THE ASCAP NEWSLETTER

Across-Species Comparisons And Psychopathology Newsletter

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"Developing a plausible theory....is only the first step in successful scientific research. The second and far more crucial step of good science is to subject one's theories to rigorous criticisms, or at least to respond judiciously to the unfavourable evidence and arguments cited by other researchers." Frank Sulloway[1]

Newsletter aims

1 A free exchange of letters, notes, articles, essays or ideas in brief format.

2. Elaboration of others' ideas.

3. Keeping up with productions, events, and other news.

4. Proposals for new initiatives, joint research endeavors, etc

The ASCAP Newsletter is a function of the International Association for the Study of Comparative Psychopathology[2]

IASCAP 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 psycho-pathologically related states. We are interested in the integration of various methods of study ranging from that focusing on cellular processes to that focusing on individuals to that of individuals in groups.

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Letter

Aug 25, 1993

I like the new "phenotype" of The ASCAP Newsletter! The newsletter continues to "evolve" admirably both in format and substance....

Henry Nasrallah, Ohio State U, Columbus, Ohio, U.S.A.

Conversation with IASCAP President, Paul Gilbert

by Russell Gardner

Trans-Atlantic words recently with **IASCAP** President Paul Gilbert brought me up-to-date with his leadership thinking about the organization:

(1) Should it have a new name, one that is congruent with the aims and goals of the membership and yet recognizable for new potential members? Really, now, what does "comparative psychopathology" truly mean? Typically, Paul finds, after he explains it to someone, they have no trouble with the concept - and are even interested, but initially there is an aversive reaction from the lack of immediate clarity.

(2) With such a change, the Association's leadership is more likely to reach a greater natural public, as with letters to editors, etc. He noted that he and John Price found in Larry Hartmann's 1992 American Psychiatric Association presidential address a reference to the neurobiology of fish in status hierarchies (that section of Dr Hartmann's address is replicated below). Such placement of an across-species allusion may indicate that the

ground for paradigm-shifting has taken place and soon such ideas may be commonplace. We are poised to help that transition.

Paul was asked to speak to the British Association for the Advancement of Science and found many interested people in the audience. I add that Ernest Barratt from UTMB has called to my attention an address from Roger Sperry to the American Psychological Association that makes similar points (see abstract below).

(3) Paul is willing to consider some proposals I have sent him regarding how **IASCAP** leaders are chosen. To this point, I have facilitated the recommendations of the July, 1991, founding group meeting at Odintune, but it has seemed at times that I have assumed too great a role. Now the organization has reached such a maturity, however, that a nominating committee- might be formed leaving me out, or advisor at maximum. A plan that would relieve any current President of the same burden I experienced is that the just Past-President be the chairman of the nominating committee also composed of the President-elect and the First Vice-President. They could convene (by electronic media if not possible face-to-face), and come up with a recommendation for the next Second Vice-President and with replacements for others in the ascending progression should someone decide to not continue. This would go to the membership, perhaps through the newsletter. These are suggestions, proffered to the president and members of the council.

Hartmann L: Reflections on Humane Values and Biopsychosocial Integration. 120th Presidential Address to the American Psychiatric Association. Am JPsvchiat 1992:

Excerpt:... *Here, briefly, to make a biopsychosocial integration point, I want to compare you all to ... aggressive fish.*

You may wish to resist the comparison, or you may not. And I apologize that the following research was done only on male fish. I expect there are, or soon will be, comparable studies on females.

Dr Russell Fernald, a Stanford neurobiologist, has been studying the African cychlid fish. He has discovered that how a male cychlid interacts with other males, and whether it is socially dominant or meek, not only has a major effect on the fish, but changes the brain cells *in charge of the fish's size, color, and capacity to reproduce.*

In aggressive male fish, commanding large territory, brain cells in the hypothalamus are six times larger than are equivalent cells in milder mannered males. Further, the dimensions of these cells are plastic; should the aggressive fish meet a larger and/or more aggressive fish, the hypothalamic neuronss of the defeated male will rapidly shrink. After the hypothalamic cells have shrunk, the male's testes follow suit, decreasing the fish's apparent desire and ability to breed. In the laboratory, some male fish were environmentally pushed *from dominators to meek types; some from meek types to dominators. Their* cellular changes followed. *When a domninator emerged socially, he began to flaunt his success; physical changes began; he grew bigger and his coat brighter; his gonads swelled and started making sperm.*

Dr Fernald found that key behavioral changes occurred first, and drove the brain changes. The dramatic growth in brain cells that produce gonadotropic-releasing hormone followed environmental change; and testicular and color changes followed that brain cell change.

Social change alters brain cells.

That is not a great surprise, but it is a relatively tidy research demonstration of what many of us who think biopsychosocially assume is a routine interaction of brain and mind. We usually do not, however, have tools with which to measure such changes in vivo in humans. In fact, you might note that given our access to somewhat different aspects of fish than of humans, the psychological middle ground *Is not prominent or explicit in fish research. (How does the fish feel or think about all this?) The demonstrations relied largely on the anatomical/physiological and the social, with the psychological middel level of description merely implicit.*

With better (and less intrusive or harmful) tools (as, for example, some of our newer neuroimaging techniques), we already are to some extent, and soon will be to a greater extent, able to demonstrate many similar bits of biosocial and biopsychosocial continuity in humans....

Sperry RW: The Impact and promise of the cognitive revolution. American Psychologist 1993;48:878-885.

Abstract: *Opening a new era in science, psychology's cognitive revolution contradicts traditional doctrine that science has no use for consciousness to explain brain function. Subjective mental states as emergent interactive properties of brain activity become irreducible and indispensable for explaining consciousness behavior and its evolution and get primacy in determining what a person is and does. Dualistic unembodied consciousness is excluded. A modified two-way model of interlevel causal determinism introduces new principles of downward holistic and subjective causation. Growing adoption in other disciplines suggests the two-way model [top-up and bottom-up, not bottom-up only] may be replacing reductive physicalism as the basic explanatory paradigm of science. The practice, methods, and many proven potentials of science are little changed. However, the new scientific worldview becomes radically revised in a new unifying vision of ourselves and the world with wide-ranging humanistic and ideologic as well as scientific implications.*

From the body of the article: *In the briefest possible terms, the new double-way model combines traditional bottom-up microdeterminism with novel principles of emergent, top-down macro and mental causation.*

The Significance of the Diving-Reflex in Human Evolution during the Littoral Double Niche Phase (6-2million B.P.)

by Michael Bujatti & Michael Chance

It is worth considering any extant unifying mechanisms that could have a supra-ordinate influence on brain function assisting the integration of intelligence and systems forming ability as part of creativity.

One of these is Michael Bujatti-Narbeshuber's[3] explanation of the hedonizing influence of Transcendental Meditation (TM) based on an increased serotonin metabolism. In my own experience and from the publication of some 350 scientific papers since the arrival in the West of Mahareshi Mahesh Yogi 18 year ago it is clear that TM is a *wakeful hypometabolic mental state*[4] It eliminates, at an early stage, residual emotional conflicts subsequently enabling the person to resolve problems and conflicts encountered in the future and promotes health through improvement in many physiological and mental functions.

Bujatti points out that TM shares many important features with the *diving-reflex,* a finding which led him independently to a littoral double niche theory (DNT) which the Aquatic Ape theory of human evolution (some 6-2 million B.P.) predicts would be highly developed in us.[5] He emphasizes that the aquatic existence was not just one of progressive adaptation to an aquatic way of life, but constituted one part of a life style of a shoreline double niche in which terrestrial arboreal life alternated with and coexisted with feeding on shellfish and the like from under the water.

This was iocated in the DanaKil region of the southern Red Sea, which is contiguous with the Northeastern end of the Great African Rift Valley.[6] Our ancestors were able to migrate along this valley into Africa by this route where most of the fossil bones have been found.

Essentially the diving reflex involves the restriction of the blood flow to a heart/brain circulation in which the rate of blood flow to the brain is greatly (perhaps as much as 25%) increased, and DNT suggests that diving could have been a factor leading to the enlargement of the neocortex in evolution by selecting for neoteny.

The diving reflex also requires the evolution of voluntary (ie premeditated) control of breathing, providing *ipso facto* one of the essentials of speech and acquires conditioned evocation by repetition of the mantra. Speech, once evolved, led to enhanced information flow.

The diving reflex also occupies an unusual status in the structure of the behaviour as, apart from its initiation by voluntary means, or if brought on by water on the face, once initiated it is an emergency reflex and so has a relaxing priority over all other instinctive behaviour.

In water the body is supported and posturally relaxed. Apart from vigorous action, parasympathetic-even trophotrophic-conditions prevail. On land the sympathetic system is called into action to maintain blood flow in the vertical position, and ergotropic demands are all the time made on the autonomic system while walking, running or climbing.

The Littoral Double Niche therefore engenders oscillations between infrastructures which underlie Hedonic and Agonic Social Structures.

John Birtchnell replies to John Price

As pointed out in my letter published in the Aug issue, "ASCAP PRESS" omitted twelve words from my last contribution to the Newsletter and rendered my account of Beck's distinction between defeat depression and deprivation depression incomprehensible. This cannot explain all of John Price's (ASCAP Vol 6, #6) misconceptions of my theory (as presented in (ASCAP Vol 4 #9 & #12, Vol 5, #3, & Vol 6 #4). Admittedly, the theory is complicated; the book describing it, which may be out by the time this appears, runs to over 300 pages.[7] One might say that understanding it is like learning a language, and at present John speaks a kind of "franglais" version of it, which enables him to get by, but which leads him into all kinds of tangles.

I am grateful for John's opinion that I am "a great improvement on Leary," but I do not agree with his reasons for this. I will not consider these here, but I discuss them in the book and in a paper called "The interpersonal octagon: An alternative to the interpersonal circle."[8]

A theory might be considered a tool which a person invents to do a particular job. The tool could be modified to do the job better, or someone else could invent a quite different tool for doing the same job. Various people think up their own particular theories which help them solve their own particular problems. Others can criticise these theories or invent new ones only if they are concerned with the same kinds of problems. What John is inclined to do is propose modifications of my theory in order to make it resemble more closely his own. It is best to leave other people's theories alone and let there remain a range of theories which overlap in various places.

John's priorities are not the same as mine. He appears to be interested in two particular, and probably related areas: (1) what is the evolutionary function of clinical depression? and (2) can evolutionary principles be used to explain why marriages break down? I am interested in developing a theoretical system which has its roots in the relating of animals and which explains the adaptive and maladaptive relating of humans. It is a global theory for applying to all forms of normal and pathological relating. He has developed a theory of the evolutionary function of clinical depression. This has been taken up and developed by Paul Gilbert, who recently christened it ranking theory. He has also become preoccupied with Michael Chance's distinction between the agonic and the hedonic mode (which was originally applied specifically to monkey colonies) and extended it so that it can be applied to marital relationships and even to individuals (ASCAP Vol 4 #10).

The issue of depression

John and Paul's explanation of clinical depression is that it is a reaction to loss of status, particularly in response to the suppressive behaviour of another person. This they relate to the yielding of one animal to another during the ritual agonistic encounter I think that there are many routes to clinical depression and this is only one of them. Also, although undoubtedly there is a continuity from the relating of animals to the relating of humans, to make a simplistic jump of this kind is to fail to take account of the fact that animal relating has undergone many modifications in its transformation into human relating.

Confusion between John's theory and mine arises because when John uses the term depression he has in mind clinical depression. When I use it I am considering depression as a regulating device. I maintain that, in keeping with all animals, we are constantly moving toward, or being moved toward by other people, what I would call relating objectives. I believe that in this process, our emotions have the special function of keeping us on course. When we move closer to a desired objective, we feel good (perhaps because of the release of a reward hormone); when we move further away from one we feel bad, i.e. depressed (perhaps because of the release of a punishment hormone). When we are in danger of going off course we experience anxiety (presumably because of the release of adrenaline). These are the kinds of emotion which we experience continuously in our daily interactions with others. Under extreme circumstances these same emotions assume clinical proportions, but the aetiology of clinical depression is more complex than this.

There are those who swing into profound and prolonged states of depression without an obvious precipitating event. It is likely that in the brains of some people the normal depression-releasing mechanism is too easily triggered off. When people swing into this kind of depression, quite of-

ten they will express ideas of failure or guilt, which may give the impression that the depression is simply a response to external circumstances. Although to some extent this may be so, it is also possible that the state of depression can induce these people to create some incorrect explanation to justify it, just as people acting upon instructions given to them under hypnosis will make up an untrue explanation for their behaviour.

John accepts that loss of any of the four positions of my theory (closeness, distance, upperness or lowerness) may induce clinical depression but, in order to hold on to his ranking theory explanation, he insists that most cases must be the result of loss of upperness. Where this does not apply, he modifies the definition of upperness to make it fit. At one point he does concede that loss of closeness may be a factor in depression, but he has difficulty linking depression with loss of the other two. His example of a master releasing his slave from bondage reveals what a negative view of lowerness he must have and fails to take account of the fact that the slave's lowemess was enforced anyway. A concrete example of loss of lowerness is death of a parent, an event which "may bring a person's life to a crisis."[9] The word support is commonly used to describe that which lowerness provides. Good marital partners support each other (interdependence), but the depression of many a weary housewife is due to her perceived lack of support from her husband. Two concrete examples of loss of distance are burglary and rape; these involve the forceful invasion of personal space. The stress of living on some housing estates results from houses heaped up on each other, people cooped up in cramped accommodation, having no escape from the noise of neighbours' children, dogs and stereos. Within families the depression of loss of distance results from lack of privacy and the intrusiveness of others.

Issues of upperness and lowerness

John invariably argues that depression is the result of being pushed from upperness into lowerness. The implications of this are (1) lowerness is the absence of upperness and (2) upperness equals good and lowerness equals bad. He arrives at this position from drawing too close a parallel between humans and animals. In early animal forms, lowerness as an objective does not exist, and even in later animal forms its function is largely to ensure that the young are protected and fed. In the wild, the young have to mature quickly because the weak are either eaten or trampled on. As human societies have developed, lowerness has come into its own. This is because no one can be good at everything, so everyone has had to become dependent upon a whole range of other people. Lowerness is everywhere. Whereas in the wild the more powerful dominate the less powerful, in human societies the more powerful help the less powerful. Whatever Richard Dawkins may say, human societies are altruistic. Humans cannot get by without seeking protection, instruction, information, help, guidance, rescue, care and so on, and so people are trained and paid to provide all these.

John appears to have some difficulty appreciating the appeal of lowerness and yet, as a member of society, he is experiencing it all the time. When he switches on the water tap, the gas or the electric light or when he flushes the toilet, he is being the recipient of society's lowemess. When Edna O'Brien, the Irish novelist, was asked for her idea of perfect happiness, she replied, "Someone to watch over me" (Weekend Guardian, Aug 29-30, 1992). In Mary Chase's play "Harvey," the psychiatrist described the recurrent and highly pleasurable fantasy of lying under a tree with a young woman stroking his brow, saying "You poor, poor boy." Many forms of psychotherapy, and all forms of religion, involve the provision of lowerness.

John maintains that there is a fundamental evolutionary constraint on the vertical dimension in that there is a limited supply of upperness. His assertion that "there is not enough power to go round" may be true of the jungle but is certainly not true of human societies. There are oodles of upperness. It assumes so many different forms that everyone can be upper in something. The wonderful thing about upperness is that it is relative. Eric Berne (one of the great vertical thinkers) was aware that if you are not succeeding in your present league, you can always drop into a lower league. Small children derive upperness from relating to even smaller children or keeping pets or playing with toys.

An example of his redefining upperness to suit his own position is his maintaining that the ultimate criterion of upperness/lowerness is who defines the nature of the relationship. Elsewhere (ASCAP Vol 4 #10) he has argued that a marital relationship switches from the hedonic to the agonic mode when only one partner defines the nature of the relationship. Upperness has nothing to do with defining the nature of the relationship. An upper person cannot be upper without a lower person to be upper to. The upper person needs the lower person as much as the lower person needs the

upper person. The upper person can get none of the valuable commodity uppemess without the lower person being available to make the interaction possible. The lower person gives the upper person upperness in exchange for the upper person giving the lower person lowerness. Each one needs the other. Each participant plays an equal part in defining the relationship.

Neglecting the horizontal dimension

The more he writes the more John reveals himself to be a vertical thinker. He says: "I would still argue that the adaptive function of depression over the course of evolution has been to help individuals to cope with loss of upperness" and "If we ignore affiliation, it is because, in evolutionary terms, agonistic behaviour and ranking is more important for the evolution of depression." He ends his piece with "This is why i write about the vertical dimension and seem to neglect the horizontal. Also, the horizontal dimension has had a lot of attention from others, from John Bowlby onwards." These remarks are sheer prejudice. There is not a scrap of evidence that depression is more linked to the vertical than to the horizontal dimension. Rado referred to depression as "a great despairing cry for love."[10] Abraham, Freud, Bowlby, even Brown and Harris, have considered the breakdown of a close relationship to be a crucial factor in the aetiology of depression. What of Blatt's anaclitic depression and Beck's deprivation depression? In my book I afford equal importance to what I call vertical and horizontal depression. My last communication (ASCAP Vol 6 #4) was a response to Leon Sloman's appeal for a reconciliation between the two ethological theories of depression. In all areas of both animal and human behaviour there must be a balance between the vertical and the horizontal, and s/he who neglects one does so at her/his peril.

On the topic of the horizontal dimension, John asks what is the relationship between the closeness-distance distinction and (1) Eysenck's (and incidentally Jung's) extroversion-introversion dimension and (2) Talcott Parsons's expressive-instrumental dimension. Both issues are discussed in the book. In brief, there is, I suspect, an overlap between the three dimensions, despite John's negative research findings. Extroversion and expressiveness can both be accommodated within the broader category of closeness. Extroversion, as John says, is picking up bits of closeness here and there, and it is not the same as investing a large amount in one selected person. Expressiveness is more a kind of donative closeness, such as what a mother gives to her child. Introversion and Instrumentality can both be accommodated within the broader category of distance. Introversion is shying away from involvement with others and turning in on the self. Instrumentality is a concern with practical and unemotional matters, which is a characteristic of some distant people.

Applying the theory to relationships

Throughout his piece John talks a great deal about symmetrical and complementary relationships, though nowhere does he define these terms. He says: "Let us by all means aim at symmetrical marriage, for that is the highest aim," and "Personally I think that symmetrical relationships are the best (even in marriage!)" from which I conclude that he considers symmetrical to be superior to complementary. From his use of the term "equal marriage" i conclude that he considers a symmetrical relationship to be one in which neither is dominant partner and a complementary relationship to be one in which one partner is dominant. Since in one place he refers to the upper partner as the "one who defines the nature of the relationship" I must conclude that he believes that any relationship between an upper person and a lower person is an undesirable one. Here he is slipping into his law of the jungle way of thinking again, for he does not seem to appreciate that, in humans, upper people often help lower people and do not just trample them underfoot.

He confuses matter still further by describing my dimensions as being "very asymmetrical." By this I think he means that they are different, because he then goes on to describe two ways in which the vertical dimension differs from the horizontal one.

His most contorted piece of thinking I leave till the end. He considers it necessary to superimpose upon my two-dimension system Michael Chance's agonic/hedonic distinction. In one place he says, "If we use as our criterion of closeness the amount of time a person spends thinking about the other, what about people who are rivals or have a feud?" Elsewhere (ASCAP Vol 4 #10) he has said that the agonic mode is the fighting mode and that when marital partners have a row they switch from the hedonic to the agonic. He piles confusion on to confusion by adding, "Even within the hedonic mode there may be both positive and negative forms of relating for each quadrant." So he would have us believe that there could be a category such as hedonic, positive closeness. What might this look like? In an earlier communication (Vol. 5 No. 3) I attempted to define the agonic and

hedonic modes in terms of my two dimensions, and this definition was consolidated at a recent meeting of the Birmingham group. It would seem absurd therefore to superimpose upon my system a distinction which is definable in terms of it.

Are other dimensions necessary?

Whether you consider additional dimensions necessary depends upon what you are prepared to call a dimension. I am not even sure that dimension is an appropriate term to apply to the two existing ones. The interpersonal theorists think more in terms of dimensions than I do. I am more concerned with the four positions, which I am sometimes prepared to call instincts, just as Freud called hunger and thirst instincts. For each there are needs, sources, stores and competencies. There is a seeking, gaining, giving and receiving version of each. Each may be held securely or insecurely, defended or fought over, and each may be feared or avoided. There is an appetitive and consummatory state of each. Finally each may be amicable negotiated or forcibly snatched or imposed. Do you call any or all of these additional dimensions?

Postscript

To have been forced to respond to all of the points raised by John has been useful. It is only by correcting people's misconceptions and defending against their criticisms that one becomes clearer about what one's theory is trying to say.

Evolutionary Psychology and Common-Sense

by John K. Pearce

I have two goals for this paper: 1. to give some examples of how an evolutionary psychiatrist practices, and 2. discuss the similarity of evolutionary psychology to good common-sense.

My original title, "The Banality of Evolutionary Psychology," was intended to be ironic. At the time, irony seemed like a good idea; it would attract attention and be fun, but I found that people seemed to think I really intended to attack evolutionary psychology--not my intention at all. Irony is fun, but slippery, so I'm going to stick to being as clear as possible.

As we all know, in psychology there is a long tradition of depth metaphors. "Depth" in psychology is regarded as desirable, just as intellectual "depth" is rightly regarded as praiseworthy. Power is attributed to depth; prestige is accorded its possessors.

If you like to use depth metaphors you could, of course, say that evolutionary psychology is "deep" because it is deeply integrated into the knowledge-base of modern biology. That, however, is not the way traditional clinicians think of depth. They use the word "deep" for mental forces that are hidden from view, for repressed mental contents that could become mental forces, or abstract theories that refer to such forces or repressed mental contents. (For example, many psychoanalysts think that their job is, or should be, simply "listening" to detect surface manifestations of deep unconscious forces. By making interpretations about the deep forces, they intend to make the unconscious conscious. They consider that this will result in psychic integration and health.)

There is another way to use the word "depth"; it is more of a folk-usage. People often suppose that what they do not understand is "deep." Well-either deep or foolish. If the person presenting the ideas is impressive or has an important position, people are more likely to say "deep." This is not surprising; we were all children surrounded by a world we did not understand. Even in college there was much that we did not understand. Even now, when I read Nature and Science, I understand only some of it. So, clearly, we all have good reasons to respect much of what we do not understand. Alas, there are people, particularly among those who are too fond of authority, who give up on obscure or abstract stuff that is well within their areas of competence; they give in to obscurity. They may even like it. It is deep.

In contrast, the stuff of evolutionary science is very understandable. To be sure, there are high-falutin' books and conversations, but it all boils down to reasonably clear ideas and data that are public in the usual scientific way. I believe evolutionary psychology can never be wrapped in the garments of vagueness, abstraction, and mystification that we find so often in our profession. All this may be good, but beware! Our traditional colleagues will complain that ours is a "surface" psychology, too much like common-sense to be praise-worthy. They are wrong in seeing this as a fault. The findings of evolutionary psychology should be similar to good common-sense.

Now I will go to my task, to describe what an evolutionary psychiatrist actually does.

I have been progressively immersed in evolutionary psychology since 1985 when Kalman Glantz recruited me, his nominal professional senior, to serve on his Ph.D. committee. Since then, particularly as a result of learning from Kalman, evolutionary ideas have been firmly integrated into my practice. Now, my evolutionary framework informs and guides me in every hour. I believe it makes for a more sensible, down-to-earth practice. Indeed, when my non-evolutionary colleagues praise me they usually say just that: I am sensible, very sensible. This, I believe, reflects how close evolutionary psychology is to good sense, to refined, good common-sense.

When I ask myself, "What are the core ideas of evolutionary psychology," I turn to our shared body of ideas and select these:

Evolutionary psychology practice is particularly concerned with Population Variability, Goals, Values, Social Group Setting, Multiplicity of Mind, and Conflicts of Interests.

1. *Population variability* is tremendous. I look for individual variations in human appetites and talents. I take differences seriously, and, generally, at face value.

For practice, it is important to diagnose treatable psychiatric disorders. Some psychiatric disorders (e.g., attention deficit disorder, obsessive compulsive disorders, anxiety disorders and depression) are variations of normal behavior. It is interesting that these are the psychiatric disorders most easily and successfully treated with medications. As a psychopharmacologist, I do what I can to find and directly remedy these and other disorders.

Although psychiatrists are often dealing with extreme behaviors, knowledge of what is usual is essential. I often teach people about human-nature from the point of view of evolutionary psychology. Explicitly teaching one's pet ideas is, of course, not unique to evolutionary psychologists-therapists almost always do so, either directly or covertly, but sometimes they think they shouldn't.

2. People, like all animals, are goa/-directed. I want to know what people want, and how they are trying to get what they want. Typically, they try to get what they *value,* so I try to understand what they value and why. (Some therapists believe that values are superficial; only deep, intra-psychic conflicts are important.)

3. People, like all animals, are shaped by the world as they have known it. I try to size up their *social setting*~their education, occupation, ethnicity and family setting. I pay particular attention to the role of trauma in their lives.

4. I assume *multiplicity of minds* and think of people as having the biological capacity to learn all kinds of contradictory things-even having multiple personalities. I am fond of psychological integration myself, but I regard this as a value like any value. All values cut two ways: good for something-bad for others. I am on the look-out for many unconscious minds.

5. *Conflicts of interests* are universal. Sociai reiations constantly involve the process of calculation of one's best interests and the calculation of fair exchanges. In general, thoughtful attention to conflicts of interests is essential. However, to get along people must often learn to blur their awareness of conflicting interests, even to the point of deceiving themselves and others. (After all, it is best that everyone believe that "all men are brothers.")

Since every hour in my practice seems to me to be a specimen of the application of evolutionary psychology how can I choose an example? So many to choose from. Some are so ordinary, so banal, so commonsensical! I'll give a quick and ordinary example:

Case #1. She Started Sleeping with Another Man!

He's 45 and she's 30. He has avoided divorce from his difficult wife for four years, in part to protect himself from getting married again. The first marriage was a horror show, and he's got two kids with pretty serious problems. He's been seeing his girlfriend for three years. Sex was great at first; lately it's declined. She has been distancing him, which was OK by him at first. Lately, he has been missing her. In addition, there was a death in his family. Now he is very upset and feels increased need for support, but she is distant. Now he loves her passionately. He "forced" her to admit the truth-she has been sleeping with another man in the past month! Shaken to the core, he realizes that he must win her back. Now, he wants to commit to her; now, he wants to give her marriage and the child she wants. Distraught, he rushes to see me.

My assessment: this is a normal situation. When my parents courted, they had to marry to have sex. When I courted we were allowed to have sex but we had to marry to live together. Today? Young and not-so-young people can have sex and live together. Sometimes one of the pair, often the male, is reluctant to get married. Remedy? Sexual jealousy. My assessment: she is being very sensible. I ask him, does he want to start up a family again? Maybe he can have a healthy family this time? If he does, he must court her. He must show her he is committed. It is risky-marriage is never safe-but if he wants to have a richer life, a life that is open to growth and health, this is the way to go. He asks anxiously, "Do you think I might have a chance with her?" Yes.

My evolutionary theory gives me a context for understanding what is going on here-the same old universal stuff. Of course, ! only know him, and even knowing him (in the context of the problems with his kids) I could not have predicted that he would respond to her infidelity (if you could call it that) with such ardor. But since he has, I can make a fair guess about how it will turn out. he will court and win her. Then, to quote the Marschallin in *Der Rosenkavalier,* "He will be as happy with that girl as any man knows how to be."

Note: I used no explicit evolutionary explanations. To do so would "mar the decent mystery of (their) progress." If I had reason to think that she was a thoroughly bad-news person, then I might give him an evolutionary perspective to help him get some distance. I have met her and she seems solid. Does this strike you as manipulative? I guess it should. I believe in sensible manipulation. Do I think I know best? No, but I think I have good sense-good common-sense.

In our effort to persuade, to be interesting, to amaze, we--all of us on this panel-want to find examples of counter-intuitive therapies. At the very least, we want you to be a little surprising. Certainly, I want to please and surprise you. When I work in my office I am delighted by my evolutionary orientation. I thoroughly enjoy what I think and do. But also I feel it is so commonsensical-at least sensible from the standpoint of evolutionary psychology. Maybe you will find this next story at least slightly unconventional.

Story #2. *A Couple on the Verge of Divorce.*

This is a story about four months of treatment: one couples session, one individual session for him, and seven for her. She "dragged" him into couples therapy. A handsome, sophisticated WASP upper-middle-class couple in their late forties, he was a big success in his profession. She was angry about not having gone to medical school and having played second fiddle to his career. She was currently in individual, expressive-psychotherapy and came to the couples session filled with tears and reproaches. He, though not at all a cringing sort, cringed at her anger. He was turned off by her and was angry at her conservative parents, who gave her ideas he considered deplorable. He said that he longed for romantic love and seemed to be hinting that he had found it elsewhere. He resented her guilt induction and said their almost-grown-up kids resented it too. I opposed him by saying that romantic love was a stage of courtship, not a permanent feature of marriages. I also sided with her by supporting her loyalty to her conservative parents, with the qualification that is was possible that she could be selective about which of their conventional beliefs she embraced. I did not aim to please in this rather confrontative session and expected to be fired after only one session.

It turned out that he was pleased that I had engaged on the core values about which were areas of conflict and asked to see me alone. In our first and only individual session he announced that he had found a lover, was delighted with her, and wanted to divorce his hopelessly stodgy, critical wife. I expressed some skepticism about his overvaluing of romance, but did not oppose his plans. I said I'd contact his wife to support her in this difficult situation. I advised against couples therapy, which, I explained, would turn out to be a bitter disappointment to his wife since it would not get her what she wanted.

I phoned her, got her in, and outlined a battle plan. She must put all her energy into her individual achievement, with an eye to making herself more valuable in his eyes. She must not chase him, not cry, not nag, and preferably, make herself rather less available than he would wish. I told her that couples therapy would accelerate the polarization that she wanted to avoid; I advised against it.

She looked depressed, and although she didn't meet the diagnostic criteria for depression, I tried to talk her into taking low-dose antidepressant medication-the serotonergic Zoloft. I wanted to provide her some pharmacological insulation from the stresses of her horrible situation, so she

wouldn't behave in ways that would embarrass and ultimately lead her to be seen in a devalued light. A sturdy WASP, she didn't want to take medication, but, also oriented to authority, she consented and promptly felt a bit better-less anxious and less likely to burst into tears.

We had individual sessions every two weeks. I told her the meetings would be occasions for coaching, support, and exhortation; exhortation to do something that did not come naturally but needed to be done. (It is noteworthy that I took responsibility for the sessions. I told her I didn't expect her to much like it; what we were doing went against the grain for her, but it was her best bet. She only had to follow orders. Note that I didn't ask her for any ideological alliance, though she did eventually become my ally.)

Meanwhile, as weeks passed, he didn't seem to be too eager to get divorced. He was seeing his lover but he no longer talked to his wife about getting divorced. I don't believe he gave it up quickly, but he hated to cause her pain. I had no contact with him.

She was able to busy herself with her work and maximize her own career opportunities. Best of all, she got a lectureship at a college four hours' travel away. That meant she could not do as much of the routine caretaking at home. I doubt that he really appreciated what she had done at home since he had never been without such care. I hoped he would feel a sting of deprivation, and learn to appreciate her. As hoped, he admired her professional accomplishments.

She was able to follow my directions throughout the next four months. At this writing, she has been rewarded by the reappearance of his sexual interest in her. She has been very pleased by positive developments and has had enough sense not to pursue him with questions or new demands. We don't know if he's seeing the other woman, and I don't really think it matters very much. The other woman is presumably either content with her lot as a mistress or has herself started bugging him, thus bursting the love-bubble. So far, so good....

Psychotherapy stories are, traditionally, miracle stories. This story almost qualifies for the genre, and suitably tricked up in the name of disguising identities, would probably qualify as a miracle story. Namely, it tells of a theory-driven procedure, preferably rather odd, that is connected to an outcome that most people would consider desirable. Of course, miracle stories are lies. We never know the whole truth. Did the "other woman" drop the husband? Is the husband merely placating his wife since he has discovered how disastrous a divorce would be financially? I don't know and I don't intend to get nosy. So far, so good....

Where's the evolutionary psychology? It lies mainly in my assessment that his romantic fling would, in time, turn sour. He was, in fact, not showing much common-sense! But we all know what it is like to fall in love: common-sense goes out the window. My focus on increasing her value in his eyes was yet another evolutionary-flavored strategy. Ultimately, people go for what they most value. As a flexible evolutionary therapist I used medication to help her carry out her difficult mission. I did not use explicit references to evolutionary theory, but I probably could have; in this case I think it would have sounded even odder than the rest of my behavior; it would not have been persuasive. It was better to base my suggestions on good common-sense-don't antagonize a guy you want to stay married to.

I focused on how she could serve her own best interests. I did not talk to her realistically about his self-interests; that would have been a painful confrontation with the reality of the gap between their best interests; I wanted to preserve her morale as best I could. I reassured; I said that as men get older, after they have passed through middle-aged, erotic rebellions, they wise up. They don't want to do it again. Surely this is often so, but not always. Truth can take a back seat; support was everything.

I did not talk about the likelihood that he is being deceptive to her. Deception, though a crucial idea in evolutionary psychology, is best ignored, winked at, or reframed as consideration. It just makes people nervous and even more uncertain. Of course, I could speak reassuringly to her about the possibility that he was deceiving himself in supposing he could start life over with a new wife....

After competing theoretical orientations: My approach was identical to that of someone from the Bowen Family Systems group, though they do the same thing for other reasons; they would make a pitch for individuation as a mystical virtue that pulls conventional virtues in its wake; in my opinion they have a silly theory that leads them to do very sensible things. My approach was utterly different from that of a feminist therapist, who would see to it that they got divorced. A naive family therapist who wanted to actively confront the truth would

also be likely to produce a divorce. I think a psychodynamic therapist might be inclined to focus on the husband's "narcissism," blaming his late-life lust on immaturity or a character disorder. It could work, but it would be a grim effort of persuasion.

Story #3. A Talented Young Man.

I often use evolutionary explanations. They *seem* helpful. This case demonstrates the use of evolutionary explanations early in the supportive treatment of a delightful 23-year-old young man just out of college and embarked upon an ambitious career as a writer. Because he writes so much, he writes about what happens in my office. So, I sometimes get the chance to read what he says happened in my office. That is great fun, particularly since I know we could turn out to have very different understandings of the same events. Turns out, we pretty much agree.

This bright young man came from a difficult family. His father, who had been a spectacularly successful professional, was probably bipolar and got divorced from my patient's mother when he was a child. His brother had been a drug addict and diagnosed as bipolar. He was eager for love, but tentative.

He came from a female-led, politically correct schools, and had a dominant, politically correct older sister. His understandable tentativeness was intensified by his fear of being a wicked, sexually exploitative male. (This is not a rare inhibition these days.)

His goal for therapy was to "work hard to get to the point where I have resolved some of my past haunts, where I can feel good about who I am." He had hopes for a relationship with Janet, a lovely girl he had known for years and now seemed to be interested in him. "Both of us trust each other so much. Maybe this can be a source of strength for us." He was at a loss about how to behave with her. "I would hate to lose her trust."

After the second session, in which I had made use of a number of explicit evolutionary and biological explanations, he wrote this:

'The hardest thing for me to take from the last meeting was your observation concerning Janet's announcement to me that she had fooled around with another guy. You had said a wise woman does not 'dangle' that information before a man she is intimate with. She would know that it would drive him crazy...and it did. When I think about it, I am not so upset about the fact of the event as I am of her telling me about it."

-- He had regarded his sexual jealousy as a defect. He felt it was wrong to be upset by her speaking her mind.

"Another distressing point to come out of the meeting was Janet's seeming approach/avoidance tendency."

- I explained how her alternating affection and rejection would produce in him an intense approach/avoidance conflict leading to escalating anxiety. That's just what he had been experiencing. (He reversed the lingo, though getting the essential point right.)

"What was helpful (though not painful) was your advice not to display my neurosis in front of her. I can work with that. Then a conversation about human biology came to pass and before the close of the second hour we touched upon all the people in my life with severe disorders. I walked away with the task to try to distinguish what it is I am experiencing that belongs to all humankind and what is 'pathologically' my own. Looking at my life in this respect was a great relief for me, because I just always assumed that if I was upset about something or if I was confused, then there was something wrong with me. Putting my 'problems' in a broader, more universal context made them somehow more manageable."

-- He wrongly calls his self-doubts a neurosis. This is too harsh. As WH Auden writes, "Every young man fears he is not worth loving...." It's even worse if you come from a family with serious psychiatric problems. He had been pathologizing his normal experiences which tended to make him feel that he was sick, like his father or brother. He needed education about normal experiences, support in tolerating them, and coaching on how to manage normal woes.

"Then you suggested that perhaps I was worried that I hadn't sufficiently impressed upon you that I was 'ill,' that I had a dark side. You pointed out that it appeared I felt compelled to let you know that I was a bad person, like my father."

~ That wasn't quite what I said. I said, more or less, that he had two very good reasons to think he was sick—his identifications and loyalty ties to his father and brother. I said that if I did not seem to agree that he was sick he was sure to feel that I

was wrong. Naturally, he wanted to "be honest" and try to warn me how sick/bad he was. Indeed, he felt compelled to let me know.

"I need to figure out my patterns, look at my mappings, write them down when they seem to be taking me to unpleasant places. Know what they are and be aware of them, step one. In addition to providing a chart of these patterns and their frequency, the process itself will serve to intercept them."

- Good plan!

"Finally your conclusion on Janet: a dangerous woman whom I must see how things go, weigh the ups (approach) and the downs (avoidance) and then decide if it is worth it to me. Though this didn't settle well to hear it, it made me feel like I could have a lot more control over the situation than I believed I did. The feeling of being able to make a decision based upon another's behavior is a good one because it is empowering. I had felt helpless, now I feel a little less so."

--I had said that Janet was dangerous because, beautiful and self-absorbed, she has a license to do as she pleases, including being brutally honest with him. Realistically, this woman is valuable, in demand, but hard on the nerves.

This talented and appealing young man needs a good map, and appropriate support. Evolutionary psychology provides useful information for his map; I intend to provide appropriate support, i.e., active encouragement as he pursues his goals and accurate clarification of problems with his multiple identifications. I think he will do well.

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As I see it, my kind of psychiatric practice blends good common-sense with explicit evolutionary thinking. But what is common-sense? Well, first of all, it isn't exact at all. The word refers to a variety of folk-beliefs. These beliefs vary from group to group. For example, I think of my student, a gay man, who was incredulous when I told him that it is not easy for a heterosexual male to just walk out into Harvard Square and get laid. To him, casual sex is something always available. This is a group-specific piece of misinformation.

Does education insure common-sense? Hardly. There may even be an inverse relationship between exposure to elite education and common-sense. In Cambridge, Massachusetts, where I practice, where the streets are lined with books, I regularly see very well educated people who do not know things everyone should know. I will spare you painful examples.

Is "common-sense" common? I guess it isn't. But there are lots of sensible people. Maybe it is yet another population variable, like a talent for music. Yes, that must be so. Then, a talent for common-sense would interact with a host of other population variables. Each combination of variables would lead to a different kind of common-sense; each would be useful information about what to expect from people in that niche. Each common-sense would be good for some things, not for others.

What can we expect from people? Both common-sense and evolutionary psychology try to answer that question. That is the link between evolutionary psychology and good common-sense.

We cannot ignore this link. Evolutionary psychologists must take a stance toward common-sense. I have a proposal. Let's take it over! Let's annex this folk territory as a province of the larger territory of evolutionary psychology. Then, instead of being uneasy about joint occupancy we can actively move in and improve the place. Using our well-honed tools, evolutionary and cross-species reasoning combined with empirical verification, we can rightly claim to make common-sense better.

Today, empirical data are thin, but as population biology methods are used more often to study human behavior we can expect to get better and better at our uncommonly good common-sense. Evolutionary psychology, our favorite science, will produce teachable, empirically verifiable common-sense.

Beahrs JO: Hypnotic transactions, and the evolution of psychological structure. Psychiatric Medicine 1992;10(1):25-39.

Abstract: *This article integrates study of hypnotic transactions with data on their primate antecedents, toward clarifying the question of differential responsibility. It concludes that psychological structures are recently evolved transactional processes that masquerade as explanatory entities, but obey rules of intentionality:* a *hypothesis with clinical and forensic implications.*

Beahrs JO, Butler JL, Sturges SG, Drummond DJ, Beahrs CH: Strategic self-therapy for personality disorders. Journal of Strategic and Systemic Therapies 1992; 11 (2) :33-52.

Abstract: *Strategic self-therapy (SST) is a psychotherapy paradigm based on limited intensity, rigorous differentiation of therapeutic boundaries, and cognitive reframing with behavior control as the vehicle for change. Prospective patients must be able to (1) guarantee safety from destructive behavior, (2) think abstractly, and (3) implement independent self-therapy projects. By focusing treatment responsibilities onto patients themselves, it is ideally suited for personality, dissociative, and posttraumatic disorders. Compared to intensive psychotherapy, it is hypothesized to be comparably effective, more efficient in time and cost, and less vulnerable to regressive dependency with its associated distress and risk from destructive acting-out behavior.*

Beahrs JO: Paradoxical effects in political systems. Political Psychology 1992;13(4):755-769.

Abstract: *Paradoxical effects often complicate public policy, contrary to expectation or intent. Some are unavoidable; effective actions require constructs that simplify the more complex, and what is omitted often yields unexpected effects. This exclusion of information is increased by shared societal self-deceptions and further heightened by large scale tramatization. Risk of negative paradox can be lessened by modified causal reasoning, eg, replacing absolute principles with "presumptions" that respect opposing forces. Several vital dilemmas emerge: defining collective identity in the face of uncertainty; confronting the myths that worsen paradox but foster social cohesion; and paradoxes inherent in social cooperation and the containment of human evil.*

Beahrs JO: The evolution of post-traumatic behavior: three hypotheses. Dissociation 1990;3(1): 15-21.

Abstract: *Catastrophic stressors regularly lead to the often-disabling symptoms of the post-traumatic stress disorders (PTSD). With resulting impairment in both personal survival skills (heightened vulnerability, self-destructive behavior) and reproductive capacity (disturbed relationships, sexual dysfunction), PTSD symptoms should be strongly selected against by natural evolution. Their wide prevalence thus presents an anomaly for the evolving paradigms of evolutionary biology. Three hypotheses may help to resolve this anomaly: (1) The same psychodynamic features that are maladaptive in a rapidly changing milieu like today's technological societies (dissocation, blurred interpersonal boundaries, cognitive distortion, rigidification, and affect-driven behavior), may ensure personal survival and family bonding in a comparatively stable milieu where threats are catastrophic but infrequent and stereotyped; eg that within which homo sapiens probably evolved. (2) Spontaneous hypnotic dissociation often accompanies the experience of trauma, which may (a) promote immediate survival; (b) permit later growth and development, at cost of perpetuating some impairment; and (c) facilitate deception of others by deception of self. (3) Traumatic affect may provide a driving force for ongoing cultural evolution.*

Sibship Order and Language Origins at HBES

by Russell Gardner

Frank Sulloway noted that sibship order correlated with reaction to 30 scientific revolutions over the past three centuries. He went to secondary sources and systematically discovered 4000 commentators, recorded 80 variables on each, and did multiple regression statistics. Overwhelmingly, positive commentators for something different were later-borns, in marked contrast to first-borns who felt things should stay the way they had been. He told me that he's on chapter 18 of his book describing in detail the study and results. We were privileged for the preview.

The other striking paper (for me personally) was not featured, nor particularly noted, and the presenter seemed to leave immediately afterwards (I was grateful for the quick conversation I had). This was Peter MacNeilage from U Texas in Austin. Interested in the evolution of language, he noted that rhythms involved with mouth, eating, and breathing are much involved with language. The most recently evolved refinement of such are those of the larynx. His discussion was elegant and detailed and I will note only one startling idea: the human language did not come from the same cerebral site mediating the articulations of other primates - medially, near the top of the brain where the cortex curves around medially (near the midline); rather, the placement of Broca's area for motor speech is quite lateral, but it turns out much

associated with brain areas correlated with swallowing and gustation.

To my mind, this evokes Franois Jacob's notion of evolution as a tinkerer. When natural selection "tinkered" to produce human speech, this thesis holds, it didn't tinker with quick, emotional responses, but with literally "ruminative sounds" --more akin to clearing one's throat as a signal to the person being conversed with than laughing or yelling, "Damn!" Clinicians seeing stoke victims know as a medical commonplace that when the motor speech area is damaged, patients can respond suddenly as before. Sudden and emotional vocal ejaculations seem to have an quite different central physiology on the one hand and a different evolutionary history on the other.

Thus struck a responsive chord in me because I've been led to consider mouth rhythms are important in speech and other vocal communication, eg, laughter, from the phenomena exhibited by the chromosome 15 deletions disorders, Angelman and Prader-Willi syndromes (AS, PWS): mouths and mouth structures are larger in AS and smaller in PWS. AS patients never speak but do laugh all the time; PWS patients tend to have food and eating on their minds all the time. This implies that some genes generally present in the deleted area have a role in modulating oral structure and function, including two kinds of communication and the functions of appetite with food-search. The natural experiment of deletions of these apparently easily modified genes ~ the absence of which still allows survival -- provides further implicit information on the central physiology and evolutionary history of informational systems.

AS and PWS patients demonstrate the non-Mendelian characteristic of parental or genomic imprinting (defective DNA from only the mother causes AS and from only the father for PWS). For this reason, they have been extensively investigated and animal models have been sought. One such is provided in an abstract reproduced next page and involves the fact that two GABA receptor genes are in the region deleted in AS.

When counted in base-pairs, the size of deletions involved in AS and PWS vary considerably. Small critical regions exist, however, in both AS and PWS. Thus, in one family, a DNA sequence caused AS when transmitted maternally, but no phenotype variation when transmitted paternally (imprinted inheritance). Part of one $GABA_A$ receptor gene (GABRB3) normally occupies the AS critical region.[11] But we need to return to HBES.

Another person involved with theories of language origins is Merlin Donald, at the conference too. Since meeting him was a major motive to going this year, I was very disappointed that his talk came just when the psychotherapy symposium discussed last issue was on, but I was grateful that he was willing to discuss the first papers of an another session on psychopathology. Moreover, we person-to-person spoke at length and I hope he responds to any errors made in this brief statement that purports to represent his thinking.

His thesis is reflected in his recent outstanding book (given *two* reviews recently in LOS Forum, the official journal of the Language Origins society).[12] It holds that the foundations of language are the story-telling and dramatic presentations that our pre-ianguage hominid ancestors probably communicated with. Speech evolved with its denotative refinements because it made such presentations much more understandable. Chimpanzees, bonobos, gorillas and other primates including the first small brained but bipedal and tool-using hominids were limited to what he calls episodic life.

A next step was mimetic culture involving emotional communication, use of rhythm, dance, laughter, mime, play even as adults, games, skilled rehearsal, and toolmaking, thus, (p193) "[T]he mimetic mind models, in action, the episodic world. In effect, this means that the mimetic mind models the episodic mind. The mimetic system is thus a seminal hominid cognitive innovation, a mode of cognition that remains dissociable from language even in modern humans, and is the logical basis of the first truly human culture."

Professor Donald then notes that archeological evidence suggests that a slow change in mimetic culture was followed by an explosion of activity: ample evidence exists that tools, artifacts, inventions of all sorts, including tribal political and social structures, suddenly exploded on the scene. He proposes that a language-mediated mythic culture brought this about: "Words allow the sharing of highly specific information, the rapid collection of new knowledge, and the regulation of all aspects of behavior."

He pointed out in a most memorable paragraph (p257), that:

"Bruner classified narrative skill as a form of thinking, rather than as an aspect of language. But it

might be seen more simply as *the natural product of language itself.* Language, in a preliterate society lacking the apparatus of the modern information-state, is basically for telling stories. Language is used to exchange information about the daily activities of the members of the group, to recount past events, and to some extent to arrive at collective decisions. Narrative is so fundamental that it appears to have been fully developed, at least in its pattern of daily use, in the Upper Paleolithic. A gathering of modem postindustrial Westerners around the family table, exchanging anecdotes and accounts of recent events, does not look much different from a similar gathering in a Stone age setting. Talk flows freely almost entirely in the narrative mode. Stories are told and disputed; and a collective version of recent events is gradually hammered out as the meal progresses. The narrative mode is basic, perhaps *the* basic product of language."

His first LOS Forum reviewer, Abraham Jonker, takes Professor Donald to task somewhat for a logical inconguity between "episodic culture" ~ culture by definition is collective and episodes are not.[13] But he ends with a tribute, "For the rest, the great merit of Donald's scenario is that it provides, as it were, a common denominator to all constituent aspects of the evolution of cognition. Therefore, it is a very important contribution to the solution of the problem of human origins."

Robert P Creed, a student of oral traditions, focused especially on a chapter summarizing the transition from mimetic to mythic culture.[14] After he quotes "Donald...at his best," he faults him for not paying enough attention to Campbell's history of mythology (and the fact that there were multiple prehistoric stages of development), for essentially ignoring levels of societal organization that various prehistoric societies had, and for emphasizing rapidity of language development, suggesting instead that it perhaps developed more slowly. He felt that Donald gave too little emphasis to the power of oral traditions.

But he ends by saying that "Having taken Donald to task for his failure to flesh out his account of Mythic Culture with an understanding of oral traditions, I must say that I don't consider this a fatal flaw. On the contrary, I find much of what Donald has to say not only persuasive but imaginative in the best sense. And I think he is right in claiming that there is a need for a theory of cognitive evolution. Donald has sketched a version of that theory in his Origins of Modern Mind that is worth grappling with."

Nakatsu Y, Tyndale RF, DeLorey TM, Durham-Pierre D, Gardner JM, McDanel HJ, Nguyen Q, Wagstaff J, Lalande M, Sikela JM, Olsen RW, Tobin AJ, Brillian MH: A cluster of three $GABA_A$ receptor subunit genes is deleted in a neurological mutant of the mouse p locus. Nature 1993:364:448-450.

Abstract: *The mouse pink-eyed cleft-palate mutation (p^{cp}) is characterized by hypopigmentation associated with cleft palate, neurological disorders and runting. Most p^{cp} homozygotes are born with cleft palate and die shortly after birth, presumably as a result of feeding problems. A few exceptional p^{cp} mutants live beyond this stage but display tremor and jerky gait. We report here that the genes encoding the gamma-aminobutyric acid type A (GABAJ receptor subunits 5 (originally described as 4), 3 and gamma 3 are disrupted by a deletion in p^{cp} mice. We also show that the 5 and gamma 3 genes are located between the p and 3 genes on mouse chromosome 7. The p^{cp} deletion leads to alterations of binding properties of the GABA. receptors of the brain, providing an* in vivo *model system for studying $GABA_A$ receptor function. The human analogue of the region deleted in p^{cp} mice is associated with Angelman syndrome. Thus, p^{cp} mice may be useful in defining the region containing the gene(s) for this syndrome.*

From the body of the article: *The human counterpart of the region deleted in p^{cp} la associated with Angelman syndrome (AS) which is characterized by severe mental retardation, microcephaly, seizures, ataxia, craniofacial anomalies and hypopigmentation. The smallest known maternal deletion resulting in AS involves the 3 but not the 5 gene (although a single AS patient bearing a trans-location is apparently intact for the 3 gene). Because the phenotypic effects of the p^{cp} mutation are recessive and independent of parental origin, the AS critical region may be outside of the p^{cp} deletion, despite certain phenotypic similarities between p^{cp} mice and AS patients. However, if the mouse counterpart of the AS gene(s) is not imprinted, it is possible that the AS critical gene(s) may be within the p^{cp} deletion. Indeed, an AS-like paternal imprinting effect was not detected for the central region of mouse chromosome 7 (including the region of p^{cp} mutation). Conservation of syn-teny of the region deleted in p^{cp} with human chromosome 15q predicts that the human gamma 3 gene will map near the 5 and 3 genes. It thus remains to be determined what role, if any, these three $GABA_A$ receptor subunit genes play in the aetiology of AS.*

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2. c/o R Gardner, 4.450 Graves Building (D28), University of Texas Medical Branch, Galveston, TX 77555-0428. FAX: 409-772-6771. For ASCAP Newsletter Volumes 3 (Jan through Dec, 1990), 4 (same months, 1991), and 5 (same months, 1992), please send $18 (or equivalent) for each 12 issue set. The first two volumes (1988 and 1989) of thirteen and twelve issues respectively are available on request without cost. For subscription to the 1993 set of 12 issues (Volume 6), the cost is $20/year. Make checks or money or ders out to "Department of Psychiatry and Behavioral Sciences, UTMB."
At this time this "informal" organization has no official budget.

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