ASCAP NEWSLETTER

Across-Species Comparisons And Psychopathology Newsletter
Volume 6, No. 3, 15 Mar 1993 (Cumulative #64)

"The metaphor of "mechanisms of defense" imply a dynamic restorative process, and by no means connote the abnormal. Rather, defenses have much in common with...an opossum vigorously and alertly playing dead or with a grouse seeming to nurse a "hurt" wing in order to protect her babies....By analogy, for centuries fever and pus were synonymous with disease, yet they are actually the body's adaptive response to invading bacteria." George E. Vaillant [1]

The ASCAP Newsletter[2]
is a
function of the

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

Newsletter aima; 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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Features;

Note; Mark Erickson is in the March issue of AJP and deserves our admiration and appreciation for gaining entry for concerns of evolutionary biology into this premier forum.

Abstract: Erickson MT: Rethinking Oedipus: An evolutionary perspective of incest avoidance. American Journal of Psychiatry 1993;150:411-416.

The author presents a biological hypothesis of incest avoidance. Pertinent literature from evolutionary biology, ethology, anthropology, and clinical research is reviewed. Secure early bonding to immediate kin predicts later adaptive kin-directed behaviors, including preferential altruism (kin selection) and incest avoidance. Impaired bonding predicts aberrant kin-directed behavior, including diminished altruism, neglect, and an increased incidence of incest. Failed bonding predicts the highest frequency of incest. Secure bonding to kin may function to establish adaptive kin-directed behaviors, including incest avoidance. Bonding is conceived of as the developmental foundation of a form of social attraction, here called "familial attraction," which is evolutionarily distinct from sexual attraction.

Announcement: Annual Meeting of the Human Behavior and Evolution Society (HBES) in Binghamton, New York, Aug 4 (Wed) to Aug 8 (Sun).

The fifth annual meeting will be held on the campus of Binghamton University. The society promotes scientific discourse in all disciplines by researchers who use the theory and methods of evolutionary biology to study humans. Research on non-human species is also welcome when it addresses general issues that are important to human evolution. Invited speakers include George C Williams (Keynote), J Michael Bailey, Leda Cosmides & John Tooby, Martin Daly & Margo Wilson, William Durham, Harry Harpending, Kim Hill, Bobbi Low, and Elliot Sober. Organized symposium include *Evolutionary approaches to cognition, Evolutionary approaches to morality,* and *Evolution and culture.*

IASCAP members expect to gather at the meeting in a more informal manner not yet firmly scheduled.

Deadline for abstracts is May 1, 1993. They go to Kevin MacDonald and use a fixed format.

Correspondence: David Sloan Wilson, HBES, Dept Biological Sci, Binghamton U, Binghamton, NY 13902-6000.[5]

Michael R A Chance column

Here are some comments and observations on contributions to the January number of the ASCAP Newsletter.

1. Re: influences on play-fighting by Pellis and McKenna. I do not think it is clearly realized that in mammals and, especially, in some primates hedonic play can be distinguished from agonistic play (play fighting). The latter is assumed (perhaps proved?) to be practice for adult rank-related behavior and to establish true relative status in rank between the play contestants later in life (dogs, wolves, hyenas, cats, monkeys; specifically the Anthropoidea or higher primates). Hedonic Play on the other hand consists of acrobatics, gamboling, touching to tease - seeing how far you can go before invoking retaliation. I have seen two examples and a third in which teasing was used towards a high ranking female by a maturing female who thereby gained high rank in a colony while still young. By drawing the adult female's attention to her, the juvenile became a grooming partner. Another episode, seen in the London Zoo colony in 1954 and recorded on film, was of an adult male (regressed to associating only with young monkeys) playing a game of pulling the tails of the monkeys, three in a row all pulling the tails of the one in front. The front monkey holding onto a rock! Then he let go and they all scampered away still holding each others' tails. Hedonic play varies more, stretching from acrobatics to social affiliative play.

Paul MacLean suggests that play fighting has another function—that of keeping the young near the nest, burrow, etc, by keeping the attention

of the young on themselves and so reducing the amount of exploring away from the nest site.

How much pleasure is there in animal agonistic play? Children get pleasure from play fighting but sometimes it escalates to serious pain inflictions.

2. At the risk of "removing all doubt" about my ignorance of psychiatric terminology, I believe that we are missing out on matters which appear in the daily press—the "pathology" of child abuse, rape (now a weapon of war), war itself, and serial killing. Is the latter an example of O.C.D.?

3. In all psychopathology, as well as in the evolution of refined movement and corresponding sensory elements, the segregation of cortical elements and the capacity of the neocortex to separate subcortical components of behavior, arousal packages, etc, must be taken into account, as when operative in periods of agonic social relations during ontogeny can lead to extreme or bizarre associations of elements normally (hedonically) fitted into a healthy development. The evidence for segregation of cortical elements is set out in The Neuronal process of the Human Systems Faculty by MRA Chance & SC Ethlinger.[6]

4. Thanks to Dan Wilson for putting me in touch with Kant's distinctions between types of classification. Looking back it is clear that the two social-mental modes were discovered by becoming aware of a natural taxonomy through labeling observations according to perceived distinctions. This is what ethologists concerned with delineating structure of social relations do and shows that Kant was unaware of the need to tie distinctions into nature through observation! The Ionian Greeks did!!

5. Finally, may I draw ASCAP readers' attention to a book of great significance to understanding human social and linguistic origins. Blood Relations by Chris Knight, Yale Univ. Press, 1992. By the way, may we know Boris Dashevsky's full address?

Response to Chance Column; The address: Dr Boris Dashevsky, Dept Psychology, U Cincinnati, Cincinnati, OH, USA 45211-0376.

I have to register that I don't comprehend the *difference* between the two kinds of play. If teasing is provoking just short of retaliation, isn't that a variation of agonic processes? Moreover, what utility is there for having two? One of the exciting features of hedonic mode is the mechanism of agonic—> play --> hedonic for adults too. RG

Letters (cont): *25 Feb, 1993*

...I learned yesterday that people who are prone to have hallucinations are most provoked into hallucinating by watching a *news reader on television. It's interesting that the brain perceives the television picture as belonging to the same category as hallucinations. John Birtchnell,Inst Psychiat, London*

I know that you meant this as an aside in a letter on other matters, but the point raises such interest that I hope you don't mind it here.

Is it the sensory experience or the manner of the patient's *relating* that makes the difference?

When patients auditorily hallucinate, they feel persecution from other people: the patient's relational expectancy set is that of hostility and the television person's seeming 'objectivity' may fit that expectancy—self-referential ideas are confirmed. Does the brain or he/she respond to the picture or to meaning-filled relational story-lines that patients (and other people) in-

cessantly generate?

I'm do not know how this fits upperness-lowerness/closeness-distance dimensions, but delusions and voices do represent forms of relating for patients, do they not?

Letters (cont): *3/2*

Thank you for sending the requested materials pertaining to IASCAP. The Newsletter is very interesting and right in line with my interests. The Association is of great interest to me as well, and I am pleased to have the opportunity to join. ... I look forward to receiving the Newsletter and enjoying a fellowship with those who share mutual interests in the biological and evolutionary bases of psychopathology.

By the way....I am particularly interested in the April issue that included Aaron Beck's commentary on mismatch theory and psychopathology. ...

I look forward to joining in on the excitement surrounding IASCAP. K Bailey, Va Commonwealth U, Richmond

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More on Sexually Transmitted Disease & Family Formation by RS Immerman

In an essay entitled *Reasons for Family Values* in a recent issue of the ASCAP Newsletter and in another, *Sexually Transmitted Disease and Human Evolution,* in the Human Ethology Newsletter, I postulated a relationship between sexually transmitted diseases (STDs) and dynamics of family formation. Questions resulted—so here, in question-answer format, I will support the postulate with historical data and suggest that the family-oriented 1950s was caused by the massive STD awareness campaigns of the 1930s and 1940s. I will also speculate as to why current public health efforts are having a limited effect.

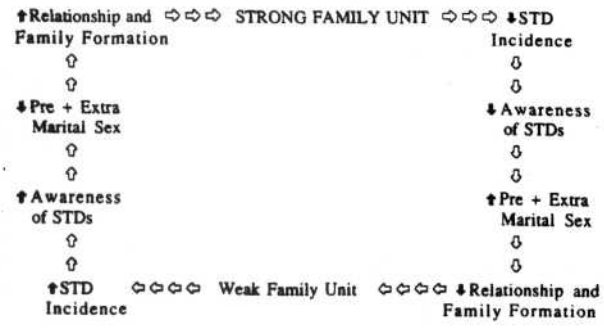
(1) What fundamentally causes sexually transmitted diseases (STDs)?

It is not sex *per se* that causes the spread of STDs. The critical ingredient is lack of strong pair bonding that leads to multiple sexual partnerships. The fundamental cause of STDs is lack of the establishment and maintenance of strong pair bonds which exclude outside sexual partnerships.

(2) How do STDs, mating strategy and family formation relate over time in society?

STDs can influence mating strategies. When sexual relationships are long term, STD incidence is relatively low. As a consequence of low incidence, awareness of STDs can fade. Then pre- and extra-marital sex may increase STD's rise. In time, the rise of STDs can increase awareness of STDs. This increased awareness can cause a decrease in pre- and extra-marital sex and a return to stronger relationships and family formation. For example, the hyper-family decade of the 1950s was preceded during the 1930s and 1940s by extensive national STD education campaigns.[11]

STDs AND FAMILY FORMATION



(3) How many sexually transmitted diseases are there? In what ways do these organisms impair health?

There are more than 50 sexually transmitted organisms and syndromes recognized today. " Included are bacteria, viruses, ectoparasites, fungi and protozoa. The pathology caused by these organisms include, but are not limited to: Infertility, chronic pelvic pain and ectopic pregnancy secon-

dary to pelvic inflammatory disease (ie, gonorrhea, chlamydia); cervical cancer (ie, human papilloma virus); immunodeficiency (ie, HIV), hepatitis and hepatic cancer (ie, hepatitis B virus); life threatening fetal and neonatal infections (ie, syphilis, hepatitis B Virus, herpes simplex virus).

(4) How long have these social dis ease affected human society?

The earliest known written record documenting genital disease is from ancient China in 2637 B.C. Ancient Egyptian medical papyruses from ca 1500 B.C. describe gonorrhea-like disease. It seems unlikely that all the STDs known today began at that time, but rather, that at least some of them had existed in ancestral human populations for many years. Thus, from ancient times STDs may have been a biological and cultural barrier to mating strategies involving changes of sexual partnerships.

(5) What are some major events in recent medical/social history that have affected the incidence of STDs and/or society's response to them?

1840; Latex technology was developed and the latex condom was invented. It was the first low cost, reasonably comfortable and effective method of reducing the risk of unwanted pregnancy and sexually transmitted disease. By the late 1800s, the latex condom was in widespread use and premarital sex began to rise in the United States.[16]

1879: N. gonorrhea was described. In 1882, culture methods were developed.[17] Awareness of STDs increased with the understanding of the germ theory, but test methods were relatively difficult.

1905: T. Pallidum discovered as the causative agent in syphilis. In 1906, the first serologic test for syphilis, the Wassermann test, was developed.[18] Epidemiologic studies of some low socioeconomic populations demonstrated syphilis prevalence to be 25% or greater. Autopsy series demonstrated a 5 to 10% prevalence.

1918; Rates of STDs upon induction to the US Army were as high as 2 50 per 1000 recruits. The Commission of Training Camp Activities produced *Fit to Fight,* a venereal disease training film. In 1919, the film was declared obscene by the NY Board of Censors.

1930; Public Health officials wanted to use mass media education to curb the epidemic, but syphilis, gonorrhea and venereal disease were not words used in public. In 1934, NY State Health Commissioner Thomas Parren soon to become US Surgeon General, was not allowed to say "syphilis" or "gonorrhea" on the radio. Under Parren's leadership, the conspiracy of silence was broken and education based prevention efforts, including the use of "talkies" and radio, significantly increased. Social hygienists, proponents of self-control and moral behavior, were concerned that the new emphasis on science and medicine might undermine larger goals of family life and values. In 1938, FDR signed the National VD Control Act which created the Interdepartmental Social Hygiene Board and the Venereal Disease Division of the PHS. VD control was institutionalized on a national level.[10]

1940s: WWII recruits received STD education and as many as fifty million condoms per month were distributed to GIs. By the end of WWII, penicillin was available; the effectiveness of fear-based education diminished.[9]

1950s; Gonorrhea and syphilis rates[20] dropped dramatically. This drop was and is generally attributed to use of penicillin, but diseases that are not treatable with penicillin also decreased. Social behavior changed dramatically. Demographi-cally, the hyper-family 1950s were the most unusual decade of the century. Fertility rose substantially

compared to the past 150 years. Marriage occurred earlier than at any other time in the twentieth century and the increasing divorce rate slowed. The family oriented young adults of the 1950s [and their parents] were influenced by the STD education programs of the 1930s and 1940s. As STD incidence declined, interest in the social hygiene movement declined. STD education and control programs diminished.

1960; The oral contraceptive was introduced. By reducing the fear of unwanted pregnancy, the "pill" further reduced the fear of casual sex, but also greatly undermined the usage of the condom. "If it feels good, do it!" philosophy developed.

Mid 60s: The incidence of gonorrhea began to rise. Approximately 10 million cases of STDs per year occurred during the 1970s. Early in the 1980s, most of the baby boomers passed through the high risk age group (20-30). Although the population at risk was declining, during the late 1980s approximately 12 million cases per year were still occurring. During the 1960s and 1970s, the issue of STDs was only minimally addressed publicly.

1981: AIDS was first reported in medical literature.

1982: Time Magazine (Aug 2, 1982) cover article on herpes, entitled "The New Scarlet Letter," began to break the silence concerning STDs generated by the sexual revolution.

Mid 80s: AIDS received media attention. Gay men organized AIDS-awareness programs. Male syphilis and male rectal gonorrhea declined significantly due to safer sex practices.

Late 80s: Syphilis among minorities rose dramatically as a result of crack cocaine use. The incidence of gonorrhea in gay men rose in spite of the AIDS threat.[24]

1990: Despite almost ten years of media attention, 53% of the U.S. public reported that they were not taking any precaution against AIDS.

1992: Over 200,000 cases of AIDS reported since the beginning of the epidemic. It has been estimated that there are approximately 1 million individuals infected with HIV in the U.S.[25] During this same time period, more than one million women per year experienced pelvic inflammatory disease which can cause sterility.

(6) Where does the STD epidemic stand today?

More than one million cases of pelvic inflammatory disease are occurring each year. Syphilis, long considered the easiest STD to control, is at its highest level since the discovery of penicillin. Recent studies on major college campuses demonstrate that STDs are not confined to the urban poor. For example, 46% of women who requested routine gynecological care at UC Berkeley Health Center were found to have genital human papilloma virus infection which causes genital warts and may cause cervical cancer. Even more startling is recent data that demonstrates that among those individuals that feel "somewhat" or "very much" at personal risk for AIDS, only 43% reported that they take any disease prevention action.

(7) Why has there been a limited response to efforts to control this epidemic?

(a) STDs are very personal and very private experiences. Few individuals relate their experience with STDs to family or friends. Therefore, the commonness and danger of these infections is not adequately perceived by the general population. This issue of privacy and the hidden nature of the epidemic are the essential elements that delays timely cessation of the epidemic and its cure, a return to longer-term relationships.

(b) Despite the fact that AIDS is only one of many STDs that pose health risks, it has been the major

focus of both the media and STD public health efforts. Almost nothing is said about other STDs which are much more common among the low AIDS-risk public. For example, pelvic inflammatory disease causes sterility and human papilloma virus can cause cervical cancer. While AIDS education is certainly viral, the AIDS educational efforts, have not to-date, generated the desired behavior change. The lack of success of these efforts may stem from the use of road-based, poorly focused messages that are not culturally sensitive, psychologically sensitive or relevant to many sub-populations. They don't, therefore, motivate changes in mating strategy.

For example, much of the AIDS-related communications have utilized "fear of death." However, the major risk group is composed of adolescents and young adults. They, in general, do not greatly fear death; they feel immortal. They are, generally, too young to have experienced significant health problems or a death of a family member. They, therefore, have a very limited health consciousness. They are more likely to use drugs, have poor dietary habits, have higher auto insurance rates, drive motorcycles and engage in risky sex. "Fear of death" messages do not work for adolescents and young adults.

The STD with the greatest prevalence, chlamydia, has received very little public media coverage. According to the CDC, 4 million cases are occurring in the US and approximately 15% of sexually active teenagers may have chlamydia. Complicated chlamydia infections, called pelvic inflammatory disease (PID), can cause infertility by scarring and/or blocking the fallopian tubes. Eight to 30 percent of untreated cervical chlamydial infection results in symptomatic PID. Additionally, PID frequently occurs without symptoms. Young women are receiving very limited education about this threat to their childbearing ability. While the AIDS message has not been shown to satisfactorily alter the mating strategies taken among adolescents, messages about chlamydia and infertility might work with sexually active women who in the near future expect to have children. Incidently, the minimal attention to non-AIDS related STDs is *not* due to the medical community. The entire Nov 13, 1991, issue of the Journal of the American Medical Association issue was dedicated to the problem of pelvic inflammatory disease.

(c) Many of the educational efforts that rely on fear have not emphasized the development of alternative behaviors and relationship skills. As stated above, the real cause of STDs is lack of pair bonding and adequate maintenance of those bonds. The 50% divorce rate demonstrates that successful partner selection and long-term pair bonding is not easy.

(8) How effective are technological solutions in the control of STDs?

The continued prevalence of curable STDs in the face of antibiotics dispensed in free STD clinics demonstrate that a "magic bullet" solution for this epidemic will not work. In addition, it is not expected that in the near future medical advances will generate solutions for all the currently incurable STDs and their various complications. The critical element which undermines medically based STD control programs is behavior. If the rate of change of sexual partners is high, sexual contact tracing and medical treatment is of limited value.

In addition, more symptomatic strains of STDs cause people to stop sexual activity and seek medical attention with greater expediency. Less symptomatic strains go untreated. This is likely to increase the asymptomatic nature of STDs. In gonorrhea, rapid onset of symptoms in the male are depended on for timely

referral of the asymptomatic female to avoid complicated infections, such as PID. Less symptomatic strains will increase the risk for everyone. In effect, antibiotics promote the evolution of more destructive strains.

We are not relying on the use of condoms to control STDs. When used for birth control, the yearly failure rate of condoms is 12-15%.[31] It is important to note that while pregnancy exposure is only around ovula-tion, risk of exposure to STD is not so limited.

(9) What is the socioeconomic cost of the STD epidemic today?

There has not yet been a comprehensive estimate of the total cost of STDs in the US. However, 12 million noninfected sexual contacts are estimated to occur per year. Recently, the annual cost of PID, associated ectopic pregnancy and infertility was estimated to be $4.2 billion and is projected to increase to $10 billion annually by the year 2000. Estimates of the economic costs of herpes, gonorrhea and chlamydia are $759 million, $1.0 billion and S2.4 billion, respectively. Additionally, costs of AIDS, congenital and neonatal infections, genital wart colposcopy and treatment, treatment of cervical cancer and pre-cancer are enormous.

As a social disease, STDs are indicators of decreased pair bonding whose ramifications are far greater than merely the occurrence of the STDs. For example, decreased pair bonding leads to decreased family stability and formation and results in decreased family socialization of children which is the basis for many social problems such as teen-age pregnancy, child abuse, drug abuse, gang activity, crime, violence, poor school and work performance.

(10) What are the essential ele ments of a successful family reforma tion program?

Longer-term relationships will emerge in our society only when the public has been motivated to develop more sophisticated relationship skills and partner selection process. The educational efforts needed must have three specific goals:

(a) Build public awareness for all STDs and their health risks.

(b) Promote pair bonding as a means of risk reduction.

(c) Provide information to parents and other key influencers so that they can assist in the development of healthy mating strategies.

Most importantly, all of the educational efforts must be culturally sensitive and believable. Tailoring the messages to specific risk groups, their families and influencers will heighten acceptance of the need and the desire for change.

The rise and fall of societies appear to follow patterns; the causes of these patterns have not been understood.[32] The effects of STDs may be part of the mechanism of the decline. Though family life in the US may appear to be in decline, no previous society has ever had information distribution resources which we have. The question is: will we recognize the relationship of STDs to family formation in time, and do what must be done?

Commentary on STDs by JK Pearce

Those of us who can remember the horror of "VD" in the forties will surely agree that the campaign against venereal diseases was effective. We were also horrified by the threat of pregnancy, especially in places like my hometown of Seattle, where abortions were unknown, at least as far as un-hip middle class kids like me were concerned. At that time, just after WWII, returning vets had "apple pan-dowdy fever"—they wanted to get married and have kids as quickly as possible, to make up for the time lost risking their lives

at war. All these things contributed to the decline in venereal disease rates.

The problem is, how do we weigh factors in historical causation? The tradition of historians (like clinicians with whom they share methodological difficulties) is to produce anecdotes, bolstered by contemporaneous documents. Plausibility is enough. Can we do better? Yes, if population data is available.

Decisions are made by individuals. Data on why people (many people, with adequate controls for religion, class, education, family constellations, and ethnicity) think they make decisions about sexual behavior and marriage would certainly be pertinent; such data may even exist! Statistical analysis would then give us more balanced evidence about the sources of historical causation. This is exactly what Frank Sulloway is doing with data on the origins of scientific revolutions. (Of course, as convinced evolutionary psychologists, we believe "the whispering of the genes" is important. In that respect, we are in danger of being like other depth psychologists who have already made up their minds about what is truly important--regardless of the evidence.)

An even greater imponderable is the evolutionary significance of sexually transmitted disease in the Pleistocene. Dr Immerman offers us what little evidence there is about the antiquity of sexually transmitted diseases; none of it goes back to the Pleistocene. His evolutionary ideas seem plausible, and since we enjoy these kinds of ideas, pleasing, but how to assess them, how to weigh their importance for our species, is a mystery to me. At the last HBES meeting, William Hamilton talked about animals in which the arms race with endemic parasites led to the evolution of brightly colored males. Females choose the brightest colored, healthiest male, thus producing offspring with the best possible resistance to parasites. Chronic, endemic infections would seem to provide more effective selection pressure than sporadic infections. Within historical times, particularly after the establishment of big cities, large populations have provided a stable reservoir for many infectious diseases (see William McNeill's Plaques and Peoples). ' Can sexually transmitted diseases have been chronic and endemic in the small scattered bands of the Pleistocene?

Communiques from Laquna de Pro by
JS Price & R Gardner

Russell Gardner lives lagoon-side in Galveston, Texas, where John and Antonia Price visited in late January, 1993, enroute to Belize for their wintertime retreat.

There were two major working results: (1) a new definition for RHP stemming from Carlyle's word, 'capability', and (2) preliminary ideas on a major review article featuring sociophysiology as a basic science for psychiatry. In the course of working on a foreword for John Birtchnell's new book, RG read about the revolution started by William Harvey in 1628 and began to realize that a "Harveian basic science" in medicine has a particular meaning and that it perhaps holds a key for our proposed basic science. Of course, other preliminary work on sociophysiology has appeared in ASCAP in the form of backs-and-forths in previous issues.

This has subsequently gained a certain impetus because a member of the editorial board of the Amer J Psychiat in conversation suggested submission of a overview article on sociophysiology to that journal.

Capability = the new RHP by JSP & RG

John suggested that Thomas Carlyle be taken seriously and we agreed that we would together make the following proposal regarding an alternate term for resource holding potential (RHP) which has long been a mainstay for our group but which has not been user-friendly to others.

The quote from Carlyle is from his book Sartor Resartus (-1830), and goes as follows:

To each is given a certain inward Talent, a certain outward Environment of Fortune; to each, by wisest combination of these two, a certain maximum of Capability. But the hardest problem were ever this first: To find by study of yourself and of the ground you stand on, what your combined inward and outward Capability is.

In our thinking we agreed that:

1. Capability is a better term than self-esteem for the human translation of resource holding potential (RHP). This was basically derived to numeri cally estimate an animal's ability to win a conflict, but there are non-antagonistic meanings such as SAHP.

2. Capability will hopefully be more attractive to others than RHP which is an arbitrary term without immediate recognition nor are readers interested in mastering its meaning.

3. A term is needed, however, to indicate quanta detected by oneself and one's audience, whether these are people close to the person or more remotely connected.

Synonyms for capability from the word processing program thesaurus include: Ability, Faculty, Competence, Might, & Capacity. Paul Gilbert had previously suggested that "capacity" is a critical variable (he characterized depression as "incapacity").

Dictionary: "Physical, mental, financial or legal power to perform."

RG elaboration: this means that John's adjectives *anathetic* and *catathetic* mean the following: Person A will have made an anathetic communication if Person B's *capability* rises as a result of it. A will made a catathetic communication if B's capability diminishes.

What do ASCAP readers think of this modification in terminology? Please send your comments: either substantive criticism *or* support should augment not so much our self-esteem but our *capability,* even if we discard the term as a result!

Harveian basic science for psychiatry: sociophysiology by RG

The circle metaphor of Harveian physiology. Before Harvey published his new concept in 1628, there was no circulatory system with the heart at its center; he had encountered a cardiology mixed with the rest of medicine that depended on Galen's thirteen century-old metaphor of blood as a food that flowed out to body parts like a river. From its source in the liver, it flowed via *both* veins and arteries to the body which had attracted it, and then used it up without renewal. Each body part attracted and retained the blood it needed; fresh supplies were continually brought by the liver.

Harvey's fresh circle metaphor buttressed by his documentation gradually brought a reluctant profession steeped in the religion-backed Galenic doctrines to a different view. As a king's physician he had access to the royal zoological garden. Altogether he dissected over 80 species of animals, including the King's ostrich when it died, and small invertebrates, including the bee. He founded modern scientific medicine, although the concept and discovery of oxygen was one and a half centuries yet in the future.

Because Harvey made naked eye observations only (the microscope had not been invented), his evidence was incomplete. Thus he did not know about the invisible capillaries, his missing link, without which proof of a continuous flow of blood was wanting.

FIGURE

Medical Model	Gastrointestinal Medicine	Cardiology	Psychiatry
Function	Digestion	Circulation	X
=	=	=	=
Structure	Gastrointestinal tract	Cardiovascular system	Brain

But from experiment he knew that "porosities" had to exist. And discovery of capillaries thirty years later with new technology depended on Malpighi's prepared mind, prepared partly from Harvey's new concepts.

Many odd observations not making sense before Harvey finally did when he focused on the heart and blood as a system and made their function a more adequate story. Galen held that there were perforations between the right and left sides of the heart although these weren't to be demonstrated. Most of all, Galen had paid little heed to structural differences between arteries and veins.

As an old man, Harvey is said to have told Robert Boyle that he had observed his teacher Hieronymus Fabricus of Padua, Italy, who had discovered venous valves in 1603. Fabricus himself had called them something else and had no idea about their function. But Harvey may even then have compared them to the valves of water pumps he had seen in his native England and seeing the valves had given him the idea that blood must flow from arteries to veins and then back to the heart.[36]

Psychiatry's present deficit. Current day psychiatry is not *physiological* in the sense of Harveian medical science. With it, however, one can understand pathology in the vascular, gastrointestinal, urinary and neural systems because consequences of ill health happen when tubes were blocked or broken, or circuits were interrupted. Physiology, anatomy and biochemistry were straightforward affairs that explained disease conditions—not fully worked out and some diseases resist the investigative effort—but the paradigm was there and one knew the domain of study. When medications or other interventions work in psychiatry, or make differences in how people behave and feel, what normal functions are brought back into line, comparable to reduced acid in the stomach for the former sufferer of peptic ulcer? (See above FIGURE).

The Chicago School by John S Price

In our search for a science of relating we (JSP & RG) followed a lead provided by Paul Gilbert and looked at the 'Chicago School' of 'pragmatists' which flourished in the early years of the century and included John Dewey, Charles H Cooley and George Herbert Mead. They emphasized the close relation between the individual human and the local neighborhood group including the family, seeing the individual as in some way a function of the group, and the individual's concept of self as something given by the group. Cooley for example, says:

...human nature is not something existing separately in the individual, but a group nature or primary phase of society, a relatively simple and general condition of the social mind.[37] And Mead says:

And thus it is that social control, as operating in terms of self-criticism, exerts itself so intimately and extensively over individual behaviour or conduct, serving to integrate the individual and his actions with reference to the organized social processes of experience and behavior in which he is implicated. The physiological mechanism of the

human individual's nervous system makes it possible for him to take the attitudes of other individuals, and other attitudes of the organized social group of which he and they are members, towards himself, in terms of his integrated social relations to them and to the group as a whole; so that the general social process of experience and behavior which the group is carrying on is directly presented to him in his own experience, and so that he is thereby able to govern and direct his conduct consciously and critically, with reference to his relations both to the social group as a whole and to its other individual members, in terms of this social process. Thus he becomes not only self-conscious but also self-critical; and this, through self-criticism, social control over individual behaviour or conduct operates by virtue of the social origin and basis of such criticism. That is to say, self-criticism is essentially social criticism, and behaviour controlled by self-criticism is essentially behavior controlled socially.

According to this thinking of the Chicago School, the self concept and behaviour is controlled by the group, and therefore the qualities of the individual depend very much on in what sort of group they are members. This applies not only to the qualities which are common to group members, but also to the degree of variation which is induced among them. For instance, a group of girls in a same form (grade) of a high school may be equally friendly with each other, and induce the same sense of belonging in each girl; but it could have a central clique and peripheral girls who are excluded from membership of the clique, and in this group the clique members will develop a sense of belonging whereas the others will be constrained by the group into developing a self-image which is characterized by ideas of rejection, unlovability, unpopularity and their behaviour will lack the sanction to participate in important group processes such as decision-making. In relation to the group as a whole, these girls are constrained into an unwelcome position of distance using Birtchnell's closeness/distance dimension of relating.

The same applies to adult groups, which may induce a sense of belonging in everyone, or may induce a graduated variation in belongingness, or may divide people categorically into those who belong and those who do not. This is seen in extreme degree in those groups which contain secret societies.

If we turn to what Birtchnell calls the vertical dimension of upperness/lowerness we find an equal variation between groups in the amount of variation they induce in their individual members. The vertical dimension measures variation in power, which may manifest itself in several ways such as leader/follower, dominance/subordination, nurturing/being nurtured, and the corresponding subjective feelings of power/impotence and independence/dependency. All groups are stratified along the vertical dimension if they contain both children and adults. In the case of groups containing only members of the same sex and roughly the same age, the situation is more variable. Some groups are egalitarian, others are stratified in various ways, usually consisting of a leader and followers with variable stratification among the followers. There are many ways in which a group induces vertical differentiation, such as voting in elections, the informal allocation of prestige, the inheritance of titles, interpersonal intimidation, patronage, and competitive examinations.

The stratification of a group is a systemic process in which recursive interactions may occur, and in which it may be difficult to allocate cause and effect to individual members. Bateson coined the rather cumbersome term of 'complementary schis-mogenesis' to describe the positive feedback interaction between dominant behaviour on the part of one person and submissive behaviour on the part of another, leading to a change from

a symmetrical relationship to one which was complementary in terms of power. Sindermann pointed out how there is a "Matthew effect" in the allocation of prestige in the scientific community, such that "To him that hath shall be given, and from him that hath not shall be taken away, even that which he hath". Viscount Simon opined that "Reputation is like capital; the more you have of it the easier it is to increase it". Rowell complained about the use of the term 'dominance hierarchy' to describe the structure of monkey groups, pointing out that much of the motivation for asymmetry came not from the dominant animals but from those who either were, or were about to become, subordinate; and she pointed out that the term 'subordinacy hierarchy' might be more appropriate for such groups. Chance discusses Bion who, from experience with therapeutic groups, concluded: there is a strong tendency in any given group to the development, at any given time, of a powerful over-dependency on the nominal leader who is, in some inchoate way, felt to be in possession of all knowledge and problem solutions if only they could be pressurized, propitiated, sacrificed to, entreated, etc., to vouchsafe them such magical and god-1ike powers projected wishes and attributes to the leader. This was accompanied by a corresponding, unconscious, irrational, profoundly powerful devaluation of the abilities and potential capabilities of the rest of the membership.[44]

Gilbert has pointed out the evolutionary development from groups in which power is seized by coercion and intimidation to those in which it is offered willingly to those who are attractive and appear to meet the needs of the group. In other words, over the course of hominid evolution, a hedonic social structure has been superimposed on a more primitive agonic structure seen in most baboon and macaque groups and which probably characterized human ancestral groups at some stage in their lineage.

For our present purpose, we are not concerned with the method but simply with the fact of stratification, which means that such groups will induce in some members a feeling of upperness and in others a feeling of lowerness, and this will reflect the opinions of the other members of the group about them, in other words, their prestige. These feelings of upperness and lowerness are likely to be unrealistically exaggerated; with lowerness, they may either be inculcated by agonic intimidation on the part of the leader or by hedonic 'devaluation -of abilities' on the part of fellow members.

Other groups do just the opposite, and strongly resist any differentiation along the upperness/lowerness dimension. This applies to most of the hunter/gatherer societies which still exist. Thus Wilson says:

> The stress placed by some peoples on egalitarianism often appears in a negative manner as the avoidance of hierarchy and status. The cul turally prescribed reaction of indifference and belittling to the success of a hunter or the deliberate withholding of gratitude suggests that such people as the !Kung or the Pandaram realize that they have to fight against a tendency that could eventuate in hierarchy. Whether this tendency to stratification or status is natural or learned by example from sedentary neighbors is not ap parent, but__ ethnography clearly points to a self-conscious awareness of the dangers of arrogance and accomplishment and their relation to hier- archy. Egalitarianism is thus ruled or structured by prescriptions and proscriptions aimed at securing and upholding it and above all insisting on univer sal entitlement irrespective of qualifications.

As Cooley said (op cit): 'Always and everywhere men seek honour and dread ridicule, defer to public opinion... ' ,but whereas in Western societies honor is given to those who 'deserve' it and who usually already have a good measure of it, thus creating a positive feedback system or 'Matthew effect' leading to social stratification, in the hunter/gatherer societies those very same qualities elicit ridicule, leading to

a negative feedback system which prevents differentiation in terms of social rank. It is very significant that cultural traditions have the power to determine which of these mechanisms operates, because it gives hope that, if we find that societies which practice inclusiveness of membership and egalitarianism have better mental health than those which favor stratification and ingroup/out-group barriers, then there is hope that social engineering may have an effective role in prophylactic psychiatry. Of course we know that more modern societies have pushed the hunter/gatherers to the fringes of the habitable world, suggesting that in the competition between small groups an egalitarian social structure has not been very successful in the recent past; and we also know that the popular demand for stratification in modern societies is very great at all levels (one only has consider the popularity of lotteries as a means of stratifying the community in terms of wealth); but possibly at some level of organization it might be realistic to foster a more egalitarian and less exclusive social structure.

If mental health is related to the self-concept of being valued and belonging, then we would predict better mental health in societies which induce no within-group variation in these qualities, because everyone would be the same and one certain thing about mental ill-health is that it does not affect a whole community at the same time. It is to the stratified communities that we would look for mental health problems, and these might be related to both of Birtchnell's dimensions. We would expect less than perfect mental health in those who are excluded from the girl's clique in the playground, or from the adult secret society, and in general in all those who are classified as "beyond the pale" by their reference group. In relation to the upperness/lowerness dimension, the situation is less obvious. Positions of lowerness can be satisfying and acceptable to their occupants, as Al-dous Huxley demonstrated so graphically in his novel Brave New World. However, the desire for high or rising rank is widespread among primate societies, and interestingly Jane Goodall suggested that those chimpanzee males who did not show this quality might be in some way abnormal :

> Dominance as a concept will surely always have its ups and downs in the behavioral literature and in discussions between scientists, but there is absolutely no question that the chimpanzee does have an inherent, powerful, and compelling desire to work his way up through the dominance hierarchy. So much so that when we have the odd individual, as we do at Gombe, who does not seem particularly interested in his social rank, we regard him as distinctly unusual and want to burrow into his childhood to see if we can find clues there as to why he shows this surprising lack of the dominance drive.[47]

The desire for high rank not only makes the individual unhappy if society allocates him a low rank, but the interpersonal process of obtaining high rank may have mental health implications. Simmel writes:

> ...the desire for domination is designed to break the <u>internal</u> resistance of the subjugated (whereas egoism usually aims only at the victory over his <u>external</u> resistance)

It seems likely that the stress on a hunter/gatherer who is kept equal is spite of a desire to dominate would be less than the stress on someone kept in a subordinate role in spite of a desire for equality.

To investigate these matters more fully, we need to descend to a lower level of analysis, exploring the self-concept of individuals and the way that it is related both to mental health and social relations, and also looking at the interpersonal signals by which group members induce these changes in each other.

Abstract; Blanchard RJ, Flores T, Magee L, Weiss S, Blanchard DC: Pregrouping aggression and defense scores influences alcohol consumption for dominant and subordinate rats in visible burrow systems. Aggressive Behavior 1992,-18:459-67.

Five male/two female rat colonies were established in visible burrow systems, with males selected for pregrouping attack scores and also evaluated in open field and cat odor tests. Dominant-subordinate pregrouping attack differences suggested that the males becoming dominant are those showing more persistent and higher level attack. For six colonies showing dominant-subordinate pre-postgrouping change scores for voluntary ethanol consumption. Subordinates showed higher ranked ethanol consumption than dominants, but these groups were not different on pregrouping ethanol consumption. Subordinate postgrouping ethanol consumption was positively correlated with pregrouping attack toward an adult intruder, consonant with previous findings that highly aggressive subordinates are the targets of more intense attack by dominants.

These results provide further support for a view that subordination stress increases voluntary ethanol consumption in male rats and suggest some additional individual differences factors that may be involved in increased ethanol consumption for male subordinates.

Abstract: Henderson JG, Pollard CA, Jacobi KA, Merkel WT: Help-seeking patterns of community residents with depressive symptoms. J Affective Disorders 1992;26:157-162.

From a community sample, fifty-five individuals identified as having three or more symptoms of depression were asked if and where they had sought help and how they found or would find treatment. Only 20 subjects (33%) reported having sought help. No demographic differences were found between help-seekers and non-help-seekers____

This implies the interpretation that a communicational propensity of staying out of the way (yielding) is operative. Help-seeking would result from depression as a "cry for help."

Abstract: Lisitsyn N, Lisitsyn N, Wigler M: Cloning the differences between two complex genomes. Science 1993;259:946-51. (12 Feb issue).

The analysis of the differences between two complex genomes holds promise for the discovery of infectious agents and probes useful for genetic studies. A system was developed in which subtrac-tive and kinetic enrichment was used to purify restriction endonuclease fragments present in one population of DNA fragments but not in another. Application of this method to DNA populations of reduced complexity ("representations") resulted in the isolation of probes to viral genomes present as single copies in human DNA, and probes that detect polymorphisms between two individuals. In principle, this system called representational difference analyses (RDA), may also be used for isolating probes linked to sites of genomic rearrangements, whether occurring spontaneously and resulting in genetic disorders or cancer, or programmed during differentiation and development.

Might one area of difference determinations eventually be the more alpha dogs (eg, basinjis) versus docile breeds. On what chromosome and in which genes will such differences lie? True, as yet, the technique works best with small genomes.

Abstract: Glatt CE, Snyder SH: Cloning and expression of an adenylyl cyclase localized to the corpus striatum. Nature 1993;361:536-8.

The neurotransmitter dopamine acts through various receptor subtypes that are largely associated with enhancement or inhibition of adenylyl cyclases. These dopamine-sensitive adenylyl cyclases are highly concentrated in the corpus striatum and associated limbic structures of the brain, where their levels exceed by several orders of magnitude those in other areas of the brain. Here we use in situ hybridization to show that messenger RNA for three of these adenylyl cyclases is not found in the corpus striatum. We have isolated and expressed a complementary DNA encoding new adenylyl cyclase whose selective concentration in the corpus striatum indicates that it may be repon-sible for the synaptic actions of dopamine.

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2. c/o R Gardner, 1.200 Graves Building (D28), University of Texas Medical Branch, Galveston, TX 77555-0428 FAX: 409-772-4288. For ASCAP Newsletter Volumes 3 (Jan through Dec, 1990), 4 (same months, 1991), and 5 (same months, 1992), please send $18 (or equivalent) for each 12 issue set. The first two volumes (1988 and 1989) of thirteen and twelve issues respectively are available on request without cost. For subscription to the 1993 set of 12 issues (Volume 6), the cost is $20/year. Make checks or money orders out to "Department of Psychiatry and Behavioral Sciences, UTMB."

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