HUMAN BEHAVIOR & EVOLUTION SOCIETY

Summer 2008 Newsletter

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The next HBES Conference will be held at California State University, Fullerton May 27-31, 2009.

Submit your nominations for the HBES Lifetime & Early Career Contribution Awards. Read more...

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From the President's Window
Steve Gangestad

Our HBES president is Steve Gangestad, Distinguished Professor of Psychology at the University of New Mexico. In this issue, Steve continues a discussion on patterns of citiations in the field. He provides some data on the growth of citations of EHB articles.

Read more...

Spotlight

Richard D. Alexander

Instead of the typical interview, in this edition, we here from Richard Alexander, winner of the inaugural HBES Lifetime Career Contribution Award. Prof. Alexander contiunes his discussion of topics included in his HBES 2008 Keynote Address.

Read more...

MisMannered

Doug Kenrick

MisMannered is currently on a well-deserved hiatus. I'd like to take this opportunity to say a big thank you to Doug for entertaining us in the last few newsletters! Stay tuned for upcoming editions of the MisMannered column. I am sure it will be a treat!

Students

The Student Voice | Aaron Blackwell

It is time to nominate a new HBES Student Representative. Current student rep Aaron Blackwell puts out the call for students interested in this post. Also, read the winning abstracts from this year's HBES competitions.

Read more...

View From the President's Window | Steven W. Gangestad

HBES 2008 in Kyoto—the first-ever HBES meeting held outside of North America or Western Europe—was a smashing success. The median distance traveled by attendees en route (which I wouldn't be surprised exceeded several thousand miles) no doubt set a record for us. Many North Americans and Europeans made the journey. At the same time, this meeting was notable for its sheer number of attendees participating in an HBES conference for the very first time, many from the host country. And our international representation—extent to which we came from different countries, little-dominated by one country of origin—may well have set a new mark too. Mariko Hiraiwa-Hasegawa and Toshi Hasegawa were wonderful organizers and hosts; the hospitality they and their staff extended to us was extraordinary, and I'm very grateful for it. Kikue Sakaguchi, who coordinated much of the conference, deserves special thanks too.

The program and slate of plenary talks showcased strengths of our science. Human evolutionary behavioral science (as we often refer to it here at New Mexico) is, of course, at once widely interdisciplinary and yet, conceptually, highly coherent and severely demanding of theoretical integration; we saw ample evidence of these features in Kyoto. This series of plenaries was particularly rich in phylogenetic analyses. Impressive, even extraordinary, studies of non-human primates figured prominently in the presentations of Tetsuro Matzugawa, Carel van Schaik, and Andrew Whiten, with both similarities to and key contrasts with humans highlighted. Wayne Potts's discussed the fascinating implications of a system with deep phylogenetic roots, the MHC system, for mate choice in a variety of species and, in so doing, delved into studies of phenomena at a range of different levels, from population studies to immunogenetic analyses. Nick Humphrey offered new perspective on a question that has endured since Darwin's Origins first appeared: What, if anything, is the function of consciousness that led it to be selected? And Toshio Yamagishi presented a remarkable series of studies incisively arguing that in-group favoritism requires the expectation of a return on cooperation with the in-group, thereby casting doubt on some major theoretical explanations of in-group favoritism. (One of these explanations, not coincidentally, was questionable when viewed in evolutionary light in the first place.) As usual, our program of invited speakers both informed and stimulated.

Dick Alexander's keynote address inspired me to revisit some of the classic foundational papers appearing in the 1960s and '70s. Only very occasionally is growth within a science punctuated by such explosion of deep insights afforded by new metatheorical scaffolding; what a remarkable time that was. I wish I would have been there to directly witness the cataclysm itself, but I'm not complaining: I'm very grateful to be a member of our collective, able to ride the tidal wave it produced.

We now have venues set for the next three annual HBES conferences. HBES 2009 will be held in Fullerton, California the last week of May. HBES 2010 appears to be headed for Eugene, Oregon. And HBES 2011 will take place in Montpelier, France.

More on Patterns of Citation

Last newsletter, I discussed journal impact indices. A couple of new indices weight citations for the visibility of the citing journals, thereby reflecting more accurately overall impact of the articles published in a journal, reverberating through a scientific literature. Evolution and Human Behavior is a very high impact journal by the lights of these new indicators, and increasingly so.

I was curious to examine the pattern of citations of EHB articles and their growth over the past several years in somewhat more detail. So I counted the total number of citations per year appearing in any journal to articles ever published in EHB for years 2003-2008. Year 2008 is but two-thirds through, and so I extrapolated from the first 8 months of citations to estimate a number of citations at the end of the year.

Year	Citations	per EHB article	Non-EHB Citations	per EHB article
2003	229	1.12	205	1.00
2004	302	1.24	273	1.12
2005	345	1.24	318	1.14
2006	429	1.36	405	1.28
2007	516	1.47	468	1.33
2008	564	1.45	515	1.32
% increase: 2003-08		29%		31%

As can be seen, EHB articles will receive about 2.5 times the number of citations in the scientific literature in 2008 as they did in 2003. That's tremendous growth. Admittedly, this comparison is perhaps not quite fair, as many more EHB articles had been published by 2008 compared to 2003. Hence, I calculated the mean number of citations per EHB article for each year (total number of citations divided by number of articles ever published in EHB up through the prior year). Those values are shown in the third column above. Even taking into consideration number of articles published to that point, the citation rate of EHB papers is substantially greater in 2008 compared to 2003—estimated to be 29% greater by the end of the year.

One might want to discount citations in EHB papers themselves, particularly as, in 2007, EHB began publishing more articles. As can be seen, however, growth in citations appearing in non-EHB journals mirrors overall growth in citations.

Where has growth occurred? That is, in what kinds of journals are EHB articles especially receiving more attention? I counted number of citations appearing in journals within 7 different subfields: psychology (excluding biologically-oriented ones), neuroscience and biological psychology, biology (including behavioral ecology and ethology), anthropology (including human biology and primatology), medicine (including psychiatry), economics, and a broad catch-all category encompassing sociology, political science, law, criminal justice, management, and education. An 8th category consisted of four general science journals: Science, Nature, PNAS, and Scientific American. In total, 97% of all non-EHB citations appeared in journals falling into these categories. (I did not categorize EHB itself as a journal. Naturally, some journals could have appeared in any one of two or more categories; I did my best to place it in the most appropriate one.)

	2003	2004	2005	2006	2007	2008	% total	Increase: 03/4 - 07/8
Psychology	73	95	107	143	166	183	35.1	81% (10%)
Neuro/Biopsych	24	36	62	71	59	57	14.8	92% (16%)
Biology	36	46	57	54	81	89	16.6	80% (9%)
Anthropology	36	46	37	60	55	57	13.5	16% (-30%)
Medicine	10	9	8	18	38	24	4.9	111% (37%)
Economics	4	8	3	9	17	20	2.7	170% (64%)
Sociology et al.	13	20	20	22	28	45	6.6	127% (27%)
General Science	3	4	11	7	16	12	2.4	186% (73%)

As can be seen, journals in no one field account for a majority of citations. About 50% of total EHB citations appear in psychology, biopsychology, or neuroscience journals. But another 30% appear, collectively, in biology, behavioral ecology, anthropology, and human biology journals.

I calculated the % growth in EHB citations within each area from 2003-04 to 2007-08. (I collapsed across two years to bolster their stability.) As can be seen, growth has been steady in psychology, neuroscience, and biology. When citations are adjusted for total number of articles published in EHB to date (figures in parentheses above), growth of citations in journals in these fields is modest, but still clearly positive. For reasons I'm not aware of, the past few years have not witnessed the same growth in citations in anthropology and human biology. (Indeed, if number of EHB papers is controlled for, we see some reduction in rates of citation in these journals.) The numbers are still small, but EHB's visibility in journals within a variety of fields outside of the traditional core of evolutionary behavioral science—medicine, economics, and other social sciences—has increased at remarkable rates. And, as I emphasized in my piece in the last newsletter, EHB articles are cited in Science, Nature, and PNAS relatively often, and increasingly so.

What can we take away from these data? If articles in EHB are representative of papers on human evolutionary behavioral science more generally (and I suspect they are), it's reasonable to infer that the visibility and impact of evolutionary perspectives on human behavior continue to spread within psychology, neuroscience, and biology. The impact of these perspectives, however, is spreading particularly quickly in allied disciplines. I don't think I'm going out on a limb when I suggest that these trends are likely testimony to the remarkable integrative power of Darwinian science and its ability to offer coherent accounts of widely disparate human activities.

A FINAL NOTE

Have ideas about how HBES can foster even better our shared interests in evolutionary science? I welcome your suggestions. You can email me at sgangest@unm.edu.

HBES 2008 Conference Photos






Spotlight | Richard D. Alexander

Note to HBES members from Richard D. Alexander: For various reasons, all my own fault(!), I was unable to finish my talk at Kyoto in a way that I regarded as satisfactory. To help correct this insufficiency I have written out the materials I expected to cover in the talk, for anyone who might wish to know more about what I intended to say. I have included three items: first, a slightly expanded version of the abstract (or introduction) to the talk with its original title (Evolution and Human Society), second, the talk (Understanding the Human Species and Its Immediate Ancestors), and third, the Lecture Handout. These documents can also be read or downloaded at: http://insects.ummz.lsa.umich.edu/pdfs/Alexander2008HBES.pdf

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Keynote Address for the June 2008 Kyoto, Japan, Meeting of the Human Behavior & Evolution Society

EVOLUTION AND HUMAN SOCIETY

Prelude

Darwin's fabulous intellect implanted the concept and general nature of evolution permanently in the minds of humans willing to think seriously about it. His several challenges included demonstrating that evolution tends to save only traits that contribute to reproduction, that evolution produces "complex organs" only via "numerous, successive, slight modifications," and that traits carried by sterile individuals can be furthered if relatives of the sterile individuals are sufficiently and appropriately aided.

In 1930, Sir Ronald A. Fisher elaborated on Darwin's arguments by explaining factors affecting rates of evolution, how such traits as allelic dominance, sex ratio selection, heroism, and runaway sexual selection could evolve, and how kin selection can be quantified.

The arguments of Darwin, unfortunately, were not sufficient, and those of Fisher were too late, to cause the social and medical sciences, and of course religion which developed answers to its pressing questions centuries ago, to accept the evolutionary process, combined with the succession of evolutionary environments, as the key to profound explanations of virtually everything about life. The building blocks were there, but the willingness and necessary vision were not.

As a consequence, the human-oriented sciences generated and elaborated the strategies, practices, and principles of their societies in a virtual absence of contributions from evolution-based science. For more than a century evolutionary biology was largely restricted to studies of pattern rather than process, amassing data from fossils and comparisons from phylogenies and genealogies of species. Evolution was often defined then as simply "change with time." In the early and middle 20th century, mathematical versions of the evolutionary process, via population genetics, primarily considered the evolutionary process to be focused on increasing the average fitness of populations, until Alice Brues, in 1964, explained as J.B.S. Haldane's "Dilemma" his claim that too many rare beneficial alleles would render the average fitness of a population so low as to threaten its extinction The mistake was made because the most beneficial allele was always given an arbitrary "fitness" of 1.0 to prevent fitness measurements from rising in a mathematically cumbersome way; as a necessary result the more abundant (therefore more influential) long-present alleles received lowered fitnesses because of the presence of the new, rare, more beneficial allele(!).

This general state of affairs was not alleviated until George C. Williams (1966) put together the arguments that (1) life is organized hierarchically, (2) selection can operate at many levels simultaneously, (3) selection can be reversed at different levels, and (4) selection is most likely to be potent at the lowest levels of organization within species, only genes and (inter-generationally transmitted) results of learning persist reliably, generation after generation.

The resulting chaos of conflicts was most traumatic for the already established human-oriented disciplines. Social scientists, medical scientists, philosophers, religious people, and those in the arts and literature for the most part vigorously rejected (or avoided) the intrusive to their disciplines revival of Darwinian and Fisherian arguments, and, even more forcefully, the establishment -- by such as George C. Williams, Robert L. Trivers, and William D. Hamilton -- of a "new" science of evolutionary adaptation with consequences for human understanding apparent in every direction.

The objections will continue. They are bolstered by ideological, moral, and ethical systems that, because of their tendencies to utilize authority-based absolutism, seem to conflict with evolution as an approach and with science as the method. They are aided immensely by our continuing – and, unfortunately, to-be-long-continued -- ignorance of the incredibly complex, largely uncharted, and all-too-often unyielding processes of ontogeny, including tendencies, capacities, and constraints on learning. The adjectives just used are appropriate mainly because of the nearly complete cooperation of the 25,000 or so genes in the human genome. This cooperation has evolved because the genes typically cannot change groups (genomes) except as a result of the generational meiotic events, hence approach having interdependent identical fates via roughly equal chances of getting into a successful gamete. This situation is resistant to being unraveled and explained because it necessarily involves an enormous number of genic interactions. As a result we have not yet been able to explain entirely the ontogeny of a single behavior of any animal, no matter how simple.

It is easy to be hostile toward evolution as the background of adaptive forces that conflict with current ethical views. It is easy to be skeptical, or even fearful, of oversimplified ontogenetic and experiential hypotheses, assumptions, and biases. It is tempting to assume or accept that human society is doing just fine, and that if it is not, an evolutionary perspective is not likely to help matters.

During the last century, between 50 and 150 million people were reported killed in warfare and genocides – an incredible average of somewhere between 1400-4000 per day across 100 years. If data on current conflicts are accurate and relevant, up to hundreds of times as many people as were killed were also maimed physically, mentally, or emotionally, often permanently. On this single basis, we can make no claim to be doing "just fine." We are now beginning to face global problems that will require global cooperation to be solved. There is reason to believe that we have not evolved to solve global problems by global cooperation, and to believe that we have never accomplished such even when "global" was not actually global but merely involved multiple adversarial human groups. Indeed, the most important and frightening of all human adaptations is likely our stubborn and perhaps unique manner of alternating our most intense emotional expressions between the two extremes of amity and enmity within our own species. I have argued across some 40 years that this feature of human life, more than any other, has shaped and elaborated the other outstanding or massively important traits that I will discuss here.

Humans are uniquely preoccupied with between-group competition and aggression (warfare and patriotism) within their own species. The results of this preoccupation are reflected in virtually every unique or distinctive major trait of humans, including biparental care, concealment of ovulation, menopause, altriciality of the human juvenile, kin recognition and differential nepotism, intensity of patriotism, and perhaps every aspect and concomitant of human intelligence and imagination, from the size and complexity of the brain to cognition, consciousness, language, absorption and retention of knowledge, imagination, and the future-seeking of mental scenario-building.

We need every tool available to understand such things about ourselves. These are reasons why the Human Behavior and Evolution Society has the potential to become the most important scientific organization in the world.

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A hydrogen bomb is an example of mankind's enormous capacity for friendly cooperation. Its construction requires an intricate network of human teams, all working with single-minded devotion toward a common goal. Let us pause and savor the glow of self-congratulation we deserve for belonging

to such an intelligent and sociable species. (Robert S. Bigelow, 1969. The Dawn Warriors)

The challenge of Darwinism is to find out what our genes have been up to and to make that knowledge widely available as a part of the environment in which each of us develops and lives so that we can decide for ourselves, quite deliberately, to what extent we wish to go along. (Richard D. Alexander 1979. Darwinism and Human Affairs) [Not all evolved adaptations are likely to be deemed desirable in today's world.]

Heredity is particulate, but development is unitary. Everything in the organism is the result of the interactions of all genes, subject to the environment to which they are exposed. What genes determine are not characters, but rather the ways in which the developing organism responds to the environment it encounters. (Theodosius Dobzhansky 1961. In: Insect Polymorphism, John S. Kennedy, editor)

Kindness and generosity arise spontaneously when the otherness of others goes away. (Barry R. McKay, 3 August 2007 letter to the Ann Arbor News)

UNDERSTANDING THE HUMAN SPECIES AND ITS IMMEDIATE ANCESTORS

Introduction

In 1990 I published a paper titled How did humans evolve? Reflections on the uniquely unique species [http://insects.ummz.lsa.umich.edu/pdfs/]. In that paper I developed arguments about how humans might have evolved to be so strikingly different in certain regards from their current relatives among the apes, and why, given the apparent speed of evolutionary change in humans, there are so few clear instances of species multiplication, with only a single human species remaining today. In the years following, I generated a list of 34 distinctive or unique human traits and sought to develop hypotheses regarding their functions (see materials in the Kyoto talk handout in this document, and the three additional papers for which online addresses are given in the handout).

My intent in the Kyoto lecture was to consider two of the 34 human traits (menopause and concealment of ovulation) in some detail because questions have been raised about whether they even exist, and whether they can be regarded as adaptations, and also because I think they can be regarded as especially important in the effort to understand ourselves. I expected to continue my talk by discussing the importance of menopause and concealment of ovulation as indicators and enablers of the other 32 traits, then complete the talk by discussing how the functions of the 34 traits in the handout could be recombined in various ways, so as to contribute to reconstructing some of the stages through which hominid lines passed on their way to becoming the modern human species. I was unable to carry out this continuation. Here I present a condensed version of the entire talk.

Menopause

The human species has essentially doubled its average maximum lifetime compared to its ape relatives, roughly from 40-45 years to 80-90 years. I am not aware of any suggestion that ovulations were added during the added 40-45 years. As a result the menopausal years have typically been referred to as a post-reproductive period. This label, however, applies only if reproduction is restricted to production of offspring. Evolutionary biologists today understand that the reproductive process also includes tending not only offspring, but, according to the amount of their genetic overlap with a potentially beneficent helper, any genetic relatives that can be aided in reproduction (Hamilton 1964).

Darwin (1871, vol. 1, p. 319) said the following: The only check to a continued augmentation of fertility in each organism seems to be either the expenditure of power and the greater risks run by parents that produce a more numerous progeny, or the contingency of very numerous eggs and young being produced of smaller size or less vigorous, or subsequently not so well nurtured.

In the above statement, Darwin was telling us what can now be translated thus: The evolutionary process, guided principally by natural selection, changes organisms adaptively solely by increasing the persistence of genetic materials (e.g., genes, alleles), sometimes more or less indefinitely. This fact, which does not entirely please us, nevertheless describes the meaning of reproduction, or reproductive success, as used by modern biologists.

A fundamental question is whether or not the menopausal period – and the equivalent 40-45 added years in men -- have been added as adaptations. It is obvious that both women and men contribute to the reproductive success of genetic relatives during the second half of their lives. To my knowledge, however, no one has demonstrated a sufficient positive effect to prove adaptiveness (i.e., to prove that neither removing the added 40-45 years nor adding ovulations would be as reproductive as the existing situation). But we can settle this question by referring to another of Darwin's remarkable challenges. In 1859 Darwin said this: If it could be demonstrated that any complex organ existed, which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down. To my knowledge this wonderful challenge has never been met, and we can carry it even further by noting that numerous instances of inter-specific hybridizations, including backcrosses and successive crossing of hybrids, demonstrate that differences between individuals of different species are of exactly the same sort that exist among genetically different members of the same species: numerous, successive, slight modifications This fact shows that "Intelligent Design" advocates cannot claim that species differences are either so great or of such specific kinds as to demonstrate that species had to have been created separately.

It is instructive to turn Darwin's challenge around and thereby realize that any accumulation of numerous, slight, successive modifications yielding directional change (the kind that can produce Darwn's "complex organs") is necessarily adaptive. Sequential saving of genes that produce cumulative effects is a positive indication of adaptive change. There seems to be no evidence that the human species added 40-45 years to its lifetimes via a single mutation. Even if this were true, such a mutated gene would be lost unless the added years were a pleiotropic effect that happened to be ineradicable because of other inseparable and more adaptive effect(s) of the gene involved. But pleiotropic effects of genes that are, for example, favorable early in life but responsible for later senescence (Williams 1957), have essentially no likelihood of resulting from numerous, successive, slight modifications yielding years of additional lifetime.

Accordingly, investigators failing to find sufficient evidence of adaptiveness in the additional years of the human lifetime have only the options of either looking more carefully for adaptiveness in modern environments or else identifying recent environmental changes that have reduced the previous adaptiveness of the additional years. I suggest that both men and women approach meeting, in somewhat different ways, Hamilton's broad statement that we expect organisms to evolve so as to help relatives according to their degree of relatedness. I also suggest that, in the more obviously cohesive and cooperative kin groups of pre-technological human societies, older women and men evolved toward the adaptive "ideal" of kin helping that Hamilton's Rule describes. As a result I am inclined to view competent older individuals in human societies, such as postmenopausal women, as evolved super-nepotists.

Why should such an extension of life have occurred in humans and not in their closest extant relatives? We know the context of extended lifetimes in fish, turtles, termite and naked mole rat queens, and numerous other forms of life. Fish continue to grow, and live longer, because large fish eat smaller fish and the reverse is typically not true. Large fish thus not only lay more eggs but probably enjoy a wider range of accessible food and also become less vulnerable to predators – i.e., as individuals, they continue to become increasingly reproductive. Turtles are similar except that they add the benefit of armor, with effects so striking that some biologists have viewed them as dying without even having a period of senescence. Termite queens and naked mole rat queens also grow, thereby becoming able to lay more eggs, and they too live much longer than their "sterile" workers and soldiers. They are protected, not by their sizes or any armor, but by the workers and soldiers that surround and guard them in their niches inside logs (termites) or beneath the ground (both termites and naked mole rats). It is obviously possible to evolve a longer adult life if the rate of reproduction can be sufficiently increased as to delay or reverse senescent trends caused by late-acting deleterious pleiotropic effects of genes having their advantageous effects primarily in earlier life.

How have humans accomplished this? They do not grow continually. They are not armored or

surrounded by individuals sufficiently devoted to protecting them. We need only consider a set of human traits that menopause also demonstrates: living in kin groups under conditions that have spawned the huge brain that causes the human baby's head to be the limiting factor in successful birth, and later becomes the most calorically expensive – and the most remarkable -- organ of the human body. I will argue that the unique human brain accords with all of at least the first 32 traits I have numbered on the handout. The human brain and all of its correlates in learning, cognition, consciousness, extensive and elaborate scenario-building, memory, and other intellectual features enable human individuals to increase their reproductive output via kin help and make evolution of longer lifetimes adaptive. The collection of mental adaptations in humans – and their continued elaboration late in life -- can be so significant that individuals that have become seriously senescent in physical attributes can nevertheless remain important, or even essential, to the survival of families and kin groups. It is thus not surprising that age is so often venerated, and that some kinds of leaders are desired or required to be as old as, or older than, the usual age of death in non-human primates (e.g., presidential candidates in the USA). Although there have been suggestions that the altriciality of the human baby is responsible for the extension of the adult human lifetime, and its intelligence, the reverse may be more likely: that selection favoring the collection of mental capabilities of adults has caused those capabilities to be further enhanced by beginning and increasing their elaborateness and their earliness of development in the human juvenile.

Menopause could not be identified as a broadly kin-based adaptation without lengthened lifetimes in the absence of additional ovulations. What we have to explain now is how the kinship systems of humans have taken forms enabling the kin help that is essential in adaptive lengthening of adult lifetimes, and what is the role of concealment of ovulation in bringing about these changes.

Concealment of Ovulation

If menopause is an indicator of how human ancestors generated the situation that resulted in many distinctive and unique traits of the modern species, concealment of ovulation may be the essential enabler of all of those same traits. Without concealment of ovulation there can be no generation of extensive kinship systems in multi-male groups, in which differing degrees of relatedness can be used in the way Hamilton envisioned -- therefore, no traits that can appear only as a result of extensive and complicated kinship systems. Humans, chimpanzees, and bonobos all live in multi-male groups, but only humans, in which females conceal ovulation, discriminate nepotistically among a wide variety of genetic relatives. In multi-male human groups, only with appropriately concealed ovulation can there be confidence of paternity, strong and lasting parental bonds, and biparental care. Only in humans with concealed ovulation can the bonds of parental care and differential nepotism provide the extensive kinship contributions that have resulted in the altriciality of the human baby, the lengthened life of juveniles, menopause, and the adaptiveness of lengthened adult life. Perhaps, as well, concealment of ovulation in multi-male groups has, at least indirectly, enabled the collection of human traits that include extensive language, art, music, humor, morality, and religious tendencies.

Confusion about concealment of ovulation seems to have existed for two reasons: (1) concealment is probably never complete and (2) concealment takes different forms, even within species. We should not expect concealment to be complete, first because evolution is unlikely to achieve or maintain perfection, and, second, because even if conscious awareness of ovulation and use of modern methods of detecting it work today, earlier in our history it may have been outside consciousness, and more nearly complete. As with all traits, our investigations and conclusions should therefore be focused on demonstrating the directions in which evolution is proceeding – or has proceeded -- rather than expecting a visualized ultimate state or expression of traits. Even the cooperativeness of genes while they are functioning within the genome is not complete, despite the commonality of their fates in that situation, evidenced by the near-unity of ontogeny, including the near-randomness of allelic success during meiosis, responsible for the survival of the concept of Mendelian ratios.

Second, concealment of ovulation varies, within as well as between species, because it is directed at different individuals. Female mammals that exhibit prominent features of estrus for periods significantly longer than the period of actual ovulation are concealing ovulation within the period of estrus and thereby gaining opportunity to favor one or more potential fathers for their offspring. For example, female horses (mares), which live in one-male herds, display estrus "extravagantly" (long distance, both chemically and visually) for 3-7 days (with ovulation occurring near the end of this period), thereby inviting outside stallions as well as the herd stallion. But this happens only when they are not accompanied by a foal of the year. When mares have new foals by their sides they ovulate approximately nine days after foaling (the gestation period is approximately eleven months and ten days, and the ovulatory cycle is approximately 21 days; therefore, unless the events of becoming pregnant are always ideal, a mare is unlikely to produce foals annually and during the appropriate season). By displaying estrus locally, quietly, briefly (usually 1-3 days), only near the herd stallion, and sometimes only at night, mares with new foals are strongly favoring the herd stallion, excluding potential rivals that may be lurking near the herd, and thereby protecting the young foal from stallions that may either accidentally or "intentionally" injure or destroy a foal produced by another stallion. Not surprisingly, the herd stallion seems to cooperate with the mare's postpartum muted and brief version of estrus (the endangered foal would be his own offspring and in a widely advertised estrus the next foal might not be). Finally, when a mare has for some reason become separated from her herd and must join a strange herd, she often displays estrus (encourages and accepts copulations from the herd stallion) immediately as she attempts to enter the herd, and then (typically) remains in estrus until ovulation, even if that is not "scheduled" to arrive for two or more weeks.

All female horses thus conceal something about ovulation during each of their three distinctive estrus periods. Manipulation of estrus in the concealment of ovulation is probably well described as a centrally important feature in the sociality of all mammals. In the multi-male groups of humans it appears to be extraordinarily influential. If women could have retained perfect (and peaceful) identification and control of ovulation, while evolving its complete concealment from males, they surely would have come even closer to ruling the world of human sociality. Mate-guarding alone cannot replace concealment of ovulation, because males that evolve the ability to displace guarding males will tend to win, and the direction of change will favor the resulting promiscuity and polygyny, as well as extreme sexual dimorphism.

Inter-group Competition

Another set of unique and incredibly influential human traits must be considered to understand the forces that have given rise to modern human behavior and society: within-species, inter-group competition, which has all too often contributed to not only hyper-patriotism, extremes of amity and enmity, we-they confrontations, aggression, and war (traits 19-22), but as well to virtually all other traits described on the handout. Today, the makeup of the world is affected prominently and continually by the competitive interactions of nations (see the last three paragraphs of the abstract). Without the effect of this unique feature of human life we would be hard-pressed to find a reason for the seemingly inexorable pressure generating and continuing elaboration of the unusual and unique aspects of virtually all of the traits described on the handout. Intergroup competition, combined with means of establishing differing degrees of kinship (i.e., concealment of ovulation and the honoring of spousal bonds), may appropriately be termed the major enablers of human distinctiveness.

Once the major source of deaths and defeats becomes a within-species, inter-group phenomenon, the principal way to win, or to maintain a competitive position, is to increase the size and strength – and as a necessary result, the social and organizational complexity -- of the competitive unit. Extended families can be socially complex, but larger coalitions of multiple and extended families (the "segmentation" of social anthropologists) complicate increasingly the questions of cooperation and leadership [as well as kinship and all of its correlates]. Trends toward larger groups are probably the most effective way of competing with other similar groups. For this reason trends toward larger sizes of groups and more complex social

systems have surely been a main force continuously driving the evolution of the extreme and calorically expensive human mental apparatus and all of its unusual and unique functions. In the trend toward large sizes of tightly knit, patriotic, within-species competitive groups, inferior or "losing" groups will tend never to be far behind winning groups; otherwise, because of their conspecificty, they will be absorbed and lose their identities. The upper limits of group size, strength, and force will depend on advances in cooperative social behavior and organizational superiority. There will necessarily be an accompanying race of strong selection on all traits that keep larger, more complex groups organized and effective (such as concealment of ovulation and all of the correlated traits and tendencies that enable kinship to be organized and complex in multi-male groups).

A mountain of information exists on the topic of warfare and all its relatives. I began speaking and writing about inter-group competition as unique in extent and form in humans more than 41 years ago. In 1990, I referred to the turmoil of within-species inter-group competition and aggression as a balance-of-power race. More recently, Richard Wrangham has several times referred to apparently the same situation as an imbalance-of-power race. Both terms are understandable and appropriate. I was emphasizing what I think must have been the most continual and desperate kind of striving -- the effort to ensure that one's group remains strong enough, and sufficiently prepared, to avoid being subjected to relentless attacks or virtual slavery by larger groups. It is surely always unusually costly, and also risky, to maintain a tightly knit group larger and more demanding in organizational cooperation and complexity than would be needed merely to maintain a balance of power with neighboring groups. As has been amply demonstrated, since at least 1776, clever, determined, relatively inexpensive wars of attrition can bring down the mightiest, especially when fought on home ground against a distantly based foe. Nevertheless, increases in group size and strength through increasing mental as well as physical skills, and including skilled crafting and use of tools and weapons, have surely been the principal changes available to warring groups that account for the unique rise of human intelligence, sociality, and culture. The cumulative learning of cultural skills continually multiplies tools, weapons, and skills, and adds to the resourcefulness of groups whose chief competitors and enemies are members of their own species. Evolutionary effects of increasingly complicated social and cultural interactions can result in enhancement of all mental performances potentially related to adaptiveness.

Possible Trait Combinations in Ancestors of Humans

If the above arguments are roughly correct, we should be able to consider the combinations of traits making up humans and the apes as if they parallel playing cards (as in decks of "playing cards") that can make up "hands" (combinations of dealt cards – or, for organisms, combinations of traits) characteristic of the individuals of each species. In efforts to discover the kinds of "hands" "dealt to" or characterizing both groups and individual members, we should be able to shuffle traits that can be understood functionally in the manner of cards in a deck -- not only traits of all of the extant species of Hominidae, but some of the several postulated species or stages comprising the progressions of fossil species ancestral to humans. If traits can be interpreted accurately with respect to function, we should be able to arrange traits in individuals and species that can function as combinations that we have otherwise had no opportunity to either witness or reconstruct. We should be able to eliminate combinations that we have learned cannot occur together. We should be able to discover sequences by which traits change and combinations of traits are realized.

Females in one-male groups, such as gorillas, and in a slightly different fashion orangutans (which are more dispersed), advertise ovulation less extensively and less obviously than do chimps and bonobos. Paternity confidence exists because a single resident male is typically able to mate with females in the band. But gorillas and orangutans probably show none of the special human traits described on the handout.

Gibbons live mostly as separated monogamous pairs, and as with gorillas they do not advertise ovulation widely. They too may show none of the human traits on the handout.

Obviously, some imaginable trait combinations would be incompatible in an organism or a social group. We can see this by comparing our relatives among the apes. Thus, chimpanzees and bonobos live in multi-male groups and their females advertise estrus almost "with abandon." From this we could have predicted that these species do not distinguish kin extensively because ovulation is not concealed in the manner that would allow distinguishing kin of both mother and father. Adaptive menopause, then, and the lengthening of adult lifetimes, also appear not to be possible. Nor, as we have seen, are virtually any of the human traits listed in the handout. Although groups of adult male chimps go on cooperative "raids" searching out individual males from other groups, which they brutalize or kill, their aggression is minor in nature compared to our own, and it is at least typically a group against an individual. Chimps and bonobos show trait 17, and chimps as well a rudimentary form of inter-group aggression (traits 18, 19, 22). Otherwise our closest relatives exhibit virtually none of the remaining traits of humans listed in the handout. This is the reason for my 1990 labeling the human species as an "N of one," requiring a special analytical approach, comparable to that used by theoretical physicists engaged in enumerating and assessing the functions of the single physical universe available to them. I referred to this method as a "Jigsaw Puzzle" method – the identification, assembling, and coordinating of the evolved functions of discernible human traits.

What are the possible and likely successions of changes in trait combinations in the extinct ancestors of humans? Here are some meager beginnings for possible models:

1. Either monogamous pairs or mobile one-male groups would likely mean there would be little sexual dimorphism (as in humans) and no extravagant features in estrus. From some such beginnings eventually come starts toward consortships and pair bonds, and, also eventually, males beginning to honor the pair bonds of other males (perhaps originally brothers). Manipulation of estrus toward the essential trait of concealment of ovulation may begin in such an ancestral situation. We can take into account recent studies showing that gibbons sometimes engage in both polyandry and polygyny. Apes resembling gibbons in these regards, but phylogenetically nearer to humans, could become groups larger than a single family, and multi-male, perhaps by sons joining father or brothers joining one another, and because of that kind of beginning pass rather directly to a closely knit kin group and move toward groups intermediate between ancestral apes and socially resembling gibbons, yet groups that are similar to a possible human ancestor. In this scenario, however, attaining of large competing groups might be more difficult. But group-living can be initiated as a response to predation, and further developed by hunting in groups.

2. Predators were probably reduced in seriousness in early stages of human evolution, perhaps partly through group-hunting of ancestral humans, and also habitat change, which would allow more effort to be devoted to increased competitive interactions between groups. In 1990, I referred to this change as a kind of ecological dominance by evolving humans. Ecological dominance may at first seem a too-broad term (although it applies with enormous and destructive force today), but it has always had a similar connotation in the field of ecology. I used this term, first, because humans, as with other organisms, are of course subjected to the entire broad ecological sweep of what Darwin called the Hostile Forces of Nature: predators, parasites, diseases, food shortages, climate, weather – and, of course, sexual and social selection. Second, I used it because organisms are described as ecologically dominant whenever they begin to displace competitors and outpace their enemies. It is indisputable that humans generated the ability to reduce the significance of large predators, probably early in human evolution, and just as indisputable that anthropologists were right when they described the human species as – to a greater extent than other species – seeming to create its own environments rather than simply living in a particular environment. Changes that allow more calories, more trait changes, and more risk-taking to be associated with within-group competition are appropriately described as changes toward the familiar concept of ecological dominance.

3. Modern human populations grow, and groups increase in size and strength; surely this was also true of early humans, and perhaps their immediate ancestors. Competition and aggression must

have become more severe and more frequent as groups became larger and stronger. Within-group amity (kinship, patriotism) correspondingly would have become more intense and unifying. Modern humans are able to shift rapidly between (1) a continuing flow of within-group competitiveness and cooperativeness, the latter effective because of kinship, social reciprocity, and acceptance of authoritatively imposed rules of ethical conduct (usually mediated by some form of religion), and (2) a correlated and coordinated ability to initiate and maintain intense patriotic cooperativeness when danger threatens from other groups.

RICHARD D. ALEXANDER'S KYOTO, JAPAN, HBES TALK HANDOUT: JUNE 2008

To read papers (1) and (3), from which most of this talk originates, go to http://insects.ummz.lsa.umich.edu/pdfs/ To download, add: Alexander 1990.pdf. (1) How Did Humans Evolve? U-M Museum of Zoology Special Publication 1 (1990): iii + 38 pp.; (2) Evolution of the Human Pysche. In: C. Stringer and P. Mellars (eds). The Human Revolution. Univ. Edinburgh Press (1989), pp. 455-513 http://insects.ummz.lsa.umich.edu/pdfs/RDAHumanPsyche.pdf; (3) Evolutionary Selection and the Nature of Humanity. In: V. Hosle and C. Illies (eds). Darwinism and Philosophy. U. Notre Dame Press (2005), pp. 424-495; (4) The Challenge of Human Social Behavior, invited review of: Hammerstein, Peter (ed) 2003. Genetic and Cultural Evolution of Cooperation. MIT Press, Cambridge, Massachusetts, and London, England. (2006) Evol. Psych. 4(2):1-28. http://human-nature.com/ep/reviews/ep04132.html.

A. The study of evolution has involved five main undertakings:

(1) discovering from fossils and living forms that change occurs with time, (2) discovering how the actual process of evolution works, (3) discovering how evolution can lead to irreversibly separated populations called species (speciation, species multiplication), (4) working out genealogies (phylogenies) of species and their traits, and (5) using all we know about the long-term, cumulative effects of the process of evolution (the nature and causes of evolutionary adaptation) to improve our understanding of extant (modern) organisms.

Most important is (5) because it summarizes or focuses the ultimate use of evolution in the effort to understand every aspect (heredity, development, morphology, physiology, behavior, the life sequence) of every form of life, including ourselves. But (5) is also controversial because it invariably becomes extremely difficult and is easy to over-simplify, because people don't like all it suggests about them, and because people fear that by acknowledging that humans have evolved to do things no one wants (other) humans to do we might be sanctioning unpleasant or immoral actions.

B. A concentration of contributions to knowledge of the evolutionary process:11 major subtheories in 23 years.

1. George C. Williams (1957) developed the Pleiotropic Theory of Senescence -- suggested by Peter Medawar 1955 – beginning an accounting for the general patterning of lifetimes in organisms with disposable somas.

2. G. C. & D. C. Williams elaborated on Darwin's (1859) explanation for the sterile castes of eusocial forms: if the trait of sterility can be carried without being expressed, then if those who express it help sufficiently those who carry it without expressing it, the trait itself can be advanced by natural selection (this wonderful bit of Darwinian reasoning resolved a major challenge to evolutionary selection as differential reproduction).

3. W. D. Hamilton (1964) developed the theory, suggested by R.A. Fisher (1930), that organisms evolve to treat kin according to their overlap in genes identical by immediate descent (humans are the prime example).

4. George C. Williams (1966) argued -- as suggested by Fisher 1958 -- that when directions of selection conflict at different levels in the hierarchy of organization of life, it is parsimonious to assume that selection is most effective at the lowest level (genes have evolved to persist, individuals and social groups to facilitate that persistence; differential reproduction is less effective at most or all higher levels except genetically isolated species populations). This argument by Williams enabled evolutionists to proceed with (A5) above.

5. William D. Hamilton (1967) expanded on the

sex ratio theory of Fisher (1930) (see also Dusing 1883 via Edwards 1998. Am. Nat.) by accounting for inbreeding situations in which extraordinary sex ratios evolve.

6. Robert L. Trivers (1971) developed the first evolutionary theory of reciprocal altruism (social investment).

7. Robert L. Trivers (1972) elaborated on Bateman's 1949 theory about how and why selection works differently on the reproduction of males and females, and the consequences.

8. Robert L. Trivers and D. E. Willard (1973) developed a theory predicting sex ratios of offspring under special conditions, and predicting different patterns of parental care to different sexes in polygynous species.

9. Robert L. Trivers (1974) developed a theory of parent-offspring conflict with respect to parental care.

10. Nicholas K. Humphrey (1976) suggested that the human intellect evolved as a social tool.

11. William D. Hamilton (1980-82) developed Jaenike's 1978 hypothesis that random scrambling of genotypes during sexual reproduction functions in out-racing rapidly-evolving parasites and diseases.

C. Developing an overall picture of the human species as a result of the evolutionary process: A "Jigsaw Puzzle Method" of analyzing an N of one.

Humans are so distinctive that many traits are difficult to understand by comparing them with traits of close relatives; but traits can be related functionally to explain the whole organism because the organism is evolved with the singular function of persistence of its genetic materials.

1. Generating and testing hypotheses explaining evolved functions of unusual or unique traits of humans.

2. Combining the hypothesized functionality of both ordinary and unusual or unique traits to generate a coherent functional picture of the whole organism – i.e., comparing functionality between traits within the same species as well as between species, the latter being the more usual approach in comparative study (Theoretical physicists use a version of this method in analyzing the single universe available to them.)

D. Some unusual and unique human traits and their likely functions, as a route toward understanding the traits (especially behavior) of the human organism as a whole -- arguably the most important human task.

1. Menopause (unique?) (the human female ovulates only to midway through the maximum average lifetime and converts to reproducing via helping grandchildren, diverse kin, and sometimes the entire circle of kin).

2. Concealment of ovulation (unique?) (disenfranchises fickle males; promotes biparental care via bonding)

3. Sexual activity not limited to times near ovulation (unique except for bonobos?) promotes parental bonds.

4. Rates and timing of spousal sexual activity apparently (often?) unrelated to production of offspring, which may have become incidental to sex that generates, elaborates, and maintains the parental bond (unique?).

5. Multi-male groups with extensive paternal care (sometimes!) (unique among mammals?).

6. Highly altricial («helpless») infant (unique among primates): frees juvenile to grow, develop, learn rapidly.

7. Lengthened juvenile life (unique among primates, possibly among all vertebrates with altricial juveniles).

8. Rapid, cumulative, complex, and retained learning and other brain functions (unique in extent).

9. Head (brain) is the most frequently limiting birthing problem (unique among mammals?).

10. Brain of juvenile grows extremely fast (unique in degree among primates).

11. Brain may have accelerated in evolutionary size increase after becoming uniquely large among primates.

12. Human brain is largest, most complex, and calorically most expensive brain among primates.

13. Human brain seems to have evolved as a social tool (interpreting the motives and intentions of others)

14. Human groups involve extended kin groups, with multiple degrees of relatedness recognized (unique?).

15. Extensive kinship systems and extensive differential nepotism are universal -- or were (unique).

16. Complex social reciprocity of a high-risk kind, both direct and indirect, is universal(?) (unique)

17. Outbreeding commonly occurs via exchanges of females, not males, between social (kin) groups (unusual?)

18. Sufficient relief from Darwin's Hostile Forces that effort can be exerted successfully in intergroup conflict.

19. Conspecific intergroup conflict becomes intense and frequent, a main source of differential reproduction.

20. Incredibly strong amity-enmity axes – i.e., tendencies to divide other humans into we's and they's.

21. Group-against-group competition in play (unique, lifelong practice affecting severe intergroup rivalries)

22. Rapid and dramatic alternations between extreme patriotism and intra-groupcooperativeness, and intense intragroup competition (Is this the selective engine driving evolution of the social brain?) (unique?).

23. Cumulative learning of learned behavior (i.e., culture), purposeful generation of (evolutionarily) novel environments (tending to be appropriate, or at least desired) that in turn guide environmental change, including technology and the phenotypic (e.g., learned and cumulatively learned) changes themselves; both automatically become aspects of the human environment, therefore alter evolutionary selection. Completion of the need-novelty feedback loop that never was accomplished by genetic change per se during evolution.

24. Language (unique in degree of complexity, and in many features – e.g., displacement)

25. Extensive consciousness (ability to predict and plan, to know that we do, and to tell others about it).

26. Large-scale and virtually continual scenario-building of (especially?) the social future (unique?)

27. Generation of multiple alternative scenarios (projected choices) (hence the concept of free will? (unique?).

28. The arts elaborate and extend reality via communication of novel scenarios to others (unique?)

29. Complex music, arising perhaps from judgments (initially of mates and social partners?) via indicators of quality, including physical and mental well-being (initially in rhythmicity and melodiousness of speech?)

30. Social-intellectual play, including the reality-mocking of humor, as lifetime social strategizing (unique?).

31. Moral concepts (and laws) arise as selfishness-restraint systems for dealing with «built-in» conflicts of interests when closely-knit cooperative groups are obligate (generation of conscience?) (unique?)

32. Concepts of supernaturalism, everlasting life, and benevolent gods, promoting group stability and success in inter-group competition and conflict (unique?). Did these concepts generate as social instruments restricted to the world of humans – including their use as extensions to cause-effect explanations of the physical world and the non-human living world; and is God sometimes a metaphor for serving the «entire» kin group – and later, larger social groups functional in inter-group competition – i.e., via patriotism?

33-34. Patterned hairlessness and bipedalism (long discussed but actual functions not yet well understood?).

The Student Voice | Aaron Blackwell

A note from your student representative:

It's that time again. At the HBES meeting in Tokyo I asked those who were there to begin thinking about nominating themselves for the position of HBES student representative. The call is still open. As HBES student rep you'll represent the student membership at executive council meetings, help organize student events at conferences, and contribute to the newsletter. If you are interested, submit a short statement or bio describing your goals as student rep as well as a brief bio to ablackwe@uoregon.edu. The election will be held sometime in the first part of next year as part of the general HBES elections.

HBES Conference 2008 Competition Winners

POSTER COMPETITION WINNER

Koki Ikeda, Kyoto University

Congratulations to Koki Ikeda, Graduate Student at Kyoto University for winning the HBES 2008 Poster Competition. Koki's poster, co-authored with Toshikazu Hasegawa, was entitled "Electrophysiological responses towards untrustworthy faces."

Abstract: To evaluate the trustworthiness of others is assumed to be an important factor to establish effective cooperation in human society. However, little is known about the neural bases underlying the cognitive process of trustworthiness. Previous brain imaging studies have suggested that it is untrustworthy faces, not trustworthy ones, that activated amygdala, an emotional center of the brain (Winston et al. 2002; Engell et al. 2007). In this study, we evaluated the temporal characteristics of the processing of facial trustworthiness by using event-related potential (ERP) technique. In addition, the effect of attention deprivation was examined in order to eliminate the possibility that the differential activation by untrustworthy faces was due to physical characteristics of the stimuli. Results suggested that the untrustworthy faces elicited emotion-related brain activity within hundreds milliseconds after the stimulus presentation. Implications of such emotion-based judgment regarding the trustworthiness of other's face on human cooperation will be discussed.

HBES Conference 2008 Competition Winners

NEW INVESTIGATOR COMPETITION WINNER

Josh Tybur, University of New Mexico

Congratulations to Josh Tybur, Doctoral Candidate at the University of New Mexico Department of Psychology, for winning the New Investigator Competition for a paper entitled “Microbes, mating, and morality: Individual differences in three functional domains of disgust”, co-authored with Debra Lieberman and Vladas Griskevicius.

Abstract: What is the function of disgust? Whereas traditional models have suggested that disgust serves to protect the self or neutralize reminders of our animal nature, an evolutionary perspective suggests that disgust functions to solve three qualitatively different adaptive problems related to pathogen avoidance, mate choice, and social interaction. We investigated this three-domain model of disgust across multiple studies, and we introduce the Three Domain Disgust Scale, a new measure of individual differences in disgust sensitivity. Consistent with our predictions, exploratory and confirmatory factor analyses demonstrated that disgust sensitivity partitions into domains related to pathogens, sexuality, and morality. Additionally, the sexes differed in disgust sensitivity between domains in a manner consistent with our perspective. We compare this model with the dominant model of disgust sensitivity, and we discuss the utility of an evolutionary perspective on disgust.

POST-DOCTORAL COMPETITION WINNER

Russell Jackson, California State University at San Marcos

Congratulations to Russell Jackson, Assistant Professor of Psychology at CSU San Marcos, for winning the Post-Doctoral Competition for a paper entitled “Evolved distance perception mechanisms”, co-authored with Lawrence Cormack.

Abstract: This study outlines a previously unknown, large illusory component to one of the most common psychological experiences. The ubiquitous unitary distance perception framework suggests that distance perception should be equal across similar vertical and horizontal surfaces. Evolved navigation theory (ENT) suggests that perceptual and navigational mechanisms reflect navigational costs over evolution. Vertical surfaces pose a distinct cost of falling not present in horizontal navigation. However, horizontal surfaces can form retinally vertical images and researchers often assume that retinal image determines distance perception. We tested ENT-derived predictions suggesting that observers would overestimate surface lengths based on environmental, not retinal, verticality. Participants drastically overestimated environmentally vertical surfaces only and did so at a magnitude related to surface length. These results replicate across multiple settings and methods and are supported by previous studies. Implications of this work include understanding prerequisite costs for most human behavior.

HBES 2008 KYOTO JAPAN

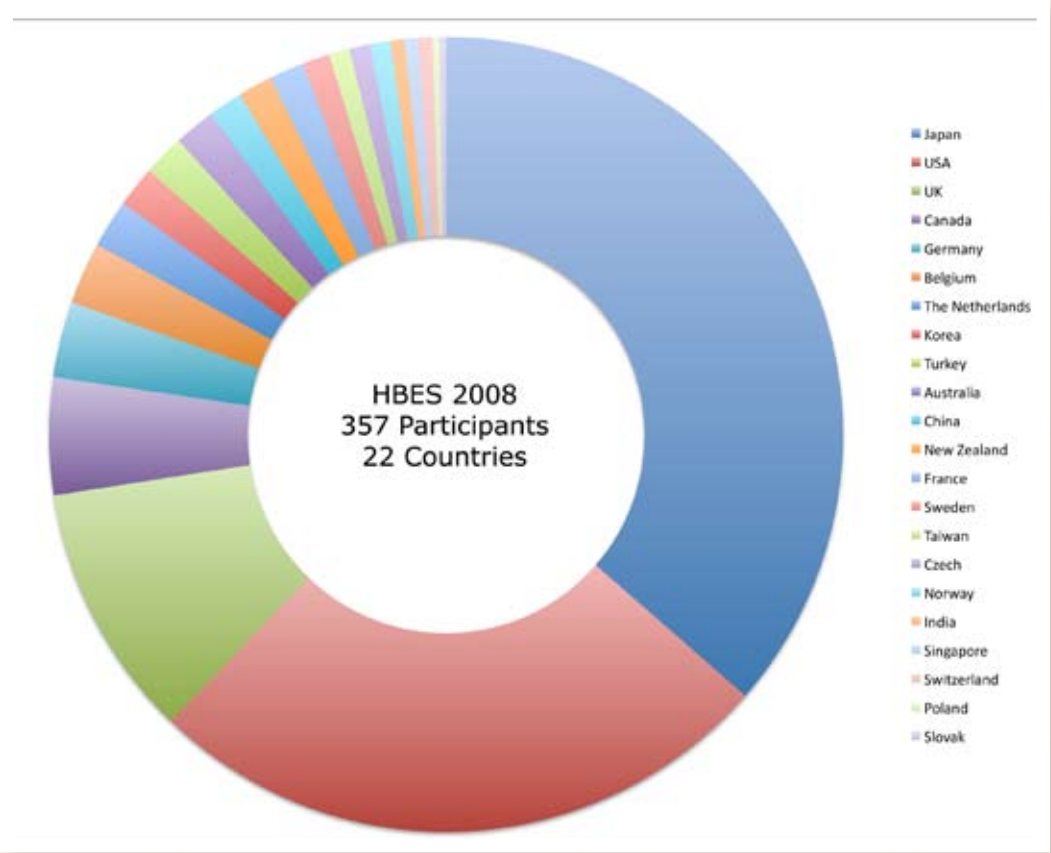
The Human Behavior and Evolution Society celebrated its 20th annual meeting in Japan, the first meeting outside the Western hemisphere. It was held in the Japanese ancient capital, Kyoto, from June 4th through June 8th. The organizers were Mariko Hiraiwa-Hasegawa (the Graduate University for Advanced Studies) and Toshikazu Hasegawa (the University of Tokyo). The venue was the beautiful Kyoto University Clock Tower Centennial Hall. Approximately 360 people from over 22 countries attended the conference. The conference attracted participants of diverse academic disciplines, as always. Though the size of the meeting was somewhat smaller compared to recent annual meetings, sessions were lively and inspiring.

Plenary addresses started with lectures by three distinguished primatologists; Testuro Matsuzawa (Kyoto University), Carel van Schaik (University of Zurich), and Andrew Whiten (University of St. Andrews). The topics ranged from primates' cognitive abilities, the association between breeding strategies and human cognitive evolution, to social learning and the evolution of cultures. Wayne Potts (University of Utah) discussed about MHC influence on mate choice, Nicholas Humphrey (London School of Economics) spoke on the distinctiveness of human consciousness, and Toshio Yamagishi (Hokkaido University) discussed in-group bias from evolutionary social psychology perspective.

Richard D. Alexander, who received the inaugural HBES Lifetime Career Contribution Award, gave the Keynote address. His talk was entitled "Evolution and Human Society," and provided a look back on the theoretical foundation of the field focusing on the topics of menopause and the concealment of ovulation.

This year, we launched a new system for the New Investigator Competition and Postdoctoral Competition. Award Committee members pre-selected the top three finalists for each competition, and special sessions were set for the finalists to give a talk. The New Investigator Competition winner was Josh Tybur (University of New Mexico), whose talk was entitled "Microbes, mating, and morality: Individual differences in three functional domains of disgust". The winner of the Postdoctoral Competition was Russell Jackson (California State University at San Marcos), whose talk was entitled "Evolved distance perception mechanisms". The winner of Poster Competition was selected from all the presented posters and Koki Ikeda (the University of Tokyo), won this award with a poster entitled "Electrophysiological responses towards untrustworthy face". Each winner was awarded a prize of 55,000 JP Yen (~$500). Thank you very much to the members of each Committee. New Investigator Competition Committee: Martin Daly (chair), Oliver Curry, & Bobbi Low. Postdoctoral Competition Committee: Clark Barrett (chair), Nobuyuki Takahashi, & Jim Roney. Poster Competition Committee: Nick Pound (chair), Akiko Uchida, & Ryo Oda.

The Host and Program Committees did a fantastic job selecting speakers, organizing the program, and ensuring all the events ran smoothly. In particular, Kikue Sakaguchi (pictured here with fellow organizer Koki Ikeda) contributed an enormous amount to the success of this conference, creating the website and managing all the logistics of the conference. Debra Lieberman along with Lisa DeBruine and Frank Marlowe, contributed by arranging the program and pacing preparations for the conference. Owing to thorough preparations, few no shows or schedule modifications occurred on site, despite the long trip many attendants had to make.



We were greatly helped by Robert Kurzban's comprehensive notes on how to organize the HBES annual meeting and so would like to extend our gratitude to him as well. As introduced in the 2006 HBES meeting, we implemented the beloved Presentation Timer, a computer application program designed to automatically keep time for oral presentations. This Timer allowed us to synchronize the four parallel sessions. The Presentation Timer was developed by Hasan Ayaz and information can be found on the following website: http://www.hasanayaz.com/presentationtimer/.

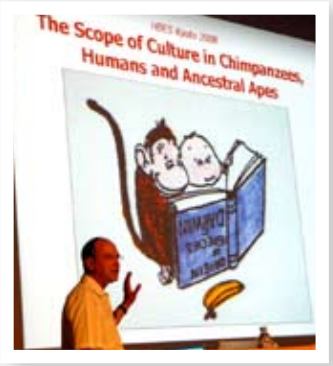
Thanks to the generous discretion of the HBES Executive Committee, we were able to distribute travel grants to 27 participants. At the same time, we acknowledge some presenters withdrew from the conference because they were not able to collect enough funds to come to Japan. There were fewer students from the United States compared to previous years, which likely contributed to the reduced number of poster submissions this year (only 93 compared to around 200 in previous years). The number of oral presentations was comparable to preceding years. We are sorry for those who wished but were not able to make it to Japan to join us, but we believe the HBES meeting in Japan had significant impact on stimulating interest in this field of research in Asia and Oceania.

The banquet was held in a historic Chinese restaurant commanding a fine view of the Kamo River. The banquet attracted as many as 250 people and more than half of them enjoyed dishes on a traditional waterfront deck, which is Kyoto's favorite summer attraction. After the banquet, many participants seemed to have gone out for a Karaoke party.

We are grateful for the financial support from Hokkaido University and the Graduate University for Advanced Studies (Sokendai). We are also very thankful to the faculties in Kyoto University for allowing us to use the conference venue.

Last, but certainly not least, the HBES student staff played a critical role in making the conference a big success. Students from Kyoto University did a magnificent job coordinating food and drinks and leading people to the campus. Students from Hokkaido University set up presentation rooms and provided technical support for each session. You can find the list of key staff in the conference proceedings. Shinya Yamamoto, Griet Vandermassen, and others took many beautiful pictures during the meeting. The conference website will be kept (http://beep.c.u-tokyo.ac.jp/~hbesj/conf2008/index.htm) for reference. You can find links to the photo album and the conference proceeding on this page.

HBES 2008 Conference Plenary Speakers



All photo credits: Griet Vandermassen, Shinya Yamamoto, and others.

HBES 2008 Conference Photos

Letters From the Editors

Letter from the Editor of Human Nature

MOST CITED ARTICLES IN HUMAN NATURE 2004-2006

2004

1. Gray, PB; Chapman, JF; Burnham, TC; et al. Human male pair bonding and testosterone. 15 (2): 119-131.
2. Honekopp, J; Bartholome, T; Jansen, G. Facial attractiveness, symmetry, and physical fitness in young women. 15 (2): 147-167.
3. Lyman, RL. Aboriginal overkill in the intermountain west of North America - Zooarchaeological tests and implications. 15 (2): 169-208.
4. Johnson, SE; Bock, J. Trade-offs in skill acquisition and time allocation among juvenile chacma baboons. 15 (1): 45-62.
5. Brase, GL; Walker, G. Male sexual strategies modify ratings of female models with specific waist-to-hip ratios. 15 (2): 209-224.
6. Lewis, KP; Barton, RA. Playing for keeps - Evolutionary relationships between social play and the cerebellum in nonhuman primates. 15 (1): 5-21.
7. Pellegrini, AD; Bjorklund, DF. The ontogeny and phylogeny of children's object and fantasy play. 15 (1): 23-43.
8. Bock, J; Johnson, SE. Subsistence ecology and play among the Okavango Delta peoples of Botswana. 15 (1): 63-81.
9. Grainger, S. Family background and female sexual behavior - A test of the father-absence theory in Merseyside. 15 (2): 133-145.
10. Waller, KL; Volk, A; Quinsey, VL. The effect of infant fetal alcohol syndrome facial features on adoption preference. 15 (1): 101-117.

2005

1. Chisholm, JS; Quinlivan, JA; Petersen, RW; et al. Early stress predicts age at Menarche and first birth, adult attachment, and expected lifespan. 16 (3): 233-265.
2. Wiessner, P. Norm enforcement among the Ju/'hoansi Bushmen - A case of strong reciprocity? 16 (2): 115-145.
3. Ziker, J; Schnegg, M. Rood sharing at meals - Kinship, reciprocity, and clustering in the Taimyr Autonomous Okrug, northern Russia. 16 (2): 178-210.
4. Anderson, KG. Relatedness and investment children in South Africa. 16 (1): 1-31.
5. Michalski, RL; Shackelford, TK. Grandparental investment as a function of relational uncertainty and emotional closeness with parents. 16 (3): 293-305.
6. Neave, N; Hamilton, C; Hutton, L; et al. Some evidence of a female advantage in object location memory using ecologically valid stimuli. 16 (2): 146-163.
7. Quinlan, RJ; Flinn, MV. Kinship, sex, and fitness in a Caribbean community. 16 (1): 32-57.
8. Meehan, CL. The effects of residential locality on parental and alloparental investment among the Aka foragers of the Central African Republic. 16 (1): 58-80.

Letters From the Editors

Letter from the Editor of Human Nature (cont)

MOST CITED ARTICLES IN HUMAN NATURE
2006

1. Haselton, MG; Miller, GR. Women's fertility across the cycle increases the short-term attractiveness of creative intelligence. 17 (1): 50-73.
2. Gurven, M; Kaplan, H. Determinants of time allocation across the lifespan - A theoretical model and an application to the Machiguenga and Piro of Peru. 17 (1): 1-49.
3. Shackelford, TK; Goetz, AT; Guta, FE; et al. Mate guarding and frequent in-pair copulation in humans - Concurrent or compensatory anti-cuckoldry tactics? 17 (3): 239-252.
4. Goetz, AT; Shackelford, TK. Sexual coercion and forced in-pair copulation as sperm competition tactics in humans. 17 (3): 265-282.
5. Van Anders, SM; Watson, NV. Social neuroendocrinology - Effects of social contexts and behaviors on sex steroids in humans. 17 (2): 212-237.
6. Ball, H. Parent-infant bed-sharing behavior - Effects of feeding type and presence of father. 17 (3): 301-318.
7. Hurtado, AM; Lambourne, CA; Hill, KR; et al. The public health implications of maternal care trade-offs. 17 (2): 129-154.
8. Locke, JL. Parental selection of vocal behavior - Crying, cooing, babbling, and the evolution of language. 17 (2): 155-168.

2007 SCImago and Journal Citation Reports for Human Nature

SCImago ranks Human Nature 7 out of 51 Anthropology journals with an SJR of 0.115. Journal Citation Reports ranks Human Nature 11 out of 57 Anthropology journals with an impact factor of 1.5.

Jane B. Lancaster, Editor, Human Nature
Professor of Anthropology, University of New Mexico

Letter from the Editors of Evolution & Human Behavior

Highlights from the June 2008 Evolution and Human Behavior editors' report. For the approximately 23 months beginning July 1, 2006 and ending May 20, 2008, the Journal received 394 submissions; up from 324 during the preceding 24-month period that ended June 30, 2006. Despite the higher rate of submissions, the Journal's acceptance rate remains between 25 and 28%, where it has been for a decade, principally due to our new larger format. Classifying submissions by the academic affiliation of the first author, psychologists account for just over half. Three other groups each account for just over 10%: anthropologists, biologists, and "other social scientists." The Journal's impact factor remains high at 2.59, and as previously reported by Steve Gangestad, two new Google-based algorithms rank EHB as high as the 92nd percentile of all scientific journals. For 2007, the most recent year with complete data, the most cited paper was Haley & Fessler (2005 "Nobody's watching: Subtle cues affect generosity in an anonymous economic game"), with 15 citations in a single year. The most downloaded paper was Healy & Ellin (2007 "Birth order, conscientiousness and openness to experience"), with 2850 downloads. Thus both aggregate and individual citation data suggest that EHB is a high-profile venue for your research.

Steve Gaulin, Ruth Mace, Dan Fessler, & Martie Haselton, Editors, EHB

Letters From the Editors

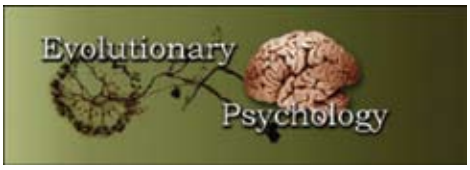
Letter from the Editors of Evolutionary Psychology

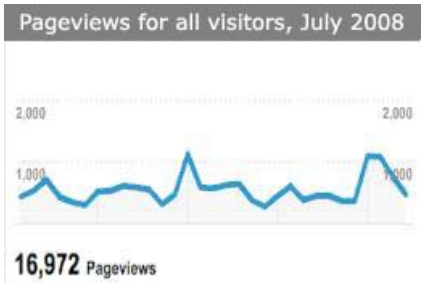
Todd K. Shackelford, Editor
Steven M. Platek, Associate Editor and Managing Editor
David P. Barash, Book Review Editor
Catherine A. Salmon, Associate Editor
Edward H. Hagen, Associate Editor
Benedict C. Jones, Associate Editor
Robert O. Kurzban, Associate Editor

Evolutionary Psychology (www.epjournal.net) is proud to announce the arrival of three new Associate Editors: Edward H. Hagen, Director, Bioanthropology Laboratory at Washington State University, Benedict C. Jones, Co-Director, Face Research Laboratory at the University of Aberdeen, and Robert Kurzban, Director, Pennsylvania Laboratory for Experimental Evolutionary Psychology.

Evolutionary Psychology with its broad scope covers empirical, philosophical, historical, and socio-political perspectives and includes a large and diverse editorial board composed of distinguished and enthusiastic individuals who wish to encourage appropriate submissions across all relevant fields, including original research papers, subject reviews, topic reviews, and book reviews. Recent published articles continue to elevate the Journal's visibility, producing numerous mentions in mainstream media including the New York Times, CNN.com, The Observer and Telegraph. Evolutionary Psychology receives over 15,000 page views per month (see Figure 1) and over 250,000 page views in the past year.

If you would like to receive our quarterly Table of Contents via e-mail, please see the Journal website (www.epjournal.net) for fast sign-up.





Letter from the Newsletter Editor

Dear HBES Members,

I hope you enjoy this installment of the HBES newsletter. Please send URLs of members in the news to newsletter@hbesociety.com. If you would like to suggest (or conduct) an interview, please submit your suggestions to the email listed above. Also, if you have suggestions for additonal content in future newsletters (e.g., illustrations, photographs, poetry, or otherwise), please drop me a line at newsletter@hbesociety.com.

Debra Lieberman, Editor

Announcements

Nominations for the HBES Lifetime and Early Career Contribution Awards

The HBES Lifetime Career Award for Distinguished Scientific Contribution is presented to candidates who have made distinguished theoretical or empirical contributions to basic research in evolution and human behavior. For these awards, nominators should include in the letter of nomination a statement addressing the following questions:

What are the general themes of the nominee's major lines of research?
What are the important research findings usually attributed to the nominee?
To what extent have the nominee's contributions generated research in the field?
What has been the significant and enduring influence of the nominee's research?
What historical contribution has the nominee's research made to the field?
Compare the nominee with others in her/his field.
What influence has the nominee had on students and others in the same field of study?
Where possible, please identify the nominee's students by name.

Nominations for these awards should include a letter of nomination, a curriculum vitae, a recent complete bibliography, up to five representative reprints and the names and addresses of several scientists familiar with the nominee's work. Deadline for nomination: **March 1, 2009**. Send nominations directly to Professor David Buss, Chair: dbuss@psy.utexas.edu

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The HBES Early Career Award for Distinguished Scientific Contribution recognizes excellent young scientists who have made distinguished theoretical and/or empirical contributions to the study of evolution and human behavior. The nomination letter should include the following information:

What are the general themes of the nominee's major lines of research?
What are the important research findings discovered by the nominee?
To what extent have the nominee's contributions generated research in the field?

Nominations for the HBES Early Career Award should include a statement about the worthiness of the nominee, curriculum vitae of the nominee, a recent complete bibliography, and no more than five reprints representative of the nominee's contributions. The awards are subject to the following limitation: **The nominee must be no more than 10 years post-Ph.D.** Deadline for nomination: **March 1, 2009**. Please send nominations directly to Professor Leda Cosmides, Chair: cosmides@psych.ucsb.edu

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Winners of both awards will be announced at the upcoming HBES conference to be held at California State University, Fullerton May 27-31, 2009.

Announcements

Job Advertisement: CAL STATE FULLERTON, DEPT. OF ANTHROPOLOGY

The Department of Anthropology at California State University, Fullerton, invites applications for the position of Assistant Professor of Anthropology (tenure track), with a specialty in Evolutionary Anthropology, beginning in Fall 2009. The department is undertaking an aggressive, multi-year faculty recruitment effort with the goal of strengthening and broadening its curriculum and research activities. The department is seeking to fill a tenure-track position in evolutionary anthropology with specialties that complement five full-time tenure-track colleagues in this area. The department especially encourages applicants who bring ethnically diverse perspectives to their understanding of the field.

Requirements:
(1) A Ph.D. in Anthropology or related field is required. ABDs may apply but must show evidence that the degree will be completed by the time of appointment. (2) An active research program with living human populations in one or more of the following topical areas: the evolution of behavior and culture; reproductive ecology; nutritional ecology; resource ecology; aging; growth and development. An explicitly evolutionary perspective is required. Geographic area open. (3)Commitment to the four-field approach to Anthropology. (4) Evidence of excellence in scholarship and effective teaching at the college level. (5) Candidates should be able to interact effectively with a wide and culturally diverse range of students and colleagues. Preference will be given to applicants who have demonstrated experience of effective teaching in ways that encourage active learning and student-faculty interaction. For further details, application information and deadlines see: http://diversity.fullerton.edu/HSS-Anthro_Evolutionary.html.

Rank and Salary:
The position is at the rank of Assistant Professor, tenure-track. Salary is highly competitive and commensurate with experience and qualifications. Salary is subject to budgetary authorization and any California State University System faculty contract increases. Additional teaching in summer and intersession is often available. An excellent comprehensive benefits package is available which includes health/vision/dental plans; spouse, domestic partner and/or dependent fee-waiver; access to campus child-care as well as affordable housing program; and a defined-benefit retirement through the state system, along with optional tax-sheltering opportunities. For a detailed description of benefits, go to http://hr.fullerton.edu/Benefits/CompareBenefits.aspx Job Control Number: 23603G-08-061

Application Procedure:
Please send your application, describing research and area interests along with (1) evidence of research in evolutionary anthropology, (2) Evidence of an active research program with living human populations, with an explicitly evolutionary perspective, in one or more of the following topical areas: the evolution of behavior and culture; reproductive ecology; nutritional ecology; resource ecology; aging; growth and development (3) a copy of the most recent curriculum vitae, (4) copies of official graduate transcripts, (5) evidence of excellence in teaching (such as sample syllabi and teaching evaluations), (6) copies of publications (such as articles, reports, and reviews), and (7) three letters of reference, to: Dr. John W. Bedell, Chair, Search Committee for Evolutionary Anthropology, Department of Anthropology, California State University Fullerton, Fullerton, CA 92834-6848. **Review of applications will begin October 1, 2008, and will continue until January 2, 2009.** Positions open until filled.

Announcements

Job Advertisement: UCSB, DEPARTMENT OF ANTHROPOLOGY

Scientific Ecological Anthropologist

The University of California, Santa Barbara, Department of Anthropology, Integrative Anthropological Sciences (IAS), invites applications for a tenure-track position at the Assistant Professor level, beginning July 1, 2009. We seek a social scientist specializing in any area of scientific ecological anthropology, such as human ecology, behavioral or evolutionary ecology, anthropology of living foragers, cooperation and common pool resources, indigenous resource management, dual inheritance theory, ethnobiology, subsistence economics, reproductive ecology, nutritional ecology, life history theory, ecological genetics, demography and epidemiology. Other sociocultural or biological approaches to human ecology are open, but research must be theoretically rigorous, empiricist and scientific, and should complement existing faculty expertise in the IAS Unit. Strong fieldwork and/or lab component is preferable. Geographical area of specialization is open, but interests in Oceania, Latin America, Africa or Asia are preferable, as is a comparative orientation.

The successful candidate will demonstrate ability to teach lower-division courses in ecological, sociocultural and/or biocultural anthropology and upper-division and graduate courses related to the anthropologist's areas of specialization. Capacity to teach courses in quantitative methods is valued. The ability to direct graduate students and to advance a departmental focus on ecological research are important requirements.

Applicants must have completed the Ph.D. at the time of appointment. Please send a letter detailing research and teaching experience and plans, a curriculum vitae, and names and contact information for three references to Professor Michael Gurven, Chair, IAS Search Committee, Department of Anthropology, UCSB, Santa Barbara, CA 93106-3210. **Applications should be postmarked on or before November 14, 2008.** The department is especially interested in candidates who can contribute to the diversity and excellence of the academic community through research, teaching, and service. The University of California is an Equal Opportunity/Affirmative Action Employer.

If you would like to advertise a position in the evolutionary sciences, please send announcement information to newsletter@hbesociety.com.

Announcements

IGERT Program in Evolutionary Modeling

Model-Based Approaches to Biological and Cultural Evolution

The IGERT Program in Evolutionary Modeling (IPEM) is an innovative Ph.D. training program in "Model-based Approaches to Biological and Cultural Evolution" funded by the National Science Foundation. The program aims to produce professionals versed in modern evolutionary theory and familiar with the most important perspectives and quantitative techniques for studying the evolution of social behavior and culture. The program is open to students working on both humans and non-human animals, and emphasizes evolutionary processes of adaptation and diversification in genetic, behavioral, and cultural domains, as well as a set of methods (including computational modeling, game theory, phylogenetic analysis, and other field and laboratory techniques) applicable to analyzing evolutionary processes across these domains.

Students enter IPEM through PhD programs in the Department of Anthropology or the School of Biological Sciences at Washington State University, Pullman, or the Department of Anthropology at the University of Washington, Seattle. Fellows spend at least one term taking courses or pursuing research at the sister institution, and form research teams across these universities and disciplines, allowing them to draw on relevant expertise at either sponsoring university. In addition they have the opportunity to pursue research at our partner institutions (the Santa Fe Institute in New Mexico; the Centre for the Evolution of Cultural Diversity, which has branches in the UK and Canada; Le Centre Universitaire de Recherche et de Documentation en Histoire et Archéologie, Central African Republic; and the University of Costa Rica).

Fellows will be supported for two years—with the possibility of a third year of funding to be competitively determined—at the NSF-mandated rate of $30,000 per year, plus tuition and an annual supplement for research and conference expenses, competitively granted, of up to $8,000.

For further information on various aspects of the program, please see the following website: http://depts.washington.edu/ipem/

Postdoctoral Researcher: Pennsylvania State University

A position is available in the laboratory of Dr. David Puts to investigate the development and evolution of psychological sex differences, mating behavior and competition for mates. The successful candidate will use the techniques and principles of behavioral endocrinology and evolutionary psychology to test related hypotheses using hormonal, genetic, anthropometric and psychometric data from human subjects. Doctoral degree in anthropology, biology, neuroscience, psychology or a related field is required. This is a fixed-term appointment funded for one year from the date of hire with the possibility of re-funding. Submit curriculum vita, cover letter, and contact information for 3 references in electronic form (Word or PDF preferred) to Melissa Strouse at mvs5@psu.edu. Work Unit: College of the Liberal Arts; Department: Anthropology; Job Number: 28707

Announcements

Chilean Foundation Science & Evolution: Darwin's intellectual legacy in the XXI Century

To commemorate Darwin's 200th anniversary and the 150th anniversary of the publishing of "The Origin of Species", the Chilean foundation "Ciencia y Evolución" (Science and Evolution), presided by chilean HBES member Alvaro Fischer, will carry out an ambitious and extensive agenda of seminars during 2009 called "Darwin's Intellectual Legacy in the XXI Century".

The schedule and guest speakers of this agenda are the following:

1. MEDICINE AND EVOLUTION, May 28-29, 2009
Paul Ewald (University of Louisville)
Randy Nesse (Michigan University)

2. ECONOMICS AND EVOLUCIONARY PSYCHOLOGY, June 25-26, 2009
Kevin McCabe (George Mason University)
Michael Shermer (Skeptic Magazine)
Ullrich Witt (Max Planck Institute)

3. LAW AND PUBLIC POLICIES, July 27-28, 2009
Oliver Curry (London School of Economics)
Owen Jones (Vanderbilt University) (to be replaced)

4. DARWIN'S INTELLECTUAL LEGACY IN THE XXI CENTURY, September 7-8, 2009
Leda Cosmides (University of California, SB)
Helena Cronin (London School of Economics)
Richard Dawkins (Oxford University) (to be confirmed)
Daniel Dennett (Tufts University)
Ian McEwan (writer)
Steven Pinker (Harvard University)
Matt Ridley (International Center for Life)
John Tooby (University of California, SB)

Chile is the country where Darwin spent a third of his trip on the Beagle, where he encountered geological variation (eruptions, earthquakes, glaciers breaking on the ocean), the stepping stone on which to found biological diversity, where he met and interacted with hunter-gatherers in Tierra del Fuego, a part of the country whose geography is flooded with names related to the Beagle's voyage. Thus it seems an appropriate place where to host such an agenda and enhance the evolutionary perspective in the year when its founder is being celebrated the world over. The Ciencia y Evolución foundation, whose members are former government officials, National Science Award winners, academics, consultants and businessmen, was founded to develop the evolutionary perspective in Latin America, and invites all HBES members and interested public to participate in this activity next year. For further information, contact: Marcela Fischer: marcefischer@gmail.com. The following two websites also provide information about the scheduled events: www.cienciayevolucion.cl or www.darwin200.cl

Announcements

Daniel G. Freedman Remembered January 16, 1927 - June 10, 2008

Dr. Daniel G. Freedman was a distinguished psychologist whose contributions to child development, behavioral genetics, human ethology and evolutionary psychology inspired colleagues and students, both in the United States and abroad. He was, according to one colleague, "ahead of his time in research and thinking about genes and behavior." His articles and books anticipated many current scholarly themes in the behavioral sciences. Specifically, Dr. Freedman recognized that biological and evolutionary viewpoints were required for full understanding of the complex diversity of human behavior. These multiple perspectives are now being increasingly embraced by researchers in psychology and related fields.

Freedman's academic career took him to many places. They include the University of California, Berkeley (BA, 1949), the University of Colorado (MA, 1953), the famed laboratories in Bar Harbor, Maine under Fuller and Scott where he collected his dissertation data on four breeds of dogs, and Brandeis University (Ph.D., 1957). He held a U.S. Public Health Service Fellowship at the Langley Porter Neuropsychiatric Institute, in San Francisco (1957-1959). He received an NIMH Special Fellowship for study at the Institute for Medical Genetics, in Uppsala, Sweden (1963-1964), after which time he joined the Biology faculty at the University of Chicago (1964-1968). Next, he co-led (with Gregory Bateson) an observational study of different cultures, in conjunction with the International School of America (1971-1972). He then rejoined the University of Chicago as a Professor of Human Development (1977-present). During this time he visited the Australian National University, in Canberra (1979), the Hebrew University of Jerusalem (1986), and the Institute for Juvenile Research, in Chicago (1989). He was also associated with the Center for Family Studies, at Chicago's Northwestern University (1985-1986). Most recently, he was a visiting scholar at Nankai University, in Tianjin, China (1995). These intellectual excursions were opportunities to study cross-cultural consistencies in behavior, as well as cultural and individual variability (what Freedman referred to as "variations on the hominid theme"). Freedman's publications are memorable for always targeting the "big picture." His studies of behavioral variations in different dog breeds, personality development in infant twins and male-female differences in behavior not only were ground-breaking at the time, but are relevant to current intellectual questions. He must be considered as one of the first human ethologists, collecting data on 16 mm. film.

Upon his retirement, colleagues gathered for a festschrift in his honor, at the University of Chicago in October, 1995, funded by the American Psychological Association. This event culminated in a volume, Uniting Psychology and Biology: Integrative Perspectives on Human Development.

In his later years, as Professor Emeritus of Psychology at the University of Chicago, Freedman moved to Ribera, New Mexico, where he pursued a number of interests. He was very concerned with issues of non-duality, especially the unity of biology and culture. He was scheduled to read a paper on this topic at the 2008 meeting of the International Society for Human Ethology, where he was also to be honored as one of the great founders of the field.

Dan Freedman was much beloved by his graduate students. He was unique in that he was both an academic advisor and a personal mentor. He maintained close ties with many of his former students over the years, more so than do most professors. He once wrote a letter of recommendation for a student that began, "she was like a breath of fresh air." This was characteristic of the special qualities that made him memorable.

Resources

Conferences

American Anthropological Association
November 19 - November 23, 2008, San Francisco, CA
http://www.aaanet.org/meetings/

American College of Epidemiology Annual Meeting
"The Dawn of Evolutionary Epidemiology"
September 15-16, 2008 Tucson, Arizona
http://www.acepidemiology2.org/documents/2008MeetingFlyer.pdf

American Psychological Association
August 6-9, 2009, Toronto, Ontario, Canada
http://www.apa.org/

Animal Behavior Society
June 22-26, 2009, Pirenopolis, Brazil
http://www.animalbehavior.org/Brazil09/

Association for Psychological Science
May 22-25, 2009, San Francisco, CA
http://www.psychologicalscience.org/convention/schedule.cfm

Behavior Genetics Association
June 17-20, 2009, Minneapolis, MN
http://www.bga.org/pages/1/Home.html

Cognitive Neuroscience Society
March 21-24, 2009, San Francisco, CA
http://www.cnsmeeting.org/

Cognitive Science Society
July 30-August 1 2009, Free University, Amsterdam
http://www.ai.rug.nl/cogsci09/

European Human Behavior and Evolution
April 6-8, 2009, University of St. Andrews, Scotland
http://www.ehbes.com/conf/2009/

Human Behavior & Evolution Society
May 27-31, 2009, CSU Fullerton, CA
http://www.hbes.com

International Conference on Complex Systems
October 28-November 2, 2008, Quincy, MA
http://www.necsi.org/events/iccs7/

International Population Conference (IUSSP)
Sept. 27 - Oct. 2, 2009. Marrakech, Morocco
http://iussp2009.princeton.edu/lobby.aspx

International Society for Human Ethology
http://evolution.anthro.univie.ac.at/ishe/index.html

NorthEastern Evolutionary Psychology
Society SUNY Oswego, NY. Dates: TBA
http://www.neepsociety.com

Organization for Computational Neuroscience
July 18-23, 2009, Berlin, Germany
http://www.cnsorg.org/2009/

Social Cognitive Neuroscience: ESF-JSPS Frontier Science Conference for Young Researchers
Feb. 27 - March 4, 2009, Acquafredda di Maratea, Italy http://www.esf.org/conferences/09263

Society for Cross-Cultural Research
Feb. 18-21, 2009, Las Vegas, NV
http://www.sccr.org/sccr2009/

Society for Evolutionary Analysis in Law (S.E.A.L.)
http://law.vanderbilt.edu/seal/index.htm

SPSP Evolutionary Psychology
Preconference Feb. 5th, 2009, Tampa FL
http://www.spspmeeting.org/

Society for the Study of Evolution
June 13-17, 2009, Moscow, Idaho
http://www.evolutionsociety.org/meetings.asp

Predoctoral Fellowships/Grants

NSF: Graduate Research Fellowship Program
https://www.fastlane.nsf.gov/grfp/

Ford Foundation: Diversity Fellowships
http://www7.nationalacademies.org/fellowships/

NIH: Predoctoral Fellowship for Minority Students
http://grants.nih.gov/grants/guide/pa-files/PA-00-069.html

APA: Predoctoral Fellowship in the Neurosciences
http://www.apa.org/mfp/prprogram.html

AAUW: American Fellowships (women)
http://www.aauw.org/fga/fellowships_grants/american.cfm

Guggenheim: http://www.hfg.org/df/guidelines.htm