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Zeichnung: Janet Brooks Gerloff

Everything Goes, But Not Everything Works

Interview of Irenäus Eibl-Eibesfeldt

by Peter LaFreniere

Irenäus Eibl-Eibesfeldt was born in Vienna on June 15th, 1928. Former President of ISHE, he is currently Professor Emeritus, Max-Planck-Institute for Behavioral Physiology, and still active as Head of the Film Archive for Human Ethology of

the Max-Planck-Society at Andechs, Germany and the Ludwig Boltzmann Institute for Urban Ethology in Vienna. From 1951 to 1970 he was a research associate of Konrad Lorenz. From 1970 to 1996 he was Head of the Research Group for Human Ethology in the Max Planck Society. An important aspect of his research has been the long-term study and filming of the social ecology of several different cultures including the San, Himba, Yanomami, Eipo, and Trobriand Islanders. This work over a span of more than a quarter century has provided a legacy of about 275 km of 16mm film from which over 200 documentary films have been published by the Encyclopedia cinematographica in Göttingen. Among his many publications are: *Ethology*, *The Biology of Behaviour* (1970, 1975), *Love and Hate* (1970, 1996), *The !Ko Bushman Society* (1972), *The Biology of Peace and War* (1979), *Human Ethology* (1989), and *Indoctrinability, Ideology, and Warfare* (1998) co:edited with Frank Salter.

The following interview took place over several days in mid February, 2000 in Andechs, just after Professor Eibl-Eibesfeldt and his wife, Lorle, celebrated their 50th wedding anniversary.

HEB: Ernst Mayr has commented that the major contribution of the leaders of biological thought has been the development and refinement of concepts and occasionally the elimination of erroneous ones. Evolutionary biology owes a remarkably large portion of its concepts to Charles Darwin, and ethology to Konrad Lorenz. I would add that Human Ethology owes a significant portion of its conceptual foundation to yourself. What are the key working concepts for present day human ethologists and have any concepts been discarded along the way?

EIBL: First of all, let's start with Konrad Lorenz whom I met just after he returned from Russia with

a manuscript of 750 pages written on cement sacks while he was a prisoner of war. This was in February 1948. But already before the war, Lorenz was internationally known for his theoretical contribution which already provided a foundation for a new science of animal behavior. In 1935, *The Kumpan in der Umwelt des Vogels* (The companion in the world of birds) was published. In this work the first overview of the field which was later to be called "ethology" was presented. Up to that time the study of instinct was linked to a kind of mystical enterprise. With Pavlov's introduction of stimulus-response learning, all of this was relegated to the behaviorist's black box, and for good reason. But eventually, Lorenz was able to force this black box open again by providing a scientific method and conceptualization that would go beyond radical behaviorism to provide a comprehensive theory of behavior. Although he recognized the validity of Pavlov's laws at a certain level, he never accepted such a limited view of the organism as a passive recipient of conditioning, a tabula rasa that had nothing inside the black box, just inputs and outputs.

And so he provided us with our working concepts. He introduced the terms, innate template (*angeborenes Schema*), in which knowledge about specific situations is encoded so that specific trigger stimuli (*Auslöser*) release instinctive actions or motor patterns (*Instinkthandlungen*). In collaboration with Tinbergen in 1938, the term fixed action pattern (*Instinktbewegung*) was introduced to distinguish them from behaviors that are more or less responsive to the presence of ongoing stimulation. This term led to much misunderstanding. What is fixed is the script of the muscle actions, but there can be variation in the intensity or speed of the behavior. You may write your name quickly or slowly, but I can still recognize your distinctive signature. In a later paper, Lorenz began to apply these concepts to the understanding of human perception and action. For example, he introduced the term Kinchenschema, which is now well known to all of us.

Here he already pointed out that his findings might be useful for understanding human behavior. One of the most important tasks of human ethology would be to check by the study of man whether or not the concepts he developed would be of any heuristic value to the study of human behavior.

When Lorenz came back after the war, I was very young. At that time I was living at a small biological station in the Viennese forest. Like

ranchers in the wild west, we were cutting trees in the forest in winter to fuel our stoves.

HEB: So you were back to nature before it became fashionable.

EIBL: (Laughs, then adds) Vienna in 1946 and 1947 was quite a place to live after the war with hunger and all that. The living conditions were poor, but exciting in many ways. As a student I joined a small staff of biologists working in the Viennese forest in a biological station founded by Otto Koenig. We lived in small barracks, scattered in the forest around a small lake. Hand reared herons would greet us when we passed. I was raising a small badger and animals were all over the place. With Lorenz's return the world re-opened for us and visitors came from all over the world; Julian Huxley was one of the first to arrive. In 1951 Lorenz received an invitation from the Max-Planck-Society to come to Germany and I was able to follow him as a research associate. Conditions in those days were still quite simple. For example, I was living in a bowling alley with my animals and with my wife, or with my wife and then my animals (laughter). But we were all in high spirits, and from all over the world people came. Eckhard Hess from the United States, then Lorenz' old friend, Nico Tinbergen, and we had lively discussions. But then in 1953 Danny Lehrman's critique of Lorenz' theory of instinct came out. Lehrman stated that one could never prove that something was innate, since one could never raise an animal in total isolation of environmental stimuli, which could act as potential "experiences". His critique turned out to make a very interesting contribution. since Lorenz was forced to think: How can I define the concept of innate positively, rather than solely in terms of the absence of learning?

Lehrman had quoted some experimental studies on nest-building in rats in a standardized test situation with papers and sticks; the rats carried them around but failed to build a nest. Now I *knew* rats and other rodents and I knew that they would never build a nest in a strange environment, they must first have a sleeping place. So I revised their experiment and I again provided the rats with shredded paper, but this time in their living cage where they had a sleeping place, and of course they built a nest. (recounts other similar experiments).

Finally, Lorenz wrote a response to Lehrman's critique which is still worth while to read. In his 1961 publication, which was translated into

English and published in 1965, as Evolution and modification of behavior, he gave the precise definition of instinct. His reply to Lehrman's critique was that the ethologists are primarily concerned with the phenomena of adaptedness. In order for adaptation to occur, information concerning features of conspecifics or of the environment toward which organism proves adapted, must have been acquired either during phylogeny or ontogeny. Whether this happened by the mechanism of mutation and selection or by learning can be tested by depriving an individual of patterned information relevant to its adaptation during ontogeny. Innate, then, refers to a particular level of adaptation.

Lorenz introduced the term phylogenetic adaptations, pointing out that these adaptations mirror facets of the external environment (including conspecifics) that impinge on the organism's fitness. Whether experience is needed or not for a particular adaptation can be checked by the deprivation experiment. If a mallard raised in complete social isolation nonetheless produces at sexual maturity all the highly specific courtship patterns, such as grunt-whistle, head-up-tail-up, nod-swimming, etc., we can conclude that the behavior at this level owes its specific patterning to the process of phylogenetic adaptation, since the relevant information to the patterning of behavior was completely absent in the environment in which the experimental animal was raised.

Then came a very interesting time since all the basic concepts were now in place. We now know down to the molecular level how the brain gets wired for its function during embryogenesis and how the growing axons of neurons, with their thread-like molecules in the growing tips show attachment to the nerve endings and are guided by chemoaffinity, to sniff out as it were, the endorgans and can find them even if they are translocated. In the now famous experiments of Roger Sperry, this was beautifully shown. For example, he transplanted a piece of skin from the back of a frog embryo to the abdomen. If one then tickles the frog on this transplanted piece of skin on its abdomen, it will scratch its back. Its fantastic! I mention all this, of course, since ethology inspired neurobiology in many ways and now a whole new field of neuroethology is flourishing.

HEB: Your anecdotes about Lorenz and his geese and jackdaws remind us that Lorenz's method was not detached observation of birds from a blind, but rather actual involvement in their lives, which

led him to basic discoveries that he otherwise would never have made, such as imprinting, a phenomenon of learning characterized by a sensitive period and irreversibility.

EIBL: Of course imprinting is a good example. It has now been shown exactly how this imprinting takes place at the neuronal level. It is learning by synaptic reduction. Wallhäusser and Scheich imprinted chicks to an object which emits a pure, rhythmic sound, just one tone. If you look at the neurons which process this stimuli, they knew, of course, in which area of the brain to look, then you find many spines on the dendrites, so to speak, many ears are listening. After imprinting most other synaptic connections to other neurons are melted down, that means that you have a receiver that is tuned to a perceptual range. If a natural sound by the mother is emitted then more synapses survive, since it is a richer spectrum. We also know how an innate releasing mechanism functions at a neuronal level. Its fantastic how you can find out how the different brain areas get determined by the genetic outfit and then determine behavior, and we know now quite a lot about this process. And so you can say that the basic concepts have proved valid - the concept of phylogenetic adaptations, the concept of innate learning disposition, etc.

After twenty years of animal ethology, I decided to write a textbook that covered the field. In this first textbook (Eibl-Eibesfeldt, 1967) I had a chapter on humans. I was now ready to begin my work on human ethology. I began experimenting in the early 60's with a life long friend of mine, Hans Hass. We had come to agree that we should make a film of human beings as an exercise. First, we thought we could get films from existing archives, but we soon found that films of social interaction in everyday life did not exist. There were only films of hut-building, weaving, pottery, etc., which is interesting but it doesn't cover the field. I wanted to know how mothers hug their children in different cultures, how people greet each other in different cultures and that sort of stuff. I also decided to study the deaf and blind-born. We made two trips to collect cross-cultural data on human social interaction using the reflex-mirror lens invented by Hans Hass in order to film natural interactions in an unobtrusive manner. This project eventually led to the establishment of an independent research institution of the Max-Planck Society which has kept me busy until now. The children that we started to film in 1969 are now adults and I have such longitudinal films in a number of cultures. I now have over 280km of 16mm film in five cultures

with longitudinal data, and samples of a number of other cultures as well. Of course, this is all well known and we need not elaborate.

HEB: Are any of the films edited toward an English-speaking audience?

EIBL: Not yet, but I wonder if maybe we should do it. We could do it.

HEB: This I think would make an important contribution to the study of culture in the English-speaking world. It is imperative, in order to establish human ethology, that we convince the skeptics who view culture as something completely relative and disconnected from nature. The films make such a convincing case that this view is fundamentally flawed. Your film archives have become world famous chiefly through the publication of sequences of frames in your books and articles as well as through many other authors like myself who use your photos to illustrate the eye brow flash, and other species-characteristic expressions.

EIBL: Yes, the films are published in German with the natural soundtrack translated and published in a printed text accompanying each film. And there is no doubt that there are many, many universals in human behavior. However, the critical experiments were conducted early on. The deaf and blind born did not just grimace, they smiled, laughed, they showed anger frowns, distress. All the basic expressions were there. My cross-cultural studies revealed then that these same expressions were present universally. The eyebrow flash which I discovered, for example, was initially questioned by Ekman, but it has come to be accepted as a species-wide display with little cultural variation. You see it all over the world.

But even more interesting are the cultural patterns, which on the surface look very different, but are based on the same rules of etiquette. This means that there are underlying rules of grammar for social behavior that are universal as, for example, display behaviors in greetings that involve both friendly and aggressive components. Among the Yanomami when an invited guest comes into a neighboring village the guest performs a dance in the open space surrounded by the huts of the villagers, but it's a war dance. Now in this display, the guest prances around with his bow and arrow and utters aggressive phrases like "With this bow and arrow, I am hungry for flesh", etc. But at the same time a small child is dancing with him and

waving green leaves. Now if you look at other cultures you may not find such a war dance as a greeting behavior, but if you look, for example, at what happens when in our culture a visitor of state comes, you will see that the military parade or a gun salute is a sign of respect, but at the same time it is a display of power, of strength. At the same time the visitor of state gets a bouquet of flowers presented by a lady or by a girl, so again you have the antithetical combination of an aggressive display and a friendly display. The display of arms is essentially affiliative, almost like saying: "Look we have guns, but we don't aim them at you".

Even in a personal greeting, like a handshake, a firm handshake is a display, and if someone gives you a hand like a dead chicken's foot, then you certainly have your odd feelings. In other instances, the handshake is a display of strength and vitality, we say friendly words, we smile, and so on. There is then a grammar of social interaction that is universal, but which can be elaborated in culturally diverse ways. For example, the object transfer is controlled by the norm of possession. First, if you own something then you can give it, and be friendly by giving. Second, if someone offers you something, you can accept it or you must provide reasons why you cannot accept it. Third, there is the reciprocity rule, you have at least to thank and later reciprocity of some form is expected. Even small children in a great variety of cultures that were filmed in interactions like this obey these basic rules. You see sometimes a breach of etiquette, that a boy tries to grasp something, but the pangs of conscience are also shown by his expressions. Even if the owner is weaker in a group of people that belong together, the argument that I had it first is convincing. Priority is of great importance in the norm of possession. Then he or she will generally give it back, and I have very nice documentation of this. Only if it is not a close member, or if the person is of higher rank, then he may take something, but then you have no friendly relation. You have to accept that something has been taken from you.

But if you have this universal grammar, you may ask why is there such cultural diversity, why this cultural pseudo-speciation by the elaboration of different rituals, as Erik Erikson said. Again you can ask what survival value does it have and how it contributes to inclusive fitness. Selection does not take place on just the individual level, on the level of close kin, but several levels of selection can be observed. Man lived originally in relatively small groups based on individual acquaintance. This is



the reason why evolution took place at such a rapid pace, since evolution works very fast when small groups engage in competition. However, there was a selection pressure which went in another direction against the small group. That means if you have two competing groups, the group that is able by certain social techniques to keep a larger group together will have the advantage. Normally bands of hunter-gather groups split when they reach a hundred people since they have no real leadership and individuals are fairly independent. But a larger group has an advantage since they can recruit more people for attack and defense. You observe then the formation of groups which get larger and larger.

In communities in New Guinea, the Eipo and their related dialect groups split up into valleys. In newly settled valleys, you find the local group, village against village. But if they have been established in a valley over a longer period of time, they form alliances and suddenly you find an identification with the whole valley community by means of cultural mechanisms which allow for the identification of the level of fictive kin. One mechanism is that the boys of the whole valley go through initiation rites and then this group of boys in a given cohort are considered brothers because

they have experienced something that binds them, much like school boys in our culture.

Furthermore you have a clan system. In clan exogamy kin networks are formed that binds the group together. Then, you have the myth of the common ancestor, that all members are of one blood. The cultural bringer is the ancestor of the whole group and inserted rocks in the mud so that the land could be cultivated, he is the common ancestor of all the clans further uniting them into a larger aggregate, the fatherland, etc. The result for all cultures is the understanding of a larger network of kin, the nation, those who share the same roots. So we tap into existing mechanisms.

HEB: An important theme in your recent work is that Homo Sapiens experienced selection pressure for ever larger groups because of conflict between groups, but at the same time they experienced selection pressure for more cohesion and cooperation within the group because they were getting larger. Human indoctrinability is one way to meet these dual selection pressures for cohesion in groups that go well beyond that maximum size of hunter-gather bands. Would you comment further on your concept of innate indoctrinability?

EIBL: Yes, indoctrinability has its roots in the mother-child bond, like all prosocial behaviors, in mammals and birds. In my book, *Love and Hate*, I pointed out that the original motivation for all nurturance came from the nurturant behaviors that we see in caretaking, grooming, feeding, etc. Second, with the evolution of individual parent-offspring bonds like we see in imprinting, we have the basis for evolving indoctrinability. Whenever such things take place in evolution, evolution takes advantage of them in an opportunistic way. Thus, in courtship these behaviors could be incorporated to form a bond between adults. You will observe that many nurturant behaviors such as courtship feeding, grooming, etc., often in a highly ritualized way, are used to establish a friendly bond.

In birds and mammals you have the recognition of individual offspring that often occurs during a sensitive period when the mother and newborn interact immediately after birth. In sheep, for instance, if you allow for mother-offspring contact for five minutes and then separate them for an hour and re-introduce the lamb with another strange lamb, the mother will reject the unfamiliar lamb but accept her own offspring. But if you allow no contact between mother and offspring and introduce the two lambs, one a genetic offspring, the other not, the mother will chase both of them away. What is the physiological mechanism? We know now that oxytocin plays a decisive role. This hormone is triggered when the newborn passes through the cervix and extends it and if you mechanically extend the cervix in a sheep which has never before given birth, then you can trigger the reflex. If you present a newborn to the nulliparous sheep, she will behave as if she was the mother. And you can repeat the experiments just described and she will accept her "offspring" and reject the unfamiliar lamb just like the biological parent. Similar mechanisms function in human beings too.

Provided with these mechanisms that allow for individual bonding, which is in a sense what we call love, since love is never anonymous but rather individualized. Thus, with this nurturance we were outfitted to develop a cultural family ethos which we extend to group members based on individual acquaintanceship, later creating symbols for group identification, clothing, hairstyles, etc. Closely related communities of pastoralists often develop the most fantastic hairstyles in order to set themselves off from the others. God knows in Africa they have these fantastic hairstyles!

HEB: In the United States too we have these fantastic hairstyles.

EIBL: Yes, yes, it is very interesting, which all shows that we are related and that we act in similar ways, driven by similar urges, such as the urge to distinguish ourselves from others. But the 'we' group, the human family, is able to grow by the development of cultural mechanisms that tap into existing familial ones. The mechanisms of indoctrination of symbol identification seem to have a special period for imprinting for the larger family, around puberty. On the one side this is positive, since it creates an emotional basis for solidarity. If you do not have this basis of solidarity, you have internal warfare within a large group involving ruthless competition which leads to reduced fitness vis-à-vis other groups.

If we can achieve peace in the world, then this type of identification would not be harmful. We could make agreements that from now on we stick to our territories. Compete in a civilized way, but not with arms anymore. Then you could have different cultures even within one state. Look at Switzerland, where you have four peoples, The French, Germans, Italians, and the Romanic. But you have them in different territories where they each have their own schools, their own laws, etc. What they share is a common economy and defense and foreign politics. In addition the living together with another culture is something very inspiring and its nice to have Italians being Italians in Italy, and the French being French in France, and Germans in German countries, and so on. This multi-cultural Europe is something unique.

HEB: Let me return to your concept of indoctrinability. You have explained its positive function, but it can become dysfunctional. What does this depend on? Can you elaborate further on the pivot point between functional and dysfunctional indoctrinability?

EIBL: That will depend on the world we live in, unfortunately. If we can get a worldwide agreement that domination of one ethnic group over another can securely be made impossible. Then we could achieve a state where we don't have enemies, common tasks would hold us together. In the past the common enemies served this unifying function, and for a long time in our history it worked like this, but there is no need for that to continue.

HEB: In a sense what you are saying is that humans must recognize their responsibilities, need to

recognize long term implications as opposed to short-term self interest. If you look at the problem of intervening between warring nations, for example, Chamberlain who was willing to appease because of the difficulty of moving his nation to war which was seen as a last resort. And so it is true today. If vital interests are not being jeopardized we seem to prefer remain on the sidelines with force even if genocide is being practiced. So in a sense, what you are requiring is human responsibility based on long term thinking or even perhaps a certain degree of altruism. Would you agree with this?

EIBL: I would agree with that. As far as altruism is concerned, I am not happy at all with Sociobiological terminology, after all altruism is something that we experience like pity and joy, etc., altruistic feelings are there. To say that they are not there because they are recast as genetically selfish is nonsense, since genes have no emotions. What actually takes place is that there is a selective advantage to be simply altruistic, to experience these feelings and act accordingly. The use of "catchy" terms just to be original is counterproductive since it promotes confusion, especially among those outside the discipline. Now if I speak to a cultural scientist about selfish genes he just stops talking to me.

What I feel is that we need to bridge the gap between the cultural and the biological sciences. And therefore we need to be careful with our language and not to be provocative, and to stick with the facts and avoid undue speculation.

HEB: There appears to be a major schism among evolutionary theorists who are attempting to address human issues. In your recent book, edited with Frank Salter, a number of papers make the claim that group selection has been an important force in shaping human evolution, particularly in the context of indoctrination and warfare. Ernst Mayr was also emphatic on this point in an interview less than a year ago with Bill Charlesworth. However, sociobiologists view group selection dogmatically as heresy or simply nonsense, and as a result altruism is always viewed with skepticism, as in the phrase "Scratch an altruist and a hypocrite bleeds". In other words there was always a "selfish gene" explanation for anything that looked altruistic and group selection was viewed as impossible.

EIBL: It was already in accord with proto-capitalism and this we now see in the world.

Solidarity to a group is despised and globalism is enhanced as something good and in reality it is sheer capitalism that is advanced without any form of civilization. We have had so far a social market economy in Europe but if you throw open this a social market economy it could be dangerous. If many people slide into misery then the stage is set for new revolutions, and one of the first things that will be endangered is liberal democracy.

Since people are fairly open to risks, we could say we human beings have an appetite for risks since we see this in so many activities, skiing, car racing hang-gliding, mountaineering, and how do you call it, yes, bungee jumping. But one threat human beings did not experience in most of our evolutionary history was this complete dependence on other people for subsistence. The hunter-gather stood on his own feet and had no division of labor, except between husband and wife. But the bushmen can never lose his job, he can make his hut, he can make his implements for the work, everything. Now nobody will doubt that in modern societies specialization and division of labor are prerequisites for a high standard of living. And we have to accept this and we can be happy that our species has achieved this spectacular progress in one century, from the first stuttering automobile to space travel, from the mechanical age to the electronic age. You are led to wonder what can such a species achieve in another thousand years, in another ten thousand years. Biologists think in different timescales.

But, of course, we have to face the very fact that our emotional outfit remains much the same as the hunter-gatherer. And emotions cannot be learned; you can teach a person whom to love and whom to hate, but you can never teach a person how to feel fear, how to feel hatred, how to feel love, anxiety, jealousy, and all that. That's our basic outfit. We have to face the fact that presidents with stone-age mentalities are now guiding superpowers, with all their bleeding hearts and girlfriends. Some of our phylogenetic adaptations are probably no longer adaptive, or even maladaptive in certain situations. But we are cultural beings from our nature and we can learn to civilize, to regulate our emotions. And we do it in all sorts of ways. In competition it is necessary to keep internal peace, ruthless competition is not the way. The pioneer way of simply pushing one's way through with one's elbows is still present. I think it is time to think it over.

HEB: Thank you very much.

ISHE Election Results

Congratulations to **Johan van der Dennen** on his election to the office of Vice-President/President-Elect of ISHE and to **Dori Lecroy** on her election as Treasurer. Both terms begin immediately for a period of three years.

The **15th Biennial Conference of the International Society for Human Ethology** will be held in Salamanca, Spain, August 9-13, 2000. Plenary speakers Jaak Panksepp, José Miguel Fernandez-Dols and Carol Worthman will be addressing the theme "ethology of emotion". See following page for complete preliminary program.

Transport to Salamanca:

From Madrid the easiest way is to take a rapid bus (Bus Expres) which makes the trip in about 2 hours. The cost of a return ticket is (at this moment) about 4.200 pesetas. The bus runs every hour. You can also take a train from Madrid to Salamanca, but it takes longer (about 3 hours), they run only four times a day, and are a little cheaper than the express bus. You can also hire a car at the airport. But in Salamanca it is not necessary to use a car, everything is within walking distance.

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ISHE 2000 CONFERENCE PROGRAM

Wednesday 9/8/00

- 15:30-17:30 Registration, set up posters
 17:30-18:00 Reception
 18:00-20:00 Welcome: Paco Abati
 Presidential Address: Linda Mealey "What? Me Worry?: Practical Problems in Ethology"
 Reply: Ullica Segerstrale "The Sociobiology Controversy: 25 Years"
 Reply: Tom Shellberg "No Prerequisites Please: Teaching Behavioral Biology"
 20:00-21:00 Officer's Meeting

Thursday 10/8/00

- 09:30-11:00 José Miguel Fernandez-Dols Plenary, Q & A
 11:00-11:30 BREAK
 11:30-13:30 Paper Session "Human Evolution: Brain, Body & Mind"
 Karl Grammar & Viktoria Keki "Human Gait as a Signal"
 Vasil Sarafis et al. "Human Copulation and Adipose Tissue"
 Frood Bourbour "The Role of Disease in Human Evolution"
 Bjørn Grinde "A Theory of Musical Appreciation"
 13:30-15:30 LUNCH
 15:30-17:30 Symposium "Ethology Research: Field Methods"
 Irenaus Eibl-Eibesfeldt "Filmed Field Documentation of Universal Patterns..."
 Wm Charlesworth "Studying Everyday Problem Solving Behavior: Field Observation..."
 Richard Wills "Field Studies as a Scientific Method"
 Discussion
 17:30-18:00 BREAK
 18:00-20:00 Poster Session
 C. M. Baenen and P. H. Perrine "Male and Female Mating Preferences ..."
 M Butovskaya et al. "Alms Giving in Ethological Perspective"
 M Butovskaya et al. "Negotiating Interpersonal Distance on Moscow Footpaths..."
 A Csathó & T Bereckei "Effects of Male's Status and Attractiveness on Direct Childcare"
 G Fauma & K Grammar "Dressed for Success: Personality and Dress Structures"
 B Fink & K Grammar "Skin Texture and Female Beauty"
 K Hirschenhauser et al. "Indications for Nonrandom Patterns of Androgens... in Men"
 A Juette & A Rikowski "Influence of Conception Risk... and Female Preference Patterns"
 K Kamelger & K Atzwanger "Walking Speed in Green Environments: New Data, Old Story"
 A Machura et al. "Status and Reproduction: ...The Maconde in Northern Mozambique"
 DK McBride & SL Tennyson "What's Up with the Hemlines"
 L Mealey "Human Testes Size, Sexual Dimorphism, and Mating System"
 L Mealey "Anorexia: A 'Losing' Strategy"
 L Mealey et al. "Facial Attractiveness, Symmetry, and the Handicap Principle"
 E Oberzaucher & K Grammar "Phytology: The Effect of Plants on ... Cognitive Processing"
 P Perrine "Human Mating Preferences: An Evolutionary Perspective on Sexual Orientation"
 P Rubin "Group Selection and the Limits to Altruism"
 JR Sanchez-Martin et al. "The Relationship Between Family Ecology and ... Behaviour..."
 S Schreiner et al. "Social Competence of Young Adults"
 N Segal & S Arad "... Perceived Social Closeness and Familiarity in Twins Reared Apart"
 B Streibel & K Grammar "The Impact of Human Movement on Social Perception"
 C Tafforin "The Ethological Approach of Man in Antarctica"
 B Tischler & K Atzwanger "Water - Source of Interaction?"
 21:00 ISHE DINNER

Friday 11/8/00

- 09:30-11:00 Carol Worthman Plenary, Q & A
 11:00-11:30 BREAK
 11:30-13:30 Symposium "Social Competence and Development"
 Peter LaFreniere "Social Competence and Behavior Evaluation (SCBE)...and Development"
 Jean Dumas et al. "Cross-Cultural Applications...of the SCBE"
 Marc Bigras et al. "Comparisons of Social Competence and Behavior...Preschoolers"
 Marina Butovskaya, Discussant
 13:30-15:30 LUNCH
 15:30-17:30 Paper Session "Friendships & Kinships"
 Marina Butovskaya "We Can't Bite Since We're Friends"
 Richard Rodgerson & Wm. Charlesworth "Relation Between Positive Affect... and Play"
 James Gall & Glenn Weisfeld "Olfaction-Mediated Recognition of and Preference for Kin"
 Percy Rhode et al. "Birth Order Differences in Family Sentiment...Russia and Spain"
 17:30-18:00 BREAK
 18:00-20:00 Paper Session "Complex Social Organization"
 Luis Calafate & Vilar Correia "An Ethological Observation...some Methodological Aspects"
 Julie Coultas "Social Influence and Mathematical Models...Behavior of Humans"
 Paul Rubin "Hierarchy"
 Arthur Squires "The Organization of Social Effort...Trajectory of Human Evolution"
 21:00 DINNER ON OWN

Saturday 12/8/00

- 09:30-11:00 Jaak Panksepp Plenary, Q & A
 11:00-11:30 BREAK
 11:30-13:30 Paper Session "Courtship & Bonding"
 Ricarda Müssig "From Monogamy back to Consortship?...Hoxgenes for Behavior"
 Linda Mealey & Roderick Whybird "Sociosexuality and Sociosexual Signaling"
 Carol Weisfeld "Sex Differences and Cultural Differences in Marital Satisfaction"
 Glenn Weisfeld "Marriage and Emotional Well-Being in Three Cultures"
 13:30-15:30 LUNCH
 15:30-17:30 Paper Session "Psychiatry I"
 Dori LeCroy "Psychoanalytic Constructs Considered...of Adaptive Behavior"
 Martin Brüne "Delusional Loving in an Evolutionary Perspective"
 Ada Lampert "The Evolution of Depression...Attachment First Detachment Later"
 Francisco Montanes-Rada "Machiavellian Intelligence and Personality Disorders"
 17:30-18:00 BREAK
 18:00-20:00 Paper Session "Psychiatry II"
 Elske Bos & Netty Bouhuys "The Relationship of Nonverbal Interpersonal Behavior..."
 Netty Bouhuys "Facial Perception and Its Relation to Depression Onset and Relapse"
 Erwin Geerts et al. "Nonverbal Coordination in Interactions...Patients and Interviewers"
 Russell Gardner "Observations in a Forensic Hospital Aided by R-Theory"
 21:00 ISHE BANQUET

Sun 13/8/00

- 09:30-11:00 Open Business Meeting

END

Edward Westermarck: An overlooked evolutionary social scientist

By Frank Salter

Max Planck Society, Andechs, Germany

The empirical and theoretical contributions made by the Finnish sociologist, philosopher and anthropologist Edward Westermarck (1862—1939) have been largely overlooked by the social sciences, the main exception being his theory of the origins of the incest taboo. Even on this topic, the Westermarck hypothesis was overshadowed for a generation by competing ideas proposed Freud and Durkheim, and backed by those scholars' superior skills at self-promotion, if not by empirical research. Of particular interest to human ethologists are those ideas of Westermarck that engaged the evolutionary approach. Finding such idea among Westermarck's writings does not require much selectivity. In the following essay I pay special attention to the way Westermarck linked universals of behaviour with institutions.

The incest taboo is a good starting point, since this part of Westermarck's thinking continues to be recognized among many evolutionary thinkers (e.g. Eibl-Eibesfeldt 1989, p. 262; Fox 1967; 1980; van den Berghe 1979; E. O. Wilson 1998). Westermarck began his analysis of the institution of the incest taboo by describing incest aversion in several cultures. He concluded that children who spend the first few years of life in intimate, familial contact develop an aversion to sexual contact later in life. In contemporary sociology, this would be described as the "micro" part of his argument. Westermarck added an evolutionary account of incest aversion, contending that it was an evolved mechanism protecting against the depressing effects of breeding between close kin. He then advanced a theory as to how this micro behaviour was linked to the institutional prohibition of incest found in all societies. First

he proposed a link between two micro-behaviours, between aversion (or approval) and the "moral emotions". Westermarck argued that among the other human emotions is a set of moral emotions that provide evaluative tags of disapproval and approval. The moral emotions have a universal element, in the sense that: "[They] differ from kindred non-moral emotions by their disinterestedness, apparent impartiality, and flavour of generality" (Westermarck 1917/1971, p. 739).

Like the other facets of human nature, the moral emotions have been shaped by natural and sexual selection and are everywhere the same. Consequently, there is a tendency for similar acts to evoke similar moral emotions, taking into account circumstance, including cultural influences.

Then came the "macro" part of his theory, with a proposed link between it and the micro behaviours of incest aversion and moral emotions. Westermarck's proposed link between micro and macro could not be simpler or bolder: prohibitions (and by extension, prescriptions) are instituted to enforce widely-held sentiments. Customs and laws follow nature. He states this conclusion in the case of incest:

[A]versions that are generally felt lead readily to moral disapproval and prohibitory customs and laws. This I take to be the fundamental cause of the prohibition of incest (Westermarck 1936/1970, p. 257).

Moral rules express the sentiment of the whole group, with a consensual basis. Westermarck believed that institutions followed from nature—*secundam naturam*, contradicting the view then in vogue that institutions suppressed human nature—*contra naturam*—proposed by Sigmund Freud and others. The latter asked: why make the effort to prohibit an act that never occurs? This question was at the forefront of criticisms of Westermarck's theory (Wolf 1993). An evolutionary explanation is straightforward, as offered by Eibl-Eibesfeldt:

Occasionally the innate aspect of certain norms is challenged with the remark that if this or that inhibition was innate it would not require any regulating laws. This has been the basis for arguing against an innate incest inhibition. What is overlooked is that variation also occurs in genetically determined characteristics. Behavioral deviations [may] need to be controlled (Eibl-Eibesfeldt 1989, p. 707).

Apart from Westermarck's theory of the incest taboo, and wide acceptance of his criticism of the promiscuity hypothesis of primitive sexuality, his works have been largely ignored for the better part of the century. I could find only a handful of articles discussing his work in a search of the *Social Sciences Abstracts* going back to their origin in the 1950s, and a search of the extensive card catalogue in the Munich State Library going back to 1911. Westermarck was largely ignored by social scientists by the middle part of the century. Even Chapple, whose great 1970 monograph on behavioural anthropology made use of such evolution-flavoured disciplines as ethology, primatology, behaviour genetics, physiology of emotions, and comparative psychology, made no use of Westermarck. There were also very few biologically-oriented sociologists of note during that period, an exception being Erving Goffman, but then only with respect to interpersonal gestures. Goffman was not engaged with Westermarck's ideas or with any aspect of evolutionary biology to any depth. One exception was Sir Arthur Keith (1947), an evolutionary anthropologist who referred not only to Westermarck concerning exogamy and marriage, but to his theory of moral ideas.

The situation hardly improved towards the end of the century. For example, the *Concise Oxford Dictionary of Sociology* (Marshall 1994; for critique see Salter 1996) barely discusses Westermarck's views on marriage beyond his "attempted" refutation of the thesis of primitive sexual promiscuity. While *The History of Human Marriage* is cited as being of historical interest (only), no mention is made of Westermarck's hypothesis of the evolutionary origin of incest avoidance, or even of his theory of institutionalization as exemplified by the incest taboo. Yet institutions are a major object of

sociological enquiry. The *Dictionary* would have benefited by using some of Westermarck's ideas in the entries dedicated to the sex differences, ontogeny, and the family. For example, there are no entries for 'hormones' or 'cross-species analysis'. The entry under 'heredity' manages to avoid stating that human development (or any trait for that matter) is genetically influenced. The entry under 'family, nuclear' barely mentions the biological view that families have a natural basis, before discussing alternate sociological theories such as that the nuclear family is an adaptation to industrial society, is a haven, and is a means for oppressing women. And in defining marriage, the *Dictionary* fails to mention that institution's reproductive function. The question, why do people marry?, does not canvas the possibility that providing a secure basis for child rearing is a prime function or concern. One must turn to Ashley Montagu's (1982) tribute to his late colleague to find a dismissal of Westermarck's achievements more contemptuous than that in *The Concise Oxford Dictionary of Sociology*. (Montagu's reminiscences of Westermarck were written in the context of several respectful treatments in a volume dedicated to him. But Montagu failed to discuss Westermarck's interest in evolution, his belonging to the tradition of Darwin, Spencer, and Radcliffe-Brown, or his original research and thinking. "Westermarck in his writings introduced nonrevolutionary ideas" (p. 69).)

As Knut Pipping (1982, p. 356) concludes, "some of Westermarck's sociologically most important contributions did not gain the acceptance which they . . . deserved." Yet, as I shall be presently arguing, Westermarck was ahead of his time in several respects that are more easily appreciated in light of evolutionary thinking that is now reemerging in the social sciences after a long eclipse.

Research with an ethological flavour

Much of the enduring contribution of Westermarck's sociology has an ethological orientation, benefiting from careful behavioural description, physiological reductive analysis, and evolutionary interpretation. This orientation bypassed the stultifying effect of Durkheim's dogma that helped cage sociology in hermetic circularity, according to which social phenomena are irreducible to psychology

(or biology). In defending his comparative method against criticisms from Durkheim, Westermarck argued thus:

They [the Durkheim school] have not sufficiently considered an extremely simple but extremely important fact, namely, that all the different ethnic groups belong to the same animal species and therefore must present resemblances which have a deeper foundation than all differences which are the effects of the social environment. . . . How could we otherwise distinguish that which is local from that which is general? Nay, how could we fully explain the social environment itself without taking into account the mental characteristics of the human species? (Westermarck 1921, Vol. I, pp. 17—18).

And:

The mental constitution of men is, in spite of all racial and individual differences, essentially similar everywhere. This is implied in the fact that they are members of the human species and is confirmed by their external behaviour. . . . [T]he mental facts that lead to the customs of peoples are not of a very subtle character. They are general instincts, sentiments, or emotions, or particular ideas, which, if still prevailing, ought to be accessible to a penetrating inquiry (Westermarck 1921, Vol. I, pp. 10—11).

Westermarck's method contradicted the Durkheim school by committing deliberate methodological reductionism. His method was also heavily inductive, a prudent strategy when theory is preliminary. His resort to animal analogies helped accomplish a "consilience of inductions" that, as evidence accumulated, established his theory of the nature and origins of incest aversion (Wolf 1993, p. 165). Consilient inductions offer powerful confirmation of hypotheses, according to William Whewell (1847) writing in the mid 19th century, because they are based on converging lines of independent evidence. (This idea is presently being revived by the sociobiologist E. O. Wilson in *Consilience* [1998], a belated antidote to the anti-inductivism popularized by Popper.)

Updating Westermarck's analysis of incest aversion, Wolf concludes thus:

Evidence from natural experiments in three different societies, from numerous studies of the conditions that encourage incest, and from both experimental and field studies of primates all conspire to enthrone one conclusion: early association inhibits sexual attraction (Wolf 1993, p. 165).

The concept of species-typical characteristics is clearly stated by Westermarck in his remarks about human universals, also a core theme in Charles Darwin's *The expression of the emotions in man and animals* (1872), though this text is not cited by Westermarck, even in his *The Origin and Development of the Moral Ideas* (1917). The omission jars with an otherwise Darwinian-evolutionary approach that attributes morality to the responses of "moral emotions". However, in the latter work Westermarck does cite Darwin's "Biographical Sketch of an Infant" published in 1877 in *Mind*. Westermarck was acutely aware of Darwin's theories of natural and sexual selection, and their application to humans. For example, he draws on Darwin to explain women's greater choosiness in mate choice (Westermarck 1921, Vol. I, p. 532). Westermarck's emphasis of species-typical characteristics means that his work overlaps that of modern ethology, as exemplified in the work of Tinbergen, Lorenz and von Frisch, and applied to the human species by Eibl-Eibesfeldt and others. Near the beginning of Westermarck's exposition of his theory of marriage he offers an extended discussion of cross-species contrasts of modes of mate choice and parenting (1921, Vol. I, pp. 28—37). "When we find in mankind a habit which it has in common with many other animal species, including those most nearly related to it, we naturally ask whether it may have a similar origin in all these cases" (Westermarck 1921, Vol. I, p. 53). The analysis is penetrating where the data of the day allowed, and is hampered only by the preliminary state of primatology on which Westermarck could draw in the early 20th century.

As noted earlier, Westermarck was also ahead of his time in his critique of the view that uncivilized peoples are sexually promiscuous (Chapter IV). His argument,

including the many ethnographic examples he marshalled to support it, dovetails with Derek Freeman's (1983; 1998) refutation of Margaret Mead's notorious *Coming of Age in Samoa* (1928/1961). Modern scholarship indicates that the existence of taboos and other social controls on sexuality are not Western aberrations, but a cross-cultural universal.

Westermarck's ideas about incest derived from a wider interest in the family, the progenitor of human sociality. His analysis did not stop at psychological and physiological causes, but extended to man's evolutionary history: "May we suppose that the more or less durable union between man and woman and the care which the man takes of the woman and their common offspring are due to instincts which were once necessary for the preservation of the human race?" (Westermarck 1921, Vol. I, p. 53). The main shortcoming of Westermarck's evolutionary theory is his assumption that selection occurs at the level of whole species, which is now rejected by most evolutionary theorists in favour of selection at the level of individuals (or genes). Modern evolutionary theorists recognize the importance of kin altruism, originally the mother-child bond but later paternal and sibling ties, as central to family dynamics (Eibl-Eibesfeldt 1972; 1989). The family has been the main engine room of social evolution. Perhaps the most significant theoretical breakthrough in formal evolutionary theory in this century is the concept of inclusive fitness, pioneered by the late William Hamilton. An individual's genetic fitness includes copies of his genes transmitted by other individuals, so that the individual's genetic interests extend beyond his own genome to those of kin, especially close kin (Hamilton 1964; and see Trivers 1972). The fact that individuals have a genetic stake in other individuals allowed for the evolution of higher levels of altruism and trust within families.

Also deserving recognition is Westermarck's comparative method. Although criticized by Durkheim as taking social data out of context, the method has been vindicated in anthropology, ethology and psychology by researchers who have made important discoveries about human behaviour by comparing cultures. Murdock (1968), for example, gained insights about social universals by tabulating data from a large number of cultures,

an undertaking that continues in the Human Relations Area File. Murdock explicitly denied the importance of culture as a holistic concept. Human ethology is also strongly reliant on anthropological data. Its field methods of comparing cultures and species parallel Westermarck's method. Darwin (1872) was perhaps the first to apply cross-cultural methods to the study of the emotions, and in this century the method has achieved what Westermarck predicted it would. In the study of emotions, we now know that all humans share a basic repertoire of emotions and emotional expressions carrying the same meaning—happiness, sadness, anger, fear, surprise, contempt, disgust (Hjortsjö 1970; Ekman and Friesen 1986). What does differ dramatically across cultures are the display rules that govern the emission of universally understood emotional signals, and the institutions that deploy those rules in the service of coordinated action (Salter 1995).

Culture-specific display rules are analogous to the mechanism postulated by Westermarck as causing different moral systems. His pioneering investigation of morality in diverse cultures led to his thesis of ethical relativism, consistent with modern liberalism. The moral sentiments are universal, but culture structures the release of approval and approbation in diverse ways by defining for each group the social categories towards which these sentiments are directed. As elsewhere in Westermarck's thinking, one glaring omission is a consideration of individual differences on which Darwinian theory is based, though this contributes to the politically correct flavour of his ideas. But not everything Westermarck pronounced was in line with modern liberal values. Feminists might not object to Westermarck (1936, p. 94) quoting with approval the opinion that: "[I]n men it is possible to trace a tendency to inflict pain, or the simulacrum of pain, on the women they love . . ." But many would feel at least a simulacrum of annoyance at his conclusion that ". . . it is still easier to trace in women a delight in experiencing physical pain when inflicted by a lover, and an eagerness to accept subjection to his will. Such a tendency is certainly normal."

There are many more examples that could be discussed, but space does not permit continuing in exhaustive Westermarckian style. Suffice it to

agree with Pipping's view (1982, p. 355) that Westermarck is important not because he had a large influence on sociological thought; Durkheim and Freud had much more influence, including on issues where they contradicted Westermarck. No, his importance lies in his being right or on the right track on several major theoretical and empirical issues, including those in which he contradicted Freud and Durkheim. Yet most of these good ideas were effectively lost to sociology and are only now seeping back.

Conclusion

Edward Westermarck elucidated links between the micro and macro aspects of social life, running against the trend of structuralism and other approaches that treated cultures as wholes. He connected institutions—such as the rule prohibiting incest—with the species-typical characteristics, an approach that is still fruitful, as we have seen in the link between spontaneous generosity and the welfare state. Westermarck thus made one of the earliest contributions to forging links between the micro- and macro-levels in sociology. The achievement was remarkable, and the ideas are still fresh. As Timothy Stroup (1982, p. xvi) has noted, "beneath the massive documentation is the outline of a unified theory of human behavior which even foreshadows the latest controversies over sociobiology. It is a theory bound by whatever the facts may ultimately reveal . . ." There is much truth in this, and undoubtedly the multidisciplinary empirical approach to sociology and ethics can lead where it may. Of course Westermarck's theories are subject to falsification. But so far many of Westermarck's hypotheses have stood the test of time and, as Stroup contended, some are back in vogue in the evolutionary sociology.

If Edward Westermarck were alive today he would, I imagine, be shocked at the slow growth curve traced by sociology during the sixty years since his death. But I believe he would be fascinated in and engaged with the new developments in evolutionary biology and see it as the way forward. No doubt he would be ethological in emphasizing cross-cultural universals and field observations, and would be well disposed to sociobiology and evolutionary psychology on the theoretical side. He would feel vindicated by the findings emerging from new methods. For example, recent developments

confirm the power of Darwinian theory of incest avoidance. Human female olfactory preferences seem to induce disassortative mating for components of the major histocompatibility complex (MHC) as in other mammals (Wedekind et al., 1995). By reflecting parts of an individual's genetic makeup, olfactory cues may thus be able to trigger an incest avoidance mechanism, adding another line of defence against inbreeding depression in addition to the famous Westermarck effect.

But above all, he would welcome the new wave of cross-disciplinary research that is making good on the promise of his own investigations, by approaching the study of family, emotions, and morality from the multiple vantage points of biology, the social sciences, and philosophy.

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Announcements

Intern'l Society for Ecological Psychology

June 23-24 at Clemson University in Clemson, SC. The meeting will be held at the Madren Conference Center. For more details, see:

<http://virtual.clemson.edu/groups/madren/>

This 2-day meeting will provide a variety of presentations including posters, papers, and invited speakers covering both basic and applied topics in the area of perception and action. A major theme of the meeting will be "applied issues in Ecological Psychology" (human factors, ergonomics, design, clinical issues, etc), but it is expected that much of the program will concern basic work.

Animal Social Complexity & Intelligence Conference

August 23-26, 2000

The Chicago Academy of Sciences (CAS), the Living Links Center (LLC) of Emory University, and the Jane Goodall Institute (JGI) have organized a major scientific conference entitled, "Animal Social Complexity and Intelligence" to be held at the new Peggy Notebaert Nature Museum in Chicago from August 23 through 26th. "<http://www.animalsocialcomplexity.org/>" for more information and on-line registration.

The first three days of the conference, will be dedicated to academic seminars and round-table discussions featuring the world's most prominent researchers in this area. The program also includes a paper and poster session for advanced graduate students and junior Ph. D.is. The fourth day of the conference, Saturday, August 26th, will feature discussions on the results of 40 years of research at Gombe. It is a special part of this conference dovetailing with the kickoff to a worldwide 40th anniversary celebration (HYPERLINK <http://www.janegoodall.org/> of Jane Goodall's long-term research on wild chimpanzees at Gombe National Park, Tanzania. Dr. Goodall, will also deliver a public address sponsored by the Chicago Academy of Sciences on Friday evening, August 25th.

Register on-line at :
<https://www.pshift.com/asc/registration.asp>

\$350 for non-students
\$225 for university and college students
Fees reduced to \$100 for students and \$225 for post-docs with accepted submissions (register at regular rate to reserve your spot, and we will bill you accordingly if your submission is accepted).

For more information contact:

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APLS/ESS Conference:

25 Years of Sociobiology: Time for Reflection.

August 31 to September 3, 2000, Wash. D.C.
For more details contact Vincent Falger at
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BOOK REVIEWS

Handbook of Human Symbolic Evolution

Edited by **Andrew Lock and Charles R. Peters**. Blackwell Publishers, 108 Cowley Road, Oxford OX4 1JF, UK, 1999, 930 pp. Pbk, \$49.95 ISBN 0-631-21690-1. First published in hdbk by Oxford University Press, 1996.

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A powerful argument can be made that the critical features separating us from other species are the ability and wont to create and use symbols of many kinds. The capacity to represent decontextualized knowledge and processes through symbolic means is utterly central to our humanness, it can be claimed. Therefore, it was with great eagerness and anticipation that I seized the opportunity to peruse this new paperback edition of a 1996 Handbook. In this review, I shall begin by listing the primary objectives of both the Handbook and the individual chapters before offering a brief commentary on the complete volume. Because of space limitations, I shall provide only a truncated analysis of the contents of this 930-page handbook and emphasize theoretical and sociocultural rather than biological themes.

According to the editors, the aim of the Handbook is to provide and evaluate "the basic knowledge and theory relevant to the evolutionary origin of human symbolic behaviour that has accumulated in scientific literature" (p. v). To this end, the Handbook comprises 28 chapters distributed among five parts. Comprehensive abstracts introduce most of the chapters, which also provide an abundance of helpful visually-oriented materials such as photogalleries, charts, diagrams, and photographs. The editors should be commended for their substantial efforts to establish linkages among the Handbook's various sections and

chapters. In addition to their introductions to all Parts except Part 1, they have inserted a variety of supplementary notes and references throughout the Handbook and have added editorial appendices to at least five chapters. In the 1999 Preface, the editors provide two websites that were intended to lead to chapter abstracts, links to emerging resources, and updated materials. However, when I checked, I found little or nothing: only a general abstract and a listing of the chapter titles and authors at the publisher's website.

Part I (Palaeoanthropology) consists of five chapters, of which the first is a photogallery of key fossil skulls discussed in the Handbook. Chapter 2 (B. Campbell) presents current knowledge and assumptions concerning human phylogeny, underlining that humans were the first species to modify their environments in significant ways. Chapter 3 (Waddell & Penny) presents the evolutionary trees of apes and humans based on studies of DNA sequences. Chapter 4 (Holloway) examines evolution of the human brain from research using comparative and palaeoneurological approaches. A key implication is that the evolution of social behaviour is seen to be inextricably linked with brain evolution. Chapter 5 (Marzke) addresses two other evolutionary features linked with developing capacities for symbolic behaviour: hands and bipedality.

Part II (Social and Socio-cultural Systems) is divided into two subparts: Comparative Perspectives (Chapters 6 to 8), and Palaeoanthropological Perspectives (Chapters 9 to 12). Chapter 6 (Jolly) focuses on primate communication, including the notion that deception accompanies the capacity for a theory of mind and the manipulation of abstract signs. Chapter 7 (Ingold) explores the differences between society and culture and the evolution of the latter concept in humans. Chapter 8 (Lock & Symes) reviews research on human nonverbal and linguistic communication. Chapter 9 (White) discusses the evolution of human sociocultural patterns, emphasising that ideas of culture have changed over time. Chapter 10 (Wynn) examines how tools and symbolic behaviour may have co-evolved over the past 2 million years. Chapter 11 (Conkey) presents developing interpretations of European palaeolithic art while cautioning us not to apply current views of art to ancient works.

Chapter 12, by the editors and several colleagues, presents a photogallery of hunter-gatherer rock art from Australia and South Africa.

Part III (Ontogeny and Symbolism) contains the next six chapters and a substantial 29-page editorial introduction. Chapter 13 (Sinha) offers a brief introduction to ontogenesis in human evolution and development. Chapter 14 (Gibson) continues the discussion of the ontogeny of brain, cognition, and language by arguing that human neural maturation seems to reflect limited recapitulation but not neoteny. On the issue of how much stone tools can inform us about linguistic capabilities, the author disagrees with Wynn (of Chapter 10) and calls for the adoption of a neo-Piagetian theoretical framework in future analyses. Chapter 15 (Messer & Collis) examines the ontogeny of communicative and cognitive processes and some attending implications for the acquisition of culture. Chapter 16 (Butterworth) outlines the relationship between language and thought and the resulting effects on cognition and culture. Chapter 17 (Sinha) provides key theories of symbolization and development as drawn from the disciplines of semiotics and psychology. Chapter 18 (Bremner) discusses children's drawings and their links, or lack thereof, to the evolution of art.

Part IV (Language Systems) includes a map gallery of the distribution and classification of existing human languages (Chapter 19). Chapter 20 (Deuchar) summarizes the main features of spoken and signed languages. Chapter 21 (Hewes) supports the gestural primacy hypothesis of language origins. Chapter 22 (Lock & Colombo) places cognitive abilities in a comparative perspective, with a special focus on research with monkeys and apes. Chapter 23 (Ristau) reviews the results and implications of the major language and cognition projects involving nonhumans. Chapter 24 (Johnson, Davis, & Macken) describes the central theories and data of language acquisition in particular and some attending implications for symbolic evolution in general. Chapter 25 (Foster) provides a description of the evolution of spoken language which, the author suggests, may one day be supplanted by visual communicative technologies. Chapter 26 (Rolfe) speculates that language as represented by grammar evolved

along with other facets of human cognition and culture. Finally, Chapter 27 (Barton & Hamilton) addresses the social and cognitive factors implicated in the development of writing. Part V consists of an Epilogue by Peters that offers a work-in-progress with the rationale for, and subsequent display of, four time charts concerning the evolution of symbolism.

The content of the chapters along with content that is absent raise important questions about theories of symbols and the nature of symbolism. In their Preface, the editors define symbol as "something that stands for, represents, or denotes something else, concrete, abstract, or immaterial, not by exact resemblance, but by vague suggestion or some conventional or accidental relation, for example, a gesture or a word; or a written character or mark used to represent something, such as a figure or sign conventionally standing for some object, process, quality, or condition" (p. vii). In my view, the editors have essentially defined the sign, of which the symbol is a special case, as enunciated by Charles Peirce (whose name is misspelled in Chapter 11). Although the author of Chapter 17 summarizes several aspects of Peirce's theory as drawn mainly from a 20-year-old secondary source, he states "although it would be satisfying to conclude the first part of this chapter by indicating an outline of a comprehensive theory of the sign (and language), the prospects for such a synthetic account are remote" (p. 489). Speaking to the contrary, I believe that Peirce realized his stated intention of about 1887 to outline such a theory. I support Santaella Braga's (1993, p. 406) assertion that "Peirce's analytical schemes may be incorporated by any individual science, discipline, or field of research, insofar as their subjects have an interpretive, communicative, or semiotic nature."

However, even if the symbol (rather than the Peircean sign) is taken as the object of attention, the Handbook follows conventional Western academic norms by focusing heavily on language. After opening with the famous 1865 statute of the Linguistic Society of Paris that forbade any communication dealing with the origin of language, the Handbook offers at least 10 chapters that highlight the evolution of human linguistic capacity. Two of the chapters refer to gesture, while three others address art.

Language certainly constitutes a central symbolic ability, but humans have evolved other capabilities as well. In the 40 pages of editorial appendices to Part IV, the editors implicitly acknowledge the narrow range of symbolic behaviour reflected in the Handbook, referring briefly to several other symbolic domains: numeracy (6 pages), music (2 pages), dance and choreography (1/4 page), and cartography (1/2 page). However, no attention is given to the symbolism inherent in a wide range of other human artifacts such as crosses, flags, statues, and architecture.

The editors claim that the Handbook's most notable omission is "the anthropological literature dealing with culture as a set of symbols" (p. viii). Nevertheless, several chapters refer to the importance of culture for symbolic development and both the editors and many of the authors offer tantalizing ideas about the possible links between cultural and human evolutions. In their introduction to Part II, the editors are frankly dismissive of "metaphors of inanity" (p. 159) such as the meme and culturgen. Later in the same introduction, however, the editors note the increasing tendency of a number of disciplines to adopt the view that "'cognitive processes' cannot be fully located within the individual, but may be partially 'embodied' in cultural practices and the symbol systems that enable these" (p. 162). In my opinion, the associations among memes, symbols, and cultural practices deserve a great deal of further exploration. Only Chapter 7 makes a serious effort to address memes in the context of symbols plus learning and teaching, although relevant implications occur elsewhere such as in Chapters 13 and 15.

These issues aside, the Handbook is a tour de force. It would be a wonderful addition to the personal libraries of those interested in the precursors to and current abilities in human symbolic domains, especially where language is concerned. Although cultural considerations are somewhat limited, classical studies on the biological bases of human evolution and symbol use are presented and often examined thoroughly from the perspectives of the mid-1990s. Although the multiple charts and illustrations alone are worth the purchase price, I consider many chapters in the Handbook to be essential

references for students and researchers working in this area.

Reference

Santaella Braga, L. (1993). Difficulties and strategies in applying Peirce's semiotics. *Semiotica*, 97, 401-410.

Erratum: The following information was inadvertently omitted from the review "A Trio of Books on the Human Face" by Thomas R. Alley published in The March HEB, 2000.

Two earlier books merit comparison to this new pair. The closest comparable book is Liggett's excellent The Human Face (1974). Liggett provides a well-illustrated and interdisciplinary approach to face perception but, of course, lacks coverage of the considerable amount of important work in the field that has been completed within the past 26 years. Reading Faces (Zebrowitz, 1997) has a different and narrower focus (on social perception). It would, however, make a good companion volume to any of the books reviewed herein.

Ignoring the variations in coverage, if you are only going to read one of the aforementioned books, BY98 is clearly the easiest to recommend; if you are going to buy just one, definitely get BY98. It is well worth the additional cost; and this may no longer be a consideration since a paperback edition is due out early this year.

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THE DECLINE OF MALES

By **Lionel Tiger**. Rutgers University. New Brunswick, New Jersey, U.S.A. 08903
 NY: Golden Books, 1999, 323p. [Hdbk, \$23.00, ISBN 0-58238-014-7].

Reviewed by **Wade C. Mackey**, Anthropology Department, Tomball College, Tomball, Texas 77375. E-mail: WADDMAC@aol.com

Lionel Tiger has written a book about gender roles. He encapsulates the thesis of the book thus: "...in mature industrial capitalism, the ascent of women and the descent of men is under way" (p. 67). Lionel Tiger has a long academic pedigree in bio-cultural anthropology including authoring *Men in Groups* (wherein the idea of male-male bonding was coined) and (with Robin Fox) *The Imperial Animal*; a book that helped human ethology reach a larger audience. It is probably accurate to note that even his staunchest critics would admit that he is a smart, well-read, articulate, and innovative behavioral scientist.

For this particular book, he has chosen to wear the hat of the commentator more so than that of the research scientist. He tests no hypotheses. No new data or theories are presented. Accordingly, the use of the book in the discipline of human ethology is limited. However, his comments are invariably well-presented, with much word play and metaphor, and he synthesizes the debate on gender relationships from the offerings of academics, the literati and the glitterati, e.g. there are 111 citations from the *New York Times* and 22 from the *Wall Street Journal*.

There are at least three facets of the book that are intriguing: (1) what he says, (2) what he does not say, and (3) the impact he may want to have upon the reader.

(1) What he says.

Using demographic data from mature, industrialized, capitalist nations, he documents (i) the increase of political, occupational, and educational achievements of women, (ii) the increased control of women upon their reproductive histories, and (iii) the increase in

single mother families. Conversely, he profiles (i) the relative loss of political, occupational, and educational advantages of men, (ii) men's loss of control of their reproductive options, and (iii) the decrease of men aligned with a woman-child dyad (i.e., the loss of married men).

Tiger is clear concerning his priorities: "We have already seen that women are achieving parity with men in many walks of life, which is as it should be" (p. 264). His sympathies lie with (non-solvent) single mothers: He refers to single mothers as the "Mother Courage" of modern society (p. 157). "Young women are strategically astute in making reproductive choices.... Then they respond to the economy with enlightened calculation about what will be to their reproductive advantage" (p. 169-170). "The players (single mothers) are dealt a hand of very poor cards. Yet they play them with skill and persistence" (p. 247).

Men are not cast in such a positive light. Tiger, the archangel of biological-evolutionary-anthropology defers to Margaret Mead — a dowager of *tabula rasa-ists* — who asserted that "Fatherhood is a human invention, and it has to be supported" (p. 130). Under the sub-heading *The Missing Weak Link*, he writes: "We have seen that the social invention of fatherhood is essential for the effective continuity of the human pattern. What happens when it becomes as frail a bulwark as it appears to have become?" (p. 134). That is, male-male bonding has a biological basis, but the father(to)child bond is a social invention. He continues: "The supportive bond between fathers and children is sharply unreliable compared with the bond between mothers and children" (p. 159).

Tiger documents the rise in out-of-wedlock births, and then carefully itemizes the decrease in the number of children per female: Quebec 1.5 children; English Canada 1.75; Japan 1.39 (p. 52), Spain, Germany, Portugal, Russia, Austria, and Bulgaria around 1.60 (p. 256) and Italy 1.19, which "will produce a nearly depopulated Italy in fifty years" (p. 256). (Note that 2.1 children per female is the minimum number of children for replacement value, as Tiger acknowledges on page 165.) Tiger enumerates the well-documented deficiencies that fatherless children experience when compared to children with an on-going social father (pp. 104, 166).

(2) What he does not say.

Tiger asks, "Are communities with low birth rates in some tangible, physical way different from more fertile ones?" (p. 104), but he does not answer his question. However, as he well knows, part of the answer entails differences in gender roles. Cultures practicing gender-complementarity (read: patriarchy) are invariably above replacement value, viz. Fundamentalist Moslem countries, the Amish, the Hutterites, the Hasidic Jews, the Mormons. Mature, industrialized capitalist countries practice gender-egalitarianism and are invariably below replacement value viz. virtually all of Europe, Japan, Unitarians. Across generations, any (sub)culture operating above replacement value will supplant or replace any (sub)culture operating below replacement value. That is, cultural evolution occurs. The more fertile groups replace the less fertile groups. Tiger's book analyzes a dysfunctional, non-competitive, breeding system; a system which cannot sustain itself across generations. The data he presents make that case.

Tiger intimates that single mothers are the responsibility of men. The Mothers Courageous are victims of feckless men. Yet men have no legal power at all, zero, vis-a-vis either abortions or out-of-wedlock births. Women, by a ratio of more than two to one are the petitioners for divorce. If a minor child is involved in a divorce situation, the man's tendency to divorce decreases and the woman's tendency increases. Tiger knows these statistics but does not convey them to the readers of this book.

(3) What is Tiger upto?

The Decline of Males (in mature, industrialized, capitalist countries) presents an interesting enigma. He documents a reproductive system that is not only non-competitive, but is dysfunctional. He lauds single mothers, but itemizes deficits of fatherless children. He writes of the biological biogrammar of the human condition -- except fatherhood (a social invention as announced by Margaret Mead). His time frame is only 50 years (1950-1999). He focuses on individual well-being, not on societal viability. The pieces of a larger puzzle are carefully given to the reader. Part of the charm of the book is why Tiger leaves the final assemblage of the puzzle to the reader.

The Psychology of Facial Expression

Edited by James A. Russell and José Fernández-Dols. Cambridge: Cambridge University Press & Paris: Editions de la Maison des Sciences de l'Homme, 1997.

Reviewed by Peter J. LaFreniere Department of Psychology, University of Maine, Orono, ME 04469, USA.

Why do so many scientists (myself included) persist in the erroneous and unfounded assumption that faces have anything at all to do with our emotions? When a child falls from a swing and grimaces and begins to cry it is nothing but a social signal; it certainly does not indicate that she may be feeling something inside. Or a smiling, laughing preschooler leaping for j-y on the playground is not expressing any emotion but merely signaling affiliative intent. Likewise the toddler who greets the caregiver with a broad smile of instant recognition, or who emits a piercing scream at her departure has no particular feeling attached to either event. A child who shows particular facial displays at the approach of a snarling dog, or a particular expression at the death of his pet, cannot be expressing any inner state - it is theoretically impossible, or at least unknowable and therefore irrelevant, according to this "State of the Art" book by Russell and Fernandez-Dols.

The book opens with a forward by Mandler who states that "the belief in such a link was not always thus in the past and that it need not be thus in the future" and declares "that the current predominance of the Tomkins-Izard-Ekman account of the meaning of facial expressions and their strong dependence on emotion started some 30 years ago, and 30 years is generally the lifetime of regnant psychological theories" (p. vii). Apparently the clock has not started ticking on Mandler's constructivist position put forth in *Mind and Emotion* (1975). In any event such musings can hardly be mistaken for a logical, empirically based argument.

I found the introductory section composed of chapters on the meaning of facial expressions (Russell and Fernandez-Dols) and methods for their study (Wagner) to be somewhat more informative. In chapter 1, the book's editors provide a useful, though at times biased, account of "The facial expression program" and in particular the debate regarding universality, and the link between emotion and facial expressions. Those familiar with Russell's previous critique (1994) will find little here that is new. Not surprisingly, the authors conclude that "There is now no evidence showing that, in a number of different societies, happy people smile, angry people frown, disgusted people wrinkle their noses, and so on" (p. 15). The link between emotion and facial expressions is similarly dismissed with little regard for empirical analysis. According to the authors, existing definitions of emotion (they cite only Izard's 1977 definition in terms of neurophysiological, behavioral, and subjective components) are so vague as to confuse squinting and chess moves with emotions. Thus, they recommend that "Perhaps "emotion" is a concept that could be dispensed with in scientific discourse ... and therefore it would have no role to play in the analysis of facial behavior" (p.19). I do hope they follow their own advice.

Other major problems that I had with this first chapter concern the revisionist history that is offered in which it is asserted that Darwin's The expression of emotions in man and animals (1872/1965) "could be taken to prefigure a dimensional at least as much as a categorical approach to emotion. (p. 6.)". In fact, Darwin's entire book and its organization is predicated upon a categorical account of discrete emotions, not as evidence against a social constructivist position, but as evidence for an evolutionary argument against the dominant paradigm (creationism) of Darwin's era. Russell and Fernandez-Dols go on to assert that "One of Darwin's less fortunate influences was methodological" (p. 7) since he used photographs of posed facial expressions as one component in a multi-methodological approach. Presumably, he should have used digital videotape analysis. For the record, let me reiterate briefly the methods Darwin used in 1878 "in order to acquire as a good a foundation as possible" to the study of expression (Darwin, 1878): careful observation of infants (a tradition that continues today as

exemplified by two outstanding chapters in this book), independent judgments of expression in photographs (which, of course, has expanded with spectacular advances in video technology since 1878), cross-cultural research (as exemplified by Eibl-Eibesfeldt, see interview in this issue), the study of expression in painting and sculpture, in psychiatric patients (e.g. Maclean, Damasio, LeDoux, etc), and of course, the comparative analysis of expression in different species (e.g. deWaal, Goodall, etc). So many of chapters of the recent Handbook of Emotions (Lewis & Haviland, 1993) begin with a tribute to Darwin's seminal impact, both theoretical and methodological, on diverse lines of research, that an objective and well informed scholar could hardly characterize his methodological influence as unfortunate.

In Part Two the reader gets some relief from this level of discussion in a series of three independent theoretical chapters. From Izard there is another brief summary of Differential Emotions Theory (DET); Frijda and Tcherkassof discuss facial expressions as modes of action readiness; and Fridlund presents his Behavioral Ecology perspective which should be quite familiar to most HEB readers.

Part Three examines more specific empirical work with a biological and/or developmental focus, including a comparison of animal sounds and human faces by Marler and Evans, naturalistic and lab studies of yawns, laughs, smiles, tickles, and talking by Provine; a neurobehavioral analysis of the recognition of facial expressions by infants by Nelson and De Haan; and a dynamic systems account of infant facial action by Messinger, Fogel, & Dickson. While space does not permit a detailed review of these chapters, I found them to be the most informative, data-driven discussions contained in this book. To the editor's credit some dissent from their social constructivist view is permitted within these chapters, though most are not at all preoccupied by this debate. Marler and Evans (p. 147), briefly take issue with Fridlund's Behavioral Ecology position and instead view "audience effects on animal signals as modulatory in nature rather than as primary motivators of expressive behavior." Thus they prefer Ekman's neurocultural model which postulates the existence of innate motivational

and emotional programs that can be modulated by social factors.

Part Four offers chapters with a "psychological and social focus" (though it is difficult to see how the preceding chapters are neither psychological nor social). Fernandez-Dols and Ruiz-Belda present their observations of spontaneous facial behavior during intense emotional experiences, such as winning an Olympic gold medal. They note that "smiling is a joint effect of an emotional experience and an interactive encounter" (p. 269), which they view as evidence for an "audience effect". Their studies do indeed provide convincing evidence for an audience effect, though they describe it correctly as a joint effect; Fridlund would not, since emotions are "unnecessary to understand how our facial expressions both evolved and operate in modern life." (p. 124). Similarly, in their discussion of meaning and context, Fernandez-Dols and Carroll also insist on an underlying emotional state and note that it may or may not be congruent with one's expression while experiencing the underlying emotion. In their analysis contextual information is crucial for interpreting the individual's underlying state. This position has much in common with current developmental perspectives on emotion. For example, in Sroufe's dynamic tension model (Sroufe, 1996), a dynamic threshold range for affective response is hypothesized in which tension is viewed as a natural by-product of actively engaging the environment. The critical feature of the tension model is that thresholds for inciting a given emotional response are not stationary but vary as a function of the meaning of an event in context. From the outside, the observer will be much more accurate in his inference of the other's emotional state, when meaning and context as perceived by the individual experiencing the emotion are taken into account. It is understood that one cannot rely on facial expression alone. I believe few active emotion researchers would disagree with such a position, though in practice many rely solely on facial expressions regardless of context.

Other chapters in Part Four include a componential analysis by Smith and Scott; another account of a dimensional-contextual perspective by Russell; faces as social communication by Chovil; and faces in dialogue by Bavelas and Chovil. Finally, the book

concludes with an integrative summary by Ginsburg, who does an admirable job of identifying common themes and issues across a disparate, and inconsistent set of chapters. That a book on facial expression and emotion would contain such a diversity of views is a sign of intense research activity on a complex and important topic, and a reminder that much work remains in constructing a truly comprehensive theory.

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Happiness:

What Studies on Twins Show Us About Nature, Nurture, and the Happiness Set Point

By Dr. David Lykken. Golden Books, New York, NY, USA, 1999, 279pp. [Hdbk, \$23.00, ISBN 1-58238-004-X].

Reviewed by Adrienne Quinn Washington, c/o Dr. Nancy Segal, California State University Fullerton, Department of Psychology (H830M), 800 N. State College Blvd., Fullerton, CA 92834. Email: adrienneqw@aol.com

Is there a genetic basis for happiness? If so, are we slaves to our genes, predestined to be as happy or unhappy as our biology dictates? Lykken wrote Happiness to disavow claims he made in a 1996 study (with Auke Tellegen) that "trying to be happier is like trying to be taller" because happiness is strongly influenced by genetics (as cited p. 3).

In this kinder, gentler tome, Lykken takes a much different and less bleak view of the potential for human happiness. Following an

introduction to evolutionary psychology and the biological basis for human traits, he examines happiness from a lifespan perspective, alternately explaining phenomena, reminiscing about his personal past, and giving advice. Lykken utilizes a conversational tone appropriate for a general audience not accustomed to ingesting empirical research but at the expense, perhaps, of some scientific rigor.

Part One, "The Heritability of Happiness" explores the genetic basis of happiness and proposes that it is an adaptive trait, passed down from our ancestors. We are a "happy breed," Lykken announces, in part because whatever genes contribute to happiness were favored by natural selection since, for example, happy people get sick less often and recover more quickly from illness. Using data from the famous Minnesota Study of Twins Reared Apart, Lykken makes a case for the existence of an individual "happiness set point" that is influenced almost exclusively by genetics. Part One concludes with the welcome news that almost anyone can learn to live above his or her happiness set point.

"Happiness Makers" explores the factors that influence whether we dwell above or below our set points. The unique human trait of effectance motivation (the desire to engage in constructive activity) is a primary source of happiness, as is the pursuit of good entertainment. In a chapter titled "The Epicure of Experience", Lykken takes a strange, yet charming detour through his own happy pleasures, offering up detailed descriptions of how to prepare beer bread and lemon meringue pie. With this, Lykken begins to personalize the topic and focus less on research and theory and more on experience and feeling. The chapter on labor, for example, involves a detailed description of the unique liberal arts college one of his sons attended, followed by a passage written by the son on what it takes to be happy in the workplace.

Part Three, "Happy Families", is truly an extended love letter about Lykken's own family, particularly his wife Harriet. "Happy Parents" focuses on the assertion that while parental influence on the behavior of their children in the outside world is not as strong as one might think, competent parenting is still crucial for the development, well-being and happiness of the child. Parents who maximize the individual

strengths of their children, while minimizing the effects of their disadvantages, will be happier in parenthood and will succeed in meeting the parental obligation of properly socializing their children. "Happy Babies" argues that a lack of rhythmic motion is detrimental to infants and devotes almost the entire chapter to singing the praises of cradles and other forms of baby rocking. All manner of nurturant mother-child contact is encouraged, from constant holding to breast-feeding to talking to and for the infant. The gold standard in all forms of parenting is Harriet, who is lionized as a near-perfect mother. "Happy Children" involves wistful recollections of Lykken's angelic children, soft-filtered by the passage of time and apparently unfettered by the constraints of direct recollection. Even with the often idealized trips down Memory Lane, Lykken gives some very useful advice and provides a great deal of food for thought on the topic of child-rearing in contemporary society.

Part Four examines issues of gender and how they relate to happiness. Refreshingly, Lykken asserts that there are differences between the sexes – differences in interests, in personality traits, and in happiness. While men and women have comparable happiness set points, women are more variable around the norm, experiencing higher highs and lower lows. He tackles love and marriage in Chapter 11, delving into the evolutionary roots of pair-bonding, the psychology of infatuation, and the development of companionate love. Interestingly, Lykken uses twin research to make a strong case for the notion that the targets of our affection are not as carefully and intentionally selected as we might like to believe; rather "Whom you fall in love with will be determined by whom you happened to be standing next to when Cupid's arrow strikes" (p. 198). Risk for divorce is shown to be genetically linked, and jealousy is discussed from an evolutionary perspective.

"The Thieves of Happiness" are singled out in Part Five; namely depression, fear and shyness, and anger and resentment. Lykken focuses on the biological basis of depression and urges medical/chemical treatment. Fear is seen through an evolutionary perspective (cf. discussion of stage fright on p. 226) and desensitizing methods are recommended. One

would never recognize Lykken as a behavior geneticist based on his comments about an angry friend being "reared by a mother very different" from his own, yet he goes on to make a strong case for a genetic influence on rage-readiness. He does an admirable job of reminding the reader that genetic influence does not lead directly to behavior – that genes are not destiny.

In "Happy Seniors" Lykken again wanders into the self-indulgent realm, his treatise on lie-detectors belying his assertion that he is ready to hand over the reins to his junior colleagues. He waxes philosophical about the fate of society's children and the destiny of his own grandchildren, lending support to the provocative idea of parental licensure requirements. Finally, Lykken closes with a nod to living wills, recommending "thanatoriums" where dying patients can spend their final hours bidding friends and loved ones goodbye while being medicated past the point of pain (p. 255). It is a rosy picture of fulfilling retirement and peaceful passing.

Overall, Lykken delivers a meandering, often bewildering but wholly endearing work. Attempts to classify Happiness prove maddening. Is it a how-to book? ... an academic offering? The answer is both and neither. Far from the research review implied by the title, Happiness is a societal editorial, a life journal, a loving family valentine. In the end, it becomes obvious that trying to categorize the book is unnecessary and counterproductive – rather, just read and enjoy it.

Editorial Note: In the Fall of 1999, Prof. Nancy Segal taught a graduate seminar on "Behavior Genetics and Evolutionary Psychology." One assignment was to read and prepare a book of David T. Lykken's new book on happiness. The preceding review was selected as the best. [T.R.A.]

Brief Reviews

New Aspects of Human Ethology

Edited by Schmitt, A., Atzwanger, K., Grammer, K., and Schäfer, K. New York and London: Plenum Press, 1997.

Reviewed by Peter LaFreniere, Department of Psychology, University of Maine, Orono, ME 04469, USA.

This collection of diverse essays reflects the current state of the field of human ethology quite well. There are descriptions of classical, observational research programs, new methodologies, speculative sociobiological analyses and hypothesis testing, evolutionary accounts of the origins of human language, reviews of behavior genetics and twin studies, and psychobiological research on hormonal influences on human behavior. In short, a turn-of-the-century look at the interdisciplinary foundations and new directions of human ethology.

The book begins with a personal history of the emergence of the discipline by Irenäus Eibl-Eibesfeldt who then comments on several promising new avenues of research especially an ethological analysis of cultural phenomena such as art, law, and urban designs. Glen Weisfeld follows with a Darwinian analyses of human emotions, arguing their phylogenetic basis and adaptive value. Peter Smith provides a review of his extensive research on the developmental and evolutionary function of rough-and-tumble play. Throughout these first three chapters, readers who are well versed in the canons of human ethology will be on familiar ground. Each in its own way emphasizes the importance of viewing human behavior from a comparative perspective and the need to assess adaptive function by naturalistic observation as a primary method.

The remaining chapters provide a sample of the diversity of orientations, methods, and subjects that may be included under the rubric "human ethology". Karl Sigmund provides a mathematician's account of game theory as

applied to the problem of cooperation, recalling earlier work by Axelrod. Robin Dunbar provides quantitative tests for his view that language evolved as a type of symbolic grooming in order to deal with the complexities and ambiguities of life in ever larger social groups. Grammer, Filova, and Feider provide an exciting glimpse into new methods of digital analysis of behavior designed to compliment and extend traditional methods of naturalistic observation. Thomas Bouchard reviews his landmark research on twins demonstrating the relative heritability of personality, psychopathology, intelligence, interests, and attitudes. Among some of his more intriguing empirical findings is the increase in heritability and decrease in common environmental influence as one ages. C. Sue Carter provides a critical review of the evidence linking sex steroids to human behavior. Finally, R. Robin Baker concludes the book with a chapter testing a number of hypotheses on human reproductive strategies from a sociobiological perspective. At first glance these chapters share little common ground, but each provides a succinct summary of a specialized research domain in very readable terms without sacrificing substance. Clearly, any human ethologist will profit, sometimes in unexpected ways, from reading such a masterful collection of essays.

New Books – June 2000

Ben-Ze'ev, A. (2000). The subtlety of emotions. MIT Press. 611p. ISBN: 0-262-024632 (hdbk). \$34.95

Hauser, M.D. & Konishi, M. (Eds.) (2000) The design of animal communication. MIT Press, 701p. ISBN: 0-262-1089277-2 (hdbk). \$65.00

Hardcastle, V. G. (2000) The Myth of Pain. MIT Press, 296p. ISBN: 0-262-08283-7 (cloth). \$65.00

Juarrero, A. (2000). Dynamics in Action: Intentional Behavior as a Complex System. MIT Press, 288p. ISBN: 0-10081-9 (hdbk). \$40.00

Johnson, V. S. (1999). Why We Feel: The Science of Human Emotion. Perseus Books. 224p. ISBN: 073820109x (hdbk). \$26

Klawans, H. L. (2000). Defending the Cavewoman: And Other Tales of Evolutionary Neurology. W. W. Norton & Co. 224p. ISBN: 0393048314 (hdbk). \$24.95

Lewis, T., Amini, F., & Lannon, R. (2000). A general theory of love. NY: Random House. 288p. ISBN: 0375503897 (pbk.). \$24.95

Segerstrale, U. (2000). Defenders of the truth: The battle for science in the sociobiology debate and beyond. Oxford University Press. 493p., ISBN 019-850505-1 (hdbk). \$35.

Sternberg, E. M. (2000). The Balance Within: The science connecting health and emotions. W.H. Freeman, ~240p. ISBN 0-7167-3479-6. \$24.95

Sunstein, C. R. (ed.) (2000). Behavioral Law & Economics. Cambridge University Press. 431p., ISBN 0-521-66743-7 (pbk). \$24.95

CURRENT LITERATURE

JUNE 2000

Compiled by Johan van der Dennen

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