For evolutionary psychiatrists, psychologists and others Interested in sociophysiological Integration

ASCAP

Volume 11, No. 04 (Cumulative #125) April 1998

"I am embracing the idea that a therapeutic change is, in the final analysis, a change of theories, the transferring of a model.... "constructing reality" [is] a terminology emphasizing the fact that we are working with models and not with reality; as Bateson says, with maps and not with territories."

Piero De Giacomo[1]

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

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ASCAP Society Mission Statement:

The ASCAP Society represents a group of people who view forms of psychopathology in the context of evolutionary biology and who wish to mobilize 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 psychopathologi-cally related states. We are interested in the integration of various methods of study ranging from cellular processes to individuals in groups.

*The **ASCAP Newsletter*** Aims:

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

The ASCAP Newsletter **is a function**

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

ADDRESSED TO & FROM . . .

Annual ASCAP Meeting

Remember to register for the ASCAP Annual Meeting -8 July 1998, in Davis, California. The registration form is on page 36 of this issue. The program outline is as follows:

Presidential Address - Dan Wilson: Toward empirical research in the clinical application of the human evolutionary sciences.

Paul J. Watson: A behavioral ecologist's social niche change theory of unipolar depression.

Ivor Jones: Response from an animal modelist.

Carolyn Reichelt: Response from a sociophysiology perspective.

Morning Break

Penelope Knapp: Response from a child psychiatrist.

Ed Hagen: Case of depression that addresses niche theory.

John S. Price: Response from a pioneer theorist on social rank theory and depression.

John K. Pearce: Response of a psychiatrist clinician who is also an evolutionary psychologist.

Large group discussion led by Dr. Wilson.

Afternoon Break

Address of **ASCAP Beck Award Winner.**

Andrew Solomon: The experience of depressive illness from a writer's perspective.

David Evans: Writers depict experience juxtaposed to evolutionary theory.

Group discussion led by Dr. Wilson.

Afternoon Break

James Brody: Fabre's Tactics of Scientific Research.

J. Anderson Thomson: The Serotonin Story.

Mark Erickson: ASCAP Theme for 1998-1999.

Business meeting (Dr. Wilson); at conclusion, the gavel is passed to Dr. Erickson.'

Committees:

Aaron T. Beck ASCAP Award: Chair—Thomas Joiner; also Kent Bailey, & Ivor Jones.

Nominating Committee: Chair — Kent Bailey; also Mark Erickson, & Russell Gardner, Jr.

COMMENTS ON FEBRUARY'S ISSUE

Enjoying February ASCAP. You (RG) had a good piece. I listened to Raptor Red on audio tape. Good yarn!

I used Solomon's piece for a seminar. I agree with all you wrote. For me it was an education in suffering. I have never suffered like that, and I imagine I distance myself from the suffering people that I see every day. So I appreciated it. I read Styron's little book, but I saw it as a post-alcoholism thing, not necessarily relevant to others.

John K. Pearce
JKP@world.std.com

Protesting "Comments on Andrew Solomon"

I was dismayed to discover a private E-Mail of mine in the March ASCAP Newsletter entitled, "Comments on Andrew Solomon." This E-Mail was sent to several ASCAP members as part of a vigorous discussion of emerging evolutionary models of depression. I pounded out the note in about two minutes one morning without worrying much about its wording, and I had *NO INTENTION WHATSOEVER* of having it published. I was not notified or consulted prior to its appearance in the newsletter. Moreover, the original message made it clear that I had not yet even read Mr. Solomon's New Yorker

article, "Anatomy of Melancholy", but had only discussed it with my wife; all indications of this were edited out of the published version.

Further, the title attached to the note by the Editor was unfortunate, as I did not intend to comment on Mr. Solomon, but rather on human nature, mine included. The title and the editing job only exacerbated the effect of my original terse wording which unfortunately could be interpreted as disparaging toward Mr. Solomon or toward gay men. I meant to convey nothing derogatory toward any person, and I have nothing but admiration for Mr. Solomon and the insights he bravely has shared with the world in his New Yorker article. And, of course, gay people can have tons of inclusive fitness and are sometimes as good, or better, at direct reproduction as non-gays.

Paul J. Watson
pwatson@mail.unm.edu

Editor-in-Chief's Note:

We apologize for the unapproved E-Mail in the March 1998 newsletter. Ordinarily, we do check first, but apparently we did not this time. We did not intend hurt nor embarrassment, but to promote the free flow and exchange of ideas, a committment of *TheASCAP Newsletter.*

EEA Definition

I think we have problems with an easy acceptance of the EEA concept (Environment of Evolutionary Adaptedness)—to which I myself have referred uncritically in my own publications.

The EEA is based on three premises:

(a) Between the origin of modern humans (80,000-60,000 B.P.) and the introduction of agriculture (the Neolithic Revolution), changes to our social and physical environment were slow or nonexistent.

(b) After the introduction of agriculture (beginning 10,000 B.P.), the pace of environmental change quickened as humans became active agents in shaping the world around themselves.

(c) Therefore, human nature tends to reflect adaptations to the pre-agricultural environment. Over the past 10,000 years, our environment has been evolving faster than our corresponding hardwired adaptations. As a result, our most recent adapta tions either have been purely softwired or have redirected older, hardwired predispositions to serve new ends.

These premises are largely but not wholly true. Some human adaptations must have arisen after the introduction of agriculture:

1. In human societies that consume dairy products, the enzyme that breaks down milk sugar (lactase) is retained into adulthood.

2. The gene for sickle cell anemia, which confers some protection against malaria, seems to be geographically associated with slash-and-burn agriculture and the attendant spread of malaria-prone habitats.

3. Alcohol tolerance seems to be higher in populations that have had a long history of alcohol consumption.

Furthermore, the period before the introduction of agriculture was not as long, stable and unchanging as had once been thought. The latest mtDNA research has considerably pushed forward the dates of human origins.

Almost 100% of the human gene pool outside sub-Saharan Africa, and 87% within, can be traced to a small population, somewhere in East Africa, that began to expand 60,000 to 80,000 years ago.[1] So the EEA time frame has shrunk to only 50,000 to 70,000 years.

Even within this shrunken time frame, the social and physical environment was undergoing major changes. One was the extinction of most big game animals (mammoth, mastodon, Irish elk, woolly rhinoceros, etc.).

leading to a relative decline in the contribution of hunting (largely by men) to the family food supply.

At the same time, food gathering (largely by women) grew in importance and evolved into proto-agriculture, i.e., the preservation and storage of wild fruit, tubers and grains for future consumption. This latter change was particularly significant in tropical regions, where a cold season did not limit food gathering.

The net result of these two changes (extinction of big game animals and rise of proto-agriculture) was to decrease paternal investment and increase maternal investment, particularly in tropical areas, and thus make polygyny more cost-effective for a larger proportion of the male population. This probably explains the high incidence of polygyny (20 to 40% of all sexual unions) in sub-Saharan Africa, New Guinea and, to a lesser extent, Australia.

There is one big exception to this picture. In Amazonia, Amerindian horticulturists have a much lower incidence of polygyny than do African horticulturists, yet both inhabit tropical environments. This behavioral difference may reflect the shallower time depth of human settlement in the Americas, as well as the pre-adaptation of ancestral Amerindians to an Arctic environment (i.e., Beringia). Even today, the physical morphology of Amerindians throughout North and South America still retains many "Arctic" adaptations.

It may be that the same holds true for their behavioral predispositions. Consequently, a high incidence of polygyny may require not only an environment with high "polygyny potential" but also enough evolutionary time to develop predispositions that can exploit this potential.

So when we talk about the EEA, we should be asking ourselves: Which EEA? We may be dealing with something that is much more heterogeneous and diverse than we've been led to believe.

Peter Frost
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Discussion on Peter Frost's EEA Definition

Jack Palmer wrote:

Although I fully agree with the basic point made by Peter Frost that evolutionary changes have occurred in our species since the advent of agricultural practices I find one part of his posting very puzzling. He writes:

"Furthermore, the period before the introduction of agriculture was not as long, stable and unchanging as had once been thought. The latest mtDNA research has considerably pushed forward the dates of human origins."

"Almost 100% of the human gene pool outside sub-Saharan Africa, and 87% within, can be traced to a small population, somewhere in East Africa, that began to expand 60,000 to 80,000years ago.[1] *So the EEA time frame has shrunk to only 50,000 to 70,000 years."*

I do not see how this last statement could possibly be true unless Homo sapiens sapiens was created 60,000 to 80,000 years ago with no previous evolutionary history. Perhaps I have misunderstood the EEA concept but if it really only applies to the pre agricultural environments of Homo sapiens sapiens and not other ancestral species and their environments it is a highly limited concept. Considering the mileage so many individuals have gotten out of the term EEA in explaining so many aspects of human behavior, I doubt that the majority of them were using it in this limited sense.

Do we need to distinguish a separate EEA for each hominid species and subspecies? Do interglacials and glacial maxima constitute different EEA? What exactly are we talking about here?

Timothy Perper wrote:

The concept of the "environment of evolutionary adaptation" may

be widely used but that does not make it widely useful. One of Peter Frost's points is exactly that there have been a number of "environments of evolutionary adaptation," and yes, we do need to specify which one we are talking about.

Generalized hand-waving about Pleistocene savannas as the environment of evolutionary adaptation is question-begging: a putatively constant environment is postulated to explain the existence of a putatively universal human nature that in turn is used to argue that such traits had to evolve in a relatively constant environment during the Pleistocene.

But in fact human evolution involved extensive migrations (one of them at ca. 60-70 kya, the so-called "out of Africa" migrations), followed by an . immense variety of wanderings. At no time can one point and say HERE was where human beings — or our non-human ancestors — obtained their universal features, or, more accurately, what are argued to be their universal features.

Talk about "the" environment of evolutionary adaptation is a kind of pseudo-paleoanthropological mind-candy: easy to eat, nothing to think about, nothing to know, least of all anything detailed about the past. The concept should be eliminated in all serious discussions of human evolution, and people should learn to speak of specific places, habitats, niches, and ecologies located during specific time ranges.

Timothy Perper
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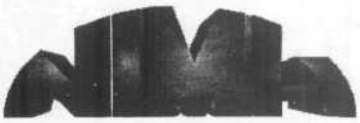

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The Role Of Evolutionary Theory in Archaeological Thought Home Page

http://www.doitnow.com/~cerci/evol1.htm

Evolutionary theory has played a seminal role in archaeological theory since the development of the discipline.

Dunnell considers that modern evolutionary biology provides an explanatory framework for the processes of cultural change, but that it cannot *"be applied unammended and uncritically to cultural phenomena, be they ethnographic or archaeological.*

John Giacobbe
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Please E-mail any contributions to ascap@utmb.edu, or mail hard copy and 3.5" HD diskette to: Russell Gardner, Jr., c/o Frank Carrel, Department of Psychiatry & Behavioral Sciences, University of Texas Medical Branch, Galveston, Texas 77555-0428, USA. WordPerfect, Microsoft Word or ASCII format preferred. Diskettes will be returned to you.

BOOK ANNOUNCEMENT

Separation and Its Discontents: Toward an Evolutionary Theory of Anti-Semitism

By Kevin MacDonald

Human Evolution, Behavior, and Intelligence Series

Praeger Publishers. Westport, Connecticut. 1998. 336 pages
LC 97-26901.
ISBN 0-275-94870-6. C4870
Price: $65.00

MacDonald develops a theory of anti-Semitism based on an evolutionary interpretation of social identity theory — a major approach to group conflict in contemporary social psychology. Beginning in the ancient world, anti-Semitism has existed under a variety of religious and political regimes.

MacDonald explores several theoretically important common themes of anti-Semitic writings such as Jewish clannishness and cultural separatism, economic and cultural domination of gentiles, and the issue of loyalty to the wider society.

Particular attention is paid to three major manifestations of Western anti-Semitism: the development of institutionalized anti-Semitism in the Roman Empire, the Iberian Inquisitions, and the phenomenon of Nazism. All of these movements exhibited a powerful gentile group cohesion in opposition to Judaism as a group strategy, and MacDonald argues that each may be analyzed as a reaction to the presence of Judaism as a highly successful group evolutionary strategy.

Because of the repeated occurrence of anti-Semitism, Jews have developed a highly flexible array of strategies to minimize its effects. These include: crypsis during periods of persecution, controls on Jewish behavior likely to lead to anti-Semitism, and rationalization, apologia, and self-deception aimed at promoting ingroup cohesion and altering gentile attitudes

Contents:

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ARTICLE:

by James Brody

Supernormal Stimuli in Sexual Selection, Orthoselection, Speciation, & Mismatch

Abstract: "Supernormal stimulus" (SNS) refers to a contrived event that elicits more frequent, prolonged, or intense responses than natural stimuli. The SNS phenomenon reveals sensory mechanisms that have the potential not only to direct momentary behavior, but also to influence the long-term, cross generational outcomes of such behavior. This possibility is most likely in the domains of sexual selection, orthoselection, and speciation. It is also could be a significant cultural factor for humans to the extent that our SNS preferences erode "tit-for-tat" strategies of reciprocal altruism in large organizations, themselves evolved according to our psychological adaptations.

"Supernormal stimulus" (SNS) was conceived by Lorenz and Tinbergen in the 1930's as a result of ethological research on stickleback aggression and gull feeding behavior.[1] Even though the concept was first applied to ethologist-produced stimuli, the methods revealed the power of specific stimulus characteristics ~ larger, brighter, and perhaps livelier -- to elicit action patterns and to direct preferences.[2] The SNS phenomenon has the potential not only to direct momentary behavior, but also to influence the long-term, cross-generational outcomes of such behavior. This possibility is most likely in the domains of sexual selection, orthoselection, and speciation. It is also could be a significant cultural factor to the extent that SNS preferences encourage the growth of large human organizations that weaken "tit-for-tat" strategies of reciprocal altruism.

Sexual selection:

Secondary sexual traits in the male are considered to be evolved as a consequence of female preferences. It could be that peacock or male widowbird tails are the essential cues for the hen - through her own psychological adaptations - both to identify a male of her species, to pick between alternative males, and to regulate the intensity of her attraction and fidelity once she has made a choice. Her sensory mechanisms may operate in a manner similar to those of sticklebacks and gulls ... larger displays more effectively trigger mating responses.[(a)] A dad with a more colorful tail may produce children with colorful tails, who because of their color, are themselves more likely to mate. A positive feedback loop is established and rapid changes occur, limited mainly by homeostatic costs or by shifts in predator success.[2,3]

Enhanced physical or behavioral displays are generally thought to advertise good genes or promise healthy offspring.[4] However, the presumed correlation between having a larger tail and being healthier could be misleading. A bird producing weaker sons would likely drift towards extinction regardless of the size of its tail. A bird producing healthy sons but with smaller tails would be less apt to mate because it didn't advertise well. The SNS value of size, liveliness, or color perhaps leads to successful mating while natural selection prunes the less fit.

Orthoselection:

Systematic changes in a trait across many generations in a consistent direction is another process within which SNS could be influential. Such changes in a particular feature give the appearance of goal-direction or teleological purpose. This seems especially true in the absence of identifiable selective pressures. Members of a species also get bigger with generations.[(b)] Again, the behavioral outcomes associated with SNS could operate to produce larger individuals as well as more conspicuous traits. In such cases there is a confounding of the survival advantage that is associated with a larger size and a reproductive advantage mediated through sensory mechanisms.

Analogous effects are seen in human preferences. Our recent passion for "sports utility vehicles" yields safety advantages; it also interacts with our preferences for mobility to the extent of our paying an inflated price (SUVs generate a larger profit margin than any other type of vehicle) for equipment to take us through canyons we will visit only in advertisements. A similar phenomenon occurred in the 1950's when tail fins were popular on cars. There was a progressive increase in fin size from approximately 1955 until approximately 1960. There is also a tendency for car models to grow a few inches in width and length each year until homeostatic costs, associated perhaps with changes in the fitness landscape lead to creation of a new miniature horse that grows in turn.[5] No one talks about "orthoselection" of these vehicles but they could.

Speciation:

Hess[1] remarked that fixed action patterns (FAPs) change slowly in closely related species except in the domain of sexual selection. FAPs that act as releaser stimuli change far more rapidly and may act along with changing physical traits to create a mating distance between former kin. Indeed, the traits may change more rapidly because they take on an SNS role. It raises the possibility that animals classed as different species retain the capacity to interbreed but do not because of differences in sensory coding for mate selection. If so, then many groups now classed as separate species may still retain the capacity to produce fertile offspring.

This latter possibility appears relevant to the debate between "gradualist" and "saltation" models of evolution. The former concept is usually associated with naturalists who study living creatures; the latter with paleontologists. Silica bones don't show the tangerine feathers of a mating cock. It is likely that colors change more often and more gradually than skeletal supports. Some of the contradictions between "saltation" patterns noted in the fossil record and the gradual changes evidenced by living creatures are perhaps an artifact of the different kinds of data.

Social Mismatch:

"Mismatch" carries multiple associations,[6,7,8] a fact consistent with the great conceptual flux now occurring in evolutionary biology.[9] Some refer to a gap between our present culture and our Eden, or our "environment of evolutionary adaptedness," itself as difficult a concept as that of Eden.(3) We are alleged to be uncomfortable or vulnerable in areas where we changed our culture but not our evolved adaptations because of inadequate time or the absence of selection pressures to make changes.

Nesse and Berridge[10] used mismatch to describe some of our attractions to drugs and video games, reasoning that such artificial stimuli reach primitive reward centers but do so in higher concentrations, with greater immediacy and frequency, and with less effort than was possible in our distant past. We become "addicted" to highly rewarding stimuli that are available for very low-effort responses. For example, we can experience hunting, killing, and dying with little pain or permanence. We also gain hierarchic rank when bragging to our friends about our prowess (likely another area for deception but mediated by SNS.[8]). A similar analysis could be applied to Internet chats and forums, preferred by a teenaged acquaintance because she can partake in 5 conversations at the same time. The effect is similar to that of a dog's leaning out the window of a speeding car or truck. He is not equipped by nature to resist the high wind speed for sustained intervals and can make himself ill, yet holds his pose with no complaint, apparently enjoying the flow of air, sound, and sights. My young friend likewise "fries her brain" during the 5 hours she routinely spends each night interacting through her computer with the same people she sees in class.

However, if our culture is mediated via our Psychological Adaptations (PAs) as argued by Barkow et. at.,[11] mismatch should follow predictable forms. PAs, honed by millennia, determine the events that function as cues. PAs guide our attention and likely determine the salience of varied rewards and periodic variations in them. To the extent that our PAs are an outcome of hunter and gatherer condi-

tions, we should have hunting and gathering minds that construct hunting and gathering cultures.

Thus, blaming all mismatch on agriculture or technology is not entirely satisfactory even though we didn't have as much technology or agriculture when we were youngsters. Other mechanisms appear to be involved. While we appear to have a lot of "distortions" in our culture, they might be functional, despite technology, if kept to a smaller scale. However, our preferences for SNS produce a range of things that once enlarged do not work so well as they once did. Examples include residential institutions (prisons, hospitals, nursing homes, housing projects), welfare, Medicare, unions, churches, school districts, our towns and cities, and health care networks. Our institutions, our tools, our systems for caring for one another are expressions, perhaps cancerous, of sensory mechanisms drawing us towards the larger, the louder, the faster, the stronger. It's as if we construct our own alphas when we form organizations or buy things.

Tit for Tat (T4T):

Particular distress arises from the interaction of SNS with our evolved strategies for handling reciprocity, the strategies of Cheater and Sucker. "Generous Tit for Tat" is sometimes considered to be an ESS (evolutionarily stable strategy) resilient to invasions by cheaters. However, T4T seems to work best in a prolonged series of exchanges between creatures.[4]

T4T is disrupted by large groups and populations with high individual mobility. The absence of a continuing, personal relationship lets Cheaters (advertisers, insurance salesmen, auto dealers, real estate developers) thrive. Reciprocity can also be disrupted by rotating staff, whether physicians or letter carriers, or in service environments wherein the identical product is given to large numbers of people. Staff rotation and the absence of repeated contact between the same individuals discourages loyalty to patients or customers. On the other hand, the existence of prolonged, repeated social contact within an organization encourages reciprocity ties between staff who are in regular contact. Thus, interests develop that are contrary to those of individual clients because the recurring relationships are those between conspe-cifics within the organization.

As organizations grow there is less inhibitory effect from customer feedback onto the organization's behavior. Cheater tactics should increase on both sides of the relationship. Thus, practitioners unsurprisingly cheat and cover for each other; patients expect falsified diagnostic codes or misleading records and see it as their rightful due. Healers and patients form alliances with each other and cheat the insurer.[(d)] Examples of this interaction can be striking. For example, Dawkins[4] discusses reciprocal altruism between German and allied troops during WWII. German artillery often struck the same targets and at the same time each day. German apologies were given for shells fired too close to the Brits. Similar phenomena can be described by many high school students with respect to school guards, their teachers, or local police officers. When one local teen arrives late to school, the building guards warn her of the vice principal's location.

About Lateral Inhibition:

Focus in sensory mechanisms is a function of the two basic processes, excitation and inhibition. The former triggers a response chain, the latter attenuates the initial sequence as well as competing reactions in parallel receptors or weaker motivational systems. The more powerful the trigger, the greater the suppression of subsequent activity. Increasing resources or dispersal of output allows another excitation phase. The resulting oscillation applies to a range of phenomena spanning from Beloussov-Zhabotinsky reactions through amoebae and neurons, through the economic growth and decay of urban areas and perhaps star systems.[12]

The basic system is refined when the inhibitory function allows the suppression of simultaneous competing activity, whether of neurons or of species. The term "lateral inhibition" (LI) applies. LI

produces contrast effects in all sensory modalities,[13] leads to the absence of distraction, perhaps to task persistence and, eventually, to thinking and the Executive Functions. [(e)] Because lateral inhibition allows an increase in sensory/motor persistence as well as contrasts between similar events, it gains functional properties identical to the Darwinian concept of "diversity driven by competition (sometimes!) " [13a]

LI allows focus, it also means that a SNS may be more successful in blocking competing response systems, decreasing response variability, and encouraging more of a digital response style. Kauffman[5] presents a mathematically based model that requires rapid, binary reactions in systems that have little cross talk between parallel decision units that function in the same manner as psychological adaptations. SNS lead to unidirectional response sequences perhaps because they suppress not only the initial response but also the inhibition generated by competing adaptations. A gull sitting on a grapefruit is not gathering food, mating, doing homework, or painting the house. Likewise for a teen watching Bart or Beavis. Microsoft assimilates marketable ideas while suppressing or devouring competing organizations. There is an inherent tension between dreamers in print and those who do so on the Internet, between the alphas of Normal Science and the kids drinking bad coffee in graduate student lounges.[14]

SNS likely has a biphasic effect. Once an SNS is dominant, response variability is reduced because there is too much coherence. The opposite effect also exists; the model requires stasis and lock-up when there is too much cross talk. When there is too even an activity level among competing systems (whether neuronal or social), a renegade (virus, concept, or invention) that operates without constraints from established activity (host, belief, organization), can establish a local focus (chatroom, newsletter, thinktank, institute), suppress input from the existing organization, and disrupt the prior activity pattern. Depending on the level of data, the result can be a change in the dominant organism, belief, or business organization. Thus, Kuhn's observation that paradigm shifts in science arise largely from younger workers or from newcomers to the field.

Finally …

The other mechanisms and processes that people have laboriously defined for sexual selection, orthoselection, and K-selection also have merit. However, the simpler and more general concept may be that of sensory mechanisms guiding preferences largely on the basis of contrasts in size, color, and physical activity.

With SNS in combination with LI we can summarize dynamic relationships in a highly general manner. It doesn't matter whether we plug molecules or civilizations into the statements, the relationships remain the same. SNS allows us to use a single mechanism on events from phototro-pisms to larger physical sizes and perhaps to symmetrical features and livelier temperaments. The process accounts even for bigger tail fins on our automobiles, for larger engines, and for faster speed in excess of what we need to travel safely.

Any of the above can be aggravated by manic traits, an excess of the alpha stuff as reflected by too much drive for territory, for standing, for resources, for sexual choices. The urge to take something big and make it bigger eventually betrays us. Thus, H&G minds build H&G cultures, including ones with social mismatch.[10]

** Thanks to John Pearce, M.D., for his helpful comments about this essay. A version of it by Brody and Pearce has been submitted to HBES for the July 1998 meeting.

NOTES:

(a) Liveliness may be a more powerful attractor than size and color. Our sensory mechanisms are generally cued to react best to stimulus change. Thus, the bounder the girl, the more we look her way. The faster the male's pace, generally the less depressed he may be and

possibly the more attractive. Hess[1] refers to Tinbergen's description of Fixed Action Patterns as also having cue properties and filling the role of SNS. Miller[2] mentions viability indicators as having signal properties. Even the choice of research material suggests a preference for SNS in ethologists; they usually study increases, not decreases, in the amplitude or duration of a creature's behavior.

(b) Another domain is K-Selection, elicited by stable environments that are near their carry ing capacity for a particular species. K-selection is characterized by more cooperation between conspecifics, less altruism, fewer children, greater parental investment, and LARGER children than under r-selection conditions. The restrictions associated with K environments might restrict mobility, allow ing sensory preferences for size to operate with respect to children. Sensory preferences for SNS could account for at least one aspect of K-selection.

(c) Keller and Lloyd[9] discuss similar inconsisten cies with other evolutionary terms.) "Mis match" has many fathers even after Rousseau. For example, JBS Haldane[15] referred to it in an essay on "Food Control in Insect Societies"" Psychological Adaptations[11] promise to give a higher level of detail as to the nature of mis match so that it becomes situational and plural. The opportunity seems ripe for Steve Gould to write an essay about the changes.

(d) Managed Health Care may be shifting its ESS. There are many recent advertisements about "they care"; "Blue Cross lately sends birthday cards to women approaching age 50. The cards say, "Happy Birthday, go get a mammogram." Computers may eventually make it possible for an organization to serve a huge audience and remember all the birthdays and names of the kids. A recently deceased politician was immensely popular and said to know the parents, children, aunts, uncles and cousins of some 30,000 local families. "Knowing" someone is the first step towards maintaining an alliance. The effect may be similar to that of the animated female in "Roger Rabbit," a 'toon but still one of the most seductive women I have ever seen. Male turkeys will sometimes attempt to mate with the head of a female turkey hanging from a string. Managed care will likely engender similar behavior and a similar degree of satisfaction at times.

Likewise, zoning codes and buyers protection plans are inhibitory reactions to initial r-selection conditions. As resources diminish, "cooperation" (an aspect of lateral inhibition?) increases so long as population is still below the carrying capacity of the environment. Liberal political beliefs, the NHTSB, and Buddhism are more likely in Cambridge or Los Angeles than in central Pennsylvania. A gradual onset of diminished petroleum avail-ability should increase the popularity and enforcement of affiliative belief systems. A rapid onset should elicit the desperate condi-tions of a behavioral sink.

(e) Bronowski[16] argued that response inhibition instills a necessary delay in reflex sequences, a delay that becomes the foundation for planning, language development, emotional regulation, and the cognitive processes of analysis and synthesis. Barkley[17] picked up on this model and applied it to a range of deficits seen in the same domains in ADHD children and adults.

(f) Selection pressures may build for people to function smoothly in hive-equivalents such as McDonalds or Toyota assembly lines. (Does McDonalds meet criteria for eusociality, defined by Wilson[18] as the "cooperative care of the young, reproductive division of labor with the sterile working on behalf of individuals engaged in reproduction (a.k.a. "manage-ment"), and overlap of at least two generations contributing to colony labor"? Probably.) G3

ARTICLE:

by Edward H. Hagen

The Defection Hypothesis of Depression: A Case Study

Approximately 10% of all new mothers, nearly 400,000 per year in the United States alone, will suffer a depression soon after the birth of their child. Lack of paternal support and infant problems are good predictors of these depressions, while variations in hormone levels are not. Long characterized as an illness, postpartum depression (PPD) may in fact be an adaptation.[1,2]

In ancestral environments, infants with developmental problems or who lacked investing fathers would have suffered high rates of mortality. In these circumstances, mothers could achieve higher fitness by cutting their losses and abandoning the new offspring in favor of investing in existing or future offspring. While this evolutionary analysis based on parental investment theory[3] explains the loss of interest in the infant that often accompanies PPD, it does not explain why depressed mothers also lose interest in taking care of themselves, nor does it explain why very few of these women actually neglect or abandon their offspring.

I argue that PPD may be a strategy to negotiate greater investment from the father and kin, or to reduce the mother's costs, by functioning somewhat like a labor strike. In a labor strike, workers withhold their own labor in order to force management to either increase their wages and benefits, or reduce their workload. Similarly, mothers with PPD may be withholding their investment in the new and existing offspring, or, in cases of severe depression, putting at risk their ability to invest in future offspring. This may force the father and kin to increase their investment and/or allow the mothers' to reduce their levels of investment.

Trivers' theory of reciprocal altruism[4] and later work on the evolution of cooperation that it inspired (see Axelrod and Dion[5] for a review), help provide a more general formulation of the "labor strike" analogy that I refer to as the defection hypothesis for depression. Like the relationship between a worker and her boss, the human pair bond is a cooperative venture -- both the mother and father agree to participate in the mutually fitness enhancing endeavor of child rearing.

As models of the evolution of cooperation make clear, individuals will evolve to provide benefits to others only if they are free to defect from these activities (e.g., quit) should their costs outweigh their benefits. If the costs of child rearing outweigh the benefits, mothers (and fathers) will need to defect from this costly endeavor - they will need to stop investing in the offspring. The ability to defect from costly endeavors is a key component of any cooperative enterprise, a perspective with the disturbing implication that child neglect is a necessary aspect of cooperative child rearing. Non-kinship based cooperation cannot evolve or be maintained in the population if individuals do not have the ability to defect.

What if an individual can't easily defect? Evolutionary models suggest that cooperative contracts can be enforced by imposing costs on those who defect. In the United States and many other countries, women face extremely high social costs for defecting from their offspring, for example. Due to the social costs, a mother can't defect from child rearing even if she has no social support or the infant has problems, that is, even if her benefits are significantly outweighed by her costs. Women who do defect from child rearing may face serious criminal charges.

In ancestral environments mothers may also have faced high social costs for defecting. Both the father and other family members had a fitness interest in the offspring, and, rather than investing themselves, they may have attempted to coerce

the mother into providing the child care by threatening her with social costs should she neglect trie offspring. The mother was then trapped between a rock and a hard place: she couldn't afford to invest in the offspring, but she couldn't afford to defect either. This was a dangerous situation for the mother, and she really had only two options: negotiate greater investment, or find some way to minimize the costs of defecting.

What power does the mother have to negotiate greater investment? I argue that major depression, the loss of interest in most or all activities including taking care of oneself, has three negotiating functions.[1,2] The first function is analogous to a worker who threatens to quit or go on strike in an effort to negotiate a larger salary. Mothers, as a key investors in new, existing, and future offspring, are a source of valuable benefits and can negotiate greater investment by putting these benefits at risk.

By losing interest in herself, a depressed mother is making a very credible threat of defecting from cooperative endeavors that others find profitable. She is not providing the benefits to others that she has previously agreed to provide, and is putting her ability to provide such benefits at risk. By holding important benefits hostage (e.g., the life of the newborn, investment in existing offspring, and her ability to produce future offspring) the mother may be able to elicit greater investment from others. The threat of defection is credible and robust to bluff-calling since the mother's costs are currently outweighing her benefits.

Individuals who threaten defection as a negotiating tactic need to avoid incurring social costs for doing so. They need to avoid being viewed as cheaters. Note that mothers aren't really cheating; their costs do outweigh their benefits. They run the risk of being viewed as cheaters, however, since other group members don't have access to the same information as the mother regarding the viability of the infant and her access to paternal and kin investment, and may not agree with her assessment of the situation (see Watson and Andrews below). Cosmides and Tooby[6] have convincingly shown that those who defect from social contracts will most likely be identified as cheaters if they are seen as having received some benefit by defecting. Mothers suffering major depression are threatening defection from important social contracts in order to negotiate greater investment from others, but they are clearly not receiving any immediate benefit. Loss of interest in the self shields mothers from cheater penalties by short-circuiting the cheater detection mechanisms of other group members.

Finally, if mothers fail to negotiate greater investment they may indeed suffer social costs for defecting, but the imposition of social costs is not free. Those who impose social costs (e.g., the father and family members) will have to decide whether to continue to pay the costs of coercion when they aren't generating much return-the depressed mother is clearly willing to not care for herself rather than continue to invest in the offspring. The father and family members may decide that it is not worth it to continue to attempt to coerce the mother and let her defect. This outcome is probably rare since mothers are likely to be successful in negotiating increased investment and thus do not ultimately abandon or neglect their offspring.

Can this defection hypothesis for postpartum depression elucidate depression in general? Whenever a social strategy has failed, be it a job, marriage, or other important endeavor involving the cooperation of others, individuals may need to renegotiate social contracts to their benefit, or defect altogether. They may find, however, that other interested parties are not so willing to allow unilateral changes in the social contracts that these self same parties are benefiting from (e.g., bosses rarely allow workers to increase their own salaries).

Major depression is a strategy to renegotiate costly social contracts by making a credible threat of defection. Human beings are extremely valuable sources of benefits. Major depression, by holding these benefits hostage, allows individuals to renegotiate social contracts to their benefit while at

the same time avoiding cheater penalties. If this negotiating strategy fails, depressed individuals may at least discourage the attempts of others to coerce them since such efforts are unlikely to pay off -- why flog a dead horse?

Applying the defection hypothesis clinically can be tricky, however. Here is a case of non-postpartum major depression where my attempts to frame the episode in terms of a costly social contract failed completely until I realized that I had a false impression of the woman's mate. I had mistakenly assumed that she was trapped in a relationship with a low status male while in fact she viewed him as a potent competitor.

This 30-ish women had suffered a mild and intermittent depression for several years, primarily because she felt stuck in a high paying but dull corporate job while her true interest was to be an artist. She readily accepted the argument that her mild depression was due to the costs she was paying devoting most of her time to the dull corporate job rather than to art, and was making slow but determined efforts to change this.

She then suffered two major depressions, the first when her boyfriend decided to move to her city, and the second a year later when he asked to move in with her and she agreed. The woman refused to acknowledge that the boyfriend had anything to do with her depressions, probably because I incorrectly inferred from her comments that he had low mate value and therefore felt that she needed to dump this guy. She frequently complained that he was uninsightful and that he couldn't understand her since he had a loving and supportive family and she hadn't. (With the onset of major depression, this woman began taking 80 mg. of Zoloft a day. Neither of us noticed much effect after 8 weeks, so I don't know how to factor that in. It could be that I just kept her afloat until the SSRI kicked in.)

Based on the defection hypothesis, I assumed that the boyfriend's desire to be closer somehow increased the cost of the relationship for this woman and that she needed to renegotiate their relationship, or defect altogether. Perhaps because he was a artist and had an unreliable income while she had a fairly large, steady income from a corporate job, she felt she would end up supporting him. In other words, I figured that she was depressed because she needed to defect from a low value mate but could not bring herself to break it off. She said she didn't even like his art.

The only thing she wanted to talk about, however, was how, at 30, she had completely missed any chance to really succeed in life. Although we had long agreed that her dull job was a liability, we were at loggerheads since I was convinced her mateship had something to do with the acute onset of her severe depression and she completely denied this. She thought she was depressed because she was a loser.

When things got really bad and she feared that she was going to lose her boyfriend as well as her job due to depression, we arranged a pow-wow with the boyfriend and her close confidants so that they could explain to the clueless boyfriend how her bad family life had made her so susceptible to depression. During this pow-wow it became clear to me that the boyfriend was very intelligent and insightful, had thought a lot about his girlfriend and their relationship, and cared about her very much.

I then realized that the boyfriend had high mate value, that the girlfriend was in fact competitive with him since he was living the artistic life that she had always fantasized about for herself, and that she resented being supportive of his high status, exciting artistic life, a life she felt she could never have since she was now too old. The cost this woman was facing was not getting trapped in a relationship with a low value mate, it was getting trapped with a competitor who would overshadow her. It was very important for her to be viewed as an artist, but her credibility was seriously threatened by the boyfriend who had an established artistic career. Everyone would view him as the "real" artist, while she was just the loser corporate hack. She faced the dilemma of not wanting to

lose her high value mate, but also not wanting to risk losing the artistic social niche that she desperately wanted to occupy (see Watson and Andrews below).

It was now clear to me why the first thing she did when the boyfriend wanted to be closer to her was to get depressed and lose interest in sex. By putting the emotional and reproductive benefits she was providing under the current social contract at risk, she was attempting to negotiate using what I call a credible threat of defection, or what Watson and Andrews view as positive fitness correlate extortion.

In order to negotiate with cooperative partners you have to have power. Depression is power, the power to deny valuable benefits to exchange partners even at a cost to oneself (this includes the ability to deny future benefits, such as when a postpartum depressed mother can threaten her production of future offspring by losing interest in taking care of herself. This suggests one reason why women are more prone to depression than men-they can always put their production of future offspring at risk. The future benefits that males can put at risk are less certain). Such threats are . only credible, and thus robust to bluff-calling, if one's costs are exceeding one's benefits, as appeared to be true in this case.

This social contract was costly both because she viewed the boyfriend as a competitor and because she would suffer large opportunity costs by supporting him since that would prevent her from pursuing her artistic aspirations. She needed to have him support her in her desire for artistic success. She was not going to provide benefits to him, or to other members of her social group for that matter, until this relationship no longer threatened the status she wanted to achieve by being viewed as an artist. Her threat of defection forced both the boyfriend and her social group to re-negotiate the social contract.

How was the social contract re-negotiated, particularly during the pow-wow? One of the most important factors in her recovery soon after the pow-wow seemed to be my comment that I thought this guy was very insightful and caring and that she should pursue a closer relationship with him rather than competing with him. Interestingly, she didn't argue one bit. During the pow-wow she had realized that while her group viewed the boyfriend as high status, they weren't going to reject her in favor of him. She had gotten the group to endorse her status and artistic aspirations, and they, in fact, encouraged her to continue to pursue an artistic niche by cooperating with the boyfriend rather than competing with him. The unspoken terms of the social contract had been made explicit and, contrary to her fears, they did not include a provision that she must abandon art; quite the opposite, in fact. She had thus found a way to keep her high value mate without threatening her own social position.

I had thought that one of the costs of this woman's relationship was providing financial support to the boyfriend, since he had a small and unreliable income while she had a large and reliable income, but she strongly denied this in a recent follow-up discussion of her case. It was emotional support that she resented providing. She felt he was ready for the adult responsibilities of living together, while she was not, which perhaps hints at her fears of being maneuvered into a role she didn't want (e.g., wife and mother rather than artist?). She feared that she was going to be swallowed up and disappear, an experience she had growing up in her family where she also experienced an episode of major depression. Individuals who don't feel they have the power to negotiating directly with their important social partners (e.g., family and mates) may instead negotiate by using depression.

In addition to her realization that she could cooperate rather than compete with the boyfriend, and that her social niche was secure, several other factors seemed to contribute to a rapid remission of the depression in the immediate wake of the pow-wow, each of which reduced the costs and increased the benefits of the relationship: the endorsement of the boyfriend as a valuable in-group member rather than

an out-group member, a reduction of her work hours to half time, and her renewed pursuit of (and eventual success in) an artistic career.

Why had she incorrectly characterized the boy-friend as uninsightful and unable to understand her? I think "insight" was the only area where she felt she could compete with him--she knew more about life than he did. She (like many women I know) wanted her relationship to be founded on her value as a reciprocal partner, not just as a reproductive partner. This suggests another reason why women may experience higher rates of depression: both female reproductive value and reciprocal value (and thus social power) is minimized and denigrated in many modern contexts.

Male investment potential, on the other hand, is almost always praised. Male investment efforts also tend to correlate with institutional profits and success, while female child rearing efforts compete with same. Women are also less able to use threats of violence as a negotiation tactic, and less able to defend against physical coercion. They may thus have to rely more heavily on depression as a negotiating strategy.

Upon reflection, this woman was also in more of a struggle with me than I realized at the time. She interpreted my initial attitude towards the boyfriend both as implying that I felt that she in fact couldn't be successful as an artist -- she was a loser - and that her decision to be with him must have been a bad one. By endorsing the boyfriend and her relationship after the pow-wow, I was implicitly endorsing her artistic pursuits as well as her ability to make good decisions.

Moral of the story for me? Get as much info on the situation as possible. This individual refused to accept the costly social environment argument until I had the details of her situation exactly right, at which point her resistance vanished, as did her depression. GS

Articles about Depression and Mood Disorders: http://fly.hiwaay.net/~garson/depres.htm

A Natural Mood Booster -- More and more therapists are recommending a herb called Saint John's Wort to treat mild depression. Does it work?

A stupid depression poem -- by Sine Nomine.

Anxiety, Depression -- Herbs Show Clinical Results Without The Side Effects of The Drug of The 90's -PROZAC [tm].

The Depressed Child - Children under stress, who experience loss, or who have attentional, learning or conduct disorders are at a higher risk for depression.

If You are Over 65 and Feeling Depressed... - "Among people 65 and over, as many as 3 out of 100 suffer from clinical depression." Treatment brings hope.

Plain Talk About Depression - Informative and helpful ideas for coping with depression.

You are not Alone... - Where to start in dealing with various mental illnesses, including depression.

Reference Books on Depression and Mood Disorders: Self-help Selections & Professional Resources

" *The Agony and the Ecstacy"* - By Timothy Hoy, what depression is like from the inside.

Bipolar Disorder - Brochure from the National Institute of Mental Health, NIMH.

Depression Central - Internet's central clearing house for information on all types of depressive disorders.

These are just a few articles and information helps that are available.

ARTICLE:

by James F. Brody

Mania Sketches #1, #2, & #3

Mania Sketch #1: Alpha Traits

Mania occurs more often than bipolar disorder but at intensities that do not justify a formal diagnosis. However, even subclinical mania has assets and costs for the individual and for people around him.[a] This essay attempts to fit a troubling clinical pattern into an evolutionary context but with no attention to Standard Social Science Model explanations of mania. The following remarks also pay little heed to biological clocks as an antecedent for manic episodes; likewise, "chemical imbalances" are not a concern here although they could be one link in the adaptive systems that underlie mania. Much of the discussion is focused on children but has equal relevance for adults. The observations are based on "clinical lore" plus some extrapolations from what is known about bipolar disorder.

The following characteristics overlap with DSM 4; however, some features are emphasized because of my concern with sociobiology and evolutionary psychology. Manics are recognized by a variety of traits that may reflect an adaptive system that works to increase their standing in the family, peer group, or school. These traits include the same tactics used often by most children; however, there is an increased intensity about them. The list includes:

1. Rapid speech, high activity level.[b]

2. Grandiosity as seen in elaborate plans to commandeer a disproportionate share of family and neighborhood resources. Re cruiting friends, accessing money, domineer ing the parents, or defeating siblings are common preoccupations. The telephone, curfews, and the family automobile will be focal issues because they are related to the access the child has to his allies. There may be a sense that the "rules don't apply to me" or "I'm good enough to figure a way out even if I get in trouble." Name dropping may be a common feature with children or adults. Autographs and athletic clothing are one more way to enhance the attribution of power, to elevate your standing.[c]

3. Having the best (clothing, toys, friends, tools) or doing the best are key motivators if useful for defeating social rivals. Excellence is pursued not for itself but as a means to get ahead of competitors. Defeating someone in a fight or contest is especially rewarding.

4. Denial or rage when criticized or embarrassed; refusal to admit to faults, refusal to accept advice, or help.

5. Reduced sleep or fatigue in association with irritability and hyperactivity.

6. Hypersexuality in some cases (after puberty; heightened interest in opposite sex can occur before puberty perhaps as a means to increased social status). Manic adults share their gametes more freely than aver age.

7. Obeying instructional or parental demands if such help the pursuit of dominance. Ignoring them if they are irrelevant to social and power agendas; defying them if they produce a loss in standing.

8. More intense use of physical aggression ("He hit me!"), invasion of personal space ("He's in my room!"), theft ("He took my stuff!"), insults ("He looked at me, he called me a name!") coalitions ("All the other kids are doing it"), intimidation (staring a sibling down, "If you say 'no,' then I won't do my homework"),

retaliation (won't do homework when angry with the teacher), excess use of "Not Fair." Supplemental tactics of spite, lying, guilt, property destruction all for enhanced personal power.

9. Their psychological adaptations for monitoring their relative social standing, their power, their possessions appear -- in defiance of both natural law and psychophysics -- to be at maximum gain yet retain micrometer resolution.

Some children are more domineering than others; they often may have at least one domineering parent or grandparent. They may also have a timid parent as well. The meek sometimes don't inherit the earth; they get to rear its future despots.[d] The manics can be remarkable; however, they can also Drive to Distraction [e] an enabling mother or one who is manic herself and obsessively idolizes her child. More extreme forms of mania blend into the troubling pattern known as "bipolar disorder".[f]

All of the above features plausibly and directly support determination, persistence, and competitiveness. They are also likely to support, directly and indirectly, personal as well as inclusive fitness. A high energy level and a driven nature (with intact Executive Functions, a nature that plans, that analyses events and imagines different outcomes) in combination with a high IQ, reasonable social opportunity, and the relevant psychological adaptations (talents, complex adaptive systems) is more apt to reach prominence in science, literature, the arts, engineering, or social leadership.[g]

One drawback to labeling an exaggeration of normal behavior as "mania" is that of eliciting erroneous impressions in family and in the client. It's too easy in our society to leap to a "manic depressive" conclusion when many of these people may show less intense or frequent cycling than the clinical population. However, the possible advantages to using this label, in a careful fashion, with parents or with wives may outweigh the risks. It gives a "reason" for the aggravation, indeed a reason that enhances personal standing. *"Your child/mate is a pain in the glutes"* becomes" *Your child/mate is potentially a great leader but he/she requires clear, consistent outcomes if they are to function with the rest of us in various alliances."* Time-out and other immediate, personally relevant sanctions become kind things to do rather than an expression of spite. Suomi[g] comments about the highly positive influence of unusually nurturing mothers and aunts on high reactive rhesus youngsters. His remarks sometimes rally fatigued enablers nearer to a tough but loving posture.[g]

(a) Portions of this essay were originally posted in the Evolutionary Psychology Forum, www.behavior/net/brody. Peter Kramer refers to this mix of features as "hyperthymia," an awkward but more compact term than subclinical mania. ("Why someone would risk it all." *U.S. News & World Report,* Feb. 9,1998, p. 40). He unwittingly describes alphas when he says "... propensities for risk taking, hyperthymia, and narcissism in the right proportions is a damn good politician - creative, energetic, able to use others well. At the same time you get a man for whom the sex act is a compulsion and a constant gamble: What is at stake is precisely his grandiosity -- if his naughtiness escapes punishment, the fates still adore him."

Gregory Bateson (1963, "Role of somatic change in evolution," *Evolution,* 1963;17:529-539. Reprinted in: Belew R & Mitchell M. *Adaptive Individuals in Evolving Populations: Models & Algorithms.* Reading, MA: Addi-son Wesley, 1996, pp 111 -124.) refers to "homeostatic costs" for any new feature that is genetically driven. A single mutation, even if nonlethal, will impose additional loads on ancillary physiological systems to help the organism handle the new feature. A longer neck on a giraffe may require hypertrophy of baseline cardiac function. Selective pressure

then exists for any mutation that leads to larger or stronger hearts. Mania certainly imposes many costs and adjustments in other psychological adaptations that a person may have. It also presents social costs and opportunities for surrounding conspecifics.

The extent to which this is a "disorder" will have multiple determinants including the mix of other talents and liabilities that are also present as well as the environmental niches. It's enticing to consider mania as a r-selection tactic, present to some degree in all of us and more adaptive during environmental wealth. However, manics also survive in K conditions but may be less impulsive in their actions. Once more, high activity level and impulsiveness might be separated from the features of grandiosity and accumulation of power. (See the sketch on "Too Much Self Esteem" for more discussion of this possibility.)

(b) High energy and activity level are thought to increase mating attractiveness. Manic verbal behavior may have some functions comparable to sexual displays. The livelier, the brighter, the larger have more opportunities to mate. However, there also appears to be a rule of diminishing returns. Excessive bragging and activity tend to elicit suspicion and avoidance. The real selection variance may be in the range between too little and too much. See Buss, D: *Evolution of Desire.* New York, New York: Basic Books, 1994.

(c) Manics seem highly intent on accomplishment regardless of social costs. There is often a trail of confusion in their families, friends, and business associates. It could be that family stability, parental investment, and eventual reproductive success depend greatly on there being a parent who will compensate for the manic partner. The manic may recruit an "enabler" as a social buffer (and "servant" for the trivial, annoying, petty details of living. I know wives who put shoes on their manic husbands! And manic males who look upon any family chore as "woman's work."!); the enabler conceivably might enhance their personal social gains and inclusive fitness by recruiting a manic spouse. Miss Timid gains in standing if she rides in Hunk's GTO or Viper.

(d) One mechanism for increasing "inclusive fitness" is for a female to find a highly "fit" male so that she will have more attractive children. Thus, her own genetic traits will more likely be transmitted to her grandchildren through her "sexy son." It could be that an enabling mother (or father) is eventually rewarded by gaining higher social standing through the accomplishments of a driven, manic child, thus, eventually inheriting the Earth. One case where highly delayed rewards outweigh immediate aggravation?!

(e) Ned Hallowell & John Ratey have a text, *Driven to Distraction* (New York, New York: Pantheon, 1994), that targets the ADHD population. Yet, many "ADHD" features in their popular book likely apply to mania as much as to ADHD. ADHD clients appear to be distracted when they are actually impulsive and shift tasks easily as a function of external stimuli; ADD clients probably are distracted (See Barkley R: *Taking Charge of ADHD,* New York,: Guilford, 1996.), while the manics are driven about a few things, appearing to be impulsive, but negligent about many others. If someone is really blessed they can be an interesting mix of ADHD and manic! That is, they may be organized and pay great attention to issues of power and standing but have no concept of time or purpose for behavior and goals that don't have immediate social or economic relevance.

(f) See Brody J.: (3/17/97) *ADHD, ODD, & Mania,* www.behavior.net/Brody. Also, Glasser JM: Differential diagnosis of ADHD and bipolar disorder. *ADHD Report,* 3(3), 8-10(1995). Wozniak J, Biederman J: Prepubertal mania exists (and coexists with ADHD). *ADHD Report,* 2(3), 5-6 (1994).

Prevailing thought is that oppositional ("Don't tell me what to do, you're not my boss") behavior is largely a function of parental inconsistency. That is, arguing works to avoid or escape chores or to gain more privileges. Oppositional behavior, in a manic child, not only avoids the chore but is also reinforced by the gain in social standing that results from defeating mom or dad. Oppositional children often have depressed mothers. Speculation differs as to whether the mother is depressed because she has no leverage over her child (thus, is a "bad mom" in her own eyes) or whether the mother is depressed and withdrawn and the child has to be disruptive to elicit attention from her. It could also be that a manic mom who loses the dominance fight against her husband and child will become depressed. Depression itself may sometimes function as a psychological adaptation that gains mercy ("Don't bug your mother!) or retains influence even in defeat.

(g) Even the word "arena" implies a show or contest. Also, see *"Touched with Fire"* by Kay Redfield Jamison (1993, New York: Free Press) for a convincing description of bipolar disorder interacting with literary and other artistic talents. After you read Jamison, give another look to Frank Sulloway, (1996) *"Born to Rebel,"* New York: Pantheon for a long roster of probable manics and bipolar characters from the sciences.

(h) Suomi S: Nonverbal communication in nonhuman primates: Implications for the emergence of culture. In *Segerstrale,* U. & Molnar, P. (Eds.) "Nonverbal Communication: Where Nature Meets Culture." Mahway, New Jersey: Erlbaum. 1997, pages 131-150.

Mania Sketch #2: Too Much Self Esteem

The following essay has a "let's pretend" quality, that Risperidone has one or two known actions and that it's useful to put rejection sensitivity and grandiosity on the same continuum. The former is certainly not true and is an old problem in psychop-harmacology. The latter rings true for the moment but certainly is not be entirely accurate. Nonetheless, the material below seems more real than real for the moment.

Rejection sensitivity, perhaps originally defined by Don Klein, can be summarized by a sense that you don't fit in, that you are somehow inferior or left out of social events. You see yourself as the bottom of the hierarchy and tend to be inhibited or easily embarrassed. RS is thought to respond specifically and powerfully to manipulations that increase availability of serotonin at CNS receptors. Peter Kramer[1] wrote that once you are aware of rejection sensitivity, you see it everywhere. The same is true of its inverse, the other end of the continuum, whether you call it grandiosity or rejection insensitiv-ity.

The common, unspoken assumption is that the SSRIs (that increase serotonin availability) act to restore a deficiency to a normal condition. There is little thought of a overload situation and the behavioral consequences of it. Some of this practice may be due to the CNS adjusting (perhaps through down regulation of receptor sites, too much serotonin eventually leads to there being fewer receptors for it) to the richer supply so that any behavior changes are transient and less destructive.

Perhaps because of genetic variability and correlated neurochemical differences between people, some of us show a more enduring shift, become less sensitive than normal to reactions from others in our lives. Thus, we seem less guilty, less inhibited, more manipulative, and more grandiose, acting as if consequences and sanctions are suspended for our benefit. Grandiosity can be associated with spending beyond our means, insisting on our wishes while ignoring those of other people, and becoming angry, manipulative, or forceful when our demands are slighted. It likely underpins the thoughts and actions of old guys who, pursuing young females, feel themselves exempt

from Symons-Buss guidelines and expect to be loved rather than assayed.

Clinical focus on mania typically is on heightened activity level, impulsiveness, and perhaps mood shifts. While mania is often characterized by a more rapid motor and speech pattern, impulsive actions, reduced need for sleep, and hypersexuality, grandiosity is a core feature. John Pearce once commented to me that "Risperidone is a pretty good antimanic." Much of these effects are likely due to its presumed actions on dopamine (Gosh, I love causal chains with "maybe" at each of 12 steps!). The serotonin blocking action, however, is far more interesting in regard to grandiosity. Just as Prozac made it possible to change rejection sensitivity in a manner apart from other aspects of depression, Risperidone may have opened the door to our watching grandiosity.[a, b]

However, grandiosity is not the same as high activity although the two may often be positively correlated. Scanning for grandiosity is similar to rotating a polarized lens, new features become prominent, others blur. Some of the next examples are echoes from the African Savannah (or Danakil Isle) as a young rhesus prepares to move up a rung.[c]

Mike, 9 years old, had a mix of ADHD and bipolar disorder. Although not suicidal, he ordered his parents about, displayed up to 3 hours of rage if mom (a nurturant Suomi type) delayed one of his requests for 10 minutes, insulted his teachers and other children, and locked his mind on moving from private to public school where he will have less supervision. Mom sometimes retaliated with threats of military school. Mike confidently retorted, "You would never do that to me." He was given TO on the outside deck (warm day); he climbed to the roof and back into his room through a window. He looked at his mother and announced, "I won." Like many such children, he was mismanaged during the days with a substantial dose of Ritalin but became a despot in the evening when home with his parents. He also had difficulty getting to sleep, getting up, and was thin for his age.

A quarter milligram of Risperidone twice a day cut his fidgeting (dopamine again!) and stopped his aggressive outbursts even on the first day.[d] He also ate a reasonable breakfast and lunch and went to bed on time and slept. On-the second day, he got himself up on a Sunday morning and let his parents sleep while he made himself breakfast. He had promised over a week earlier to serve Mass for the priest; Mike walked the half mile to church and kept his promise. All of these things were "firsts" for him.

My explanation to Mike was that he did not take Risperidone in order to make him behave or sit still, although he thought those goals were reasonable. Instead I spoke of his being a team player instead of telling his parents what to do and getting angry to make them comply. I also mentioned our need to count on his following directions and the hope that he would sample this new kind of teamwork while he took the medicine for 3-6 months. We would next reduce it to see if his new social relationships eliminated the need for medicine. He had no arguments; he seemed to understand. He gained some pounds and his Ritalin was reduced significantly in the oncoming weeks.

Aaron in his late teens was a graffiti specialist, sharing his art on local walls despite his being on probation and in dread of another residential confinement (grandiose people hate confinement). He also drove 110 MPH in his mom's car, with 4 friends, to various concerts and to clubs in Manhattan without parental knowledge. His older brother met full criteria for bipolar disorder. Aaron was stopped cold by 1.5 mg of Risperidone. No more racing, no more graffiti and relatively more honest with his parents about his activity.

Sometimes tricky things happen. Aaron became obsessed with a former girl and increased his Risperidone dose by a mg per day. Massive tears and guilt followed in regard to his past treatment of her as well as his treatment of his family. He expressed a need to settle down and to be part of a family, both feelings absolutely novel to him. He even insisted on a 2nd appointment that week with

me just in case he needed it (which he didn't) There was no criticism of his fat sister (ordinarily a target for scorn).

He next stopped his Risperidone cold and within a week was back to graffiti, scheming for money in order to get a fast car, going to clubs in several cities, and applying to several colleges despite his poor grades. He mocked fat women again and refused to walk to work for a "lousy $5.80 per hour." One segment of his mind saw the need for medication; another disliked it. He needed some more "therapeutic walls" to convince him that he is not immune from natural consequences. (Skipping medicine appears a common trait with mania; they sometimes interpret medicine as evidence of impairment. Life is also less fun if you're less impulsive.)

Charley was in his 60's. He was noted for dropping trash on the ground and not caring despite the presence of his wife and an audience of strangers. He had been in trouble with her for decades because of his arrogance and hostility as well as his similarity to her father. She had once evicted him from the house for a year but let him back home after he had major surgery. Their contract was that he would be respectful or be evicted again; Charley managed to stay just within the boundary while keeping her upset. He averaged 2 nights per month in a motel, booted from home because of rudeness and oppositional behavior.

He was confronted often for not caring and for inconsiderate behavior, for acting as if relationships did not count. He was known to be poor with partnerships. His rebuttal was that he had an automatic defense mechanism to avoid being hurt, thus, pretended not to care even though he did. She did not particularly believe him, and neither did I. (There will be long debates about when denial exists or when certain adaptations simply fail to work.)

He had two incidents of tantrums the week before starting Risperidone; none afterwards.[(e)] After starting Risperidone he seemed to stay with our conversations in therapy, even when his wife was critical. He didn't act baffled as in the past. His wife reported a series of small miracles. She went with him to a home center and shopped for building materials. His tolerance was usually 15 minutes; he lasted an hour.

Further, he had a plan for making the cabinet and put the materials in their cart. However, he accepted her suggestion to check the Ready Built Department and bought one of the store models. She could not recall his ever doing this before. Charley typically made up his mind and ignored her opinion even if his way did not work. She felt "it was a pleasure" to shop with him that evening. She wanted a partner, not a puppy and not a defiant child.

Installation was another surprise. He measured the placement and asked her to check his measurements (totally novel!). She found a 1 /2 inch mistake; he made the correction. His past routine was to ignore her contribution, stick to his measurements, then discover his mistake after driving more than a few nails and screws, and abandon the project in disgust, leaving her with scraps, incomplete pieces, and sawdust.

On another evening, he fixed dinner, she complimented it. He remarked *"Of course it was good,"* and she retorted,*" I taught you."* He quietly agreed, *"That's right'* instead of arguing with her.

There are costs with Risperidone, costs such as possible dystonias or parkinsonian reactions. Still, they are said to be smaller than with other neuroleptics. Two of these guys were on the verge of not having a place to live, the third was close to living someplace he did not want to be and the courts did not want to put him. The two younger ones may do well on Depakote eventually or lithium. For the moment all of them and their families had a break from chronic manipulations, lying, and temper displays. While it was too early to assess the contrast in their conduct for stability, I still felt as if someone had given me and their families a bouquet.

It appears likely that we can separate grandiosity from other aspects of bipolar disorder. We can ' probably find it in some cases of conduct disorder and I suspect someone even now is studying the effects of Risperidone on antisocial behavior. It seems paradoxical to seek a medication that may lower self-esteem and increase anxiety or guilt, even for the purpose of inducing social compliance, compliance for the goal of working effectively with other people. Mike, however, had no complaints about his medication (a sharp contrast to his opinions about methylphenidate); likewise for Aaron and Charley. The three of them enjoyed feeling a part of their respective groups instead of their prior sense of alienation. If Risperidone is a useful lead with respect to serotonin blockage at particular sites then similar blockers might be effective but with less dopamine effect and perhaps less risk of extrapyramidal changes. We may be able to give more people the choice of being active but modest to complement our now hidden cadres of the quietly arrogant. [f,g]

Notes:

(a) Portions of this essay were originally posted in the Evolutionary Psychology Forum, **www.behavior/net/brody.** Possibly 1 mg. of Risperidone bid would have kept Kennedy (several of them), Bono, or Mary Jo alive.

(b) Risperidone may be another tool that allows us to dissect existing diagnostic categories and reorganize them by chemical or by adaptive mechanisms (grandiosity, activity level, sexual interest, territoriality, aggres sion) rather than statistical commonalty. High activity level and impulsiveness might be separated from the features of grandiosity and accumulation of power. (See the sketch on "Too Much Self Esteem" for more discus sion of this possibility.)

One of many strains in my fantasies is the suggestion by others that 5-HT2 receptors mediate anxiety. If so, then serotonin would play opposite roles - elevating self esteem while raising fear (a phenomenon compatible with Suomi's rhesus, see the sketch on "Someone to Watch Over Me") ~ as a function of the receptor it strikes. (Nature's certainly up to this cleverness. For example, I know people who are not responsive to Demerol and two who claim insensitivity to morphine.) I am not aware of the specific measures taken of anxiety in these models. Anxiety about illness or injury could have one set of mechanisms whereas anxiety about social standing might be mediated by another set.

(c) The dominant rhesus in a group commonly raises his tail straight up like a battalion flag. I recall a photo of a rhesus monkey running with a pack of baboons, each 3-4 times his size. The rhesus had his tail up!

(d) My suggestion to physicians is to start medication changes on Saturdays so that parents can observe their child rather than send him to school with a new medicine and with uncertain outcomes. I saw Mike for a few minutes on the first two days to check for dystonias and to train his mom in watching for them.

(e) Older clients are often on many medications and supplements. It can be difficult, for example, to separate Charley's temper issues from Ritalin effects, from sugar changes associated with his diabetes, testosterone shifts from his patches, or fluctuations in his blood pressure medication. His wife also had him on a high protein diet for weight control. They agreed, however, that his temper and stubbornness were family traditions, seen in other members as well as existing in Charley well before he started various medical regimens. He began on a minimal dose of Risperidone; the pharmacist did a computer check for negative interac-tions between Risperidone and his other medications. Charley responded immedi-ately and felt no side-effects.

(f) These examples all involve disruptive behavior. However, Beck[2] has described "love" as comparable to mania and reflection suggests many grandiose feelings associated with infatuation. Infatuation (along with a heightened sense of perceived similarity) seems to be elicited or reinforced by intercourse. Manics seek it more than many of us, forming instant alliances whether in bed or on the Internet. We are as one flesh (and one mind). No more being alone.

There is often substantial grandiosity, denial, selective perception, lessened worry of failure with infatuations. Substances with actions similar to Risperidone might be effective in moderating infatuations. *"I don't want to give up the affair"* is a common reaction from teens or from wives. I cannot imagine someone actually treating inconvenient attractions with Risperidone, still, it's a possibility if the afflicted person has children and a decently behaving if boring, formerly attractive spouse. The affective shifts, the change in perception that occurs, the extra tingling that go with every look and word can be difficult to combat. Likewise for the bias that an existing mate seems awkward, boring, selfish, and clumsy while the new partner is sensitive, understanding, and *"just like me."*

There is also the inverse problem, that of being in love but dumped. The rejection model suggests that SSRIs would be the effective treatment but many only respond partially to them. The partial responders may have some manic features in their background; a manic without hope is not only depressed but may still have a grandiosity problem, perceiving the universe as betraying special them. (Indeed, it's possible that dysthymia, also said to be sometimes difficult to treat, also reflects manic traits but combined with no chances of success, of winning whether a partner or a contest) Treat the grandiose expectations with the right serotonin blockerand paradoxically cure the depression?

(g) I recall a stubborn 30 year old, physically solid but with a gut hanging over his belt. I shared some findings about male body fat distribution and cardiac risk. He felt that he still had some time, despite Type A behavior, poor cardiac history in his family, holding several jobs, and having unpredictable, sudden physical demands in his work. Is this grandiosity or detachment in the face of delayed consequences. Denial? Probably grandiosity. He had recently visited Alabama and remarked to me that "Some of those southerners are really big boys." Can belly size function as a supernormal stimulus for some people, inflating self esteem because of being large even if fat? I am currently treating one chunky, combative 12 year old with a low dose of Risperidone. Risperidone commonly increases eating. I'm curious to see if he eats less because he's perhaps no longer competing for a larger size.

Mania Sketch #3: Someone to Watch over Me?

Geoffrey Miller[(a)] suggests that feminist accusations of men's controlling women agree with many evolutionary findings about male behavior including the manipulation of food access, spouse-monitoring, sperm competition, vaginal plugs, and rape. The distal causes of male control (exclusive access to her eggs) appear evident, yet there is more to the tale. Enough, perhaps, to suggest that enabler females (or males!) have greater clout than is first apparent.

There are at least 3 streams of information to consider:

First, my client, Pete. He was in his mid-40s, had quickly lost 10 pounds, developed fine tremors and difficulty making decisions, and claimed not to have slept for 5 days... ever since his whimpering wife

sent him back to his mother's to live. He was as shocked about his loss of self assurance as he was about her action; he would do anything, anything to be allowed back home with her and his teenaged sons. He even came to counseling and took medication to buffer his panic, temper and critical nature, his tangled mix of mania and ADHD. He was by no means the only husband to be so miserable and had hit one of the few walls that gain a manic's attention. Still, the incongruity bothered me. Pete was ordinarily assertive, fit, a successful tradesman; his wife passive, whining, overweight, and inert. His sons neared adulthood. Why panic?

Second, I was fortunate to meet a series of 3-4 year olds referred to me over the past year. There were about 10 of them with a mix of oppositional, domineering behaviors. The average member of this troop lied, stacked cards or sneaked extra turns to win games, hollered "How could you do this to me!" when informed of a little sister enroute, assaulted peers in day care, needed relatively little sleep, displayed tantrums after every "No," and dominated the household to the extent of driving parents to pay me significant money for advice. Most of these sprouting Saddams also had separation anxiety, crying and clinging to mom when she dropped them at daycare or school, or tried to leave them with a sitter. Princess MacBeths likewise clung to mom at night and often complained sufficiently to pull mom to their own bed. They showed far milder reactions to dad's absences.[b,c]

Third, a quote by Suomi (1997) about rhesus monkeys riveted me: "... *high-reactive infants, reared by unusually nurturant attachment figures, are remarkably precocious socially and typically rise to the top of their group's dominance hierarchy."* The quote startled me for several reasons. I studied rhesus monkeys in a lab during graduate school. They routinely opened their jaws wide and displayed canines an inch or more in length, stared at me or at each other eye to eye, or kicked against the side of their cage walls, sometimes dropping to a crouch and hurling themselves against the metal siding, impacting with all four paws. Their apparent targets could be another male rhesus in the next cage or one of us sappy graduate students. These dominance behaviors were likely aggravated by confinement, serving in operant conditioning studies, or being under the supervision of human nerds. Still, I recall a photograph taken somewhere on an African plain. There were a half dozen baboons on the march, a rhesus - one quarter their size - in their midst, his tail stiffly elevated, a furred Huxley and the self-appointed pack leader.[d]

It's worth repeating Suomi: "… *high-reactive infants, reared by unusually nurturant attachment figures are remarkably precocious socially and typically rise to the top of their group's dominance hierarchy."*

I know a lot of Suomi's mothers. It's also possible to view Pete as a sun spotted edition of the 4 year olds. This trio of observations suggests that the female enabler (of two species!) can be more powerful than the male, even on a day to day basis, and that she can live comfortably without him more easily than he can without her (or she can with him). She can probably replace him more easily than the reverse.[e]

Aside from my troop of preschoolers, there are many, many anecdotal examples of these relationships and across a range of ages:

1. Julius (13 years old), harangued his mother into buying only the best sneakers or shirts, into letting him wear only what he wanted to school, and into changing schools whenever he came into contact with an authoritarian teacher. Mom, herself, could be highly oppositional to anyone who expected Julius to behave. He carefully monitored her location despite his macho style. He ignored directions and called her names until she gave him the edict, "Go live with your dad."

2. George (10 years old), became "weirded out" (and so did his sister) whenever he is left in a strange room. He was restless, anxious,

and expected creepy people or evil spirits to appear. In familiar settings, he was generally arrogant and in his parents' words, "always told us what to do." His mother hoped that I could get his friends and teachers to tolerate him as she did. She was adamant that he has been prejudged. I was not to bury little Caesar but to guard him.

3. Jared Jones (12 years old), made his younger sister do everything that he did, becoming extremely angry if she refused or simply played independently of him. (Fortu nately, she was also something of a pistol and defended herself very well.) Their parents did the practical thing and scheduled them often to be in separate universes, giving each of them a territory and individual adult attention. He also called his parents and other adults by their first name.

4. Hank (40 years old) had a volatile temper when young and was beaten often by his equally volatile father. Hank remembered escaping to his grandmother's house where he had a sense of someone "being on my side." (Hank's wife came to me for help with anxiety and depression; Mr. Bluster naturally followed along, coming to trust me because his wife got better. My goodness, we guys can be such puppies!)

5. Pat was vigilant and suspicious of me in our first meetings. She had many many questions and a like number of personal second opinions to my recommendations. Full cooperation appeared once she believed I was her child's ally. Thus, a therapist can be seen as mom's ally for protecting the kid rather than changing him. I sometimes caution parents that schools do not always appreciate my involvement. I put it bluntly, " *They don't like me over there."* The parents often react, *"Great."*

There are gains, immediate and delayed; and perhaps causes, proximal and distal. The immediate pay off for little alpha is that he/she recruits someone to look after him, to repair the holes he rips in the social fabric and to care for him when he is sick. Thus, his physical well-being and position in the hierarchy are somewhat better protected and, as noted by Suomi (1977), improved. (Reactive rhesus without a nurturant mother or aunt appear to have a greater risk of injury in times of stress, they are less likely than average monkeys to be hurt in low stress conditions.) These same mechanisms may underlie his adult dependence on an enabler, less equal than a formal ally. His tools to motivate his team include both his own behaviors (anxiety, panic, helplessness, anger, spite, threats, bargaining, immediate or delayed retaliation) and the mother's adaptive systems that react to those displays.

However, what is the gain for the enabler? For the aunt or grand mother? For Pete's whimpering wife? And, what are her tools, the reciprocal tactics that synergistically, symbiotically mesh with those of her child or husband? (See separate posting on manic females.) The immediate gains for the adult enabler who is a partner might include protection, greater economic resources (shelter, warmth), mutual grooming, sexual and social companionship, and an alliance with someone who fills the gaps in her own psychological adaptations.

As for domineering children, the mothers talk about helping their child to grow up, to have friends, and to ensure that he won't be like his father. This may be self deception since mom was once attracted to the father. I do know mothers who despise their husband and idolize their sons all while complaining that the boy acts "just like his father." As for friends, I sometimes think that women screen males on the basis of the male's capacity to form and maintain alliances. Loner guys are usually less attractive and many of us lose friends when separating from our wives just as we originally got those friends when we married. They seemed to have been lurking in the hope chest and go back to it when our union dissolves. Mothers may also be so tuned to familial alliances that they become upset when he pursues economic alliances instead.

Mom's immediate, positive motivations are tied to traits of her child, to his/her liveliness, physical strength, stamina, high verbal output, and assured manner in her presence. A healthy, lively, "manic" child can likely function as a supernormal releaser, driving the mother harder than a more average child. An anxious lively child is more apt to live and have a greater choice of mates as adult. His anxiety could make him more careful of his partner, therefore, raising odds that his offspring will have a mother. (Or that he will have offspring!) A living manic kid -- larger, more healthy, livelier... all attractive sensory buttons for SNS & for mate selection.[10]

She becomes more certain of her own importance through her impact on her child's comfort and assertion. Her immediate aversive incentives may include relief to whatever discomfort she feels when her child complains or is excluded. Just as there are different systems in the infant's brain that respond to vocal quality, there are likely compli-mentary systems in the mother's brain, perhaps elaborated from childhood mechanisms, that respond to infant and child distress signals that the child can use for imposing escape, avoidance, or punishment contingencies on his mother.[(g)]

Her tools (counter measures) for defending her own interests against a child or a husband may include building alliances (enlisting friends and families, forming political networks whether for baby sitting or for alternate shelter for herself), driving male sexual selection (so that the guys pay homeo-static costs derived from being larger and more aggressive), limiting sexual access, sharing things they gather, handling the money, managing the nest, manipulating his fears and eliciting jealousy (by the slightest smile at his rival, sending herself flowers, etc.), criticizing him into impotence, whining (interacts strongly with noise distractibility in males), and playing helpless.

The most powerful female card is language. The average male is hopelessly overpowered verbally by an average female; there are laws against his using his strengths (muscles) against her ("I had to make her shut up.") but laws and rules are extended expressions of her needs and linguistic skills. Because such are protective largely of female interests, there are no rules and no arrests for nagging. (Consider a GSR study of males encountering varied female tactics, watch the needle jump after he hears whines & screeches. Also, few of us ask about noise distractibility problems but should, particularly in marital or childrearing contexts.).

Picture our likely cradle days, when intense survival pressures shaped these patterns. Many women died in childbirth, making a capable female even more rare than is true today. Tough alphas had to behave more gently and manage alliances because of the stricter competition for access to a female. Even with our polished mate guarding skills, it is impossible to watch your woman constantly and still hunt or lay back and watch the Green Bay Packers. Be neglectful or cruel and she will be gone in 4 years.

Separation anxiety (or fear of abandonment) ensures that he will adjust his behavior to suit his mate's demands. His fear is her tool, his fear is an extended phenotype of her needs, to use when she will or when he forces her to use it.[(h)] Often, these latter consequences no longer operate so obviously; thus, a modified form of "Mismatch" may also apply to the phenomenon of spouse abuse.[(l)]

Notes:

(a) Miller, Geoffrey: How mate choice shaped human nature: A review of sexual selection and human evolution. In Crawford C & Krebs D (editors) *Handbook of Evolutionary Psychology.* Mahwah, NJ: Erlbaum, 1997, pages 87-130. Portions of this essay were originally posted in the Evolutionary Psychol ogy Forum, **www.behavior/net/brody.**

(b) A substantial portion of these children also have working mothers, thus spending long intervals in daycare. It's an easy leap to blame mom's job for the child's aberrations.

I, too, want children with their mothers or with a small group of known, nurturant adults (primate "aunts," human grandmothers) for a good number of years just as was likely true in Africa.

I also generally believe that hyper-parents (or grandparents) often have hyper-children (or grandchildren). There is correlational research that children left to institutions may become withdrawn or clinging as a function of placement age. The children that I've seen, however, are not clinging to strangers, to dad, or even to grandparents. These kids are often less domineering when with grandparents in mom's absence. However, some of them periodically develop a clinging relationship to an aide at daycare and mothers will use these relationships as a basis for leaving their child at a particular setting. (Institutionalized children were often indiscriminate in settings and targets for clinging.).

(c) I also know adult males who are sleepless until their wife is in the door at night. Wife guarding, sperm competition, or separation anxiety? Probably not sperm competition since the Petes drop immediately to sleep when she arrives home. (Others of them cannot get to sleep until after having inter course with her even if she has not been out of the home.) Of course, separation anxiety in either children or in adults could be viewed as a mechanism not only to ensure safety but also to insure existing resources against competitors (other children or other men).

(d) Suomi S: Nonverbal communication in nonhuman primates: Implications for the emergence of culture. In *Segerstrale,* U. & Molnar, P. (Eds.) Nonverbal Communica tion: Where Nature Meets Culture. Mahway, NJ: Erlbaum, 1997, pages 131 -150. I periodically share his observation with anxious moms who have determined children; it is another example of the close reciprocity possible between "cheaters" and "suckers." It gives moms a "reason" for their compliance to their child's directions as well as supporting the need for firm limits such as predictable time-outs. Several mothers remarked that their child does best with adults who are very firm but loving. Many of these same mothers take pride when their son dominates people outside of their home.

The dominance silliness applies to rhesus macaca mulatta; rhesus speciosa are friendly even to graduate students. Macaques attained marketing dominance, perhaps for commercial reasons, and led to decades of mutual primate hostilities.

(e) There are, of course, some husbands who do not have anxiety attacks when their wife detaches. Most of these guys may have another female already in position. If so, the wife may correctly decide that "he doesn't love me any more," and get on with her depression while missing the possibility that his love for her was primarily self-serving even from the onset of courtship.

(f) See other essays on supernormal stimuli and how the physical traits of size and quickness may be effective signals regard less of correlated genetic sturdiness. The suggestion is that larger, livelier males also encounter more risks such that the less capable are injured or killed. Thus, stimuli that fight into the ethological of "supernormal releasers" have a key role in mate selection. Liveliness is a powerful factor. I recall a pet store with two display windows. Young ferrets wrestled in the one, young rabbits sat quietly in the other. The ferrets had 6 people watching them; the rabbits 2.

The "healthy, sexy son" explanation sug-gests that distal payoffs for the mother's genes are better if he is large, quick,

intelligent, and acquisitive. These traits in a son make him attractive to egg bearers, raising the chances of his mother's genes to travel another generation. Her tactics shift as she gets older because she is less likely to have healthy sons. Unfit males generally do not mate (darned Y chromosome? or exclusively female choice?) whereas nearly any female will find a guy. Thus, an older mom will be more genetically successful if she pumps out daughters. The data followed the theory in this case. Dawkins, R. (1976, 1989) *The Selfish Gene.* New York: Oxford.

(g) Fernald A.: Human maternal vocalizations as biologically relevant signals: An evolutionary perspective. In Barkow, J., Cosmides, L, & Tooby, J. (editors) *The Adapted Mind: Evolutionary Psychology and the Generation of Culture.* New York: Oxford, 1992, pages 391-428.

(h) Domineering males deteriorate sharply when they are dumped even by the enablers they recruited. Their deterioration has immediate gains ("He really needs me, yep, I'll stay.") but delayed risks given that their sweetie was originally attracted to their gruff, strong manner. Crying and whimpering appear inconsistent with Symons-Buss standards. Even in younger children, the overlap of anxiety and domineering behavior seems inconsistent. It could be that anxiety is one more tactic to attract resources, particularly while you are temporarily smaller or weaker than your siblings. It seems to work for the tough guys at any age.

It's possible to "see these effects everywhere." I know several teen age arrogant types who can do their own homework provided that mom is somewhere in sight in the kitchen. Harry (9 years old), startled his psychiatrist by rooting through mom's purse without asking permission. Desipramine held him for a while, Zoloft aggravated the grandiosity, Ritalin did little. He settled, did his work, and carried groceries for mom after starting Risperidone. Willie, a 40 year old tough guy, "had" to call his wife after stopping here at 7:40 a.m. on his way to work after sniffing coke the night before. He relaxed during our therapy session but didn't do so completely until he spoke with Cindy. A person with panic attacks will cling to someone in middle of the night for relaxation.

Hollywood has also noticed the phenomena. In "Eddie" a defiant basketball player complained to his female coach, "I can't believe you told my mother." He subsequently was far more cooperative. A host on a local radio station remarked, "Some of these guys will lead cops on a high speed chase but always mind their mothers. Put their mothers in the patrol cars." I believe a character in "Pal Joey" asked, "Why is it that when a man has problems with a woman, the first thing he looks for is another woman?"

The lack of an enabler is a recurrent problem in alcoholism. "God" is an important element in AA treatment programs. God is perhaps an ultimate enabler, providing a mix of toughness and protection. Religiosity is often a symptom of bipolar disorder. I remember several female manics, "children of alcoholics" who handled anxiety by "giving it to God." They also had a ritual of having someone else open their Bible and, with eyes closed, pick a verse to help make a risky decision. A rigorous behaviorist would liken the payoffs to a variable interval schedule of reinforcement and there are sufficient cognitive tactics in believers to get them past long intervals of no reinforcement or of negative outcomes from a scriptural hint.

You may need to treat some manics by finding an assertive enabler (tough but caring). An "alpha" therapist can become

an essential prop for a powerless manic who exhibits dysthymia. Such a relationship should evolve until the dysthymic takes the leader role and the therapist slides into "back up." Contingent caring is a powerful tool despite our loyalty to non-contingent acceptance. Some data suggest that a key factor in recovery from alcoholism is the presence of an active but determined family. Again, the "tough but loving" morph of a reciprocity contract. Put the trained spouse back into harness and the drinker gets better.

Parents sometimes do these things instinctively. Martha set up her enabler son with a manic girl. His past choices were customarily bipolar types with drug and alcohol problems. Annie, Martha's young coworker, is a clone of Martha, productive, respected, high energy, proud, and looking for a connection. Annie called him for the first date.

Role switches are certainly possible. George was critical of his wife but flirtatious with other women for a decade. Ruth "flipped" one day and stopped waiting on him, started going out with her friends, and making him do things for himself. He angered, then trembled. He then adopted the tactic of minimizing his disagreements with her in order not to elicit her departure. Their roles reversed quickly from a 20 year pattern. Kelly and Hank (classic manics) have dated for several decades, each of them keeping to their own ambitions. Hank eventually dropped her; Kelly then lost sleep and weight, responding badly to benzodiazepines and SSRIs until he called her. She quickly agreed to schedule 3 short dates per week and to reserve Saturdays for him. She then put a couple pounds back on and glowed; he complained that she was a little too close.

Some manics have "back-up" crews to avoid emotional blackmail or dependency on a single partner.

(i) Nesse R & Williams G: *Why We Get Sick: The New Science of Darwinian Medicine.* New York, New York: Vintage, 1995.

Editor's Note: The May issue of The ASCAP Newsletter will have the final four (4) sketches of this series in it. *c8*

DEPRESSION CENTRAL:

http://www.psycom.net/depression.central,litml

This site is Internet's central clearing house for information on all types of depressive disorders and on the most effective treatments for individuals suffering from Major Depression, Manic-Depression (Bipolar Disorder), Cyclothymia, Dysthymia and other mood disorders.

Here is some of the contents of this WebSite:

- Bipolar (Manic-Depressive) Disorder
- Borderline Personality Disorder
- Causes of Mood Disorders
- Cyclothymia
- Diagnosis and Classification of Depression
- Dysthymia
- Electroconvulsive Therapy (ECT)
- Epidemiology of Mood Disorders
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- Usenet newsgroups devoted to Depression
- Women and Depression
- Writings by People with Mood Disorders
- WWW Sites Devoted to Depression

ABSTRACTS & EXTRACTS...

Roush W: Worm longevity gene cloned. *Science,* 1997;277:897-898.

Kimura KD, Tissenbaum, HA, Liu Y, & Ruvkun, G: Doe, J.: *daf-2,* an insulin receptor-like gene that regulates longevity and diapause in Caenorhabditis elegans. *Science,* 1997;277:942-946.

Extract: The worm (Caenorhabditis elegans) ages about 5 human years for every day of its life and usually lives about 14 days. Even so, when over-population occurs in an area, a pheromone is produced by the worms, storage of fat occurs, and the worms go into a "dauer" phase of suspended animation for 2 or more months (equivalent of 300 human years). The *daf-2* gene that allows this transformation into this "dauer" phase has been cloned and the protein it produces functions like an insulin receptor.

Changing proline to leucine in human insulin receptors produces diabetes and obesity in humans; the same changes *daf-2* produces fat deposits in worms. Small mutations in *daf-2* allows the worm to live 2 to 3 times the normal worm life span without going into the "dauer" phase.

It is possible that changing glucose metabolism could slow the again process in higher organisms. It is known that caloric restriction in rats and mice prolongs their life-span. The 2 year normal life-span in mice can be increased up to 40%, by decreasing caloric intake. Another gene, *daf-23,* produces P13 kinase which transmits signals into the cell. (In mammalians, P13 kinases are changed when insulin binds to its receptor.) Looking at the amino acid sequences, daf-2 proteins, human insulin receptors, and insulin-like growth factor-1 receptors, all seem to have a similar evolutionary origin and probably a similar function. Loss of mammalian insulin receptor activity produces leprechaunism, lipolysis, and ketoacidosis in humans; daf-2 worm mutants have fat deposits.

When there is a lot of food, Caenorhabditis elegans produces high levels of an insulin-like hormone that binds *daf-2.* this may make *daf-23* pass information through a second messenger that it is time for the cell to use up energy. When there are more worms than food, pheromone concentrations increase and the worm's insulin level decreases precipitating the "dauer" phase.

Diapause arrest is necessary in many vertebrate and invertebrate groups to cope with environmental extremes by decreasing metabolism and the rate of aging in order to prolong the reproductive period. Environmental extremes may have selected for *daf* genes. Heterozygous mice with diabetic genes live during a fasting period about 20% longer than wild controls. The prevalence of Type II diabetes in man, may reflect survival from earlier famine periods.

These studies may lead to ways to prolong the life-span, study insulin signaling, and find new treatment approaches for diabetes.

Extracted by: Beverly J. Sutton
ASCAP Society Member

Von Bartheld CS & Schober A: Nitric Oxide synthase in learning-relevant nuclei of the chick brain: Morphology, distribution, and relation to transmitter phenotypes. *The Journal of Comparative Neurology,* 1997; 135:135-152.

Abstract: Nitric oxide (NO) has been implicated in learning in the hatchling chicken. To examine morphological and neurochemical properties of neurons that contain nitric oxide synthase (NOS) in brain regions known to be involved in learning and memory, the NADPH-disphorase technique was used in conjunction with immunocytochemistry and tract tracing. A distinct cell type was NOS-labeled in the lobus parolfactorius (LPO) in the telencepha-lon, and neurons were labeled in the area ventralis of

Tsai (AVT), the substantia nigra (nucleus tegmenti pedunculo-pontinus, pars compacta, TPc), and the locus coeruleus in the brainstem. Thus, NO may influence processes of learning and memory in the forebrain after release from intrinsic neurons and/or from extrinsic NOS-projections originating from the brainstem. Dil-tracing revealed that most of the NOS-positive neurons in the ACT/TPc project to the basal forebrain. The majority of tyrosine hydroxy-lase-positive (presumptive dopaminergic) neurons in the AVT and TPc expressed NOS.

Double-labeling with antibodies to tyrosine hydroxy-lase, choline acetyltransferase, somatostatin, and the neurotrophin receptor as a marker for noradren-ergic coeruleus neurons showed that NOS was not co-localized with noradrenergic or somatostatiner-gic neurons, and that less than a third of the cholinergic neurons were double-labeled for NOS. Injections of 6-hydroxydopamine in the brainstem did not reduce the density of NOS-labeled fibers in the LPO, indicating that most of the NO in the LPO originates from intrinsic neurons in the basal forebrain. Thus, NOS-containing presumptive local circuit neurons in the LPO are the most likely source of NO involved in learning of passive avoidance tasks in hatchling chicks.

Extract: Nitric Oxide (NO) is thought to be a retrograde signaling molecule involved in synaptic plasticity, learning, and the modulation of aggressive behavior. The site of action and the mechanisms involved are a matter of debate. In the hatchling chicken, inhibitors of nitric oxide synthase (NOS) induce amnesia in a passive avoidance test, and this effect appears to be due to the inhibition of neuronal NOS.

Boscarino JA: Diseases among men 20 years after exposure to severe stress: Implications for clinical research and medical care. *Psychosomatic Medicine,* 1997;59:605-614.

Abstract: Epidemiologic studies have linked exposure to severe environmental stress, such as natural disasters and combat operations, to the onset of specific psychiatric disorders. Some research also suggests that these exposures may be associated with the onset of chronic diseases as well. However, these chronic disease outcome studies often have been obscured by bias and confounding.

The medical histories of 1,399 male Vietnam veterans, approximately 20 years after combat exposure (mean years = 17), were analyzed by lifetime Post-Traumatic Stress Disorder (PTSD) status (lifetime PTSD - 332 cases). These men were included in a national, random in-person study of United States Army veterans of the Vietnam War (study completion rate = 65%). After controlling for pre-service, in-service, and post-service factors (including intelligence, race, region of birth, enlistment status, volunteer status, Army marital status, Army medical profile, hypochondriasis, age, smoking, history, substance abuse, education, and income), associations were found for reported circulatory (odds ratio (OR) = 1.62, p = .007), digestive (OR = 1.47, p= .036), musculoskeletal (OR = 1.78, p = .008), endocrine-nutritional-metabolic (OR = 1.58, p= .10), nervous system (OR == 2.47, p< .001), respiratory (OR = 1.54, p= .042), and non-sexually transmitted diseases (OR = 2.14, p < .04) after military service.

Although this study has some limitations, it suggests that there is a direct link between severe stress exposures and a broad spectrum of human diseases. In the future, medical researchers and clinicians should focus more on the medical consequences of exposure to severe environmental stress and seek to better integrate psychobiologic models of disease pathogenesis.

Psychosomatic Medicine -Journal of the American Psychosomatic Society

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Psychosomatic Medicine was founded in 1939. It publishes experimental and clinical studies dealing with various aspects of the relationships among social, psychological, and behavioral factors and bodily processes in humans and animals.

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

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