Across-Species Contrast Comparisons And Psychopathology Newsletter

# ASCAP

Volume 7, No 3, (Cumulative #76) March 1994

*"Low rank and falling rank in animals have been used for models for human physical disease, such as heart disease and renal disease, and it would be surprising if social stress intense enough to produce these physical pathologies were innocent of inducing psychopathology."* *Price, Sloman, Gardner, Gilbert and Rohde*[1]

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

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.


Editor: R. Gardner, Graves Bldg, D-28, University of Texas Medical Branch, Galveston TX 77555-0428.
Tel: (409) 772-7029
Fax: (409) 772-6771.
Previous volumes are available. For details, contact Managing Editor: Erica Ainsbury, at above address.

**ASCAP Society Mission Statement**

The society represents a group of people who view forms of psychopathology in the context of evolutionary biology and who wish to mobilize the resources of various disciplines and individuals potentially involved 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 psychopathologically related states. We are interested in the integration of various methods of study ranging from cellular processes to individuals in groups.

## Contents



Concerning paleobiology, sociophysiology, interpersonal and group relations, and psychopathology

# *ADDRESSED TO & FROM ...*

## *EDITORIAL NOTE*

Note the still newer format! Are you recognizing The ASCAP Newsletter?! As you can see, Erica Ainsbury has put her talents to work as managing editor and we have major changes. As Glenn Weisfeld says in his letter below, it feels ever snazzier.

Please communicate problems with our progress, however, and with what we may think is progress but may not be. We realize that new and glitzy aren't necessarily better as a matter of course and we hope the exchanges, styles of communication and newsletter contents remain familiar.

**The Philadelphia meeting approaches on May 21, 1994! Remember that we meet in Room 139, Jefferson Alumni Hall, 1020 Locust Street, Philadelphia, Pennsylvania from 9 a.m. to 3 p.m.** where our first stimulus will be words from President Paul Gilbert. The principal agenda for the overall meeting is the future form of our organization (as well as the usual agenda for a meeting of information-exchange). How often do people have the kind of opportunity that we are now having to invent the procedures and lay the traditions by which a group of people thinking together to some extent alike can best go about it?

Although we hope for good response to the letter President Gilbert has written to various journals (see below) and for a reasonable attendance, we also look forward to the atmosphere of a relatively small group. We note the productivity of subsets of our members as modeled, for instance, by the Michael R A Chance group headquartered in

## *... the pioneer for many facets of our being...*

Birmingham, UK. Michael has been the pioneer for many facets of our being. Indeed, in his intrepid style he would like to see us make initiatives in national and international politics! He would have us no longer look only at our navels (by which he means thinking about psychopathology), but many of us have this as our usual business and moreover think that navel-gazing (called something else) is very interesting. But he is correct that our thinking may have widespread ramifications, and it's good to have him tweaking us.

There are other small groups: cross-national/cross-continental collaborations are all over the place increasingly hinged around the composition of papers for refereed journals that have sprung - or are springing - from the pages of this newsletter. This was my highest hope when it began in December 1987, and I believe that many contributors are pleased at these results. The articles of this issue beautifully demonstrate the spirit of idea-furtherance, back-and-forth brain-storming and mutual support for which The ASCAP Newsletter was initiated.

## *ASCAP PUBLICITY FROM PAUL GILBERT, PRESIDENT*

Here is the letter that was finally sent to *The Psychologist* (UK), *The British Journal of Psychiatry* (UK), *The APA Monitor* (USA), and *The American Journal of Psychiatry* (USA). I am working on some others...

"Dear Editor:
RE: The Across-Species Comparisons and Psychopathology Society

We would like to take this opportunity to bring your readers' attention to the existence of a new, international society concerned with an integrative approach to psychopathology and interpersonal processes. The context for the society is with humans as evolved beings and hence our acquisition of basic shared dispositions (e.g. for attachment, social hierarchy, alliance formation, etc.). We are interested in the integration of various methods of study, from the biological to individuals and individuals in groups. Our newsletter covers a large range of areas and has included contributions on genetics, neurochemistry, adaptations of Leary's interpersonal theory, Beck's approach to personality disorder, Price's ranking theory of depression, Gardner's theory of basic plans, Chance's

theory of social structures and evolutionary approaches to psychotherapy.

You will note that the "and" in the name of the society indicates that while psychopathology is a particular concern, it is by no means exclusively so. This breadth of interest is also reflected in the fact that our first president was a primatologist, our second was a psychiatrist, and I am a psychologist. The newsletter invites people to explore ideas and controversies around the issues of evolution, behaviour and social structures in an open and friendly way.

On May 21st, 1994, there is an international meeting in Philadephia just prior to the APA meeting for psychiatry. This meeting will explore future developments of the society. Further information on this and on how to subscribe to the newsletter (currently $18.00 p.a. for twelve issues) please write to. . . . .
We look forward to your participation and welcoming you as new members with new ideas and points of view.

Yours sincerely,
Paul Gilbert

[Editor's Note: Publicity is always wonderful, but, members, please note that the current subscription cost is $20.00 annually, not $18.00!]

## *ALSO FROM PAUL GILBERT...*

People may be aware that Richard Dawkins has recently been describing religion as a "virus in the mind". Dawkins takes the view that psychological ideas can function with a strong "replicate component". He sees the replicate component as a source of a lot of religious beliefs. He sees many religious beliefs as ultimately dysfunctional and destructive. Dawkins seems to suggest that atheism is really the only position for people with an evolutionary biology approach. One is aware of course, of Brant Wenegrat's book, *The Divine Archetype.*

### *... does taking an evolutionary approach automaticallyclose the door on a spiritual view?...*

I think this debate is of some interest, particularly as physicists are beginning to talk in terms of "the quantum mind". Some believe that consciousness may actually be at the ground of everything. I refer to authors like Amit Goswami, who is professor of physics at the University of Oregon. He has just written a book called *The Self Aware Universe — How Consciousness Creates the Material World.*

I can't pretend to be quite up on the physics but it certainly seems to me that the quantum mechanics has some potentially important implications for theories of mind. Should we evolutionists perhaps begin to think about the nature of that debate? I would be quite interested in whether readers feel that taking an evolutionary approach automatically closes the door on spiritual view. I think that an evolutionary approach certainly shows that the process of evolution is often a relentlessly harsh cruel one. Many have difficulty coming to terms with the bumbling, stumbling, thrashing of nature, with its tinkering here and there, and any concept of religion.

The reason I raise this is that in this country Dawkins has stirred up quite a storm. He's even suggested that theology should not be represented in respectable universities since it is not a scientific academic subject. It seems to me therefore that we may need to think through some of this implication?

I very much enjoyed Beck's comments on the seven sins. I thought that was right to the point. I very much enjoy the way he is able to articulate things so clearly. It's a good example of how conflicts of interest can give rise to various attitudes and social values.

Paul Gilbert

## *GREETINGS FROM SWITZERLAND!*

I just gave a lecture at the historic Burgholzi now called Psychiatricsche Universitat Klinik Zurich. What a wonderful and humbling experience. The Director, Prof Dr Med Daniel Hell has interests in evolutionary psychiatry (with a special interest in depression). He knows Paul Gilbert and Michael Chance. I encouraged him to join, i.e. to get the excellent ASCAP Newsletter.

It turns out that I will be at the APA for a symposium on May 23 so it may be possible for me to come early for an **IASCAP** (ASCAP Society) meeting either May 21 or 22 or both - I'm not sure yet. I will be in London giving

a presentation on my book *Transforming Processes* on March 20. I'll be in England 7-10 days and I plan to see Anthony Stevens. Perhaps I could visit with Paul Gilbert, Michael Chance, and John Price. Please send their addresses.

David Rosen, Texas A&M, on sabbatical at the Jung Institute

## *HUMAN ETHOLOGY*

The 12th biennial congress of the International Society for Human Ethology will be held 3-7 August 1994 at the University of Toronto, Toronto, Ontario, Canada. Themes will include proximate mechanisms of behavior and cross-cultural research. Founded in 1974, ISHE comprises researchers in numerous disciplines in 30 countries who apply evolutionary theory to the study of human behavior. For more information, please contact: Prof. Irwin Silverman, Psychology Department, York University, 4700 Keele Street, North York, Ontario M31 1P3, Canada. Tel: 1(416) 736-5122. Fax: 1(416) 736-5814. Your newsletter gets snazzier all the time. I am continually amazed that you get it out every month.

Glenn Weisfeld

[Editor's Note: Thank you for the compliment... we try our best!]

## *ASCAP NAME*

If I can put in my two cents worth in regard to the change of name, I liked the title "Society for the Study of Evolutionary Approaches to Interpersonal Processes" (SSEAIP). As a member of the Washington School of Psychiatry — whose founder, Harry Stack Sullivan, gave birth to the conception of psychiatry as the study of interpersonal processes — I admit unapologetically to a clear bias.

*... Harry Stack Sullivan conceived psychiatry as the study of inter" personal processes ...*

Sullivan cast a very broad net with this conception. He believed that the study of interpersonal processes was a meeting ground where biology, the social sciences and a dynamic, operationally defined psychiatry could converge. Fifty years later this vision continues to be fertile, far-reaching and certainly integrative.
The main drawback for SSEAIP is that it is not as phonetic as ASCAP and does not necessarily convey the idea of basic plans. However, an evolutionary approach must account for the emergence of architecture and structure, so maybe this is not such a serious limitation.

Mauricio Cortina

## *AFTER COMMENT*

Sullivan was carefully reviewed in my psychiatry training 30 years ago and I had already read his book on how to interview patients when a junior medical student. I suspect all of this has been critical to my development as a psychiatrist and the eventual idea of a basic science of psychiatry that would prominently feature sociophysiology.

Certainly I agree - and I believe most do in the ASCAP readership - with the emphasis you make on interpersonal processes. John Birtchnell puts it well in the quote used in the December, 1991, issue of ASCAP (#49): "relating is so essential a part of our being that we never stop doing it (just as our hearts never stop beating)."

The question is how to best communicate that. How does the new byline sound to you? "Concerning paleobiology, socio-physiology, interpersonal and group relations, and psychopathology." The three middle terms all refer to interpersonal' relations at different levels and the other two do not contradict, but rather supplement, the basic thrust of this.

Back to Sullivan: do you know quotes from his writings that might be reproduced in the pages of the newsletter in view of his power as a conceptual ancestor to what it is that we are trying to do here? Thanks for the reminder of his contributions to our roots!

Russell Gardner, Jr.

PLEASE **SEND EN YOUR UNPUBLISHED ARTICLES (SO WE CAN PRINT THEM IN ASCAP)**

**AND YOUR PUBLISHED ARTICLES (SO WE CAN PUBLICIZE THEM BY REPLICATING THE SUMMARY)**

**AND DON'T FORGET TO RETURN THE QUESTIONNAIRE!!**

by KG Bailey

# ARTICLE: Our kind - their kind: response to Gardner's we-they distinction

In his January 1994 ASCAP article, Russ Gardner focused on the we-they aspects of persecutory delusions and their proximate causation at the cellular and neurochemical levels.[1] In the we-they distinction, Russ has addressed a fundamental principle of nature that radiates into all aspects of animal and human social behavior. This principle is of special importance in psychological kinship theory (see Bailey & Wood, ASCAP Nov 1993), and is fundamental to the process of kinship classification.[2] The following comments, which are excerpted from a paper in progress on the evolution of psychological kinship, will hopefully add something to the issues Russ has raised.

The earliest living creatures in the primeval soup were capable of some rudimentary distinctions between "itself and "not itself, and even the simplest organism had the capacity to approach advantageous stimuli, such as ingestible substances, or to withdraw from noxious or dangerous stimuli.[3] The most fundamental distinction in nature is between self-nonself, and at some later point in phylogeny, when organisms were capable of self-recognition, group-recognition, and species-recognition, distinctions between one's Kind and all that is not one's kind became basic organizing principles in the ecosystem.

The biochemist Sidney Fox, in his Emergence of Life, tells us that "the production of laboratory protocells leads not to lone individuals but to groups [suggesting] that life was social right from its beginning".[4 p 82] Thus, if laboratory protocells designed to emulate life's beginnings are defined by their aggregative qualities, then we may reasonably assume that the first actual living cells three billion years ago possessed similar qualities. Even one-celled creatures required a sense of our kind versus their kind, and mis-identification or mis-classification could be fatal. Once multicelled organisms evolved, the notion of species-appropriate cell aggregation became a logical necessity, and even minor deviations in DNA transfer of such aggregations from one generation to the next could jeopardize species continuity. Through some process of recognition, classification, and then attraction to appropriate cell aggregations and aversion to inappropriate ones, primitive organisms were able to maintain continuity of organs, organ systems, and, indeed, their essential selfness from generation to generation. Without this hard and fast "kinship of cells", so to speak, it would not be possible to maintain organismic integrity and the self-not self distinction. Maintaining one's essential species-typical and family-typical integrity or selfness both between generations (e.g. parental inheritance) and within generations (e.g. avoiding mutational anomalies as with cancerous formations), are tasks of monumental precision and complexity.

Genetically, the storage (DNA) and transcription (RNA) of nucleotide sequences into the protein molecules that will eventually subserve the organism's self-defining organic and behavioral systems must be carried out in almost perfect, fail-safe fashion. Even the slightest deviation from normal sequencing producing the "wrong kind" of outputs is likely to be lethal or pathology-inducing. For example, human hemoglobin consists of 576 amino acids in chains whose function is to carry oxygen to cells throughout the body. Change in only one amino acid in the normal sequence is all that is needed to convert a normal red blood cell into the cell responsible for sickle-cell anemia.[4]

Clearly, there are powerful evolutionary constraints on organic design, and what an organism is to be materially and functionally requires reliable inhibition of what it could be relative to a hypothetical model of zero constraint.[56] We see that nature supports distinctions between self-not self and between my-kind and not-my-kind at the fundamental levels of DNA transcription, tissue formation, and formation of organ systems. Supporting these distinctions externally is the most fundamental behavioral system in nature, the approach-withdrawal system: *"approach* and *withdrawal* are the *only* empirical, objective terms applicable to *all* motivated behavior in all

animals".[7 p.2 (italics in original)] Presumably, the earliest approach-withdrawal behavior was instinctive, automatic, and stimulus bound, but as organisms evolved greater masses of neural tissue, the pleasure-pain system evolved as a more flexible means of strongly encouraging - but not forcing - adaptive approach-withdrawal and approach-avoidant behavior.[8]

In Sandor Rado's hierarchic psychodynamic cerebral system, the hedonic (pleasure vs. pain) level is the most primitive phylogenetically, and lies at the foundation of the organism's response to the environment.[9] Indeed, species integrity itself is, in large measure, due to the pleasures the organism experiences in being its normal, species-typical self, whereas being forced out of its natural mold is unpleasurable and aversive. Herrnstein provides the most persuasive argument that pleasures and aversions are nature's way of assuring the performance of adaptive forms of species-typical behavior, and Barash says that we humans find "sweet" those things that are good for us in the adaptive sense.[10,11]

One of the sweetest things in the lives of mammals and primates is the experience of group togetherness and kinship with familiar and well-liked members of the group -- that is, it is inherently and deeply pleasurable for our nearest relatives in phylogeny to spend time with their "own kind." The capacity to make cognitive distinctions between our-kind and not-our-kind in higher animals is erected upon phylogenetically older instinctive recognition and approach-withdrawal systems, and represents elaborations and refinements of them. Higher animals do not just make distinctions and then automatically respond with movement toward or away from, they recognize, then classify, and then place other organisms into more-or-less permanent categories such as kin, friend, sexual object, stranger or enemy.[12] The more highly evolved and highly intelligent the animal, the more elaborate and complex the systems of recognition —> classification —> categorization become, with the hominoid apes and human beings possessing the most elaborate complementary systems of affiliation versus animosity, kin versus nonkin, and us versus them. Once one is categorized as within the human in-group, then he or she is further classified as being closer (e.g. brother, sister, mother, father, husband or wife) or farther from the classifier (e.g. distant in-laws, cousins and various nonrelatives). How we classify and categorize others determines, in large measure, how we respond to them. Do we get a warm, positive feeling in a certain person's presence, or do we feel anxious, insecure, and ill at ease? Or, at the extreme, do we hate this person, fear this person, or wish harm on this person? It is all a matter of how we classify others and place them into particular categories either closer or farther from the family kinship core.

**Sociobiological perspective on kinship**

Sociobiologists have pondered the adaptive value of kinship classification and aggregation at great length. They tend to view kinship in fundamentally genetic terms, following W. D. Hamilton's theory of kin selection. Kinship selection means that an organism's behavior may reduce its own Darwinian fitness but nevertheless be favored by natural selection if the resulting effect increases the likelihood of survival of close relatives. Such self-sacrificing altruism to close kin serves to perpetuate our genes in them through succeeding generations; the object is for genes to survive and phenotypes are of lesser consequence. Inclusive fitness reflects the degree to which the process of kinship selection has been successful - that is, the greater the amount of family-wise genetic material transmitted to the next generation, irrespective of the fate of individual family members, the greater the inclusive fitness.

Like all kinship theories, the sociobiological model presupposes mechanisms of kin recognition and classification, and characteristic modes of social interaction among those so recognized and classified. Using particular perceptual cues, a given animal somehow recognizes its similarity to another and, if sufficient similarity or kinship is perceived, the probability of altruistic self-sacrifice is enhanced accordingly. Perception of similarity implies first recognition that the perceiver and target animal belong to the same in-group ("our kind"), and then classification into categories of differing degrees of valuing within the shared in-group. Theoretically, the greater the perceived similarity (presumably based on proportion of shared genes), the higher the perceiver values the target animal and favors it in

the form of parental care, cooperative defense, food sharing, warning calls, rescue behavior, mutual grooming, and nepotism.

Phil Rushton argues that detection of genetic similarity is itself genetically mediated, and occurs in response to phenotypic cues such as general resemblance, or specific visual, aural, or tactile characteristics associated with the target organism.[13] He points out that familiarity, especially in early life, physical proximity, and shared geographic locations facilitate the detection of genetic similarity. Whether or not the similarity principle is gene-based is highly controversial (see Rushton and commentaries), but, whatever its mechanism, it appears to mediate much of human social behavior, and seems at the heart of love, friendships, family togetherness, happy marriages, tribalism, political preferences, and nationalism.

***... interindividual differences may be a source of variety and exhilaration or a source of fear, animosity, and conflict...***

The other side of perceived similarity is perceived difference, and such attributed out-group designations form the nucleus of prejudice and discrimination, ethnocentrism and tribal warfare, gender conflict, and social irritations in general. Depending on the personality structures, learning backgrounds, and cultural patterns of the perceiver, interindividual differences may be a source of variety and exhilaration, or a source of fear, animosity and conflict - it all depends on the particular patterns of recognition, classification, and categorization employed. Xenophobia and group conflict are among the many negative consequences of favoring own and fearing others, and humans seem ever so ready to "phylogenetically regress" to "our-kind-against-their-kind" with minimal provocation.[8]

In challenging genetic similarity theory, Kendrick postulates a dissimilarity-repulsion model of group formation and intergroup conflict - "people are not so much attracted to similar others, as they are repulsed by those who are dissimilar".[14, p.531, (emphasis in original)] More than likely, warm hedonic, and altruistic relations or, contrariwise, cold, agonic, and competitive relationships reflect a particular balance of attraction-repulsion and similarity-difference, and it is improbable that any relationship is totally based on one principle versus the other.

Sociobiology emphasizes two primary classes of social interaction: those between genetically related kin and those between genetically unrelated parties. We tend to be altruistic toward our biological kin in proportion to degree of genetic relatedness, but we can also exhibit reciprocal altruism toward nonrelatives. Whereas familial altruism may be sacrificial and the only payoff is in increased inclusive fitness, reciprocal altruism basically reflects economic exchanges among acquaintances and strangers. Sociobiological theory implies a continuum of social relations proceeding from altruistic family ties at the kin pole, through cooperative, reciprocal relations between nonrelatives in the mid range, and on to fearful and hostile relations with outsiders at the nonkin pole. The reader may consult our November 1993 ASCAP commentary for a more extended version of the sociobiological kin-nonkin continuum.

In conclusion, I believe that the we-they distinction Russ discusses emanates from an ancient and universal principle of nature that goes back to the earliest living creatures. Integrity of self, the self-not self distinction, approach-withdrawal mechanisms, and we-they distinctions all revolve around the tendency of organic matter to organize itself into "kinds" of cellular aggregations with associated mechanisms of attraction-repulsion, preference-assortment, and highly prescribed patterns of organization and systemic integrity. Given this argument, the paranoia and xenophobia of Russ's patient EO would seem to come from very ancient roots indeed. To view oneself as one "kind" and someone else as another does not directly cause persecutory delusions, sexism, racism, genocide, and the like, but it sets the stage for easy phylogenetic regressions to we-they distinctions that are but a step away from us versus them.

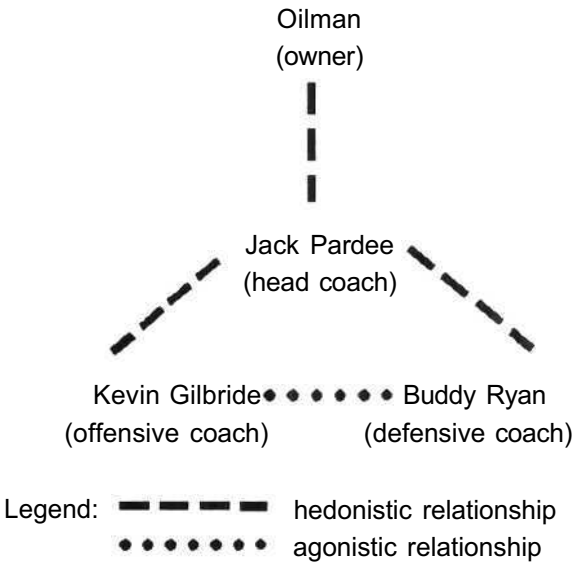
*References: page 17*

by J Price

# ARTICLE: Commentary on the ranking problems of the Houston Oilers

The first thing to note about the Houston Oilers in Russell Gardner's article on the disputes among them (ASCAP Jan 1994) is that there is a formal hierarchy, in which ranks are allocated by appointment. This formal hierarchy is not necessarily the same as the "dominance hierarchy" which represents the interpersonally negotiated ranking of each dyad. In many ways, formal rank is similar to dependent rank as seen in animals, so that there may be two separate hierarchies depending on whether the authority figures who determine the formal/dependent rank are present. And, for completeness, we should remember the "prestige hierarchy" which Franz de Waal observed in his chimpanzees, which was not the same as their dominance hierarchy.

But in the case of the Oilers, I do not detect any informal deviation from formal rank, and so we can write the hierarchy thus:




(As we recall, Buddy was caught swinging on Gilbride by a television camera after an offensive play that Buddy disagreed with.)

The next thing we need to know is whether the relationships are in the agonistic or hedonic modes (I use the term agonistic rather than agonic because the current definition of agonic excludes episodes in which catathetic signals are being exchanged, and I do not wish to exclude them). In the agonistic mode the power bases of the relationships are being contested, in the hedonic mode they are not. Thus it seems that all the relationships are hedonic except that between the two assistant coaches. According to the information you give, the agonistic aspect of the Gilbride/Buddy relationship is contributed by Buddy, who wants to be formally superior to and informally dominant to Gilbride. Perhaps he is an "authoritarian personality", which means that he has a deficit in the area of forming hedonic equal relationships. Or he may disapprove of the idea of the offensive and defensive coaches having equal status, and instead of trying to change the formal structure, he is trying to become informally dominant to the other coach. For whatever reason, he is challenging the symmetry between himself and Gilbride. He is emitting catathetic signals to Gilbride, in the form of both words and blows. We are not sure of Gilbride's response, but our theory predicts that if the catathetic signals are not returned in full measure (or dealt with by some other method), Gilbride will suffer a fall in RHP and will be liable both to an episode of involuntary subordinate strategy (ISS) and to being manoevered into the one-down position in his relationship with Buddy.

Also, since the exchanges between Buddy and Gilbride are public, they are competing for prestige in the eyes of both their patrons and their teams. We do not know on what criteria the prestige will be allocated. It may go to Buddy, who may be seen as desirably strong; or it may go to Gilbride if he is seen as chivalrously ignoring the boorish behaviour of Buddy.

Buddy has more manifest "up-hierarchy motivation" than Gilbride. Whereas Gilbride has been offered positions of head coach, we do not know whether he wants them, but we have been told that Buddy covets the senior positions. Nevertheless, we have not been told that he covets Jack Pardee's job, nor that Jack finds Buddy's bumptiousness threatening,

so we have no direct evidence that the relationship between Buddy and Jack is contested, and therefore it can be said to be in the hedonic mode. The only suggestion of agonistic development in the relationship is Buddy's criticism of the offensive play which Jack brought from a previous job, and which is therefore presumably publicly identified with Jack. This could be said to be an indirect attack on Jack, so we might anticipate a switch in the Buddy/Jack relationship from hedonic to agonistic.

If Buddy's desire for advancement was backed up by an "involuntary dominant strategy" (IDS) in the form of elevated mood, this would make him more aggressive to Gilbride (whom he hopes to dominate), more aggressive to Jack (whom he hopes to supplant), but more actively submissive to the Oilman, who he hopes will support his attempt to supplant Jack. This illustrates the important point that, whereas passive submission is characteristic of depressed mood and the ISS, active submission is a component of elevated mood and the IDS. Powles, if no-one else, has pointed out that an increase in flattery (active submission) is characteristic of manic but not of depressed patients.[1]

**The basic plans of symmetrical relationships**

The hierarchy of the Oilers as described does not include a hedonic relationship at the same level, but I would like to use the example to discuss the difference between the basic plans for agonistic and hedonic "symmetrical" relationships. Perhaps we could assume that when they started off together, Buddy and Gilbride were good friends and all their apparent aggression was in the form of play; and that at some stage they switched to being enemies (or at least rivals). What are the basic plans for symmetrical relationships, and are there two basic plans, one for hedonic and one for agonistic relationships, or is there one overall basic plan which can vary a bit depending on how well people are getting on? In other words, is the variation between hedonic and agonistic dimensional or categorical?

The original basic plan for symmetrical relationships must have been laid down hundreds of millions of years ago, at a time when all relationships between members of the same sex were agonistic, and before the development of group living with individual recognition (the requirement for hierarchy formation). At that time there must have been just two basic social plans, the agonistic symmetrical plan for dealing with members of the same sex, and a (male and female) reproductive basic plan for dealing with members of the opposite sex.

The instructions of the basic plans were probably very simple. In dealing with the same sex, the plan must have been designed to instruct the animal whether to attack or flee. Two variants of the plan seem to have evolved, depending on whether the criterion of ownership is available on the input side. If so, then the basic plan is: "If you are the owner of the territory, attack! If you are not the owner, flee!"

Of course we do not know how these plans are organised in the brain and so we must treat the brain like a black box. But the choice between two strategies has been traced right through the brains of electric fish.[2] When their output frequency is jammed by another fish with a similar frequency, they have two alternative and mutually incompatible responses (or strategies): they can increase their own frequency or they can reduce it. Formally, this strategy choice is similar to the decision whether to attack or flee in a social situation with a same-sexed conspecific. These basic strategies do not seem to have changed much over the past 300 million years or so. We can see Buddy appraising Jack and if he thinks he can get the better of him, he swings with his right. The main changes are the extension of the strategy set from "attack or flee" to "attack or flee or submit"; and the introduction of allies and especially patrons (higher-ranking allies) into the evaluation of relative RHP.

Long after the agonistic symmetrical basic plan came the hedonic symmetrical basic plan. In the meantime, other basic plans had evolved, particularly those relating to the parent/child relationship and those relating to pair-bonding. Also there was the hedonic asymmetrical pair of basic plans, according to which there could be hedonic relationships between same-sexed animals of different ranks. I think that these must have evolved out of the parent/child basic plans. Certainly in monkeys, in which these hedonic asymmetrical relationships are very common, they are based on the mother-

daughter relationship, and their extension to sister/sister and aunt/niece relationships are probably secondary developments when family life became more complicated.

It is only very recently in evolution that hedonic symmetrical relationships appeared. They do not occur in monkeys (except possibly in opposite-sexed animals who are pair-bonded). It is only in chimpanzees that same-sexed individuals are able to tolerate close social relations without the establishment of dominance. And it is only in the human lineage that these equal relationships have become common and the basic plans for them have presumably evolved in the context of enormous advantages in cooperation with family and other group members. What are the instructions for the hedonic symmetrical basic plan, and how do these differ from the modern human equivalent of the primitive agonistic symmetrical basic plan mentioned earlier? Here are suggestions:

1. If I get my own way on this occasion, you are more likely to get your own way on the next occasion (reciprocity). This contrasts with the agonistic rule that "success breeds success".

2. If I detect any weakness in you (low RHP) I respond by boosting you up. This contrasts with the agonistic response which is to take advantage of any weakness by putting the other down even more than usual.

3. I do not desire to dominate you, and I do not suspect that you desire to dominate me. This contrasts with the mutual desire to dominate which characterises an agonistic relationship.

4. If I attack you, at the same time I metacommunicate that this is "play". Thus in play, friends develop their agonistic skills which are used "for real" in other relationships.

5. I am interested in knowing about you so that I can help you, compared with desiring to know about the other in order to exploit weakness.

6. If I boast, the boasting includes you, e.g. "We are great". This contrasts with expressions of "I am great".

7. The more powerful you appear, the more powerful I feel. In an agonistic relationship, your power makes me feel less powerful.

8. Our conversation centres on shared attributes, and serves to justify our beliefs, affiliations and actions.[3] Agonistic verbal exchanges emphasize differences.

9. If we have a serious difference of opinion, we negotiate rather than trying to impose our own will.

I think the hedonic symmetrical basic plan probably evolved out of the hedonic asymmetrical pair of basic plans, which evolved out of the parent/child plans; whereas the agonistic symmetrical basic plan is a direct evolutionary descendant of the original plan for dealing with members of the same sex. So we should consider the possibility that the two symmetrical basic plans are of different phylogenetic origin; so that when Buddy and Gilbride switched from their former hedonic relationship to their present agonistic relationship, they switched from one basic plan to another of an entirely different phylogenetic origin. This suggests a categorical change of strategy rather than a movement along a dimension of variation of a unitary basic plan.

Before trying this exercise, I had not realised how complex the hedonic symmetrical basic plan is. No wonder it took so long to evolve. Clearly a lot of people have difficulty in relating hedonically to equals and this has been the main problem in those who have been labelled as having authoritarian personalities.[4,5] At the moment I am reading A. N. Wilson's biography of Tolstoy, who seems to fall into that category, especially in his relationship with Turgenev, to whom he was frequently and unnecessarily aggressive; he liked to affiliate with admirers, such as his serfs or the coterie which surrounded him when he was famous.

The cases presented in Anthony Ryle's excellent book on cognitive analytic therapy are largely people who cannot relate to peers. Some feel they have to buy friendship with subservience (and then feel resentful about it), some are so controlling that they are rejected by others; therapy is aimed to encourage symmetrial and hedonic relating.

I am afraid I have strayed from the Oilers, but in a way the interesting thing about their hierarchy was what wasn't here -- like the dog that didn't bark in the night - in the form of a hedonic symmetrical relationship -- what about that for an account of a football team from the land of equality! (I have come across a patient here in New Zealand who responds to the injunction. "Have a nice day!" as if it were a catathetic signal... and she was committed to hospital after responding to such an apparently friendly greeting with a blow to the face (she has a paranoid psychosis)).

An afterthought - why is there no existing social psychology of hierarchical relationships? I think there are two answers to this. One is that social psychologists have denied the existence of hierarchy, or at least of the occurrence in humans of the sort of hierarchical relationships that occur in animals.[6] The other is that social psychologists have worked largely with students, who do not form dominance/subordinacy relationships in the sort of settings that social psychologists put them.

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# *ABSTRACTS...*

Wu J, Cohen LB, Falk CX: Neuronal Activity During Different Behaviors in *Aplysia:* A Distributed Organization?

Sobet EC & Tank, DW; In Vivo $Ca^{2+}$ Dynamics in a Cricket Auditory Neuron: An Example of Chemical Computation

Aboitiz F: Further Comments on the Evolutionary Origin of the Mamma-Han Brain

Sheldon BC: Sexually transmitted disease in birds: occurrence and evolutionary significance

Wu J, Cohen LB, Falk CX: Neuronal Activity During Different Behaviors in *Aplysia:* A Distributed Organization? Science 1994;263:820-823

The active neuronal populations in the Aplysia abdominal ganglion during spontaneous and evoked behaviors were compared with the use of multineuronal optical measurements. In some preparations, more than 90 percent of the neurons activated during the reflex withdrawal of the gill also were activated during respiratory pumping and during small spontaneous gill contractions. Although the same neurons made action potentials in all three behaviors, the activity patterns were different. There was a substantial interaction between the neural substrates underlying evoked and spontaneous behaviors when they were made to occur together. If a gill withdrawal reflex was elicited a few seconds after a respiratory pumping episode, the evoked neuronal activity in most neurons was clearly altered. These results suggest that a distributed organization involving a large number of neurons may be responsible for generating the two behaviors. Different behaviors appear to be generated by altered activities of a single, large distributed network rather than by small dedicated circuits.

Sobel EC & Tank DW: In Vivo $Ca^{2+}$ Dynamics in a Cricket Auditory Neuron: An Example of Chemical Computation Science 1994;263:823-826

Fura-2 calcium imaging in the cricket omega neuron revealed increased intracellular free calcium ion concentration in response to simulated cricket calling songs and other sound stimuli. The time course of the increase and decrease in intracellular calcium coincided with the time course of forward masking, a time-dependent modulation of auditory sensitivity. The buffering of calcium transients with high concentrations of a kinetically fast calcium buffer eliminated the post-stimulus hyperpolarization associated with forward masking, whereas the uncaging of calcium inside the neuron produced a hyperpolarization. The results suggest that sound-stimulated intracellular calcium accumulation acts by means of a calcium-activated hyperpolarizing current to produce forward masking. These findings underscore the importance of chemical dynamics in neural computation by

demonstrating a behaviorally relevant role of calcium dynamics in vivo.

Aboitiz F: Further Comments on the Evolutionary Origin of the Mammalian Brain Medical Hypotheses 1993;41:409-418

**Summary of the hypothesis** - In summary, my previous proposal suggests that the mammalian neocortex arose as a consequence of contingent adaptations to nocturnal life resulting in the development of the olfactory system and the reduction of the visual system. This condition was associated to a generalized development of the cerebral cortex, especially those structures related to olfaction (in reptiles olfaction is an important cortical function). Concomitantly, the main visual projection system (retino-tectal) became reduced. On the other hand, the sensory nuclei of the thalamus receiving direct retinal projections reinforced their preexisting connections with the cerebral cortex in order to establish associations with olfactory stimuli. At this point, the expanding cerebral cortex replaced the optic tectum in many of its perceptual and integratory functions. When mammals reinvaded the diurnal niches, the cerebral cortex was so involved in perception and motor integration that the simplest adaptive strategy was to modify this working system instead of rebuilding the old midbrain (optic tectum or superior colliculus) visual centers. The further growth of the mammalian neocortex was important in the establishment of strong cortico-cortical connections which permitted a better association between different sensory modalities.

**Abstract** - This paper is an extension of a previous report on the origin of the mammalian neocortex. Two main aspects are elaborated. The first is the evolution of visual projections from the midbrain to the telencephalon, featuring the encephalization of visual functions. Associated to this, the progressive fusion of the two main visual systems (thalamofugal and tectofugal) in the mammalian telencephalon (striate and extrastriate cortex, respectively) is viewed in the context of increasing cortico-cortical connectivity in the evolution of the mammalian brain. In addition, the issue of a presumed homology between mammalian extrastriate cortex and reptilian anterior dorsal ventricular ridge (ADVR) is reviewed in some detail, and it is concluded that extrastriate cortex is a derived character of mammals while ADVR is a derived character of reptiles and birds. It is not likely that ADVR is ancestral to extrastriate cortex. The second aspect under analysis is the origin of the inverted (inside-out) lamination pattern of mammalian neocortex that differs from the outside-in pattern of reptilian cortex. Furthermore, mammals have developed a transient embryonic cell layer (the subplate zone) that serves as a waiting compartment for thalamic and cortico-cortical axons while their prospective target cells end their migration process to reach their final positions. It is postulated that both inverted lamination and the subplate zone arose in evolution as successive and complementary strategies to maximize synaptic contacts between thalamic afferents and the new cortical cell types (belonging to prospective granular and supragranular layers) that were being originated at that moment.

Sheldon BC: Sexually transmitted disease in birds: occurrence and evolutionary significance Phil. Trans. R. Soc. Lond. B 1993:339:491-497

Sexually transmitted diseases (STDs) span two current areas of sexual selection theory, namely the roles of multiple mating in determining individual reproductive success, and of parasites in mate choice, yet have been relatively neglected in the ecological literature. I reviewed the occurrence of STDs in populations of commercially kept birds and found widespread evidence for the existence of pathogenic STDs in such populations. STDs may have important consequences for the evolution of behaviour, reproductive physiology and some sexual characteristics. Where STDs are costly they are hypothesized to affect the evolution of mating systems, and, via selection for hostility in the female reproductive tract, to explain high levels of sperm mortality after insemination. The potential for coevolutionary cycling is large, as some STDs may coevolve with female and male reproductive physiology, which may themselves coevolve. Although little information currently exists concerning the occurrence of STDs in wild birds, techniques for their identification are well established. This study raises a number of testable predictions about the consequences of STDs for avian reproductive biology, and I suggest that STDs should be considered as a potentially powerful factor in future studies of mate choice and sperm competition.

by M Erickson

# *ARTICLE:* Serum Cholesterol and Behavior: A Darwinian Conjecture

Research on heart disease has repeatedly demonstrated that lowered cholesterol reduces death due to cardiovascular causes. Remarkably, however, overall death rates are not decreased. Reexamination of the data revealed a significant increase in death due to violent causes, e.g. accidents, homocide and suicide, which offset the reduced death rate to heart disease.[1] Low serum cholesterol has, in other research, been linked to antisocial personality disorder, aggressivity, and depression.[2,3,4]

The effects of dietary fat and cholesterol on social behavior has been studied in the cynomolgus macaque. Over a 22 month period one group of macaques received a "luxury" or relatively high cholesterol diet, the other a "prudent" or low cholesterol diet. The frequency of several behavioral acts commonly exhibited by this species were recorded. Of these behaviors only contact aggression varied significantly. The diet low in cholesterol was associated with increased aggression.[5]

During evolutionary history, behavioral strategies which varied with changes in the availability of high caloric foods may have been selected. For example, in times of scarcity, behaviors such as increased aggressivity, for socially dominant individuals, or diminished activity and behavioral depressions, by subdominant individuals, may have been adaptive. An internal biological marker which fluctuated with such environmental changes, and hence could entrain variable strategies, may have been serum cholesterol.

A possible physiological mechanism is suggested by research which shows that lowered membrane cholesterol is associated with a decrease in the number of serotonin receptors in mice.[6] Several studies now link low levels of the serotonin metabolite 5-HIAA to aggressive and violent behavior, impulsivity and depression.[7] It could then be hypothesized that diminished availability of high caloric food effects a relative lowering of serum cholesterol levels which in turn downregulates the serotinergic system in ways which effect behavioral strategies, e.g. increased aggressiveness, that are adaptive in times of scarcity.

This hypothesis is consistent with the views of John Price on the potential adaptive nature of depression relative to social context.[8] If correct, the hypothesis again demonstrates how well intended medical treatments may inadvertently conflict with adaptive processes. The need for a new discipline of Darwinian medicine is reemphasized.[9]

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by R Gardner

# ***AFTER COMMENT:*** Reactions to Rethinking Oedipus

In addition to applauding the creative idea Mark provides us with in this essay, I wish to summarize the exchange of letters in the February issue of the American Journal of Psychiatry (pp 296-298) regarding his article on Rethinking Oedipus.[1] Mauricio Cortina (ASCAP Society member), Richard Balan, Brian Krause, Domeena Renshaw and Donald R. Taves made commentary. Mauricio Cortina supportively noted Freud's notion that childhood sexuality is accelerated (sexual wishes of the Oedipus complex occur in childhood). But, in fact, neoteny characterizes primate development including humans: as Stephen Jay Gould stated in Ontogeny and Phylogeny (miscited by the way in the AJP), sexual maturation is extraordinarily delayed.[2] He points out that intergenerational closeness must have been critical for K type selective strategy: he cites a study of mothers seductive to their sons in which all had a history of incest or had been "spousified" with their fathers or stepfathers.

Also supportive, David Balan suggests that differences between central Europe and the USA hinge on the US mobility which may foster decreased attachment, which in turn may enhance increased incest. He also noted that "In some nomadic cul-

tures of Central Asia people have remembered their ancestor's names for seven generations so they will not marry anybody to whom they are related."

Brain Krause feels that father involvement is critical for Mark's thesis and that the evolutionary history of this is unclear; rather, he proposes, father-connectedness with children is a late more societal driven phenomenon, not something from natural selection. Domeena Renshaw flatly calls Mark a wishful thinker: incest avoidance is not natural but learned. In her observation, affection may proceed incest.

David Taves suggests that contrary evidence to the familial bonding/incest avoidance notion may stem from the Oneida Community of upstate New York: despite close connections as children, the people stemming from it were unusually faithful to each other (long marriages) and exhibited outstanding altruistic behavior.

Mark in response felt that Balan and Cortina added good ideas. He countered Krause's data: chimp fathers can be quite nurturant to the little ones and may at times substitute for an absent mother. In response to him and Renshaw who further supports the culture-power models, he suggests that the data support the familial bonding idea. "One prediction of the cultural hypothesis is that incest would be more common in cultures with a mild incest taboo than in cultures with stringent taboos. There are no findings to support this prediction despite the fact that cultures are known to vary widely in the stringency of their taboos. In contrast, over the last 30 years, a great body of evidence has accumulated that clearly supports a biological hypothesis of incest avoidance in humans and animal species."

He also looked at the Oneida literature and found that these children were raised quite differently than those in the Israeli kibbuz and *simpua* marriages of India where aversion to sex has been noted between children raised together. The Oneida children were (1) raised by their mothers until 18 months, (2) were separated by age and sex especially when very young, and (3) "exclusive" relations between children were frowned on by the elders so that "undisrupted close proximity between childhood peers of the opposite sex was rare or even nonexistent."

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by M Waller

# *ARTICLE:* More on the We-They

First, may I make my contribution to John Price's call for examples of depression following agonistic encounters. On reading his request I immediately thought of the biblical character with even more negative "vineyard" associations than Teddy Kennedy. I will let the opening verses of Chapter 21 in The First Book of the Kings speak for themselves:

"And it came to pass after these things, that Naboth the Jezreelite had a vineyard, which was in Jezreel, by the palace of Ahab, King of Samaria. And Ahab spake unto Naboth, saying, "Give me thy vineyard, that I may have it for a garden of herbs, because it is near unto my house: and I will give thee for it a better vineyard than it; or, if it seem good to thee, I will give thee the worth of it in money." And Naboth said to Ahab, "The Lord forbid it me, that I should give the inheritance of my fathers unto thee." And Ahab came in to his house heavy and displeased because of the words which Naboth the Jezreelite had spoken to him: for he had said, "I will not give thee the inheritance of my father." And he laid him down upon his bed and turned away his face and would eat no bread. But Jezebel his wife came to him, and said unto him, "Why is thy spirit so sad, that thou eatest no bread?" And he said unto her, "Because I spake unto Naboth the Jezreelite, and said unto him, 'Give me thy vineyard for money; or else, if it please, I will give thee another vineyard for it': and he answered "I will not give thee my vineyard'." Being an unqualified practitioner, the therapy Jezabel settled on was to arrange for the murder of Naboth. She then exhorted Ahab to seize the vineyard. Ahab did so and ran into a lot of problems with God, but exploring these would take us a little beyond the scope of our mission statement!

Something else which strongly interested me in the January Newsletter was your use of the case of EO to illustrate persecutory delusions and proximate

causation. If there is no professional bar to your doing so, I should like to know more of the background circumstances. You tell us that the patient was a 45 year old female realtor, brought in to treatment by her family. As a lay observer, it seems to me that each fact may be of some significance here. The mid-forties are commonly seen as a challenging time for both sexes, and particularly so for women. Apart from biological changes, there are the wider ramifications of children leaving home, and a significantly increased risk of the husband (perhaps following a pattern favoured by natural selection) decamping to create another family with a younger woman. If the case is a recent one, there is also the possibility of business worries arising out of the sudden collapse of the real estate market. All or any of these factors could account for a rapid diminution in self-esteem. If so, might the persecutory delusions be seen in this case as desperate, albeit dysfunctional attempts to cope with a catastrophic fall from the in-group of success to the out-group of self-perceived failure?

Predictably, I would see this as just another way in which low self-esteem can acclerate our exit from the gene pool. But your using the EO case to illuminate we-they/in-out-group proximate mechanisms triggered another line of thought. I recently visited a local aircraft museum and came across a display dealing with the relief brought by air to Allied POWs in the hands of the Japanese, immediately following the cessation of hostilities. One exhibit was a letter of thanks sent by a POW. It contains the following sentence: "Anyone in the camp could pick the next to go - you could see it quite easily and all the men knew it." There are obvious parallels between this remark and the commonplace observation that animals seem to know which of their number a predator has targeted. Although not fully reflected in the sentence I have quoted, the letter as a whole conveyed to me a seemingly desperate desire by the author to achieve a sense of "oneness" with the recipients. I interpret this as arising from a strongly felt need to shift the we-they divide from non-POW/POW, to survivors/non-survivors.

However, in connection with EO, what particularly interests me is how, as the period of captivity lengthened, those who at the outset had considered themselves survivors, coped with falling into the category "next to go". I would suppose that the earlier casualties would be largely made up of individuals with low self-esteem who might be expected to accept this fatalistically. But how does a hitherto high achiever, be he/she a POW or a real estate broker, cope as their world starts to fall apart? Perhaps much as does a dictatorship when finally faced with incontrovertible evidence of its own economic mismanagement, by recourse to conspiracy theories and witch-hunts. Enacted by a Stalin, the effects of such a strategy are terrible to behold or contemplate; adopted by a powerless individual, the consequences appear pathetic and misconceived. But again reverting to my basic thesis, in the natural world the bizarre, erratic behaviour which results from paranoia would be as much a threat to survival as the morose listlessness of the mono-polar depressive.

Rightly or wrongly I extracted much the same message from the monoamine oxidase A research you drew our attention to in the December Newsletter. Known to be associated with depression in some human subjects, when administered to female rats, it was found to inhibit attacks they would normally have been expected to make on female intruders. However, the frequency with which the treated animals were themselves attacked increased significantly. Your summary suggested that the trigger for the second effect was changes in the smell of experimental animal's urine caused by the protein. This finding seems to me to have a direct bearing on my lonely contention that submissive behaviour has more to do with genetic self-elimination than survival. I am not suggesting that this is conclusive proof that the survival thesis is wrong. But it does seem strange that an artificially induced version of the kind of bio-chemical process which is probably employed to impose a submissive pattern of behaviour, also delivers an olfactory message which invites attack rather than discouraging it. My guess would be that the same would be true in that other savage laboratory of life, the school playground. The nervous child who wets himself is more likely to be tormented by his peers than enjoy their sympathetic consideration.

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by R Gardner

# AFTER COMMENT

Mike Waller brings up so many wonderful points. Let me begin by briefly addressing some of his comments about EO's reality. He wonders about the placement of the symptoms in the details of her life: did she have sociophysiological symptoms due to her receiving communications from others that she was unwanted, or perhaps to a sense of her life plan going badly, as opposed to the implicit or explicit idea of a subtle brain disease as we now think causes many psychiatric illnesses? As I recall in her case (this happened several years ago), her job was quite secure so far as we (and the family) could determine. She had lost her job due to a failing performance *after* her delusions began rather than before. I am also aware that her husband stayed with her through several exacerbations of illness.

Now on to Mike's really basic issue: I have troubles with the idea of "genetic self-elimination." Rather, my guess is that the human with the three-times larger brain has as a result of that increased neural power the capacity to plan in the form of self-told stories sometimes not in tune with reality. Merlin Donald tells us that humans in contrast to other animals incessantly invent and act on those inventions (customs, storylines, life-decisions).[1] In my experience, when people are suicidal, they usually have something other than death in mind when they think of their ends.

YK, a patient from my New York experience, for instance, was so bent on suicide that at the conclusion of many sessions I would have to negotiate her safety until I saw her again. But back then, YK would hear the traffic on Third Avenue in my not fully soundproofed office. She told me how she sensed that if she were to die by thrusting herself into it, she would be bourne upon it like a swaddled baby in a cradle on the waves of the gentle ocean (the sound through the window did have a white noise, wave-like quality). In other words, she wasn't dying in the sense of personal oblivion by diving into the traffic; rather, she would be comforted and soothed. No wonder I had a difficult time persuading her! She did on one occasion make a painful suicide attempt that caused her a long rehabilitation and I heard no more of the comforts suicide would provide. I hear regularly from her and she is doing well now twenty years later.

There are many motives for suicide and they seldom include a true sense of oblivion. The word may be used, but the main intent, usually, like YK, is relief from pain. Other motives include revenge, venting of anger, or even semi-altruistic motives for loved ones. "Now my wife will be happy!" said a man I heard about this week after he put an eight inch butcher knife in his chest, because he assumed (wrongly) she would feel better with him dead.

***... now my wife will be happy!...***

Denys de Catanzaro has shown that estimates of low benefit to one's kin (shared genes) predict lethality. People who have little personal likelihood of reproducing or of helping those they already produced are more likely to die in their self-destructive attempt. But is this a "self-destruct gene" all by itself or the consequence of the genes that produced a three-times bigger brain that in turn is able to produce a more accurate estimation of genetic payoff for an invented future? (Note the *Aplysia* uses the same nerve networks for varied purposes. Humans probably don't have suicide subcircuits.

Other less exalted qualities may come into play as well that don't require the same head size, such as subordination or out-group definition, communicational states encoded in the genome long before babies put their human mothers at risk by simply being born. Thus, being on the losing side of an out-group definition (wrong odor as with the female rats Mike alludes to or wrong appearance as in xenophobic human hatred) may make all the difference, not as a result of a gene that directs victim self-destructive behavior, but from biologically mediated communicative processes that organize social processes that I keep wanting to call sociophysiology.

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