

# Human Ethology Newsletter

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VOLUME 7, ISSUE 2

ISSN 0739-2036

JUNE 1992

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*Published by the International Society for Human Ethology*

## SOCIETY NEWS

### From the Membership Chair

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Many thanks to the members of ISHE for the opportunity to serve as Membership Chair during the next three years. I am grateful to Jay Feerman, former Membership Chair, and to Glenn Weisfeld, Newsletter Editor, for their help in facilitating the transfer of responsibilities.

A primary goal will be to increase the membership of the organization. There are several ways in which I will attempt to accomplish this. One way will be to publish information about ISHE in a variety of professional journals and newsletters. A second way will be to distribute sample newsletters and/or other materials at scientific meetings. All of you can offer invaluable assistance by bringing to my attention the names of individuals and organizations that would be receptive to the aims and interests of ISHE.

I intend to set this process in motion almost immediately. This June, I will be attending the Seventh International Twin Congress, in Tokyo. This four-day meeting brings together twin researchers representing diverse behavioral science and medical science disciplines. This event provides an excellent occasion for acquainting potential members with ISHE.

I regret that I will be unable to attend the 1992 ISHE meeting in Amsterdam. I do,

however, look forward to hearing from many of you over the coming months. I would like to encourage you to renew your membership in a timely fashion if you have not done so. A new bank account has been established in Fullerton, California in the name of the International Society for Human Ethology, and is always ready to accept dues!

### Amsterdam Meeting

It is not too late to attend the ISHE convention in Amsterdam July 27-31. For information contact Frans Plooiij, fax 31-29-634197.

### Message from the Editor

With the approach of our convention in Amsterdam, it may be appropriate for me to make a few comments about the newsletter and some related matters. (As Vice-President for Information, I feel entitled to write about most anything!)

Publication is now approximately on schedule. We have had some production delays preventing this in the past, but I think these have been solved in the main.

The length of some recent issues has exceeded 12 pages. As long as the copy received merits publication, I would prefer not to be limited to 12 pages. However, exceeding this length entails additional postage costs.

It would help to increase our membership, which as held steady at about 340 paid over the past two years. Only by recruiting new members can we prevent raises in dues (last raised in 1989) or shortening of the newsletter. Please try to remember to show the newsletter to prospective members and tell them about ISHE. Extra copies are available for publicity purposes, ask me for them. Remember that students can join for half price.

We have simplified the process of joining the Society or renewing one's membership. Henceforth, one need only send the completed membership form and dues to a single address--to Nancy for North Americans, to Herman for others. Once again, please renew your membership promptly--in time for the March issue, which is the first of the calendar year. In order to save money, we do not send out separate bills. The date below your address indicates the year for which you last paid.

Concerning the content of the newsletter, I welcome any comments and suggestions. Feel free to submit the references to your own publications as they appear, so they can be listed under Current Literature. However, they are likely to be listed anyway, thanks to the efforts of Bob Adams. The Current Literature section is very much appreciated by the members. It saves us the trouble and expense of purchasing and scanning *Current Contents* for publications in our field.

I also wish to thank those of you who have contributed book reviews and other articles. Please consider submitting a book review or an article suitable for the Growing Points or Mini-Communications sections. If you are willing to write a book review, consult the appropriate book review editor for suggestions of books to review, or to receive a copy of any book you wish to review. Some books needing review are annotated in the Current Literature section. Also, please remember to send announcements of interest to the members. The more submissions, the bigger and better the newsletter. ]Enclosing a disk as well as a paper copy helps.

The fact that our membership is stable is not necessarily a sign of declining interest in human ethology. Several other societies have emerged in recent years, suggesting that our approach is gaining adherents. These new societies include Politics and the Life Sciences, the Human Behavior and Evolution Society, Across-Species

Comparisons and Psychiatry, and the European Sociobiological Society. Many ISHE members belong to one or more of these other groups.

Despite the rather pessimistic tone of some recent reviews and articles in the newsletter, our approach to the study of behavior is steadily progressing. New journals devoted to it have appeared, such as *Human Nature*. Numerous other journals have begun publishing articles with an evolutionary perspective, as is apparent from the Current Literature section. *Ethology and Sociobiology* (available at 20% off to ISHE members) has expanded to six issues per year. Books on ethology and related disciplines are appearing so fast that they cannot all be listed in the newsletter, let alone reviewed.

Things may still be tough for our discipline, but the ideological snow was even deeper in the past. The first issue of the newsletter, published in 1974, stated that the only journal that regularly accepted articles on human ethology was *Social Science Information*, edited at the time by Roger Masters and John H. Crook.

One way to reach a broad readership with our work is through the wire services. A friend in Detroit works for the Associated Press and gave me the following suggestions. Write a story in journalistic style on your research results as soon as they appear in print. Label it a press release. Aim for the weekend, when copy is scarce. Include quotations of yourself, the author. Keep it simple, catchy, and of general interest. Play up any local angle to the story. Send it to the nearest Associated Press office. Include a copy of the journal article. If the local office likes the story, it will be sent to all subscribing newspapers and electronic media in the state, which then decide whether or not to run it. Even so, it is wise to send the story to the major local newspapers. If it appears in print, the wire services may pick it up belatedly. Major universities have media relations offices to do this for us; you might leave it up to them. If other wire services, especially those abroad, follow different procedures, please tell me so I can publish the information in the newsletter.

As we continue our sometimes lonely work, let us remember that we are the intellectual heirs of Darwin, Tinbergen, von Frisch and Lorenz. What other branch of behavioral science can boast a Darwin or three Nobel laureates? What other branch has as solid a

scientific theory on which to base its efforts? A recent book, *The Sociobiological Imagination*, describes some of the contributions of our approach to a score of disciplines. Eibl's *Human Ethology* is impressive for its list of references alone. We are making an impact. Let's keep up the good work.

## NEW HUMAN ETHOLOGY DEPARTMENT AT HUMBOLDT UNIVERSITY

By Wulf Schiefenhovel, Forschungsstelle für Humanethologie in der Max-Planck-Gesellschaft, von-der-Tann-Strasse 3-5, W-8138 Andechs, Germany

Ethology was not among the disciplines favored by the state of East Germany. Research on animal and human social behavior was funneled into a very narrow stimulus-response model, developed mainly in the Soviet Union. This model, limited as it was, misrepresented the much wider methodological and theoretical approach of Pavlov. Interestingly, the other big power in recent decades, the US, favored a similar concept of human behavior, behaviorism.

In February 1990, soon after the fall of the Berlin Wall, the director of the Anthropological Institute of Humboldt University, Prof. Dr. Karl Sommer, established a department of human ethology. This was the first such university unit in any German-speaking country. Doz. Dr. Renate Siegmund agreed to head the Department. She had been a collaborator of Gunter Tembrock, the nestor of ethology in that part of Germany, and works on the ethology and chronobiology of fish, mammals, and humans.

As scientific cooperation between Dr. Siegmund's team and researchers at the Forschungsstelle für Humanethologie in der Max-Planck-Gesellschaft had already existed since 1988, the Bavarian human ethologists were able to act as midwives for the new member of the human ethology family. In 1990-1 the Max Planck Society Head Office in Munich generously funded the purchase of most of the scientific equipment for the new department, as well as meetings of the two groups in Andechs and Berlin. Margaret Schleidt, myself, and other colleagues from

Bavaria have been doing some of the teaching of human ethology for Dr. Siegmund's students, who come mainly from the fields of medicine, prehistory, biology, psychology, and pedagogy. The new discipline has been quite enthusiastically received at Humboldt University, and has already attracted doctoral and diploma students from the former West Germany as well.

Joint projects between Berlin and Andechs are being conducted on breastfeeding, sleep-wake cycles, and general activity patterns in Europe and New Guinea, and on infant vocal development and nonverbal behavior especially with regard to pediatrics. Dr. Kathleen Wermke has been active in the latter work. Publications that have resulted from collaboration between the two departments include:

Eibl-Eibesfeldt, I. (in press). *Humanethologie, Biologie des Verhaltens*. Eine Kurzdarstellung. Wissenschaftliche Zeitschrift der Humboldt Universität, Berlin.

Mende, W., Wermke, K., Schindler, S., Wilzopolski, K., and Hock, S. (1990). Variability of the cry melody spectrum as indicator for certain CNS disorders. *Early Child Development and Care*, 65, 95-107.

Mende, W., and Wermke, K. (in press). Analysis of sound of newborns by spectral and linear methods. Proceedings of the 13th Annual International Conference IEE of the Engineering in Medicine and Biology Society, Orlando, FL, USA.

Mende, W., and Wermke (in press). *Über die Strategie der Komposition komplexer Laute aus Schrei- und Nichtschreilaute während der frühen Sprachontogenese*. Wissenschaftliche Zeitschrift der Humboldt Universität, Berlin.

Schiefenhovel, W. (in press). *Kultur und biologische Rhythmen: Stillpraktiken und Behandlung von Säuglingen in Melanesien*. Wissenschaftliche Zeitschrift der Humboldt Universität, Berlin.

Siegmund, R. (in press). *Kultur und biologische Rhythmen: Zur Chronobiologie ausgewählter fruhkindlicher Verhaltensweisen*. Wissenschaftliche Zeitschrift der Humboldt Universität, Berlin.

Siegmund, R., Biermann, K., and Schiefenhovel, W. (1990). Ontogenetic development of time patterns in food intake - a study of German infants and preliminary

data from Trobriand infants (Papua New Guinea). *Journal for Interdisciplinary Cycle Research*, 3:246-248.

Siegmund, R., and Schiefenovel, W. (in press). Time patterns of food intake in early ontogeny. Proceedings of the Seventh Annual Meeting of the European Society for Chronobiology, Barcelona.

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## MINI-COMMUNICATIONS

### Nature-Nurture Imbalance

By David Alan Munro, 802 Blue Bird Canyon  
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All too casually, it seems to me, our best theorists slip from a casual *tabula rasa* to a casual innateness, almost as if the two may be considered in the same breath.

But it is no little thing if the human smile is built in, if walking is innate, if the very structure of language is elaborately programmed, for it means we have acquired these things in a long and painful evolutionary process beginning far back in human history. Each and every one of these behavior patterns had to demonstrate a sufficient survival utility, had to be selected for, had to be continuously useful for sufficient hundreds of thousands of years to be inscribed in the human genome--by trial and error, by accidents of mutation, by differential advantage in reproduction.

That is to say, there's a majesty in what we discuss here, an imperious majesty not to be trifled with. If, for example, we find young male humans preprogrammed for that communal violence called warfare *we have no right* to duck it, to attempt to transfer it to the insubstantial, the conditioned reflex, the culture. At such points the nature-nurture imbalance is glaring. The one is serious, the other trifling.

This is written upon the assumption that ethology is now taking its place as part of the basic understanding of the nature of human nature as it applies to the conduct of all human affairs, displacing popular beliefs not compatible with it.

It is altogether possible that the "sequencing" inquiries into the human DNA, expected to be complete by 2020, will reveal the neurological bases for these inheritances--see Robert Shapiro's brilliant and charming *The Human Blueprint*, 1991--but for now the critical data for the ethological paradigm come from universals (observed by Eibl-Eibesfeldt and others) in human behaviors in a variety of unrelated cultures. (Comparable linguistic research into language structure universals has been carried out by Joseph Greenberg.)

The entire question of morals will be refurbished under the expected hegemony of an ethological paradigm, for it will be obvious that--left quite uninstructed--we automatically "mature into" the rules we live by in family and community (Piaget's unexpressed assumption). It is unlikely that, sans tough instruction, we would go wild (old psychology assumption, from Freud to Watson; religious assumption from Catholic to Protestant, Muslim to Jew). At this point, without being too specific, we know that most of our rules need no policemen nor father-figure, real or internalized.

I like to think that that marvelous invention, the Common Law, sprang from this realization far, far back in human history.

### Additional Thoughts on the Nature-Nurture Issue

By Marianne Jakus, 138 Village Park, Amherst, MA 01002 USA

In the December, 1990 issue of the newsletter David Munro began his article with "Ethology needs to come out of the closet." In his article he was worrying about problems of world war. I'm glad he reminds us that even though we've come a long way in communicating we have only just begun. So this submission is my attempt to improve my communication and come out of the closet a little. After all, there's the possibility that the better our communication, the better job we do with our lives, the longer our species makes it on the planet, and the more fun we have.

Even though the nature-nurture controversy is less exaggerated than it was 10 or 15 years ago (I see efforts at negotiation between the two extremes in academic literature), there is not enough clear communication to the lay public. How can we get our ideas across more effectively?

I have never been able to imagine a gene without an environment. When talking about human behavior, therefore, I think it's always best if we discuss the interaction of genes and environment. That's the easiest shortcut to explain to people that you cannot ascribe a simple causal function to genes. We are always looking at interacting systems, but since we can describe genes as they directly relate to certain syndromes we tend to say it's genetic. This is too simplistic. "Cause" is a limited concept. We use the word "cause" to describe a

critical point in a pattern of events. But in the frame of reference of the universe the word loses its meaning. We have to change the word "cause" to define a more complex process or pattern.

People seem to have trouble going from the experimental level of analysis to the natural science viewpoint. Each observational tool has its own physical parameters. When you compare looking through a microscope to the human organism viewing itself or another human being in the environment, it's not all that different except for the flexibility of human behavior.

One source of division between the nature and nurture camps is lack of agreement on whether we're watching conservative or labile adaptations. Different people see different amounts of change around them because what they see is dependent upon their own experience of change. There's a lot of stereotypic thinking because people's survival strategies have protective aspects, making it very difficult to take a new view.

It would be nice to see the Human Behavior and Evolution Society, ISHE, the Association for Politics and the Life Sciences, and the International Peace Research Association meet together.

#### Membership Renewals

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

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

#### Newsletter Submissions

Anything which might be of interest to ISHE members is welcome: Society Matters, suggestions for Forum topics, essays for the Growing Points feature, Mini-Communications, Announcements of meetings, journals or professional societies, etc. These sorts of submission should be sent to the editor. Book review suggestions should go to the appropriate book review editor. Submission should be in English, on paper and, if possible, also on disk.

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

## GROWING POINTS

### Sexually Transmitted Disease and Human Evolution

By Ronald S. Immerman, Cleveland  
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Reproductive health is integral to evolutionary success. Sexually transmitted diseases (STDs) can reduce reproductive health. Therefore, an evolutionary effect of STDs is postulated.

Today, STDs are an important cause of infertility. For example, more than one million cases of pelvic inflammatory disease (PID) are occurring in the U. S. per year. (Washington and Katz 1991). PID is caused by the spread of organisms into the upper reproductive tract of females. Sexually transmitted PID is caused predominantly by *Neisseria gonorrhoeae* and *Chlamydia trachomatis*. These organisms can cause infertility by damaging the fallopian tubes.

Eight to 30 per cent of untreated cervical chlamydial infection results in symptomatic PID. Additionally, PID frequently occurs without symptoms (Moore and Cates 1990). By the year 2000, it is estimated that sexually transmitted PID will have sterilized 10% of women born in 1950 (Curran 1980). This estimate is of women in whom the PID may have been treated with antibiotics. Treatment limits the damage to the fallopian tubes. The estimate uses a 20% rate of infertility after PID. However, during the pre-antibiotic era the rate of post-gonococcal PID tubal obstruction was reported to be as high as 70% (Moore and Cates 1990). It should be noted that during the period of the estimate substantial numbers of individuals exercised sexual restraint which may have been absent in the evolutionary past. For purposes of evaluating the importance of STDs in human evolution, the use of estimates of the magnitude of infertility caused by PID in modern industrial societies may be very conservative.

Reproductive impairment caused by STDs is not limited to PID. An ectopic pregnancy is a pregnancy in which the fertilized ovum has failed to descend from the fallopian tube into the uterus. Ectopic pregnancy is a surgical emergency and if untreated often results in maternal death. PID increases the

risk of ectopic pregnancy seven to ten fold (Westrom and Mardh 1990). Maternal death caused by an ectopic pregnancy is certainly a limitation of fertility.

In addition, the pathology of STDs is not limited to the reproductive organs. For example, gonococcal neonatal ophthalmia is an infection of the conjunctiva after passage through an infected birth canal. During the pre-antibiotic era, this infection was described to be sudden in onset and rapidly destructive. During the 19th century, up to 15% of infants had neonatal ophthalmia and the great majority are presumed to have been gonococcal (Gutman and Wilfert 1990). Data from the early part of this century indicate that total or partial impairment of vision occurred in 23% of the cases of gonococcal neonatal ophthalmia (Norris 1913). From 1906 to 1924, 25% of the entrants to schools for the blind were blind due to gonococcal neonatal ophthalmia (Gutman and Wilfert 1984). Certainly, optimal evolutionary survival is dependent upon a competent visual system.

There are currently more than fifty sexually transmitted organisms and syndromes recognized (Division of STD/HIV Prevention 1990). Included are bacteria, viruses, ectoparasites and protozoa. The earliest known written record documenting genital disease is from China in 2637 B. C. (Kampmeier 1984). Ancient Egyptian medical papyri from ca. 1500 B.C. describe gonorrhea-like diseases (Kampmeier 1984). It seems unlikely that all the STDs known today began at that time; rather, some of them had existed in ancestral human populations for many years. Unfortunately, little is known about the infertility and impaired reproduction caused by STDs historically, and there are no data prehistorically. Since the mechanisms of STD-related infertility that are known today occur in soft tissues, prehistoric and historic data from the fossil record may remain elusive.

It is hypothesized that although the time of onset of STD-related infertility is unknown, whenever STD-related infertility began to occur, adaptation began also. Inadequate adaptation to STDs may have led to decreased fertility or even extinction. Although the time of onset of STD-related infertility is unknown, the risk factors of exposure to the diseases will not have varied. Therefore, the major principles of risk will remain consistent (i.e., the number of sexual partners and the previous sexual behavior of those sexual partners). Generally, one might assume several possible times for the onset of STD-related infertility: before the emergence of

hominids, at their emergence, between their emergence and historical times, or during historical times. For the purpose of construction of this theory, it is assumed that STD-related infertility began to occur in the ape-like ancestors of humans.

STDs are communicable diseases. Central to this theory is the principle that the risk of acquiring an STD is a function of the number of and the previous sexual behavior of sexual partners and that this risk is not uniform within a social group. Transmission of these diseases is dependent upon the formation of sexual partnerships. Sexual partnerships are determined by communications between individuals. Therefore, selection may have occurred against communications that increase relative STD-risk. Therefore, it is postulated that STDs may have influenced the evolution of human communications.

#### Selection against Dominance Display and Sexual Display

In mammals, sexual partnerships are determined basically by two types of communications: dominance display and sexual display. In the presence of STD-related infertility, individuals that are more successful at these types of communications may have higher STD-risk and might be selected out of the gene pool. Communicators with less effective dominance display and sexual display may have been relatively protected from STD-related infertility. Therefore, the nature of dominance display and sexual display may have been altered by STDs.

Dominance displays are meant to intimidate others. Dominance displays influence social status and access to resources. In many species, including pre-industrial humans, elevated social status has been observed to increase the number of sexual partnerships (Betzig 1986). If STDs were present in ancestral populations, more effective dominance display may have led to greater number of sexual partners and, therefore, greater STD-related infertility. Selection may have been against characteristics of dominance display such as vocalizations, piloerection, body hair, body posturing, display of canine teeth and display of physical strength and agility. Indeed, these characteristics have been selected against during human evolution.

It should be noted that although greater dominance display in males usually yields an increased number of sexual

partners, this does not necessarily increase the number of offspring produced by the female. Maximal number of offspring by the female can be achieved with only one male regardless of how high or low his social ranking. Therefore, in the face of disease, matings of low ranking males and low ranking females with limited access to sexual partners may have, nonetheless, maximized total number of offspring per female. High ranking females may have been more likely to experience STD-related infertility because of their access to higher numbers of sexual partners and/or high ranking, high risk partners.

Selection against dominance display may have had a significant influence on the development of upright posture during human evolution. Dominance display sometimes involves rapid locomotion both along the ground and up into trees. Poor ability for these movements may have resulted in less effective dominance display and may have been selected for by STDs. The musculo-skeletal configuration of upright posture with relatively long hindlimbs and short forelimbs is, indeed, poorly adapted for both ground movement and tree climbing. Therefore, selection against dominance display by STDs may have influenced the development of upright posture.

Sexual display, except in humans, serves to attract sexual partners, preferably high ranking, predominantly at the time of ovulation. More effective attraction of sexual partners may have increase the risk of STDs by increasing the number of and the social status of sexual partnerships achieved. Therefore, selection by STDs may have been against sexual display, which in primates can include pheromone production, perineal skin color change, perineal swelling, and body posturing. All of these have been selected against during human evolution. Thus, selection by STDs can explain the lack of outward signs of ovulation in the human female.

Selection against sexual display may have also influenced the development of upright posture. Sexual display in the female primate involves assuming a posture which displays the perineum. Selection for changes in the relative length of the forelimbs and hindlimbs not only may have impaired the ability to adequately display the perineum, but also may have impaired posturing for copulation and, thus, limited the number of and social status of sexual partners. In addition, during upright posture the perineum is hidden by the hind

limbs, further hampering visualization of sexual display. Thus, selection by STDs against the posture(s) of sexual display may have had an impact on the development of upright posture.

Clearly, selection by STDs can account for many of the changes of dominance display and sexual display during human evolution.

#### Selection for Protective Characteristics

Characteristics which impaired dominance display and sexual display may have been selected for by STDs. Non-lactational breast enlargement may be an example of this type of selection. Lactation can suppress ovulation in the human and is, therefore, from a reproductive standpoint a suboptimal time for copulation. In the captive chimpanzee, the frequency of copulation has been observed to be the lowest during lactation (Lemmon and Allen 1978). By providing the appearance of lactation, non-lactational breast enlargement in the ancestral line may have reduced exposure to STDs by falsely communicating suboptimal reproductive timing and thus discouraged sexual partnerships. Therefore, STDs may have selected for the non-lactational breast enlargement of the human female. In principle, characteristics that contributed to a decrease in the number of and/or the social status of sexual partners may have been selected for by STDs.

#### Selection for Pair Bonding

Consort relationships, observed in many primate species, are monogamous sexual partnerships isolated from the social group at the time of estrus (McGinnis 1979). Since the consort relationship reduces the number of sexual partners, the entire system of relationships skills that facilitates consort relationships may have been selected for by STDs. Selection for consort relationships by STDs may have influenced the development of pair bonding among humans.

#### Selection for Adaptive Communications

Effective dominance display establishes relatively stable social hierarchization. Selection against characteristics of dominance display may have made dominance displays less effective and hampered the stability of the social hierarchy. Less effective dominance displays may have resulted in increased social conflict and disrupted social and sexual relationships. Selective pressure may then have favored communication systems that re-established stability in social and sexual relationships

and, therefore, in the social hierarchy. The development of complex language and increased memory capacity may have allowed the development of and adherence to relationship behaviors which decreased conflict and increased relationship formation. Thus, selection against characteristics of dominance display may have selected for complex language and increased memory capacity as a means of resolving conflict and establishing stable social relationships.

The development of relationship behaviors needed for increasingly stable social relationships and group organization may have required increased socialization. Increased parental investment and extended childhood may have been needed. These would have provided the time for the additional teaching and learning of the relationship behaviors needed for stable social relationships and group order. The advantage of increased parental investment coupled with the STD-protective advantage of pair bonding may have selected for the family unit.

#### Sexual Behavior and Awareness of STDs

The discovery that sex could lead to disease may have caused changes in sexual behaviors and attitudes. At that time dominance display and sexual display may have no longer represented reproductive fitness but, rather, STD-risk. Selection may have favored behaviors and attitudes that minimized changes of sexual partners and/or contact with high risk sexual partners. For example, the delaying of sexual intercourse until the formation of a closed, lifetime sexual partnership (i.e., marriage) may have decreased the transmission of STDs and increased fertility. Selection may have favored control over sexual impulses and the development of relationship behaviors that facilitated long-term sexual partnerships.

#### Cyclic Social Change: Sexual Gratification vs. Reproductive Health

Variance over time in the level of awareness of STDs may have created cycles in sexual and social behavior. The level of awareness of STDs is influenced, in part, by the incidence and perceived danger of STDs, the availability of protective medical technology and social drug use. Adherence to risk-reducing behaviors may have reduced the incidence and, therefore, the awareness of STDs. Over time reduced awareness may have undermined the adherence to risk-reducing behaviors. With decreased adherence to risk-reducing behaviors, the incidence may have increased and resulted in increased awareness



and a return to risk-reducing behaviors. Development of relatively stronger or weaker family formation may be fundamental to this cycle (figure 1). Medical technology may have influenced this cycle by providing real or perceived protection from the dangers of STDs. Social drug use may have also influenced this cycle by impairing adherence to risk-reducing behaviors (i.e. control of sexual impulse). Therefore, STDs may have been a cause of cyclic social change.

**Conclusion**

While many factors must have been involved in human evolution, STDs can directly reduce reproductive fitness and, therefore, may have been important

In summary, exposure to STDs is dependent upon communication. It is suggested that STDs may have selected against communication systems that increased disease exposure, such as dominance display and sexual display. STDs may have selected for characteristics that reduced disease exposure, such as non-lactational breast enlargement and pair bonding. The selection against communication systems that formed social relationships and hierarchies may have caused selection pressure for characteristics which would have provided stable social relationships, such as language and memory. The need for learning relationship skills may

have required a longer childhood and increased parental investment. Awareness of the dangers of STDs may have altered sexual and social behavior. Variance in the degree of awareness of the dangers of STDs and variable adherence to STD-protective behaviors may have been responsible for cyclic social change.

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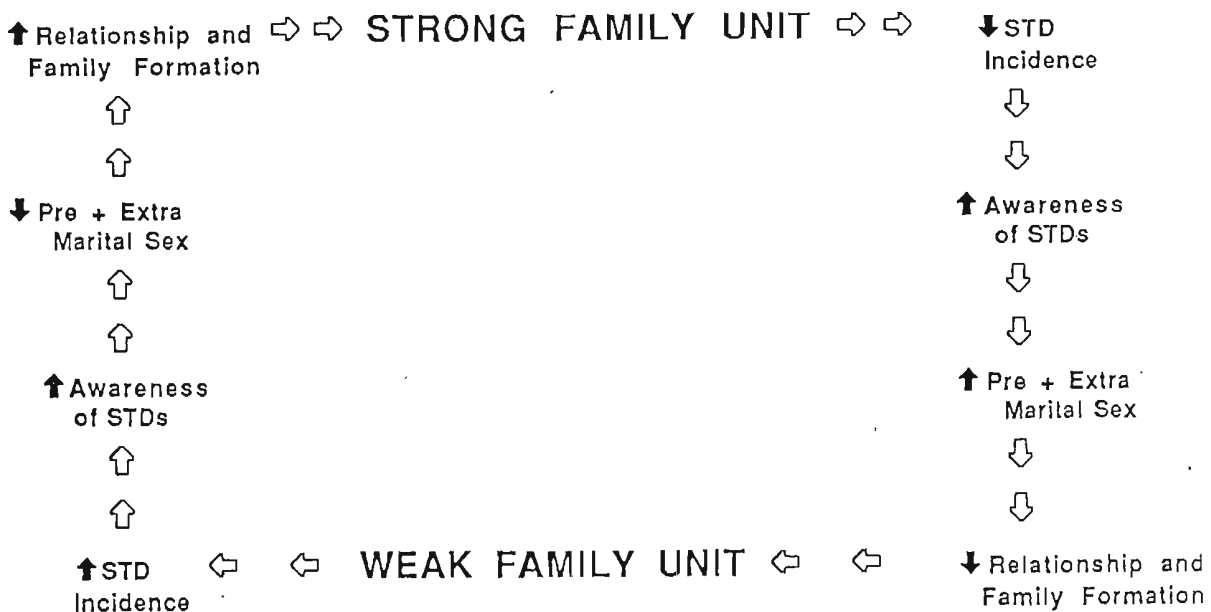


Figure 1. Cyclic social change: High rate of new sexual partnership formation with high levels of STDs vs. relatively stronger family formation with improved reproductive health.

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Note: Many of the ideas in this paper were published in the Human Ethology Newsletter [4(11);1986:, pp. 6-7] entitled "Sexually Transmitted Disease and Human Evolution: Survival of the Ugliest?".

## ANNOUNCEMENTS

### Mailing Labels

Sets of mailing labels with the addresses of ISHE members are available for sale for scholarly purposes at \$0.25 per name. Sets have been sold, for example, to publicize books of interest to the members. Contact the editor for information.

## Flights to Amsterdam

For information on special low-cost airfares from the US to Amsterdam, as well as pre/post conference tour programs, contact: W. P. Johnson and Assoc., 5 Georgetown Drive, Suite 10, Framingham, MA 01701 USA, tel. 1-508-626-2109, fax 1-508-879-1981.

## Congress of Anthropological and Ethnological Sciences

The 13th International Congress of Anthropological and Ethnological Sciences will be held in Mexico City July 28-Aug. 5, 1993. Samir K. Ghosh will be organizing two sessions: (1) anthropology of children ("Children of Tomorrow"), and (2) anthropology of nonaggressive behavior (greeting behavior, friendship, humor, mother-infant relations, nonverbal communication, etc.). He is seeking contributions and suggestions for them. Write to Prof. Samir K. Ghosh, Director, Indian Institute of Human Sciences, 120-A, Sri Aurobindo Road, Konnegar, West Bengal, India-712 235. For information on the congress, write to Dr. Linda Manzanilla, Instituto de Investigaciones Antropológicas, UNAM-Cuidad Universitaria, 04510 Mexico, D. F., Mexico.

## Class Reading Lists

Christopher Badcock has offered to distribute copies of the reading lists for two of his courses to interested members. One course is Evolution and Social Behavior; the other is The Psychoanalytic Study of Society. Both lists contain annotated bibliographies of relevant works in ethology, sociobiology, and other fields; summaries of the course lectures; and last year's exam. Each course also uses a book specially written for it by Christopher: *Evolution and Individual Behavior: An Introduction to Human Sociobiology*, and *Essential Freud: An Introduction to Classical Psychoanalysis*. In the Evolution and Social Behavior course, Christopher makes available to each student a Macintosh format HD disk containing a copy of his HyperCard Prisoner's Dilemma Tutorial version 2.0. He is also offering to send copies of this to anyone who teaches Axelrod's material or is otherwise interested. There is no charge, but please first send a 700K or HD disk to him at: Dr. C. Badcock, London School of Economics and Political Science, Houghton Street, London WC2A 2AE, England, tel. 44-71-955-7288, fax. 44-71-955-7405.

### Discount on *Ethology and Sociobiology*

This major journal in our field is offered at a 20% discount to ISHE members. Remember this when you subscribe or renew, and when you recruit new members for the Society. The undiscounted rate for US subscriptions is \$131, for others \$159, for OS libraries \$272, for other libraries \$300.

### Forthcoming Meetings

International Primatological Society, Aug. 16-21, 1992. Contact: Centre de Primatologie, Universite Louis Pasteur, 7, rue de l'Universite, 67000Strasbourg, France.

International Congress on Human Paleontology, Jerusalem., Aug. 23-28, 1992. Contact: Prof. Patricia Smith, c/o International Ltd. PO Box 29313, 61292 Tel Aviv, Israel, tel., 972-3-510-2538, fax 972-3-660-604.

European Meeting of the Paleopathology Association, Barcelona, Sept. 1-4, 1992. Contact Mrs. Teresa Carreras, Museu Arqueologic de Barcelona, Parc de Montjuic S/N, 08038 Barcelona, Spain.

Language Origins Society, Cambridge University, Sept. 7-10, 1992.. Contact Dr. Leonard Rolfe, Dept. of Psychology, University of Lancaster, Lancaster LA1 4YF, England

Congress of the European Anthropological Association, Madrid, Sept. 7-10, 1992. Contact Prof. M. D. Garralda, Dept. of Biology, Univ. of Madrid Complutense, Spain..

European Sociobiological Society, Augsburg, Germany, Sept. 10-13, 1992. Main theme: Sociobiology, child and family. Free papers are also welcome. Contact: Prof. Peter Meyer, Buchenstrasse 19, D-8902 Neusass, Germany.

International Ethological Conference, Torremolinos, Spain, Sept. 1-9, 1993. Contact: Dr. Anna Omedes, General Secretary, XXIII International Ethological Conference, Ap. 98033, Barcelona 08080, Spain.

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