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GHENT PROGRAM

Tuesday July 27

09:00-01:00 REGISTRATION

01:00-02:30 OPENING RECEPTION

02:30-03:30 PRESIDENTIAL ADDRESS AND OFFICERS' REPORTS

03:30-04:30 SYMPOSIUM: Linda Mealey: Remembering Her Life and Work I

- N. Segal: *Contributions of Twin Research to Human Behavior*
- J.A. Thomson: *Work of Linda Mealey: Implications for Clinical Research and Practice*
- E.M. Hill: *Life History Theory and Behavior Genetics: Linda Mealey's Unique Perspective*

04:30-05:00 BREAK

05:00-06:00 SYMPOSIUM: Linda Mealey: Remembering her Life and Work II

- R. Gardner: *Linda Mealey's Impact on Human Ethology*
- C.C. Weisfeld: *Sex Differences*
- Discussion

06:00-06:20 - E.G. Hammerstein: *Konrad Lorenz: His Youth Cannot Humiliate his Older Days*

Wednesday July 28

09:00-10:00 PLENARY: F. Abati & P. LaFreniere: *Sex Roles and Gender Socialization in Tribal Societies of Southwest Asia and Africa: A Film Lecture*

10:00-10:30 DISCUSSION / BREAK

10:30-01:00 PAPER SESSION: Mate Choice & Attractiveness

- A. Wilke (LMA): *Is Male Risk-Taking a Cue for Mate Choice?*
- T. Shellberg: *Tall Bishops and Geneflection Genes*
- I. Blantar: *Changes in Personal Attributes due to Facial Surgery*
- J. Havlicek: *Odour Attractiveness and Dominance: A Menstrual Cycle Phase Effect*
- M. Sergeant (LMA): *Sexual Orientation, Fertility and Body Odour*
- T. Pollett (LMA): *Sexual Selection as Mechanism for Conspicuous Consumption*
- M. Voracek: *2D:4D and Personality: Theoretical Considerations, New Data, and Research Synthesis*

01:00-02:30 LUNCH

02:30-04:30 PAPER SESSION: Love and Relationships

- M. Fisher: *Male Influences on Female Intrasexual Competition: A Preliminary Report*
- N. Hess (LMA): *Guy-Girls and Girl-Girls: Alternative Strategies in Female Competition?*
- B. Husarova (LMA): *Human Male Mate Guarding and its Link to Female Fertility Status*
- J.A. Thomson: *Do the Sexual Side-Effects of Serotonin-Enhancing Antidepressants Jeopardize Romantic Love and Marriage?*
- G.E. Weisfeld: *Humor and Marital Satisfaction in Four Cultures*

04:30-05:00 BREAK

05:00-06:20 SYMPOSIUM: Ethological Approaches to Literary Studies

- J. Carroll: *The Human Revolution and the Adaptive Function of Literature*
- D. Kruger: *Dad and Cad Mating Strategies in British Romantic Literature*
- D. Evans: *Sexual Display in Sports Poems*
- Discussion

06:20-06:40 - E. Dissanayake: *Art and Anxiety*

06:40-08:00 POSTER SESSION

- T.R. Alley: *The Book Review Process at the Human Ethology Bulletin*
- T.R. Alley: *The Eyewitness as an Observer: What Gets Reported?*
- J.H. Barkow: *Beyond the Popcorn: What Happens at the Movies in Evolutionary Perspective*
- J.O. Beahrs: *Hypnotic Interaction: Fundamental Unit of Human Culture*
- T. Bereczkei: *Sexual Imprinting in Human Mate Choice*
- C. Betsch: *Symmetry Preference in Unfamiliar Human Faces*
- U. Brüne-Cohrs: *Impairment of Theory of Mind and Self-Awareness in Neurodegenerative Dementia*
- L. Campbell: *Do Women's Faces Honestly Signal Long-Term Mate Quality to Men?*
- A. Cox: *New Directions in Spatial Ability Research*
- A. Demaret: *Ethological Aspects of Cigarette Smoking*
- V. Dorfman: *Sex Differences in Morphological Predictors of Attractiveness and Sexual Behavior*
- B. Fink: *The 'Big-Five' Personality Factors in Relation to Facial Asymmetry and Digit Ratio*
- M. Fisher: *Sex Differences in Guilt Arising from Infidelity*
- A. Fuerlinger: *Drawing an Artificial Line: Between Animals and Man*
- P. Gray: *Age-Mixed Play as a Natural Foundation for Education*
- J. Hanusova: *Influence of Latent Toxoplasmosis on Behaviour of Men and Women*
- E.M. Hill: *Environmental Unpredictability, Future Discounting, and Risk-Taking*
- G. Medicus: *Towards a Theory of Interdisciplinarity*
- R. Müssig: *Homo Delineans. Why People Like to Draw: A Contribution to Archeo-Ethology*
- E. Oberzaucher: *What Makes Our True Friends What They Are?*
- A. Oldenquist: *The Evolution of Morality*
- Y. Pardo: *Machismo and Mate Guarding in Mexican Couples*
- J. Plusnin: *Territory for Dominance - Territory for Subordinate*

- A. Putilov: *Evolutionary Psychological Explanation of Seasonal Depression*
- S.K. Sanderson: *IQ and the Wealth of Nations: A Re-analysis of Lynn and Vanhanen's Data*
- J.A. Thomson: *Captain Robert Fitzroy's Darwinian Depression*
- R. Trnka: *Comparative Analysis of Facial Expressional Elements in Human and Chimpanzee*
- H. Vermeersch: *What Lies Beneath: A Biosocial Analysis of Self-Control Theory*
- M. Vitakova: *Decrease of TCI Factor Novelty Seeking in Subjects Infected with Cytomegalovirus and Toxoplasma*

Thursday July 29

09:00-10:00 PLENARY: A. Mazur: *Biosociology of Dominance and Deference*

10:00-10:30 DISCUSSION / BREAK

10:30-01:00 PAPER SESSION: Social Behavior

- E. Boyko: *Physiological and Behavioral Aspects of Peacemaking in Children*
- P.A. Corning: *The Phenomenology of Fairness*
- J.M.G. van der Dennen: *Our Reptilian Brain and Ritual Display Behavior; Ethological Aspects of Human Ritual Behavior in Psychopathology, Threat Display, and Ritualized Combat*
- C. De Backer (LMA): *Making Love and War. Strategies to become a Tabloid Star*
- E. Oberzaucher: *The Choice of Friends - Movement Quality as a Decision Criterion*
- J.P. Rushton: *A Twin Study of Best Friends*
- C. Tafforin: *Ethological Analysis of Pain Expression in Woman*

01:00-02:30 LUNCH

02:30-03:30 PAPER SESSION: Facial Expressions

- A. Gaspar: *Facial Action and Social Attraction in Chimpanzees, Bonobos and Humans*
- K. Grammer: *Explorations in Facial Expression Simulation*
- M. Mehu (LMA): *Smile in Naturally Occurring Human Interactions*

03:30-04:30 PAPER SESSION: Cognition

- B. Ruso (LMA): *Age and Gender Differences in the Behavioural Response to Discrete Environmental Stimuli*
- T. Kuppens (LMA): *Race Categorisation and Stereotyping in the Framework of Human Evolutionary Biology*
- O. Schepina (LMA): *Strategies of Behavior in Ambiguity Situation*

04:30-05:00 BREAK

05:00-06:40 SYMPOSIUM: Socialization for In-group Identity

- W. Charlesworth: *Group Identity in Terms of Socialization, Economic, and Reproductive Strategies of Gypsy, Amish, and Intentional Communities*
- J. Cvoric: *Socialization for In-group Identity among Serbian Gypsies*
- K. MacDonald: *Socialization for In-group Identity among Assyrians in the United States*
- W. Schiefenhövel: *In-Group/Out-Group Ideology in Traditional New Guinean Societies*
- Discussion

06:40-07:20 PAPER SESSION: Nepotism

- F. Salter: *The Successful Application of the Ethological Theory of Ethnic Nepotism in Contemporary Societies*
- T. Vanhanen: *Domestic Violent Conflicts*

08:00 BANQUET

Friday July 30

09:00-10:00 PLENARY: A. Campbell: *Gender, Aggression and the 'Feeling' of an Adaptation*

10:00-10:30 DISCUSSION / BREAK

10:30-11:30 PAPER SESSION: Fitness, Genes, & Heritability

- L.M. Goos: *Measuring the Influence of Genomic Imprinting on Human Brain Development via Intra-Familial Correlations: Theoretical Implications*

- M. Butovskaya: *Trauma Down the Generation: Fitness and Survival*
- P.A. Rohde: *The Maladaptiveness of Modern Fertility Decisions*
- 11:30-01:00 PLENARY: F. Plooij: *Age-Linked Periods of Regression, Conflict, Vulnerability and New Skills in Human Infancy: Hierarchical Reorganization of Perceptual Control*
- 01:00-02:30 LUNCH
- 02:30-04:30 PAPER SESSION: Language and Communication
 - D.W. Ploog: *On the Evolution of Speech: Vocal Behavior Versus Gestures*
 - R. Allott: *Evolution of Language - Motor Aspects*
 - J. Locke: *An Ontogenetic Approach to the Evolution of Human Language*
 - U. Griebel: *A Comparative Perspective on Contextual Freedom in Communication*
 - D.K. Oller: *Foundations of Human Communication: Vocal and Emotional Expression in the First Six Months*
- 04:30-05:00 BREAK
- 05:00-07:00 SYMPOSIUM: Evolutionary Psychopathology
 - W. Schiefenhövel: *Ritualized Vomiting: The Disgust Face*
 - J. Price: *Apppeasement Displays at three Levels of the Triune Brain*
 - E. Geerts: *Convergence of Behaviour and Satisfaction with an Interaction in Depressed Subjects*
 - R. Gardner: *Ethology and Manic Communicational States*
 - M. Brüne: *Evolution of Language: Theory of Mind and Pragmatics in Schizophrenia*
 - Discussion
- 07:00 GENERAL ASSEMBLY

LMA ... Applicant for the Linda Mealey Award (= Young Investigator Award)

About Ghent:

Ghent is one of Western Europe's most attractive historical cities, known for its excellent gourmet dining and extensive cultural life. Its university was founded in 1817 and is one of the largest universities in the Low Countries. The city is located 55 km to the west of Brussels, covers 156 sq. km of which 36 sq. km is port area. It is the second largest city of the region 'Flanders', and the third centre in Belgium. Ghent is the core city of a metropolitan area of 515,000 inhabitants; 290,000 people live in the villages of the Ghent commuting belt outside the city limits. Every day, 35,000 people commute to Ghent.

The city combines an impressive past with a vivid present. In summer, Ghent is visited by tourists from all over the world. The historic heart of the city offers a lot of places of interest. From St Michael's bridge there is a wonderful view on the skyline of Ghent with the three impressive towers of St Nicholas' Church, the Belfry with its bell tower and St Bavo's cathedral with the world famous painting "The

Adoration of the Mystic Lamb" by Jan van Eyck. Traces of the Middle Ages were preserved at a lot of places. The old port with its guild halls on the Graslei and Korenlei is merely one example of the beautiful views this town has to offer. Not far from the Graslei arises the Castle of the Counts, once the medieval fortress of the Count of Flanders. Ghent can be discovered by boat, carriage, bicycle or on foot.

The official language in Ghent is Dutch but most people also speak French, English and/or German. The Belgian currency unit is the euro. There are exchange offices and banks in the city centre, credit cards are accepted in most places.

Transport

International air travellers usually arrive at Brussels International Airport. From there, a regular train service connects to Ghent, either at Ghent St-Pieters or at Ghent Dampoort railway station. Visitors to the city center take trains to Ghent St.-Pieters. The conference venue is located in the city center, as are the hotels.

Conference Lodging

The meeting will take place at the Sofitel Gent Belfort, Hoogpoort 53 B-9000 Gent. Through Sofitel, we reserved 50 rooms at the IBIS Kathedraal Hotel at two minutes walking distance from the conference venue. We obtained a special conference discount, rooms here are 95 EURO single room, breakfast included. In addition, 20 rooms are reserved at the NOVOTEL hotel, next to the Sofitel. Here too, room rates are discounted at 127 EURO single room, breakfast included. These rooms are reserved on a first come, first serve basis. Both the conference location as the hotels suggested here for lodging are right in the middle of the historic city center. Lodging at university dormitories will also be offered later on, as well as contact details for other hotels.

Room reservations can be made directly at the hotel:

Sofitel Gent Belfort
Hoogpoort 53
B-9000 Gent
Belgium
Phone: + 32.(0)9. 233.33.31
Fax: + 32.(0)9. 233.11.02

Novotel Gent Centrum

Goudenleeuwplein 5
Gent 9000, Belgium

Property Summary

117 rooms. 4 stories. Built in 1986. Renovated in 1996. In the very heart of the historic centre, next to the city-hall, the Belfry, St-Bavo's cathedral, museums and shops.

Credit Cards Accepted

Visa, American Express, Diners Club, Eurocard

Check In/Check Out

12:00 / NOON / 12:00 / NOON

Deposit and Cancellation Policy

A credit card is required to book online. Cancellation policies may vary due to availability and rate booked. When making reservations, please read the rate rules given immediately after selecting a specific rate.

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Offers 120 modern rooms, all equipped with color TV, telephone, radio, bathroom
4 rooms equipped for wheelchair users
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Elaborate buffet breakfast
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Located in the historical center of the city, right next to the cathedral
Ideally situated for your discovery of the medieval heart of Flanders, its monuments and musea
Pubs, restaurants and shops within walking distance

Location

**Limburgstraat 2
9000 Gent**

General information about Ghent can be obtained from:

Tourist Office City of Ghent Administration

Predikherenlei 2
B-9000 Ghent
Tel. +32 (0)9 225 36 41
Fax +32 (0)9 225.62.88
E-mail toerisme@gent.be

Inquiry desk

Crypt of the Belfry
Botermarkt 17A
B-9000 Ghent
Tel. +32 (0)9 266 52 32
Tel. +32 (0)9 266 52 33
Tel. +32 (0)9 266 52 34

For more information about Ghent see:

www.gent.be/gent/english/index.htm

Or contact the ISHE conference organizer:

kristiaan.thienpont@ugent.be

Registration for ISHE 2004
 17th Biennial conference of the
 International Society of Human
 Ethology
 Ghent, Belgium
 July 27 to 30, 2004

Total Fee due:

Registration fee =
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 Coach =
 Total Amount Due:

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Credit card information:

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 Credit Card Number:

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 Signature:

Registration fee:

After April 1st:

MEMBER: US\$ 325.
 NON-MEMBER: US\$ 360. (includes one year membership)
 STUDENT: US\$ 220.

Registration includes a welcome reception on Tuesday 27th, morning and afternoon coffee at the conference location, and lunches on Wednesday, Thursday and Friday.

Send payment to

Dori LeCroy
ISHE treasurer
PO Box 418
Nyack
N.Y. 10960
USA
DoriLeCroy@aol.com

Banquet registration fee (optional): US\$ 50.

For more information on the conference visit:
www.psw.ugent.be/bevolk/ishe2004

Coach service Berlin-Ghent:

Participants at the HBES meeting in Berlin may take advantage of a coach service that takes them from city center Berlin to city center Ghent, so they can join both meetings without having to make travel arrangements between Berlin and Ghent. ISHE offers this service at a special rate of US\$ 50,- per person, conditional upon the number of passengers (50 is the absolute minimum) and date of enrolment.

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BOOK REVIEWS

Does intelligence result from social complexity?

Animal Social Complexity: Intelligence, Culture, and Individualized Societies

Edited by Frans B.M. de Waal and Peter L. Tyack. Harvard University Press: Cambridge, MA & London, England, 2003, 616p. ISBN 0-674-00929-0 [Hdbk US\$49.95].

Reviewed by Pouwel Slurink, Lijsterbesstraat 98, 6523 JW Nijmegen, the Netherlands. pouwelslurink@hetnet.nl.

Which animals have the biggest brains on earth? To what extent do hunting chimpanzees anticipate each other's moves? Why do female spotted hyenas have such large 'penises'? How do some killer whales learn to catch sea lions lying on the beach? If these questions arouse your interest, you should certainly get a copy of *Animal Social Complexity*. Be prepared, however, for a book that is like a small library itself and one that will free you of some illusions about human uniqueness. Perhaps we are the most intelligent species on earth, living in the most complicated societies and exhibiting the longest learning period and the most elaborate cultures, but certainly we are not the only intelligent species, nor the only one living in complex societies, or passing on cultural habits. For everyone who has read this book, the idea that intelligent beings on other planets, if they exist, are necessarily bipedal naked apes that only differ from us by having pointed ears, pieces of scaly skin, and/or a lack of emotions (think of *Star Trek*) must be absurd. Instead of searching for alien intelligence on other planets we can better try to decipher the behavior and communication of intelligent animals on this planet (and, of course, protect them).

This book is based on a large conference held in Chicago in 2000 that brought together

ethologists working with a variety of relatively intelligent animals from different taxa, all of which happen to live in relatively complex societies (in contrast to simple herds, schools, etc). This conference tried to overcome the tendency of the researchers of these different groups to isolate themselves and view their own study animals somewhat myopically. According to the editors, primatologists, bird researchers, marine mammalogists, and others, all have their own traditions, conferences and journals, making it difficult to make theoretical generalizations that transcend a particular group. Like the conference on which it is based, this book attempts to bridge the gaps that have arisen and to bring together insights about the structure and evolution of the cognitive abilities of some of the most intelligent animals on earth.

Initially, you may be overwhelmed by the sheer number of different perspectives and research topics in the 18 chapters and 13 case studies. The book covers both theoretical as well as purely empirical approaches relating to social complexity in species as different as parrots, bats, hyenas, dolphins, sperm whales, and chimpanzees. It is organized in five parts: "Life History and Brain Evolution", "Evolution of Cooperative Strategies", "Social Cognition", "Communication", and "Cultural Transmission". While each part is properly introduced, I often needed some time to understand the links between the papers and the way in which they are ordered and bound together by a particular theme. I can imagine that it would be helpful for students if the book was accompanied by a seminar that helped order one's thoughts.

Part I, "Life History and Brain Evolution" starts with a critical evaluation of the theory that cognitive evolution in primates and in mammals generally is driven by the need for social strategizing (Carel van Schaik and Robert Deaner, "Life History and Cognitive Evolution in Primates"). The authors claim that this "Machiavellian intelligence" hypothesis is based both on the use of necessarily imprecise proxies for intelligence (brain size, neocortex size, or some kind of encephalization quotient) and for social complexity (group size). While brain size *does* correlate with group size in some cases, there are a number of instances in which both factors do *not* correlate (home range is a better neocortex

predictor than group size). Van Schaik and Deaner conclude that it is too early to decide that social strategizing is the only, or major, selective pressure on cognitive evolution. They subsequently focus on factors relating to life history and in their data on primates links between longevity and intelligence, and between longevity (life history) and arboreality. "Both arboreality and the ability to fly reduce mortality and slow life history. Overall, animals that are off the ground have slower life history, most likely because they face lower mortality risks. Thus the relative encephalization of the earliest primates can be attributed to the fact that they were one of the few arboreal mammalian radiations (16-7)." The authors conclude that life history acts as a filter: the same selective pressure will lead to enhanced cognition, and hence enlarged brain size, in a species with slow history, but not in an otherwise identical species with fast life history.

The editors have placed this theoretical essay together with two essays on dolphins (Chapter 2, Randall Wells: "Dolphin Social Complexity") and elephants (Chapter 3, Katy Payne: "Sources of Social Complexity in Three Elephant Species") respectively, to enable the reader to judge for himself what the likely mechanisms for brain evolution in these species were. It is clear that longevity and intelligence in these species go together, but that does not go for sea turtles. Dolphins also have very complex social lives in which the calves stay with their mothers for a long period in nursery groups and elephants seem to need their legendary memories both for extensive maps of their enormous home ranges (up to 3,000 km²) and for accumulating social experience (the matriarchs seem to be "wise").

In Part II the organizing theme is the "Evolution of Cooperative Strategies". Christophe Boesch's chapter on "Complex Cooperation among Tai Chimpanzees" shows that in this extraordinary population of chimpanzees from western Africa, the survival of the group depends on cooperation. As in human hunter-gatherers, individual group members are dependent on the food acquisition skills of others to gain access to rich foods that are either hard to acquire, such as meat, or hard to process, such as nuts. Male chimpanzees over eight years of age consistently secure more meat than they consume. This meat

surplus is distributed within the group: younger males and females of all ages receive a share. Males eat a mean of 186 grams of meat a day, females only 25 grams. Contrary to human hunter-gatherers, some female chimpanzees participate in hunting. In the case of the nuts, it is the females that produce more than they can consume, while the males only consume what they produce (they do not share). Adult females use the surplus of nuts cracked to provide for their young. Tai chimpanzees are the only chimpanzees known to share food that is acquired through the use of tools.

Boesch also gives some remarkable details about the hunting strategies of the chimpanzees from Tai forest. Red Colobus monkeys are their favorite prey. In hunting, each chimpanzee can play the role of driver, chaser, blocker, or ambusher. Older chimpanzees are better able to anticipate. "Full" or even "double" anticipation can only be demonstrated in chimpanzees with more than 20 years of hunting experience. In territorial encounters, the strategy which is chosen (attack, patrol, avoid) depends on the force ratios between parties. While cooperation in hunting seems to be unique to the chimpanzees of Tai, and is at least not observed in Gombe and Mahale (both eastern Africa; compare Nishida in Chapter 15), cooperation is required everywhere where chimpanzees defend their territories. It should thus be stressed that the habits of the chimpanzees of Tai forest are to some extent unique: they demonstrate how in isolated populations higher levels of cooperation may evolve that via gene-culture coevolution could even affect the evolution of mind.

Another example of the evolution of cooperation is afforded by the white-faced capuchins studied by Susan Perry (Case Study 4A: Coalitionary Aggression in White-Faced Capuchins). These New World Monkeys, which were studied in Costa Rica, show a tendency to form what she calls "pseudo-coalitions" all the time; that is, coalitions against non-conspecifics like frogs, insects, or primatologists. By forming such a pseudo-coalition a subdominant individual can often avoid displacement from a feeding site by a dominant individual at some later time. Coordinating aggression plays an important role in the social system of capuchins and a group may even prevent immigration of foreign males into the group (who may commit

infanticide or the eviction of resident males). This essay shows that the roots of our tendency to form coalitions are probably much older than the split between Old World and New World Monkeys. Eduardo Ottoni and Massimo Mannu's report of "Spontaneous Use of Tools by Semifree-ranging Capuchin Monkeys" (Case Study 16A) shows that the same may go for our talent to use tools: the authors observed tufted capuchin monkeys from Brazil while they were cracking nuts with stones.

Christine Drea and Laurence Frank (Chapter 5: "The Social Complexity of Spotted Hyenas") show how spotted hyenas are forced to cooperate to be able to hunt relatively large prey, yet have to compete fiercely to get their share of the booty. This aggressive competition for a share of the meat may have resulted in some of the extraordinary characteristics of the species in which females are highly masculinized, both behaviorally and morphologically (the large clitoris can get the size of a male penis) and in which a dominance hierarchy plays a large role (lower-ranking individuals getting only a small part of the booty). Intelligent as the species may be, table manners do not belong to their repertoire and they only need a few minutes to be able to consume a carcass completely, including bones. Drea and Frank show that a high social rank pays both for females, which have better access to resources, as well as for males, who have more mating opportunities. This is why striving for dominance is an evolutionary stable strategy.

Mutual dependence seems to have a completely different background in sperm whales (Case Study 6A: Sarah Mesnick *et al.*, "Sperm Whale Social Structure: Why it Takes a Village to Raise a Child"). Sperm whales have to make long feeding dives to depths (over one kilometer!) where their calves cannot follow and the ultimate reason that females stay together could be that they can dive alternately while the group defends the calves against possible attacks from sharks or killer whales. Whitehead (Chapter 17: "Society and Culture in the Deep and Open Ocean: The Sperm Whale and other Cetaceans") also mentions the possibility that sperm whales learn from each other about prey distribution and location and can even herd prey together (the most common prey being squid). He also succeeds in communicating some of his

enthusiasm for these large creatures with the largest brains on earth.

The mechanisms behind the cooperative talents of dolphins seem to be even more complex (Chapter 2 by R. Wells; Case Study 4B by Richard Connor and Michael Krützen; Chapter 13 by Peter Tyack). In bottlenose dolphins, males and females have different reasons to be social. Males have long term companions or "friends" which may increase their feeding efficiency and safety. Research from Shark Bay, Australia, suggest that these alliances of males may also arise, because only a group of males is able to "capture" a female and force her to stay some time with them. Females and calves live in their own groups, in which they benefit from each other: They can learn from their mothers, can enjoy allomaternal care, and perhaps get mutual protection from aggressive males. A third type of dolphin group consists of older juveniles of mixed sex, comparable to non-breeding adolescents in other species, including humans.

Part III on "Social Cognition" contains three theoretical studies of which at least two seem to reflect a theoretical dispute about the level of mental complexity behind social cognition with some reminiscences of the debates about behaviorism. Robert Seyfarth and Dorothy Cheney claim in "The Structure of Social Knowledge in Monkeys" (Chapter 8) that to be able to process the enormous amount of necessary knowledge about each other's dyadic and triadic relationships, referring to both kinship and dominance, they must be innately predisposed to "chunk" the stream of social information in a way that enables them to distill a tree of hierarchical classes. I assume that they mean that animal minds are shaped by gene-society coevolution to enable them to capture the socially relevant categories of the particular societies in which they have dwelt most of their evolutionary histories. For primates, hierarchy plays obviously such an important role that it is even hard to transcend the limits of hierarchical labeling in a scientific community. Anyway, I find it strange that some ethologists, including those with which Seyfarth and Cheney are in dispute (Chapter 7: Schusterman, Kastak & Kastak: "Equivalence Classification as an Approach to Social Knowledge: From Sea Lions to Simians"), still seem to have difficulty accepting the complexity

of learning mechanisms and innate "structures of experience". If wings and flippers are delicately adapted to the medium through which they have to propel an animal, why would the energetically expensive brain with which it maneuvers itself through complex social contexts only be endowed with some simple learning mechanisms?

Part III also contains a somewhat speculative but very inspiring essay by one of the editors (Frans de Waal: "Social Syntax: The If-Then Structure of Social Problem Solving"), who seems to be an even more radical proponent of an (albeit flexible) "adapted mind". De Waal speculates (perhaps influenced by Calvin & Bickerton, 2000) that the mental mechanism that enables primates to solve problems in a complex social environment, in which each choice has to be a compromise between "giving and taking", is akin to the mechanism which orders symbols in the hierarchical tree-like structures of human language. He tries to establish a link between social cognition and social skills and the emergence of language by referring to what he calls the "if-then structure" of social knowledge. It seems easier to me to hypothesize that the cognitive modules underlying human language, in which reality is primarily structured as a series of actions between subjects, may have originated in modules which still enable a plurality of primate species to structure their social environment. If our minds are indeed "social coping instruments" to such an extent, it is, of course, no wonder that "primitive" man tended to understand the forces of nature as the expression of the motives, personalities and idiosyncracies of invisible individuals hiding themselves behind our horizons. Whether this is true or not, it is a fact that speaking is an ultrasocial activity in which partners are taking turns in the emissions of signals and (often valuable) information. Language can only have evolved in an ultrasocial context in which there is trust and reciprocity, in short: cooperation.

The context in which communication and language evolves is also discussed in Part IV on "Communication". There one can find a case study (11A by Hallberg, Nelson & Boysen: "Representational Vocal Signaling in the Chimpanzee") which seems to suggest that referential communication systems may evolve to transmit information referring to food types. This

study demonstrates that the foodbarks of chimpanzees at least contain some information referring to the nutritional value of the food. Most studies in Part IV, however, try to find a link between vocal and social complexity in species as diverse as parrots, bats, and dolphins. In bats, vocal complexity can sometimes be understood as a result of sexual selection. In relatively large colonies infant isolation calls are relatively complex, too (Chapter 12, Gerald Wilkinson: "Social and Vocal Complexity in Bats"). In some species of parrots (e.g., bugarigars), the loud contact calls of pairs and even flocks seem to converge, apparently indicating familiarity. Yellownaped Amazons do even know discrete dialects and birds living near the dialect boundaries are often bilingual "producing either type of contact call as needed, but never melding them" (p. 309; Chapter 11, Jack Bradbury: "Vocal Communication in Wild Parrots"). In some species, different flocks come together at night roosts or at specific food patches and have to split again afterwards: contact calls seems to help them to stay in their own group, but they may also acquire the contact call of another group and move between groups. Thus, vocal learning is important in a context where it pays for birds to move between groups, which is the case if each group maintains its own knowledge about the environment (called "socially acquired habitat lore" by Bradbury).

Social and vocal complexity are clearly linked in dolphins. One only need to remember the three different social groups in which they live to understand that it pays for them to "communicate about individual-specific social relationships" (Chapter 13, Peter Tyack: "Dolphins Communicate about Social Relationships"). Because calves are both precocious and dependent on their mothers for a relatively long time, the mother-offspring recognition system has to be excellent. The signature whistle that they produce within this context also functions as a contact call between females. Dolphins show an astonishing ability to imitate sounds that are similar to their own whistles; thus it seems that signature whistles are not inherited but acquired. The whistles of male calves are often similar to that of their mother, while female calves develop more distinctive sounds. At the moment that males form alliances their signature whistles are starting to converge,

however, as if to show to each other that they belong together. Dolphins also produce a variety of other sounds, similar to whistles, of which the function is not always clear. When they are in each other's vicinity they may produce whistles similar to the other's signature whistle as if they are calling each other. It is still too early to conclude, however, that their communication system can be understood as a *referential* system (in which a signature whistle for "John" is used in different sentences like "Hi, John" or "John, there is some fish over there").

The fifth and last part of the book is about "Cultural Transmission". In the first two chapters, the Japanese primatologist Imanishi is honored as the first to acknowledge that some animals have culture in the sense of behavior or information that passes from generation to generation in a non-genetic way. Tetsuro Matsuzawa (Chapter 14: "Koshima Monkeys and Bossou Chimpanzees: Long-Term Research on Culture in Nonhuman Primates") summarizes what is known about the cultural evolution of the habit of sweet-potato washing by Japanese monkeys on the island of Koshima, Japan, and about the nut-cracking behavior of chimpanzees at Bossou, Guinea, West Africa. Toshisada Nishida (Chapter 15: "Individuality and Flexibility of Cultural Behavior Patterns in Chimpanzees") gives an overview of the habits of chimpanzees at Mahale (Tanzania), which he compares with the cultural traditions of the chimpanzees of Gombe, which live only 135 kilometres away in a similar ecological situation, but which have many completely different cultural traditions. Nishida stresses the importance of what he calls low-fidelity information transmission, in which cultural habits are passed on, but not copied exactly, from generation to generation. Quite shockingly and amusingly, he confesses that he does not know how to use chopsticks according to the official Japanese tradition, although he manages to pick up small food items using chopsticks. In the same way chimpanzees are not always exactly copying each other's behavior. Culture and individual variations on cultural traditions go hand in hand, and that is probably one of the causes of cultural evolution.

Another cause is explored in an interesting case study on "Sex Differences in Termite Fishing among Gombe Chimpanzees" by Pandolfi, van

Schaik, and Pusey (Case Study 15A). They demonstrate that female chimpanzees at Gombe usually (in November things go differently) spend more time on fishing for termites than males, because termite fishing is done most efficiently alone and males give more priority to activities which can be combined with social activities, ultimately to compete for access to females. They suggest that there may be more primates which display sexual differences in food choice resulting from the fact that males have to compete with males for sexual opportunities, while females just avoid feeding competition with other females. "Perhaps even the sexual division of labor that we see in humans is primarily a product of socioecological differences between the sexes" (p. 418).

In his "Ten Dispatches from the Chimpanzee Culture Wars" (Chapter 16), William McGrew suggests that one of the functions of culture in chimpanzees may be the creation of a social identity for a community. The sharing of cultural habits may remind chimpanzees of a group of the fact that they belong together, just as it works for humans. But why would chimpanzees need such a social identity? I wonder whether the need for such a group identity does not result from intergroup competition.

After this string of primatological papers it is refreshing to take a dive again and examine some sea mammals. Whitehead (Chapter 17) gives a series of interesting examples of cetacean culture: for example, the song of the humpback whale which is transmitted with "high fidelity" (in the terminology of Nishida) within one ocean, but which differs from ocean to ocean. "In 1997, the singers off the east coast of Australia in the South Pacific basin unanimously abandoned their own song type and adopted an Indian Ocean type originally sung by a few 'minstrel' whales from Australia's west coast, the only documented case of a 'revolution' in a nonhuman culture" (p. 455). Whitehead himself studied sperm whales in which he found that groups share a series of vocalizations, which might be understood as a tradition. He even claims that such traditions (or traditions about feeding strategies) have genetic repercussions in the sense that the reproductive success of sperm whales of a particular tradition may have the byproduct of spreading that

cultural tradition as well. He considers this "cultural hitchhiking" to be one form of gene-culture coevolution.

Another talented cetacean species is the killer whale, which is discussed in Case Study 17A: "Do Killer Whales Have Culture?" by Harald Yurk. Some populations of killer whales have learned to catch sea lions by almost washing themselves ashore where the sea lions are lying on the beach. Other populations have different tactics, still apart from the fact that some populations mainly feed on fish, while others eat sea mammals. Such differences in habits between pods of killer whales, including the differences in their vocal repertoires, give rise to the notion that different populations of killer whales have different cultural traditions. Does this imply, however, that culture is transmitted intentionally? The fact that some of the killer whales that catch sea lions from the shore are accompanied by their young while doing so suggests that the habit is learned by imitation. One time it was even observed that a killer whale female pushed her calve onto the beach, suggesting intentional teaching. Yet, according to Yurk we are still far away from decisive proof that something like intentional teaching is going on.

In a final chapter the song talents of cowbirds and starlings are discussed (Chapter 18: West, King & White: "Discovering Culture in Birds: The Role of Learning and Development"). I can watch and hear starlings right from my home. Although the starlings that I can hear here imitate the songs of other species, even species that do not live nearby, they do not imitate humans as do the domesticated starlings described by West, King and White. These starlings seemed to imitate especially the humans which with they interacted and the authors propose that starlings preferentially imitate sounds that reflect social knowledge. (The starlings in my neighborhood also seem to bluff about their geographical knowledge). The cowbirds that they studied tested their songs on females and looked for subtle signs of their approval or disapproval, just as this sometimes happens in human adolescents that are showing off. West, King and White conclude that culture is not simply passed on from generation to generation, but is acquired, tested, and modified each generation, and thus reflects real needs and interests. With that, the

poverty of the belief in culture as just a pool of memes is demonstrated.

In summary, this book is an important contribution to our knowledge of intelligence and culture in non-human species. For the human ethologist it may work as a good reminder that there are many dimensions in which our species is not as unique as sometimes claimed. Directly relevant to the understanding of continuities between humans and apes is the study of Jan van Hooff and Signe Preuschoft about the evolution of laughter and smiling (Chapter 10: "Laughter & Smiling: The Intertwining of Nature and Culture"). They argue convincingly that smiling evolved from an expression of fearful submission, whereas laughter evolved in the context of joyful play. This study shows that it pays to understand humans as primates. Other studies show that humans are an extreme case of tendencies also displayed in many other species. Although the book does not give a final answer to the question that I used as a title for this review, it suggests at least that a complex social environment is one of the most important factors causing the evolution of intelligence.

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Calvin, W.H., & Bickerton, D. (2000). *Lingua ex Machina: Reconciling Darwin and Chomsky with the Human Brain*. Cambridge, MA: MIT Press.

Pouwel Slurink is a philosopher trained at the Catholic University of Nijmegen (to be renamed Radboud University in 2004), the Netherlands. He has written a book and papers on evolutionary naturalism and on the evolution of culture in a series of Dutch as well as international journals. In 2002 he published *Why Some Apes Became Humans: Competition, Consciousness, and Culture*. Currently he is preparing a course on philosophy and evolutionary psychology to be given at Radboud University.

A Devil's Chaplain: Reflections on Hope, Lies, Science and Love

By **Richard Dawkins**. Houghton Mifflin (215 Park Avenue South, New York, NY 10003), 2003, 263p. ISBN: 0-618-33540-4. [Hdbk., US\$24.00]

Reviewed by **W.C. McGrew**, Depts. of Anthropology & Zoology, Miami University, Oxford, OH 45056. [mcgrewwc@muohio.edu]

For his seventh book, Richard Dawkins has used a new format and content. The key is in the subtitle: These reflections are 32 pieces that range from eulogies to introductions to other person's books to substantial book chapters from earlier anthologies to an open letter to his (then) 10 year-old daughter. Of the four objects of reflection, there is a lot more on science and lies than on hope and love. These writings are spread over seven topical sections of great heterogeneity, and originate from the past 25 years (but most are from the last 5 years). Although all the work is by Dawkins, the volume was edited by Latha Menon, which may explain some of its inconsistency. Happily, each of the sections and its contents are introduced by Dawkins, who often supplies autobiographical context. There are 144 helpful end notes.

As Charles Simonji Professor of the Public Understanding of Science at Oxford, Dawkins presumably has wide terms of reference to comment on any and all aspects of science in the public arena, no matter how controversial. This he does, as he has always done, clearly and incisively. He does not shrink from calling a spade a spade, whether that implement be genetic engineering, jury trials, postmodernism, political correctness or, most tellingly, institutionalized religion.

Thankfully, the book is worth buying just for the 18 essays comprising its first three sections. The first section explains the book's title, a phrase coined by Darwin in reference to Nature's complex self-contradictions. Section 1, *Science and Sensibility*, is a ringing defense of science, as it is beset from various directions in

this post-modern world. It is wickedly devastating in tackling woolly-mindedness. Section 2, *Light Will Be Thrown*, focuses more specifically on evolutionary theory and the wondrous developments in modern genetics, all tied together by Darwinism. Section 3, *The Infected Mind*, is Dawkins at his most pointed, sometimes even caustic, in taking on the malignance of the world's most destructive three religions, Christianity, Islam and Judaism. The self-proclaimed atheist pulls no punches, and some essays, especially the one written just after 11 September, 2001, will disturb some readers.

The following four sections are considerably weaker: Heartfelt eulogies (e.g., to Douglas Adams, author of *A Hitchhiker's Guide to the Universe*); a strange quintet to do with a "beloved enemy" (my quotation marks), Stephen Jay Gould; African miscellanea (inexplicable trivia, perhaps page filler?); and the admirable closing letter to his daughter Juliet. A cynic might say that this last piece is meant to send us away with an image of a softer, warmer Dawkins, versus the uncompromising firebrand of the earlier sections.

Optional exercise for sharp-eyed readers: Keep count of the number of Dawkins' post-graduate cohorts at Oxford who manage to get included in the book. (There are at least five.)

In sum, Dawkins is the finest evolutionary essayist now writing, bar none. Even if you ignore the book's second half, the purchase price is money well spent.

W.C. McGrew is Professor of Anthropology and Zoology at Miami University (Ohio). He holds Ph.D.s from the Universities of Oxford (England) and Stirling (Scotland) and is a fellow of The Royal Society of Edinburgh. He studies mostly the socio-ecology and ethology of wild chimpanzees.

Touch

By **Tiffany Field**. MIT Press, Cambridge, MA [<http://mitpress.mit.edu>], 2003, 193pp. ISBN 0-521-77030-0 [Pbk \$12.95]. [The original, hardcover edition was published in 2001.]

Reviewed by **Peter Gray**, Department of Psychology, Boston College, Chestnut Hill, MA 02467. E-mail: grayp@bc.edu

Tiffany Field, Director of the Touch Research Institutes at the University of Miami School of Medicine, is a leading touch researcher. She is particularly known for her pioneering work, published in the 1980s, showing that daily massage dramatically improves the growth and health of prematurely born human infants. Since then, she and her colleagues have published roughly 100 further studies that reveal benefits of touch and massage for people of all ages and as treatment for a wide range of medical and psychological disorders.

In this brief book, *Touch*, Field provides a non-technical introduction to touch as a sensory system and, especially, to the benefits of massage therapies. Touch, she argues, is the most neglected sense in Western cultures, particularly in North American culture. It is neglected in our daily living, in medical treatments, and as a topic of scientific research. Field overviews the evidence for the extensive use of touch and massage as medical treatment and comfort in non-Western cultures and in earlier times in the West. She argues that the advent of modern drug therapies led us to forget about the value of touch, which researchers are now beginning to rediscover. She also points out that in recent times – in misguided reaction to incidents of sexual abuse – we have become even more a touch-taboo culture than we were two or three decades ago. She points, for example, to preschools where teachers are forbidden, for fear of lawsuits, to hug and cuddle young children even when they are hurt.

The book summarizes many experiments showing benefits of massage for a wide variety of conditions. Included are findings concerning the value of massage for preventing premature births; promoting growth of premature infants; calming and improving the social behavior of autistic children (who don't like cuddling, but do like deep massage); improving the school performance of ADHD adolescents; relieving pain that derives from a wide variety sources; overcoming sleep difficulties; facilitating on-the-job alertness of hospital workers; reducing

neuromuscular problems associated with Down's syndrome, cerebral palsy, multiple sclerosis, and spinal cord injury; improving immune reactions in healthy college students and in HIV-positive patients; and treating such disorders as depression, anxiety, PTSD, anorexia, bulimia, drug addictions, asthma, and dermatitis. The book also summarizes, briefly and uncritically, a wide variety of massage treatment methods.

The book is a mixture of advocacy and literature review. As advocacy, it presents a compelling case for increasing the use of social touch and massage in our daily lives and in medical treatment. As literature review, it does a good job of summarizing the positive findings concerning benefits of touch and massage, but does not present the methodological details and critical discussions that would be necessary to convince an appropriately skeptical reader. Field does provide references to all of the studies she summarizes, so the skeptic at least knows where to find more details.

I chose to read this book while attending a couples massage weekend retreat, and I must say that my reaction to the book was not unlike my reaction to the teachings of the massage therapists at the retreat and the terrific massages that my wife and I shared. I enjoyed it all greatly and was left with no doubt that massage is a wonderful experience, both to get and to give. But the scientist in me was left wondering. I did not accept the explanatory stories told by the massage therapists, and I left Field's book wondering whether or not massage really does all that she claims for it and, if so, what the mechanisms might be. Also, as an evolutionist, I wondered: Why are we (and other mammals) constructed in such a way that touch plays such crucial roles in our growth and wellbeing? At one meal at the retreat I happened to voice this question (which Field does not deal with), and the reaction I got from others at the table (including my wife, who is a physician) reminded me how odd such questions seem to those outside the realms of ethology and evolutionary psychology. We have work to do!

Peter Gray is Research Professor of Psychology at Boston College and the author of an introductory psychology textbook. His current research is concerned with the educative functions of children's play

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COMMENTS ON
"THE CANNIBALS ARE FEEDING"

BY BILL CHARLESWORTH

Bill Charlesworth makes many fine points and the below are proffered to complement them rather than to be interpreted in any other manner.

Were human ethology to compete with Introductory Psychology-Sociology-Anthropology, then we need to have a marketable niche wherein human ethology offers the best explanations of the human condition. On paper, we should have a huge advantage. To wit: A cornerstone of human ethology is a reliance on Homo sapiens' genetic recipe/blueprint which has been sculpted by eons of selection. Without relying on eye-glazing mathematical formula, all students are easily convinced that their mother had a mother who had a mother had a mother. Same thing for fathers. What moms and dads need to do to have grandchildren is not rocket science. Human ethologists have the advantage of a cottage industry of data which demonstrate the influence of our genetic package on our behavior. As a group Sociologists are still devoted tabula rasa-ists. Many/most Psychologists and Anthropologists are still loathe to mull the notion that humans have not transcended biology.

Human ethologists have several lodes to mine of cross-cultural data. Aligned with traditional ethnographies are (e.g.) United Nations' data-bases. WHO is pouring data into its libraries. These are data for us. The only theory that is initially needed is an analogy: The web is to the spider, as the nest is to the bird, as the dam is to the beaver, as culture is to us. If we can make the "us" the contemporary humans in current societies and the folks in the university and community college classes, then we can be competitive with the vast resources and public relations of Psychology. Much of

Anthropology and Sociology is being cannibalized by incestuous ideologues who are rapidly turning the two disciplines into discourses in the humanities. The tedium of science is not for them, i.e. clever rhetoric trumps analysis of variance and ferreting out central tendency.

Although no one has asked me, I shall offer three suggestions:

(1). Stiffen that spine and take on political correctness. Gender differences are mind-bogglingly obvious. Cultural differences are equally salient. "Race" is not merely a shallow metaphor.

(2) Human evolution is continuously occurring. Again, data are not in short supply. Some types of communities are poised to replace other types of communities. The Shakers, the Tasmanians, the Ona, and the Yahgan are gone for reasons. What went wrong? A billion Chinese and a billion Indians are there for reasons. What are they doing right? The Hebrews had a couple of thousand years head start on the Moslems. Yet there are hundreds of millions of Moslems, but less than 20 million Jews. There are cultural parameters to more/less successful communities, and these are currently operating. We are better poised to analyze them than are the competing disciplines. It may be to our benefit to do so.

(3) The human version of "father" is fairly unique and is a cross-cultural universal. Primate homologues would not predict the salience of our version of "father". Whether the family of orientation of the family of procreation is the focus of a study, the unique character of the social father is systematically omitted from Psychology-Sociology-Anthropology trio. Again, our discipline is better positioned to analyze this key cog to the human condition.

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