

# ASCAP NEWSLETTER

Across-Species Comparisons And Psychopathology Newsletter

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"[M]ental suffering is rarely the result of genetic error. Rather it is the activation of certain types of potential within us."  
Paul Gilbert<sup>1</sup>

The ASCAP Newsletter<sup>2</sup>  
is  
a function of the  
  
International Association  
for the Study of  
Comparative Psychopathology  
(IASCAP)<sup>3</sup>

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Newsletter aims: 1. A free exchange of letters, notes, articles, essays or ideas in whatever brief format.  
2. Elaboration of others' ideas.  
3. Keeping up with productions, events, and other news.  
4. Proposals for new initiatives, joint research endeavors, etc.

IASCAP Mission Statement: The society represents a group of people who view forms of psychopathology in the context of evolutionary biology and who wish to mobilize the resources of various disciplines and individuals potentially involved so as to enhance the further investigation and study of the conceptual and research questions involved. This scientific society is concerned with the basic plans of behavior that have evolved over millions of years and that have resulted in psychopathologically related states. We are interested in the integration of various methods of study ranging from that focusing on cellular processes to that focusing on individuals to that of individuals in groups.

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Announcement: Congratulations to Mark Erickson, who has earned the Karl Jaspers Award from the Association for the Advancement of Philosophy and Psychiatry for writing "Rethinking Oedipus: An Evolutionary Perspective on Incest Avoidance." He is now working at *The Center for Special Problems in San Francisco*, partly to follow his interest on determinants of incest. His assignment entails learning more about not only the victims but those perpetrating the abuse; he previous: • noted that disrupted familial bonding may precede incest. Effects of incest are increasingly recognized as major contributors to psychopathology. Biological barriers to incest (and lacks thereof) need effective study.

Message from Michael R A Chance:

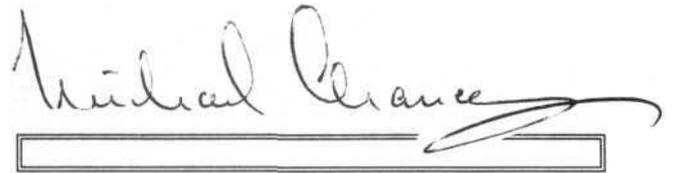
As I retire as IASCAP president I would like to draw attention to two frames of reference which together define Ethology and which are in danger of becoming separated.

These are observational and evolutionary. Both are valid, but observing, recording and describing behaviour is the logical first step. This leads in its most rigorous outcome to transitional probability diagrams for delineating the pathways of response and then the identification of signals evoking particular responses. This amounts to defining the structure of social interaction. It is frequently emphasized that this should be done in the wild, which is, of course, the way it should be done if possible. If this is not possible then the behaviour can be examined in a part of the environment, ie, in an isolate so to speak, eg, gulls nesting on cliffs, chimpanzees in the open, rats in a cage. The essence of isolate formation is to consider how far and in what way the isolation may have distorted the behaviour. Failure to do this has led to so much misinformation coming out of the Gombe Stream Reserve on chimpanzee social behaviour since provisioning was started in 1965.<sup>4</sup>

Paul Gilbert in his latest book, Depression; The Evolution of Powerlessness,<sup>1</sup> writes "the social milieu becomes the dispenser of rewards and punishment and the individual above all else must accommodate to this fact." In this way the methodological continuity between the ethological and psychological dimension is established but as Gilbert points out those like Niko Tinbergen, who are more concerned with the evolutionary frame of reference, ask four basic but related questions:<sup>1p.135</sup> (1) the study of causation, (2) the study of function, (3) the study of ontogeny, (4) the study of phylogeny.

All these, however, can be seen to be subsidiary to the definition of behaviour structure, and in considering human mentality this structural approach opens up the possibility of seeing human mentality as a system which has evolutionary potential into the future via creativity and innovation and especially systems formation. This potential is more and more becoming recognized as a feature of mental health and so relevant to all our concerns as much as is the way in which our minds have evolved.

Welcome to John Price's Presidency!



News; Molecular evolution occupies two Research News sections in the 3 July Science (1992;257;30-2). For example, a new multidisciplinary group called the Society for Molecular Biology and Evolution debated over the origins of introns; an "intron-early" school holds that these strings of seemingly no-sense (non-coding) stretches of DNA are in the same position with respect to the coding stretches (exons) in widely separated organisms, meaning that their common ancestors were extremely ancient. In our language, this means there is major scientific interest in how basic plans are coded and transmitted. Indeed, particular introns may go back to the common ancestors of animals and plants.

Doubters (the "intron-late" school) hold that this is the exception rather than the rule and that findings are chance. Believers feel that seemingly "missing introns" might have been lost to "streamlining" effects. Of reported high excitement at the meeting, a "missing intron" showed up in a mosquito exactly where it had been predicted from organisms ancestral to mosquitoes but from

where it was missing in organisms from which it was perhaps trimmed.

The theory that this data bore upon is the "shuffling exon" theory of Walter Gilbert, Nobelist from Harvard: introns (whose existence since they are non-coding has been a mystery since their discovery) physically separated protein-coder-sequences and thereby "made it easier and faster for exons to move about through recombination thereby permitting rapid evolution of novel forms."

In contrast, J Palmer of the competing intron-late group predicts that as the gene at issue is sequenced for other organisms, many other new introns will be found in unpredicted locations awkward for the exon-shuffling hypothesis. This is an unfolding story for which clear answers will provide new chapters.

Abstract; Rapoport JL, Ryland DH, Kriete M: Drug treatment of canine acral lick: an animal model of obsessive-compulsive disorder. Arch Gen Psychiat 1992;49:517-521.

Canine acral lick dermatitis is a naturally occurring disorder in which excessive licking of paws or flank can produce ulcers and infection that require medical treatment. Forty-two dogs with severe chronic canine acral lick dermatitis were treated in three double-blind crossover comparisons of clomipramine hydrochloride/fenfluramine hydrochloride, and sertraline hydrochloride placebo. The serotonin uptake blocking drugs were clinically effective, while the other drugs were not. Based on phenomenology and pharmacological response, we propose canine acral lick dermatitis as an animal model of obsessive-compulsive disorder.

#### Crimean Meeting by John Price<sup>5</sup>

In May 1992, Victor Samohvalov and Vitaliy Egorov (who contributed to the June 1992 ASCAP) hosted an International Conference on Ethology and the Evolution of Human Behaviour in the Crimea, sponsored by the Crimean-German Center for Human Ethology and

the Crimean Association of Psychiatrists and Psychologists. It was the first international psychiatric conference to be held in the former Soviet Union since the republic gained its independence; and it was the first conference in the world to be jointly sponsored by organisations devoted to ethology and psychiatry.

Ethology was formally banned in the Soviet Union until 1987 because of it was linked to sociobiology, considered anti-Marxist. In spite of this, the Crimeans had been having secret joint psychiatric and ethological meetings for ten years. They hike into the mountains, sleep in tents, and present their papers under the trees. Their ethology is technically called neurophysiology. Guests at previous meetings have included Irenaeus Eibl-Eiblsfeldt, the current president of the International Society for Human Ethology, and William Hamilton from Oxford who is well known for his mathematical solution to the problem of the evolution of altruism.

Although ethology and ethological psychiatry are now perfectly legal in the Crimea, the secrecy of the meetings has not been entirely lost. On arrival at Simferopol, the capital of the Crimea, the guests were taken to the history department of the university and entertained by ethologists disguised as physiologists. Then, although the conference was advertised to take place in Simferopol, we were taken by bus for fifty miles to a dacha on the Black Sea coast, where the conference was, in fact, held in surroundings of outstanding natural beauty. A conference room (and refreshments) were provided by the village champagne factory (which exports two million bottles a year to Germany); and on the last day the old habits reasserted themselves as the whole conference hiked up into the mountains, hearing the first paper on a ledge overlooking the sea, and

then, after another half hour hike, the second paper beside a mountain stream, the third under a clump of juniper trees, and so on until the weary throng stumbled back to the dacha for the final banquet.

For many years the Crimean Department of Psychiatry under the leadership of Professor Alexey Nikolacvich Kornetov (accent on the second syllable, pronounced "yet") has been opposed to the Moscow school with its "delusions of social reforms." Its interest in ethology as a basic science for psychiatry owes something to Detlev Ploog of Munich, who unfortunately could not get to the conference because of a strike on German airlines (but see his contribution to the Festschrift for Sir Martin Roth. There are differences in diagnosis and other matters from Western psychiatry, and I was fortunate to receive from the publisher, only a week before the conference, Paul Calloway's excellent monograph on Soviet and Western Psychiatry. This book, virtually a joint Russian and Western textbook of psychiatry, greatly helped in avoiding confusion over labels and diagnostic systems.

The book of conference abstracts contained thirty papers from departments of psychiatry in the former Soviet Union, mostly from the Crimea, but others from Moscow and as far away as Latvia and Tomsk in Siberia. Other contributions came from departments of zoology and anthropology. The interest is partly in applying ethological methods in the study of psychiatric patients, and partly in conceptualising psychiatric disorders in the context of evolutionary biology. The early work of the Crimean department is summed up in the monograph by Kornetov *et al.*<sup>8</sup>

Professor Kornetov gave a fascinating paper on "The Problem of Totalitarian Socialism in an Ethological Context." Professor Pavlovitch Samohvalov described the Crimean Project

which is an ethological study of patients, taking particular note of cultural differences (there are 100 national groups in the Crimea), sex differences (both biological sex and sexual orientation), and age differences (there are, of course, no official social classes in the former Soviet Union). Other papers from the Crimean department covered the non-verbal behaviour of the schizophrenic patient, using a technique similar to that described by Ivor Jones. The facial expression, particularly, the smile, and posture and gesture have been subjects of study. Has anyone ever seen a schizophrenic patient shrug his shoulders, or place his finger on the side of his nose? How does psychiatric illness affect what a patient does, and how he relates to important people in his life? How does the patient instruct his stockbroker, his bookmaker, his accountant, his bankmanager, his lawyer, or his tax accountant? All these things are as important as his reports of his voices, or the fact that he is unable to praise his children. Does the onset of illness change the ratio of smiling while talking to smiling while listening (an index of social dominance)? The answers to some of these questions were reported; others await future research.

Sadly for the hosts, the conference was not well attended from the West, but was particularly gratifying for me to have a chance to get to know Tyge Schelde from Copenhagen whose ethological studies of depressed patients were described in the Feb 1991 ASCAP. Tyge speaks excellent Russian, which helped to raise the prestige of the Western contingent.

A major current concern of the Crimean delegates was their application to be an independent republic. Another was the rate of inflation and the scarcity of foreign exchange, which makes it difficult for them to obtain Western books and journals,

let alone attend conferences in the West. The rouble is now ninety to the dollar in the bank, 120 to the dollar on the street: a year ago it was forty to the dollar. Living in the Crimea is cheap (in dollar terms), but getting there is not cheap as one has to fly via Moscow and stay overnight there. A cup of coffee in the Intourist Hotel in Moscow cost fl.50, whereas, a three course lunch in the best hotel in Simferopol cost 50p.

Next year's conference will be on "The Biological Roots of Human Behaviour", June 1-4, 1993, and hopefully, by then, there will be direct flights from London to the Crimea, or at least a boat across the Black Sea from Istanbul. It is proposed to hold the conference in a boat cruising the Black Sea coast (total cost is \$370 for the four days, including volleyball, ping-pong, swimming pool and book of abstracts). But going by past form, it may all take place in a submarine. The conference language is English, which is the second language in Crimean schools. Information about next year's conference can be obtained from Dr. Vitaliy Egorov (accent on second syllable, "o" as in "roar"), Department of Psychiatry, Crimean Medical Institute, R. Luxemburg str. 27, Simferopol, Crimea, Ukrania 333000, CIS. Dr. Egorov's interests include parent-offspring relationships in schizophrenia, and the biological function of the types of behaviour associated with a predisposition to schizophrenia.

#### HBES Annual Meeting by J K Pearce

The 1992 annual meeting of the Human Behavior and Evolution Society was held this July in Albuquerque at the U New Mexico. One hundred forty people had signed up for the meeting and more walk-ins were expected; this was a new high for HBES meetings.

The U was soothing--a big campus with buildings all finished Mexican

"adobe" style, few trees, big-sky country, and a handful of easy going Summer School students. Kids on roller blades gracefully zipped along the wide concrete and brick walkways. The atmosphere was a mixture; laconic campus and intense HBES scientists.

I had expected desert weather, hot dry days and cool nights, but in July it rains. Albuquerque gets much of its annual rainfall in July when moist air comes in from the Gulf of Mexico. Three days out of five, slate-gray fronts appeared in the Southeast, bringing hours of soaking rain. In addition, on hot afternoons thunderheads produced brief heavy rains. I bought an umbrella.

The disciplines most conspicuously represented were biology, field anthropology, the psychology of Darwinian algorithms, and the Darwinian historians. Psychiatry was represented by John Beahrs of Portland, Oregon, John Wylie of Washington, Randy Nesse of Michigan, and Brent Wenegrat of Stanford.

John Beahrs' background in hypnosis and Transactional Analysis has well prepared him to think about multiple brain modules. Add evolutionary insights into deception and you get a fresh perspective on neurosis. As Beahrs sees it, victims of childhood psychological (and physical) abuse dissociate to fight back indirectly, thus deceiving the oppressors. He thinks therapist should be wary of posing as powerful healers--thereby replicating the original dominance/submission problem; he thinks therapists should focus on encouraging the strengths, not uncovering. He and his like minded colleagues are working with a series of multiple personality disordered patients who have agreed to put their efforts into a program of developing strengths with planned self-therapy and infrequent (monthly) appointments. He reports the treatment outcome is similar to more intensive, uncovering therapy

(but, of course, much more cost efficient). Sicker patients do not enroll in such programs; they prefer uncovering past traumata. No one knows what therapy outcomes are for standard uncovering treatment, but many patients get worse, much worse.

Other presentations of clinical interest: T Shellberg of Dearborn, Michigan, gave a witty paper about tall people. Height is regularly equated with superior status, an assessment bias of great antiquity, but something we ordinarily don't think about. K MacDonald, a developmental psychologist at Cal State U (Long Beach), did a poster presentation pointing out that attachment and warmth are separable factor analytic dimensions. Attachment has to do with protection: warmth is a reward system that enhances learning. Attachment and warmth are intertwined, but biologically distinct.

D Buss (UMich) a lucid intelligence, is trying to bridge the gap between personality psychology and evolutionary psychology. Personality researchers now generally agree on the factor analytic independence of the Big Five dimensions of personality: Extroversion (vs Introversion), Agreeableness (vs Disagreeableness), Emotional Stability, and Intelligence. Each of these dimensions has elements of biology (eg, shyness), developmental vicissitudes (eg, how one has been treated by others), and situational influences (no one is the same in every situation), but the Big Five personality traits are reasonably stable for most people most of the time. Buss constructed a list of marital annoyances: condescension, possessiveness, neglect, abuse, unfaithfulness, inconsideration, moodiness, sexual withholdingness or aggression, alcoholism, self-centeredness, sloppiness, etc. Buss then studied spouse complaints and how personality traits correlate with interpersonal strat-

egies, eg, intelligent spouses try to deal with conflict by being loving; unintelligent spouses tend to rely on insults. This seems to be a promising direction for research.

Most of the conference was of scientific interest, but not directly relevant to psychotherapy. Examples: Only 3% of bird species practice cooperation involving more birds than just the mating pair. They do so in unusually resource poor or dangerous environments where going it alone or by pairs would lead to extinction. JD Ligon (U New Mexico) gave a plenary talk on the details of these diverse adaptations. R Baker and M Bellis, of the University of Manchester (England), gave exceptionally interesting talks on sperm competition in humans. They measured sperm content in male ejaculate (using condoms) and developed the ability to predict sperm content for various matings. They studied flow back from female vaginas after various matings (a tricky business, but possible). Findings: female orgasm resulted in more sperm being held in the vagina and cervix. Extra pair matings led to more sperm being kept. Conclusions: The patterns of findings suggest that in ancestral species females mated promiscuously (as do chimp females, who are thought to earn better treatment for their babies by making all the fellows suspect they might be papa), but exercised considerable female choice by rejecting sperm from men who are not highly valued. The ancestral species might then later become somewhat monogamous, but stay receptive to high quality sperm from valued strangers. Conclusion for our times: We know that illegitimacy (ie, putative father is not biological father) ranges from 3% to 30% in various communities. Part of the reason seems to be that women may become pregnant more easily in extra pair matings.

Men want to impregnate (at least

they were selected for fertility in the ancestral species) and women want to pick the best man available. Result: sperm wars in which each sex has evolved gimmicks. H Sapiens penises, the glans shaped like the cap of a mushroom, are designed to be sperm removers. Thrusting, the erect penis traps the other guy's sperm and draws it out of the vagina. Then, after ejaculating, the erection vanishes and a penis quickly slides out, removing none of its own sperm. (After ejaculation, the guy's sperm is at the mercy of the female's tricks for storing or expelling sperm.)

Sperm turn out to be more complicated than I had supposed. Apparently only 1% of sperm are capable of incoination. The rest continue to fight the sperm war by either agglutinating in masses to block access to the cervix, or, in the case of kamikaze sperm, seeking out and destroying other men's sperm. Remarkable! I think it is fair to say that everyone has been blown away by these findings.

J Tooby and L Cosmides (U Cal Santa Barbara), giants of evolutionary psychology, have done it again. They presented experiments that demonstrated that humans are very good at reasoning about frequencies of events when the problems are embedded in familiar ecological contexts (76%), and even better when they are required to construct a visual representation of the frequencies involved (92%). So, it is not true (as had been supposed) that people are poor at probabilistic reasoning, nor would it be expected in light of the fact, established by one study after another, that people are very good at figuring out what actions are in their best interests. What people are not good at is mathematicians' language of probability. For effective reasoning, a naturalistic context is all important.

In her PhD thesis, Cosmides did essentially the same job. Humans are

terrific at reasoning about obligations, as long as the problem is presented in a natural context, ie, who owes who what. Thus, she demonstrated that reciprocity satisfied the criteria for a Darwinian algorithm. Now Tooby and Cosmides have done the same thing for reasoning about frequencies. They demonstrate that human thinking consists of Darwinian algorithms, a collection of special skills that evolved for solving the typical problems people encountered in the environment of evolutionary adaptedness. Some gifted people are good at abstract reasoning as well, but not very many.

The renowned biologist, W Hamilton (U Oxford) was banquet speaker. He talked about the genetic problem of resisting endemic parasites. Rapidly reproducing parasites try to match the antigenic structure of their slowly reproducing hosts. The hosts must, by wise selection of mates, breed an unfavorable environment for the parasites. How do they do it? Females mate only healthy males. In many birds, and in some primates, this means the most brilliantly colored males. Brilliant colors mean health, which means parasite resistance. In birds in which males contribute to the care of the young, females will even put up with less paternal investment in order to get the fittest males. It is well to suspect an endemic parasite problem in any species in which the males are brightly colored. Science (17 Jul 92) brings news that some female birds select mates with the most symmetrical feathers; yet another indication of good genes.

The Darwinian historians are now talking about long term fitness" in elites. That makes a lot of sense. Elite families may not always have more children, but they take good care of those they have, and in the long run they produce more children. At this meeting, E Voland of Gottin-

gen, Germany, presented a study of farmers in Krummyhorn, Germany, from 1720 to 1874. Rich farmers had more children. Will historians ever tire of finding more examples of the Darwinian fitness of elites? They work hard to make the same point over and over again. Voland did find something somewhat surprising: at times when crowding made male children less valuable than female, male infant mortality went up. (Causes of deaths unknown.)

N Chagnon (U Cal Santa Barbara) reported on the latest chapter of his studies of the Yanomamo in Venezuela. Enjoying the patronage of the President of Venezuela (meaning use of Venezuelan Army helicopters), Chagnon has more comprehensively surveyed Yanomamo ecology. Turns out that not all the Yanomamo are "fierce people". The nice guys have retreated to steep hillsides where they may have to work hard to make a living, but they don't have to kill people. In the fertile flatlands, the Yanomamo easily travel long distances to raid, killing men and abducting women. The less fierce Yanomamo are driven into the steep highlands.

I have commented on only 11 of over 90 presentations. Special appreciation should also go to some outstanding writers and talkers: E Dissanayake, who has written an extraordinary good book Homo Aestheticus; RW Smuts, father of an eminent primatologist, who has, after retirement from a business career, brought a literate intelligence to evolution studies; J Hartung for his exegesis of Talmudic rules governing rape; and B Jankowian, an anthropologist who put in a good word for love.

The HBES annual meeting is a science fair. Collectively, its members are assembling an up-to-date model of human nature. This model must be the foundation for any scientific study of psychopathology. We are the lucky beneficiaries of their scientific zeal.

## Problems with Basic Plans

by M Waller

I would like to take up, by a very roundabout route, some of the definitional issues raised in the May ASCAP Newsletter, particularly those concerning "basic plans". As I have mentioned before, prior to getting involved with evolutionary theory, my areas of academic interest were first political science and then organization theory. Both underwent radical changes as a result of fundamental, and parallel, shifts in the prevailing analytical framework.

Up until the late 1950's, the traditional approach to teaching political science was what might be called the institutional/constitutional model. This simply assumed that governmental institutions, such as the US Presidency and Congress, or the UK parliament, were in the business of optimally governing their respective countries. If things did not work out, it was primarily due to the inadequacies of specific individuals or to structural weaknesses in the constitutional framework. The difficulty is that the predictive power of this model is very close to zero. Politicians, and those they work with and respond to, are not a band of brothers (or sisters) working towards a common goal. They are a variously motivated rag-bag, and the actions which result from their deliberations are better seen as resultants, the outcome of a number of discrete forces acting on single body.

There is a problem with this "pluralistic" approach in that studying it in action is very difficult and some of the findings are not what people want to hear. One study apparently revealed that a particular Governor's chauffeur was extremely influential in the decision making process! However, difficult or not, there can be no doubt that, if you can get at the facts, pluralism has much greater predictive powers than

the unitary, institutional approach it replaced.

Much the same resolution took place in organisation theory. The sixties were dominated by "systems thinking". This viewed the organisation as an entity which survived by maintaining its alignment to its environment, ie, business. It too proved to be a very inadequate basis upon which to make predictions. One classic study showed that many traditional authoritarian bosses would sooner see their firm go bust than make the personal, behavioural adjustments necessary to cope with a shift to a more volatile market. Once again, academic minds had to catch up with common sense. When we speak of IBM doing this or that it is no more than shorthand for another resultant reflecting the various motivations of the individuals involved, multiplied in each case by the power and influence at their disposal. Again very difficult to study, but likely to have far greater predictive strength than the unitary approach it replaced.

Against this background I get a certain sense of *deja vu* with psychopathology in general and terms like basic plans in particular. It seems to me that classical Darwinism, with its focus on individuals, equates with the unitary models previously favoured by other disciplines. In contrast, neo-Darwinism with its emphasis on the multiplicity of genes within each individual, represents the new pluralism.

The difficulty for psychopathology is that its medical origins make focusing on the individuals not only intellectually natural, but also a legal and professional requirement. Even if our whole culture was not built upon the notion that the most important thing in the universe is the human being, the mission to heal the sick must strongly re-enforce the natural tendency to view a gene which causes dysfunctional suffering to a

human as failing to do its job.

It seems to me that the crucial thing is to delineate clearly between the psychopathologist as clinician and the psychopathologist as scientist. The former is concerned with relieving the suffering, the latter has very disinterestedly to ask the question: Could this suffering in any way further the replicative interests of the genes which cause it? The potential offered by this re-orientation seem to me to be enormous. Unlike political scientists or organisation theorists, we are not dealing with collections of people with their multifarious and shifting motivations. We are dealing with genes and their fixed effects. The great majority of those associated with mental processes are doing exactly what the individual-centric model would predict: operating to the selective advantage of the individual. (Its comparative reliability is another reason why the unitary approach has persisted so much longer in this sphere.) Our job is to hunt down and explain the evolutionary rationale of that small minority which patently are not.

This brings me back to "basic plans". My contention is that even with the very specialised connotation put on them by Price and Gardner in the May ASCAP Newsletter (p.4-6), they are still seen as properties of life-forms rather than reflections of different genetic strategies. For example, P&G define hibernation as "a midrange basic plan, an option for some animals confronted with climatic adversity". I know that "option" is not meant to be taken literally, but, if we really accept the standard neo-Darwinism metaphor, option refers to the means whereby, in an appropriate vector such as a bear, hibernation genes persist through time.

This is more than "just another way of looking at things." The alternative, individual-centric approach is

known to be fatally flawed. It cannot adequately explain the evolutionary process. Its shortcomings drove Darwin back to a form of Lamarckism. Using it as the basis for thinking about any kind of evolutionary development is like using a component with an intermittent fault in an aircraft engine. You never know when it is going to let you down.

The implication in relation to depressive yielding/defeat reaction is, as I have already suggested, that we should be asking the question "how does this help the genes responsible increase their frequency in the next generation?" rather than "how did this initially benefit individuals within the species which experience it?" Put more figuratively, we should shift the emphasis from the puppets to the puppeteers!

#### Waller-Gardner exchange by RG

Are basic plans and selfish genes incompatible? Does a physician's preoccupation with the body blind him/her to population effects? Is one a puppet and the other a puppeteer?

First, how good to have a social scientist knowledgeable about biology in the ASCAP readership. Our mission statement includes: "We are interested in the integration of various methods of study ranging from that focusing on cellular processes to that focusing on individuals to that of individuals in groups."

Also valuable is the systems approach and the metaphor of organizations and their effects to bodies and their effects. Attribution of responsibility for actions within organized groups (eg, governing groups) need not match reality. So Mike Waller suggests that genes may have actions that we attribute to bodies (selfish gene theory). Shared genes may have group effects that a conceptual focus on the body alone doesn't predict.

No problem, but definitely the gene

needs the body as a carrier. Moreover, the gene may act to cause the body to do things (ultimately via the proteins sequenced by coding genes, each a segment of DNA molecule). The body is an organism that in turn when congregated and organized may contribute to population effects: bodies may emit communications affecting other bodies. These grouped may in turn have population-effects. Some genes are closely connected with other genes, may represent modifications of originals. Variations are less basic than the gene that got varied.

That basic plan genes exist doesn't militate against population effects. Indeed, for a particular selfish gene to have its effects, it needs the collaboration of enormous numbers of other genes and their products.

Basic plans do not assume all genes are equal (beanbag genetics) but rather that some are core and others less core but related; hence there are core genes for the mouth and its behaviors; breathing and speaking require action of the core genes and the action of add-on genes also. And speaking of course has much effect upon groups of people behaving. Mike's influential chauffeur talked!

What we talk about are *both* "properties of life-forms" and "reflections of different genetic strategies." It cannot be otherwise.

#### Escalation/De-escalation Strategies

by John S. Price

One problem with the two level diagram (May ASCAP, pages 4, 7 & 8), is that it does not deal with anger. Leon Sloman has made the point that depression is maintained by continuing anger. How does this idea fit into our scheme? We know anger is increased in mania, so it could go into the mania box, but then, what about anger in depression?

I think we need another level of

boxes dealing with anger and its alternative, showing that they are relatively independent of the deliberative level (which Dave Stevens suggested as a name for the higher level during a recent Birmingham group meeting) and of the thymic level (mania versus depression). We could use Aristotle's analysis of the reaction to being insulted (receiving a catathetic signal). He said to be insulted caused pain, but that the subsequent emotional reaction depends on the source of the insult; if it comes from a lower ranking person, we feel angry and indignant; if it comes from a higher ranking person, we feel sad and chastened. We add (adapting the model to our egalitarian society) that if we feel insult to be unjustified and if we are in the right and/or innocent, we feel angry; but if an insult is justified and we are in the wrong and/or guilty, we feel chastened. Let us call this an emotional module (fig 1).

Figure 1. Alternative strategies for social competition in three brain modules

<u>Brain levels</u>	<u>Alternative strategies</u>	
	Escalate	De-escalate
Deliberative module	Conscious decision to fight for win	Conscious decision to give way
Emotional module	Be: angry indignant envious resentful	Be: chastened put down humiliated frightened
Thymic module	Elevation of mood	Depression of mood

Alternative strategies for dealing with an evenly matched adversary or equivalent agonistic situation. Usually the same strategy (escalating or de-escalating) is chosen by each module; a decision in the thymic module facilitates a similar decision in the other modules, and a decision in the emotional

module facilitates a similar decision in the deliberative module, but facilitation probably does not work in the opposite direction. De-escalation in the deliberative and emotional modules facilitates the termination of the de-escalation strategy in the thymic module. Two types of chronic depression are predicted by the model: angry depressives who are escalating in the emotional module, and blocked yielders (Bibring's "clingers-on") who are escalating in the deliberative module.

Then, in any competitive situation, we have three modules monitoring events, deciding all the time whether any action needs to be taken; and if a decision to take action is made, the next decision of each module is whether to adopt an escalating or a de-escalating strategy. The deliberative module decides whether to fight back (or fight on) or to give way; the emotional module decides whether to feel angry or chastened; the thymic module decides whether to elevate or depress mood. For each module, we need to know the sort of information used to decide to act, and the sort of information used to decide whether the action taken should consist of escalation or de-escalation (see fig 2). The modules do not necessarily act at the same time, but if they do, things will clearly go better if they all decide to do the same thing (escalate or de-escalate). If the thymic module opts for depression and the deliberative module opts for fighting on, we get Bibring's depressive "clinging on to unachievable goals". If the thymic module opts for depression and the emotional module opts for anger, we get an angry depressive who feels the emotional disposition to fight but is too depressed to do so. In Depression; The Evolution of Powerlessness.<sup>1, p252</sup> Paul Gilbert gives a quote from a depressed patient which I think gets the spirit of the angry depressive:

I hate her, and there's nothing that can be done about it. I spoil her by thinking her seams are crooked or that she only seems nice because she is

so shallow. I am powerless with her. I do not want to smash her, to get rid of her, to tell her what I think of her. And I hate you (the therapist) for being so strong. I feel impotent. I can't change you. I kiss ass and walk away hating you. It's a passive ragefulness.

This lady seems balanced between escalation in the emotional module and de-escalation in the thymic module; these modules are so active in her case that the deliberative module seems overwhelmed by the others, but on the whole she seems to

Figure 2. Information used in decision-making processes.

Whether to make the change	What change to make (Escalate or de-escalate)
<u>Deliberative module</u>	
Perception of: blocked goals	Escalation in emotional module
no progress	Escalation in thymic module
	Likelihood of winning
	Good omens
<u>Emotional module</u>	
Receipt of catathetic signal(s)	Escalation in thymic module
threat or attack	Rival is: lower-ranking in the wrong
insult	Criticism unjustified
criticism	Accusation unfounded
omission of expected anathetic signal	
<u>Thymic module</u>	
Amount of: punishment received	No information used
physical/mental pain experienced	Decision randomized with probability of mania
frustrative non-reward experienced	
RHP lost	
(?) activity in thymic module	

In the right hand column the information mentioned promotes escalation; the opposite information would promote de-escalation.

have accepted her powerlessness, so on the evidence given we should probably say she is de-escalating in the deliberative module. Why is the emotional module out of line with the others? It could be that she is an angry person (with a genetic or developmentally contingent tendency to respond with anger); or it could be something in the situation specific for the emotional module. This could be a sense that the behaviour of the other person is unfair or unjustified in some way, it has offended against our idea of what is socially acceptable (like being insulted by a subordinate, or accused when we are innocent, or contradicted when we are in the right, or being condescended to by someone we think we are better than). The emotional module is sensitive to social rules and their infringement, the deliberative module to realistic predictions of possible outcomes, the thymic module to how much punishment (or frustrative non-reward) we are taking on board.

One cannot help noticing how the three modules seem to fit Paul MacLean's three brains, and might suggest a localisation of the thymic module to the reptilian brain (corpus striatum), the emotional module to the paleomammalian brain (limbic system), and the deliberative module to the neo-mammalian cortex.

One basic rule seems to be clear and important for therapy, that to bring to an end the thymic de-escalating strategy (basic yielding strategy) which we hypothesise to be equivalent to depressed mood, the mode of the other two modules needs to be taken into consideration. One approach is to replace the involuntary yielding of depression with voluntary yielding. In that case, it is the challenge of therapy first to identify escalating modes in either the deliberative or emotional modules, and then to bring about a switch to de-escalation. In the case

of deliberative de-escalation, it does not seem to matter to whom the yielding is directed. It does not have to be to the person or symbolic entity who was the original "evenly matched adversary". Submission to anyone seems to do the trick, provided they are powerful enough. Thus, submission to a cult may end a depression caused by confrontation with a parent or other person. How does de-escalation in the deliberative module bring the depression to an end? One way is by stopping the punishment, as in a fight or quarrel. But it may be that the very fact of de-escalation in the deliberative module is enough; as though the thymic module is monitoring the deliberative module as well as punishment received, as follows: Punishment + deliberative escalation = do something vs Punishment + deliberative de-escalation = wait & see.

Of course, there are other options in therapy apart from voluntary yielding. One alternative is to help the patient to win the contest in spite of the depression, in which case the deliberative and emotional modules need to be in escalating mode. Or the therapist can assist the patient to leave the field (for example, by rejecting the other's claim to be a valid rival, as John Pearce suggested in July ASCAP). Or, perhaps best of all, the therapist can facilitate a switch to the hedonic mode and work out differences by negotiation. In other words, ethological diagnosis requires an extensive and intensive survey of the patient's competitive position and the options available.

*The Nature of the Thymic De-escalation Strategy*

Our theory does not concern itself with the detailed organisation of the strategy, except to show that the individual features are consistent with a yielding function. The intrapsychic processes of the strategy have been studied in detail by both psychoanalysts and cognitive psychologists.

It is interesting to note some of the things that occur and some which do not occur. One thing is that the grammar of the thymic module has no place for an object - unlike the emotional module in which the object may be very much present, either as an object of anger or as a source of dysphoric emotion such as grief.

I have just reread Rado's paper; he conceptualises depression in terms of the ego yielding to the superego, and talks of the "complete subjection of the ego to the unrestrained tyranny of the sadistic superego", and also in terms of the ego yielding to the Id: "Such total capitulation on the part of the ego to the sadism of the id would be incomprehensible, if it were not that we realise that it falls a victim to the indestructible infantile illusion that only by yielding and making atonement can it be delivered from its narcissistic distress." (His italics; by narcissistic distress he means lowered self-esteem.) So, according to this model, the dyadic agonistic encounter is internalised and re-enacted between different components of the mind. Switching to an archetype terminology, we must have archetypes for the two main hierarchical situations, dominant self and subordinate other, and dominant other and subordinate self. In depression it is the latter two which are activated, and instead of being projected out onto a real opponent, the dominant other remains internalised and subjects the subordinate self to cathetic signals, which may be represented in consciousness as a self-accusatory tirade, as Paul has described so clearly in his book. This odd process may be what I have termed the internal referee, the agency that ensures that a ritual loser loses, and performs the function that a real referee performs in sporting contests; it is not the dominant other archetype which is the

referee, but the very fact that he is there: one could say that the dominant other archetype serves as the referee's whistle.

While on Rado's paper, which is a tour de force, I might mention some other points he makes, because it summarises all his own thinking as well as Freud's and Abraham's. His view on the importance of self-esteem fits our conceptualisation of mood change as a form of RHP management:

The most striking feature in the picture displayed by the symptoms of depressive conditions is the fall in self-esteem and self-satisfaction (selbstgefuehl).

He almost, like Bibring, also says that a fall in self-esteem is a cause of depression. He says those predisposed to depression are characterised by "an intensely strong craving for narcissistic satisfaction" (maintenance of RHP requires constant anathesis) or "a very considerable narcissistic intolerance" (sensitivity to catathetic signals) and with the latter "we observe that even to trivial offenses and disappointments they immediately react with a fall in their self-esteem." Thus, he gets to the point which is made clear by the currency devaluation analogy that lower RHP is both a cause and an effect of the initiation of thymic de-escalation.

Rado claims that depression is often preceded by "a period of arrogant and bitter rebellion" which fits with Hamburg's disengagement from goals and incentives hypothesis (ASCAP June 89), but I don't think this is now generally accepted as occurring in most depressions. He sees the depression as an atonement for failed rebellion and a cry for the return of love. I think we would say that the depression facilitates voluntary yielding which leads to conditional reconciliation (reconciliation conditional on acceptance of subordinate rank) which leads to a switch into the hedonic mode and the restoration

of a loving dyadic relationship.

Reading Rado's paper, I think it is clear that our evolutionary perspective is not at odds with psychoanalytic findings - we talk at a different level - if anything our perspective makes it easier to understand what they are getting at (a critic might say that we are replacing their incomprehensible jargon with our own, but I remain optimistic that we are getting somewhere, and I think the pointers to therapy are encouraging, but getting anything like proof would need a controlled trial of ethological therapy against existing forms of psychotherapy, not a light under taking!).

#### Note of Appreciation by RG

I find the addition of "deliberative" suggested by Dave Stevens to refer nicely to the *experience* of what goes on. Thank you Dave!

How good that John is working on the dimensions relating evolutionary concerns to psychoanalysis and its keen observers of the past. Observation, as Michael Chance importantly noted, is critical for ethology.

But does the terminology John proposes--attuned as it is to clinical work and observations--mean that it has less relevance to interfaces with cellular-molecular biology.

Introspection not evidence is the way that thymia vs emotions are here separate anthropomorphic "modules." But I protest that introspection is notoriously inaccurate for determining how the brain is really organized, as shown by the split brain researchers.<sup>12</sup> Thus, we experience things as a seamless whole; yet this is somehow constructed from the action of whole varieties of separated neuronal programs. I doubt that emotions and thymia will ultimately sustain as separate functions, despite clinical usefulness of the concepts, Paul MacLean notwithstanding.

1. Gilbert P: Depression: The Evolution of Powerlessness NY: Guilford Press, 1992, 117.
  2. c/o R Gardner, 1.200 Graves Building (D29), University of Texas Medical Branch, Galveston, TX 77550 FAX: 409-772-4288. For ASCAP Newsletter Volume 4 (Jan through Dec, 1991) please send \$18 (or equivalent) for the 12 issues. For subscription to the ASCAP Newsletter, make checks or money orders out to "Department of Psychiatry and Behavioral Sciences, UTMB."
  3. EXECUTIVE COUNCIL:  
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- At this time this "informal" organization has no official budget.
4. Power M: The Egalitarians: Humans and Chimpanzees. NY: Oxford U Press, 1989.
  5. (Adapted from a report accepted for publication by the Bulletin of the Royal College of Psychiatrists).
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  12. Gazzaniga MS: Organization of the human brain. Science 1989;245:947-952.