

Human Ethology Newsletter

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ISHE Officers Call for Suggestions for Nominees

Based on the decisions made at the Cheney business meeting - the minutes appear in full in this issue of the Newsletter - suggestions for a slate of nominees are requested for the offices of President, Vice President, Secretary, and Treasurer.

Send suggestions for nominations, you may suggest yourself, to the Newsletter editor by December 21, 1984. The suggestions will be forwarded to the Executive Board which will use its best judgment to draw up a slate from the suggestions. A ballot will then be distributed by separate mailing.

Minutes of Business Meeting August 15, 1984 Cheney, WA

Submitted by Gail Zivin,
meeting chair and secretary

Fifteen members present. Officers present: Judith Hand and Gail Zivin. Past officers present: Joan Lockard and Ron Weigel.

I. Decisions on next meetings' locations.

- A. 1985: With ABS in Raleigh, NC, end of June.
- B. 1986: Hopefully with International Primate Society in Germany. Ron Weigel, Meeting Committee chair, will write to inquire whether Eibl-Eibesfeldt still would like to host an ISHE meeting at that time.
- C. Explorations of financed aid for foreign meeting:
 1. Ron Weigel will explore Germany's DAAR committee's aid.
 2. Judith Hand will explore NSF aid.

II. Decisions on restructuring society:

- A. Unanimously decided to have empowered officers and by-laws and to explore non-profit incorporation. This vote was informed by the positive opinion of the majority of responses to the Newsletter questionnaire plus the positive opinion of the 3 current Board members whose views are known.
- B. Unanimously decided to proceed as follows: (The meeting acknowledges its appreciation of Michael McGuire's suggestions for procedures which were all adopted, virtually unmodified.):
 1. Initial offices will be President, Vice President, Secretary and Treasurer.

2. After suggestions for nominations are solicited through the Newsletter, the Board will draw up a slate of candidates. (The Board will be guided by: aiming for persons who are willing to be very energetic in these new offices, who are well known to the membership, who include Europeans and Canadians, and who include an older member acquainted with the history of the organization.)
3. The terms of all the new officers will be 3 years. Terms in by-laws for later officers may be shorter. More offices may be added as found needed through the by-laws and changes in them.
4. The new President will be responsible for having the by-laws drawn up, getting the advice and approval of the then current Board members plus the Newsletter Editor, and with the advice of legal counsel.
5. Further suggestions from this meeting for the new officers:
 - a. Do not let new membership stimulation wait until by-laws are passed.
 - b. Write a clear statement of the Society's purpose.
 - c. Retain Newsletter Editor as ex-officio.
6. Procedures for the first election (with nominations developed as in II. B. 2., above):
 - a. Call for suggestions of nominations and self-volunteering in next newsletter. Urge this as soon as possible.
 - *b. Ballot will appear in December Newsletter. Urgent to be put out in November.
 - *c. Last day to vote December 31, 1984.
 - *d. Offices take effect January 1, 1985.
 - e. Gail Zivin will immediately write to Board members urging them to start immediately thinking about nominees that fulfill criteria and to develop a mechanism for slate drawing.

*Due to prior experience with overseas mailings, it has since been advised that the nomination and balloting processes be each scheduled to allow approximately two months' response time.

Corrections

The article by McGrew and Phtiaka in volume 4, number 2 contained two errors: page 2, 4th line up: In the formula, the numerator should be $(n \times n) - n$; page 3, line 2: Should be 525, not 105.

New Board Member - Gail Zivin

(The name and statement of the fourth new member of the ISHE Executive Board were omitted from a previous issue of the Newsletter. She is a previous Board Member who has been active in the Society since its inception. Her statement of personal views follows.)

My experience at the recent ABS meeting helped clarify my thoughts on current major issues in human ethology. One experience was a sense of oppression by the preponderance of papers, human and nonhuman, whose main question was whether some phenomenon was directly related to reproductive success. Another was an awareness that there indeed were many folks there, human and non-human ethologists, who clearly enjoyed conversations about other issues of ethology that I consider interesting and rich in merit for study. A third was a growing uneasiness that many of the human papers, seeking to draw relevance and parallel from questions and paradigms generated in non-human research, overlooked to their peril the uniqueness of the human ecological niche: from such presentations one would not know that layers of symbolizing and culture might intervene between world and human to alter adaptations away from simple, easily predicted strategies.

The first two reactions point up one issue. It is whether the pursuit of the **plurality** of worthwhile issues in human ethology – both from classic ethological problems (such as the structure, function and experiential modification of innate propensities) and from newer questions (such as the structure, function, and development of social strategies) – may be becoming less vigorous.

If there is such a withering trend, what might be fostering it? It might be due to the attraction of pursuing questions in the apparently less muddled arena of sociobiological hypotheses. It might be due to the leveling off of excitement as this infant field moves through its first rush of open horizons to the tougher work of tightening up its approaches. It might be due to the sense of little accumulation of knowledge that bedevils fields that do not yet have large integrating theoretical frames. It might be due to the difficulty young researchers face in establishing careers in a fringe area of knowledge. Sociologists of science would suggest several more possibilities, and it would be worth our while to know all of them so that we may, if we value the full picture of organismic functioning to which plurality can lead, note ways in which our efforts might promote the vigor of pluralistic human ethology.

My third reaction points to a second large issue for human ethology: that the problems of applying comparative logic to human behavior remain unsolved. This remains true despite such useful books as M. von Cranach's **Methods of Inference from Animal to Human Behavior** (Aldine/Mouton, 1976) and D. W. Rajecki's **Comparing Behavior: Studying Man Studying Animals** (Erlbaum, 1983). I need not mention the vague confusion that follows attempts to apply to primate behavior two of the clearest concepts in this area, homology vs. analogy. A more sophisticated form of the problem is how to blend classical biological, ethological, and sociobiological approaches and perspectives with anthropological sociological, and psychological knowledge of human ecological niche.

This is daunting indeed. However, I do believe that human ethologists are the thinkers uniquely positioned both

to see the necessity for this difficult synthesis and to have the breadth of knowledge (often self-taught) to undertake it. This is not, for me, a simple issue of intellectual curiosity, but one of adequate complexity to approach adequate description. No other discipline might ever be so placed or motivated to provide it. It therefore seems to me that without the aim of developing such a multi-faceted and integrated perspective that narrowness that I noted above might not be premature, but a tedious step toward well deserved trivial consequences.

Action Pattern and Image As Functional Units

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Emotion is a term rarely defined but intuitively “understood” among the general public. Among academic psychologists, definitions of emotion are also hard to come by. In point of fact, emotion is poorly described empirically, although scientists have long recognized a relationship between the individual's subjective experience of an “emotional state” (e.g., “fear” or “anger”) and activity in the autonomic nervous system (ANS). This division of the peripheral nervous system functions intimately with the endocrine system to integrate, coordinate and control sensation and perception of the internal “environment”, and ANS processes may or may not predict overt behavior. Following from our present knowledge of these processes, psychologists generally identify three properties of emotion – the visceral, the conscious and the behavioral.

A formal and empirical problem for students of emotion has been the explanation of differential “emotional states”. What mechanisms permit the individual to discriminate between the states of “anger” and “fear” and “love”, for example? Such discrimination, at the conscious or unconscious level, is presumably necessary to permit a behavioral “decision” by the central nervous system (CNS). Attempts to explain this differentiation of “emotional states” have been proposed in four paradigms. The James-Lange theory assumes a conscious organism experiencing certain detectable physiological changes (e.g., changes in heart rate or muscular tension). In this model, consciousness of the visceral (internal) response to an external stimulus constitutes the emotion, requiring the assumption of differentiated ANS activity (i.e., ANS activity for “anger” different than that for, say, “fear” and is communicated as such to the CNS). Major objections to the James-Lange have been the common assertion that ANS activity is undifferentiated; that awareness of “emotional states” may persist longer than their physiological correlates; and, that awareness of “emotional states” may be measured **before** physiological correlates are detectable instrumentally.

The Cannon-Bard theory of emotion was an attempt to compensate for the apparent deficiencies of the James-Lange and to explain emotional reactivity in organisms with deficient or minimal neocortical activity. According to this model, “emotional state” is discriminated by subcortical brain centers responding to an external stimulus **prior** to the

cortical registering of undifferentiated ANS response. Decorticate animals respond to aversive stimuli as if their thresholds to such stimuli had been lowered, implicating subcortical structures and supporting this model's assumption that detection of "emotional state" (e.g., "pain") is primary to awareness of visceral condition. Consistent with the Cannon-Bard theory, the Papez-McLean model proposed that a "limbic system circuit", composed of hypothalamus, cingulate gyrus, hippocampus and their inputs and outputs, constitutes a unit which mediates emotional response.

The James-Lange, Cannon-Bard and Papez-McLean models assume that discrimination of "emotional state" occurs in response to an external stimulus or stimulus complex, often termed the "situational context". The Schachter-Singer theory lent support to this view. In this model, undifferentiated ANS "arousal" is "labelled" by higher mental processes as a function of conscious interaction with "situational context". Thus, conscious processes discriminate among emotions. While the Schachter-Singer model fails to differentiate between cognitions and visceral responses since both are assumed to interact, it appears to support the basic assumption of previous models that perceived emotional response depends upon external cues and suggests that such cues may be main effects.

Both the James-Lange and the Schachter-Singer models assume that visceral (physiological) activity occurs **before** differentiation of emotion ("anger," "fear," or "disgust," etc.), but only the James-Lange holds that differentiation of emotion is a function of differential ANS activity. Strong evidence now exists for this latter view.

In a recent article, Paul Ekman and his associates (1983) show that "autonomic nervous system activity distinguishes among emotions". Six "target emotions" ("surprise", "disgust", "sadness", "anger", "fear" and "happiness") were assessed with 16 subjects in two laboratory conditions ("directed facial action" and "relived emotion" — tasks 1 and 2, respectively) by 5 ANS measures (heart rate, left- and right-hand temperatures, skin resistance and forearm muscle tension). The "directed facial action task" (6 trials) required each subject to perform a "prototype" of an emotional expression (e.g., "fear") contingent to performance of a non-emotional expression. "Prototypes" of emotional and non-emotional expressions were controlled across trials by standardized instructions from investigator to subject which specified those different muscles to be contracted for each "emotion-prototypic expression" and for the non-emotional expression which required the contraction of muscles into two action patterns not included in those patterns comprising "emotion-prototypic expression." In task 2, subjects were asked to imagine or to "relive" a past experience with each of the six "prototypic" emotions.

Difference scores (mean "emotion-prototypic expression" ANS measures minus mean non-emotional ANS measures for task 1; mean "relived emotion" ANS measures minus mean resting period ANS measures for task 2) were analyzed statistically. Emotion as a main effect was highly significant, though significant differences between the two tasks were also found. Results across tasks show that heart rate distinguished the negative emotions of "anger" and "fear" from the positive emotion of "happiness" while temperature distinguished "anger" from "happiness". Among negative emotions, heart rate

distinguished "anger", "fear" and "sadness" from "disgust" while temperature distinguished "anger" from "fear", "sadness" and "disgust". Skin resistance distinguished "sadness" from "fear", "anger" and "disgust". The two tasks yielded different effects with task 1 distinguishing "disgust" and "anger" from one another and these two from "disgust", "anger" or "fear". Both tasks distinguished between positive emotions and negative emotions. Thus, "the emotion main effect, as well as the task x emotion interaction were both significant" statistically (R.W. Levenson, personal communication).

While the authors of this study acknowledge that their work leaves unresolved the question of what mechanisms control emotional differentiation as well as the proximate and ultimate significance of these, certain implications seem clear. First, it is important to note that task 1 is a motor task; task 2, a cognitive task. Whatever the pathways connecting facial nerves and nerves associated with imagery within the human nervous system, the present evidence suggests that the pathways differ significantly and that they also interact, probably by way of the ANS. Second, verification that a cognitive task (task 2) elicits ANS activity shows that higher mental processes are not independent of autonomic function. The extent to which cortical function is dependent upon ANS activity, and the potential for cognitive processes to be functionally "emancipated" (see Lorenz, 1971; Tinbergen, 1952) from autonomic activity remains unclear. The data do suggest, however, that facial motor function predicts more of the variance in emotional response than cognitive function. Thus, cognitive function may be related less to ANS function than facial motor function; or, the relationship between cognitive function and ANS activity may be more specialized.

The present results also show that "stereotyped" motor patterns in the human face are functionally significant (see Bolwig, 1964; Schleidt, 1974). This demonstration leads to the conclusion that variation in human phenotype (facial motor patterns in particular) is subject to selection and, thus, may be related to variation in human "fitness" (see Eibl-Eibesfeldt, 1979). Variation in imagery may be **indirectly** exposed to the environment by way of interaction between the ANS and the CNS and any motor patterns generated by those implied pathways. Such relationships among "complex patterns" of response may also have broad significance by extension to problems concerning the lawful processes of integrated neural networks (see McCormick, et al., 1982; Szentágothai and Arbib, 1975).

I thank Martin Moynihan for reading the manuscript and R.W. Levenson for detailing the authors' (Ekman, et al., 1983) statistics.

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Book Review

Instinct, Environment and Behaviour

by S. E. G. Lea. London: Methuen
(New Essential Psychology Series) 1984
ISBN: 0-416-33640-X paperback
£2.95.

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If you teach ethology to undergraduates, have you found yourself wishing for a short, cheap, introductory paperback which, though up-to-date and topical, also covers the classical work of the Big Three?* Something, perhaps to recommend for vacation reading before the start of semester, or as follow-up reading for the beginning student whose interest has been aroused in a lecture? This may be it. (And do not be put off by the forgettable title!) In only 125 pages of text, Lea has covered selfish herds, optimally foraging tits, and signing chimpanzees, as well as dancing bees, courting ducks, and egg-rolling geese. Kin selection as well as innate releasing mechanisms, 'armchair adaptationism' and displacement behavior — it is all there, albeit sometimes (and understandably) superficially.

The author's stated goal is to ask if human beings are a special case or do we fit into the general pattern of the animal kingdom? In tackling this, matters of function receive the most attention, matters of mechanism less, and developmental matters barely at all. There are seven chapters, covering material from the level of fixed action patterns to the evolution of society. The chapter on males,

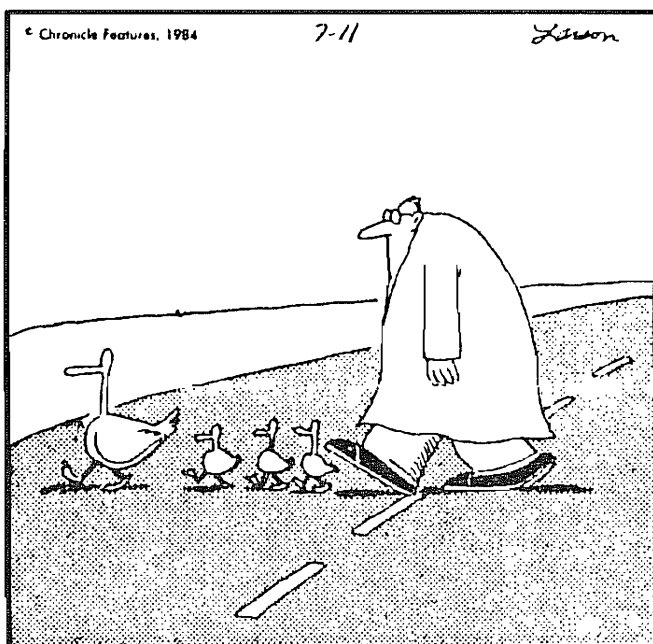
females, and offspring starts usefully with anisogamy and develops this theme through to the origins of human intelligence. The latter two chapters, on learning, intelligence and culture, and on the talking animal, will be of most interest to human ethologists. With regard to *H. sapiens*, Lea is stronger on ideas than on recent empirical findings, and he could usefully have delved into the pages of *Ethology and Sociobiology*.

There are a few problems, of course. In terms of factual errors, the ape-fostering of the Kelloggs and the Temerlins is amusingly transposed, and the ischial callosities and perineal sex skins of baboons are confused. Occasionally there is the infelicitous phrase: "Instinct gives the chick a concept of mother . . ." or "The lek, in fact, is a sort of externalized peacock's tale." Sometimes, over-generalizations grate, e.g. the claim that matrilineal characterize almost all primates societies, when this really applies only to Old World monkeys. By and large, however, for such a quick tour through such a wide area, the book is commendably apt and accurate.

In terms of format, the book is exemplary. For teaching, there is a chapter-by-chapter list of suggested further readings. The list of about 175 references includes for each one the page number in the text where it is cited. The subject index even italicizes the page numbers where the definitions of terms will be found. My only disappointment was at the absence of illustrations.

All in all, this is a book to be recommended in teaching, especially for undergraduates studying psychology who do not have much of a biological background.

*The Nobel Prize winners of 1973: von Frisch, Lorenz, and Tinbergen

THE FAR SIDE by Gary Larson

When imprinting studies go awry

(Reprinted by permission of, and with thanks to
Chronicle Features.)

Sociobiological Theory and Stepfather-Daughter Incest in Humans

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In a recent review of the literature on stepfather-daughter incest in the United States, several authors were found to offer Sociobiological theory as one possible explanation for the observed high rates of stepfather-daughter incest in reported cases (Burgess & Garbarino, 1983; Finkelhor, 1979). These authors have suggested that stepfathers are disproportionately represented in reported cases due to a weakened or less restrictive incest taboo resulting from the lack of a biological relationship. This perspective assumes that at least some of the higher than expected rate of stepfather reports are due to an actual higher rate of incidence. In addition to the problem of disentangling the possibility that stepfathers are more likely to be reported and/or are more likely to be identified by the system, there are several reasons why sociobiological explanations are to be considered problematic and highly unlikely explanations for this observation.

First, all sociobiological applications to human behavior rest on the assumption that humans adapt to their social and physical environment by the process of natural selection operating through differential reproduction. A

sociological explanation of stepfather-daughter incest assumes that incest avoidance behaviors are under control of natural selection or subject to influence by differential reproduction. Thus, the sociobiological hypothesis would be that 1) sexual behavior in humans is controlled by natural selection, i.e., it is instinctual or unlearned, and 2) those families which do not engage in incest are more fit and therefore produce more viable offspring.

While it is clear that sociobiological theory has some explanatory power for many aspects of reproductive and parental behavior in animals, the relationship between mating and caretaking activities in humans and the adaptive success of human civilizations has not been documented, much less established from a theoretical perspective. Human adaptive strategies are characterized by social living and the use of clothing, shelter and heating devices for survival in a vast range of environments, and the cultural diversity in these patterns provides overwhelming evidence that these strategies are learned. Furthermore, increased individual reproductive capacities (i.e., larger numbers of viable offspring) have not yet been linked to higher intelligence, increased ability to cope with stress for survival in the physical or social environment, or increased adequacy of parenting skills.

All of the available evidence on primates at this time strongly suggests that competency in mating as well as caretaking behavior is learned and not inherited through the genes (Harlow, 1962; Harlow & Harlow, 1965; and Mason, 1965). Learned behaviors are not under the control of natural selection. In addition, several studies on non-human primate sexual behavior demonstrate "incest avoidance," and statistical analyses of the results indicate that close matrilineal association and intrafamilial bonding are the most likely factors inhibiting matings between related animals (Murray & Smith, 1983; Bramblett, 1983). This interpretation has been further supported by observations of higher incidences of "probable father"-daughter and paternal half-sibs attempted matings in captive primate groups which are best characterized as matrilineal or matrifocal (Smith, 1982). Thus, despite the appearance of evidence supporting sociobiological explanations of patterns of incest in humans (i.e., possible indication of higher rates of stepfather-daughter incest), behaviors which are not under the control of natural selection are not appropriate for such explanations. Furthermore, sociobiological explanations of incest behavior would predict that incestuous families are less fit and therefore leave fewer offspring who exhibit this behavior in the succeeding generation. Strong contraindications to this prediction have been shown by the current dramatic increase (two to five fold) in the number of reported cases during the last 5 years. Furthermore, it may also be the case that the use of force is symptomatic of an abuse of a power relationship which is commonly regarded as the underlying dynamic or motivation of both child molesters and rapists. A greater tendency for stepfathers to be reported and for such cases to be identified by the system however, does not rule out the possibility that the presence of a stepfather in the home places any daughters at greater risk for child sexual abuse.

Evidence from reported cases of intrafamily child sexual abuse suggests a high rate of the use of force by perpetrators of cases which are reported (Dolan, 1984). The role stress found among parents in remarried families could

well contribute to a situation where an abusing stepfather could not rely on daughter's feelings of loyalty and trust to gain access to the child (Perlmutter, Sager and Engel, 1982), resulting in the use of force. It may be the use of force and a higher incidence of stepfamily problems that contributes to a disproportionately high rate of stepfamilies in populations of reported child sexual abuse cases.

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Bulletin Board

Please submit to the editor any items of general interest. These may include job openings, sabbatical opportunities, requests for information on a topic of interest, a call for correspondence from individuals who may be involved in research related to yours, meetings of interest, etc.

Position Opening

Biopsychology. Assistant professor, Haverford College, tenure track position starting Fall, 1985. Competence in the following areas desirable: the functions and mechanisms of behavior, behavioral ecology, evolutionary theory, animal learning, biological bases of human behavior, statistics and computer control of experimental apparatus. Teaching responsibilities include:

introductory psychology; introductory course in research methods; intermediate and advanced courses in biopsychology; statistics; and supervision of senior research theses. The person hired will also be responsible for maintenance and continued development of a computerized animal research laboratory. Applicants should have completed all requirements for the Ph.D. by the start of the Fall semester, have had some teaching experience and be actively engaged in biopsychological research. The department is particularly interested in finding a female or minority person to fill the position. Application deadline: November 12, 1984. Send curriculum vitae and three letters of recommendation to: Dr. Sidney I. Perloe, Chairman, Department of Psychology, Haverford College, Haverford, PA, 19041. Haverford College is an Affirmative Action/Equal Opportunity employer.

On the Society Handshake

"I think that it would be inappropriate to use such an ethnocentric gesture, given that we are an international society. Instead, we need something truly pan-cultural. The next problem is to choose a pattern which will allow us to identify one another. This means that something like a simple smile, however pleasant, is not enough. May I suggest that four eyebrow-flashes in quick succession, standing for the four letters of ISHE, would do?"

(Thanks to Bill McGrew)

European Sociobiological Society Meeting

The main theme of the meeting will be "In-group/Out-group. Which are the biological bases of xenophobia?" The meeting will be held January 5-6, 1985 in Oxford, UK. Interested persons should contact Dr. J. Wind, Institute of Human Genetics, Free University, Amsterdam, P.O. Box 7161, 1007 MC Amsterdam, The Netherlands. (Abstracts of the Society's July meeting are available from the HEN Editor.) Memberships may also be obtained through Dr. Wind. Rates are D.fl.40/U.S. \$15, students and un-employed colleagues one-half.

Computer Software

(Note: The following submission, although from an individual associated with ISHE, might well be considered a commercial announcement. In the interest of fairness, other such software of potential value to members will also be given HEN space on request.)

ANTANA is a package of programs for univariate and multivariate data analysis with special application to anthropology. Designed for teaching as well as for research, it is in regular use by our students and colleagues.

There are more than 30 modules for data screening and cleanup, matrix manipulation, simple statistics, multivariate procedures, and graphics. Data input is optionally from any file or from the keyboard in a free-form format, and disk files, the keyboard, or the printer may be specified interchangeably for output.

Several utilities perform housekeeping chores like stripping labels, identifying and counting missing values, joining and pruning data matrices, various normalizations, reporting simple statistics, box plots, and ranking. Standard statistical routines include t-tests, chi-squares, multiple regression, and polynomial regression. Multivariate procedures are principal components and coordinates using the

singular value decomposition, non-metric multidimensional scaling using the Kruskal algorithm, and cluster analysis. In addition matrix utilities like matrix-invert and matrix-divide are provided for those who wish to perform or to teach fancier analyses.

Graphics include simple character-graphics which may be used like text in a document, screen graphics, and high-density graphics for dot-matrix printers. Source code is provided (in C and Pascal) so the graphics routines may be customized for special devices. A scientific desk calculator and a technical text formatter are also included.

The price is \$200 and includes a tutorial manual of approximately 100 pages. The package is available for CP/M-80 microcomputers in many diskette formats and for MS-DOS/PC-DOS versions 1.x and 2.x in the standard 5.25" format. Contact Henry Harpending, 1080 Cypress Rd., Bosque Farms, NM 87068, 505-869-3595.

American Society of Zoologists Meeting

December 27-30, Holiday Inn Downtown, Denver, Colorado. This symposium is on the topic: Patterns of dispersal among mammals and the genetic structure of populations.

North American Book Review Editor

Bill Bailey is North American book review editor and may be sent books, suggestions for books to review, etc. His address is: Department of Psychology, Development Program, Tulane University, New Orleans, Louisiana 70118 (USA). European book review editors are Bill McGrew and Ian Vine.

ISHE Membership Drive

You may send \$10.00 to the Editor for a subscription/membership for the non-member or ex-member of your choice. You may also renew for 1985 at any time. Subscriptions are by calendar year, and the date on your mailing label is the year through which you have paid.

Future ISHE Meetings

ISHE will meet in June, 1985 at North Carolina State University in Raleigh, North Carolina. The 1986 meeting date and location have not been arranged, but I. Eibl-Eibesfeldt has offered to host a meeting in West Germany. Please send your comments on the 1986 meeting site to Ron Weigel, Human Ethology Laboratory, Neuropsychiatric Institute, UCLA, Los Angeles, CA 90024 (USA).

Current Literature

Submissions for this section should be sent directly to the editor. A brief, about one sentence, abstract would be helpful to readers.

BOOKS

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- NOTE: *The Journal of Human Evolution* 13/1, 1984, which was dedicated to sociobiology from J. Wind (see European Sociobiological Society note, Bulletin Board). For U.S. requests, send \$10.00 for surface mail, \$12.50 for air via International Postal Money Order.
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