescent school experiences and dropout, adolescent pregnancy, and young adult deviant behavior. *Journal of Adolescent Research*, 13, 1, 49-72 (Unit 47, 722 W 168th St., New York, NY 10032, USA)
- Kashani, J.H., Suarez, L., Allan, W.D. & Reid, J.C. (1997). Hopelessness in inpatient youths: A closer look at behavior, emotional expression, and social support. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 11, 1625-1630 (Univ. Missouri, Dept. Neurol. & Psychiat., 3 Hosp. Dr., Columbia, MO 65201, USA)
- Katainen, S., Raikkonen, K. & Keltikangas-Jrvinen, L. (1997). Childhood temperament and mother's child-rearing attitudes: Stability and interaction in a three-year follow-up study. *European Journal of Personality*, 11, 4, 249-266 (Univ. Helsinki, Dept. Psychol., POB 4, 000014 Helsinki, Finland)

- Katsikitis, M. (1997). The classification of facial expressions of emotion: A multidimensional-scaling approach. *Perception*, 26, 5, 613-626 (Univ. Adelaide, Dept. Psychiat., Adelaide, SA 5000, Australia)
- Keltner, D. & Buswell, B.N. (1997). Embarrassment: Its distinct form and appeasement functions. *Psychological Bulletin*, 122, 3, 250-?? (Univ. California, Dept. Psychol., 3210 Tolman Hall, Berkeley, CA 94720-1650, USA)
- Keltner, D. & Robinson, R.J. (1997). Defending the status quo: Power and bias in social conflict. *Personality and Social Psychology Bulletin*, 23, 7, 1066-1077 (see supra)
- Kendon, A. (1997). Gesture. *Annual Review of Anthropology*, 26, 109-290 (43 W Walnut Lane, Philadelphia, PA 19144, USA)
- King, N.J., Ollendick, T.H. & Murphy, G.C. (1997). Assessment of childhood phobias. *Clinical Psychology Review*, 17, 7, 667-688 (Monash Univ., Fac. Educ., Sch. Grad. Studies, Clayton, Vic 3168, Australia)
- Kleinke, C.L., Peterson, T.R. & Rutledge, T.R. (1998). Effects of self-generated facial expressions on mood. *Journal of Personality and Social Psychology*, 74, 1, 272-279 (Dept. Psychol., Anchorage, AK 99508; USA)
- Knodel, J., Low, B., Saengtienchai, C. & Lucas, R. (1997). An evolutionary perspective on Thai sexual attitudes and behavior. *Journal of Sex Research*, 34, 3, 292-303 (Univ. Michigan, Ctr. Populat. Studies, 1225 Univ. Ave., Ann Arbor, MI 48104, USA)
- Koepke, J.E. & Bigelow, A.E. (1997). Observations of newborn suckling behavior. *Infant Behavior and Development*, 20, 1, 93-97 (Simon Fraser Univ., Dept. Psychol., Burnaby, BC V5A 1S6, Canada)
- Kowalski, R.M. (Ed.) (1997). *Aversive Interpersonal Behaviors*. Plenum Press, 233 Spring Street, New York, NY 10013, USA, \$49.50.
- Kraemer, P.J. & Golding, J.M. (1997). Adaptive forgetting in animals. *Psychonomic Bulletin and Review*, 4, 4, 480-491 (Univ. Kentucky, Dept. Psychol., Lexington, KY 40506, USA)
- Kunkel, J.H. (1997). The analysis of rule-governed behavior in social psychology. *Psychological Record*, 47, 4, 699-? (Arizona State Univ., Dept. Sociol., Tempe, AZ 85287, USA)
- Leith, K.P. & Baumeister, R.F. (1998). Empathy, shame, guilt, and narratives of interpersonal conflicts: Guilt-prone people are better at perspective taking. *Journal of Personality*, 66, 1, 1-37 (Baumeister, RF; Case Western Reserve Univ., Dept. Psychol., 10900 Euclid Ave., Cleveland, OH 44106, USA)
- Levin, M. (1997). *Why Race Matters: Race differences and what they mean*. Greenwood Publishing, 88 Post Rd. West, P. O. Box 5007, Westport, CT 06881 USA, \$65 (hdbk.).
- Levine, S.P. & Feldman, R.S. (1997). Self-presentational goals, self-monitoring, and nonverbal behavior. *Basic and Applied Social Psychology*, 19, 4, 505-518 (Univ. Massachusetts, Dept. Psychol., Tobin Hall, Box 37710, Amherst, MA 01003, USA)
- Leyendecker, B., Lamb, M.E. & Scholmerich, A. (1997). Studying mother-infant interaction: The effects of context and length of observation in two subcultural groups. *Infant Behavior and Development*, 20, 3, 325-337 (Lamb, ME; Sect. Social and Emot. Dev., 9190 Rockville Pike, Bethesda, MD 20814; USA)
- Lieberman, D.E. (1997). Making behavioral and phylogenetic inferences from hominid fossils: Considering the developmental influence of mechanical forces. *Annual Review of Anthropology*, 26, 185-262 (Rutgers State Univ., Dept. Anthropol., New Brunswick, NJ 08903, USA)

- Loney, J., Paternite, C.E., Schwartz, J.E. & Roberts, M.A. (1997). Associations between clinic-referred boys and their fathers on childhood inattention-overactivity and aggression dimensions. *Journal of Abnormal Child Psychology*, 25, 6, 499-509 (Dept. Psychiat. and Behav. Sci., Putnam Hall, South Campus, Stony Brook, NY 11794, USA)
- Lutwak, N. & Ferrari, J.R. (1997). Shame-related social anxiety: Replicating a link with various social interaction measures. *Anxiety, Stress and Coping*, 10, 4, 335-340 (Dept. Psychol., 17 Lexington Ave, New York, NY 10010, USA)
- MacDonald, K.B. (1998). Evolution, culture, and the five-factor model. *Journal of Cross-Cultural Psychology*, 29, 1, 119-149 (Calif. State Univ., Dept. Psychol., Long Beach, CA 90840-0901, USA)
- MacDonald, K.B. (1998). *Separation and Its Discontents: Toward an Evolutionary Theory of Anti-Semitism*. Westport, CT: Praeger (88 Post Road West, P.O. Box 5007, Westport, CT 06881-5007, USA) **Needs Reviewer.**
- Mackey, W.C. (1998). Father presence: An enhancement of child well-being. *Journal of Men's Studies*, 6: 227-243 (Wade C. Mackey, Townshire Manor, Apt. #6, 401 Lake Street, Bryan, TX 77801, USA)
- Margulis, L., & Sagan, D. (1997). *What Is Sex?* Simon & Schuster, 200 Old Tappan Rd., Old Tappan, NJ 07675 USA. \$37.50 (hdbk.).
- Markus, H.R. & Kitayama, S. (1998). The cultural psychology of personality. *Journal of Cross-Cultural Psychology*, 29, 1, 63-87 (Stanford, CA 94305; USA)
- Martin, R.P., Wisenbaker, J., Baker, J. & Huttunen, M.O. (1997). Gender differences in temperament at six months and five years. *Infant Behavior and Development*, 20, 3, 339-347 (Dept. Educ. Psychol., 325 Aderhold Hall, Athens, GA 30602, USA)
- Mashman, R.C. (1997). An evolutionary view of psychic misery. *Journal of Social Behavior and Personality*, 12, 4, 979-998 (Del Mar, CA 92014, USA)
- Mayr, E. (1997). *This is Biology: The Science of the Living World*. Belknap Press. 5 Cambridge Center, Cambridge, MA 02142, USA
- Mazur, A., Susman, E.J. & Edelbrock, S. (1997). Sex difference in testosterone response to a video game contest. *Evolution and Human Behavior*, 18, 5, 317-326 (Syracuse Univ., Public Affairs Program, Syracuse, NY 13244, USA)
- McGrew, W.C. & Marchant, L.F. (1997). On the other hand: Current issues in and meta-analysis of the behavioral laterality of hand function in nonhuman primates. *Yearbook of Physical Anthropology*, 40, 201-232 (Miami Univ., Dept. Zool., Oxford, OH 45056)
- Meyer, W.U., Reisenzein, R. & Schutzwohl, A. (1997). Toward a process analysis of emotions: The case of surprise. *Motivation and Emotion*, 21, 3, 251-274 (Psychol. Abt., Postfach 100131, D-33501 Bielefeld, Germany)
- Mignault, A. & Marley, A.A.J. (1997). A real-time neuronal model of classical conditioning. *Adaptive Behavior*, 6, 1, 3-61 (Dept. Psychol., 1205 Dr Penfield Ave, Quebec City, PQ H3A 1B1; Canada)
- Muris, P., Merckelbach, H. & Collaris, R. (1997). Common childhood fears and their origins. *Behaviour Research & Therapy*, 35, 10, 929-938 (Univ. Limburg, Dept. Psychol., POB 616, 6200 MD Maastricht, Netherlands)
- Ohbuchi, K.I. & Tedeschi, J.T. (1997). Multiple goals and tactical behaviors in social conflicts. *Journal of Applied Social Psychology*, 27, 2177-2199 (Tohoku Univ., Sch. Arts and Letters, Dept. Psychol., Sendai, Miyagi 98077, Japan)
- Olofsson, U., Nyberg, L. & Nilsson, L.G. (1997). Priming and recognition of human motion patterns. *Visual Cognition*, 4, 4, 373-382 (Dept Psychol, 2136W Mall, Vancouver, BC V6T 1Z4; Canada)

- Olweus, D. (1997). Bully/victim problems in school: Facts and intervention. *European Journal of Psychology of Education*, 12, 4, 495-510 (Univ. Bergen, Res. Ctr. Hlth. Promot., Hemil, Emisties Gate 13, N-5015 Bergen, Norway)
- Osterman, K., Bjorkqvist, K., Lagerspetz, K.M.J., Kaukiainen, A., Landau, S.F., Fraczek, A. & Caprara, G.V. (1998). Cross-cultural evidence of female indirect aggression. *Aggressive Behavior*, 24, 1, 1-8 (Abo Akad. Univ., Dept. Social Sci., PB 311, FIN-65101 Vaasa, Finland)
- Page, S. (1997). An unobtrusive measure of racial behavior in a university cafeteria. *Journal of Applied Social Psychology*, 27, 24, 2172-2176 (Univ. Windsor, Dept. Psychol., 401 Sunset, Windsor, ON N9B 3P4, Canada)
- Pakaslahti, L. & Keltikangas-Järvinen, L. (1997). The relationships between moral approval of aggression, aggressive problem-solving strategies, and aggressive behavior in 14-year-old adolescents. *Journal of Social Behavior and Personality*, 12, 4, 905-924 (Dept. Psychol., POB 4; Fin-00014 Helsinki, Finland)
- Pakaslahti, L., Spoof, I., Asplund-Peltola, R.L. & Keltikangas-Järvinen, L. (1998). Parents' social problem-solving strategies in families with aggressive and non-aggressive girls. *Aggressive Behavior*, 24, 1, 37-51 (Univ. Helsinki, Dept. Psychol., POB 4, FIN-00014 Helsinki, Finland)
- Palmer, C.T., Frederickson, B.E. & Tilley, C.F. (1997). Categories and gatherings: Group selection and the mythology of cultural anthropology. *Evolution and Human Behavior*, 18, 5, 291-308 (Univ. Colorado, Dept. Anthropol., Colorado Springs, CO 80933, USA)
- Pepler, D.J., Craig, W.M. & Roberts, W.L. (1998). Observations of aggressive and nonaggressive children on the school playground. *Merrill-Palmer Quarterly Journal of Developmental Psychology*, 44, 1, 55-76 (Lamarsh Ctr. Res. Violence and Conflict Resolut., Dept. Psychol., 4700 Keele St., N York, Ontario M3J 1P3, Canada)
- Perry, E.L., Kulik, C.T. & Schmidtke, J.M. (1997). Blowing the whistle: Determinants of responses to sexual harassment. *Basic and Applied Social Psychology*, 19, 4, 457-482 (Univ. Illinois, Inst. Labor & Ind. Relat., 504 EArmory Ave., Champaign, IL 61820, USA)
- Perry, S. (1997). Male-female social relationships in wild white-faced capuchins (*Cebus capucinus*). *Behaviour*, 134, 7-8, 477-510 (Univ. Calif., Dept. Anthropol., Los Angeles, CA, USA)
- Peters, M. (1997). Gender differences in intercepting a moving target by using a throw or button press. *Journal of Motor Behavior*, 29, 4, 290-296 (Dept. Psychol., Guelph, ON N1G 2W1, Canada)
- Petit, O., Abegg, C. & Thierry, B. (1997). A comparative study of aggression and conciliation in three cercopithecine monkeys (*Macaca fuscata*, *Macaca nigra*, *Papio papio*). *Behaviour*, 134, 5-6, 415-432 (Univ. Louis Pasteur, Ethologie & Neurobiologie, CNRS-URA, Strasbourg, France)
- Pike, A. & Plomin, R. (1997). A behavioural genetic perspective on close relationships. *International Journal of Behavioral Development*, 21, 4, 647-667 (Inst. Psychiat., 113 Denmark Hill, London SE5 8AF, England)
- Piker, S. (1998). Contributions of psychological anthropology. *Journal of Cross-Cultural Psychology*, 29, 1, 9-31 (Swarthmore, PA 19081, USA)
- Plomin, R. & Petrill, S.A. (1997). Genetics and intelligence: What's new? *Intelligence*, 24, 1, 53-78 (Inst. Psychiat., 13 Denmark Hill, London, SE5 8AF, England)
- Plomin, R., Fulker, D.W., Corley, R. & DeFries, J.C. (1997). Nature, nurture, and cognitive development from 1 to 16 years: A parent-offspring adoption study. *Psychological Science*, 8, 6, 442-447 (Inst. Psychiat., 13 Denmark Hill, London, SE5 8AF, England)

- Povinelli, D.J., Reaux, J.E., Bierschwale, D.T., Allain, A.D. & Simon, B.B. (1997). Exploitation of pointing as a referential gesture in young children, but not adolescent chimpanzees. *Cognitive Development*, 12, 4, 327-365 (Div. Behav. Biol., New Iberia Res. Ctr., 4401 W Admiral Doyle Dr, New Iberia, LA 70506, USA)
- Pryor, J.B. et al. (1997). Gender differences in the interpretation of socio-sexual behavior: A cross-cultural perspective on sexual harassment. *Journal of Cross-Cultural Psychology*, 28, 5, 509-534 (Illinois State Univ., Dept. Psychol., Coll. Arts & Sci. Res. Off., Normal, IL 61790, USA)
- Raja, M., Azzoni, A. & Lubich, L. (1997). Aggressive and violent behavior in a population of psychiatric inpatients. *Social Psychiatry and Psychiatric Epidemiology*, 32, 7, 428-?? (Santo Spirito Hosp., Dept. Mental Health., Diagnostic Serv., Via Prisciano 26, 00136 Rome, Italy)
- Reeve, J. & Nix, G. (1997). Expressing intrinsic motivation through acts of exploration and facial displays of interest. *Motivation and Emotion*, 21, 3, 237-250 (Dept. Educ. Psychol., Milwaukee, WI 53201, USA)
- Reznick, J.S., Chawarska, K., Betts, S.L. & Logan, B. (1997). A simple system for monitoring the timing of infant gaze to stimuli at specific locations. *Behavior Research Methods Instruments and Computers*, 29, 4, 528-533 (Dept. Psychol., Box 208205, New Haven, CT 06520; USA)
- Riese, M.L. (1998) Patterns of reactivity to an aversive tactile stimulus in fullterm and preterm infants. *Merrill-Palmer Quarterly Journal of Developmental Psychology*, 44, 1, 97-113 (Hlth. Sci. Ctr., Child Dev. Unit, Sch. Med., Louisville, KY 40292, USA)
- Roche, B. & Barnes, D. (1997). The behavior of organisms? *Psychological Record*, 47, 4, 597-618 (Natl. Univ. Ireland, Univ. Coll. Cork, Dept. Appl. Psychol., Cork, Ireland)
- Rupp, D.E. & Vodanovich, S.J. (1997). The role of boredom proneness in self-reported anger and aggression. *Journal of Social Behavior and Personality*, 12, 4, 925-936 (Vodanovich, S.J., Univ. W Florida, Dept. Psychol., 11000 Univ. Pkwy., Pensacola, FL 32514, USA)
- Sainsbury, D. (1996). *Gender, Equality and Welfare*. Cambridge Univ. Press, 1 Trinity Street, Cambridge CB2 1SZ, England.
- Samarapungavan, A. & Wiers, R.W. (1997) Children's thoughts on the origin of species: A study of explanatory coherence. *Cognitive Science*, 21, 2, 147-178 (Purdue Univ., W Lafayette, IN 47906, USA)
- Satterfield, J.H. & Schell, A. (1997). A prospective study of hyperactive boys with conduct problems and normal boys: Adolescent and adult criminality. *Journal of the American Academy of Child and Adolescent Psychiatry*, 36, 12, 1726-1735 (Schell, A; Dept. Psychol., 1600 Campus Rd., Los Angeles, CA 90041, USA)
- Savelsbergh, G., Von Hofsten, C. & Jonsson, B. (1997). The coupling of head, reach and grasp movement in nine months old infant prehension. *Scandinavian Journal of Psychology*, 38, 4, 325-333 (Fac. Human Movement Sci., Inst. Fundamental and Clin. Human Movement Sci., Amsterdam, Netherlands)
- Schnake, S.B., Ruscher, J.B., Gratz, K.L. & O'Neal, E.C. (1997). Measure for measure? Male retaliation commensurate with anger depends on provocateur gender and aggression covertness. *Journal of Social Behavior and Personality*, 12, 4, 937-954 (Dept. Psychol., New Orleans, LA 70118, USA)
- Schwarting, R.K.W. (1997). The neurochemistry of behavior: Dopamine and motivation. *Psychologische Rundschau*, 48, 4, 211-223 (Univ. Duesseldorf, Inst. Physiol. Psychol., Univ.Str. 1, 40225 Duesseldorf, Germany)
- Scott, E.C. (1997). Antievolution and creationism in the United States. *Annual Review of Anthropology*, 26, 263-312 (Natl. Ctr. Sci. Educ. Inc., POB 9477, Berkeley, CA 94709, USA)

- Segal, N. L. (1997). Behavioral aspects of intergenerational human cloning: What twins tell us. *Jurimetrics*, 38, 57-67. (Dept. of Psych., Calif. State Univ., Fullerton, CA 92834 USA)
- Seidlitz, L. & Diener, E. (1998). Sex differences in the recall of affective experiences. *Journal of Personality and Social Psychology*, 74, 1, 262-271 (Med. Ctr., Dept. Psychiat., 300 Crittenden Blvd, Rochester, NY 14642, USA)
- Shackelford, T.K. & Buss, D.M. (1997). Anticipation of marital dissolution as a consequence of spousal infidelity. *Journal of Social & Personal Relationships*, 14, 6, 793-808 (Florida Atlantic Univ., Dept. Psychol., 2912 College Ave., Davie, FL 33314, USA)
- Sheets, V.L., Fredendall, L.L. & Claypool, H.M. (1997). Jealousy evocation, partner reassurance, and relationship stability: An exploration of the potential benefits of jealousy. *Evolution & Human Behavior*, 18, 6, 387-402 (Dept. Psychol., Terre Haute, IN 47809; USA)
- Soloff, P. (1997). Psychobiologic perspectives on treatment of personality disorders. *Journal of Personality Disorders*, 11, 4, 336-344 (3811 O'Hara St., Pittsburgh, PA 15213, USA)
- Sprecher, S. & Felmlee, D. (1997). The balance of power in romantic heterosexual couples over time from 'his' and 'her' perspectives. *Sex Roles*, 37, 5-6, 361-380 (Illinois State Univ., Dept. Sociol. & Anthropol., Normal, IL 61790, USA)
- Squire, L.R. (1997). Memory systems of the brain. *Brain & Cognition*, 35, 3, 297-298 (Univ. Calif. San Diego, La Jolla, CA 92093, USA)
- Stahl, S.M. (1997). Serotonin: It's possible to have too much of a good thing. *Journal of Clinical Psychiatry*, 58, 12, 520-521 (Univ. Calif. San Diego, Dept. Psychiat., San Diego, CA 92103, USA)
- Stam, H.J. (Ed) (1997). *The Body and Psychology*. Sage Publ. Inc., 2455 Teller Road, Thousand Oaks, CA 91320, USA.
- Steinhausen, H.C. et al. (1997). Behavioral and emotional problems reported by parents for ages 6 to 17 in a Swiss epidemiological study. *European Child & Adolescent Psychiatry*, 6, 3, 136-141 (Univ. Zuerich, Dept. Child & Adolescent Psychiat., Freiestr. 15, 8028 Zuerich, Switzerland)
- Stice, E. & Gonzales, N. (1998). Adolescent temperament moderates the relation of parenting to antisocial behavior and substance use. *Journal of Adolescent Research*, 13, 1, 5-31 (Dept. Psychiat., Stanford, CA 94305; USA)
- Stiles, W.B. et al. (1997). Gender differences in verbal presumptuousness and attentiveness. *Personality and Social Psychology Bulletin*, 23, 7, 759-772 (Miami Univ., Dept. Psychol., Oxford, OH 45056, USA)
- Stouthamer-Loeber, M. & Wei, E.H. (1998). The precursors of young fatherhood and its effect on delinquency of teenage males. *Journal of Adolescent Health*, 22, 1, 56-65 (Sch. Med., Western Psychiat. Inst. and Clin., 3811 Ohara St., Pittsburgh, PA 15213, USA)
- Thagaard, T. (1997). Gender, power, and love: A study of interaction between spouses. *Acta Sociologica*, 40, 4, 357-376 (Univ Oslo, ISS, Box 1096, N-0317 Oslo, Norway)
- Thompson, C., Baressi, J. & Moore, C. (1997). The development of future-oriented prudence and altruism in preschoolers. *Cognitive Development*, 12, 2, 199-212 (Dalhousie Univ., Dept. Psychol., Halifax, NS B3H 4J1, Canada)
- Tsai, J.L. & Levenson, R.W. (1997). Cultural influences on emotional responding: Chinese American and European American dating couples during interpersonal conflict. *Journal of Cross-Cultural Psychology*, 28, 5, 600-625 (Univ. Minnesota, Dept. Psychol., Elliott Hall, 75 E River Rd., Minneapolis, MN 55455, USA)
- Tyler, T., Lind, E.A., Ohbuchi, K.I., Sugawara, I. & Huo, Y.J. (1998). Conflict with outsiders: Disputing within and across cultural boundaries. *Personality & Social Psychology Bulletin*, 24, 2, 137-146 (NYU, Dept. Psychol., 3210 Tolman Hall MC1650, Berkeley, CA 94720, USA)

Underwood, M.K. (1997). Peer social status and children's understanding of the expression and control of positive and negative emotions. *Merrill-Palmer Quarterly*, 43, 4, 610-634 (Reed Coll., Dept. Psychol., Portland, OR 97202, USA)

Valois, R.F. & McKewon, R.E. (1998). Frequency and correlates of fighting and carrying weapons among public school adolescents. *American Journal of Health Behavior*, 22, 1, 8-17 (Sch. Publ. Hlth., Dept. Hlth. Promot. and Educ., 216 Hlth. Sci. Bldg., Columbia, SC 29208, USA)

Van IJzendoorn, M.H. (1997). Attachment, emergent morality, and aggression: Toward a developmental socioemotional model of antisocial behaviour. *International Journal of Behavioral Development*, 21, 4, 703-727 (Ctr. Family and Child Studies, POB 9555, 2300 RB Leiden, Netherlands)

Vandervert, L.R. (1997). The evolution of Mandler's conceptual primitives (image-schemas) as neural mechanisms for space-time simulation structures. *New Ideas in Psychology*, 15, 2, 105-123 (W 711 Waverly Pl., Spokane, WA 99205, USA)

Venable, K.V. & Martin, M.M. (1997). Argumentativeness and verbal aggressiveness in dating relationships. *Journal of Social Behavior & Personality*, 12, 4, 955-964 (Dept. Commun. Studies, POB 6293, Morgantown, WV 26506, USA)

Vogelzang, L.N., Euwema, M.C. & Nauta, A. (1997). You, we, and I: Relationships between verbal expressions of communality and dyadic conflict behavior. *Journal of Language & Social Psychology*, 16, 4, 456-? (POB 15061, 3501 BB Utrecht, Netherlands)

Wark, G.R. & Krebs, D.L. (1997). Sources of variation in moral judgment: Toward a model of real-life morality. *Journal of Adult Development*, 4, 3, 163-178 (Simon Fraser Univ., Dept. Psychol., Burnaby, BC V5A 1S6, Canada)

Weingart, P., Mitchell, S.D., Richerson, P.J. & Maasen, S. (Eds.) (1997) *Human by Nature: Between Biology and the Social Sciences*. Lawrence Erlbaum, 10 Industrial Ave, Mahwah, NJ 07430-2262, USA, \$89.95.

White, M.C. et al. (1997). The evolution of organizations: suggestions from complexity theory about the interplay between natural selection and adaptation. *Human Relations*, 50, 11, 1383-1402 (Louisiana Tech. Univ., Coll. Adm. & Business, Dept. Management & Mkt, POB 10318, Ruston, LA 71272, USA)

Wickham, H. & Murray, R.M. (1997). Can biological markers identify endophenotypes predisposing to schizophrenia? *International Review of Psychiatry*, 9, 4, 355-364 (Inst. Psychiat., Dept. Psychol. Med., de Crespigny Pk., London SE5 8AF, England)

Williams, W.M. & Ceci, S.J. (1997). Are Americans becoming more or less alike? Trends in race, class, and ability differences in intelligence. *American Psychologist*, 52, 11, 1226-1235 (Cornell Univ., Dept. Human Dev., Myr Hall, Ithaca, NY 14853, USA)

Wilson, D.S. (1998). Hunting, sharing, and multilevel selection: The tolerated-theft model revisited. *Current Anthropology*, 39, 1, 73-97 (Binghamton, NY 13902, USA)

Winocur, G. (1997). Brain mechanisms in memory: An animal model approach. *Brain and Cognition*, 35, 3, 302-303 (Trent Univ., Baycrest Ctr. Geriatr. Care, Rotman Res. Inst., Peterborough, ON K9J 7B8, Canada)

Winter, K.A. & Kuiper, N.A. (1997). Individual differences in the experience of emotions. *Clinical Psychology Review*, 17, 7, 791-? (Univ. Western Ontario, Dept. Psychol., London, ON N6A 5C2, Canada)

Yuval-Davis, N. (1997). *Gender and Nation*. Sage Publ. Inc., 2455 Teller Road, Thousand Oaks, CA 91320, USA

Zanolli, K.M., Sandargas, R.A. & Twardosz, S. (1997). The development of toddlers' responses to affectionate teacher behavior. *Early Childhood Research Quarterly*, 12, 1, 99-118 (Univ. Kansas, Dole Ctr. 4001, Lawrence, KS 66045, USA)