ASCAP NEWSLETTER

Across-Species Comparisons And Psychopathology Newsletter
Volume 5, No. 10, 15 Oct 1992 (Cumulative #59)

"Although it may wound our pride to admit it, our species is--to emphasize both words in Aristotle's phrase--the political animal." Roger Masters[1]

The ASCAP Newsletter[2]
is
a function of the

International Association
for the Study of
Comparative Psychopathology
(IASCAP)[3]

Correspondence with IASCAP is c/o
R Gardner, secretary, and editor
of ASCAP Newsletter
1.200 Graves Building (D29), UTMB,
Galveston, TX 77555-0429, U.S.A.
Phone: (409) 772-7029
FAX: (409) 772-4288

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.

San Francisco Arrangements I've heard from John Birtchnell and Aaron Tim Beck that they will try to make the first IASCAP meeting during the Annual Meeting of the APA 22-27 May, 1993. As outlined in the Sept issue, IASCAP has submitted symposium application entitled "From genes to behavior: evolution and psychiatry."

If the presenters and discussants come (numbering 8) and if others are interested as well (2 more as of now), Sue Gardner has suggested that we check for hotels willing to arrange for a block of rooms at reduced cost and also include in these arrangements a meeting place, eg, a room that is a suite for get-togethers. Indeed, it could have a resemblance to the initial founding meeting of IASCAP in Odintune, Sussex, hosted by our president, John Price and his wife Antonia.

Indeed since Sue knows San Francisco, she has made some preliminary phone calls and has determined that a small hotel at a good site (which she and I know) is willing to give rates as low or lower than the lowest APA rates to a group willing to block a relatively minimal number of rooms. At least a small meeting room would be available. This place is within a block of the bus routes provided by the APA for movement among the hotels and the convention center.

Preliminary arrangements: if you are interested in staying at the same hotel, and like the idea of a common one, *let us know immediately* so that we can solidify arrangements once a critical number of participants is reached.

We are promised to learn mid-November about the fate of our proposal so the next ASCAP may be late so as to await that word and relay it onto you.

Even if the program committee of the APA refuses our offering, those of us who nevertheless go to San Francisco could discuss papers and points of view. If such would suit our science and help travel plans, we could *officially* meet (certainly in a business meeting and with formal discussions as well).

Announcement: CONFERENCE ON *EVOLUTION AND THE HUMAN SCIENCES* at the London School of Economics Thu-Sat 24-26 June, 1993. Sponsored by the LSE Centre for the Philosophy of the Natural and Social Sciences.

Conference theme: It is widely believed that the 'Darwinian revolution' transformed our whole view of ourselves and of our place in the universe. But, in fact, until recently the implications of Darwinian theory for humans have remained remarkably underexplored. This is partly because of the genuine problems facing Darwinian accounts of human behaviour; and partly because the enterprise has been tainted by an inglorious history, from the crude 'Social Darwinizing' of the nineteenth century onwards. But over the past couple of decades, Darwinians have discovered rigorous and powerful principles of social behaviour, and have applied them to a wide variety of animal species. Can this more sophisticated work lend insight into human behaviour - without repeating the mistakes of the earlier false starts? Recent studies - in psychology, anthropology, economics, sociology and linguistics - suggest that it can. This conference will bring together evolutionary biologists, social scientists, methodologists and philosophers of science to appraise the prospects for carrying through Darwin's unfinished revolution.

Topics: Evolutionary roots of homicide, incest, sexuality, reasoning, language, consciousness, economics, medicine.

Contributors: L Cosmides, M Daly, R Dawkins, D Dennett, WD Hamilton, N Humphrey, P Kitcher, JM Smith, S Pinker, E Sober, D Sperber, J Tooby, GC Williams, M Wilson, and others.

Registration: Conference fee of £75 includes lunches, teas, coffees and an reception. Bursaries may be available. Accommodation can be arranged at a Students' Hall of Residence. Please apply as soon as possible (cheques should be made payable to the London School of Economics).

Further details: Pat Gardner, Centre for the Philosophy of the Nat. and Social Sciences, LSE, Houghton Street, London WC2A 2AEA, England. Telephone 071-955 7341, Fax 071-242 0392, Email philcent@uk.as.lse

Letter: 23.8.92

... I see a quandary about being scientific with humans. I believe it means different things to different people depending on their convictions. Or are there different objectives in being scientific about humans? In making predictions, for instance--or wanting to influence events. How do *you* see it? Should the issue be raised to the readership?
[Yes! Here--in your own words!]

May I personally congratulate you on the energy and success with which

you keep the Newsletter going. Bravo!
Michael RA Chance, Birmingham, UK

Obituary (from Science 1992;257:[11 Sep issue]1475)

Barbara McClintock, the pioneering geneticist whose revolutionary ideas about "jumping genes" took decades to be accepted by the biology community, died last week at age 90.

In the 1940s and 1950s, through her exhaustive study of the color of maize kernels, McClintock deduced the presence of small strands of DNA that could move within the plant's genome. Her results were ridiculed at first, but the work ultimately brought her a Nobel Prize in 1983. Today, the study of transposable elements, as her jumping genes are now known, has blossomed into an active field.

Paper #1; Evolution & the genes that cause mental disorders. by R Nesse[4]

Genes associated with psychiatric disorders are steadily being elucidated, but their evolutionary significance remains unclear. While it is tempting to suspect that genes associated with mental disorder are defective, many such genes have likely been selected for. Many universal traits that seem harmful result from genes that are beneficial. The genes that cause aging, for instance, are selected for because they increase fitness early in life. The capacity for low mood may have been selected because of the benefits of low mood. Anxiety disorders, while causing much individual suffering, may also confer a fitness advantage, at least in the environment of evolutionary adaptedness. Tendencies to behavior that may be dangerous or harmful, such as violence associated with jealousy may exist because such behavior may increase reproductive success. Genetic variations need similar analysis. Genes that increase susceptibility to alcoholism might well have been selected because they offer benefits unrelated to substance use, such as a general lack of inhibition. Manic-depressives may have reproductive success equal to or greater than normal people. As we gain the capacity to alter such genes it becomes mandatory to think carefully about their evolutionary history and functions.

Paper #2; Evolutionary epidemiology; disease or design? by DR Wilson[5]

What are genetic errancies that cause psychiatric illness in humans on the one hand and how do these relate to mechanisms that underlie kinship and the generation of descendents? Study of psychiatric disorders benefits from taxonomic study of characteristic behavioral aberrations, form, variation and distribution (epidemiology). The facts of phenotypic epidemiology stem from mechanisms of evolution. Behavioral taxonomy may help elucidate natural laws of behavioral ecology that determine origins and evolution of psychopathotogy. Evolutionary mechanisms are the only known processes that provide a reliable science for both psychoanalytic and biologic psychiatry. Linnaeus and Kraepelin focused upon topographic and proximate life taxonomy whereas Darwin and Freud sought comprehension of deeper dynamics of the interaction between life forms and their ecology. Evolutionarily useful features of major mental illness may be subtle because they are defined only with respect to modern environments and social circumstances. On the other hand, Darwinian evolution requires eons of positive selection for simple gene changes to penetrate the genome at rates of one percent or more. Much mental illness can be regarded as misfit between past abiding adaptations of small hominid consanguineous bands and the briskly civilized milieu that has arisen over the past thousands of years.

Paper #3: Do genes for communication exist on chromosome 15? by R Gardner[6]

How are genes organized that bear on mental preoccupations and on verbal and non-verbal communications relevant to psychiatry? Two mental retardation syndromes may represent a natural experiment: Angelman (AS) and Prader-Willi (PWS) syndromes result from approximately the same deletions on chromosome 15 (15q11q13). Which syndrome eventuates depends on which parent was the source of the missing DNA: if mother, the child has AS and if father, PWS (parental or genomic imprinting). In AS the children never speak but laugh and smile incessantly. In PWS, hypothalamic deficits exist, but the most pathological component of the PWS clinical picture is a constant preoccupation with food and consequent severe obesity. Mouth structures are large in AS and small in PWS. The genes contained within chromosome 15q11q13 need to be delineated further to explicate in part their role in modifying basic plans dealing with mouth structure and mouth actions that eventuate in some mental ac-

tivity (appetitive planning) and some communication (vocal speech and laughter). Oral basic plans operating in conjunction with others may be important for these psychological and communicational structures.

Paper #4. Incest avoidance: an evolutionary view. by M Erickson[7]

For most of this century it was believed that incest avoidance was uniquely human and contingent upon cultural taboo. Research now indicates, to the contrary, that incest is widely avoided in nature. Moreover, anthropological studies suggest that our species has inherited a biological mechanism of incest avoidance which is similar to that of many animal species. Bonding in early life appears to establish adaptive kin-directed behaviors in later life, including preferential altruism (kin selection) and incest avoidance. Disruption of "familial bonding," in both human and animal species, effects an increased incidence of incest. A nurturant childhood milieu, known to establish secure bonding, may then be essential for natural incest avoidance.

This perspective varies distinctly from the psychoanalytic Oedipus hypothesis in which aversive conditioning, i.e., childhood castration fear, is thought critical for incest avoidance.

Contemporary social practices, such as extensive use of surrogate parenting (nannies, day-care), rare in our evolutionary past, may disrupt bonding, thereby leading to a higher incidence of incest.

Paper #5: Depression; adaptation or failure of homeostasis? by JS Price[8]

It is argued that human mood (the elation/depression dimension) manifests a movable defended set-point, what Mrosovsky has called rheostasis. The function of the variable set-point is not immediately obvious, and there are competing theories; e.g., (1) that depression represents a "cry for help;" (2) that elation and depression are required for the formation and break-up of relationships; (3) that mood swings regulate the consumption of resources and/or investment in the environment; and (4) that elation and depression represent winning and losing reactions, respectively, in ritualized agonistic behavior. These theories are discussed via how well they explain the phenomena of depression and how well do predictions from each explain research and treatment data? On the whole, depression is maladaptive in cases of attachment malfunction, when increased affiliative and other activity is usually required. Only in the role of the yielding reaction with inhibition of agonistic behaviour can the strange phenomena of depression be understood in an evolutionary context.

Paper #6: Dissociation: Strategies of Adaptive Deception by Jo Beahrs[9]

"Dissociation" denotes processes by which separate trains of experience, behavior and self concept are maintained as relatively discrete from one another. Examples include "hypnotic" phenomena elicited and rigidified by psychological trauma, and sometimes manifest in dissociative disorders like multiple personality (MPD). Interpreting these phenomena as substantive intrapsychic entities is useful, but if taken too literally leads to three kinds of anomaly: (1) legal: dissociators remain culpable for deeds carried out beyond apparent awareness or control; (2) clinical: legitimization sometimes leads to relief, but an escalating cycle of regressive dependency; and (3) scientific: the form of dissociated entities varies with how they are defined, in ways that are intrinsically motivated and clinically manipulable. These anomalies yield to an evolutionary perspective that views dissociation as evolved strategies of adaptive deception of self and others; e.g., a beaten subordinate avoids further retribution by "pleading illness." Such a deception best avoids detection when fully experienced. Similar processes contribute to social cooperation in the face of conflicting interests. One's basic competencies remain intact, however; the source of the anomalies described. They can be accessed and empowered, which provides the key to therapeutic change when dissociative processes have become problematic.

Proposal for an Institute of Sociophysiological Medicine by RG

For complex reasons, I went to the effort of working out a plan for conducting research at an academic medical center in the form of an Institute for Sociophysiological Medicine. Now I submit the idea to the ASCAP Newsletter readership for your appraisal and comments. Is this

a way that medical educators in psychiatry might conduct their future efforts? Does this rationalize and explain it well enough? Are there flaws in reasoning, fatal or otherwise, to be still considered?

J. *Reasons to contemplate an Institute. If it is a solution, what is the problem?*

A. Present problems. Compared to non-psychiatric medicine, traditional psychiatry stems from conceptual paradigms not truly rooted in the body and its physiological mechanisms. Nonpsychiatric clinicians understand thoroughly the concept of pathophysiology, namely that a normal system gone awry results in pathology and that the disease is illuminated by knowing the operations of the normal system. To illustrate, duodenal ulcer is a function of stomach acidity (increased) and usual mucosal protection from digestive agents (decreased). Comparable normal systems that have gone awry in psychiatric syndromes have not yet been similarly characterized, nor is the fact that this is a centrally important objective constantly in our sights as educators, clinicians and researchers.

Traditional ways for understanding psychiatric problems are inefficient guides for future biological research. Two inclu,de: (1) psychoanalytic conceptions that facilitate therapies but do not relate to the brain, (2) operationally defined disease categories of descriptive psychiatry that have increased reliability of diagnosis but by themselves are not independent of each other. Neither are they discretely nor definitely related to particular brain systems, areas or defects.

Do schizophrenics or bipolar patients have gross brain alterations compared to normal controls? This common research question in central nervous system imaging research for psychiatry casts such a broad net that schizophrenia remains like ulcer pain, only epigastric distress, not a symptom indicating a physiological system gone awry, like digestion in the above example.

B. New investigatory frameworks are needed. Moreover, the stratagem hasn't worked. One could not complain if such crude estimates of how the nervous system works (disorder *vs* normality) turned out to be correct. But they have not. Initially positive findings of measurably larger lateral ventricles accompanying the major psychoses have turned out to be the result of poorly chosen controls.[10] Moreover, an exciting finding concerning a brain "hot spot" at the anterior temporal poles in panic disorder has turned out to be from anxious clenching of the masseter muscle.

An understanding of brain and genome contributions to normal behavioral interactions is likely to have more leverage for research meaningful to the pathophysiology of symptoms than will empiric studies of heterogeneous entities alone. For example, Charles Ford notes that the label of somatoform disorder falsely implies homogeneity of causation, pathogenesis and treatment; rather, there are multiple etiologic paths to the conditions meeting criteria for somatoformdisorder.[12]

C. Psychiatry's exciting frontiers. 1. Behavior, neurons and genome need interconnections. Despite psychiatry's problems, its future represents one of the most exciting frontiers in medicine.

Various syndromes such as mania, depression, autism and persecutory delusions are "final common pathways" in that many conditions or stimulus circumstances cause them to occur, such as genetic diathesis, drug intoxication, head injury and physical disease. Imaging studies popular now might search for correlates of final common path syndromes across various disorders rather than searching for

how the entities differ.

Stress effects such as child abuse have profound implications for subsequent life and development overall is extremely important in a gregarious species. But all children learn languages, albeit many different kinds. Evolutionarily shaped basic plans in the genome (such as capacity for language) need investigation in addition to the currently studied determinants of individual differences (such as acquisition of different languages).

Keying on this, psychiatric and mental retardation syndromes should be seen not only as clinical problems but as opportunities to discern hierarchies of normal function. Why do manics persist in their overcontrolling behaviors despite the major punishment of becoming a patient? Should their persistent efforts at controlling lead us to investigation of the biology of typical controlling behaviors, as in leadership states?[13]

Behaviors highlighted by psychiatrically relevant syndromes need to be more extensively characterized by observation not only in affected people but in normals as well. Definable genomic deviations that create stereotyped behavioral changes should be valued as natural experiments and explored further; these genes and their products need specific description and analysis; brain areas potentially affected need to be examined for, as with new imaging techniques. Standardized interviews are not enough (though important); direct quantitative observations of the kind pioneered by ethology are required.

Studies of laughter should be considered. Deletions in chromosome 15 cause a mental retardation syndrome characterized by a large mouth, no speech development, and disregulated laughter. Should we look at the genes in the deleted chromosome 15 region for clues about communication? Should laughter be better characterized in its normal variants and in its pathological forms? Laughter is not often thought of as a meaningful categorization of behavior, but the natural accident of this mental retardation may allow us to examine it more. Certainly laughter has psychiatric importance, ie, mocking forms can cause homicide and suicide; bonding laughter, good feelings and relaxation.

Moreover, molecules that are ancient in life forms--eg, those determining and shaping the mouth and its activities--need to be examined for how their modifications cause modern day adaptations. Mouth and respiratory rhythms existing in animals ancestral to humans gave rise also to laughter, vocal speech and singing when humans emerged. New work on across-species comparisons is warranted to explore how the ancestral molecules were affected, how these functions are neurally mediated and how they are modified by a particular individual's life experience. The definition of the chromosome 15 genes deleted in the above syndromes should generate studies across genomic, neural and behavioral levels of analysis.

2. Psychiatry's physiology is best called sociophysiology. New frameworks of investigation might involve physiological systems relevant both to psychiatric symptoms and normal adaptation.[14] A shorthand term which encapsulates the idea is "sociophysiology" because the symptoms or their amelioration almost invariably involve other people (humans are very gregarious) and a number of poorly understood physiological systems mediate these interactions.

II. Institute for Sociophysiological Medicine.

A. Goals. 1. Center of excellence. An Institute for Sociophysiological Medicine will establish an academic center of excellence for psychiatry and its basic biological sciences.

2. Physiology and pathophysiology. Institute activities will focus particularly on the pathophysiological mechanisms of psychiatric and emotional problems and its research considerations would include the physiology of normal counterpart states. Gathering and analyzing research data bearing on these processes will be high priority with special interest paid to potential interfaces between three system levels of study and research. Small groups would focus on eight areas of sociophysiological interest briefly described below.

3. Membership. Recruitment (or deployment) of appropriate faculty and a well implemented system of organization would assure that the group members would teach well and enthusiastically, provide excellent care of patients, and contribute prolifically to the scholarly archival literature. The organizational schemata would outline expectations clearly, assure the time available to do these jobs with protection of each member's time so that each task could be accomplished, and list procedures for separation from the Institute (though not removal from employment) if goals were not met. Potentially, for example, as the faculty person would think about the problems that interested him or her most, rejoining may prove fruitful.

Research-oriented academic psychiatrists and psychologists should be engaged regularly in scholarly activities with the goal of extending the scientific domain of psychiatry while simultaneously engaging in increasingly successful grant-seeking activities. Faculty need to be flanked by people especially trained in research and writing, some of whom are conversant with statistics, computer analyses, biochem- istry, genetics, evolutionary biology, imaging technology, and research design. Such expertise should be available to any on the academic team.

The Institute would primarily require the interests and involvement of a mix of senior and intermediate level faculty with both Ph.D. and M.D. backgrounds. Faculty would qualify by expertise in organism-biology (ethology, neuropsychology, classical genetics, clinical psychiatry and psychology) and/or cellular-molecular biology, including biochemistry, physiology, neurosciences and molecular genetics. Productive themselves, members of this group would be expected to play an important role in the development of research and scholarly profiles of younger faculty, residents and promising medical students.

4. Patient focus. Research data in turn should affect how patients are treated. The academic psychiatrist needs to be a clinician. American medical educator Robert Petersdorf recently stated that medical research generally requires more involvement with bedside care, and urges funding agencies to take this into consideration.[15]

5. Educational mission. A new program should have self-perpetuation built into it. The nature and organization of well-done psychiatric medicine should be visible to trainees who become meaningfully involved themselves and benefit from enthusiastic teachers. Residents would thereby have enhanced interest in academic careers. Medical students appreciate psychiatry more when it functions effectively in the context of general medicine. Moreover, strong role models heighten recruitment into psychiatry.

6. Systematic program to acquire research funds. Focused attention would be required for writing grant proposals which meet criteria for the granting agencies, recognizing that capability in grant generation is acquired over time and with experience. Recruitment of a staff person skilled in writing (for proposals and papers)

would assist faculty in these endeavors. There is good evidence that such a person can have extraordinary effects upon the scientific productivity of a department.

7. *Endowment.* The Institute's novelty, originality and importance might attract philanthropic contributions so that those implementing the plan should aim at an endowment and construct a governing board. The model for this ambition stems from that achieved by The Neuropsychiatric Institute of Fargo, ND, affiliated with the Department of Neuroscience, University of North Dakota School of Medicine under the pioneering leadership of Lee A. Christoferson who founded both the institute and department.

B. Eight areas of physiological study (groups). Many of the considerations mentioned above have been considered and debated in the ASCAP Newsletter over the past five years. The following areas I feel to be synthesized from contributions by many contributors to this publication. They should be natural foci of attention for small work groups.

1. Eating and nurturance. Eating is a fundamental animal attribute and molecules mediating the structure and functions of mouths must be very ancient. Mammals foster their offspring's eating so nurturance is included in this heading, perhaps as an evolutionarily recent development (though some cyclid fishes use prolactin to regulate secretions for offspring nurturance implying this hormone somehow had parallel functions in mammalian ancestors). Over/undereating, smoking and other kinds of ingested substance abuse represent pathological variants of an oral physiology that are seen in psychiatry and medicine more generally.

2. Flight, fight and danger. The physiological flight response is activated in anxiety states and both consultation-liaison and emergency room psychiatrists are familiar with 'fight' states in angry, delirious patients. This physiology exemplifies Cannon's endocrine and autonomic fight-flight response in many animals. The pathophysiology of chronic stress may materialize from continuous activation of these responses. Obsessive and compulsive behaviors seem designed to guard against environmental dangers.

3. Mating and sexual preoccupations. Sexual selection is a potent mechanism in evolution and implies the importance of sexual communications. A uniquely human form includes suppressed evidence of estrus. Conversely, promiscuity in males *vs* coyness in females is shared across many species, and may result from different 'investment' in gametes: males have many, cheaply made; females few, expensively made. Pedophilia and other sexual perversions represent fixed sexual preoccupations.

4. Phonology and communication. While eating is a still active ancient use of the oral apparatus, vocal singing, laughing and speech are human-specific functions. Their absence is seen abnormally in autistic people and in the negative symptoms of schizophrenia. Hebephrenic patients laugh in a silly manner. Stroke patients have represented experiments in nature for communicational physiology. Music both soothes babies and inspires warriors.

5. *Planning and leadership.* Leaders, manics and sociopathic people all spend much time planning. The striving for dominance evident in all three states takes on different qualities depending on the situation. Across-species comparisons are readily apparent as social rank hierarchies are evident throughout the animal kingdom. High blood serotonin seen in dominant vervet monkeys is also evident in human leaders.

6. Powerlessness and yielding.

Depressed and defeated people convey powerlessness. Yielding can be construed as adaptive in the face of odds from a perceived antagonist. The fact that depressed people are themselves convinced of their own worthlessness make displays of hopelessness more persuasive to potential foes who then leave them alone. Low ranking chickens demonstrate appearances similar to those of low rankers in other species, including defeated humans.

7. *Suffering and pain.* Endogenous opiates evolved to ameliorate pain and to induce perhaps compensatory euphoria. They seem to be released when self-injurious behaviors occur in retarded patients as evident from reduced self-injury when opiate blocking agents are used. Cocaine analgesia is another model for study. Many borderline personality disordered patients self-injure as a reaction to developmentally induced suffering, as from sexual and physical abuse in childhood. Dissociative reactions seem to be another mechanism to ward off suffering.

8. Xenophobia and in/out groups. Not only social rank hierarchies but sharpening of boundaries between in and out groups are evident in humans and non-humans. People with borderline personality disorders typically 'split' staffs caring for them; this refers to an ability to heighten latent in-out group distinctions in treatment groups. Hostility to perceived out-group enemies may cause civil rights efforts to be difficult. Paranoid delusions indicate cautious attitudes about anticipated persecution. When in dangerous circumstances such attitudes may, of course, be adaptive.

C. Nonexclusivity. Much overlap among the study areas obviously exists. A frightened delusional psychotic patient who fights is displaying not only xenophobia but fight-flight physiology. Offering a potentially violent person (*flight, fight and danger*) something to drink may signal a reassuring nurturance (*eating and nurturance*) that reduces the tension. Manic patients (*planning and leadership*) often display enhanced sexuality (*mating and sexual preoccupation*). They can be manic and depressed (*powerlessness and yielding*) at the same time or sequentially. Depressed people often suffer grievously (*suffering and pain*).

Such overlays are evident in all physiology, not sociophysiology alone. The living stomach as part of the digestive system is hardly devoid of oxygenated blood and is affected by the central nervous system's decision about what and when to eat.

D. Purposes of group tasks. The areas are meant to focus think-tank discussions, stimulate position papers, foster critical scholarly documents aimed at archival publication, and generate research hypotheses, data collection and grant proposals.

The groups are not intended as completely independent nor mutually exclusive. A member leading or participating in one group may wish to participate in others as well, time allowing. In each, however, there will be the effort to foster interactions between genomic, neural and behavioral levels of analysis. Specific reactivity of behavioral syndromes to particular medications would heighten attention to the defining behaviors, eg, the responsivity of obsessive-compulsive symptoms to clomipramine has called fresh attention to this disorder and its behavioral components.

E. Integration with educational services. Scheduled interactions will assure trainee exposure with Institute groups: during medical student rotations, each student will be expected to present a case to an Institute group, depending on patient characteristics and the physiological

area that is the responsibility of that group, eg, a patient with delirium or panic attacks represents a case highly suitable for presentation to the *flight, fight and danger* group. A depressed person with persecutory delusions could be presented to meetings either of two groups, either those dealing with *powerlessness and yielding* or to the *xenophobia and in/out groups.* Group members would discuss the case with respect to its area concerns and accumulated work.

Residents assigned to associated services would be expected to choose one of the eight groups for at least the duration of the assignment. They would participate to the extent of their interest with no demerits for non-participation. However, clinical duties will not be allowed to prevent involvement.

III. Institute workings.

A. Description of Institute activity. Each group would be charged to (1) work out conceptual papers in which the framework of genomic, neural (and other phenotype tissues or agents such as hormones), and behavioral aspects of their physiological area would be explored, (2) integrate direct observations of patients which pertain to the problems outlined — as in connection to student presentations, (3) design investigatory plans that group members would fashion into research studies, and (4) monitor progress in papers and proposals which individual members draft.

The entire Institute membership would meet regularly on a large group basis that does not interfere with Grand Rounds for the full department. Members would present group efforts and hear guest speakers who would be invited for a several day period every two months.

B. Candidates for Institute membership. Institute activity should represent a program without walls (open to any department member), but it should also have a semipermeable membrane. Being an Institute member would signal intelligence, interest, excitement, energy and group support; thus, measures must be devised to assess such qualities to maintain membership when thresholds are reached or exceeded, and as criteria for discontinuation of membership if not. I expect that the Institute would achieve identity as an elite corps.

For maximum effectiveness, the whole department of psychiatry should be proud of Institute activities and achievements. While all interested faculty are cordially invited to apply, no-one would be required to participate. Potential participation should be extended to all with the most qualified and hard-working faculty chosen as members.

Residents will be potentially exposed to Institute activities during rotations on the MCMC/FH locations; they will be assigned to the Institute group of their choice but not required to attend meetings. However, only severely emergent clinical duties would be reasons for not attending. Otherwise, the role of residents would be based upon interest, effort and energy as well as negotiation with the residency director. The occasional qualified student may be temporarily involved as a group member on an individually negotiated basis. Faculty who are not members of the department of psychiatry (eg, neurology, basic neurosciences, genetics) would not be eligible for Institute membership but may attend meetings when invited as consultants. They would of course be eligible for full membership if they serve in joint membership in both psychiatry and the other department.

The most involved people would probably be those located in the general hospitals. However, even here membership is not automatic as there would surely be those unable or unwilling

to put forth the scholarly and research efforts necessary to sustain membership. Their clinical, teaching and non-Institute research activities may still, however, be valued by the department and medical college.

C. Group leadership and composition. Leadership of groups will be critically important. The leader will convene and chair weekly meetings, make decisions when impasse occurs, keep minutes of meetings, administer grant funds obtained by group members in association with other department and medical school officials, and in consultation with the Institute director and executive committee, make decisions about group membership.

Each group would be 15 at maximum but would usually be much smaller; if a minimum of three did not enroll, the group would not be officially active until a sufficient number of people made a commitment. The director would be an ex *officio* member of each group.

D. Efforts necessary to sustain membership. An individual's membership will be reviewed every two years. Requirements would extend to the director and group leaders. Minimum efforts for continued membership will be the production and accepted submission of two first authored manuscripts per year in the form of the archival literature (refereed journals) or invited book chapters. Authorship other than first authorship will count on a ratio of one to two (two co-authorships will equal one first authorship). Personally authored published books would be equivalent to one first-authored paper regardless of author order; edited books would be equivalent to co-authorship of papers.

For those directly under the jurisdiction of the Institute director, research grant applications would be expected at the rate of two per year until the faculty person successfully obtains funding.

Member failure to meet standards may result in adjunctive membership for one year if there is a wish to continue Institute activities. Reinstatement could then occur if criteria then become met.

E. Governance. The executive committee of the Institute would consist of the director and the eight group leaders along with the chairman and co-chairman of the department of psychiatry as ex *officio* members.

Meetings would be convened and chaired by the director. All decisions would be advisory to the department chairman. They will consider issues raised by the clinical tasks, consultation attending duties, requests for liaison assignments or the performance of such assignments, and group activities. Important decisions would include determination of Institute membership and governance of group activities, although each group leader would be given considerable latitude in how the groups would conduct their activities, divide responsibilities, etc.--of course always within the constraints of the goals, rules and regulations of the Institute, its host department of psychiatry and medical school.

F. Director. The director and his office will assure that appropriate faculty are recruited, that the coordination of the complex Institute scheduling occurs as planned, that assessments are made according to Institute rules and regulations, and that scholarly work, research, clinical efforts, and educational responsibilities are carried out as assigned and scheduled.

G. Clinical and Institute assignments. An important principle of the Institute is that research, grant and other Institute responsibilities need integration into teaching responsibilities and clinical work. Doing research fails to be a reason for not carrying out the central obligations of a medical college.

The assignment to primary clinical duty would consume on average 20 hours per week. When Institute group meetings involve case discussions, they would be calculated as part of the primary clinical assignment.

Other components of the work week would involve Institute efforts including group meetings, research administration, literature review and updating, data analysis, paper writing, seeing patients extrinsic to primary assignment, as well as other department work not directly Institute—related, such as other committee assignments, supervision of residents not assigned to the Institute, and medical student and resident courses.

H. Timeframe and anticipated problems. Any dramatic new idea encounters major resistances, regardless of quality, especially if major different demands are made. People are often reluctant to change to a less certain schema than the existing one, despite its shortcomings.

That all eight areas may not be immediately populated with the minimum of three participants for a viable group should not discourage the beginning efforts. For best strength, growth of the organization may most effectively proceed slowly. A solid foundation with relatively few committed faculty persons is crucial and certain key features of the program need to be modeled for the dictum of "lead, follow or get out the way" to have meaning.

There would need to be a certain critical mass of, for example, the director and at least four leaders with sufficient faculty to have a minimum of three peersons per group for the four groups. This would assure that these groups could begin soon to model the method and procedures. With this minimum initial nucleus, less venturesome faculty would be more likely to overcome their reservations and participate also. With survival and accrued time, the Institute could take on "traditional" value so that activity in it could become more attractive for conservative faculty members when they see newcomers and others who made earlier commitments demonstrate the plan's viability and thereby gain academic and professional benefits from participation.

The mechanistic boss in the mechanistic organisation by Michael Waller

Mea culpa! Referring to your editorial of the September issue of ASCAP, where a reference of mine was desired, the classic study to which I referred, was Burns T, Stalker GM: The Management of Innovation Second Ed London: Tavistock, 1968.

I do not have my copy immediately to hand, but I do have an excellent summary, ie, the following passage:[16]

> The mechanistic type of organisation is adapted to relatively stable conditions. In it the problems and tasks of management are broken into specialisms within which each individual carries out his assigned, and precisely defined, task.... The ...organic type of organisation is adapted to unstable conditions when new and unfamiliar problems continually arise which cannot be broken down and distributed among the existing specialist roles___
>
> The almost complete failure of the traditional Scottish firms to absorb electronic research and development engineers into their organisation leads Burns to doubt whether a mechanistic firm can consciously change to an organic one. This is because the individual in a mechanistic organisation is not only committed to the organisation as a whole. He is also a member of a group or department with a stable career structure and with sectional interests in conflict with other groups. Thus there develop power struggles between established sections to obtain control of the new functions and resources. These divert the organisation from purposive adaptation and allow out-of-date mechanistic structures to develop.

What is clear from the primary text is that CEOs were amongst the worst offenders. The status of the head of a mechanistic structure can best be described as omniscient. He/she knows

most about virtually everything of importance. Leading an organic structure requires a great deal of letting go; the new man at R&D knows far more about his specialism than the CEO can ever hope to know. The role shifts from detailed prescription to facilitating, but as Fred Herzberg once said in a management film "giving birth is easier than resurrection." These guys were heading up mechanistic structures because they could meet the power and behavioural requirements of the role, and very much enjoyed doing so. In consequence they were almost inevitably ill suited by temperament to leading an organic structure. In part for this reason, they frequently failed to take the actions necessary to force through the mechanistic/organic shift.

Nor, in my judgment, were they necessarily short-sighted in what they did. From an organisational/systems perspective they should have dropped off like a redundant tail, ie, allowed themselves to be replaced by somebody better suited to the role. As it was they hung on in, drawing a salary, improving their pension position, and enjoying the exercise of supreme power much longer than rational economic rationalists would deem appropriate. The ethics may be questionable, the self-interest is clear.

And this is essentially my point. I have only limited belief in Aaron Beck's "evolutionary friction rub" or Paul Gilbert's idea of evolution as a hoarder saddling us with problems because the bits it has cannibalised to construct us "do not always work smoothly with each other." (Both quotations are abstracted from ASCAP Newsletters from Apr & Sep, 1992.) Regarding the first, I note that, for example, amongst southeast Asian tree shrews, operating in their natural conditions, losers in territorial conflicts, though not seriously injured, not infrequently go into what seems best described as a depressive state and die.

With the latter, for all the the problems of the appendix, I do not see about me imperfectly lashed-up animals, plants and insects. I see species perfectly tuned to their niches. If evolution can do it with bodies, why not with mind? Particularly so as "evolution is not simply the superimposition of new "layers" over more primitive ones, but often consists of fundamental reconstructions of the anatomy, physiology and behavioural organisation of organisms."

This is where my mechanistic boss re-enters. His behaviour makes no sense in terms of the organism's survival, but a great deal of sense in terms of his own economic interests and emotional needs. So, I believe, with pathological depressive conditions and the ubiquitous genes defining the mechanisms which underlie them. As I have repeatedly argued, the genes' "objective" is the same as any sensible holding company: ensuring its own survival by continually withdrawing investment funds from those who perform and maximising the opportunities to the successful. Please do not think I like it, but am pretty sure it is true.

Postscript: Through fate, the post which brought the Sept issue of ASCAP also brought this week's Spectator in which I found a passage of extraordinary relevance from the editor of the Daily Telegraph, to whom a deposed bank chairman complained because the paper exposed him for fraud whereas he felt the problems were completely due to subordinates:

> Reluctance about resignation from high office stems partly, plainly, from horror of losing the chauffeur and Covent Garden tickets, but often also from a misconceived concept of courage. It is remarkable how often ministers and tycoons persuade themselves, conveniently, that it will be heroic to withstand the media pack baying for their blood.[18]

1. Masters RD: Nice Guys DON'T finish last: aggressive and appeasement gestures in media images of politicians. Chance MRA (Ed): Social Fabrics of the Hind Hillsdale, NJ: Lawrence Erlbaum Associates, 1988.

2. c/o R Gardner, 1.200 Graves Building (D29), University of Texas Medical Branch, Galveston, TX 77555-0429 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:
President: John S Price
President-Elect: Paul Gilbert
Vice President: John Pearce
Secretary & Newsletter Editor: Russell Gardner, Jr

Treasurer: Leon Sloman

Past-President: Michael R A Chance

At this time this "informal" organization has no official budget.

4. Ness RM: Sociobiology and psychiatry. Maxwell M (Ed): The Sociobiological Imagination. NY: SUNY Press, 1991, pp. 23-40.

5. a. Darwin C: The Descent of Man. London: John Murray, 1871.
b. Mayr E: Animals. Species. Evolution Cambridge MA: 1963

6. Smeets DFCM et al: Prader-Willi syndrome and Angelman syndrome in cousins in a family with a translocation between chromosomes 6 and 15. NE J Med 1992;326:807-811.

7. Erickson MT: Incest avoidance and familial bonding. J Anthropol Res 1989;45:267-291.

8. Price JS: Alternative channels for negotiating asymmetry in social relationships. Chance MRA (Ed): Social Fabrics of the Mind. Hove, England: Lawrence Erlbaum, 1988.

9. Beahrs JO: Hypnotic transactions and the evolution of psychological structure. Psychiatric Medicine 1992:10:25-39

10. Risch C: Psychiatry Grand Rounds, UTMB, August 31, 1992.

11. Woods S: Research conference, Department of Psychiatry and Behavioral Sciences, July 14, 1992.

12. Ford CV: Personal communication, Sept 21, 1992

13. Gardner R: Mechanisms in manic-depressive disorder: an evolutionary model. Arch Gen Psychiat 1982;39:1436-1441.

14. Gardner R: Sociobiology. Kaplan H, Sadock B (Eds): The Comprehensive Textbook of Psychiatry Sixth Edition William and Wilkins, in press.

15. Petersdorf RG: Bedside manners. Book review of Ahrens EH Jr: The Crisis in Clinical Research: Overcoming Institutional Obstacles. Oxford U Press, 1992. Nature 1992;358:(27 Aug issue)722.

16. Pugh DS et al: Writers on Organisation Second Ed London: Penguin, 1971.

17. Richardson K: Learning theories. Unit 8/9. Personality. Development and Learning. Milton Keynes: The Open University, 1985.

18. Hastings M: Diary. The Spectator 26 Sept 1992, p.6