For evolutionary psychiatrists, psychologists and others interested in sociophyslological Integration

ASCAP

Volume 12, No. 4 (Cumulative #137) April, 1999

"In the absence of any general consensus regarding the value of theories and therapies [about the neuroses - or emotional disorders], there are no bounds to the extent of disagreement among the competing schools of thought."

Aaron T. Beck, 1976'

Contents

Across-Species Comparisons and Psychopathology (ASCAP) Society Executive Council:

President: Mark Erickson
President-Elect: Ivor Jones **1 st Vice**
President: Thomas E. Joiner **2nd Vice**
President: Lynn O'Connor **Just Past**
President: Daniel R. Wilson

Previous Past Presidents:

Michael R. A. Chance - 1991-1992
JohnS. Price-1992-1993
Paul Gilbert -1993-1994
John K. Pearce -1994-1995
Leon Sloman -1995-1996
Kent G Bailey -1996-1997
Daniel R. Wilson -1997-1998

ASCAP Society Mission Statement:

The ASCAP Society represents a group of people who view forms of psychopathology in the context of evolutionary biology and who wish to mobilize members and resources of various disciplines so as to enhance the further investigation and study of the conceptual and research questions involved.

This scientific society is concerned with the basic plans of behaviorthat have evolved over millions of years and that have resulted in psychopathologi-cally related states. We are interested in the integration of various methods of study ranging from cellular processes to individuals in groups.

The ASCAP Newsletter Aims:

- ♦A free exchange of letters, notes, articles, essays or ideas in brief format.
- ♦Elaboration of others' ideas.
- ♦Keeping up with productions, events, and other news.
- ♦Proposals for new initiatives, joint

***The ASCAP Newsletter* is a function of the ASCAP Society.**

Editor-in-Chief: Russell Gardner, Jr.
Neuropsychiatry and Social Brain Institute
NASBI
Tel: (409)744-5974
Fax: (630) 839-5040
E-Mail: rgj999@yahoo.com
rgj999@looksmart.com
or
rgj999@hotmail.com

European Editor: John S. Price
Odintune Place, Plumpton East
Sussex BN7 3AN, ENGLAND
(01144)1273-890362
Fax: (011 44) 1273-890614
E-Mail: john.price@lycosmail.com

Previous volumes are available

For details, contact Russell Gardner, Jr.

World Psychiatric Association

http://www.wpanet.org
for the August, 1999 meeting contact:
www.wpa-hamburg.de
Some of us will be staying at
Hotel Holiday Inn, KielerStrasse 333
22325 Hamburg, tele 040 54740-0
fax 040 54740-100

The World Psychiatric Association is an organization of psychiatric societies aimed at advancing psychiatric and mental health education, research, clinical care and public policy.

The basic members of the WPA are 110 national psychiatric societies, representing more than 140,000 psychiatrists worldwide.

The ASCAP Newsletter* is the official newsletter of the *Psychotherapy Section* of the *World Psychiatric Association.

ADDRESSED TO & FROM ...

Congratulations!

Aaron T. Beck has been elected to the National Academy of the Sciencesl Dr. Beck's contributions to making the study of psychotherapy a scientific process is something well known and for which we are highly grateful. This keys significantly on our double role as newsletter for the World Psychiatric Association.

But we in The ASCAP Society are also aware that he has been a steady supporter of our group. Although pre-eminant in devising ways of measuring and influencing behavior in ways that made practical sense, he has always wondered about the whys of behavior. Thus some years ago when the group met in Philadelphia in a still coalescing mode he graciously but definitely helped us set our course. Of course the yearly Aaron T Beck ASCAP Award has signalled to younger colleagues the seriousness and purpose of our group such that they have made significant and thoughtful contributions. Indeed he took the extraordinary step several years ago of convening the winners of the prize for a special luncheon hosted by him.

So again congratulations for the well deserved honor, Dr. Beck. We feel honored to have had you significantly associated with us and look forward to our future connections.

RG

In Memorium

Claire Russell has died. We learn from W.M.S. (Bill) Russell that his dearly beloved wife and our esteemed colleague passed away shortly after 1999 began. Both had been ailing over the holidays; she declined and died with him at her side.

This causes great sadness for those of us associated with ASCAP as the two of them, she a psychoanalyst, had with their colleague, Michael R. A. Chance, blazed trails linking complex human psychological issues with the behaviors of animals other than humans. I feel *ASCAP* to be in line with their earlier efforts. I'm glad that she had the chance to see the history of the British Social Biology Council published in the October, 1998, issue of *ASCAP.*

Claire Russell contributed the idea of pseudosex to the literature, noting its likely origins in displacement activities documented by the early ethologists. I personally value her autographed copies of "Primate behavior and the concept of psuedosex"and The concept of pseudosex" from 1963 & 1970, respectively. Bill tells us that she felt these to have been significant contributions in her life-time. I expect to reprint them in these pages. We say a sad goodby but look forward to Bill Russell's continued involvement with *ASCAP.*

RG

Beck Award Competition

The deadline is May 30,1999, for the fifth Aaron T. Beck ASCAP Award Competition. $1000 towards a trip to present the paper plus a plaque will be earned by the winner. Topic should be relevance to the objectives of the ASCAP mission. Elgibility stems from being a student or new investigator within two years of degree or graduation from residency program if an M.D.

Applicants should indicate which of the two ASCAP meetings they would prefer in their cover letter the special MacLean Festschrift ASCAP Society meeting in Boston July 16-17 or the Annual ASCAP Society Meeting juxtaposed with the World Psychiatric Association meeting in Hamburg, Germany, August 6,1999.

Send three copies of the submission to Linda Mealey, Chairperson of the Award Committee, Psychology Dept, College of St. Benedict, St. Joseph, MN 56374, email mealey@csbsju.edu or fax 1 (320) 363-5582. See Feb. 1999, issue for full details.

Erratum

John Pearce in a letter published on page 7 of the March issue alluded to "Paul Thompson." He (and we who didn't catch the error) apologize. He conflated Paul Watson or Andrews and Andy Thomson.

Letter from John Price to Members of the Section on Psychotherapy (WPA)

Dear fellow member and greetings to all my colleagues!

Now we are 2.5 years into our stewardship of this important section, and have only three months to go until the next World Congress and the completion of our period of office. It is time to submit a report on our activities to the Secretary for Sections, so that he can submit it to a meeting of the Executive Committee before the meeting in Hamburg. I should therefore be grateful if you would report to me all the activities you have undertaken on behalf of the Section since we last met in Madrid.

According to the by-laws of the WPA, we are required to have at least 20 members. Our activities during the past 2.5 years have included the following:

1. Establishing *The ASCAP Newsletter* as the monthly newsletter of the Section, thus making the dates of future meetings of the WPA available to members and to others; it published section bylaws; also it publishes essays and other material relevant to the practice of psychotherapy.

2. Submitting three official Section Symposia to the Scientific Commit tee of the next World Congress, all of which were accepted.

3. Publishing the abstracts of the papers submitted for the symposia in the ASCAP Newsletter.

4. Sponsoring a meeting in Washington, DC in May, 1998, devoted to the bearing of attach ment theory to psychotherapy (organised by Mauricio Cortina).

5. Offering Professor Gardner as our representative on the WPA Educational Committee.

6. Providing a commentary for Prof. Mario Maj (Secretary for Publications) on a chapter entitled *Indications and Planning of Psychotherapies for Schizophrenia* by Max Birchwood and Elizabeth Spencer, for the second volume of the WPA series, *Evidence and Experience in Psychiatry.*

7. Maintaining a website to provide internet information about the section and its activities.

8. Communications with other international organisations devoted to the practice of psychotherapy.

I would be grateful if you would let me know your reaction with additions or comments. Note two appendices in the new section on WPA Business page 34 this issue.

Also, WPA is involved on several fronts with official declarations on psychotherapy and psychosocial interventions. I drafted on request a consensus statement for the section on what psychotherapy is and sent it to Dr. Ahmed Okasha. Please respond so that I can be informed about your opinion on this important topic.

John Price
john.price@lycosmail.com

Festshrift & Cape Cod Meetings

Planning continues apace for these two meetings juxtaposed in time, space and some participants (especially John Price, Jim Brody, and myself). Some title changes/ additions for the Festshrift include:
C.U.M. Smith: "Deep time and the brain: intimations of its evolutionary past from its molecular biology"
Roger Masters: "Why the "Enlight-enment"?: neuroscience, the triune brain, and the origin of modernity,"
Alan Swann: "On formulations that mania resembles leaderships critique."
Horatio Fabrega: "On the limits of an evolutionary conception of psychopathology." John D. Newman: "Audiovocal communication and the Triune Brain."

Registration on page 36. Contact RG for details

Open slots remain for the Cape Cod course on **Clinical Sociobiol-ogy: Darwinian Feelings & Values,** July 19-23,1999. This is one of 26 organized by Dept of Psychiatry at Albert Einstein College of Medicine. Other faculty include John Fentress, & Robin Walker. The course focuses on positive features of what has happened from evolutionary forces, e.g., cooperation, nurturance, marriage, constructive living. How can one understand and intervene as clinicians when dealing with people for whom anxiety, depression, abuse and infidelity have occurred?

For details contact James Brody
jbrody@compuserve.com

Abstracts needed for German ASCAP meeting August 6,1999

Abstract deadline is June 15,1999. Sending earlier will help planning for Aug *Newsletter! See* March issue for details.Abstract deadline is June 15,1999. Sending earlier will help planning for Aug *Newsletter!* See March issue for details.

Announcement:
New York Symposium
on
Evolutionary Theory and Psychopathology
November, 1999

The symposium will be sponsored by The N.Y. Chapter of the Association for the Advancement of Philosophy and Psychiatry. Donald Mender, M.D., is Program Committee Chair.

A recent explosion of interest in hereditary determinants of mental processes and the application of evolutionary theory to psychology has given new meaning to older Darwinian views of human nature. It is once again become fashionable to invoke the survival value of both cognitive and behavioral traits in order to explain their origin and function.

This outlook has produced novel approaches to the study of psycho-pathology. The latest theoretical advances in evolutionary theory, developmental neuroscience, population genetics, and DNA biochemistry are being applied systematically to the study of depression, schizophrenia, anxiety disorders and the addictions.

Technical innovations in the laboratory as well as concepts like kin selection, heterochrony, random drift and strange attractors are moving research forward at a rapid clip.

However, many questions remain.

Some are strictly matters of scientific fact. It is difficult to devise empirical tests for adaptationist perspectives on psychopathology. Moreover, we still have no general agreement on the degree to which human behavioral traits are inherited. Do genes reallly exert the most crucial influence on normal and abnormal human psychology? Even if they do, phenomena like stimulus-transcription coupling, which may allow learned changes in brain physiology to feed back on gene expression, raise doubts that DNA's effects on the mind are unidirectional.

Further questions raise troubling philosophical and social issues. Not only does the paradigm of Lamarkian cultural transmission continue to challenge the most overarching claims of genetic reductionism. In addition, it is possible that cultural biases, rooted in our market-driven economy, are actually fueling our current fascination with the inherited aspects of mental illness. One may then ask where such biases could lead - to a dark new version of Nazi eugenics, perhaps, or to a bright future of cures for madness through gene therapy. Might there be an ethically fertile and intriguing spectrum of possibilities between these two extreme forecasts?

The NYCAAPP conference planned for November 1999 in New York City will bring together clinicians, researchers and philosophers interested in these and related problems. Presented papers will focus on gemane aspects of evolutionary theory, its applications to mental illness, and the resulting implications for scientific episte-mology, philosophy of mind, medical ethics, and clinical practice.

Abstracts are quested that are no longer than 600 words and accompanied by the author's name, affiliation, mailing address, and telephone number. Please attach a separate cover sheet with the identifying information; this will facilitate blind review. Abstracts in triplicate should be mailed to Donald Mender at the address below, postmarked no later than July 15,1999. Acceptances will be mailed no later than September 15, 1999. Authors with accepted abstracts will read the corresponding papers at the November meeting in presentations no longer than 30 minutes.

Donald Mender, M.D. 5.15 North Wagner Avenue #3 Mamaroneck, NY 10543 USA dmende r@ix. netcom .com

Editor's note: Dr. Mender has written the following book: *The Myth of Neuropsychiatry: A Look at Paradoxes, Physics, and the Human Brain.* New York, NY: Plenum Press, 1994.

Gene quality and wealth

Most wealth is inherited and not earned; so I am sceptical of the link between wealth/social status and genetic quality of any sort. The message from evolutionary psychology is supposed to be that natural selection does not produce general purpose solutions, but domain specific ones. It's as unlikely that there is a domain general faculty of intelligence as it is that there is a domain general faculty of perception. The wealth-producing inventive skill that might be derived from possession of a superior innate naive physics capacity would, for example, be very different from the sort of materially advantageous social skills one might derive from possession of a superior theory of mind capacity, or a superior cheater detection module. These things are dissociable, variable, differentially heritable, and subject to different selection pressures.

Since the evolution of culture the survival of traits has also not simply been a matter of natural selection, and in the developed world is not now a matter of selection at all. Even if one were to concede the possible existence of general intelligence, why should we think that people in Eurasia have been more subject to selection pressures likely to cause the retention of any variability affecting intelligence, when in fact they dwell in an environment in which they do not need to place such strong reliance on their own individual capacities? Yes, we can produce smart people like Einstein, but just how smart do you have to be to tap into the vast repository of stored knowledge made possible through the inventions of writing and printing?

The only specifically cultural adaptations I know of are those to the metabolization of alcohol and lactose, and it seems quite likely to me that distinctive adaptations possessed by Eurasians are those derived from the selection pressures of living with a wide range of domesticated plants and livestock and the parasites they share in common with humans, just as Jared Diamond argues in his remarkable book, *Guns, Germs, and Steel: The Fates of Human Societies.* (NY: W.W. Norton Company, 1997).

Ian Pitchford
Ian.Pitchford@scientist.com
http://www.human-nature.com/

Human rituals & peacock tails

In response to the idea that rituals functioned for social cement, I believe this is no doubt true. But it begs the initial question: why should a Darwin survival machine waste any effort AT ALL on decorative arts? Aren't the pyramids at Giza a costly and oblique way to build social solidarity?

The Dawkinian notion of survial machines has a sub-text: survival as a means of optimising the generational throughput of genes carried. The key to maximising reproductive success is to appear to be a highly successful sexual partner, carrying high quality genes. As with the peacock's tail, anything which serves to deliver this message is worth investing in up to the point at which it really does seriously threaten survival.

This is not only responds to the above idea but also to the even more eloquent question asked by King Lear: "If only to go warm were gorgeous, wherefore gorgeous wear'st thou which scarcely keeps thee warm?"

Obviously, as the need to display success takes place in a competitive context, the need to do relatively better is a (more likely, the) great driver in socio-technological progress. In relation to the Eurasian debate it does therefore seem reasonable to me to suggest that the more cultures you're exposed to, the more imaginative will have to be in your responses if you are to stay ahead of the game. To illustrate *The Daily Telegraph* tells the following of the new self-governing Innuit region of Canada: 20% employed by government, 30% on welfare, 22% unemployed, their own taxes only paying for 5% of the annual budget, "their clans broken up, a once proudly independant subsistence culture became dependant on federal handouts." The price of not keeping up with your cultural neighbours/rivals seems pretty horrendous.

Keeping up with the reproductive Jones ain't a game, it's war!

Mike Waller
mwaller@comparator.win-uk.net

ARTICLE.-

By John Price

De-escalation at the emotional (limbic) level of the triune mind/brain: an interpretation of Dori Le Croy's 'female emotionality'

Male lizards (e.g., *Anolis carolinensis)* have to make decisions every day about whether to escalate or de-escalate their agonistic behaviour with other male lizards. If they get it wrong they are in trouble. De-escalation (losing and defeat behaviour) during and after a serious fight is associated not only with loss of adult coloration but with impaired functioning and sometimes death. The same is true of human beings. If we get badly defeated we sometimes get seriously depressed, and, although we do not change colour like the male lizard, we may die. It seems not unreasonable to speculate that our common ancestor with the lizard also had to make decisions about escalation and de-escalation, some 300 million years ago, and that the decision-making mechanism is situated in the "reptilian brain", somewhere down among the basal ganglia.[1]

Then, when we became mammals, and developed the limbic system, we had another "brain" to decide about escalation and de-escalation. When we escalated, we felt indignant, angry, exhilarated, and we went into the attack with our voices roaring and our fists flailing. When we de-escalated, we slunk off with furtive gait, and presumably we felt pretty bad about ourselves and our lot.

Now that we have the neocortex, we can sit in counsel and decide calmly to destroy our neighbour, and if necessary to "take him to the highest court in the land". Or we can decide to de-escalate, and to give in, say we are sorry, admit we were in the wrong and allow him to build the shed or whatever it was we objected to.

I suggested before that these three decisions to escalate or de-escalate at three brain levels usually coincide and pull together and achieve either victory in our conflict, or orderly withdrawal and/or submission.[2] But sometimes one level decides to escalate while another decides to de-escalate and then we are in trouble. The combination we see in the psychiatric clinic is reptilian de-escalation combined with escalation at one or both of the higher levels, and then the reptilian de-escalation is recognised as depressive illness (see the Table on page 13 of last December's *ASCAP).*

In the clinic we are not much troubled with limbic de-escalation, because it is not seen as an "illness". Limbic de-escalation is an emotional matter, and it is the dysphoric emotions that are involved. We see it in real life, we read about it in novels, we even feel it ourselves. I have listed my personally observed manifestations of limbic de-escalation in Table 1. No doubt there are many more. Thanks to the fascinating article by Dori Le Croy in the December 1998 ASCAP,[3] it appears that limbic de-escalation is a real problem in the marital counselling situation. She calls it emotional distress, which seems a good term, as it is certainly emotional, and it is distressing for not only the client, but forthe spouse and also, probably, for the counsellor.

Does it help to identify emotional distress as limbic de-escalation? I think so. Let us argue from the way we treat reptilian de-escalation. We ask, "If you have a problem with shivering, why have you not turned on the central heating?" And, "If you have a problem with depression, which is a reptilian strategy of submission, why have you not submitted at the rational, neocortical level?" In other words, we ask why the problem has not been solved already by the highest level of the brain. Usually the patient is escalating (ineffectively) at this rational level, due to moral scruples, pride, stubbornness, or circumstances outside his or her control. We encourage the patient to re-appraise the situation and to escalate if there is a reasonable chance of succeeding, but otherwise to give in, submit or "get the hell out of it" as fast as he or

she can. There must be a resolution of the conflict at the highest level of the brain.

In the case of the woman showing distress during marital counselling, it seems likely that she is submitting (de-escalating) at the limbic level with tears, sobbing and suchlike display, and she is hoping that the husband will accept the submission at the limbic level, by taking her in his arms, cuddling her, kissing her and whispering loving words of reassurance. But the husband is not doing this; he is sitting, turned half away, with stony faces. Why is this?

Because the husband knows that his wife is still escalating at the highest level. She is trying to get her own way. There is some marital disagreement because he is working too hard, not paying her enough attention, or drinking too much, gambling or womanising; in some way, he is threatening her with the loss of expected male support. She cannot accept this situation with her rational brain, so she continues to escalate at this level. But her emotional brain sees this great beefy man getting angry with her and about to beat her up, so at this level she submits and manifests emotional distress. The counselling session is still another battlefield in this marital war. She puts on an extra display of limbic submission, as if to say, look how much I am submitting, it is his fault if he does not accept it and reconcile.

There has always been marital disharmony, because the interests of husband and wife differ over such problems as opportunities for extramarital conceptions and the diversion of resources along collateral kin pathways. But now there is increased expectation of equality and satisfaction on the part of wives, and to the extent that husbands are not able or willing to provide this satisfaction, there will be increased disharmony. The husbands learn about marriage from The Godfather" and the wives from feminist literature, and this is a recipe for disaster. Also, the increased incidence of step-children provides a battleground over discipline and the allocation of resources.

In lizards the fighting is a male thing, and so is the resultant de-escalation. Why is depression and emotional distress commoner in women than men?

McGuire and Troisi give a useful discussion of this.[4] My own view is that escalation and de-escalation are all about the breaking of symmetry in personal relations. In male social life the asymmetries are often prescribed by the society at large and do not have to be decided on an individual basis. This is less true of female asymmetries, and even less so of male/female asymmetries. I have argued that modem social groups require asymmetries to be decided by the group as a whole (so that they get the best leaders) and therefore there are sanctions against the breaking of symmetry in dyadic interaction (such as agonistic behaviour).[5, 6] However, these sanctions do not apply to marriage, as the group as a whole has no interest in whether the husband or wife is dominant. It does not matter to the group. So the couple are left to sort it out themselves. There are sayings such as, "It is only a fool who intervenes between husband and wife."

My remarks in no way detract from Don Le Cray's analysis. I agree with everything she says. In particular, I like her idea that the limbic submission is expressed in the metaphor of being childlike ("I am like a small child to your big adult, and therefore no threat to you"), just as we have already proposed that reptilian submission is often expressed in the metaphor of physical illness ("I am like a sick person to your healthy person, and therefore no threat to you").[7] Our pre-linguistic ancestors liked dramatic metaphor.

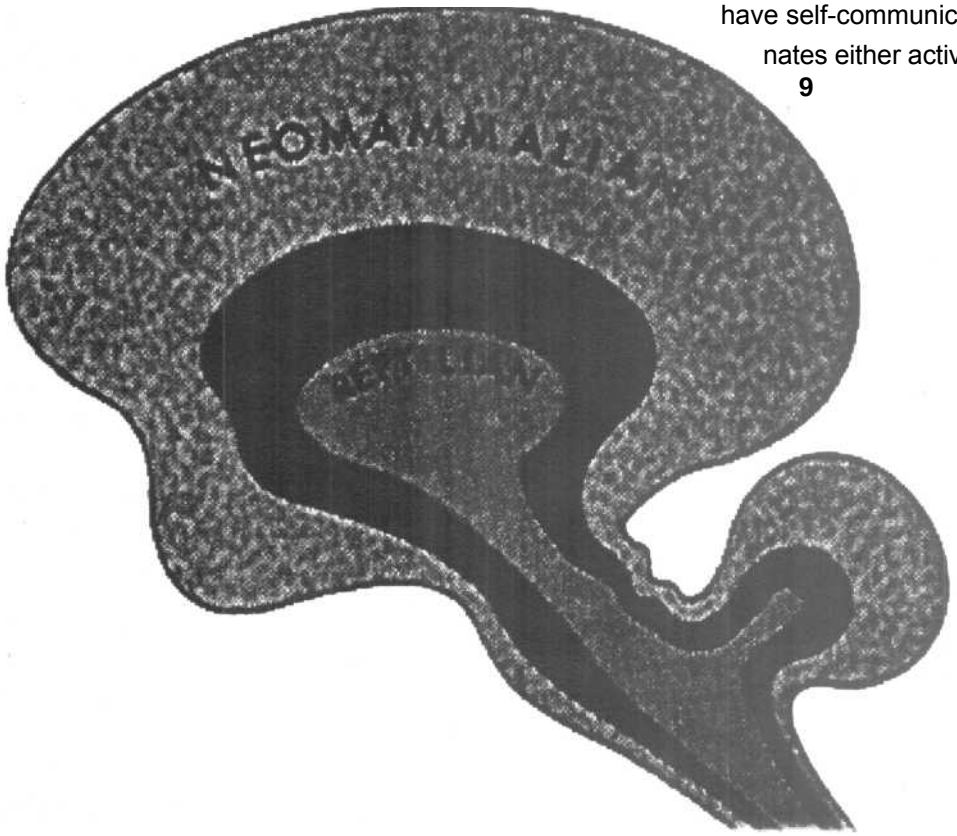
The thing that our triune brain model adds, I think, is the observation that the limbic submission has failed to achieve reconciliation. If it had not failed, the wives would not be having counselling accompanied by stony-faced husbands. It has failed because the wives are escalating at the rational level. This confuses the husbands. They are presented with a wife who is escalating at one level and de-escalating at another. They cannot cope with this, and their confused reaction makes things worse. What needs to be done is to ignore the limbic manifestations and tackle the problem at the rational level. I am sure Don Le Cray does this already, but I hope that our model has helped her to understand why she does it. And I think our shivering model might help the husbands and wives to understand what is happening to them.

Table 1. Manifestations of limbic **de-escalation (emotional distress)**

- Weeping, sobbing, crying
  Sulking
  Temper tantrums
  Whining
  Twisting wet handkerchief
- Beating the breast
  Tearing the hair
  Impulsive self-harm
  Aggression to subordinate others, loved ones or inanimate objects
  Subjective guilt, shame, feeling chastened, depressed emotion

References on page 34

The Triune Brain



MacLean PD: *The Triune Brain In Evolution: Role in Paleocerebral Functions.* New York & London: Plenum Press, 1990, p. 10.

Extract: Behaving entities provide the means of ascertaining what are known as "facts." Hence, facts are conventionally identified with something substantial, real, and true. In scientific discourse, they compare to the pitons of a mountain climber, being so hard and rigid that they can be nailed or wedged in anywhere for gaining a purchase. A step-by-step analysis shows, however, that "facts" *apply only to those things that can be agreed upon publicly as entities behaving in a certain way.* The term *validity does* not apply to the facts themselves, which are neither true nor false *per se,* but rather to what is agreed upon as true by subjective individuals after a public assessment of the facts. What is agreed on as true by one group may be quite contrary to the conclusions of another group.

When two or more individuals are within communication distance, there is the possibility for either active ("intentional") or passive (unintentional') communication to occur with respect to the "sender" or "receiver." Even when an individual is alone, a sound, utterance, movement, or odor emanating from the self may have self-communicative value as it originates either actively or passively.

ARTICLE:

by Robin Walker

Hedony and the dog

Hedony stems from the emotional brain

The dog nicely exemplifies a "quick and dirty" Reward System in action. I remind my students that Homo sapiens is vastly more complex due to cognitive complexity and the greater power of oppositional, associative, cyclic, adaptive mechanisms and so forth. But until recently emotions where something that women possessed and were considered to be the explanation of difficulties more rational men had with understanding their disappointments and discontents. Lately it has been conceded that not only men but all animals possess something called the emotional brain. The study of behaviour is changing with a steady convergence on the topics of emotionality, memory, reward and feelings in neural-behavioural scientific literature over recent years.

Hedony (pleasure) is a subject which comes with its own philosopher, Epicurus, and a fine sense of struggle against the nasty Stoics and Religious zealots who deny and despise the notion of reward or pleasure for reasons that always are revealed as ruling class fears that ordinary folk might want some joy in life!

Resting contentment seems to have two components. A basic feeling of reward just from being. Plus a resting level of security which is absolutely critical for sleep and recuperation. To give the minds of my students the flavour of a homeostasis of pleasure/ reward/joy/whatever I invite them to see emotional balance or resting contentment as a floating bobbin in an oxygen meter. The updraft of gas is balanced by the pull down of gravity. Satiety is the gravity-like governor that prevents reward from going off scale. The natural body under normal stimulus maintains the necessary equilibrium. Gross over-indulgence blunts and destroys pleasure and the artificial violence of certain drugs bums out the mechanisms of restraint.

Perhaps the most important finding of Behavioural Studies has involved the power of associative stimuli to control, evoke and switch off reward chemistry. The checks and balances of resting contentment and its tidal surge in appropriate circumstances seem to share centres and circuits as if God or the Creative evolutionary process was a very parsimonious electrician who would not put in extra or dedicated lines if the shared or party lines could suffice. Consequently the experience of such emotions as fear, frustration, revulsion, love, bonding and craving seems to be tightly interlaced in the "emotional brain". From the great body of work on addiction we can draw insight into the understanding of animal well being.

Addiction involves more than drugs.

A paper such as "Drug Abuse: Hedonic Homeostatic Dysregulation," by G. F. Koob and M. Le Moal in *in a 1997 Science* article would reward anyone interested .[1](also see abstract by Koob & Roberts in Feb ASCAP) what emerges from this type of study are the propositions that addiction, craving, need, affective withdrawal, depression and despair are feelings" that animals share with us. Koob and Le Moal tell us that "dysregulation of hedonic homeostasis can also occur with compulsive use of non-drug reinforcers. Similar patterns of spiralling distress-addiction cycles have been observed with pathological gambling, compulsive exercise, compulsive sex, and others."

A veterinary behaviourist or ethologist easily sees animal counterparts. The diagnosis and treatment of stereotypies, separation distress, and frustrative rage are inspired and illuminated by such research. I have the 1994 book *Ethology and Psychophanvacology* edited by Hendrie and Cooper at my elbow and in spare moments sift through the experiments described in 18 chapters of painstaking and 'not-a-bit-soft' branch of Ethology.[2]

In a veterinary practice, effects of psychiatric medications are protean and unsuspected. One needs more

information to interpret what happens when anxiolytics are deployed for hedonic regulation by inhibiting reward or enhancing frustrative vigour, and when serenics or antidepressive agents are used for both motivation and demotivation. My reward from this demanding bedside reading is not insomnia but a sense of contentment as the peculiar cases of the day begin to make sense.

New formulations for behavioural disturbances.

For example, I heard recently of two Jack Russell bitches that fight savagely when one of them attempts to leave the room with their joint male owner. Valium therapy seemed to work for two weeks but then made everything much worse. The answer? No! Not disinhibi-tion — but rather enhanced frustration. I have invited the veterinarian who called in with the case to review everything and discuss with the owners the proposition that the case is (a) a typical bitch dispute about breeding rights (population density control, etc.), and (b) the response of the aggressor bitch to Valium might be explained in the context of hedonic regulation, valium (diazepam) is useful for the control of violent mental patients whose acute psychosis is caused by withdrawal from various sedative-hypnotic drugs. However, the liver needs to clear it by breaking it down metabolically through a conjugation process— as is true of a host of drugs (notably phenobarbitone). So activation of these liver (microsomal) enzymes means that after a time the patient is effectively on a lower dose of diazepam than at the outset.

Low dosing with diazepam has accrued to itself some aphoristic tags.

> "Never give diazepam (or any of the benzodiaz-epine anxiolytics) to cases of fear aggression." "Low dose anxiolytics will reveal repressed behaviours."
> "Women on chronic low dose Valium regimes may batter their babies because they are disinhibited from being moral—so lock them up!"

All this appeals to the moral tyrant in us and is horribly plausible.

But I think these data may bear an alternative interpretation. We have found that dogs studied by Panksepp and colleagues on low doses of anxiolytic (for noise phobia) behave identically to separated dogs treated with naloxone.[3] In short, agents fostering GABA receptor actions (agonistic) inhibit dopamine release. Agents that block opioid actions prevent disinhibition of the GABA inhibition. Thus the chemical expression of hedony (reward) is reduced or prevented. The sensation that this produces might be described as dysphoria, anhedonia, withdrawal symptoms or just plain frustration. The failure to achieve an expected reward can result in either more vigorous attempts to achieve the reward or a deepening of misery. According to the "temperament" or "breeding" of the sufferer the results may be as follows:

> Panksepp's dogs resorted to face licking and attempts to solicit contact when given naloxone. My dogs given phenobarbitone are often reported as becoming nuisances; "always underfoot," "pestering for attention," "much more affectionate" and so forth.
>
> A depressed mother with a bawling, fractious infant, a ditto husband if he is there at all, a lousy income, and horrid surroundings may have her "hedonic experience" even further lowered. She may indeed smack the baby!
>
> After being on anxiolytics fora time, the Retriever who does not get to retrieve may suddenly fly at its owner.
>
> Inducing conditioned behavioural inhibition in a dog by means of hiding tidbits and use of sound training discs can induce acute angry frustration in a suitable dog.
>
> My wife's Borderterrier "Pip" pissed in the toaster because I didn't take him out enough when she was away. His wife (Pickles) just was plain depressed and defecated on the back door mat.

Another view of depression from an overdosed dog.

Some argue that animals do not suffer from depres-sion. The self-administered psychopharmacological feat of a boisterous meat/feet-seeking missile of a Border Collie tells us another story.

Bailey, an 18-month-old male, comes to 'work'with one of my assistants. A few days ago he stole a chocolate cake from his mistress's kitchen sideboard. The cake contained 6 oz of dark cooking chocolate. The dog is only around 23 kg in weight and my mathematics finally achieved a dose figure of 107 mg of theobromine per kilo. Fortunately no fatalities are recorded for a dose of less than 200 mg/ kilo.

The xanthines (caffeine, theophilline and theobromine) are well known as stimulants in humans. Toxicity in the dog -which species has problems with eliminating theobromine — is less well known. Within 8 hours and for a period of 36 hours, Bailey simply raced around his home with his toys in his mouth. In his owner's words: "Admittedly, Bailey is quite a 'hyper' dog, but he became unusually so for the next thirty-six hours. Normally, he likes to play rough and tumble games where he is pushed over and chased, but this time he wasnt interested in us; he only wanted to run around the house with his toys for literally hours. The following morning when he was let out, he ran up and down the garden at full speed for half an hour, came in to rest for five minutes, and then began again. I took him to work with me, where he peed all overthe floor on several occasions; normally he goes to the door when he needs to go out, so I can only assume that this time he did not realise he needed to go out until it was too late. This continued for the rest of the day, and to my relief he had started to calm down by the time I went to bed -1 didn't fancy being kept awake for hours by the sound of the dog running round the house."

But the phenomenon which was most striking and of most interest from a behaviour viewpoint was the profound depression which followed: "He was a totally different dog the next day - miserable and depressed. Off his food and did not want to play at all - not even with his favourite squeaky toy. Even the cry of 'CATS!', which normally results in him hurling himself out of the back door to look for his sworn enemies, made no impression on him except a slight raising of his head and a big sigh. All he wanted to do was lie on the sofa and be miserable; this continued all day."

I believe the dog was suffering severe "withdrawal symptoms'. We know that the methylxanthines enhance noradrenaline and dopamine neurotransmitter systems via effects on cAMP. The overall effect would seem to be intense arousal and enhanced reward (euphoria). It would appearthat (with all due care and caution) a possible model for reward and withdrawal is found in the dog. Behavioural measurements might be devised to demonstrate different emphases of reward bias in different breeds.

Oscillation at the animal clinic.

A Lurcher who had eaten rat-bait was injected with apomorphine to make it vomit. Subsequently it showed marked reluctance to come into my clinic. Now the simple view of this is, 'of course it had an aversive experience and didn't want to return to the place where it happened'. But a more measured analysis gives a different answer. The typical dog entering a clinic is on a gradient of approach and aversion. The reward for approach is the bond with the owner. The aversion is me in my cubicle. The opposing forces usually equate at the cubicle door and the dog 'oscillates' at this point, torn twixt 'come on Ben!' and the desire to escape.

An injection of the dopamine agonist apomorphine does indeed cause emesis but I was not present just then and moreover, the owner pats and praises the dog whilst taking care *to keep him on the paperi* Only when the 6th and usually final vomit has occurred does the dog escape. I wonder if the reward for escaping is not greatly enhanced by the elevated dopamine. When the dog next attended clinic, the oscillation occurred on the path outside. This would accord with the hedonic set point for the gradient being moved down toward escape. The 'cure' is simply for me to walk behind the dog. This reverses the gradient and the dog (with owner) escapes into the clinic and into the cubicle!

Hold the thought—

In *Ethology and Psychopharmacobgy,* the induction of stereotypies by apomorphine (p.281-9) and amphetamine (p.241-263) is discussed and illustrated. Chapter 13, "Amphetamine-induced stereotypy in rats: its morpho-

genesis in locale space from normal exploration," describes the effects of amphetamine on rats exploring a box. In essence the rat explores from a 'home-base. Outward trips are hesitant with many stops. Home trips go quicker with fewer stops. Over an hour the random excursions are increasingly refined to very clearly defined repetitive path. Finally the rat oscillates about the home base only and the last stage is to sit wagging its head. To my mind this is a reflection of increasingly tilting the gradient toward the greater reward of escape back to base and in the end shifting the hedonic set-point down scale until reward is achieved without doing very much at all. What has been created is not a nosological entity called 'stereo-typy' but a state of accelerated reward which involves the chemistry of addiction. We might have a model here for the conversion of consummatory rituals to increasingly perfunctory routines: Greedy vs. Gourmand; Quickie vs. Lover etc. I feel that we should look again at the effects of these drugs in experiments on such folk as pigs and jumping voles to discern exactly what central state is being rewarded. There could after all be such a condition as 'accelerated standing still'

Overly pleasured.

Let us take a quick look at some of the cases with which I have had experience and see how they fit the labels of the budding veterinary version of a *DSM.* I have video film of a desperate German Pointer in the apparent grip of some behaviour problem. On sunny days it stands in a large garden quiveringly alert, 'pointing' and poised for the advent of shadows of birds overflying. It dashes after the shadows, tirelessly, hour upon hour unless brought indoors. There it becomes acutely distressed,panting and pacing until it is allowed out to resume the 'driven' behaviour pattern. The dog was 'medicated' on the presumption that it had some compulsion to repeat this behaviour endlessly and in the face of failed attempts to engage it in any alternative activity by any means whatever.

We chose fluoxetine (Prozac). The effect was apparent within days. Now the dog chased the shadows with redoubled vigour! When brought in to the clinic out of concern for its physical health, it became violently agitated and distinctly aggressive. A hasty reappraisal of the dog and its plight led to the alternative assumption that maybe, rather than some kind of "OCD or stereotypy," this was a manifestation of a "seizure disorder." Discounting the hype, humbug and commercially directed preferences and prejudices of the pharmaceutical scene, the dog was medicated with the most effective anti-convulsant (bar none) forthis species. On phenobarbitone, at a low dose of 2 mg per kilogram, *all* the disturbed behaviour ceased very promptly.

Four years later my analysis of these events is provisionally that the diagnosis should have been hedonic dysregulation. I believe that the 'manic' dog's plight entailed a lack of reward-inhibition. Now it is well established that much of the chemistry of reward is opioid and dopamine based and it is restrained, counterbalanced, or dampened, by GABA-ergic regulatory mechanisms. Phenobarbitone in the dog is a precise and potent agonist in the GABA-benzodiaz-epine receptor complex. This particular Pointer was, in my view, a likely victim of a form of "hypertiedony" which was then still further increased by the Prozac; finally it was brought within a normal range of homeo-stasis by the barbiturate. Intense selection by breeders for the obligatory in-built motivation of this 'bird dog' behaviour clearly predisposes the type of dog to the risk of over-expression. The labels stereotypical, OCO or epileptic are simply not adequate.

A Border Collie Cross exhibited intractable fly catching'. A walk with this dog was impossible. Incessant snappings and swoopings at invisible objects were punctuated only by plunging its head into pools or water-filled ditches in order to 'blow bubbles' beneath the surface. Indoors, in very dim light, fly-catching' gave way to a very slow, rather eerie, half crouched, stalking around the walls of the room. The behaviour was greatly alleviated, I was told, by diazepam, after complete failure to achieve relief by any form of behaviour therapy or ingenious intervention that could be devised. Today's analysis of this bizarre behaviour has provisionally settled on the following proposition: the inbred, innate behaviour sequence of'eye-crouch-stalk-run in- etc' of the Collie was present but hedoni-cally dysregulated. The eye component was present but corrupted into over rewarded 'fly catching'. In dim

light the second component of the sequence could supervene and an 'over rewarded' almost ecstatic stalking ensued. The water plunging and bubble blowing might be attributed to a disorder of the temporal lobe duties of facial recognition (prosopagnosia -which is of course Greek for inability to recognise faces). The dog saw its reflection in the water and attempted a dialogue with it!

Well — I laughed too. But this week I am apprised of a 17-week-old Border Collie pup in Belfast, which is already a manic flycatcher and is only distracted when showing great interest in the surfaces of puddles into which it will stare fixedly. A Rotweiler in a rescue kennel is (this week) staring fixedly at the floor as if in a trance. It has also on occasions glared into its water bowl and spent time dashing all the water out onto to floor with its paw. I have a video of an English Bull Terrier, which repeatedly is 'captured' by the pattern on the floor coverings and goes into a trance 'eyeing' the surface and then slowly begins a routine of pouncing onto the spot in question. It sways back, gathers itself and leaps straight up landing with its front paws on target. The pouncing and trancing goes on for hours. (GABA-ergic therapy has once again greatly alleviated this.)

A diagnostic schema must surely be based, therefore, upon a continuum of hedony (or reward neurophysiol-ogy) which allows the propositions that there may be either too great a reinforcement or too feeble an inhibitory mechanism for a balanced homeostasis of highly motivated routines. After reviewing reports on 114 English Bull Terriers which go into helpless, ecstatic trances of what seems to be pure pleasure, when tickled by garden foliage or household drapes I suggest we recognise a state of 'Status Hedonicus' or being paralysed with pleasure!

Wholly different are the cases where the individual seems to have a craving or need for rather more hedony than its own neurochemistry will provide or its environment allow! Here the organism seems to learn to 'work' for its rewards perhaps employing variants of the' singing and dancing and oral gratification' routines for which Homo sapiens sells tickets? Tail chasing for example might be categorised as a 'play' routine that has become easily evoked on a pretext for self-gratification. Perhaps 'auto-hedonia' could serve. Here medications, which raise or enhance the chemistry of reward, can induce a state of resting contentment or satiety, which obviates the 'craving' provided the organism *has* the necessary neural tracts, chemistry, especially, of course, the receptors essential for the experience or expression of hedony. The therapist must constantly try to divine the position or setting of the 'hedonestat' and decide between trying to turn it up' or turn it down' Something approaching disaster might occur if a reward-enhancing drug is given to a creature which currently enjoys nothing so much as attacking others or smashing the furniture.

Revised view of ranking effects on drug response.

In the 17th chapter of *Ethology and Psychopharmacy,* The Relevance of Ethology for Animal Models of Psychiatric Disorders: A Clinical Perspective, Alfonso Troisi mentions the apparent influence of social factors on drug response, [pp 329-340] "For example there is abundant evidence that animals of different rank respond differently to the same dose of pharmacological agent." I do not quite agree with this. I think that a hedonic theory can show that the animals are responding exactly as they should but not as the experimenters *expected.* For example "Miczek and Gold demonstrated that, in adult squirrel monkeys, the effects of d-amphetamine depended on the social status of the individual monkeys within their group: low doses of the drug reduced agonistic behaviour in dominant monkeys but induced complete social isolation in subordinate monkeys."

An apparent paradox—but *is* it? These are healthy creatures with normal hedonic homeostasis. The 'dominant' individuals are not psychopathic. They are privileged and rather well rewarded by their status. Not obvious candidates for drug abuse or the induction of mania. Dopamine enhancement in these monkeys might be confidently predicted as enhancing resting contentment and making them rather mellower toward each other. On the other hand the subordinate lives in apprehension and a state of suspended aversion where 'reward' is revised to be remain unmolested — to survive the day is a relief and pleasure. Dopamine

enhancement for these chaps might be expected to reward more what is already rewarded. That is of course successful avoidance. So they are shaped to avoid comprehensively. Let us make no bones about it - humility is addictive! Watch the passing nun hugging the corridor wall. Troops allowed to run away regularly are brought back to a readiness to stand their ground with some difficulty. The treatment of long established avoidance behaviour is working against a gradient of endogenous addiction.

To return to Troisi's quotes again, "Raleigh et al showed that, in vervet monkeys, dominant and subordinate males differ in their sensitivity to drugs that enhance central serotonergic function: fluoxetine, quipazine and tryptophan increased approaching and grooming and decreased avoiding and vigilance much more in dominant than in subordinate males." The effects of serotonin reuptake inhibition (with NE and ACh) and serotonin increase via tryptophan are not quite entirely comparable but the relevant effect (among others) still centers on hedonic enhancement.

What about Risperidone? Well I have never used it. But if I did, I would be guided by a rational approach to reward chemistry instead of current nosology and the bald categorisation of the drug's licensed use. In 'Hyperhedonia' or 'status hedonicus' where serotonin and dopamine activity is way 'off scale' there might well be a rationale. But one should not use it where hedony is balanced (normal but naughty) or in 'Hypohedonia'. We must remember that learning is contingent on reward chemistry for both memory and motivation to persevere. Our main misuse of medication centres on the above considerations.

The Click is the Reward is the Click is the Reward.

The important thing about rewards is the question 'are they focussed or are they fuzzy?" Consummatory and bonding rewards (food and cuddles) tend to be 'fuzzy' (unless you are in the 'hands' of a gourmet, exquisite, houri or courtesan but that is another thesis). Focussed rewards are the short sharp bursts of pleasure achieved by activities such as table tennis and pouncing on beetles. Making hedony (pleasure) conditional upon the occurrence of a stimulus is exemplified by Pavlov's famous salivating dogs. The sound of the bell or buzzer evokes the pleasurable anticipation of food of which one manifestation is dribbling. Something similar happens with the 'clicker[1]. When rewarding a dog fora certain movement a tidbit is produced as quickly as possible in association with a clicking sound. Pouncing on the tidbit is as focussed as consummatory rewards get. The associated sound of a click (although at first meaningless) soon becomes itself a signal of reward which actually evokes the physical sensation of reward. In this way the click (evoking stimulus) can produce sharp pulsatile bursts of reward chemistry.

Once this is established the click induced reward sensation can associate with something the animal does. Thus the performance of a task which is not especially rewarding becomes very rewarding. Withholding the reward (either the tidbit or the click) say on 50% of the trials' places the recipient brain on a schedule of 'Partial Reinforcement' (PR). The intermittent 'disappointment or annoyance' of being denied the reward has (in my view) its very own neurochemistry. This is the chemistry of frustration or non-reward. It also seems to be susceptible to 'focussing' or being made pulsatile or a 'burst' of sensation. The interesting effect of frustration is the increased vigour of the attempt to achieve reward and the apparent heightening of the pleasure when the reward is actually achieved. Which is why the graphs of PR compared with CR (continuous reward) always show the animals running faster with seeming greater enthusiasm and sense of greater reward. The related phenomenon of Resistance to Extinction is shown by individuals trained'on a PR schedule. Stopping rewards discourages and terminates reward seeking in continuously rewarded folk much more quickly than in PR types. The why and wherefore is to be pursued in the literature of drug addiction and withdrawal symptomology. The neural mechanics lie in a literature represented by the letter in *Nature* by Forillo and Williams entitled, "Glutamate mediates an inhibitory postsynaptic potential in dopamine neurones."[4]

The dog trainer's technical challenge is to foster best rapid intense pleasure responses to crisp clear signals. Success is measured when such signals

evoke responses that outweigh the million-year old impetus 'Oh My! There's a Rabbit!' The socic-psycho-logical challenge in the human realm relates the rhythms and fluctuations of reward chemistry to such topics as 'Why do women marry absolute bastards and seem to suffer abandonment so much more acutely than their sisters who seem able to leave sincere gentle continuously attentive husbands because they are boring?' That is, is the grief and pain of loss more acute after the Partial Reinforcement of life with an occasionally swine than the Continual Reinforcement of a really nice predictable and totally dependable type? .It seems to me possible to train personal hedonic responses on the equivalent of a voluntary Partial Reinforcement Schedule. So Nanny was right! No one should eat until the Dinner Gong says so and a large wine cellar is an indicator of a great deal more than a lot of money.

Emotional Toughening.

This topic draws together just about everything I have tried to share with you from hedony through drug therapy to 'fuzzy signals'. But first some Shakespeare. In his second Age of Man *(As You Like It. II,* vii, 139): "And then the whining school-boy, with his satchel/And shining morning face, creeping like snail/ Unwillingly to school." Separation anxiety is a messy group of childhood problems, which may include school refusal. It is very significant that 'cases of school phobia have been reported as a side-effect of haloperidol.'[5] This is surely not surprising. A drug that abolishes reward (being a dopamine antagonist) isn't going to be helpful to a child who already finds school scary and very unrewarding. Just as the drug abolishes 'conditioned place preference' in rats.[6]

The dog is not a child so we must be a little selective here. Off the relevant pages in Kaplan and Sadock, *Synopsis of Psychiatry,* Ed. 7, pp 1104-1107, I take: "The most common anxiety disorder that coexists with separation anxiety disorder is specific phobia.... Symptoms emerge when separation from an important parent figure becomes necessary.... They frequently experience gastrointestinal symptoms of nausea, vomiting and stomachaches and have pains in various parts of the body, sore throats, and flu-like symptoms. In older children, typical cardiovascular and respiratory symptoms of palpitations, dizziness, faintness and strangulation are reported."

In my experience the picture in the 'separated' dog is very similar, the problem being the disruption of the bond between the dog and its owner. This acute state of non-reward, dysphoria, or gut wrenching misery has the potential to lead to depression or violent frustration according to the temperament' of the sufferer. They may also develop acute specific phobias. The physical symptoms of distress in the dog are similar to those of withdrawal from opiates in the human. This again brings up the work Jaak Panksepp *et al* who have extensively investigated the addictive nature of bonding and the withdrawal nature of separation.[2]

History supports the opioid mediation of the bonding experience. Until the turn of this century, morphine in a multitude of potions was retailed from grocers and chemists for the placation of fractious infants. Animal experiments have demonstrated that distress calling in a number of species can be alleviated by morphine. Heroin is still used to soothe the acute distress of prematurely born infants who must endure enforced isolation.

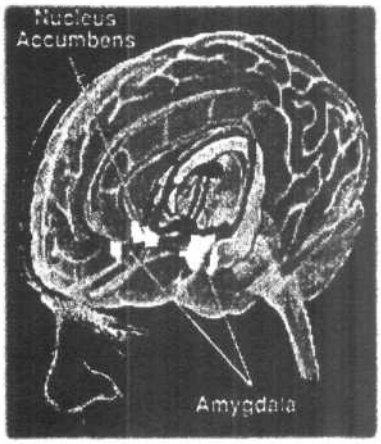
The merits of anti-depressant drugs with serotonin activity and the selective serotonin reuptake inhibitors (SSRI's) lie in their ability to buffer against panic and to bring about feelings of well-being or contentment which countervail the dysphoria of depression and frustration. The evident success of drugs like clomipramine and fluoxetine in reducing the distress of unwillingly isolated dogs must provide a better opportunity to deal with the behavioural considerations. Just giving the drug is not enough. The dog has to learn to cope with periods away from its social companions.

The traditional prescription is to 'Cool the Bond'. But trying to ignore the dog or be 'less attentive' or 'less tactile' often seems to fail. It can be argued that this is due to the rather 'fuzzy' nature of the semiology. It may be difficult for the dog to work out what is happening and it may simply try harder to achieve its customary (habitual) level of gratification due to touch or proximity. The dog fares no better than the children

trying to defer eating the sweets without some cue or signal which clearly announces forget it' or "wait until the signal changes'. To this end,periods of lime out' in which the dog is ignored, left, not included (even though it is present!) must be constructed and contingent upon a *clear signal.* Variations on Karen Pryor's celebrated towel on the back door[1] have been employed. It often entails tethering the dog into a comer of the room as otherwise it may simply grab the owner's attention or forcibly contact thus nullifying the process.

Huge difficulties surround this in some families where neck braces and mummiform bandaging would be needed to prevent the peeking and signalling of the less steely-minded members! In the most desperate cases .where the neighbours have been 'driven to distraction' or the owners lose their furniture, success has been achieved as the dog learns that when the 'flag' is up he is on his own and when it comes down (and only then) he is once again available for socializing. As ever the owners who are likely to be very good at this level of discipline and organisation are exactly the type of people who probably would not have had the problem in the first place.

References page 34



A "transparent" human brain illustrating locations of the nucleus accumbens and amygdala, both limbic structures involved in addiction. Another limbic structure is the curled carrot-like structure starting just behind the amygdala. This is the hippocampus along with its fornix tail that goes back, up and around.

Morell V: The origin of dogs: running with wolves. Science 1997,276:1647-1648

Extract: [A]ll of today's [dog] breeds had only one canine forebear: the wolf. [Although humans tamed members of that lone progenitor species at least twice, domestication was apparently a rare event...

To prove that even a toy poodle is a wolf in dog's clothing, evolutionary biologist [Robert] Wayne and his team amassed tissue samples from 162 wolves from North America, Europe, Asia, and Arabia, as well as from 140 dogs representing 67 breeds and five mixed breeds. They also sampled coyotes and jackals, because all wild canids... might have contributed... to the making of man's best friend. ... Wayne's lab sequenced the **DNA** in the canid's mitochondria, which is inherited only from the mother... [studying]... the control region... likely to reveal differences between such closely related animals as wolves and dogs.

The team found a total of 27 haplotypes, or particular sequences, in the wolf control region and 26 sequences in the dog. The dog haplotypes did not sort by breed ... there may be no such thing as a "pure-dog breed.... But all the dog sequences clearly differed from jackals and wolves in at least 20 sites, where one nucleotide was substituted for another.... a smaller study of nuclear DNA... gave the same results.

[A]ll the dogs' haplotypes fell into four distinct clades. In two of these, the sequences showed that the dogs came from two unique common ancestors. Thus, each of these clades was founded by a separate wolf population [but] could not find a match... with particular wolf populations living today.

[WJolves and coyotes... parted ways a million years ago according to fossil record [and] 7.5% of their mitochondrial sequence changed. When applied to [dogs], that clock yields a date of 135,000 years for the separation of dogs from wolves.... "ten times greater than we thought," says Svante Paabo....

[O]nly one other mammal has that rare combination of unusual genetic diversity, and a widespread, well-mixed gene pool: humans.

ARTICLE:

bv John

Price

Response to Dylan Evans

I was both pleased and chastened to read Dylan Evans thoughtful article. The reason I felt chastened was that we do not seem to have stated the hypothesis clearly. Dylan Evans says, for instance, "By signalling the intention to look for another niche, the submission cues indicate that the depressed individual does not pose a threat to the established dominance hierarchy in the current niche." What we have actually been saying is that depression helps the individual to accept a low rank in the "established dominance hierarchy of the current niche" and one of the obligations of low rank is to do what one is told by higher ranking people. If higher ranking people want the depressed person to go off and look for another niche, all very well. But if the "powers that be" want the depressed person to stay, the depressed person stays. To "signal the intention to look for another niche" is a signal of social initiative, and the depressive is (or should be) signalling not initiative but incapacity. I will try to elaborate this point, at the risk of some repetition. The reader is also referred to other sources.[1,2]

Finding a new niche?

Some theorists have suggested that the function of depression is to get the person out of their existing niche into a new niche in which they will function better and have more success.4,5,6 This is not our view. Our reasons are partly the nature of depression itself, and partly the nature of the task it has to perform.

One of the main features of depression is its pervasiveness. It affects all goals and incentives. It takes away the power of logical thought and the capacity to make decisions. Everything seems black and hopeless to the depressed person. This is not the state of mind in which to choose a new niche. Possibly emotional/ limbic de-escalation might serve this function - in this case there is an object for the depressed emotion, the person is depressed about something, and may be able to formulate a strategy which will avoid the painful emotion. But depression as we see it in the clinic -what we have called instinctive/reptilian de-escalation (or the yielding subroutine, or the involuntary subordinate strategy) - this is either unfocused on an object, or self-focused, and it is globally incapacitating, and it appears to be the sort of state in which the depressed person will be unable to get out of the existing niche, however bad.

And this is exactly the role we have postulated for depression. It is not to change one's niche, but to accept one's niche however bad. In a hierarchical society, the bad niche is associated with low rank. Depression inhibits rebellion, and it also inhibits the desire to find a new niche. How many wives have we all treated who were too depressed to leave their husbands? The depressed wife may allow herself to be swept off her feet by a knight in shining armour, but she is not well equipped to find new accommodation for herself and her children, and to support herself and be independent. Nor is she likely to be sufficiently assertive to chuck her unsatisfactory husband out. Nor indeed is she likely to be attractive to a "knight in shining armour", norto be found in those social arenas in which knights in shining armour are likely to congregate. Depressed wives are able to carry out the day-to-day household drudgery, but they are too depressed to take any initiative or change their situation. And, as a matter of interest, they are too depressed to mirror their children's "grandiose selves" and so are unable to inculcate a life-long high self-esteem strategy in their children.

In summary, the depressed person accepts the definition offered by the other. If this definition is to stay in the existing niche, then the role of the depressed person is to stay. If the other wants the depressed person to go, they go (responding to some such command as, "Get off my patch!"). This is what

"yielding" is all about.

The cue which triggers depression

I would like to take up Dylan Evans point about the cues which trigger depression, or rather, the cues which trigger the module which causes the behaviours which we call the Involuntary Subordinate Strategy (ISS) which we sometimes recognise as "major depression". We all presumably have some sort of module which monitors whether we are getting what is due to us, or what we deserve, or what we want, or whether we are getting our own way, or, more technically, whether our definitions of relationships and situations are being accepted by people around us. Or, conversely, whether we are being thwarted and unsuccessful with loss of rank, in view of the fact that most human rank depends on a balance of alliances. Also childbirth is a good predictor of the possibility that one's own desires may have to give way to the desires of others. Not every baby bom is wanted by the group, and infanticide is common in most cultures. To kill one's own baby, or to permit others to kill it (rather than fighting like a tigress for her cub) is an experience which a significant proportion of post-partum women have to undergo, and be a strong incentive to submit to group pressures. This may be provided by depression, and we know that depressed post-partum women not infrequently kill their own babies. It seems likely that, for a certain period after childbirth, the module that triggers depression has a lowered threshold.

Rates of depression

We have suggested that depression is a failsafe way of getting people to accept low rank. There are other, more effective, ways of accepting low rank - using the rational/neocortical brain, or Birtchnell's outer brain. For instance, one can be humble, and take the view that one does not deserve any higher rank than one has. If everyone was humble (de-escalating at the rational/neocortical level), we would predict that rates of depression would be much reduced. If you get as much as you expect, or more than you expect, you tend to be happy. If you get less than you expect, you are angry or unhappy (the emotional/limbic agonistic strategy set is accessed). This may be a reason why everyone is not depressed.

The sort of upbringing which is likely to predispose to depression is one in which the child is told he (or she) could become President of the United States. Then most must fail. We see ft happening now in marriage. Girls are led to expect equality with their husbands, but often they do not get it -the boys have been brought up with cultural models based on male dominance, such as "The Godfather", and behave as if the wife is subordinate. There is often a clash, and the marriage may break up, or one of the spouses may get sufficiently depressed to acquiesce in the dominance of the other.

This marital problem is exaggerated in marriages of couples from different longitudes. We know there is a high correlation between eastern longitude and the cultural expectation of female subordination. Therefore, if men marry to the east, the wives get more equality than they expect, and are happy. If men marry to the west, the wives are forced into a cultural role of subordination they were not prepared for, and are likely to get depressed. This prediction is borne out by clinical experience, but I know of no epidemio-logical work which has addressed the problem.

Voluntary submission

In summary, according to the social competition hypothesis of depression, the goals of the depressed person are given up (or, at least, not effectively pursued) but they are not replaced by new personal goals, but rather by the goals of other more powerful group members. Then, ideally, the depressed person adopts these new goals, so that their goals become identical with the goals of the group (or of its powerful members). Then there can be acceptance and reconciliation. True submission (at the rational/ neocortical level) means identifying oneself with the goals (and beliefs) of the person one is submitting to. Then the seeds of rebellion are no longer present, and depression is no longer required

References on page 34

ARTICLE:

by James Brody

Diagnosis and Evolutionary Theory

Our human female ancestors had lighter leg bones and rotated ankles in comparison with the males. These details led scientists to infer that women came to ground from the trees long after the males did. Observers next watched our children on playgrounds; the girls at age 6 climb higher on monkey bars than boys of the same age. Finally, giving young children in Israel or the United States a simulated escape game revealed that girls more often than boys choose to climb trees and climb further out on the branches. Israeli girts climbed higher on the simulated Acacia tree after a real terrorist attack in Tel Aviv or Jerusaleum.

This sequence — reported by Richard Coss (rgcoss@ucdavis.edu) at the Human Behavior and Evolution Society this past summer—reveals not only one aspect of our mental architecture but also one of the subtle tactics found in evolutionary research. It's simple to make up stories of how we came to do one thing or another; confirmation requires making some predictions about data that might be found and relating it systematically the environment of the time and to our physical and psychological adaptations.

Another example—every human 6 year old has a naive biology, a naive physics, and a naive psychology. The last includes notions of how another person thinks and the capacity to interpret the feelings of a second person from facial and vocal displays. Each child tracks others' conduct, monitors social exchanges, and has a sense of fairness and cheating. It seems very probable that chimpanzees, gorillas, and orangutans have the same capacities even if less Simonized.

Carl Sagan and Ann Druyan would perhaps have referred to these traits—whether tree climbing, the gymnastic talent of young girts, or the untaught capacity for empathy—as "shadows of forgotten ancestors." Genetics, sociobiology, anthropology, evolutionary psychology, and paleontology offer structures and explanations for how those shadows came to be. These several disciplines also allow predictions about previously unnoticed details of our behavior. *It seems plausible that understanding other shadows—those of emotional distress — could also be helped by consideration of our probable evolution-ary history.*

The DSM: An Insect Display Case

Naturalists put things — shells, insects or pieces of yellowed bone—in compartmented boxes or glassine envelopes. Arrays of specimens form on the basis of systematic differences in size, color, and shape, arrays that match the classifier's mind as well as with the relationships that he imagines.

Psychiatric diagnoses — roughly 400 of them — occupy a momentarily useful display case, the *Diagnostic and Statistical Manual, 4th Edition.* Intensity and duration are the sorting standards for worry, fear, sadness, and grief. Some empirical studies of the 'natural occurrence" of various disorders show us relationships between some of them. However, because of the self-selected nature of the data, correlations can be described but classification and explanation may sometimes be arbitrary and fanciful.

Classification by Medicines

The classification of disorders according to the tools used for treatment is not such a bad gambit. The '50s and '60s hosted the use of imipramine and lithium and diagnosis according to prescription was popularized. Practitioners commented about a "manic process" if lithium abated a patient's distress; likewise for "schizophrenic process" if chlorpromazine settled them down.

Peter Kramer then gave us cosmetic psychopharma-cology, the understanding that a continuum of discomfort exists for all of us and that many subclinical annoyances respond postively to changes in serotonin. He also suggested that we "listen to Prozac" in order to learn about serotonin and, indirectly, about normal functioning and about psychopathology. Thus, Peter taught us to study the hammer and nail — Prozac and serotonin — in order to understand the roof (psychopathology) and we now have "serotonergic spectrum disorders."

He was right but there are further steps. Serotonin has been in living creatures for about a billion years and does a lot of things. Dopamine and norepineph-rine may be equally ancient. Thus, serotonin reminds us to study not just what she does for us but also for our relatives. Prozac opens a door to our past.

A Foundation from Evolutionary Theory

Evolutionary understandings will help us generate arrays on the basis of past survival functions. We should have a system for "diagnoses" that incorporates traits rather than "disorders" and describes the original functional missions of our assorted discomforts. An evolutionary system will meet the traditional obligations of diagnosis by giving an etiology (both phylo- and ontogenetic), a description of present complaints, suggestions for giving assistance, and a prediction of outcomes. An evolutionary diagnostic system should:

- Describe the interplay of psychological complaints
- Suggest effective ways to reduce complaints through the modification not only of serotonin or GABA but also through environmental changes that tune the responses of the client's genetic characteristics. Niches that allow greater personal satisfaction increase serotonin levels without requiring a weed. Instead of medicating the client to tolerate the intolerable, we draw on the client's abilities to find new settings consistent with her talents or to change the one that she now occupies. (Evolution is not just environment's hammering critters into molds; we also make our own niches or move to ones that are less irritating or are irritating in fun ways.
- Allow a rational structure that ties our automated, finely honed adaptive systems to corresponding overlays of thinking. Cognition has a deep structure; using the structure well should allow us to teach ourselves and our children simpler techniques for reciprocal inhibition and for synergy between response systems.

Let us see emotions and morals as tools that reflect survival mechanisms.

- Provide a different appreciation of how we can vary genetically and yet perform survival tasks — including those of social cooperation — in ways that are highly similar and complimentary to one another.

A Series of Contributions from Natural Selection

First, natural selection shapes behavior as surely as does a Skinnerian. Random actions—whether exerted by genes or by muscle tissue — are pulled in a consistent direction by the consequences of those actions. Things that work, that aid survival and reproductive success, are repeated and become more frequent in each succeeding minute or generation. Learning merely allows a single creature to do in a few moments the tasks that formerly required many creatures and many generations.

Second, adaptations are the important output of natural selection. They also become a likely tree for our diagnostic schemes. Adaptations are the shaped behavior and structural organizations that efficiently solve survival tasks. Different components—eye, ear, mind, and muscle — perform as a single unit to escape a hunter or to raise a child. Adaptations can be physical as in the sculpted lines of a duck's bill or behavioral as in a husband's jealous guarding of his wife. Behavioral (psychological) adaptations include those for monitoring economic exchanges, social networks, mate selection, child rearing, hunting, gathering, and managing alliances and hierarchies. Even the phrase "common sense" has meaning within evolution... "common" because it reflects evolved understandings that are shared by the majority of

humans and "sense" because the understandings help survival and reproduction.

Different adaptations appeared in different eras. Dan Sperber has commented, "We had better think of the mind as kludge, with sundry bits and components added at different times, and interconnected in ways that would make an engineer cringe." Frogs have bug detectors, so do little hominids. Girls climb, birds soar perhaps because of the same neural foundations. The kids who wear rings in theirtongue declare their fitness in the same manner as my ducks who employ iridescent feathers. People universally seem to prefer blue; so do frogs and probably fish. Thus, the toad in a stream would also respond positively to the IBM logo and dress code. People who exclaim they "aint related to no ape" might reconsider when they learn they are also related to lizards. Imagine being regressed under hypnosis back to your lizard stage!

Third, an understanding of the things done by our adaptations and their survival value lets us understand and predict our behavior and in surprising ways. For example, many women are most likely to have extra marital sexual affairs just before ovulation, at times when they are most likely to get pregnant. Many women can sort men's dirty shirts by odor and in a way that reflects the physical symmetry and attractiveness of the guy who wore it. Our commitment to romantic love possibly allows a fuller rein to imprinting and to familial and genetic similarity as a basis for marriage. Men often reflect greater autonomic distress about their wife's sexual indiscretions than about her falling in love with someone else. Women often have the opposite pattern. We grieve more about the death of a 12 year old than we do for either an infant or for a 20 year old.

Emotions and morals are tools that amplify behavior sequences and extend their duration. Depression can be viewed as a means to conserve resources through a winter or to discontinue nonproductive relationships. The latter occurs in a subtle manner. Signs of depression elicit both sympathy and avoidance from other people. A skilled wife can be depressed to cause her aggressive husband to lose interest in her at the same time she elicits closer allegiance from other women.

Finally, diagnostic and ameliorative functions are met not just by psychologists but also by barbers, neighbors, mates, barmaids, diner companions, and geishas. Lucky for chimpanzess who do similar things, there has been no empirical demonstration that extensive training in psychology is sufficient or necessary to be an effective ally. Clients assess competence probably as accurately as they assess being swindled and a competent ally is more vital than the language on his wall certificate. Friends often have more influence than a therapist and the sense of alliance probably accounts for the 45% placebo response commonly found in studies of depression.

Aspects of Diagnosis and Treatment

We can expect variability in the intensity of every psychological adaptation, even those for breathing. Impaired or exaggerated adaptive foundations for child rearing, mating, and social exchanges may be found to be the most disruptive. Enablers and cheaters have always been in our group. We appear to have "cheater detectors"—untutored skills that recognize unfair exchanges and lies—that fire excessively or not at all, depending on who we are and our context. Cheater detector may eventually be as important a concept as rejection sensitivity.

> Randy Nesse and George Williams have an excellent article in a recent *Scientific American* on "mismatch" due to incompatibilities between our treatment practices and our evolved needs. Too often "mismatch" is described in Rousseau's terms, a whine that our nature is not compatible with our culture and that our biology cannot maintain pace with our toys. Nonsense. Small children cannot build a Furbie but still know what to do with one. Indeed, a Furbie is attractive because it reflects our psychological adaptations. *it may be more helpful to view mismatch, like our culture and our technology, as the product of our psychological distortions and their costs.)*
>
> John Price and Russ Gardner have suggested that mania appears to be a disorder that involves hierarchy and dominance. Heightened activity

level, sexual interest, word flow, and manipulative-ness accompany a diminished need for sleep. Mania is noticeable because of activity level; its damage however, may be in a limited sensitivity to social consequences. Self importance becomes so great and perceived consequences so small. Ambition outruns achievement; bipolar crashes follow. Ambition without success perhaps underlies dysthymia.

Mania and depression are often studied with charts drawn on a calendar. Goodwin and Jamison devote 900 pages to bipolar disorder— there is no mention of evolution and little consideration of event driven mood changes. Yet, the late Dennis Cantwell once remarked that he could usually identify changes in external conditions that preceded bipolar episodes in children and adolescents. Nothing oscillates in nature as a function of time; rather time gives us a boundary for describing the results when stimuli are applied to particular structures. Whether capacitors and resistors or neurons and genes, the principle is the same.

There appear to be many different depressions, each with its positive functions and some of which may have more benefit to the client if they are not treated. Price suggests that depression is a survival tool for lowering your self importance when you are faced with a more able competitor. Self inhibition is a useful tool for maintaining alliances; women are usually superior to men with these skills. Girls at 14 quadruple their rate of depression, males double, perhaps an exaggeration of an internally imposed reduction of self-importance. The loss for a girl is her standing within a group of other girls; if successful, she gains male protection and resources for her self and her future children.

Moderate liveliness is ordinarily a blessing and is not a defining symptom for either ADHD or for mania. Liveliness is correlated with health, higher intelligence, better word flow, superior social skills, and high economic achievement. ADHD is more reasonably associated with impairments in executive functions—working memory, response inhibition, word and memory retrieval, affect regulation, and the capacity to *logical adaptations.* The shampoo counter in a market reflects technology, it also reflects our driving adaptations for sexual selection. Hunter-gatherer minds build hunter-gatherer cultures regardless of technology. Traffic jams, changing homes every few years, clothing styles—all reflect our nature and have their equivalents in other cultures and in other species.

Mismatch of another type seems common in psychological distress. I refer to the mismatch that can exist between a client and her setting. We are each slightly different in our adaptations. A certain amount of variability in us helps us to survive environmental variability. Psychology can be misdirected when it attempts to mold by lecture and training just any individual into any given slot. J. B. Watson's boast was reactive; regardless of the client's age, it was also wrong.

Genetic influences now appear to be more powerful than previously thought even though we are just learning how genes respond to changes in our settings and by our personal interpretations of those changes. Winning at tennis not only gives you more confidence at the next tennis game, it also raises your serotonin levels—you stand taller and attract more mates. Genes are different for each one of us; genes also can be tuned by the seasons, childbirth, orthe relative youth of people around us. Winning, loss, age, and status —all may have unsuspected power to influence us. Therapy and life can be summarized in Brian Goodwin's terms about finding places to be yourself.

Anxiety has evolutionary significance and is not typically a random Pavlovian outcome. Primates not only fear easily, they tend to fear specific things. The details of anxiety, not just the global diagnoses, may run in families and reflect our evolutionary history

PTSD. MacLean events — pain, death, illness,

poisonings, abandonment—may bias the response of very primitive and very generalized emotional and cognitive systems. Slight changes in posture, sounds, or appearance trigger massive changes in mood or behavior sequences. Ulcers occur in restrained rats, likewise for mothers who don't organize their children into hierarchies. The rodent and the human are both immobilized. Reminders of these periods in our lives may never lose their power to elicit extreme fear. (Such events have their positive counterparts that are not customarily "diagnosed." The mania that comes with infatuation, promotions, or unexpected acclaim might also be seen as MacLean events with their own distortions and costs.)

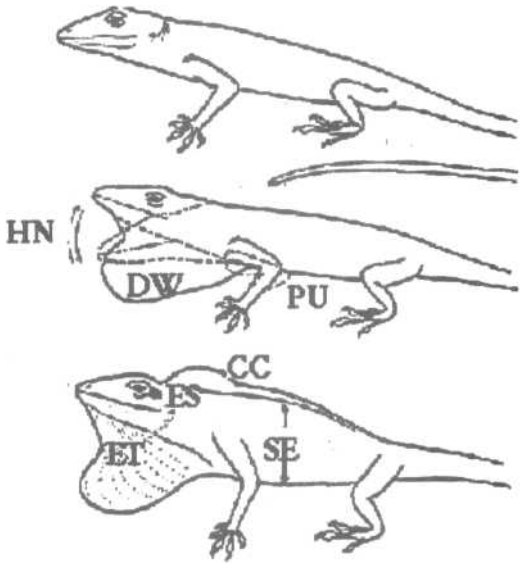
Finally, appraisals of executive functions should be made more overtly instead of hidden under estimates such as "global assessment of functioning." This is true for individual clients and for our species. *Evolution becomes relevant and not just for knowing our origins but also for using our origins to gain a sense of our possible futures. By knowing where we have been, we can appreciate where we might go. We might still make some choices before it is too late to do so.* These "executive functions"—working memory, development of language for memories, sharing of plans, using emotions strategically, and our ability to analyze situations and imagine novel sequences of events—are perhaps our finest gift from the past 200,000 years. Executive functions truly imply that ignorance of our past guarantees our repeating it. Still true for our species and for our individual clients.

---

[1] Dylan Evans, Ph.D. candidate at the London School of Economics and a student of Helena Cronin's, presented a seminar on *Evolutionary Psychology and the DSM* at last summer's Cape Cod Institute, *Healing the Moral Animal: Lessons from Evolution.* This year's course is *Clinical Sociobiology: Darwinian Feelings and Values* and runs from July 19-23,1999.

[2] 1262 West Bridge St, Spring City, PA 19475. (610) 948-5344. Jbrody@compuserve.com. See related work at http://forums.behavior.net/fonjms/evolutionary or http://www.clinical-sociobiology.com.

MacLean PD: *The Triune Brain in Evolution: Role in Paleocerebral Functions.* New York & London: Plenum Press, 1990, p. 153 (after Greenberg).



Features of the signature and challenge displays of the common green anolis lizard *(Anolis carolinensis).*

Top: The usual attentive posture Middle: Diagrammatics of the signature (assertion) display. This display consists of three to five head nods (HN) and pushups (PU) along with an extension of the dewlap (DW). The broken lines indicate the excursion of the head and flexion of forelimbs during pushups. Note absence of static modifiers. Bottom: Diagnostic features of the challenge display of adult male lizards. In addition to the dynamic components of the signature display, the challenge display has several static modifiers. The first to appear are the extended throat (ET) and sagittal extension (SE), followed by an elevation of the nuchal and dorsal crests (CC). A darkly pigmented eyespot (ES) may appear after 2 to 3 minutes.

p. 152: The average body length of an anolis lizard is about that of one's forefinger. The maximum snout-vent length is 75 mm. The brain is the size of a small pea (average length 2.7 mm).

p. 159: It turned out that lesions of the paleostriatum... affected the performance of the "distant" challenge display.... [W]ith destruction of tissue largely confined to the ADVR or PDVR [cortex counterparts] continued to perform challenge displays.

ARTICLE:

by Ichee

Manifesto on human ecology and ethnology

Understanding the present and Choosing the future

International Council for Human Ecology and Ethnology (ICHEE) members are those who agree with the manifesto replicated below. ICHEE Councilors are invitees who have promoted ideas and aims consistent with the ICHEE manifesto.

In 1962 Rachel Carson's book *The Silent Spring was* published. The value of her work in raising consciousness of the relationships between ourselves and animals and plants as part of ecological systems is inestimable. It is wonderful to recognize the successes of the ecology movement.

We need now to raise consciousness to understand that there is a human ecology, and to act accordingly, consonant with Edmund Burke's conception of society as a partnership "between those who are living, those who are dead, and those who are to be born."

The International Council for Human Ecology and Ethnology offers a new way of thinking about human relationships and future human development. It considers human affairs in their evolutionary and ecological context, as part of a way of looking at the world and its animals, plants, natural resources, its geography, and its geopolitics.

ICHEE promotes the integrity of tribal, racial and national ethnic groups because differentiation is part of biological and cultural evolution. Powerful economic and political forces are used to try to erase these differences through various forms of disintegration of natural communities.

Marxism and imperialism are systems that have promoted or forced the disintegration and disappearance of tribal, racial and national ethnic groups. Transnational corporatism often exercises powerful economic and political power towards these ends in the contemporary world.

Social, political and ethnic developments should be towards devolution of powers, limiting those of centralized or transnational authorities and corporations, and inspired by ecological preservation and renewal.

We the People are kept far from the planning and control over supranational authorities. How are the arbiters of the World Trade Organization appointed? Supranational controllers, their appointment and dismissal, are free from electoral vote. To whom are they accountable? Since they have power over us, shouldn't we have an equal power to remove them?

ICHEE opposes programs which distort ecological systems through foreign aid, welfare, or mass migration, for example, and supports programs for population stabilization. We support repatriation of refugees from economic and political conditions, and military operations, in their areas of origin as soon as possible.

ICHEE may recommend systems for national and ethnic conflict resolution. These are based upon local or regional mutual interests, with the use of simulations and projections of alternative possibilities.

If we are secure and confident in our communities, we can better enjoy the diversity of other places and peoples. As once some dreamed, from our homes we can surf the stars of cyberspace and share new dreams, and old and new ideas with others.

ICHEE is a non-profit tax-exempt educational organization. Your interest and support for ICHEE is welcome. Join us in enlightening others with our perspective of a Human Ecology; a perspective of respect for natural systems. Make copies of this Manifesto. Communicate to say Yes! I support ICHEE.

Robert John, Ichee@aol.com

Borras-Valls JJ, Salvador A, Simon VM: Acute and chronic effects of clomipramine on isolation-induced aggression in male mice. *Psyehobiology* 1994;22:226-231.

Abstract: The behavioral effects of clomipramine were studied on an ethopharmacological model of aggression. A range of low doses (similar to those used in clinical practice...and a higher dose... more usual in animal experimentation) were administered to isolated male mice that confronted anosmic opponents in a neutral area. Encounters were staged 30 min after acute treatment and either 30 min or 24 h after the last drug administration in the chronic (21 -day) treatment. Significant behavioral effects were similar in the sense that both decreased aggressive behavior and produced some impairment of motor behavior, but differed in that such antiaggressive action was more potent in the chronic treatment, whereas the motility impairment was stronger in the acute one. The two chronic evaluations (at 30 min or 24 h) did not produce widely different results.

Johnson DL, Wiebe JS, Gold SM, Andreasen NC, Hichwa RD, Watkins GL, Boles Pronto LL: Cerebral blood flow & personality: a positron emission tomography study. *Am J Psychiat* 1999;156:252-7

Abstract: This study...describe[d] brain regions associated with the personality dimension of introversion/extra version. Measures of cerebral blood flow (CBF) were obtained from 18 healthy subjects by [via] positron emission tomography. Correlations of regional CBF with introversion/extra version were calculated, and a three-dimensional map of those correlations was generated.... [I] ntroversion was associated with increased blood flow in...frontal lobes and...anterior thalamus. Regions in...anteriorcingulate gyrus,...temporal lobes, and...posteriorthalamus were...correlated with extraversion. The findings of the study...support ...that introversion is associated with increased activity in frontal lobe regions. Moreover... individual differences in introversion and extraversion [relate] to differences in a fronto-striato-thalamic circuit.

Amos B, Twiss S, Pomeroy P, Anderson S: Evidence for mate fidelity in the Gray Seal. *Science* 1995:268:1897-1899.

Abstract: Colonially breeding gray seals are poly-gynous. Males are larger than females, compete with each other for position among aggregated females, and contribute no parental care. Genetic analysis of pups bom on the island of North Rona, Scotland, reveals large numbers of full siblings, although dominant males father disproportionately few of these. This results cannot be explained by mating patterns based solely on male dominance and the spatio-temporal organization of the breeding colony. Instead, many full siblings must result from choices favoring previous parental combinations. Thus, polygyny and partner fidelity appear to operate simultaneously in this breeding colony.

Smith DG: Male dominance and reproductive success in a captive group of Rhesus Macaques (*Macaca mulatto). Behaviour*1994;129:3-4.

Abstract: Paternity exclusion analysis [using electro-phoretic protein analysis] was employed to estimate the reproductive success (RS) of 32 males who experienced at least one breeding season over the age of four years between 1977 and 1991 in a captive group of rhesus macaques *(Macaca mulatta).* Although three different males held alpha rank during the period, the male dominance hierarchy remained relatively stable even when the number of males was high. Average dominance rank and overall RS of males while in the group was strongly correlated. However, during most years the correlation between male dominance and RS was not statistically significant because males achieved high rank (1) were those who experience relatively high RS as lower ranking sub-adults and (2) maintained high dominance rank after experiencing a sustained decline in RS. Correlations between male dominance rank and RS were highest when the number of subadult males entering the dominance hierarchy was increasing and one or very few of the males were least effective in monopolizing

females. These results are not consistent with expectations based solely on the priority of access model of intrasexual selection. Female choice, as exemplified by the preference of females for mating with young males that were rising in rank, might also influence the evolution of social dominance in rhesus macaques.

Wimmer EA, Jackie H, Pfeifle C, Cohen SM: A *Drosophila* homologue of human Sp1 is a head-specific segmentation gene. *Nature* 1993;366:690-694

Abstract: Segmentation in *Drosophila* is based on a cascade of hierarchical gene interactions initiated by maternally deposited morphogens that define the spatially restricted domains of gap gene expression at blastoderm. Although segmentation of the embryonic head is morphologically obscured, the repeated patterns of expression of the segment polarity genes reflect the formation of seven head segments; two of these depend on the segmentation and homeotic genes used in the trunk, whereas the others form as a result of the activity of the head-specific genes *orthodenticle (otd), empty spirvles (ems)* and *buttonhead (btd).* The genes *ems* and *otd* encode homeotic proteins, suggesting that they may function as transcription factors. They are expressed in overlapping stripes in the embryonic head *oi Drosophila,* and their vertebrate homologues, *ots* and *emx,* are expressed in overlapping domains in the anterior central nervous system of the mouse embryo. We show here that *btd* is expressed in a stripe covering the head anlagen of the segments affected in *btd* lack-of function mutants and that *btd* encodes a zinc-finger-type transcription factor with sequence and functional similarity to the prototype mammalian transcription factor Sp1. When expressed in the spatial pattern of *btd,* a transgene providing Sp1 activity can support development of the mandibular segment in the head of *btd* mutant embyos. A ubiquitous transcription factor from humans can therefore replace an essential component of the genetic circuitry required to specify the development of a particular head segment in the fly.

Gray MW, Burger G, Lang BF: Mitochondrial evolution. A review. *Science* 1999;283:1476-1481.

Abstract: The serial endosymbiosis theory is a favored model for explaining the origin of mitochondria, a defining event in the evolution of eukaryotic cells. As usually described, this theory posits that mitochondria are the direct descendents of a bacterial endosym-biont that became established at an early stage in a nucleus-containing (but amitochondriate) host cell. Gene sequence data strongly support a monophyletic origin of the mitochondrion from a eubacter ancestor shared with a subgroup of the a-Proteobacteria. However, recent studies of unicellular eukaryotes (protists), some of them little known, have provided insights that challenge the traditional serial endosym-biosis-based view of how the eukaryotic cell and its mitochondrion arose in a common ancestor of all extant eukaryotes and raise the possibility that this organelle originated at essentially the same time as the nuclear component of the eukaryotic cell rather than in a separate, subsequent event.

Mufti RM, Balon R, Arfken CL: Low cholesterol and violence *Psychiatric Services* 1998;49:221 -224.

Abstract: The association between violent behavior and low serum total cholesterol was examined in a psychiatric inpatient population with diverse diagnoses. The study used a case-control design to compare the cholesterol levels of patients in a long-term psychiatric hospital who had a history of seclusion or restraints (N=20) and those who did not (N=20). A low cholesterol level was defined as less than 180 mg/dL. A strong association was found between low cholesterol levels and violent behavior (odds ratio=15.49), an association that was not due to age, race, sex, or diagnosis. The finding was consistent whether mean levels or dichotomized levels of cholesterol were examined. Physical health, cholesterol-lowering drugs, current alcohol use, or unusual diets could not explain the results. However, the raw frequency of the frequency of violent behavior was not associated with cholesterol level. Dichotomizing cholesterol levels at 180 mg/dL yielded high sensitivity (90%) for predicting violent behavior but at the cost of

low specificity (65%). The results support the hypothesis that an association exists between low cholesterol and violent behavior among psychiatric patients but argue against using cholesterol level as a screening tool for predicting violent behavior.

Ahlburg PE, Clack JA, Luksevics E: Rapid brain-case evolution between *Panderichthys* and the earliest tetrapods. *Nature* 1996;381:61-64

Abstract: The panderichthyids (orelpistostegids) are the most tetrapod like fishes that still retained paired fins rather than limbs. During the transition from fish to tetrapod, the braincase, previously subdivided by a joint, was remodelled into a solid structure. Here we present the complete braincase of the fish *Panderichthys rhombolepis,* a Middle Devonian member of the tetrapod stemgroup. *Panderichthys* has an externally retained the intracranial joint, conforming wholly to the generalized pattern of lobe-finned fish, and sharing no obvious features with tetrapods. This places the braincase transformation between *Panderichthys* and the earliest tetrapods exemplified by *Acanthostega.* The timing of the braincase transformation closely matches that of the limbs. There are also striking similarities with the braincase transformation in the lungfish lineage. Both phenomena may reflect developmental linkages and canalization.

Means M: Never trust anyone under 30 - on the White House staff. *Houston Chronicle* March 17, 1999, Column on p. 33A.

Extract: In his 1970 book *Twilight of the Presidency,* [George] Reedy [Lyndon Johnson's White House press secretary] notes, "The inner life of the White House is essentially the life of chickens in the barnyard. ... It is a question of who has the right to peck whom and who must submit to being pecked."

When [former presidential aide and author of *All Too Human]* George Stephanopoulos was riding high and doing the pecking, he was OK. But when he fell from favor and saw himself as low on the pecking order, he was consumed by hives and anxiety.

"The institution provides camouflage for all that is petty and nasty in human beings and enables a clown or a knave to pose as Galahad and be treated with deference," Reedy observed.

Reedy wasn't referring merely to the Johnson White House that he knew best. He quoted a former aide to Franklin Roosevelt, a fellow known for what FDR called a "passion for anonymity," as explaining that insecurity and duplicity were eternal at the seat of ultimate government power. That's the way it has always been and that's the way it will always be," the aide said.

... Stephanopoulos pretends he never anticipated any of that. His insistence on his own honorable political principles and naivete about Clinton's womanizing are a typical author's trick. You get to write the book; you get to cast yourself as hero.

... Stephanopoulos can't make up his mind whether to like [Hillary Clinton] or not. It doesn't matter. On the basis of his premature literary squealing we can easily decide to not like him.

Contreras D, Destexhe A, Sejnowski TJ, Steriade M: Control of spatiotemporal coherence of a thalamic oscillation by corticothalamic feedback. *Science* 1996;274:771-774

Abstract: The mammalian thalamus is the gateway to the cortex for most sensory modalities. Nearly all thalamic nuclei also receive massive feedback projections from the cortical region to which they project. In this study, the spatiotemporal properties of synchronized thalamic spindle oscillations (7 to 14 hertz) were investigated in barbiturate-anesthetized cats, before and after removal of the cortex. After complete ipsilat-eral decortication, the long-range synchronization of thalamic spindles in the intact cortex hemisphere changed into disorganized patterns with low spatiotemportal coherence. Local thalamic synchrony was still present, as demonstrated by dual intracellular recordings from nearby neurons. In the cortex, synchrony was insensitive to the disruption of horizontal intracortical connections. These results indicate that the global coherence of thalamic oscillations is determined by corticothalamic projections.

Keller L, Genoud M: Extraordinary lifespans in ants: a test of evolutionary theories of aging. *Nature* 1997; 389:958-960

Abstract: Senescence presents not only a medical problem, but also an evolutionary paradox because it should be opposed by lateral selection. Evolutionary hypotheses propose that ageing evolves as the necessary cost of processes increasing early reproductive success, or because of weaker selection against late-acting mutations. A prediction of these hypotheses is that the rate of ageing should increase and the average lifespan decrease as the rate of extrinsic mortality increases. Alternatively, non-adaptive, purely mechanistic hypotheses invoke damage to DNA, cells, tissues and organs as being the unique cause of senescence and ineluctable death of organisms. Here we show that the evolution of eusociality is associated with a 100-fold increase in insect lifespan. Such an increase is predicted by evolutionary theorie because termite, bee and ant queens live in colonies that are sheltered and heavily defended against predators. Moreover, a comparison of ants with contrasting life histories also reveals an association between lifespan and extrinsic rate of mortality. These results provide strong support for evolutionary theories of ageing, as purely mechanistic hypotheses of senescence do not propose any association between the rate of extrinsic mortality and lifespans.

Gainetdinov RR, Wetsel WC, Jones SR, Levin ED, Jaber M, Caron MG: Role of serotonin in the paradoxical calming effect of psychostimulants on hyperactivity. *Science* 1999;283;397-401.

Abstract: The mechanism by which psychostimulants act as calming agents in humans with attention-deficit hyperactivity disorder (ADHD) or hyperkinetic disorder is currently unknown. Mice lacking the gene encoding the plasma membrane dopamine transporter (DAT) have elevated dopamine tone and are hyperactive. This activity was exacerbated by exposure to a novel environment. Additionally, these mice were impaired in spatial cognitive function,and they showed a decrease in locomotion in response to psychostimulants. This paradoxical calming effect of psychostimulants depended on serotonin neurotransmission. The parallels between the DAT knockout (KO) mice and individuals with ADHD suggest that common mechanisms may underlie some of their behaviors and responses to psychostimulants.

Extract: Administration of the SERT [5-HT transporter], fluoxetine, markedly attenuated the activity of the DAT-KO mice, whereas it had no effect on wild-type animals. These actions were presumably mediated by increased extra-cellular concentrations of 5'HT receptor agonist, also reduced hyperiocomotion in the DAT-KO mice. Another method for potentiating central 5-HT neurotransmission is through the increased availability of precursor substances. When mice were treated with 5-hydroxytrypophan or... HT precursor (L-tryptophan, hyperiocomotion in the DAT-KO mice was again profoundly reduced. Similar reductions in... rearing and stereotypic responses were also observed. By comparison, the wild-type animals either did not respond to these serotonergic pharmacological treatments or responded with only marginal and transient reductions in locomotion.

Zuk M: Mating arenas. Review of *Leks* by J. Hoglund & R.V. Alatalo. Princeton: Princeton U Press, 1995. *Science* 1996; 271:1370-1371.

Extract: Leks are among the greatest wonders of the natural world. These aggregations of displaying male birds, mammals, and (by some definitions) insect, apparently existing solely as mating arenas where females come, mate with one or more popular males, and leave having obtained nothing more than the sperm to fertilize their offspring, have caprtivated naturalists for centuries. Why should hundreds of grouse cluster every spring on a barren icy meadow, with populations often occupying the same display grounds for decades? If males supply only sperm, what differences among them motivate female choice so extreme that a single male can fertilize 90 percent of the offspring produced? Given that such extreme choice occurs, how can any genetic variation in fitness remain after generations of selection?

...I found it disappointing how few questions could be definitively answered even for representative systems.

The authors emphasize the need to integrate theory with practice, a synthesis that is nowhere more evident than their own work with black grouse. They combine ingenious manipulations of male feather ornaments with meticulous observations of display and copulation success (documented to closely reflect paternity).... [F]ew cues in males explain the high degree of mating skew observed, although more vigorous males tend to be more successful.... [W]e may have been too hasty in assuming that females receive nothing from lekking males besides their genes and suggest that direct benefits have not been ruled out by careful research.

Lank DB, Smith CM, Hanotte O, Burke T, Cooke F: Genetic polymorphism for alternative mating behaviour in lekking male ruff *Philomachus pugnax*. *Nature* 1995; 378:59-62.

Abstract: Alternative male mating tactics are widespread among animal taxa, but there are few well documented examples of genetic polymorphisms for them. The dimorphism in male courtship beahviour between independent and satellite ruffs, *Philomachus pugnax* (a lekking sandpiper), has often been cited as a potential example but this has been questioned because of lack of data and the widespread pheno-typic plasticity in the development or expression of alternative tactics in other species. By rearing ruffs in captivity, we now show that differential morph development is genetically controlled and consistent with a single-locus, two-allele autosomal genetic polymorphism. Several potentially relevant environmental factors do not appear to alter behavioral development.

Sinervo B, Lively CM: The rock-paper-scissors game and the evolution of alternative mating male strategies. *Nature* 1996;380:240-243.

Abstract: Most species exhibit colour polymorphisms associated with alternative male reproductive strategies, including territorial males and 'sneaker males' that behave and look like females. The prevalence of multiple morphs is a challenge to evolutionary theory because a single strategy should prevail unless morphs have exactly equal fitness or a fitness advantage when rare. We report here the application of an evolutionary stable strategy model to a three-morph mating system in the side-blotched lizard. Using parameter estimates from field data, the model predicted oscillations in morph frequency, and the frequencies of the three male morphs were found to oscillate over a six-year period in the field. The fitnesses of each morph relative to other morphs were were non-transitive in that each morph could invade another morph when rare, but was itself invadable by another morph when common. Concordance between frequency-dependent selection and the among-year changes in morph fitnesses suggest that male interactions drive a dynamic 'rock-paper-scissors' game.

Extract: (FIG 1) Colour polymorphisms of male side-blotched lizards. Males with orange throats... and/or sides are 'ultra dominant' to males with blue on their throat.... Males with yellow throats... resemble females in morphology in that females have yellow throats when receptive....

We have described the first biological example of a cyclical 'Rock-paper-scissors' game. As in the game where paper beats rock, scissors beats paper, and rock beats scissors, the wide-ranging 'ultradominant' strategy of orange males is defeated by the sneaker 'strategy' of yellow males, which is in turn defeated by the mate-guarding strategy of blue males; the orange strategy defeats the blue to complete the dynamic cycle. Frequency-dependent selection maintains substantial genetic variation in alternative male strategies, while at the same time prohibiting a stable equilibrium in morph frequency.

Orange vs* blue side-blotched lizards (in a photo the *background* of which is artificially whitened to heighten *contrast)

***Orange* color (exhibited by the animal on the left) *correlates* with ultra-dominant *status* (notice the higher *nose* position.) The yellow morph in which the male resembles females is not *depicted* here.**

WPA business :

Dr. Price's letter to The World Psychiatric Association Executive Council that includes the draft of a consensus statement on psychotherapy: please review and comment

Dear Professor Okasha,

You ask that our Section should produce a consensus statement on psychotherapy for endorsement by the General Assembly in Hamburg, August, 1999. You also mention that Dr Senf from the International Association of Psychotherapy is producing a consensus statement on psychotherapy and that he may be in touch with me; in fact, I have not heard from him. I have, however, heard from Professor Robert Cancro who has been asked by the EC to create a task force on psychosocial interventions. He too is preparing a consensus statement for Hamburg, and has asked to have a provisional report from our section by the end of March. I will send him a copy of this message, and I hope he will send a copy of his request, and any other relevant material, to the members of our Committee, listed above, in the hope that one of them may wish to join his task force.

You also ask for comments on the statement on "Ethics of Psychotherapy" by the Ethics Committee. I will deal with their four points one by one:

1. "Psychotherapeutic techniques are becoming more and more specific for specific disorders. Therefore psychotherapeutic intervention should follow a proper psychiatric diagnosis". I am very doubtful about this proposition, even if it were clearly an ethical matter. Are patients to be denied psychotherapy if the diagnosis is in doubt? Sometimes, as in a case reported by Mardi Horowitz in his recent book *(Formulation as a Basis for Planning Psychotherapy Treatment,* American Psychiatric Press, 1997), the diagnosis does not become clear until psychotherapy is well advanced, and the patient is secure enough to confide more fully in the therapist. The choice of psychotherapeutic method depends on many matters, such as the patient's personality, their social circumstances and their finances, and I would not put a formal psychiatric diagnosis at the top of the list.

2. "Psychotherapy must be assessed and evaluated in the same way as any other treatment in psychiatry". Yes, I agree. But how to do it? That is the problem. After nearly a century of psychoanalysis, there has been no adequate trial of it. We need a task force on how to evaluate different forms of psychotherapy.

3. "Informed consent must be obtained for the applica tion of psychotherapy". Why? Who is going to go for psychotherapy if they do not consent? And plenty of information is available about psychotherapy, so no one need be uninformed. I should be very unhappy to see this requirement put to the GA for endorsement.

4. "Psychiatrists can use psychotherapy only if they have been fully trained and qualified to apply it". This statement is meaningless and potentially harmful in the absence of a clear definition of psychotherapy. Because of this I offer you a draft "consensus state ment" to try to tackle this problem.

A CLASSIFICATION OF PSYCHOTHERAPIES USED BY DOCTORS

1. Basic psychotherapy. This should be applied by all medical practitioners, as it includes all the tech niques for developing a good doctor-patient relation ship. It ensures that the patient remains in treatment, and has sufficient confidence in the doctor to take any recommended medication. It is a deficiency in this kind of psychotherapy that drives so many patients to "alternative" practitioners.

2. General psychotherapy. This should be used by all psychiatrists and it involves helping the patient to sort

out whatever chaos their lives are in, and in dealing with whatever factors seem to have precipitated the presenting illness. It should not take much more than two or three sessions, and it should not be handed over to a nurse or other paramedic unless it is clear that a more prolonged therapy is required. This therapy may be individual, or involve a couple, or a whole family, and the training of all psychiatrists should make them comfortable in all these kinds of psychotherapeutic situation. Some general practitioners and general physicians may use this category of psychotherapy.

3. Specialist psychotherapy. This aims at making fundamental and long-term changes in the patient's way of thinking, feeling and behaving. It may be individual, in which case, through the development of transference, it may offer a "corrective emotional experience" to counterthe failure of parents to inculcate basic trust and self-esteem in the child. It may take the form of an out-patient group, in which case it may offer a "corrective emotional experience" to counter the failure of the adolescent peer group to give the patient a sense of belonging and being valued. In more severe cases it may take a residential form. All these forms of specialist psychotherapy should be carried out (or at least supervised) by psychiatrists who have had special training, over and above the general psychiatric training, and who devote the majority of their time to the practice of psychotherapy.

The above thoughts are my personal reaction to your request, and do not necessarily reflect the views of the section who are nevertheless informed about the draft via *The ASCAP Newsletter,* which is the official publication of the section. Nevertheless, I hope my colleagues will respond, and that by the time we get to Hamburg we may have something that could be offered as a consensus.

Psychotherapy Section Members please contact Dr. Price formally via the newsletter or directly.

John S. Price, D.M.
john.price@lycosmail.com

APPENDIX 1 to Dr Price's report in To and From, p.4

A conference was held in Washington, DC, on May 2 1998, sponsored by the Section on Psychotherapy of the World Psychiatric Association. A description of the conference follows.

CLINICAL APPLICATIONS OF ATTACHMENT THEORY AND RESEARCH

There is a growing interest among clinicians to learn about attachment theory. Research informed by attachment theory not only has confirmed some of the basic postulates of the theory, but has also extended its findings from normal to clinical populations. Some of these findings have important implications for clinicians. Unfortunately, unless one is familiar with the burgeoning literature spread in many specialized journals and edited books, there is no easy access to this body of research. We think that the conference will be a step toward filling this gap.

The speakers at the conference were:

Arrieta Slade, Ph.D. Professor and full time member of the doctoral faculty in Clinical Psychology at the City College and Graduate Center of New York. She has directed two major federal funded studies of the relationship between parental and child representations of attachment and has written several papers in this area. She has maintained a clinical practice for 16 years and has also published papers on the intersection of psychoanalysis, psychotherapy and attachment theory. She is the editor with Denny Wolf of Children at Play and Developmental Approaches to Meaning and Representation, published by Oxford University Press in 1994.

Jude Cassidy, Ph.D. Associate Professor of Psychology, University of Maryland. Dr. Cassidy is well known nationally and internationally as an outstanding attachment researcher. She has published dozens of articles in the field and is editor with P.R. Shaver of the Handbook of Attachment Theory and Research (in preparation). She is a recipient of a NIMH grant on studying the relationship between Generalized

Anxiety Disorder and Adult Attachment.

Mauricio Cortina, M.D. is the director of Institute for the Study of Attachment Relations and Culture at the Center for Adult Development in Washington D.C. Dr. Cortina is a faculty member at the Washington School of Psychiatry, member of the Institute for Contemporary Psychotherapy and honorary member of the Mexican Institute of Psychoanalysis. He is currently engaged in research using the Adult Attachment Interview (AAI) in psychotherapy. He maintains a clinical practice in Washington D.C.

Mary Dozier, Ph.D. Associate Professor of Psychology, University of Delaware. Dr. Dozier has published extensively in the field of attachment. She is engaged in two lines of research relating attachment to treatment. In the first, she explores the evolution of attachment for babies in foster care, examining factors related to attachment quality, such as timing of placement and foster parents internal working models. She has developed an intervention designed to sensitize foster parents to children's attachment needs. The second line of research examines the importance to treatment process and outcome of clients' and clinicians' internal working models.

Discussants:

Joseph Lichtenbeng, M.D., founder of the Institute for Contemporary Psychotherapy and David Scharff, M.D., Co-director with Jill Scharff of the International Institute Object Relations Training Program. Comments of the presentations from a self-psychology and object-relations perspective respectively.

The conference was sponsored by the Center for Adult Development, a non-profit research and consulting organization in Washington D.C.

The cosponsors were:

The Institute for Contemporary Psychotherapy. The International Object Relations Training Program Uniformed Services University for the Health Sciences The Washington School of Psychiatry International Attachment network

The papers were:

Jude Cassidy. Attachment theory and Generalized Anxiety Disorder
Arrieta Slade. Attachment theory and Psychoanalysis
Mauricio Cortina Disorganized Patterns of Attachment in two Clinical Cases
Mary Dozier. Using Attachment Theory to Sensitize Foster Mothers to Young Children's Troubled Attachment Patterns

APPENDIX 2 Report from Marco

Bacciagaluppi (Section Treasurer):

1. In November 1996, together with a group of col leagues, I set up an organization called OPIFER (Organizzazione di Psicoanalisti Italiani), a group of independent Italian psychoanalysts which follows the model of the American Academy of Psychoanalysis (of which I am Fellow). OPIFER has since then orga nized, or co-organized, a number of national and international meetings.

2. In June 1997, as President of OPIFER, I presented the Neofreudian approach at the VII Annual Conference of the EAP (European Association for Psychotherapy) in Rome.

3. In Spring 1998, the Journal of the American Acad emy of Psychoanalysis devoted a Special Section to contributions of OPIFER members. My own contribu tion was titled "Recent Advances in Evolutionary Psychology and Psychiatry".

4. In October 1998, at a meeting in Pisa to com memorate Silvano Arieti (the first Editor of the Ameri can Handbook of Psychiatry), I gave a paper on 'Evolutionary aspects of Silvano Arieti's work".

Editor's note: Books by Dr. Arieti include:
Arieti S: Creativity. The Magic Synthesis. NY: Basic Books. 1976.

Arieti S: On Schizophrenia, Phobias, Depression, Psychotherapy and the farther Shores of Psychiatry. NY: Brunner/Mazel, 1970.

As CITED BY .....

Cover Page Head Quote

1. Beck AT: *Cognitive Therapy and the Emotional Disorders.* New York, N.Y.: International Universities Press, 1976, p.7.

From Page 9 (Price: Response to Don LeCroy)

1. MacLean PD: *The Triune Brain in Evolution.* New York: Plenum Press, 1990
2. Price JS: Goal setting in psychotherapy: a contribution from evolutionary biology. *The ASCAP Newsletter* 1997;10(10):8-11.
3. Le Cray D: Female emotionality: an evolutionary explanation. *The ASCAP Newsletter.* 1998;11 (12):8-11
4. McGuire MT, Troisi A: *Darwinian Psychiatry.* Cambridge, MA: Harvard University Press, 1996
5. Price JS Implications of sexual selection for variation in human personality and behavior. In: J van der Dennen & D. Smillie (Eds). *The Darwinian Heritage and Sociobiology,* Westport CT: Greenwood Publishing Group, (In press)
6. Price JS: Agonistic versus prestige competition: a possible basis for the distinction between the agonic and hedonic modes. *The ASCAP Newsletter.* 1995;8(9):7-15.
7. PriceJS, GardnerR: The paradoxical power of the depressed patient: a problem forthe ranking theory of depression. *Brit J Med Psychol* 1995;68:193-206.

From Page 17 (Walker: Hedony and the dog)

1. Koob GF, LeMoal M: Drug Abuse: Hedonic Homeostatic Dysregulation. *Science* 1997:278:52-58. A similar abstract by Koob GF, Roberts AJ: Brain reward circuits in alcoholism CNS Spectrums 1999;4:23-37 was placed in the February 1999 issue of *The ASCAP Newsletterer*1999;12(#2):28.
2. Cooper, S.J., Hendrie, C.A. (Eds): *Ethology and Psychopharmacology.* New York, NY: John Wiley & Sons, 1994.
3. Panksepp J, Nelson E, Bekkedal M: Brain systems for the mediation of social separation-distress and social-reward. Evolutionary antecedents and neuropeptide intermediaries. *Ann NY Acad Sci* 1997;807:78-100. Also see Panksepp, Jaap: *Affective Neuroscience: The Foundations of Human and Animal Emotions.* Oxford University Press, 1998. Chapter 14 entitled "Love and the social bond: the sources of nurturance and maternal behavior" treats the issues raised here.
4. Forillo, Williams: Glutamate mediates an inhibitory postsynaptic potential in dopamine neurones. *Nature* 1998:394:78.
5. Keltner, Folks: *Psychotropic Drugs,* New York: Mosby, 1997, p. 356

From Page 19 (Price: Response to Dylan Evans)

1. Price JS, Sloman L, Gardner R, Gilbert P, Rohde P: The social competition hypothesis of depression. *Brit* JPsyc/i/af1994;164:309-135. Reprinted in S. Baron-Cohen (Editor): *The Maladapted Mind: Classic Readings in Evolutionary Psychopathology,* Hove: Psychology Press, 1997, pp. 241-253.
2. Stevens A, Price J: *Evolutionary Psychiatry: A New Beginning.* London: Routledge, 1996.

ASCAP

The ASCAP Newsletter
Russell Gardner, Jr., M.D., Editor-in-Chief
Frank Carrel, Managing Editor
Department of Psychiatry & Behavioral Sciences
Marvin Graves Building, Room 1.103
University of Texas Medical Branch
Galveston, TX 77555-0428
Tel: (409)772-3475
Fax: (409) 772-4288 or (409) 772-6771
ASCAP E-Mail: ascap@.utmb.edu
rgardner@utmb.edu

SUBSCRIPTION & MEMBERSHIP FEES

For the twelve 1999 issues (Vol. 120, Nos. 134-145), please remit $50.00 with this cover sheet* Checks or money orders are payable to *The University of Texas Medical Branch.* Please mail to Frank Carrel, Managing Editor, at the above-mentioned address.

Reprints of previous volumes are also available: Indicate below the Volumes that you want. Please send me:

____	Vol. 1,1988 (nos. 1-13)	$15.00	_____	Vol. 6,1993 (nos. 62-73)	$15.00
____	Vol. 2,1989 (nos. 14-25)	$15.00	_____	Vol. 7,1994 (nos. 74-85)	$15.00
____	Vol. 3,1990 (nos. 26-37)	$15.00	_____	VoL 8,1995 (nos. 86-97)	$15.00
____	Vol. 4,1991 (nos. 38-49)	$15.00	_____	Vol. 9,1996 (nos. 98-109)	$25.00
____	Vol. 5,1992 (nos. 50-61)	$15.00	_____	Vol. 10,1997 (nos. 110-121)	$25.00
____	Vol. 11,1998 (nos. 122-133)	$35.00	_____	Vol. 12,1999 (nos. 134-145)	$50.00*

TOTAL AMOUNT ENCLOSED:_____

*** This includes membership in the Psychotherapy Section of the WPA. One does not have to be a psychiatrist in order to be a member. If the subscriber wishes membership in The ASCAP Society alone, $35 is the subscription cost.**

If you prefer to use a credit card, please complete the following:

I authorize The University of Texas Medical Branch to charge to my

Master Card / Visa / Discover / American Express **(circle one)**

The following amount: _____ Card Number: _____

Card Expiration Date: _____ Signature: _____

Please fill out the following items for our membership/subscription list:

Name:

Tel: _____ Fax: _____ E-Mail: __ _____

Address: _____

ASCAP

Registration for

Paul D. MacLcan Festschrift

Boston Back Bay Hilton, July 16 & 17,1999

sponsored by the ASCAP Society

REGISTRATION:

My registration fee of $75 (waived for invited speakers) is enclosed as

☐ **Check** ☐ **Money Order** ☐ **Credit Card Charge**

Checks **or money orders are payable to The University of Texas Medical Branch**

If you prefer to use a credit card, please complete the following: I authorize The University of Texas Medical Branch to charge to my (mark one)

☐

MasterCard ☐ Visa ☐ Discover ☐ American Express

The following amount_____Card number _____

Card expiration date: _____ Signature:_____

Name:_____ Address:_____

Send to Russell Gardner, Jr.

Secretary-Treasurer, The ASCAP Society

921 Blume Drive, Galveston, TX 77554

HOTEL RESERVATIONS:

Please make your own reservations as needed at the Boston Back Bay Hilton. 40 Dalton Street. Boston, 02115 800 874-0863 or 61723&-1100. Special rates have been arranged for The ASCAP Group"- $185/night for single or double plus tax. Please make your reservations for the nights of July 15 & 16 (for the meetings Friday, July 16 ft Saturday, July 17) as quickly as possible, latest June 15. After this date, the group rate will be provided only on a room - available basis. Make sure that you identify your group affiliation as ASCAP when you make your reservation. Group rates may hold for July 17 should you desire to stay.