For evolutionary psychiatrists, psychologists and others interested in sociophysiological Integration

# ASCAP

Volume 12, No. 6 (Cumulative #139) June, 1999

**"Grooming [in old world monkeys and apes] denotes a willingness to invest time and effort in the welfare of another: what we ordinarily call friendship. Animals that groom together, look after each other.** **Richard Byrne[1]**

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### 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 behavior that 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 research endeavors, etc.

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

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**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 ...*

**To: All participants in the first and second symposia of the Psychotherapy Section of the WPA,** Hamburg, 8/6-11/1999.

From: John Price, Chairperson, Psychotherapy Section

Dear Fellow Participant, It is now only weeks to the Congress, and I regret that I am still unable to tell you the days that the symposia will take place. I am in touch with the organisers and they have promised to tell me as soon as they have decided, which they think will be the end of May. I will pass on the information to you as soon as I get it.

I hope you have managed to book accommodation in Hamburg. As you know, we are having an ASCAP meeting on August 6, probably at the Holiday Inn, and so I myself have arranged to arrive in Hamburg (by airfrom Heathrow) on 5 August, and will be staying for two nights at the Hotel Holiday Inn, and then moving to the Hotel Mittelweg which costs about the same but is nearer the Conference Hall (about ten minutes walk away). If anyone else is interested in staying there, the fax number is 0049 4041 410120 and the address is Mittelweg 59,20149 Hamburg.

I hope all speakers will let me have copies of their talks before the meeting, so that I can pass them on to the discussants. Let us set a date of two weeks before the congress; i.e., 24 July (my youngest daughter is getting married on that day, so it will be easy for me to remember!).

Looking forward to a good meeting, and wishing you a safe journey there.

**MacLean Festschrift**

A number of title changes have happened so please see the amended replication of the schedule for the meeting to occur on July 16 and 17. Funding is still not clear. Dan Matthews, one of our speakers, is taking our proposal up with this higher-ups in CNS Hospitals. They have hospitals in Boston and he will arrange that the meeting will be advertised there as well. Encourage attendance -- we have some but not many people who have registered as audience.

We are working on a formal prospectus for each of the two volumes that we will be proposing to the Greenwood-Praeger Publishing group. They have expressed interest but their final decision, of course, will of course stem from their evaluation of the proposals.

Next issue will be the abstract issue and program for the Festschrift already well underway (albeit complicated because we are moving from Galveston to Madison as June begins).

**AECOM Cape Cod Conference on Clinical Sociobiology**

TheCape Cod course is still accepting applicants. This is on **Clinical Sociobiology: Darwinian Feelings & Values,** July 19-23,1999. One of 26 week-long courses organized by Dept of Psychiatry at Albert Einstein College of Medicine, faculty include James Brody, John Price, 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 clinicians understand and intervene when dealing with people for whom anxiety, depression, abuse and infidelity have occurred?

For details contact James Brody
jbrody@compuserve.com

**Hamburg ASCAP Meeting**

As previously mentioned, we expect that the various WPA symposium participants may well wish to also present at the annual ASCAP meeting which will be on August 6. European members might also wish to present. **Please furnish** your abstract **by 6/15/99.** The one abstract I have so far replicatesthe person's WPA talk. If there are few abstracts we might fruitfully meet in the informal style of the earliest ASCAP meetings, which may be a relief given the formalities of the MacLean and WPA meetings.

### Klein-Gardner Dialog

I was quite pleased with Russell Gardner's comment that the newsletter is a forum for brain-storming as much as anything else in response to Dr. Klein's assertion that much of what is printed is remiss in not sticking to articles suggesting ideas specifically formulated into hypothesis-testable forms. Brainstorming is the first step in any new discipline, especially perhaps for any new interdiscipline, as the evolutionary perspective has made out of all psychology/psychiatry. Yet I am sympathetic to Dr. Klein's view.

After writing two articles for *ASCAP,* on 'female emotionality' the 'single case study', I was immediately preoccupied with thoughts of how one might test the ideas they elaborated. However I'm not an experimentalist, and would have to leave that to others with a different set of skills who might find the ideas sufficiently intriguing. I think some such division of labor would have to mark a highly interdisciplinary field. I certainly hope that if the newsletter should progress to the status of journal some room for brainstorming will remain.

Dori LeCory
DoriLeCroy@aol.com

### Beck Award

We cannot yet announce the Beck Award winner as this issue of *ASCAP* must go to press before the deadline. News of the winner will be announced in the July issue.

### Hafiz yes, Clinton no

In response to the Hafiz piece, alpha-ness clearly occurs on many levels. You say the poet "is alpha in his own way". And that's true and it is why most people are not depressed over a subordinate state: they are alpha within themselves and within their life situation. Our retired friends value themselves greatly and feel alpha in their circumstances, because they are deeply involved in various community, church and philanthropic enterprises that do much for society. Others continue to work part-time, because they're needed and fulfilling that need contributes to their self-assessment of personal status. So what is essential for the depressed individual is to find that personal alpha-ness. Not everyone is going to be a full professor orthe chief of staff or a CEO of a Fortune 500 company or a head of state. In fact, hardly anyone is. But knowing that one has pearls to offer at whatever level is probably a definition of mental health.

But your quote from the diplomat re Clinton that "Of course, he did it. He's a leader!" strikes me as arguable. Yes, alpha animals tend to have access to much sex and the highest ranking females, etc., but I wonder about whether Clinton is truly a leader. He strikes me as a follower, dependent on poll data for his positions. He has a history of extreme delay and vacillation in making political decisions, which probably cost him his chance to change the medical system (not that I'm complaining). He has a history of deceit, e.g. the stories re his draft status and marijauna use. He grew up in a home full of alcohol, gambling, and violence and is certainly to be admired for having overcome that background. But the compulsive womanizing seems to be more a need for approval and love anywhere he can find it than an alpha behavior, perhaps even somewhat narcissistic behavior. Is he less alpha and more sociopath? The latter deploy considerable SAHP also! In other words, I suggest caution when we attach these traits to specific humans. I certainly don't disagree with the overall theory as you well know. I just think that humans are so complex that we have to be circumspect.

Yes, I suspect that "mood" state is a less accurate descriptor for mania, depression, and euthymia than "communicationar state. Communication of our feeling state has enormous utility within the group and always has. Mood is static; communication is active, as is behavior. Which leads to "sociophysiology" as an appropriate name for our science.

Carolyn ReicheK

### RG Response

Whether one agrees or disagrees with Clinton's policies and sees him as a weak leader, he is indisputably a leader in that he was elected twice by the U.S. population to be president. He may not be a leader one likes, and he may not be a moral standard, but he clearly represents an example of a leader. For that

matter, moreover, he behaves in an alpha-like fashion as defined by high energy, logorrhea, planning behavior, and such like. That he listens to others (pays attention to the polls, advisers, etc) goes with leadership too.

**Erratum**

On page 7 of the March issue "Paul Thompson," a conflation of Paul Watson or Andrews and Andy Thomson, seemed to have been responsible for the ecological niche theory of Paul Watson and Paul Andrews. The fictional Paul is not; the two real ones are.

**Women's roles changed**

Fifty years ago, probably fewer years than that, but certainly fifty years ago, there were no, repeat no, females in major symphony orchestras (sometimes a harpist behind a curtain). Today as we watch PBS concerts we see many women in the orchestra pit playing all kinds of instruments.

What made the difference?

Just one thing. It was all that it took: a screen was placed between performer and judge at auditions.

Dorothy Tennov

**Origins** of **Cooking**

Richard Wrangham (Harvard) and others are about to publish a paper in *Current Anthropology* on the topic of "cooking" and its effect on male vs. female inputs into our domestic economy. A discussion which get tugged over to the "sexual politics" side of the bed with monotonous certainty. Yawn.

The idea that cooking was "employed" or "discovered" for some purpose has never appealed to me. I cannot picture a human or a close precursor, surveying a lump of frozen meat and thinking "I know! How about heating it up with that fire-stuff!" Or "Gosh I am bored! Let's invent beer!" I think 2/3rds of our preferred activities, sex, boozing and eating, were chance discoveries! Maybe all three!

I have said before the hamster invented beer by the accidental fermentation of damp stored grain and evolved the "moral" faculty of liver enzyme detoxification mechanisms of great efficiency.

Women (those bright, inquisitive gatherers, observers and gossips) soon found that wild grain surpluses that got buried were still available and edible the next time the nomadic group visited the site. I am equally sure that the natural accident of fermentation of the damp product led to women getting drunk and developing the "immoral" faculty of becoming addicted and adept "brewsters."

The "text-peckers" flapping and cackling around Wrangham's publication will be saying that women would have attracted or retained their mates by offering platters of roasted tubers to the tired, often empty-handed hunters. Then of course they would develop more sexy bodies and long periods of availability between hair washings to entice the men to protect the source of the cooked produce. Humbug! The guys were already hanging around for the beer!

Now it seems to me that bush fires might be the source of the discovery of cooking. Picture a newly fired landscape yielding a range of most enticing smells! Creatures and vegetables of all types "cooked" in everyway. Boiled in pools, grilling on flat rocks, baked in ashes, pot roasted in clay burrows, kebabbed on thorns, smoked in hollow trees!

I saw on TV. some aboriginal ladies in Australia toss a large lizard onto a bed of burning logs forthe comedian Billy Connolly. Now they may have been "taking the Mickey" and retiring, giggling, to a trailer with a microwave and a feast of fast-food. They may have had their own grandmothers spinning in the grave at such a lack of sophistication! It may have been genuine, that is to say, that the discovery of a fat lizard roasted in its own thick crispy skin was indeed the discovery of cooking! And the baked clay lining of the burrow was the discovery of the ceramic cooking pot. So - some of you have seen such fires and poked about in the ashes. Could I be right?

If this has already been done, published, trashed or whatever, I shall simply send the wife out for some beer. She can gather it just across at the comer. She will be pleased not to have to chew the grain and spit it into the brew pot for hours.

Robin E Walker B.Vet.Med.
Worcester, UK
Centre of Applied Pet Ethology

**Detailed Schedule for MacLean Festschrift**

Location: Back Bay Hilton in Boston. Make reservations at 800 874-0663 or 617 236-1100 (noting your group affiliation with ASCAP). For non-speakers and people not members of the MacLean family, the registration is $75 made out to UTMB via check or credit card; send to
Russell Gardner, Jr.
at 921 Blume Drive, Galveston, TX 77554 if before June 1, or
214 DuRose Terrace, Madison, WI. 53705 if after June 1,1999.

Each presentation allotted 30 minutes with speaker taking 25 or fewer minutes - remaining time for discussion

**Friday, July 16,1999** (Russell Gardner, Jr., Chairman)

**8:30 to 8:45 a.m. Welcome from Dr. MacLean or his family if present**

**Session 1. Neuroscience Perspective**

1. 8:45-9:15 C.U.M. Smith: Deep Time and the Brain: the Message of the Molecules
2. 9:15-9:45 Gerald A. Cory: Inaccurate Reviews of Paul D. MacLean's 1990 Triune Book
3. 9:45-10:15 Vassilis Koliatsos: Appraisal Of MacLean's Efforts For Neuroscience

10:15-10:30 a.m. Break

**Session 2. Philosophy, History and Theory**

4. 10:30-11 Seymour Itzkoff: Evolutionary and Philosophical Issues of Triarchic Theory
5. 11-11:30 Ernest Barratt: MacLean's Triune Brain Model: A Historical Perspective

6. 11:30-12 Daniel Levine: Neural Nets, Consciousness & Triune Theory

12-1:30 p.m. Lunch

**Session 3. Attention, Behavior and Emotions**

7. 1:30-2 Allan Mirsky: The Triune Brain in Relation to the Functional Analysis of Attention
8. 2-2:30 Neil Greenburg: The Beast Within: Human Implications of the Reptilian Brain

9. 2:30-3 Glenn Weisfeld: Human Emotions and Their Ethological Roots: Darwin and MacLean

3-3:15 p.m. Break

**Session 4. Children, Aggression, and Violence**

10. 3:15-3:45 James C. Harris: Developmental Neuropsychiatry, Compassion, and the Integration of the Triune Brain
11. 3:45-4:15 Anneliese Pontius: Neuroethology Exemplified by Limbic Seizures with Motiveless Homicide
12. 4:15-4:45 Daniel Matthews: Practical Results in the Treatment of Violent Youth from Assessing Limbic System Pathophysiology

4:45-5 p.m. Audience discussion.

**Saturday, July 17,1999** (Gerald A. Cory, Jr., Chairman)

**Session 5. Triune Theory and Depression**

13. 8:30-9 a.m. John S. Price: The Triune Theory and Depression
14. 9-9:30 Hagop Akiskol: Evolutionary Significance of Hyperthymic and CyclothymicTemperaments
15. 9:30-10 Leon Sloman: Involuntary Subordinate Strategy as Backdrop for Depression

10-10:15 a.m. Break

**Session 6. Triune Theory, Mania and Hyperactivity**

16. 10:15-10:45 Daniel R. Wilson: Mania and Evolutionary Epidemiology
17. 10:45-11:15 James Brady: Mania and Hyperactivity as Evolutionarily Determined Alpha States

18. 11:15-11:45 Alan Swann: On Formulations That Mania Resembles Leadership: A Critique

12-1:30 p.m. Lunch

**Session 7. Politics and Pathology**

19. 1:30-2 Roger Masters: Why the "Enlightenment"?: Neuroscience, Triune Brain, & Origin of

Modernity

20. 2:-2:30 Kent Bailey: Upshifting and Downshifting the Triune Brain: Role in Individual & Social Pathology

21. 2:30-3 Horatio Fabrega: On the limits of an evolutionary conception of psychopathology.

3-3:15 p.m. Break

**Session 8. Communication and Implications**

22. 3:15-3:45 John D. Newman: Audiovocal Communication and The Triune Brain.
23. 3:45-4:15 Russell Gardner, Jr.: Communicational, Brain and Molecular Basic Plans
24. 4:15-4:45 Karl Pribram: The Last Word: MacLean's Work and The Informational Sciences

4:45-5 p.m. Audience discussion.

The limbic lobe as a common denominator in mammals from page 247 of *The Triune Brain in Evolution,* 1990
Rabbit, cat and monkey are here represented.

**For presenters: Chapter deadline August 30,1999**

# Mania and leadership: reprise with wish for comment

Note a gift to you from me this month of an old reprint. I found many copies of the article in the course of moving. Suzie Gardner wishes to reduce our moving weight so I send it to you. In another way, this is not a real gift because it's nearly two decades old. But my co-editor, John Price feels that I might request your comment. What have we learned since it was published? Do you known of data that supports it or, even more importantly, data that weighs against it? What do you think for whatever reason?

Not all have ignored it. Dan Wilson and James Brody endorsed the idea with extensions of their own. Each in fact originated the idea independently on their own, just as I had not known of John Price's work until deep into my own sense of originality. Dan underlines that evolutionary epidemiology represents a data-based approach. Prevalance of mania suggests an adaptive state misapplied in illness or disorder. If a disorder, then from what order does it depart? Jim extends the notion to attention deficit and hyperactivity disorder. Similar leadership programs evolutionarily derived, genomically transmitted and neuronally realized may get applied even with no applicability.

John Price himself had associated mania with a winning mentality over three decades ago in his landmark *Lancet* paper. My 1982 *Archives* paper emphasized more the "communicational state-component. Subsequent data showed that stress may precipitate a manic episode as though the person is working on a success strategy, perhaps similar to whistling in the dark when afraid. If losing, that is, put on a brash front anyway. Mania seems to influence the person himself or herself to assume a leadership role regardless of suitability, telling other people what to do and resisting instruction or advice from others..

The *Archives* article gave my initiative a prestigious soundoff but was mostly ignored. John Price and Leon Sloman wrote an appreciative letter that Daniel X. Freedman, editor then of the *Archives,* also duly published. Freedman had been American Psychiatric Association President in 1982, and fostered his former teacher at Yale, Paul D. MacLean, speaking to the group. I remember the occasion well as Danny X. from the dais winked at me in the audience as Dr. MacLean talked of defeated lizards that lost their color and died.

In the wake of the article, I with Carl and Joan Gustavson did a study on (1) recently hospitalized acute manics compared to (2) normal high profile community leaders without psychopathology matched to age and sex. Leaders were nominated independently by several community occupants. Subjects rated themselves on a 13-item rating form derived from the characteristics of mania. Both groups were also compared to similarly matched (3) normal low profile community people and (4) manics in remission from lithium treatment. Results showed that the leaders showed the attributes of leaders (the first two groups were essentially the same) but both significantly differed from control groups. A class of (5) first year psychology students scored slightly higher than the control groups. I interpreted these results not as leaders being manics but that both groups exhibit similar communicational states.

I presented this in 1985 when people interested in evolution and psychiatry converged in Durham, N.C. at the annual meeting of the Animal Behavior Society; psychiatry was featured in a special session. There I met Michael Chance, John Price, and Leon Sloman. The seeds of ASCAP were planted there, the newsletter emerging in late 1987. The group later reconverged and formed the ASCAP society in an early iteration in 1991. The idea was suggested by Leon Sloman - Antonia Price, John Birtchnell, Paul Gilbert, David Stevens and Suzie Gardner were also at this meeting. So a few people in the world including these people plus Danny X. and Paul D. were then interested in the evolutionary origins of mania and depression. Dr. MacLean, when I had visited him in the early 1980s, at his home near

Washington, D.C., had challenged me by saying, "do you want to be the first evolutionary psychiatrist? Opportunity beckons." Of course this wheel was then being invented in various parts of the world. Besides this group, Michael McGuire, Randy Nesse, Kalman Glantz and John Pearce were early figures, Michael especially, though his thinking differs from MacLean's.

Dr. Price had associated winning with mania. My *Archives* article focused more on mania as a state; subsequent data showed that stress (including defeat) stimulates mania in susceptible people. Is mania, then, like the state of brashly whistling when afraid? Of course we know that while psychosocial factors are important early in the illness, later episodes are often triggered without discernable social factors.

Returning to those interested in mania as a reflection of evolutionary leadership states, James Brady has pointed out that the compendium on manic-depression by Goodwin and Jamison[1] doesn't mention the idea; also in the many papers to which they refer, they list neither the Price contribution or my *Archives* paper. Jamison who mostly wrote the compendium likewise fails to mention such formulations in her subsequent work. One book featured the prevalence of bipolar disorder in accomplished artists, composers, leaders and other notables.[2] She showed that the taint of illness may be an overall family asset. Suffering occurs yes, but so does great accomplishment. As she knows. She too has experienced a bipolar illness powerfully and painfully, as she told about in self-disclosing book.[3]

When I read this, I felt an Aha experience that explained the total neglect of our theorizing in Jamison's work. I will share that with you now for whatever it's worth, meaning no disrespect whatsoever to her. A bipolar patient challenged me some years ago when I gave a Grand Rounds presentation at the University of Wisconsin. I don't remember the specifics of his challenge at the talk, but we exchanged letters for awhile (some published in *The ASCAP Newsletter).* He had no trouble relating mania to leadership, but carried it to another conclusion. Rather than leadership being a function of *anyone's* makeup if stimulated, he suggested that bipolars are a group or race apart from more mundane humans. They carry out guidance and leadership for everyone else with the regrettable side effect of the exaggerated state of mania in some. Not having bipolar illness in my family perhaps allowed me to consider alternatively that leadership may exist potentially in any person.

But I suspect Kay Jamison has a notion similar to that of my challenger. She wrote the compendium with manic-inspired energy, albeit under good control at the time of writing (she describes it in her last book; she is highly grateful to lithium carbonate for the stabilizing qualities it has had for her, though she is at times tempted to "feel good" by not taking the drug). Her book on artists and creative people showed that many of them had depression and mania. So I suspect that her omission of an evolutionary basis stemmed from a deep sense of the superiority and uniqueness as a member of the group susceptible to mania. The disregard shown by descriptive psychiatry generally for the pathophysiology of the illness has another cause; subsequent to Eli Robins, pathophysiology is in the future and something that neurochemists will do (behavior is defined only by disorder to Robinsians); to them it seems sufficient to catalog characteristics, asking no questions about how the brain machine works to bring normal behaviors about.

The *Archives* article, on the other hand, supposed that all people have the propensity for leadership action as a fundamental human (or mammalian or vertebrate) characteristic. In my conception, the patients with bipolar illness simply have the highly dramatic version of the state triggered more easily than is true for most people; their exaggerated states can be hard to reverse. I have had more to say on how alpha psalics are less dramatically exhibited as in the recent Hafiz piece (see Carolyn Reichelt's letter this issue).

References:


1. Goodwin FK, Jamison KR: *Manic-Depressive Illness.* NY: Oxford U Press, 1990.
2. Jamison KR: *Touched with Fire: Manic-Depressive Illness and the Artistic Temperament.* The Free Press, 1993.
3. Jamison, Kay Redfield: *An Unquiet Mind: A Memoir of Moods and Madness.* NY: Vintage Books, 1995.

# ARTICLE:

*BY DORI LECROY*

## Dori Lecroy's Response to John Price's Interpretation Of Her 'Female Emotionality' Article

I read John Price's comment on my article with great interest. Using MacLean's triune brain model, he speculates that distress displays, as I describe them (child-like crying more typical for women than for men and particularly intense in the presence of mates who are withholding satisfaction over some issue), signal limbic de-escalation unaccompanied by de-escalation on other levels.

When mates fight, each typically feels both angry and hurt. The man usually preferentially expresses the anger, while the woman expresses both. The man may report his hurt feelings but it is minimally displayed. My article suggested a reason for this sex difference and Price's comment a possible mechanism. His idea holds that female distress displays during male-female conflict represent a limbic decision is to capitulate, admit fault, and defer to the other, while the cortical decision is to fight-on to get one's way.

I certainly agree that the crying woman is continuing to fight. This is indicated by the fact that her signs of distress are frequently accompanied by aggressive, demanding, and accusing statements that are clearly designed to wound by eliciting guilt in her partner. Males are often cited as the aggressive sex. They are certainly the more physically aggressive ones. But women can be verbally savage and take advantage of male sensitivity to personal reputation and status to impugn character by maligning his earning power, sexual prowess or ability to live up to social norms. Guilt and shame infliction are a woman's weapons, and when hurt and angry she often uses them ruthlessly. So my suggestion is that displays of grief accompanying her verbal onslaughts might, in part, function to divert retaliation while she dismantles her mate's sense of personal value. Such displays, I argued, also may function to win her appeal for whatever resource she is hoping for. Both goals may be attained because we are a species with high male parent investment and hence male vulnerability to cues reminiscent of needy offspring.

So because it's useful for females to express the entire spectrum of their emotional experience - that is, both rage and grief - during a fight, they clearly do so. I see both the fighting-on with rageful verbiage and the grief display as emotional expressions, and therefore both embody a limbic component. Dr. Price makes the point that the mate is not fooled and knows she is still escalating in spite of her tears. I agree, he does know that the distress display doesn't signal a decision to de-escalate or submit. In fact, if it is a signal for a decision it might more likely indicate an increased frustration level and an intention to escalate rather than de-escalate. The relationship between frustrated anger and tears is familiar to women, and less so to men. This is an interesting and perhaps telling point.

So I don't see the distress display as capitulation or submission in any way. The lady may be crying, but she's still pissed and fighting! Indeed if he tries to reach out toward her, she's likely to reject him unless this is accompanied by a sign that he's gaining some sympathy for her point of view. Otherwise he seems patronizing and condescending and she's not interested. She knows he just wants to shut her up, get some peace and continue the status quo.

I haven't thought about it a lot and have an open mind, but I have difficulty with the idea that decisions are separately made on three sequentially evolved levels in the brain, and that because they operate separately some of the time, they can be in conflict. It suggests that as each level evolved it became encapsulated from the other levels. Rather it would seem that as the reptilian brain was overlaid by the limbic system, it did so beginning as a differentiation within the limbic

system, and proceeded in that differentiation to become structurally and functionally distinct. But I don't see how any substantial disconnection could happen. During this differentiation process natural selection wouldn't have sacrificed integration because emotion has no function as a disconnected subjective experience. Emotions are after all reward and punishment systems that allow for the shaping of behavior to give flexibility in variable environments. Similarly, the neocortex arose as a further differentiation of already existing structures. It could only have constituted an adaptive advantage if it remained well integrated. Stimulus-response learning chains needed elaboration into higher order processes like concept learning of various sorts that can be reflected in adaptive behavior. Indeed, how would the higher brain regions have evolved if they didnt do so out of small step elaborations of preexisting structures of which they were and continue to be an integral part?

Yet I do see the mind as compartmentalized. I don't think anyone doubts that knowledge and motivation can be variously conscious and unconscious, for example. The conscious/unconscious division of the human mind has been described by Triver's as a Machiavellian attribute in the service of deception — specifically by making the deceiver more convincing by being deceived himself. With self-deception what one knows and feels can be contained out of awareness while one 'sincerely' carries out a self-interested plot. Processes involving reason, emotion and actions are held in the unconscious while a different array from all these levels are simultaneously held in consciousness. This suggests a vertical (metaphorically speaking) split in the mind rather than the horizontal types the MacLean model suggests. The entire brain is integrated into adaptive processes that include selective access to consciousness.

As a reading of my "single case study' article reveals I also believe a substantial amount of compartmental-ization of the mind occurs with the intemalization of experience as fragmented representations along with various sorts of identification with the fragments. This article describes such processes as possibly evolved variants of self-deception in the interest of deceiving another to foster survival. Again these seem to represent vertical divisions integrating emotional and rational attributes in the often conflicting splitting of perception, reason and feeling.

I realize that not everyone is sympathetic to the idea that psychodynamic mechanisms may constitute evolved functional structures within the mind. Yet the growing experimental evidence for self-deceiving processes in the human mind is currently giving credence to psychodynamic concepts like the unconscious, the various defense mechanisms, and other 'modules' that psychodynamic theorists may be familiar with. So my mind, at least at the moment, is running in that direction. Thank you Dr. Price for inducing me to think a little more.

**Editor's Note:** The April issue of the *Am J Psychiatry* features an article concerning psychoanalysis and biology by Eric Kandel that rebutted the stand of some analysts that the two areas (psychoanalysis and biology) are, and should remain, separate. Reference, abstract, and extract are on page 3x of this issue. The following quote pertains to Dori LeCroy's comments above(p.516):

*[A]spects of the preconscious unconscious may be mediated by the prefrontal cortex. ..The prefrontal association cortex has two major functions: it integrates sensory information, and it links it to planned movement. Because [it] mediates these two functions, it is thought to be one of the anatomical substrates of goal-directed action in long-term planning and judgment... Over the past two decades, it has become clear that the prefrontal cortex subserves one component of a system that serves as a critical short-term holding function for information, including information that is stored in or recalled from declarative memory stores.... [R]ecall of any explicit information from memory...requires working memory.... [S]tudies of patients with lesions suggest that the prefrontal cortex also seems to represent some aspects of moral judgments; it governs our ability to plan intelligently and responsibly. ...[R]ecall of explicit knowledge may depend on an adaptive and realistic evaluation of the information to be recalled.*

# ARTICLE:

*by John S. Price*

## Evolutionary biology demarcates the territories of specialist psychotherapists and general psychiatrists

Part 2: The psychotherapeutic role of the general psychiatrist

This concludes a pair of essays, the first of which was published in the May issue. I present a radical and speculative view which I hope will act as a basis for discussion.

**Introduction**

This essay is about the difference between psychotherapy as practised by the general psychiatrist (or clinical psychologist) and psychotherapy as practised by the specialist psychotherapist. Surprisingly, evolutionary biology can throw light on this apparently highly detailed and technical matter. There is a tendency in the multidisciplinary team in the UK for the psychiatrist to attend to medication and legal issues, while any brief psychotherapy done is carried out by a clinical psychologist or nurse; for long-term psychotherapy, the patient is referred to a specialist psychotherapy department. There are probably two reasons for this. One is that psychotherapy is time consuming and nurses are cheaper than psychiatrists for management to hire. The other is that the existence of specialist departments of psychotherapy tends to spread the myth that psychotherapy is something requiring specialist training over and above that of the general psychiatrist. This in my view is unfortunate for both psychiatrist and patient.

When patients come to the psychiatric out-patient clinic, their lives are usually in a mess. The mess is aggravated by the psychiatric symptoms themselves. There is usually a positive feedback interaction between psychiatric symptoms and adverse life events, such as loss of job or spouse, excessive drinking, and social withdrawal, in that these life events both cause and result from psychiatric symptoms, particularly depression. And like Hamlet, their melancholy unfits them to deal with the situation that caused the melancholy in the first place. Some of these patients have previous good adjustment, others have always had chronic low self-esteem and/or various pathogenic beliefs or behaviours. These patients make up the bread and butter of the general psychiatrist, and their optimum management usually involves both antidepressant drugs and brief psychotherapy.

One evolutionary view that helps to analyse these cases is the idea that depression evolved as part of social hierarchy behaviour, either to prepare the patient for low social rank, or to accommodate the patient to a lower than desirable rank after a fall in rank order has occurred.[1] Therefore, although all sorts of adverse life events may trigger a depressive episode, humans are especially sensitive to ranking stress; i.e., the perception that social rank is being, or is likely to be, lost or in some way jeopardised. Logically, there are three sources from which ranking stress may arise: from an equal, from a superior and from an inferior. The worst ranking stress is associated with a rank reversal - when a former despot has to bite the dust and grovel to a new boss. Before the first world war, a Norwegian schoolboy called Thorleif Schjelderup-Ebbe noted that this stress caused a severe depressive reaction in the hens on the farm where he spent the school holidays.[2, 3] The same occurs in many other species.

My first case describes a situation in which a tyrannical father's position of dominance was usurped by his daughter, who very much rubbed her father's nose in the dust.

## Illustrative cases of ranking stress

### Case 1: The overthrown tyrant

A 55-year-old solicitor came to notice after an over-dose, at which time he gave a history of three months of major depression. He complained of sleeplessness, poor concentration and memory, poor appetite with loss of half a stone in weight, tiredness and suicidal thoughts. He had been off work for a month, treated by his general practitioner with dothiepin. There was no previous history. He was a married man with two daughters, he had a good work record and was a moderate drinker.

The depressed mood was associated with what the referring doctor called "obsessional thoughts" in which, when walking down the street, he felt irrational surges of anger against women who were pushing babies in prams. The anger was associated with images of assaulting them and injuring them. He was terrified that he was going to turn into a serial killer.

A diagnosis of major depressive illness was made. As he had not responded to dothiepin in four weeks, and was not getting any side effects, it was decided to double the dose from 75 mg node to 150 mg node. An arrangement was made to interview his wife who confirmed the sketchy history given by the patient, and added a rich background of family difficulties. She revealed that he had always been a tyrannical man, had dominated her and been severe with his two daughters. The younger daughter had a rebellious personality and there had been frequent rows between father and this daughter. He had prevented the daughter taking a course of study, which she bitterly resented. After the daughters left home, relations with theirfather improved. The elder daughter married and had a miscarriage, and was told she was unlikely to have further children. The younger daughter married and had a son. This daughter would bring her child to visit the parents at weekends, and the father became devoted to his grandson. Gradually, however, the younger daughter started to take liberties with her father, make demands on him and in general to put him down. When he remonstrated with her and tried to resume his old bullying tadics, she stayed away for a few weekends. Eventually, she managed to induce a situation in which the visits of the grandchild were made conditional on her father's submissive behaviour. This situation was tolerated for a while, but then she went beyond the bounds of what even the devoted grandfather was able to tolerate. On one occasion she said to her mother who was hoovering (using the vacuum cleaner), "Don't do that, Mum, let Dad do it, he's got nothing better to do." It was shortly after this episode that he became depressed.

*Comment:* This case represents a reversal of complementarity (an inversion of hierarchy) in that the father who had been dominant to his daughter now became subordinate to her. The daughter had found an effective weapon in her control of the grandchild, and the father had no defence against it. The father suffered what we once called a "reversal yielding subroutine" because it involved an involuntary reversal of rank order within the dyad - involuntary because the new social situation was unacceptable to the father.[4] It was not a case of an elderly parent gratefully relinquishing the dominant role, and leaving the child to take on the task of caring for the parent. The "yielding subroutine" or "involuntary subordinate strategy" was the outcome of a battle of wills, and it was recognised by the medical profession as a major depressive illness.

*Therapy:* The principle of our therapy is to sort out the problem (in this case, a form of ranking stress) at the rational (neocortical) level of the triune mind/brain, and to ignore the manifestations at the lower levels, including the emotional (limbic) phenomena in the form of displaced anger against the daughter, and the depressive state which represents a de-escalating strategy at the instinctive (striatal) level.[5, 6]

Therapy in this case took the form of using the patient's depression (with associated readiness to lake a back seat") to enable the mother to become more influential in the family. In joint interviews with the patient and his wife, she was encouraged to take a more assertive role, so that she was able to keep a reasonable peace between her husband and daughter,

and when the latter tried to interfere she was able to say, "Please don't try to dictate who shall do what in my house!", and on the whole she did this so tactfully that the daughter was able to continue to bring the grandson for visits without attacking her father and so increasing his depression. In the end father and daughter laughed about it together, saying they were both congenital tyrants, who needed to be kept in check by someone as amiable as the mother. The depression gradually resolved, but of course in the individual case it is not possible to say whether this was due to anti-depressive medication, the passage of time, or the resolution of the family problem.

Reversal of a dominance/subordinate relationship is not common, but it is probably easier to achieve than equality, once any sort of asymmetry has already been established. I have seen several cases in marriage, when a previously subordinate wife gains confidence due to work experience, or exercising authority over her children, and then becomes dominant to the husband. It is then the husband who gets depressed. Reversal occurs when there is breakdown of dependent rank; I treated a woman who had been raised by her father to the number two position in the family hierarchy, over her mother and older sister; he did this to punish his wife for having the older sister while he was away at the war; when the father died the mother and older sister took their revenge, the younger sister fell in rank and became depressed. I have also treated cases in which a grandparent raised a grandchild above the parents, with dire consequences when the powerful grandparent died.

Reversal of dominance is rare in the work situation. When employees are demoted rather than fired they are usually transferred to a new location. I have seen a reversal yielding subroutine in a non-family employee of a family firm when a relatively incompetent family member was promoted over him.

**Case 2: The exasperated son**

A delivery van driver aged thirty presented with depression and obsessional thoughts of harming his fiancee. The depression had been coming on slowly over the course of six months. He suffered from weeping, free-floating anxiety, palpitations, insomnia, poor concentration and outbursts of rage in which he would bang his fist on the furniture or the wall. Over the past few weeks he experienced visual images in his mind of himself bashing in his fiancee's skull. These images occurred while he was awake, and usually while he was lying peacefully holding her in his arms. They were not accompanied by any anger or other emotion. He was terrified by these images, and feared that he might really harm her, and since the images started his depression had got considerably worse.

There was no previous history of psychiatric disorder. He had worked as a van driver for five years and was able to continue his simple job in spite of his symptoms. He was engaged to a woman in another town who was taking a university degree, and he was in the habit of staying with her in her small bed-sitter at weekends. He lived with his widowed father, and had two older sisters living nearby. A diagnosis of major depression was made and therapy with an antidepres-sant drug was instituted. He was followed up in the out-patient clinic.

*Family background:* Enquiry revealed that he had lived with his father following the tatter's widowhood five years previously. The father was becoming very decrepit and was incontinent of urine and faeces. For the past year the patient and his two older sisters had been trying to get the old man into sheltered accommodation, but the father did not want to leave his house, and in this he was supported by his social worker, who had laid on a home help for him, and, through his GP, visits from the district nurse. The week before the consultation, the family had taken the father to a delightful rest home, where all his wants would be satisfied in pleasant surroundings, but the old man had refused to accept the placement. At this the elder sister washed her hands of the matter, while the younger sister offered to continue to help her brother.

*Therapy:* The patient remained in a state of depression and agitation, constantly wondering whether he was becoming a homicidal maniac, and asking for a lot of reassurance. He made no connection between his frustration over his father and the images of

attacking his fiancee (with whom he had a good, close symmetrical relationship, and she presented him with no source of anger). He said that he used to get very angry with his father, but recently had not done so, on the grounds that the father was too old to be a source of rational anger. He had been very disappointed when his father refused the rest home. He found the task of cleaning up after his father difficult to stomach, and he complained that the district nurses did not attend at times when they were needed. He said, for instance, "You can't just do nothing when you see him walking around with shit coming out of his trouser leg". He very much resented the contrast between his former idealisation of his father and his current pity and disgust for him. The resentment would sometimes switch to guilt over his own inability to resolve the problem.

It was felt that the situation required some active medical interference. Ideally, the patient would have been encouraged to solve his own problem, and learn to deal with the difficulty himself. But it was felt the dangers of deterioration, possible loss of job and risk of suicide were too great. A conference was arranged to which were invited the patient, his father, the two sisters and the father's social worker. In the meantime a temporary lodging was found for the patient at the home of a friend.

At the conference, attended by all but the older sister, the therapist pointed out that the patient had suffered such stress from his current situation that his health was seriously at risk, so that he was advised to leave home for a period. It was suggested that responsibility forthe father should be shared by the sister and the social worker. The father, whose intellectual function was somewhat impaired, approved vigorously of the arrangement, and encouraged the patient to go and stay with his friend, saying that he could manage perfectly well on his own. The social worker and the sister reluctantly agreed to the arrangement.

Following the conference, the patient duly left home. It was soon apparent to everyone that the father could not manage on his own, and he was admitted to a residential home within two weeks. The patient returned to his home, and visited his father frequently. His images of harming his fiancee stopped almost immediately, but his depression took many weeks to resolve.

*Comment:* In the family matrix, the father was dominant to the son, although it was a close and loving relationship. There was no reversal of dominance, as in the previous case. The ranking stress was less apparent, but took the form of increased and unacceptable demands made on the subordinate by the dominant. These demands (to care for his disabled father) were reinforced by the older sisters and the social worker. We would therefore classify the depression as a "confirmation yielding subroutine" in which the function of the depression is to help the subordinate to accept demands and conditions imposed by the dominant which in a normal state of mood he or she would not do without rebellion.[4] In this case possible rebellion by the son was inhibited not only by his respect for his father but also by love.

The demands on the son were not only excessive, they were also unacknowledged, in that the family and the social worker maintained the fiction that the old man could look after himself. This informed the plan of therapy, which was to remove the son from the equation, and thus to demonstrate that more intensive care was necessary.

This "confirmation yielding subroutine" is very common. It confirms and increases an already existing asymmetry. It is often seen in marriage when a dominant spouse makes yet more demands on the partner. It also occurs in the work situation when the boss is a bully and the employee is trapped.

Sometimes the instability in the hierarchy originates in the subordinate. Adler in 1929 described the case of a daughter who rebelled against a father with whom she had a very loving relationship.[7] She insulted him, he then struck her, she then sank into a state of deep depression with somatic delusions.

**Case 3: An episode of unexpected subordination**

A married woman of thirty presented with a typical depressive illness in which there were cognitive,

affective, vegetative and volitional components. She had been well until three months previously and the illness started with a panic attack on the way to work.

Enquiry revealed that, after raising her children to school age, she had returned to clerical work six months previously. She was employed by a male office manager to work with him and another female clerk who had been in the office for three years. At the appointment interview, the manager had indicated that the two clerks would be of equal status in the office, and this seemed appropriate to the patient as they were about the same age and the patient had considerable previous office experience. However, according to the patient, her colleague treated her as an assistant, while all the time being friendly and helpful to her. This situation was confirmed by a phone call to the manager, who confirmed that he had indicated to his existing clerk that the newcomer was coming in as a junior (he did not regard the relative status of the two women as a matter of any consequence).

At the time of her out-patient consultation, the patient had been off work for 8 weeks. She was treated with eclectic psychotherapy and amitriptyline, and it was arranged with the manager that she should return to work in another office of the same firm. Two months later she was able to return to work and her depression had largely remitted, although she did not regain her former self-confidence or self-esteem fully.

*Comment:* If we accept the causative role of the office situation in this case, then two points of interest have been demonstrated.

First, the ranking stress occurred without any expression of hostility. The fellow clerk was very nice to her all the time. The ranking stress occurred because of the form rather than the content of the other clerk's communication. In the terminology of the Mental Research Institute in Palo Alto, the definitional (or command) element in the social communication had a putting down effect, while the informational content was neutral, or even boosting.[8] The work colleague made remarks such as, "When you have finished your work, bring it to me and I will check it for you." This was clearly intended in a helpful way and was probably thought to be appropriate to the work situation; but it was received as putting down by the patient because it defined the relationship in a way which was neither expected by her nor acceptable to her. When a form of communication becomes known to be used in a hierarchical situation from a dominant to a subordinate, and not in the reverse direction, the use of such a communication in an equal relationship has a catathetic (putting down) effect because it defines the receiver of the communication as subordinate.[9]

Second, the connection between the work situation and the depressive reaction was not clear to the patient, nor was she able to apprehend it easily when it was pointed out. Even though the depression started with a panic attack on the way to work, she had no intuitive cause/effect experience linking the work situation to herdysphoric feelings. And when the therapist pointed the connection out, both she and her husband were very sceptical of its validity. It was not within the confines of their belief systems that a trivial social awkwardness at work could cause the severe, disabling and life-threatening condition from which she felt herself to be suffering (and was indeed suffering).

This failure of the patient to identify the cause of the depression is very common. Depressed patients often blame the depression on some incidental event, like starting or coming off "the pill"; or they attribute the depression to one of the symptoms of depression, such as psychogenic pain or insomnia. This is what we would expect from ranking theory. The function of the depression is to accommodate the patient to adverse circumstances, not to remedy those circumstances. The identification of what is wrong is the first step to putting it right, and this is not a course of action which fits with the depressive function. Some theorists have suggested that depression acts as a "signal to the self that something is wrong and provides a stimulus for them to change,[10] but this seems to me not to be the case with depressed mood (a module orchestrated by the reptilian brain), although it might well be true of depressed emotion, which is usually focused on an object, and which is part of the limbic or paleomammalian agonistic strategy set.[11]

**Three forms of ranking stress**

These three cases illustrate the three social situations in which ranking stress may occur in relation to another person. In the first, former dominance was lost and the father was forced into a subordinate role. In the second, the son was already subordinate, but was forced to accept behaviour on the part of his father which was outside the limits informally agreed in their relationship. In the third, an equal relationship deteriorated into a subordinate relationship due to a misunderstanding on the part of the other, who thought she was in a supervising role; it is noteworthy too that her behaviour was not overtly aggressive, but it derived its catathetic (putting down) effect from the fact that it was behaviour normally shown by superiors to subordinates, and therefore assumed a rank difference which was not accepted by the patient.

I have not described any cases in which ranking stress occurs in relation to the group as a whole, as when an artist receives bad reviews, or a politician fails to get re-elected or when someone undergoes a "degradation ceremony" such as a criminal being convicted and sentenced by a court. These situations relate to failure, not in agonistic behaviour, but in a more recently evolved type of social competition which we have called prestige competition.[11] Nor have I included any cases in which depression occurs in response to a situation which predicts ranking stress, such as when the lady of the manor is bereaved and has to give up her house and titles to her daughter-in-llaw.[6]

The goals and aspirations of humans are extraordinarily diverse and unpredictable.[12] In each case it is necessary to determine what is important to the patient. At the same time, one can keep in mind the simpler case of the chacma baboon, all of whose rewards and incentives depend on social rank, so that the one goal to seek is a rise in rank, and the one disaster to fear is to be overtaken by the baboon who ranks below. The self-esteem of the baboon is not much different from its fighting capacity or resource-holding potential (RHP). It may be significant that Abraham Maslow, who discovered the great human variation in self-esteem, started life as a primatologist, and once remarked that a dominant monkey is more similar in behaviour to another dominant monkey than to itself when subordinate.[13]

**A note about the evolution of variation**

In this argument, I have postulated evolved mechanisms (critical learning periods) for causing variation in self-esteem. This may give the reader pause for thought. One can imagine the evolution of a trait (because it is adaptive) but how can one envisage the evolution of variation in a trait? To whom is the variation adaptive? It may seem adaptive to the high self-esteem person, since dominant people are in a position to acquire and hold on to resources; but how can it be adaptive for the low self-esteem person? There are at least three possible answers to this problem. One comes from evolutionary game theory, and depends on the fact that a pure high self-este em strategy may not be "evolutionarily stable" in that it can be infiltrated by a mixed strategy containing both high and low self-esteem people.[14] This depends partly on the fact that self-esteem is subject to negative frequency-dependent selection, in that the payoff for high self-esteem becomes less if everyone else has high self-esteem. It pays to be a dove if everyone else is a hawk, but if the majority of the population are doves, the hawk does very well. Aldous Huxley appreciated this fact, and portrayed it in his novel, *Brave New World,* in which an expedition composed entirely of "alphas" has a poor outcome.[15]

Also arising from evolutionary game theory is the possibility that low self-esteem may be a "contingent" or "best of a bad job" strategy, adopted when social circumstances are unfavourable (e.g., the family is low-ranking) or the phenotype is deficient in some way. Both these conditions are likely to lead to the learning of low self-esteem, both from parents in early childhood and from peers during adolescence.

Another possibility is group selection.[16] Groups with large variation in self-esteem form more stable hierarchies and are therefore better able to compete with other groups. Shakespeare appreciated this fact, and portrayed it in his play "Troilus and Cressida", in which Ulysses attributes the Greek failure to capture Troy to an unstable hierarchy of command. Burgess, introducing the text, writes: "Ulysses, giving his opinion on the Greek failure to take Troy, blames it on the Greek

failure to maintain order.[17, p.185] There is a hieratic pattern in the universe, which men, for the sake of communal health, must be willing to imitate:

*Take but degree away, untune that string, and Hark! What discord follows.*

*The general's disclaimed By him one step below, he by the next, That next by him beneath; so every step, Exampled by the first face that is sick Of his superior, grows to an envious fever Of pale and bloodless emulation And 'tis this fever that keeps Troy on foot, Not her own sinews. To end a tale of length Troy in our weakness stands, not in her strength.*

Group selection has been a controversial subject in evolutionary theory, but has not been entirely discredited.[16,18]

So, it is adaptive to have a different self-esteem from everyone else, and there are mechanisms for ensuring that this difference occurs. In this sense, variation in self-esteem is unlike other types of human variation, like introversion/extraversion.[19] Here it probably pays to be like everyone else; and the variation probably exists because introversion is selected for in one type of habitat, and extraversion in another. Therefore there are no mechanisms for creating variation in introversion/extraversion - no critical learning periods - and the variation appears to be largely genetically determined. This is why, ever since the pioneering work of Maslow in the l940s, we have been aware of the enormous variation in human self-esteem, and why psychotherapy is largely concerned with self-esteem management, rather than with other types of human variation.[13]

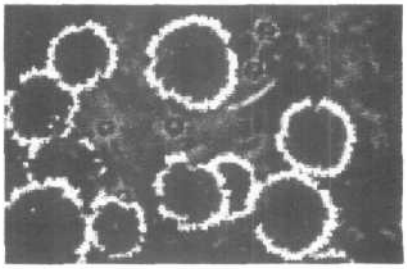
## Conclusion

In dealing with common psychiatric disorders, we are dealing with an evolved self-esteem management system, deriving phylogenetically from the RHP management system of our "reptilian" ancestor. With depressive, dysthymic and other personalty disorders associated with low self-esteem, we are dealing with lifetime variation in self-esteem. This variation is induced during two critical learning periods during childhood. To alter this variation in later life is possible but difficult. It requires the re-evocation of the original archetypal situation either in individual psychotherapy or group psychotherapy. To achieve this requires the skills of the specialist psychotherapist.

With depressive and anxiety disorders, we are dealing with short-term adjustments in self-esteem. What is required here is to co-ordinate the activities of the triune mind so that all levels are either escalating or de-escalating, resulting in resolution of whatever ranking stress led to the original de-escalation.[6] The patient needs to deal with the situation at the highest mental level, so that there is resolution in the form of victory, withdrawal/submission, escape from the situation, refraining, submission for arbitration, etc. De-escalation by the "reptilian" brain needs to be replaced by a rational strategy.[1] This is a task that can be performed by the general psychiatrist, but still requires the application of great psychotherapeutic skill, partly to identify the conflict of importance, partly to help the patient to talk about it frankly, and partly to help the patient to give up those goals, aspirations or parts of the self which were unrealistic and so causing trouble.

Guides to brief psychotherapy include such authors as de Shazer,[20] Fisch et al.,[21] Horowitz,[22] Ryle,[23] Weissman & Markowitz,[24] and more specific guides to psychotherapy along evolutionary lines add Glantz and Pearce,[25] McGuire and Troisi,[10] Stevens,[26] Stevens and Price,[17] and Weisfeld.[27] With training in the various forms of family therapy, the general psychiatrist should be equal to the task.

**References on Page 30**



# ARTICLE:

*by John S. Price*

## The Complete Response to Dylan Evans

A chunk got left out of my "Response to Dylan Evans" in the April issue- probably at the stage of sending it from Goa. I'm attaching the complete text below. Also, the last four references were lost, and these are important because I sense that Dylan Evans is not aware of them. I'm sorry about this extra trouble, but telecommunications are not perfect, especially in India.

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.[123]

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, whetherwe are being thwarted and unsuccessful, and having unacceptable definitions forced on us. Are our escalating strategies being successful? If not, there may be advantage in a change of strategy. It seems likely that the final common path of this module is loss of self-esteem (RHP and/or SAHP; or mate value; or, simply, R).

Our module also needs to predict whether we are likely not to get our own way in the future. Some events are good predictors of loss of rank. Loss of an ally, for instance, must be a good predictor of 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 born 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 because of the strength of the maternal instinct, may require 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 it 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.

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**Extract:** Healthy argument is not bad thing, but if the subject is to be a scientific one there must be ways to resolve the disagreements - at least in principle. Much of the subject of palaeoanthropology is simply not science, although it uses many of the tools of science. Theorizing about hominid behaviour is a subject closer to detective work; detective work, however, in which the results are never going to be dramatically confirmed. An Australopithecus is just never going to jump up and say, "OK, you got me nailed: I've got my hands up! I admit I had no consonantal phonemes, but I was a real nifty scavenger from sabretooths." Detective work is great fun, and in the hands of experts... it is the best that we can ever hope [to understand] the events of the past 5 million years of our evolution.

**From Email:** I have asked Trinkaus about the size of Neanderthal brains in relation to *Homo sapiens;* he said that it was a common misconception that Neanderthal's had larger brains than modem humans and that when you scale for body size Neanderthal brains turn out to be relatively smaller than modern human brains. Furthermore Neanderthal brain size is increased compared to earlier Homos, not by expansion of the anterior or lateral sides, but rather the occipital (or posterior) region is expanded.

Fascinating. I have yet to find a Neandertal willing to step on the scales and give us his/her weight. Neandertal weights can only be calculated from regression formulae based on modern humans and other hominids, and I am careful about accepting such estimates. As for the brain weights, my calculations (Holloway 1985, in Delson *et al Fossil Ancestors)* showed that the mean Neandertal brain weights were slightly larger than modern *Homo sapiens* groups, including Eskimo and Buriats which tend to have the largest cranial capacities among modem human groups. As for the posterior or occipital part being expanded, that is utter BS! There are no reliable markings on any of the Neandertal brain endocasts of sulcal morphology which would allow one to even demonstrate the position of the central sulcus, the posterior boundary of the frontal lobe. Finally, relative brain size is a meaningless functional measure, and it varies considerably among different human populations currently extant. Trinkaus is simply wrong on matters of the Neandertal brain. Ralph Holloway

## *ARTICLE:*

***by James Brody***

# **Darwin's Ledger and Epigenetic Grout for** Hrdy's **Mosaic**
(After some lectures at Hunter College in NYC)

First, girls *will* play — certainly yesterday's news a very long time ago before there was Margaret Mead, a very long time indeed. The more subtle notion — perhaps a rationalization but perhaps not — is the suggestion (from Buss and Gangestad among others!) that male traits are a result of female tactics. Guys puff up and beat each other in order to impress women. De Waal also carries this banner to the extent that he feels Bonobo females—with their extended receptivity - both accrue personal dominance and lessen male competition simply by sharing their bodies more easily and with nearly everyone, including each other. A Puck might suggest a trial study in Manhattan or HBES, I admire De Waal's hypothesis and the way that he tacked it to female alliances and their feeding patterns that are perhaps secondary to niche characteristics.

Next, Hrdy, a very bright and lively individual herself as well as one who projects humility about her hard and careful work, faces an array of "just so" possibilities that arise as you begin to assemble explanations from her observations that involve multiple societies and multiple species. Even though I like her and would like to know her better, the specter of self-selected information is her bane and lover although no more so than for most of us correlation managers. However, Charles Crawford (Hunter School of Social Work Seminar, NYC, 2/17/99) reminded us that correlations don't make causation apparent. Sometimes, correlations can be fine. Astronomers like this arena and give us magnificent theory and prediction; Evolutionary Psychology findings may acquire a similar luster over the decades, but we're not there yet.

In this instance, differences between female strategies and male reliability or food supply may be attributable to "good genes" or to women's (and men's) possessing several strategies for solving a problem (as modeled by Crawford at the first meeting in this series) in different environmental conditions. Environment "tunes" genetic outcomes and genes have a lot to do with choosing and modifying their environment.

Along these lines, Geoff Miller (also coming to Hunter!) has talked about "liveliness" as a positive factor in mate selection. Further, "liveliness" in humans is associated with better physical coordination, less need for sleep, greater sexual activity and with more partners, earlier first children, more quarrels with parents, more social manipulativeness, and somewhat earlier death.

This next speculation bridges several realms of data that are joined more by "consilience" than by systematic PCR analyses; it, however, is also consistent with Gangestad's observations on human female mating strategies—that extra pair copulations (EPCs) and shifts in attraction to varied male features occur in a subset of women, not in all. I suspect that Hrdy's polyandrous prairie dogs, grasshoppers, and Aache ladies share the same good genes as Gangestad's EPCs, genes that, if not buffered, sometimes produce bipolar disorder in humans. Are the non-roamers beaten and frightened? Or, genetically different from the start? My own bet is with the latter.

Darwin's Ledger— Men and women have competing interests but no more so than between two men or two women in regard to resource acquisition and social standing. Separating political (survival?) interests from reproductive interests may be helpful. Hrdy's conclusion — that male domination exerts a cost on the female needs further consideration. There is another side to the accounts and concepts of non-shared environment and of tuning" help us balance the totals.

(a) There is a continuing political and economic barter that occurs between each of us, regardless of sex. It occurs every day of our lives from birth when the nurses tell little boys to "shape up" but hug little girls in maternity wards and it lasts until our dotages.

(b) Niche variations — in economic conditions, social standing, age, hormonal state, medications, seasons, temperature conditions - will change the set points of such negotiation.

(c) The girls *do* shape the guys during child rearing and elementary school when peer contests become important sculptors. Despite mom's and teacher's tactical advantages for 12 years, males *do* become male even if the ladies make us unhappy about it.

(d) Females also advance themselves at cost to other females and for an audience of those same females. Shunning, teasing, and competition to be in one particular alliance or another cause intense feelings; girls may show no mercy to each other. Moreover, inhibited females may calibrate their standing in regard to men but they first test their standing in regard to other females.

(e) Non-shared environment acts to affect us - and we neglect it. Inhibited women *may* be selecting more powerful contacts for their own gain. (I've met numer ous "enabler" females and males who get more recognition and economic support because they are paired with a conduct disorder. They experience abuse but they are ahead in regard to their net impact on other people. Instead of depending on everyone, they only have to depend on one person and gain tribute from us as a price for intervening on our be halves. Someone's Blessed Virgin did it but was not the first one; many still ask Her to do it.

(f) The less inhibited, more lively, defiant, manipulative females - and possibly more symmetrical and likely to be in Gangestad's group that goes on follicular romps — form their own alliances, push themselves to excellence while generating post-hoc explanations that begin with "because" or "in spite of." De Waal's older lady Bonobos take the orange slice regardless of being only 85% of the male's size; diminutive Natalie Angier writes hostile books without asking permission from some *man.*

The point? Hrdy's thought about males gaining at female cost may sometimes be misleading or have things backwards. A procedural issue—the audience for Hrdy was significantly different than that for Buss and for Gangestad. Hergroup was larger and older and wore more suits and jackets than those at the earlier talks. To my surprise Hrdy seemed nervous, stumbling in her speech. However, she relaxed as soon as the question period started and I suspect that she had attempted to walk a line, defending evolutionary approaches but excluding older versions of male/female mating strategies, stereotypes now expressed currently by one or two female writers, making some bucks and tattling on the boys to the rest of the class and so teacher overhears." David made his belief clear that our arrays of strategies are common to human males and females and that some characteristics of either sex are "driven" by characteristics of the other. Unfortunately, stereotyping and the "us/them chip" are more likely under seriatum conditions such as these and a manifestation of non-shared environment—that is, we go to talks that agree with our passions. It would be wonderful to have David and Sarah on the same stage at the same time; their data and interpretations are mutually consistent — aside from a possible dig given about questionnaire methods vs. field observations. (Do we suspect that Universal Human Nature produces Universal Social Desirability? Should Margaret Mead have relied on questionnaires?)

**Other Sideshows.**

*Genes: Intervening Variable or Hypothetical Construct?*

Hrdy (and Gangestad and perhaps Buss also) referred to a "good genes" model of sexual mating strategies for males and for females. Darwin missed the significance of Mendel; but Morgan, Fisher, Haldane, Wright, Huxley, Mayr, Simpson, Hamilton, and Trivers did not. Neither did Richard Dawkins. Genes appear to be dynamic, high turnover events and with large chunks that have unknown functions. Further, most of us are interested in continuous, not binary, traits. We might get excited if we had either a nose or no nose; such is rare and we generally track sizes and shapes of noses instead. Medical disorders are often traced to missing "gene(s)" but the behavioral stuff, per Mike Bailey arises from teams of 3-10 active members, that is, an implied digital event is likely comprised of 3-10

cooperating elements, none of which have we seen.

The older days considered an idea to be an "intervening variable" if you made it up to help your thinking even if there was no possibility of your ever seeing the variable itself. "Hypothetical constructs" were those ideas for which you pretended a physiological base to exist and about which you were reasonably optimistic that you would someday see, smell, and squish it between yourgloved fingers.

"Genes" so far and for many domains of EP have been more like intervening variables because we reach conclusions without pointing to specific genes; if so, we might have more intellectual freedom if we consider non-gene models when we try to account for the rich texture of human conduct and our experiences of it. We will also suffer fewer embarrassments when our shabby efforts are compared to astronomers who infer black holes but never see one.

*Signal Detection Theory*

I suggest that we consider a supplemental model for the time, one that avoids the either/or stereotypes that are so easily misunderstood in relation to "a gene for," but that still respects our addictions to "genes" and being thereby part of a dramatic frontier. (Did John Milton anticipate us when he commented that "they also serve who only stand and wait"?)

One option is a signal detection model as introduced by Swets, Tanner, and Birdsall (STB) in the late '60s and applied to psychophysics. You probably remember that psychophysics studied our detection of very tiny events and tried to discover absolute thresholds for sensory activation in vision, hearing, and touch. Psychophysics — like many evolution studies - relied on verbal responses and studied both binary responses and sorting tasks. However, contrary to expectations, absolute thresholds were tremendously variable until ST&B offered a crucial distinction—that between "detection" and the "decision to report." As it turns out, "detection" is routinely very very tiny—about 3 photons for light — but the decision piece varies tremendously as a function of the matrix of consequences for the conditions of stimulus present/absent in combination with detected/undetected. For example, if you are a frightened sophomore working off your requirements for an introduction to psychology and if you land in a dark room with flashing tiny lights and a dour experimentalist, you will be *very* sure that a light is on before you report it. Inattention is more forgivable than lying — at least it was in Fechner's day.

Signal detection approaches produce a curve of "decisions"-a "receiveroperating characteristic" (ROC)—that varies with modality and outcomes. If we substitute trait" (male sexual jealousy) for "signal present/absent" and "resources and social outcomes" for consequences, the model begs to be adopted and we can accept that sexual jealousy is present in both males and females and will display varied intensities in relationship to age, income, past histories, and whatever else interests us. After all, we can describe the behavior of our radio under different conditions but without discussing transistors and we know the rhapsodies on our favorite compact disk are epiphe-nomena of silver bits; we can enjoy our behavior without transforming it into a "gene" quite so often. That is, we may continue to talk about genes while ROCs keep us closer to our data.

*Genes and their Baggage*

I'm personally not sure that we're ready for these ideas and write them with some worry. Memories of Germany are part of my fear, Ed Wilson's experiences in the 1970s are another. My intention is *not* to offend but my greater and opposing fear is that our choosing to remain ignorant of genes almost guarantees their driving us in surprising ways in response to environmental —geological or social — changes. However, there are some nasty dilemmas if we continue to account for analog behavioral and physical traits as the outcome of digital events such as "genes" but invoke "culture" when we need it.

(1) Gangestad and Hrdy (and Miller?) talk about "good genes," a phrase that begs for someone to get upset by that language. What may be happening in regard to "genes" is that women (and men) are most attracted to "good outputs." Gangestad noted in his talk that

the continued variability in human traits is puzzling, that some mechanisms must exist to account for the continued existence of trait variability. He suggested mutation as one possibility, genes being less than a stable structure is another. Instead of saying women look for good genes, they could be accurately described as conducting their personal eugenics program, cleaning out the "bad" ones over successive partners. After all, drosophila should be perfect by now since 10% of the males produce 100% of the kids. Are the girls choosing new genes or non-defective existing ones? Lawyers, female mating strategies, or cellular apoptosis are the functional equivalents to a bulldozer in the older sections of Rome. Plausible tactics but not prettily described to people who are fond of their personal irregularities! Given that "good" is defined by outcomes, contexts and time frames, we should drop "good" altogether.

(2) Chimps and Bonobos are isolated geographically, a prime factor in the formation of two species. The Zaire River puts a two mile fence between the two societies of ape. Human societies are also mutually isolated but are not considered to be separate species despite differences in many physical and social characteristics and reproductive practices. "Animals" are two species even if they might produce viable offspring; people are not. We defend our inconsistency by noting that the range of variability in genetic codes within any human group exceeds that seen between human groups.

The problem is still with us however, in regard to possible genetic foundations for human differences because the range of variability in that exists in gene sequences has not been translated into information about what sequences have what outputs. One gene in 50,000 may regulate the size of our sphenoid bone and guide the slope of our face and brow. As Peter Frost has noted, it is not how many genes are the same or different but *which* genes are the same or different.

Second, "nonshared environment" *is* with us as a poorly assessed concept that will eventually comfort us or be considered as the "Dark Side of the Force." There are suggestions from twin research that we need to consider four sources of influence on variance in outcomes—genetic, shared environment, nonshared environment, and error. Plomin and his colleagues estimate that shared environment accounts for 0% of the variance that is observed in outcomes for some personality tests. Again, that's *zero percent.* The implication is that attributing differences in human outcomes to differences in cultural experience becomes less tenable than before. Notions such as tuned" responses to resource availability, weather, social standing, time of life, or hormonal status make more sense. Nonshared environment may produce two reproductive casualties (I have *no* expectation that our current generation will adapt to or adopt the concept but our children might.) Anthropologists may stop using "culture" to explain differences between societies. Differences in "culture" may translate into differences in physical environments and the varied responses of subtle genetic differences in the management of environments.

If you examine functional relationships and functional skills of people, then Stephen J. Whosis was wrong, the "tape" might be replayed and with outcomes that do not vary beyond "noise." ("Culture" still has an important role, comparable to that played by our memories, parents, and genes—that of buffering response variability from generation to generation and between individuals of the same generation in a common society.)

If we stick with genes, we will have to acknowledge the possibility of systematic genetic differences between human groups *and that such differences are helpful.* Eventually, we may understand that we are different and it's useful that we're different, that diversity of genes as well as of customs is a protection for our species. Most importantly, we need to grasp the idea that *"good genes" are "good" only in particular contexts and for particular durations; shift the contexts and another set has the advantage* by the ghostly standard of reproductive success. (Driving any human trait into extinction is highly unlikely short of nuclear incidents and meteors because most of our traits are outcomes from multiple causal sequences. How many of our past strategies are still encoded in my typing fingers' cells, waiting for severe environmental disruptions in

order to again function? It also follows that "genocide" is *not* about genes but is a convenient excuse in battles to control territory and wealth.)

*Again,* I'm personally not sure that we're ready for these ideas and write them with some worry. Memories of Germany are part of my fear, Ed Wilson's experiences in the 1970s are another. My intention is *not* to offend or create division between us. My greater and opposing fear is that our choosing to remain ignorant of genes almost guarantees their driving us in surprising ways in response to environmental —geological or social — changes.

*Useful Outputs of a Combined Gene/ROC Approach*

I'm told that tuning" has been used by geneticists since the '30s; it seems to apply to many of our descriptions of genes and settings. (A review by J. Maynard Smith in *Nature* highly praises a book by Enrico Coen, *The Art of Genes: How Organisms Make Themselves,* for comparing genetic mechanisms as working in a manner similar to an artist who works without a plan but who continuously interacts with his paint and changes direction in response to what it does.)

(1) Varied behavior will be expressed by an individual at different times of life, the day, the month, or the year and after varied social victories and losses. There will be male and female overlaps and extremes in the behavior of either. Thus, some men will be "sensitive" and women will partake in Wrangham's "Chimp War Parties," perhaps working to destroy targets by destroying social standing and not by immediate homicide. Someone noted that a chimp alone is soon dead; exclusion, gossip, ridicule, and shunning can be lethal even if legal.

(2) Observations such as those reported by McGuire and Troisi in their *Darwinian Psychiatry* are less surprising. The status of male vervets and their response to changes in the availability of serotonin seems to be entirely dependent on the presence and supportive behaviors of females.

(3) Many effects of medications for psychological distress can be described in terms of adjustments in social standing. There is no change in genes but the proximate foundation for medication effects may well be activation of some genetic outputs and suppression of others.

(4) Men and women can have with identical traits but varied outcomes in relation to resources (social standing, environmental, ability to manage alliances, psychological adaptations, executive functions) and task demands. Many women will overlap many men depending on trait and circumstance.

(5) A range of adaptability can exist with extremes on either side of average. We can have "bad genes" in 2 directions in the sense of being too lively, intelligent, big, strong, sexually driven and needing lithium to slow you down, risperidone to impart some humility, Ativan to buffer your separation anxiety, and a bit of stimulant to give you a sense of the future. Otherwise, you can be "bipolar" and likely to kill yourself. Our common sense reacts that we can have too much of any trait - antler size or breasts, liveliness and risk taking; tuning models are consistent with that observation.

Tuning allows us to consider balances between strategies for reproduction and for resources acquisition. These are possibly not the same systems and mating gambits sometimes risk hierarchy.

(6) *The most useful output from a tuning model is that we all can be outwardly alike regardless of genetic underpinning (given range of output) but will achieve equality by different strategies and at differing per sonal costs, we can also be inwardly identical but outwardly different due to tuning effects.*

Finally, male or female outcomes, genes, and tuning characteristics are *an outcome of* the *probability of reinforcement,* the survival value of different traits. This is *"antique behaviorism"* such that a behavior or a colored feather or an individual or a species is an instrumental response, emitted at different frequencies and with different mechanisms for reacting to cues and consequences. Natural Selection or Probability of Reinforcement—perhaps the latter guides the former.

I thought of Sarah, David, Frans, and Steven as I waited in traffic to get into the Lincoln Tunnel — I had ninety minutes to sit still and to think — fully in control of my vehicle and trapped by complexity—in the driver's seat of my 300 ZX. Baby is black and sleek and quick and no longer to be found in showrooms, probably an eventual extinction event, choked by the barnacles of excess population called "Geos." I noticed the Blond before I noticed that she also drove a 300 ZX, identical to mine except metallic blue and lots cleaner. Neither of us were going anywhere in that niche yet we had the same interests and would behave synchronously insane on open, winding roads. She was twenty years younger than I, elegant, symmetrical and she made eye contact, smiling and waving before I did. I know that we would have gotten along. I also know that in another setting and without the cars, she would have reacted first to the puffy eyes and scowl that also led my father - but that's another essay.

# Poems

*Vitamins and Roughage*

*Strong ankled. sun burned, almost naked.*
*The daughters of California*
*Educate reluctant humanists,*
*Drive into their skulls with tennis balls*
*The unhappy realization*
*That nature is still stronger than man.*
*The special Hellenic privilege*
*Of the special intellect seeps out*
*At last in this irrigated soil.*
*Sweat of athletes and juice of lovers*
*Are stronger than Socrates' hemlock:*
*And the games of scrupulous Euclid*
*Vanish in the gymnopaedia.*

*Kenneth Rexroth. 1944*

*The Heavy Bear Who Goes With Me "the*

*withness of the body"*

*The heavy bear who goes with me. A manifold honey to smear his face. Clumsy and lumbering here and there. The central ton of every place. The hungry beating brutish one In love with candy, anger, and sleep. Crazy factotum, disheveling all. Climbs the building, kicks the football. Boxes his brother in the hate-ridden city.*

*Breathing at my side, that heavy animal. That heavy bear who sleeps with me. Howls in his sleep for a world of sugar, A sweetness intimate as the water's clasp. Howls in his sleep because the tight-rope Trembles and shows the darkness underneath. —The strutting show-off is terrified. Pressed in his dress-suit, bulging his pants. Trembles to think that his quivering meat Must finally wince to nothing at all.*

*That inescapable animal walks with me. Has followed me since the black womb held. Moves where I move, distorting my gesture, A caricature, a swollen shadow, A stupid clown of the spirit's motive. Perplexes and affronts with his own darkness. The secret belly of belly and bone. Opaque, too near, my private, yet unknown. Stretches to embrace the very dear With whom I would walk without him near. Touches her grossly, although a word Would bare my heart and make me clear. Stumbles, flounders, and strives to be fed Pragging me with him in his mouthing care, Amid the hundred million of his kind. The scrimmage of appetite everywhere.*

*Delmore Schwartz, 1938.*

*From Ellman R, O'Clair R (Eds): The Norton Anthology of Modem Poetry Second Edition. New York. NY: Norton Publishers, 1988.1975*
*Rexroth: p. 711. Schwartz: pp. 877-8*

# *ABSTRACTS & EXTRACTS ...*

**Li L-L, Kerverne EB, Aparicio SA, Ishino F, Barton SC, Surani MA: Regulation of maternal behavior and offspring growth by paternally expressed *Peg3. Science* 1999;284:330-333.**

Abstract: Imprinted genes display parent-of-origin-dependent monoallelic expression that apparently regulates complex mammalian traits, including growth and behavior. The *Peg3* gene is expressed in embryos and the adult brain from the paternal allele only. A mutation in the *Peg3* gene resulted in growth retardation, as well as a striking impairment of maternal behavior that frequently resulted in death of offspring. This result may be partly due to defective neuronal connectivity, as well as reduced oxytocin neurons in the hypothalamus, because mutant mothers were deficient in milk ejection. This study provides further insights on the evolution of epigenetic regulation of imprinted gene dosage in modulating mammalian growth and behavior.

Extract: Maternal and paternal genes contribute unequally to development through the monoallelic expression of imprinted genes that affect embryonic and placental development as well as behavior in mice. It is possible that complex behavioral output of the central nervous system (CNS) might be a common function of neurally expressed imprinted genes such as *Mest* and *Peg3.* In this context, we showed previously that parthenogenetic (PG: duplicated maternal genome) and androgenetic (AG: duplicated paternal genome) cells contribute unequally to the formation of the CNS of chimeric mice. PG cells contribute more to the cortex and striatum, whereas AG cells contribute to the hypothalamus. The imprinted gene *Mest* of paternal origin is expressed in the hypothalamus and functions in regulating growth and maternal behavior. Another paternally expressed gene, *Peg3,* of unknown function is expressed in a variety of embryonic meso-endodermal tissues, in the hypothalamus and the adult brain. The putative Peg3 protin contains 12 $C_2H_2$-type zinc-finger motifs and two proline or acidic amino acid-rich repeat domains, suggesting its involvement in DNA-binding and protein-protein interactions, respectively. Recently, *Peg3* (also known as *Pw1)* was implicated as a partner protein to TRAF2 and in the tumor necrosis factor (TNF) signaling pathway....

[The mouse] mother normally builds a nest, gathers her pups together, and keeps them warm by crouching over them. We found that the mutant primiparous mother failed to exhibit any of these maternal responses. To validate these observations, we first tested the response of the postpartum mothers toward three newborn pups. Mutant mothers took 11 times longerto retrieve and 8 times longer to build a nest and, unlike wild-type mothers, never crouched over their pups in the 15 min of testing. The inability to find the pups was not a factor for the impaired maternal response, as the motant mothers sniffed the pups as quickly as wild type mothers....

The neural circuit responsible for maternal behavior is complex because it involves multisensory stimulation in the female after exposure to the pups. High levels of Peg3 expression were present in the hypothalamic nuclei, including the medial preoptic area as well as in the medial amydala, bed nucleus of the stria terminalis, hippocampus, and olfactory bulb.... [O]ur *Peg3* mutant virgin females did show appropriate *fosB* induction in the MPOA after their exposure to pups, suggesting that the lack of maternal behavior is independent of *fosB* activation.

[F]or females to to maximise their lifetime reproductive success, it is necessary for progression to the next pregnancy to happen in the shortest possible time.... Lactation and pregnancy (involving embryonic growth) demand considerable maternal growth energy resources; these two demands cannot be met simultaneously. Because the paternal interest is best served by prolonged care and feeding of his progeny through maternal lactation, there are asymmetric parental interests involved. This could explain why the paternal genome may have acquired the ability to regulate maternal behavior through imprinted genes such as *Mest* and *Peg3.*

**Donovan WL, Leavitt LA, Walsh RO: Conflict and depression predict maternal sensitivity to infant cues. *Infant Behavior & Development* 1998;21:505-517.**

**Abstract:** We used Signal Detection methodology to examine how mothers' actual sensitivity to infant distress (crying) is influenced by psychosocial factors. Fifty-five mothers of 4- to 6-month old infants participated in a signal detection task in which they were asked whetherthey could detect differences between a standard cry and variants of that cry. Cry variants differed from standard cry in small, systematic changes in fundamental frequency. Home/work conflict, marital unhappiness, and maternal depression predicted sensitivity (the mothers' ability to discriminate small differences in cries varying in fundamental frequency). This finding indicates how mothers' psychological state and social environment may affect mother-infant interaction. It also suggests the use of intervention strategies which focus on helping mothers attend to infant signals.

**Extract:** As a group, clinically depressed mothers have been found to be less competent with their infants... Mothers.. mildly to moderately depressed were found to be less responsive as well as slower to respond.... Reciprocal interaction in the first several years influences the child's emerging capacities with warm, responsive and sensitive maternal behavior providing an optimal context within which infants can learn to effectively regulate their arousal. In contrast, insensitive parental behavior may induce anger, distress, high activity, physiological arousal, and other indicators of poor affect regulation in infants.... [I]t was the mothers who were more sensitive who responded most quickly. Sensitivity was not correlated with number of hours the mother works... Conflict accounted forthe largest part of the variance (10%), marital unhappiness, 4%, and depression, 3%. [From the depression scale], four individual items correlated with sensitivity: (1) "I had trouble keeping my mind on what I was doing", r=.33, p<.02, (2) "Everything I did was an effort", r=.29, p<.04, (3) "I felt lonely", r=.39, p<.003, (4) "I enjoyed life", r=-.28, p<.04. Items such as "People were unfriendly to me" did not correlate with sensitivity.

**Kandel E: Biology and the future of psychoanalysis: a new intellectual framework for psychiatry revisited. *Am J Psychiat* 1999;156:505-524**

**Abstract:** The *American Journal of Psychiatry* has received a number of letters in response to my earlier "Framework" article. Some of these are reprinted elsewhere in this issue, and I have answered some of them briefly there. However, one issue raised by some letters deserves a more detailed answer, and that relates to whether biology is at all *relevant* to psychoanalysis. To my mind, this issue is so central to the future of psychoanalysis that it cannot be addressed with a brief comment. I therefore have written this article in an attempt to outline the importance of biology for the future of psychoanalysis.

**Extract:** I outline eight areas in which biology could join with psychoanalysis to make important contributions: 1) the nature of unconscious mental processes, 2) the nature of psychological causality, 3) psychological causality, 4) early experience and the predisposition to mental illness, 5) the preconscious, the unconscious, and the prefrontal lobes, 6) sexual orientation, 7) psychotherapy; and structural changes in the brain, and 8) psychopharmacology as an adjunct to psychoanalysis.

From 1.5 *decades* ago, we *see* the theme is not *new.*

**Cooper AM: Will neurobiology influence psychoanalysis? *Am J Psychiat* 1985; 142:1395-1402.**

**Abstract:** Neurobiologic research has begun to elucidate brain mechanisms of affective states and behavioral patterns. Discussions of anxiety and sexual identity demonstrate how these researches lead the psychoanalyst to broader views of behaviors that were previously considered entirely psychological in origin. While introspection and extrospection are distinct realms of investigation and conceptualization, they share common boundaries and areas of interpenetration. Psychoanalytic theory is challenged to accord with newer findings in biology and to provide important questions for further research. Neurobiologic advances will continue a enturies-old process of confining the realm of psyche, but there is no danger that mind will disappear.

**Chadwick PK: *Schizophrenia: The Positive Perspective. In Search Of Dignity For Schizophrenic People.* London & New York: Routledge, 1997, pp. 146-7 (thanks to John Price)**

**Extract:** Writing, however, need not be for others. Via the keeping of a journal all manner of thoughts and experiences can be ventilated and problems genuinely worked through and solved. Journal writing testifies to the possibility of effective therapy without transference. A journal has many advantages. For example, it sets no time limit to your verbal delivery. It never gets exasperated or bored, nor does it ever criticise or rebuke you. It never forgets anything, its cost is minimal, it can travel with you and it demands nothing from you otherthan that you will fill it with meaningful useful writing so that in a way it is "allowed" to fulfil its function. It allows you to find your own interpretations, never chides you for lack of motivation or evasiveness and it never misunderstands you or gets romantically or sexually involved with you. It never probes or questions you if you are "late" and it is never shaken by outbursts of emotion - all that happens is that the pen is more indented into the page. It allows you to be yourself completely and it will receive what you say faithfully at any time of the day or night. The deficiency, of course, is that there are none of the challenges or positive consequences of a relationship - and none of the positive spin-offs of criticism or of the sense of development of a relationship.

**Silver LM: *Mouse Genetics: Concepts and Applications.* New York, NY: Oxford University Press, 1995, PP.11**

**Extract:** [M]ice and humans (as well as all other placental mammals) are even more similar genetically than they were thought to be previously. An astounding finding has been that nearly ail human genes have counterparts in the mouse genome... Thus, the cloning of a human gene usually leads directly to the cloning of a mouse homolog, which can be used for genetic, molecular, and biochemical studies that can then be extrapolated back to an understanding of the function of the human gene. In only a subset of cases are mammalian genes conserved within the genomes of *Drosophila* or *C. elegans....* [T]hree types of information have been used to build phylogenetic trees for distantly related members of the animal kingdom -paleontological data based on radiodated fossil remains, sequence comparisons of highly conserved proteins, and direct comparisons of the most highly conserved genomic sequences, namely the ribosomal genes. The most parsimonious model is one in which flies *(Drosophila)* and nematodes (C. *elegans)* diverged apart from the line leading to mammals just prior to the time of the earliest fossil records in the pre-Cambrian period which occurred 570 million years ago. The divergence of mice and people occurred relatively recently at 60 million years before present. ... [H]umans and mice are ten times more closely related to each other than either is to flies or nematodes.

Although the haploid chromosome number associated with different mammalian species varies tremendously, the haploid content of mammalian DNA remains relatively constant at approximately 3 billion basepairs. ... [T]he underlying genomic organization has also remained the same as well. Large genomic segments... have been conserved virtually intact between mice, humans, and other mammals.... [A] rough replica of the human genome could be built by simply breaking the mouse genome into 130-170 pieces and then pasting them back together again in a new order.

**Byrne R: *The Thinking Ape: Evolutionary Origins of Intelligence.* New York, NY: Oxford University Press, 1995, pp. 35-36**

**Extract: Dangers of everyday observations.** Of course, few are fooled by social insects' behaviour into imagining that their actions are at all like our intelligence. But many cases are less obvious and do fool people, including me - as I noticed recently. I.. recount... my error, as a cautionary tale of how careful we must be in inferring species-level intelligence.

I underestimated sheep. Most people do, I suspect, particularly in comparison with sheep-dogs. Black and white dogs... are famous for outwitting sheep. The classic image is the sheep-dog, responding to

mere whistles of a shepherd with flawless out manoeuvring and controlling of 100 sheep. Of course, any ethologist would point out that this wonderful performance depends on anti-predator reactions of sheep. Bunching and running in tight-packed flocks when attacked makes it difficult for a wolf to single out a potential kill, but easy fora sheep-dog to manoeuvre a group. The black and white wolf-descendent is also equipped with innate hunting tactics, which can also be seen in any untrained sheep-dog let out to chase some sheep. In training, the shepherd does just that and then painstakingly labels' each tactic with whistles, giving the appropriate command whistle after the dog has run in a certain direction, sat down, crouched, and so on. Eventually one day the dog notices the whistle-tactic association, and from then on will obey each by making the appropriate action. This is all the training needed because the dog's reward is simply to please the shepherd, who has usurped the wolf role of the pack leader. After it has made the connection between whistle and action, the sheep-dog follows the human's intentions.

But still, the dog is able to deploy its tactics to order; the sheep are unable to overcome their innate restrictions - so surely they are dumb, in comparison? Well, not necessarily. Recently I was able to spend some time with Gujarati shepherds on the Little Rann of Kutch in India. They whistle their commands just like British shepherds; it seemed a familiar scene of sheep being pushed around because they are not overly bright. Eventually, I noticed the sheep-dogs-asleep. In fact, the sheep in Gujarat learn to understand the shepherds' commands and follow them, treating the shepherd as herd leader. The dogs' role is not one of herder, but a source for the flock of protection from wolves. I suspect that pet dogs seem especially intelligent to people largely because they happen to use facial musculature for visual communication, giving rise to expressions that resemble our own and happen to have similar meanings. Because of this we can 'see' what they are thinking. Sheep are very foreign and cryptic because they are not primates like us, and we easily underestimate their capacities.

**Isaacson RL: A "fuzzy set" perspective of the limbic system: implications for cognition and memory.** *Neuroscience* ***Research Communications.*** **1993;13(supplement1:S15-S18 (Thanks to Roger Masters for this)**

**Abstract:** This paper attempts to merge two quite diverse major themes: the application of Paul MacLean's ideas on the evolution of the brain and certain of the principles and ideas arising from the relatively recent developments in "fuzzy set theory." MacLean proposes three major divisions of mammalian brains that have been elaborated overthe course of evolution: an R-Complex (reptile-like), a limbic system, and a Neomammalian (Neocortical) system. Neural elements in all of these systems, at various times, contribute to goal oriented behaviors and to the analysis of the environment. All of these major categories of brain organization have mechanisms of plasticity that allow alterations in behavior to be made on the basis of environmental contingencies.

However, these major components of the nervous system in the MacLean model cannot be firmly defined in traditional anatomical terms. In fact, given the complexity and variability of the mammalian nervous system, firm definitions may be impossible. In a real sense the brain areas involved and the interconnections among brain regions are uncertain and, therefore, "fuzzy." The significance of conceptualizing the nervous system in Fuzzy Set terms and the implications to come from doing so are discussed.

**Extract:** Systematic aproaches to uncertain conditions were pioneered by Lotfi Zadeh in his formulation of fuzzy set theory. The basic rule of how to deal with complexity is to simplify. Not all the available information is used and an increased amount of uncertainty is accepted to create robust summary concepts. Typically we summarize the weather by saying it is sunny, overcast... and so forth. The measured amounts of rainfall... are "hard data," "crisp numbers," but are less useful than "misty" or "hard rain." **The vagueness of these terms do not make them less useful but more useful.** Crisp data, those with minimal uncertainty, are rarely found in either clinical or

**Whiffen VE, Johnson SM: An attachment theory framework for the treatment of childbearing depression. *Clinical Psychol Sci Prac* 1998;5:478-493.**

**Abstract:** Postpartum depression (PPD) is relatively common among childbearing women, with approximately 13% of recently delivered women experiencing symptoms severe enough to warrant a clinical diagnosis. Etiological research indicates that, among other factors, PPD is linked to women's negative perception of their marriages and to perceived lack of support from their spouses. In general, women tend not to be treated for PPD. If treated, the intervention does not typically address the marital context in which PPD occurs.... [W]e propose that PPD be conceptualized within an attachment framework, and we illustrate this perspective with case material. Attachment theory can assist the therapist in conceptualizing the client's depression within individual therapy. More significantly, we suggest that marital therapy may be an effective treatment for PPD, especially... Emotional Focused Couples Therapy (EFT) that specifically addresses the marital bond.

Extract: °[T]he couples who experience the greatest gains with EFT are those in which one partner is able to ask for reassurance and comfort and the other partner is able to respond appropriately.... [L]arge gains in EFT are made particularly when the husband, at intake, appears to be avoidantly attached....

[T]hese men were perceived by their wives to be emotionally inhibited, and the husband reported that they tended to not seek their wives out for comfort and emotional support.

Interventions in EFT involve, first, deescalating negative cycles to facilitate emotional engagement; second, explicitly reframing the cycle and reprocessing negative affect in terms of attachment insecurity; and finally, creating positive cycles of contact and bonding events. The process of therapy typically involves the therapist setting up structured tasks so that one spouse asks for comfort and reassurance, while the other spouse is supported to respond empathically.

**Turner PE, Chao L: Prisoner's dilemma in an RNA virus. *Nature* 1999;398:441-443.**

**Abstract:** The evolution of competitive interactions among viruses was studied in RNA phage ø6 at high and low multiplicities of infection (that is, at high and low ratios of infecting phage to host cells). At high multiplicities, many phage infect and reproduce in the same host cell, whereas at low multiplicities the viruses reproduce mainly as clones. An unexpected result of this study was that phage grown at high rates of co-infection increased in fitness initially, but then evolved lower fitness. Here we show that the fitness of the high-multiplicity phage relative to their ancestors generates a pay-off matrix conforming to the prisoner's dilemma strategy of game theory. In this strategy, defection (selfishness) evolves, despite the greater fitness pay-off that would result if all players wre to cooperate. Viral cooperation and defection can be defined as, respectively, the manufacturing and sequestering of diffusible (shared) intracellular products. Because the low-multiplicity phage did not evolve lowered fitness, we attribute the evolution of selfishness to the lack of clonal structure and the mixing of unrelated genotypes at high multiplicity.

**Extract:** Viral evolution offers a unique opportunity to study the prisoner's dilemma because co-infection of the same host cell by more than one virus creates conflicts similar to those assumed in game theory and ancestral genotypes can often be retrieved for reconstructing the pay-off matrix.

**Nowak MA, Sigmund K: Phage-lift for game theory. *Nature* 1999;398:367-368.**

**Extract:** A virus is a natural born cheat that makes its living by exploiting the vital functions of a host cell. Small wonder, then, that viruses also exploit each other.... Evolutionary game theorists will see this paper [by Turner and Chao] as a landmark. Indeed, it will be hard to find players more primitive than phage ø6 and its mutant clone øH2, stubby chunks of RNA. ... In 1981, in a seminal paper by Axelrod and Hamilton, [the prisoner's dilemma] was applied to the evolution of cooperation in biological societies.... In the following years, both computer simulations and

study of real-life occurrences were expanding areas of research, but... It proved much easier to do the simulations, and the empirical evidence lagged sadly behind.... The underlying problem is the bug-bear of evolutionary game theory: the currency for payoff values is Darwinian fitness, which is notoriously hard to measure.... With phages the job becomes doable. The two strategies are embodied in the usual type of ø6 (the cooperator) and a mutant called øH2 (the defector) which manufactures fewer of the intracellular products needed for replication of the phages. Turner and Chao measured the relative fitness of the two types in the in bacterial cultures by means of a genetic marker, cleverly exploiting the fact that the defector's fitness is greater when they are rare.... The fitness of a øH2-defector in a øH2-infested cell turns out to be P = 0.83, and that of a ø6-phage in such a cell is S = 0.65. This is precisely the rank ordering required for the prisoner's dilemma. ...

It should be noted, however, that the life cycle of phage ø6 (reproducing in bacteria which eventually burst, and reentering new bacteria) marks it as an ideal candidate for a specific type of group selection - which can, more orthodoxly, be viewed as individual-based slection for the ability to build successful groups.

**Knowlton BJ, Mangels JA, Squire LR: A neostriatal habit learning system in humans. *Science* 1996;273:1399-1402.**

**Abstract:** Amnestic patients and nondemented patients with Parkinson's diesase were given a probabilistic classification task in which they learned which of two outcomes would occur on each trial, given the particular combination of cues that appeared. Amnestic patients exhibited normal learning of the task but had severely impaired declarative memory for the training episode. In contrast, patients with Parkinson's disease failed to learn the probabilistic classification task, despite having intact memory for the training episode. This double dissociation shows that the limbic-diencephalic regions damaged in amnesia and the neostriatum damaged in Parkinson's disease support separate and parallel learning systems. In humans, the neostriatum (caudate nucleus and putamen) is essential for the gradual, incremental learning of associations that is characteristic of habit learning. The neostriatum is important not just for motor behavior and motor learning but also for acquiring nonmotor dispositions and tendencies that depend on new associations.

**Koepp MJ, Gunn RN, Lawrence AD, Cunningham VJ, Dagher, A, Jones T, Brooks DJ, Bench CJ, Grasby PM: Evidence for a neostriatal habit learning system in humans. *Science* 1996;273:1399-1402.**

**Abstract:** Dopaminergic neurotransmission may be involved in learning, reinforcement of behaviour, attention, and sensorimotor integration. Binding of the radioligand "C-labelled raclopridetodopamine $D_2$ receptors is sensitive to levels of endogenous dopam-ine, which can be released by pharmacological challenge. Here we use $^{11}$C-labelled raclopride and positron emission tomography scans to provide evidence the endogenous dopamine is released in the human striatum during a goal-directed motor task, namely, a video game. Binding of raclopride to dopamine receptors in the striatum was significantly reduced during the videogame compared to baseline levels of binding, consistent with increased release and binding of dopamine to its receptors. The reduction in binding of raclopride positively correlated with the performance level during the task and was greatest in the ventral striatum. There results show... behavioural conditions under which dopamine is released in humans....

# *AS CITED BY.....*

**Cover Page**


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**References for J.S. Price (From page 16)**


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