For evolutionary psychiatrists, psychologists and others interested in sociophysiological Integration

ASCAP

Volume 9, No 10, (Cumulative #107) October 1996

"[H]uman learning is not adequately characterized as mere imitation. It is an active fabrication. The human tool-maker enjoys a domain-general, polytechnic cognitive capacity that is applied to shaping behaviour and shaping objects."

Hiram Caton[1]

Contents

ASCAP Society Executive Council:

President: Kent G. Bailey **President-Elect:** Daniel R. Wilson **1st Vice President:** Mark Erickson **2nd Vice President:** Russell Gardner

Past Presidents: Leon Sloman
Michael A. Chance
John S. Price Paul
Gilbert John Pearce

ASCAP Society Mission Statement:

The ASCAP Society represents a group of people who view forms of psychopathology in the context of evolutionary biology and who wish to mobilize the resources of various disciplines and individuals potentially involved so as to enhance the further investigation and study of the conceptual and research questions involved.

This scientific society is concerned with the basic plans of behavior that have evolved over millions of years and that have resulted in psy-chopathologically related states. We are interested in the integration of various methods of study ranging from cellular processes to individuals in groups.

Across Species Comparison and Psychopathology (ASCAP) Newsletter Aims:

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

♦Elaboration of others' ideas.

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

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

The ASCAP Newsletter is a function of the ASCAP Society.

Editor-in-Chief: Russell Gardner, Jr.
Dept. of Psychiatry & Behavorial Sciences
Room 4.450, Marvin Graves Building, D-28
University of Texas Medical Branch
Galveston TX 77555-0428 Tel: (409) 772-7029 Fax: (409)772-6771 E-Mail: rgardner@utmb.edu

European Editor: John S. Price
Odintune Place
Plumpton East
Sussex BN7 3AN
ENGLAND (01144)27-389-0362 Fax: (011 44) 27-389-0850 E-Mail: 100042.2766@compuserve.com

Managing Editor: Frank Carrel
Dept. of Psychiatry & Behavorial Sciences
Room 1.103, Marvin Graves Building, D-28
University of Texas Medical Branch
Galveston TX 77555-0428
Tel: (409)772-3475
Fax: (409)772-4288
E-Mail: ascap@utmb.edu

Previous volumes are available. For details, contact Frank Carrel, the Managing Editor of *The ASCAP Newsletter,* at the address above.

The WWW Address for the The ASCAP Home Page is:

http://psy.utmb.edu/ascap The

alternate WWW address is:

http://129.109.4.55/ascap

ADDRESSED TO & FROM

Resources & Behavior-From E-Mail

The Kinesics researcher Birdwhistle did his Ph.D. thesis on the difference between hill and bottom folks (in Kentucky or the like) which showed how bottom people, who had rich resources that need intensive cultivation, were close to, and married cousins.

Hill people, with slim resources, put an emphasis on individuality and separation-they had to leave to make a living. This demonstrates the interaction of marriage patterns with other mechanisms, such as resource assessment.

John K. Pearce
jkp@world.std.com

Report from Editorial Board Meeting

by Russell Gardner, Jr. and John Price

Date: 15 September 1996

Location: College Station, Texas, U.S.A.

In The ASCAP Society business meeting on May 5,1996, John Price became the European Co-Editor of *The ASCAP Newsletter* and an editorial board was seen as a good idea could it be worked out. John and I, met for the first time face-to-face since the new policy because a meeting was hosted by Texas A&M University on "The Evolution of the Psyche" to which both editors were invited as speakers (RG is co-editor of the proceedings to emerge from the conference). Accordingly we met for several hours and concluded the following:

1. Relationship with other organizations:

a. World Congress of Psychiatry (WPA). We will explore a possible linkage with the WPA Section on Psychotherapy. As noted elsewhere in this *To and From* section of this issue, JSP was made Section Chairman in the August 1996 meeting of the WPA.

The former Section Chairman was ASCAP Society member Ferdinand Knobloch. Co-chairman with him was another member, Mauricio Cortina, from Washington, DC.

Dr. Knobloch has wished for a newsletter distribution to the membership. We wondered about whether the section could work with the separate but complementary ASCAP organization. This needs to be explored with the WPA hierarchy to determine whether the rules and regulations allow such collaborations. We note that the next meeting of the WPA will be in 1999, in Hamburg, Germany.

b. Other groups. While psychologists interested in the topic are welcome as section members (Paul Gilbert was a fruitful contributor to the August symposium in Madrid), the fact that they are not being physicians means that they cannot become members of the board by WPA rules.

In our discussion, however, we recognize that many ASCAP members are psychologists (e.g., the current president Kent Bailey) as well as other health and mental health professionals. Therefore, we feel it is important that we be open to other professional affiliations that may emerge.

2. Newsletter purposes:

a. These should continue to be integration of various kinds, with psychopathology, sociophysiology, observation, and evolutionary thinking.

b. We both acknowledge the influence of Ferdinand Knobloch in fostering integration. He wrote a multi-translated book in 1979 on Integrative Psychiatry and has himself contributed

fruitfully to the newsletter. Integration seems important. We were fresh from the Texas A&M sponsored conference and noted that many presenters were saying similar things but with different languages and frames of reference.

i. An example of latent similarity is that of "egocide" which David Rosen discusses. This concept of killing a part of the self is similar to formulations of treatment-resistant depression of JSP and Anthony Stevens and the *Bhagavad Gita* article of RG. Goals maintained by one different level of the nervous system may have to be given up by dint of another level(s) of involvement. Aside from the work published by ASCAP Society members, we suspect little has been written on how depression represents a state that may be resolved by a patient having to give up something.

ii. Another example is that JSP learned from Paul Gilbert's work that hedonic or externally mediated competition is very similar to Knobloch's meta-selection discussed in the *ASCAP* 1996 issue. Competition is not between two individuals with one or the other losing from what they had been genetically endowed with, but between the two of them for the attentions of a third party(ies) according to culturally determined criteria. The most effective leader is someone whose individual goals are most similar to those of the group.

c. We should foster the ideas of President Kent Bailey in providing didactic summaries of the various formulations contributed by ASCAP members, such as the involuntary subordinate strategy, alpha (and other) psalics, social attention holding power-potential, and psychiatric epidemiology. This is a particularly important initiative as the pieces could be used for classroom study and thereby educate and stimulate the next generation of scholars, researchers and other workers.

3. Playfulness and fun.

a. We should as a policy publish cases, so that the integration of ideas might stem from the reactions of the readers.

b. Also stories should regularly be included of social rank be included of social rank hierarchical or affliative behaviors of people in the newspaper and other media. (JSP recalled with pleasure, discussion of within-team conflict of the Houston Oilers of years past.)

4. Stimulus articles for debate are important and should feature aspects of psychopathology not often considered: psychosis eating and sexual disorders, and sociopathy are examples.

   For example, JSP quoted a statistic recently heard that there is 1 woman raped every 6 minutes in the U.S.A.

5. John S. Price will work on eliciting the cooperation of European contributors even as Russell Gardner, Jr. will continue work on this side of the Atlantic.

6. Editorial board members: Such membership should be encouraged but it should stem from effort and contribu tions to the integrative effort, and details need to be worked out in time.

Announcement

4th Gruter Institute Faculty Seminar

"Biological Perspectives in the Social Sciences and Humanities"

Dates: 2-8 August 1997

Location: Dartmouth College

The Gruter Institute for Law and Behavioral Research is pleased to announce the 4th Annual Faculty Seminar on "Biological Perspectives in the Social Sciences and Humanities", which will take place from 2 August 1997 (evening) through 8 August 1997 (noon). In prior years speakers have included:

Robert Trivers (Evolutionary Theory)

Frans de Waal (Primate Behavior)

Michael T. McGuire (Neurobiology and Behavior)

Miguel Marin-Padilla (Neuroscience)

Lionel Tiger (Anthropology)

Helen Fisher (Anthropology)

Robert Frank (Economics)

Roger Masters (Political Science)

E. Donald Elliott (Law)

Edward Berger (Genetics)

Peter Richerson (Cultural Evolution)

Randy Neese (Evolutionary Medicine)

Every attempt has been made to keep costs at a minimum. There will be a registration fee ($200.00). Single dormitory rooms, with a shared bath, have been reserved at Dartmouth College (Rate: $35.00 per day with maid service). Participants who so desire (particularly if coming with spouses or family) may, however, arrange other accomodations in hotels or seasonal condominiums in the Hanover area. On campus parking ($3.00 per day) and access to Dartmouth's athletic facilities ($3.00 per day) are available on request. Participants will purchase their meals through the College dining services. Opening and Closing dinners and lunch each day will be served at the Seminar location in the Rockfeller Center. Breakfast and other meals are available at the Dartmouth Dining Hall.

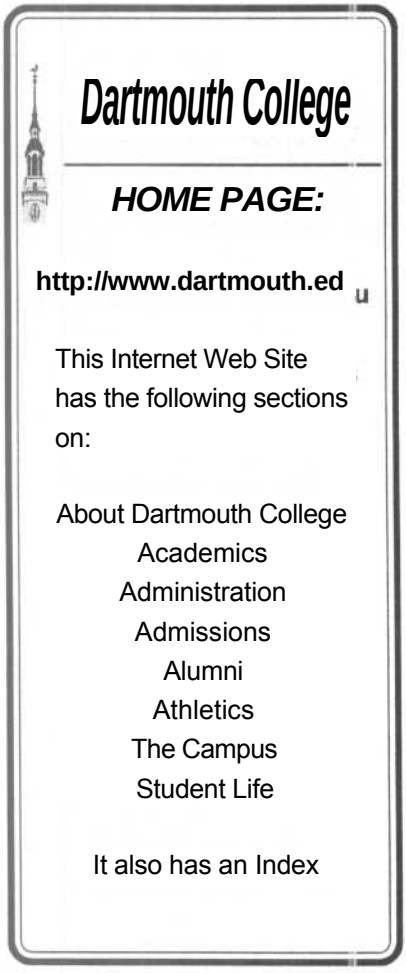
A limited number of grants covering the expenses of room and board will be available for those who teach courses or conduct scholarly research linking biological perspectives to the social sciences or humanities; the registration fee is waived for grantees. Participants are responsible for their own travel expenses.

Applications for a grant to cover room, board, and registration fee should indicate the course(s) now being taught or planned and/or the topics of research which relate the biological sciences to the study of human social behavior. Graduate students should submit 2 letters of recommendation, one from a thesis advisor and the other from another faculty member who knows the applicant well.

For applications and inquiries, write:

Ms. Suzanne Saxton
Gruter Institute for Law and Behavioral Research c/o
Department of Government
Silsby 6108
Dartmouth College
Hanover, NH 03755-3514

Telephone: (603) 646-102&
Fax: (603)646-2152
E-Mail:
gruter.institute@dartmouth.edu



Publication Possibilities

by Russell Gardner, Jr.

In the abstracts and extracts section of this issue, please note the article first-authored by Dan J. Stein of South Africa. He had lived in the U.S. for a time and is well familiar with research and publications in this country. By email, he notes that a series of articles in a journal such as *Psychiatric Annals* might place the ASCAP point of view before the psychiatric public. A proposal is necessary as is the C.V. of the principal proposer. The issue should echo a theme and the articles should each carry that forward, as with different disorders.

I noted to Dan that a number of articles have stemmed from ideas initially "sounded" on the pages of *The ASCAP Newsletter,* including my inspection of the impressive new book called *Evolutionary Psychiatry* by Anthony Stevens and John Price which I had the privilege to see at the Texas A&M sponsored conference.

I feel that the new venue might be interesting. Since I receive *Psychiatric Annals,* I took a look at it and found that it: "*is a peer-reviewed monthly journal featuring articles on new insights and new developments that will affect the practice of psychiatry in the United States. It is the aim of* Psychiatric Annals to *provide physicians with new information on the diagnosis and management of psychological and psychiatric disorders that would be useful to them in their practices. We invite your interest, comments, and participation."*

The editor is Jan Fawcett, Rush-Presbyterian-St. Luke's Medical Center, Chicago. The Editorial Advisory Board numbers 30; most are psychopharmacolo-gists. Typically there are 5 or 6 articles and an introduction from the guest editor who may or may not also contribute an article.

I believe we might proceed with some planning, not with any sure sense of success, but with the expectation that the efforts would be a springboard to success elsewhere. If practicality is at issue, there are a number of practical suggestions for patient managment that do stem from our approach.

Please send your ideas.

E-Mail, Re: HBES Brochure now Available

3 September 1996

From: Kevin MacDonald

To: Multiple recipients of HBES-L list
hbes-l@listserv.arizona.edu

Subject: HBES Brochure now available

The HBES Council directed that a brochure/flyer be printed up describing the society and providing information on how people could join. It is now available.

I have 1,000 copies on hand and will send them out to people who can distribute them at conferences or other presentations, or even put them up on a local bulletin board. Send an address and let me know how many you can use.

Kevin MacDonald
HBES Secretary /Archivist

Write to:

Kevin MacDonald
Department of Psychology
California State University-Long Beach
Long Beach, CA 90840-0901
or
Phone: (310 985-8183
Fax: ((310)985-8004
E-Mail: kmacd@csulb.edu

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

ARTICLE:

***by John S.** Price*

Spermatogenesis or Sperm Retention? The Problem of the Undescended Testes.

Comment on a new theory by Michael Chance

I had always thought that the testes were externalised in order to lower the temperature, and that this in some way facilitated spermatogenesis. One hoped that this was really necessary, to make up for the inconvenience and occasional excruciating pain to which the external testis is subject. But this is not the accepted answer.

In the most recent review of the field, Bedford says: "Descent of the testis to an accommodating scrotal sac is one of the more puzzling features of the reproductive tract of mammals.....the present conceptual framework in male reproductive physiology may yet be inadequate to resolve these questions."[1]

Now Michael Chance has come up with an entirely new and amazingly bright idea. In a paper in a recent issue of the Journal of Zoology he proposes that the testes are externalised in order to avoid sudden rises in intraperitoneal pressure.[2] He points out that the mammalian male reproductive tract is not guarded by a sphincter, and so, if the peritoneal pressure rises, the seminal fluid would be expelled from an internalised testis, epididymis and seminiferous tubules.

This idea came to him when he read in a newspaper that the urine of Oxford and Cambridge boatmen contained prostatic fluid after the boat race. If prostatic fluid is expelled after exertion, why not also spermatic fluid? The answer: the organs containing stored semen are not subject to rises in intra-abdominal pressure because they are not in the abdomen! Now, it is known that many mammals do not have externalised testes. It is this fact which casts doubt on the temperature theory of externalisation.

What is it which distinguishes those mammals who do from those who don't have externalised testes?

Here Michael Chance is able to marshall evidence in favour of his "concussive peritoneal pressure theory (CPPT)". Those mammals with internalised testes are burrowers and scuttlers, whereas the externalised mammals are leapers, bounders and gallopers, with the body raised off the ground. In other words, it is only those species of mammals; which are subject to CPP which have externalised testes. This strongly supports the CPPT.

Unfortunately the *Journal of Zoology* does not have a correspondence column, otherwise one would wait with rising excitement the response of Michael's zoological colleagues. Already there has been some comment in *New Scientist* (August 21) and on the BBC's World Service (August 23).

It is certainly a cause for excitement in ASCAP members that our first President and long-time guru should set the zoological world aflame at the venerable age of 81. There is no doubt that his "systems forming faculty" is still fully operative.

An additional reaction of my own is to be profourdly disappointed in evolution. Mammals are very good at providing sphincters where necessary. The Oxford crew do not regurgitate their stomach contents, their feces or their urine during their exertions, so why should they lose prostatic fluid?

And why on earth can the testis and its appendages not stay comfortably in the abdomen and be pro tected by a sphincter from what might be called exertional ejaculation?

How easy to provide a sphincter! How hard to send these little organs on a long journey through the abdominal cavity, out through the abdominal wall, leaving it weak and subject to hernia, and in doing so to expose them to all sorts of risks and injuries,

even to the extent of being bitten off by one's fellow chimpanzees. There must, surely, be some reason why a seminiferous sphincter was not a viable option during the evolutionary solution of this CPP problem.

A similar argument applies to the Surbey explanation of anorexia nervosa.[3]

If adolescent girls want to delay reproduction for a few years until circumstances are more propitious for childbirth, why can't they inhibit the release of gonadotropic hormone releasing hormone from the hypothalamus, in the way that the humble marmoset does, rather than evolve the convoluted, crude and clumsy pathway of getting the girl to believe she is too fat when she weighs five stone (90 pounds) just to keep her weight below some threshold at which ovulation is inhibited?

This is not the sort of behaviour we have come to expect from evolution.

We can forgive the odd lapse, like having some of the photosensitive pigments on the wrong side of the neuronal network of the retina, but this is clearly one of those minor peaks on the epigenetic landscape, and to scale the highest peak one would have had to go through the valley of altering the whole evolution of the eye.

But when a simple alternative is available, like a seminiferous sphincter?

When and if we finally get to call our Maker to account, we should put it to him that we are not at all happy that the race of men should have been handicapped with external testes, just so that the Oxford and Cambridge crews can cling on to that precious fluid they have been accumulating through the long weeks of intensive training and self-denial.

But seriously, Michael's theory will give rise to a lot of thinking about the evolution of sphincters, and also to a reappraisal of the whole subject of intra-abdominal hydrodynamics in relation to exercise. G3

ARTICLE:

by Paul J. Mitchell

Prediction of Antidepressant Activity from Ethological Analysis of Agonistic Behaviour in Rats

Letter, Re: Rat Resident/Intruder Paradigm

After writing about The Rat Resident/Intruder Paradigm: A Model for the Involuntary Subordinate Strategy (ISS). in *The ASCAP Newsletter,* February 1995, pages 12-16,I ran across a chapter by Paul J. Mitchell: Prediction of Antidepressant Activity from Ethological Analysis of Agonistic Behaviours in Rats. Editors: S. J. Cooper, & C. S. Hendrie, In *Ethology and Psychopharmacology,* London: John Wiley, 1994, pages 85-109, who was then working in Wyeth's research unit in the United Kingdom (U.K.), and has now moved to the University of Bath. The paper was very interesting, but I was surprised to note that he had given the anti-depressant drug to the resident rat and not to the intruder (which all the others had done), on the grounds that the intruder usually loses, and so might be said to get depressed.

John S. Price
100042.2766@compuserve.com

Introduction:

Towards the end of last year I received a letter from Dr. John Price with reference to a chapter that I contributed to *Ethology and Psychopharmacology,* published in 1994. The chapter described my work on antidepressant drug-induced changes in the non-social, social and agonistic behaviour of resident rats expressed during encounters with unfamiliar intruder conspecifics. John asked a couple of questions and I was most happy to reply. Sometime later I received a second letter from John asking my permission to publish my reply in your ASCAP Newsletter. I readily agreed but suggested, firstly, that your readers might require some explanation as to how the communication arose, and, secondly, that the reply would requires some editing prior to publication.

It is now sometime since John and I last spoke, but I have managed to edit my reply into an acceptable format.

Paul J. Mitchell
P.J.Mitchell@bath.ac.uk or prspjm@bath.ac.uk

Price Question:

Why is there a difference in the baseline level of aggression shown by the respective control groups in acute and chronic drug studies?

There are two main points to discuss here:

Firstly, we have routinely observed higher levels of aggressive behaviour exhibited by vehicle-treated resident rats in acute treatment studies compared to the baseline level of aggression shown by resident rats prior to implantation of osmotic minipumps containing drug or vehicle in chronic treatment studies.[1]

The data from a number studies, indicate that the behaviour of resident rats is modified by administering a subcutaneous (sc) injection, i.e. an elevation of aggressive behaviour (which is reflected by increased flight behaviour in the intruder rats) compared to the baseline, pre-implantation, behaviour of the resident rats in the respective chronic studies.[1,2]

It may be argued, therefore, that all resident rats in chronic drug studies should receive an acute sc injection of drug vehicle prior to a social encounter in order that the baseline aggression levels of the resident rats should be comparable to those observed in

acute drug studies, rather than being behaviourally tested on the first occasion without any treatment.

However, we do not think that such slight differences in baseline behaviour would have any significant consequences regarding drug-induced changes in rodent social and agonistic behaviour. In fact, the differences in baseline aggressive behaviour may work to our advantage. In our studies, acute treatment with antidepressant drugs (regardless of their pharmacological activity; data summarized), dose dependently reduces aggressive behaviour, whilst chronic treatment increases aggressive behaviour.[3]

Thus, a higher baseline aggressive behaviour in the acute studies increases the window of opportunity to enable significant drug-induced reductions in aggressive behaviour to be observed. Likewise, a slightly lower baseline aggressive behaviour in the chronic drug studies also increases the window of opportunity to observe significant drug-induced increases in aggressive behaviour.

The second point concerns the relative levels of aggressive behaviour expressed by the resident and intruder rats. We generally observe higher levels of aggressive behaviour in the resident rats compared to the intruder rats, especially in the acute drug studies where the aggression of the resident rats has been elevated by the sc injection as discussed above.

In the chronic treatment studies, however, because the aggression of the resident rats is slightly lower the relative levels of the aggressive behaviour of resident and intruder rats are much closer. Indeed, in some cases the aggression levels may be nearly identical. Also, we have observed a degree of variation in the relationship between the respective baseline aggression levels of resident and intruder rats in various drug studies.

Clearly an explanation for the variation in relative aggression levels is required. This concerns the function of the aggressive behaviour exhibited by the resident and intruder rats during social encounters. In these studies, social encounters are initiated invariably by the resident rat and the aggressive behaviour shown by these animals is described by many authors as offensive. Such behaviour initiates defensive behaviour in the intruders which generally manifest as either flight behaviour or aggressive behaviour (in some cases displacement behaviours, e.g. grooming, occur when motivational conflict arises).

Thus, resident rats generally exhibit offensive aggressive behaviour while intruder rats generally exhibit defensive aggressive behaviour. The actual offensive and defensive aggressive postures shown by the resident and intruder rats are nearly identical and differentiation depends on identifying which of the two subjects initiates the encounter. This demonstrates the important ethological concept that no single behavioural element (regardless of species) can be understood without reference to the complete dynamic structure of behaviour (i.e. the function of a behaviour may only be understood by knowing which behaviours) precede and follow it). In our studies we record each social encounter on videotape and then analyse the behaviour of each animal in turn.

So, during real-time analysis of each encounter, and considering the speed at which successive behaviours occur, it is nigh impossible to identify and score which animal initiates the aggressive encounter and hence to differentiate between offensive and defensive aggressive postures. This may reflect a deficiency in the scoring system used, but it is a deficiency we have accepted since slow motion replaying of each videotape to score the behaviour of both subjects at the same time would drastically increase the analysis time of each encounter.

Of course, this is not to say that intruder rats do not initiate aggressive encounters. Indeed, intruder rats do exhibit offensive aggressive behaviour but not as readily as the resident rats in this experimental situation. For example, in some acute drug treatment studies, intruder rats show slight increases in ag-

gressive behaviour even though the aggressive behaviour of the drug-treated resident rats is reduced.[2]

These behavioural changes in the intruders probably reflect slightly increased offensive aggressive behaviour rather than increased defensive aggressive behaviour since the need for defensive behaviour in general is reduced, as shown by the reduced flight behaviour of the intruders. An increase in intrude rat offensive aggression would also explain the increased flight behaviour of the resident rats. When the aggressive behaviour of the resident rats is increased during chronic antidepressantdrug treatment one would expect a concomitant decrease in the offensive aggression shown by the drug-free intruder rats.

However, some intruder groups also show increased aggressive behaviour when the aggressive behaviour of the resident rats is increased.[2]

This probably reflects increased defensive aggressive behaviour since the flight behaviour of the same animals is also increased in response to the elevated aggressive behaviour of the resident rats. Thus by considering the overall changes in the behavioural profiles of both drug-treated resident and drug-free intruder rats it is possible to appreciate the relevance of the observed behavioural changes. An important aspect of this is that the behaviour of both animals during a social encounter are interdependent.

Thus, as one animal's behaviour changes so the behaviour of the other subject also changes. The baseline behavioural profiles of both resident and intruder rats, and behavioural changes observed during the course of each experiment, are dependent on the strategy, or changes in strategy, employed by each animal during the encounter. The strategy of an individual rat in these studies would be dependent on many factors, both environmental (e.g. familiarity of caging, time of encounter with reference to circadian cycle) and social (period of isolation or grouping, previous social experience, relative rank position within home group social structure) in addition to any drug-induced changes in the behaviour of the resident rats.

Price Question:

Why administer antidepressant drugs to the resident rather than the intruder rat?

When these studies started we did not know whether antidepressant drugs, regardless of the treatment regime used, would modify the social and/or agonistic behaviour observed in these studies. At the time we simply wished to use environmental and social manipulation to promote rodent social and agonistic behaviour. This we achieved by using the conditions described.[2] The resident rats were chosen for drug treatment because they generally initiated each encounter and provided a wider profile of various behavioural elements than the intruders.

Once it had been established that antidepressant drugs induced very specific changes in the behav iour of resident rats, that was entirely dependent on the treatment regime used, and that such changes could be used as markers to identify potential antidepressant activity for novel compounds, there seemed very little point in changing the methodol ogy. The behaviour of the intruder rats in these studies is generally in response to the attention it receives from the resident rat. The behaviours exhibited by the intruder thus reflect the strategy they adopt to counteract the behaviour of the resident (i.e. stand and fight, or flee).

In both cases, the strategy used will depend on the position of the two animals in relation to each other and their surroundings (i.e. whether the intruder has an opportunity to flee or whether it has been cornered by the resident rat) and also on the level of fear the intruder has of the resident. Since anxiolytic drugs are thought to reduce the perceived level of fear/stress in an aversive situation it may be that the behaviour of the intruder rat is sensitive to

treatment with anxiolytic, rather than antidepressant, drugs.

Interestingly, acute treatment with diazepam fails to selectively modify the behaviour of resident rats and only reduces aggressive behaviour at doses which cause motor impairment, while chronic treatment with diazepam has no effect on aggression during treatment, although resident rats may show some rebound elevation of aggressive behaviour 7 days after treatment has stopped.[2] So, while antidepressant drugs clearly have profound, selective, effects on the offensive aggressive behaviour of resident rats, anxiolytic drugs have little or no selective effect on this type of aggressive behaviour.

Whether antidepressant drugs may similarly modify the defensive aggressive behaviour of the intruder rats, or whether such behaviour is more sensitive to anxiolytic drug treatment, remains to be examined. In the light of the current literature on the behavioural effect of anxiolytic drugs on defensive behaviour in rodents, and the lack of effect of antidepressant drugs in animal models of anxiety, anxiolytic compounds, rather than antidepressant drugs, would be more likely to modify the aggressive behaviour of the intruder rats.

We also need to ensure that any discussion on the aggressive behaviour of rats is kept in context, especially regarding any possible relationship to the behavioural changes observed in patients during the recovery process from depressive illness. We take the view that aggression in social animals (such as the rat) is very different, and serves a very different function, from the aggression shown by territorial animals (such as, for example, mice).

Territorial animals show very violent aggressive behaviour in order to defend their territory from an intruder conspecific, and such behaviour usually results in marked damage, even death, to one of the combatants. Such behaviour may be observed in a resident-intruder encounter between male mice. For a social species, however, such violent aggressive behaviour would be to the detriment of the social group. The aggressive behaviour of social animals, including rats, is therefore far less violent than that of territorial animals such as the mouse, and is generally termed affective or affiliative aggression.

Indeed, we have never observed any physical damage to the more subordinate subject during an encounter, even where the resident rat showed very marked aggressive behaviour during chronic antidepressant drug treatment. Chronic antidepressant drug treatments appear to exaggerate behavioural responses [both aggressive[1,2,3,4] and submissive[5,6]] appropriate to the social stimulus (it just so happens that exaggerated aggressive behaviour is the appropriate response for resident rats confronted with an unfamiliar intruder).

Thus, the elevated aggressive behaviour observed in the rat may be a manifestation of disinhibited or released social and agonistic behaviour. This change in rat behaviour seems remarkably similar to the reversal of intropunitive aggression[7] or impaired sociability[8] observed in depressed patients that leads to the externalization of emotions[9] associated with the remission of depressive illness.

Some human studies would suggest, for example, that depressed patients do become more aggressive during recovery, but the heightened aggression is constructive, not destructive, and is manifest as increased verbal and non-verbal communication, a more positive outlook on life and increased self-confidence and self-awareness. *c8*

ARTICLE:

by Claire Russell & W.M.S. Russell

Population Crises and Population Cycles
2. The Crises and Cycles of China

(Reproduced with permission from the Galton Institute Newsletter, September 1995.)

Editor's Note: The Introduction to this article appeared in *The ASCAP Newsletter,* March 1996, Volume 3, pages 16-18. This is the second contribution of 4 parts. The reference list for the entire article will be put with the 4th and final installment in our December 1996 issue.

The civilisation of China has always depended on irrigation and flood control. The first region developed was the easily worked loess area of the Upper Yellow River, growing wheat and millet; with greater mastery of flood control, cultivation of these crops was extended to the Lower Yellow River, more productive thanks to its silt but liable to serious flooding; and finally, the rice region of the Yangtze River was developed, the most productive area of all.

But the resulting advances in food production were always accompanied by excessive growth of population, leading to a succession of crises and cycles.

The first overpopulation crisis of which we have detailed knowledge occurred in the later 1 st millennium B.C. In former times, wrote Han Fei-Tzu (died 233 B.C.),"... *there were few people and plenty of supplies, and therefore the people did not quarrel... But nowadays people do not consider a family of five children as large, and each child having again 5 children, before the death of the grandfather, there may be 25 grandchildren. The result is that there are many people and few supplies ...so the people fall to quarrelling, and... one does not get away from disorder."*

China was then composed of many little states, each busy completing the water control system within its own borders, and disputing with other states using the same rivers. Thus the state of Ch'in built an embarkment on the Yellow River which had the effect of flooding the states of Chao and Wei, who built a counter-embankment to return the compliment.

The wars between the states ended in the unification of the Yellow River and the Lower Yangtze by the state of Ch'in, which controlled the loess area, forming what has been called a water-shed empire. Like similar empires elsewhere (the Assyrians, the Inca), the Ch'in Empire was a horrible military tyranny. When the wars, with their huge death rates, were over, the first Emperor used his enormous army to build the Great Wall, a Stone Curtain designed to keep his subjects from straying out of his reach into the Central Asian steppe, where climate and terrain favoured the development of a nomad herding culture.

However, no people could long tolerate a regime in which everything but agriculture and military training was forbidden, where art and love were capital offences, and where anyone failing to denounce **a** friend for lawbreaking was sawn in half.

In 202 B.C., the Ch'in were finally replaced by the first great Chinese dynasty, the Han, ruling through a relatively humane and flexible bureaucracy, selected by public examinations. These were open to all in theory, and in some periods even in practice, but few people had time to learn written Chinese except the sons of the land-owning gentry, who fused with the bureaucracy into one class, the *Mandarins.* This system survived through all of the Chinese Imperial dynasties.

As Chinese historians have observed, each major dynasty rose and fell in a cycle of reduced population pressure, population growth, overpopulation, and population crisis. The mandarins wanted no overseas trade or large-scale industry to disturb the bureaucratic routine, still less any labour-saving machinery.

By the 16th century, they succeeded in halting both Chinese technological progress and Chinese maritime exploration, hitherto far in advance of Europe. Moreover, the mandarins wanted more land to be cultivated and more peasants to work it, to yield them rent as owners and taxes as officials, both paid in grain.

The great productiveness of Chinese irrigation agriculture permitted a high population density, even in periods of *relative* relief from overpopulation. So the accumulated effects of the crisis periods outweighed the constructive effects of the crisis periods outweighed the constructive effects of the relief periods, and, by the time of the later Ming, Chinese civilisation was in many ways in decline.

The population cycles of China since the Ch'in are shown in **Table 1** (page 15). The 3rd column shows increases in food production as various regions were fully developed and new crops were introduced. The numbers of water control works are minimum figures, but they give a fair picture of the differences between earlier and later periods, and between relief and crisis periods, when water control activities increased more slowly or even decreased.

Absolute population figures shown can not be accurate, but from the 14th century onwards they are fairly reliable, and there is no doubt (even in earlier periods when no figures are given) about the enormous increase in population resulting from the successive advances in food production, or about the huge fluctuations accompanying the crises.

When the Han dynasty finally collapsed, in A.D. 220, China was long divided between the Northern plans, the Lower Yangtze, and a new economic area, the Szechuan plateau.

Then the Sui dynasty, almost as brutal and short-lived as the Ch'in, completed the linking of the Yangtze and the Yellow River by the Grand Canal. The grain wealth of the rice region could now be brought to a capital in the North, supplying armies that could dominate the rest of China. But, as in every population crisis, China fell apart into its component regions, and even smaller factions, ruled by numerous lesser dynasties not shown in **Table 1.**

Beside famines, epidemics, and appalling civil wars, China suffered during the population crises from incursions of nomad chieftains from across the Central Asian borders, who often founded the Chinese dynasties, notably the Yuan (Mongol) and Chi'ng (Manchu) dynasties, whose conquests were particularly destructive. By the dreadful crisis of the 20th century, the nomads had been subdued, but China suffered instead from her own brutal warlords, European exploitation, and Japanese conquest.

In 1949, the People's Republic brought peace to China, amidst popular enthusiasm like that which greeted the accession of the great national dynasties of the Han and Ming. But the new government delayed introducing birth control, and another crisis ensued, the "Cultural Revolution", which nearly destroyed Chinese civilisation and caused massive environmental damage. It remains to be seen whether China's new birth control policy will reduce the population in time to avert another crisis, and bring to an end the "cycles of Cathay". G8

The 6 Major Regions of China.

Table 1: The Population cycles of China

Dates	Period	Food Production	Water Control Works*	Population (millions)
481-206 B.C.	**Crisis 1:** Warring States, Ch'in, civil war	N.W. Loess area developed	1.6	
206 B.C. to 221 A.D.	Han (actually 2 dynasties)	N.E. Lower Yellow River developed	6.6	
221-618A.D.	**Crisis 2:** 3 kingdoms, Tsin, South & North dynasties, Sui	S.E. Lower Yangtze River developed; Grand Canal	7.6	
618-755	T'ang (at its height)			
754				50
618-907			43.9	
755-960	**Crisis** 3: Civil war, later T'ang , 5 dynasties			
839				30
907-960			12.3	
960-1280	Sung	Early-growing rice	174.4	
1100				100
1280-1368	**Crisis 4:** Yuan (Mongols)		175.6	
1290				60
1368-1644	Ming	Potatoes, sweet potatoes, groundnuts, maize	411.2	
1393				65
1600				150
1644-1683	**Crisis 5:** Fall of Ming, Manchu Conquest			
1661				100
1644-1912	Ch'ing (Manchu)		603.4	
1700				150
1779				275
1794				313
1850				430
1850-1880	**Crisis** 6: Taipeng, Nien, Moslem Revolts			
1872				330
1900				430
1912-1949	**Crisis** 7: Warlords, civil war, Japanese invasion			
1931				450
1950-Present	People's Republic of China			
1953				580

Number of engineering works of water control per 50-year period.

ARTICLE:

by Russell Gardner, Jr.

Sociophysiology on a Sunday Afternoon

On an early fall vacation, we traveled to Wisconsin. As a part of this I additionally traveled to the Twin Cities in Minnesota to visit my son who goes to school there. The return leg of Minneapolis to Madison is a six hour trip so I was grateful on Sunday afternoon to Wisconsin Public Radio for their tradition of friendliness to ideas and education. I experienced this first in grade-school days when my teacher tuned to Professor Edgar Gordon's music program from the University of Wisconsin at 2:00 p.m. on Wednesday afternoons, and during college days, while on summer painting jobs, I heard books read aloud from the same state station. Here I was again, in the familiar landscape of rolling hills, dairy farms, and kettle moraine mounds of glacial remains from the last ice age. A few partly-colored maples signaled the season. There was a difference. As I heard the programs now, I found myself contemplating how the featured scientists and thinkers would in the future rethink their conceptions with the powerful conceptual tool of sociophysiology. I provide some predictions of this future in this essay as well as thoughts about current knowledge in this implicit field.

A series of interviews focused on human consciousness, two of which I mention here. A first dialog told of Roger Chamber's skepticism that consciousness as a subjective experience would ever be reduced to neurons and their activities. (This approximates his name, which I did not know independently of the program though his ideas seem somehow familiar.) He has no trouble with the mechanics of consciousness' components: with the pace of research, he is quite aware that we will surely increasingly understanding better how our brain transduces vision, how it contemplates and carries out movement, and where in the brain parts especially caring for memory reside. But a second level of understanding, he asserted, will remain elusive, the component that underlies each person's subjectivity. If each of his own brain cells, he asked by way of a thought-experiment, were one-by-one replaced by silicon counterparts, at which point would he stop being conscious? He seemed involved with non-physiological undoable experiments and not at all concerned with the history of the human brain considered most important by readers of *The ASCAP Newsletter.*

So how might this issue be sociophysiologically rephrased? Anyone who has thought, dreamed and contemplated while knowing he/she is so doing is an expert on consciousness of course, and I'm hardly more so than anyone else. Yet I suspect that the question of consciousness — abstracted in isolation—will be less interesting for future generations than in how it might be the side-effect of other social brain attributes. Consciousness when discussed focuses on the individual alone, rather than on the person in the company of others. In contrast, I boldly predict that our intellectual descendants will know our brain as an exquisitely tuned social brain in that its mushroomed size (compared to that of our hominid ancestors) came about for the increased advantage provided by nuanced and extensive communication with others of our same species. A consequence of this includes that many "as if possibilities may occur to a person, in other words, stories. Consciousness is what happens when one has a conversation with oneself, an "as if self. We relate, I assert, to our parts and to our future or past selves in such contemplations similar to how we relate to animate and inanimate objects of many sorts, such as John Birtchnell's excellent example of the stop sign.[1] We choose to be interpersonally "lower" not only to another person but, while driving, to inanimate symbols. In a similar manner, a person can ask himself a question and then answer it later. Cham-

bers stayed in a philosophical present, did not consider history, did not mention evolutionary origins, did not ask what advantages the mushroomed brain had for increasing the risks for the individual who was born of an only reluctantly enlarging pelvic opening in the mothers of these oddball children who suggest to themselves, "I think, therefore I am." Do you suspect with me that in the sociophysiological future, he will be queried along such lines by more sophisticated interviewers so that a sharper conceptualization will result for the Sunday listener.

A second feature in this series involved Rudolph Innes, a neuroscientist focusing on thalamocortical loops. (Again, I'm unsure of the name as later in the Madison Borders Book Store, a helpful clerk could not find it in the electronic *Books in Print,* possibly instead the name is Ralph Ellis, but we couldn't be sure as the book was unavailable.) In any event, Dr. Innes/Ellis told us that action loops from central core nuclei of our brains to an analyzing periphery and then back are exquisitely timed phenomena crucial to conscious perceptual experience.

To make his point come alive, he and his interviewer used the example of a jogger coming by while the perceiving person sits on a park bench. What sensory impressions occur, how are they timed and how integrated? In an obviously previously rehearsed sequence, they casually mentioned the jogger had a green parrot on his shoulder. I supposed this detail gained inclusion to heighten the listener's attention. They didn't mention how the images they presented illustrated human storylines and how wonderfully attuned our brains are to these. The woman jogger with a parrot clinched my already naturally occurring thought of how important storyline details are, including how those same thalamocortical loops might be involved, how they might include personal and shared storylines as well as the shared cultural 'worldview' and 'dreamtimes' of the Davies family who wrote *Humankind the Gatherer-Hunter From Earliest Times to Industry* mentioned last issue. Stories are what humans use incessantly to relate to each other. We love to listen to stories and we revel in generating them. Where and how are these attributes in the brain? Certainly timing is part of it.

So my interest in perceptions — never great from the beginning of their dialog — now switched to much higher gain as I felt curious about how *the story* was transduced in the brain. The park bench sitter heard a jogger, looked to see a woman running, and then perceived of all things a green parrot on her shoulder — a parrot!? I imagined my own doubletake — if I had been there on that park bench — on seeing this unexpected feature. An implication for the brain-version of this is that I had fit the jogger story into a standard routine version of such a story that had been present in my brain. The expected story was one that the detail of parrot violated; my novelty proteins must have been activated, in this case pleasantly. Ernest Barratt's work on the oddball paradigm in cortically evoked potentials showed that when a particular stimulus is expected, but an odd one is there instead, the brain behaves quite differently as measured by the electrical brain wave.

The discussants involved with Dr. Innes/Ellis's major points for the anecdote ignored the parrot in their discussion, to be cool in their presentation perhaps, but I confidently predict that such sociophysiological features of the storyline will be the neural-perceptual ground more intensely investigated in the future. Mark these words; put this article aside for 10 or 20 years and then we will together listen to Wisconsin Public Radio on a Sunday afternoon to check on whether this prediction has come true.

Consciousness was not the only topic featured on the *Ideas Program* of Wisconsin Public Radio. Another focused on a new book by a man named Art Kleiner which reviewed changes in business practice that took place several decades ago. This reference *could* be verified at the Madison Borders Store, having been published May, 1996. Kleiner describes several biographies in *The Age of Heretics: Heroes, Outlaws, & the Forerunners of Corporate Change.* Doubleday and Co., of which I'll

mention only one, that of Lyman Ketchum. In the first half of the twentieth century when American business was monolithically authoritarian and hierarchical, Ketchum held forth for a more democratic approach, sensing that power dispersed as far down as possible would result in greater productivity, contrary to the truths of the early giants of American Industry such as Ford and Carnegie who treated people as objects that could be moved. Ketchum's bosses at General Foods took great persuasion that anything of the sort would work. Now, from many modern activations and revisions of Ketchum's thinking, the concept of total quality management and delegating decision-making to the lowest levels possible fill our common parlance and organizational practice, although multiple forces trending in the other direction persist to this time.

But I hear you asking 'how is this sociophysiologi-cal?' So far in this story, nothing has been mentioned of the brain nor body although physiological implies the body must be involved; we all know that, but may take it for granted as too complex to analyze at present. But we must begin somewhere. If social and behavioral facets of behavior are focused on with analysis of their brain and cellular counterparts in the offing, there may develop better understandings of them, either as developed individually or as prepared by the genomic basic plans to give rise to the learning that needs to be involved. We learn and our brains are programmed to learn.

So I now relay on my Sunday afternoon thoughts in the kettle moraine country of southwestern Wisconsin. Societal factors influencing Ketchum's theory and grand experiment (first done in a newly constructed midwestem plant) include the observation that concentration of resources in the history of humans seems to enhance authoritarian features of the social rank hierarchical features of human organization. That is, when resources are scarce and no one person has much more than anyone else, there is little beyond the ally-formation of the chimpanzees described by de Waals and Goodall to help a would be ruler: he or she desiring unalloyed authority is easily brought down to size although the desire seems to always remain, however harnessed. Jane Goodall reports, *"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 [male] 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 the surprising lack of the dominance drive."*[2]

We have little reason to doubt that humans have these drives and pushes too, but modulated by the big brain and close social ties, especially in scarce resource gatherer-hunter groupings. But with concentrated resources, the ruler can buy not only allies but means of enforcement, or in corporate leadership, the symbols of power which mean making decisions. The very idea of delegating decision-making power to a class of lesser beings caused Mr. Ketchum great trouble, however ahead of his time he was, as he encountered the entrenched pleasures of power that distorted thinking. Finally he was given the go-ahead, with the admonition, "Ok, you are now free to fail," so doubtful were the corporate officials that the experiment would succeed. And he both succeeded and failed; the plant flourished with the delegated power and apparently in the culture of the place. Many subsequent attempts to change it to a more authoritarian place failed. However, Ketchum lost his leadership role.

Another facet of this investigation, I can envision, involves routine. The academic lawyer, Paul Wohlmuth, mentioned this as a powerful variable in the cause of social behaviors last issue. If things have been done a certain way, the tendency towards future actions will trend towards the way they have been before. Thus, a competing hypothesis for the final acquiescence, the eventual change

of mind, by the corporate officials who finally granted Mr. Ketchum's application involves routine.

Experimentally, we pose the questions as follows: how was the brain of the corporate official — or some future experimental counterpart—functioning when confronted with the ideas of a Mr. Ketchum: was it:

1. Savoring the privileges of the favored class thereby unable to conceive of lower class people having decision making-power? or

2. Was it concerned simply with routine, unable to conceive of a new way of doing things? **or**

3. **Both?** If both, what proportions of each were operating? And how were the mindsets of the decision-makers influenced by the others of the committee? What were the social rankings implicit and explicit and how did this mix keep Mr. Ketchum's pleadings alive for the repeated meetings he encountered so the project could eventually receive approval for the "freedom to fail"?

Speaking of routine, mine — continuing the journey down Highway 94 going to Madison—was interrupted when the particular station beaming to my car faded so that I instead listened to *Country Western Countdown.* Since I was thinking 'socio-physiological' already, however, I persisted, and invite you to consider the final four songs (in the same reverse order that they were played):

#4. "Stop Pretending" (referring to infidelity),

#3. "Learning as You Go" (I can't remember from my fragmentary note whether this refers to a potentially mating pair or one that is breaking up but am inclined to the latter),

#2. "Shoe's on the Other Foot, Guys Do It All The Time" (a woman wreaks revenge on her lover by herself going out, drinking, and being unfaithful in the middle of the night), **and**

#1. "I Don't Think I Will" (the narrator is tempted by the availability of an extramarital affair, but resists).

All refer to vicissitudes of human pair-bonding with consequences of brain and hormonal connotations, as have been dealt with by Helen Fisher[3] and Lionel Tiger.[4]

The #2 song featured revenge and anger, and also included reference to considerable drinking (a pattern familiar to middle-aged male patients of my clinical practice whose wives have dysfunctionally started using alcohol and drugs). The pharmacology of alcohol and related drugs as well as the physiology of related responses are currently much investigated (because well funded) research areas.

We know already of course that social behaviors are affected by alcohol: one becomes more affiliative and more boisterous in the early stages of intoxication,[5] whereas solitary drinking may enhance a sense of comfortably being with someone though in fact one is not.[6]

Recall the idea of resource-concentration as engendering aggression and hierarchy. Other facets of the frustration-aggression referred to in song #2 are under investigation. Psychologist researcher Donald Cherek has invented an aggression machine.[7]

He recruits people with newspaper ads to come to his laboratory with the promise that they can earn some money. Not much, something like ten dollars per session, but some money for about 20-30 minutes of work. Most of those responding are men who need such money.

The task for the subject — we'll call him Mike — entails looking at a monitor while punching a large, industrial strength button.

The monitor registers the number of points earned which index an amount of money to be collected later. The more the button's punched, the more the payoff. But the task is more complicated:

Mike has been briefed that he is linked to another person at another, undisclosed location. To Mike the other remains anonymous, but we'll call him Art; also the other location is not disclosed to avoid potential, unleashed violence for reasons to be clear with more description of the experiment.

Mike is told that the anonymous Art has the same console. Both have a significant second button which allows Art to reduce Mike's hard-earned points. Mike has the same option of course. In fact, what Dr. Cherek measures in his machine is what Mike does when he sees his screen display point-subtractions — reductions in his accumulated points. Does Mike continue to punch the button earning points or does he feel revenge and hostile aggression?

The various Mikes frequently resort to revenge, depending in part on how often points are subtracted, and how many. When the researchers give varying amounts of alcohol, only very small quantities change Mike's behavior towards aggression. The amount is much less than legal intoxication, reduced from what Cherek and his colleagues had expected and from what is already been known from the effects of alcohol.[8]

Additionally, when Mike is addicted to nicotine, a cigarette diminishes the aggressive pounding of the second button, but wanting a cigarette will augment the attacks on it.[9]

Both buttons are industrial strength meaning they were made to be stable if run over by heavy equipment. This design feature has good reason because the machine sometimes bears the physical brunt of the subject's frustration, just as Goodall's early chimpanzees would bang away at the bars restricting their access to food they knew was there. Margaret Power has suggested this influenced their entire culture and the history of that grouping, turning them into *abundant* gatherer-hunters, to use the Davies' term.[10]

Moreover, returning to Cherek's work, some human subjects are motivated more by revenge than by whatever reward they contemplate. Note the small amount of money competed for by Cherek's subjects. Amount seems less important than evenness of distribution. To make an opposite point, according to the accounts of early historian Howard Shinn, miners in the early Gold Rush days thought that the gold they were mining was a resource without limits.

This resulted in a remarkably peaceful society, at least briefly. Shinn tells us that, *"there was a short time in California in 1848, when crime was almost... unknown, when pounds and pints of gold were left unguarded in tents and cabins, or thrown down the hillside, or handed about through the crowd for inspection."*[11]

"Gold was so abundant, and its sources seemed for a time so inexhaustible, that the aggrandizing power of wealth was momentahly annihilated." "The mines put all men for once upon a level. Clothes, money, manners, family connections, letters of introduction, never before counted for so little.... The early camps of California did more than merely to destroy all fictitious social standards. They began at once to create new bonds of human fellowship."[12]

This pleasant interpersonal atmosphere raises another concept I consider important for our nascent discipline: the differentiation between agonic and hedonic states of human groupings. The above was clearly the latter, just as the aggression machine caused the individual's brain to focus on more aggression-laden situations stimulated by frustration.

Certainly the Sunday afternoon drive was a pleasant one, enhanced and made more pleasant by this essay that took increasing form as I drove along. Part of the pleasure no doubt stems from the realization that at this time, sociophysiology is yet not widely shared, so that I was able in fantasy to let my mind go communicating with people with whom I can relax as we played around together a bit with offshoots of the Wisconsin ideas with which I started some decades ago. *c8*

ABSTRACTS & EXTRACTS ...

Stein, D., Rapoport, J.L.: Cross-cultural studies and obessive-compulsive disorder

Fink, G.R., Halligan, P.W., Marshall, J.C., Frith, CD., Frackowiak, R.S.J., & Dolan, R.J.: Where in the brain does visual attention select the forest and the trees?

Atzwanger, K., & Schmitt, A.: Walking speed and depression: Are slow pedestrians sad?

Kirkpatrick, B., Buchanan, R. W.: The neural basis of the deficit syndrome of schizophrenia

Treue, S., Maunsell, J. H. R.: Attentional modulation of visual motion processing in cortical areas MT and MST

Stein, D., Rapoport, J. L.: Cross-cultural studies and obsessive-compulsive disorder. ***CNS Spectrums,*** **1996;1:42-45**

Abstract: Despite increased attention to obsessive-compulsive disorder (OCD) in recent years, relatively little work has focused on cross-cultural issues. This paper reports on current thinking in this area, and considers ways of advancing the field.

An important theoretical distinction in medical anthropology is that between "disease" and "illness". This distinction was employed to help review past cross-cultural studies of OCD and to consider further questions for empirical research. Several studies indicate that the medical disease of OCD is found in a range of cultures, with no apparent need for modification of diagnostic criteria. However, there is almost no work on how OCD as an illness - its subjective perception and experience - varies across cultures. Given the possibility that such variations may influence course and outcome, it is important to attend to them in future work. Further research on OCD needs to address unanswered questions about the epidemiology of the disease and to focus on neglected questions about variations in the subjective illness experience. Cross-cultural variations in illness experience are likely to lead to differences in the path of presentation, and may even result in variations in course and outcome.

Extract: A central theoretical distinction in modern anthropology is that between disease and illness The term "disease" refers to bio-medical aspects of disorders that are uniform across cultures (e.g., raised blood pressure, depressed mood), while "illness" refers to subjective perception and experience of such disorders. Medical anthropologists have emphasized a point well-known to psychiatry -that the perception of a disorder can affect its course and outcome. For example, the experience of the medical disorder known as depression in Chinese culture is informed by explanatory models that highlight the relevance of somatic symptoms and the expectation that management involves the family. In this context, patients suffer from the illness experience known as neurasthenia, in which somatic symptoms are prominent.

First, there is increasing evidence that specific neuroanatomical circuits and neurochemical systems underpin the symptoms of OCD. Second, epidemiological studies indicate that in almost all counties studied to date, the prevalence of the disorder is approximately 2% to 3% of the population, except in Taiwan (Formosa) where it is much lower. Third, clinical and epidemiological studies

have found that demographic variables such as age of onset, sex ratio, etc., are strikingly similar in a range of different countries.

An understanding of the patient's explanatory model leads directly to a negotiation in which the clinician's model is presented and treatment is decided.

We routinely present a view of OCD as a basal ganglia disorder in which there is a false alarm, evolutionary derived, which can be switched off by either medication or exposure therapy. In some cases, the patient accepts such a view immediately (or has come to such a view already). In other cases, however, the patient responds with arguments about the psychogenicity of OCD, or the patient's family continues to insist that avoidance of cues is a useful strategy. In either event, the dialogue between patient and therapist can be used to determine the nature of the treatment intervention. Depending on the nature of the negotiation, pharmacotherapy, individual exposure, or family interventions may be made.

****Editor's note:** Dan J. Stein, M.D. is an ASCAP member, from the Department of Psychiatry at the University of Stellenbosch in Tygerberg, Union of South Africa.

Dr. Stein is supported by a grant from the Medical Research Council of South Africa. This article is based on a workshop chaired by Dr. J. Rapoport at the 2nd International Obsessive-Compulsive Conference (Guadeloupe, 1996). Presenters at the workshop were Drs. A. Fiske, D. Greenberg, and Dan J. Stein. Other conference participants also contributed to the discussion at the workshop.

Fink, G.R., Halligan, P.W., Marshall, J.C., Frith, CD., Frackowiak, R.S.J., & Dolan, R.J.: Where in the brain does visual attention select the forest and the trees? *Nature,* 1996;382:626-623

Abstract: The perceptual world is organized hierarchically: the forest consists of trees, which in turn have leaves. Visual attention can emphasize the overall picture (global form) or the focal details of a scene (local components). Neuropsychological studies have indicated that the left hemisphere is biased towards local and the right towards global processing.

The underlying attentional and perceptual mechanisms are maximally impaired by unilateral lesions to the temporal and parietal cortex. We measured brain activity of normal subjects during two experiments using 'hierarchically' organized figures. In a directed attention task, early visual processing (prestriate) areas were activated: attention to the global aspect of the figures activated the left inferior occipital cortex.

In a subsequent divided attention task, the number of target switches from local to global (and vice versa) co-varied with temporal-parietal activation. The findings provide direct evidence for hemispheric specialization in global and local perception; furthermore, they indicate that temporal-parietal areas exert attentional control over the neural transformations occurring in the prestriate cortex.

Atzwanger, K., & Schmitt, A.: Walking speed and depression: Are slow pedestrians sad? *Programs & Abstracts,* ISHE -13th Conference -Vienna, Austria, 5-10 August 1996, page 25.

Abstract: It is known since the early days of psychiatry (e.g., Kraepelin), that a depressed mood goes along with psychomotor slowdown (see DSM-III). This has been quantitatively demonstrated by sophisticated and rather complex (Fisch, et al., *J. Abnormal Psychology,* 1983,92:307) and by quite easy to handle ethologi-cal methods (Sloman, et al., *Can J. Psychiatry,* 1987,32:190). The latter found that low mood individuals show a smaller push off force during normal gait and thus have a "heavier step", than

those in a good mood. The biologist's claim is that individuals signal their inner state to others by body motion. Our model (Schmitt & Atzwanger, *Ethology & Sociobiology,* 1995,16:451), suggests that besides factors like culture, sex, age, body height, men's socioeconomic status, and women's attractiveness, mood correlates with walking speed. The better the mood, the more dynamic the gait, and the higher the walking speed.

We measured walking speed and mood (Beck Depression Inventory) of randomly selected pedestrians (N-279). Pedestrians who were depressed walked slower than those who were in a good mood. This result was stable when factors like sex, age, body height, and status were controlled for (simple factorial ANOVA). We discuss whether the measurement of walking speed can be developed into a simple and reliable tool for investigating the non-verbal behaviour associated with affective disorders.

Kirkpatrick, B., Buchanan, R. W.: The neural basis of the deficit syndrome of schizophrenia. ***The Journal of Nervous and Mental Disease,*** **1990,178;9:545-555**

Abstract: The deficit syndrome is the domain of schizophrenic psychopathology defined by the presence of primary negative symptoms that are enduring features of a patient's function between periods of relapse. Lesions of the putative neural circuit underlying social affiliation and social behavioral cues in non-human primates and other mammals, cause behavioral impairments in animals that model the diminished social drive, poverty of speech, and blunted affect of the deficit syndrome. Components of this circuit include the amygdala, periamygdalar cortex, and part of the prefrontal cortex. Abnormal function of this functional circuit may underlie the deficit syndrome.

Treue, S., Maunsell, J. H. R.: Attentional modulation of visual motion processing in cortical areas MT and MST. ***Nature,*** **1996; 382:539-541.**

Abstract: The visual system is constantly inundated with information received by the eyes, only a fraction of which seems to reach visual awareness. This selection process is one of the functions ascribed to visual attention. Although many studies have investigated the role of attention in shaping neuronal representations in the visual cortex, few have focused on attentional modulation of neuronal signals related to visual motion. Here we report that the responses of direction-selective neurons in the monkey visual cortex are greatly influenced by attention, and that this modulation occurs as early in the cortical hierarchy at the level of the middle temporal visual area (MT). Our finding demonstrates a stronger and earlier influence of attention on motion processing along the dorsal visual pathway than previously recognized.

Member Announcement

From: Paul Gilbert
Subject: E-mail address
To: ascap@utmb.edu

This is to say that I am now on the E-Mail system at last. I am still working out how it works though!

Paul Gilbert
paul@mhru.demon.co.uk

AS CITED BY.....

Cover page

[1] Caton H: Foreword to Salter, Frank Kemp: *Emotions in Command: A Naturalistic Study of Institutional Dominance.* Oxford, UK: Oxford University Press, 1995, pp. vii-xii.

Spermatogenesis or Sperm Retention? The Problem of the Undescended Testes ... page 9

Bedford, J.M.: Evolution of the scrotum: the epididymis as prime mover? In: *Reproduction and Evolution* (Editors, Callaby, J.H. &Tyndale-Biscoe, C.H.). Canberra: Australian Academy of Science, 1977; Pages 171-182

Chance, M.R.A.: Reason for the externalisation of the testis of mammals. *Journal of Zoology,* London, 1996;239:691-695). [3]

Surbey, M.K.: Anorexia nervosa, amenorrhea and adaptation. *Ethology and Sociobiology,* 1987;8:47-62.

Prediction of Antidepressant Activity from Ethological Analysis of Agonistic Behavior in Rats ... page 14

[1] Mitchell, P. J. and Fletcher, A.: Venlafaxine exhibits pre-clinical antidepressant activity in the resident-intruder social interaction paradigm. *Neurophanvacology,* 1993;32:1001-1009.

[2] Mitchell, P. J. and Redfern, P.H.: Acute and chronic antidepressant drug treatments induce opposite effects in the social behaviour of rats. *J. Psychopharmac,* 1992;6:241-257.

[3] Mitchell, P. J.: Prediction of antidepressant activity from ethological analysis of agonistic behaviour in rats. In: *Ethology and Psychophanvacology* (Editors, Cooper S. J. & Hendrie, C. A.). J. Wiley and Sons Ltd, Chichester. 1994;pages 85-109.

[4] Willner, P., Theodorou, A. and Montomery, A.: Subchronic treatment with the tricyclic antidepressant DMI increases isolation-induced fighting in rats. *Pharmacol. Biochem. Behav.,* 1981; 14:475-479.

[5] Eichelman, B. and Barchas, J.: Facilitated shock-induced aggression following antidepressive medication in the rat. *Pharmacol. Biochem. Behav.,* 1975;3:601-604.

[6] Mogilnicka, E. and Przewlocka, B.: Facilitated shock-induced aggression after chronic treatment with antidepressant drugs in the rat. *Pharmacol. Biochem. Behav.,* 1981; 14:129-132.

[7] Priest, R. G., Beaumont, G. and Raptopoulos, P.: Suicide, attempted suicide and antidepressant drugs. *J. Int. Med. Res.,* 1980;8(suppl. 3):8-13.

[8] Dixon, A. K., Fisch, H. U., Huber, C. and Walser, A.: Ethological studies in animals and man: Their use in psychiatry. *Pharmacopsychiatry,* 1989;22(suppl. 1):44-50.

[9] Kaplan, S.M., Kravetz, R.S. and Ross, W.D.: The effects of imipramine on the depressive components of medical disorders. *Proc. 3rd World Congress in Psychiatry,* 1961;2:1362-1367.

Sociophysiology on a Sunday Afternoon ... page 18

[1] Birtchnell, J: *How Humans Relate: A New Interpersonal Theory.* Westport, Conneticut: Praeger, 1993.

[2] Goodall, J.:Gombe: Highlights & current research. Heltne, P.G., Marquardt, L.A. (Editors): In *Understanding Chimpanzees.* Cambridge, MA: Harvard University Press, 1989, pp. 2-21 (Quote on page 2).

[3] a. Fisher, H.: *The Sex Contract: The Evolution of Human Behavior.* NY: Quill, 1983.

b. Fisher, H.E.: *Anatomy of Love: The Natural History of Monogamy, Adultery, and Divorce.* New York: WW Norton, 1992.

[4] Tiger, L.: *The Pursuit of Pleasure.* Boston, Massachusetts: Little, Brown, 1992.

[5] McClelland, D.C., Davis, W.N, Kalin, R., Wanner E: *The Drinking Man: Alcohol and Human Motivation.* New York, NY: The Free Press, 1972.

Gardner, R., Wilsnack, S., Slotnick, H.B.: Communication, social support, and alcohol use in first year medical students. *Journal of Studies on Alcohol,* 1983;44:188-193.

[7] Cherek, D.R., Spiga, R., Bennett, R.H., Grabowski, J.: Human aggressive and escape responding: effects of provocation frequency. *Psychol Record,* 1991;41:3-17.

a. Cherek, D.R., Steinberg, J.L., Manno, B.R.: Effects of alcohol on human aggressive behavior. *J. Studies on Alcohol,* 1985;46:321-328.

b. Kelly, T.H., Cherek, D.R., Steinberg, J.L., Robinson, D.: Effects of provocation and alcohol on human aggressive behavior. *Drug and Alcohol Dependence,* 1986;21:105-112.

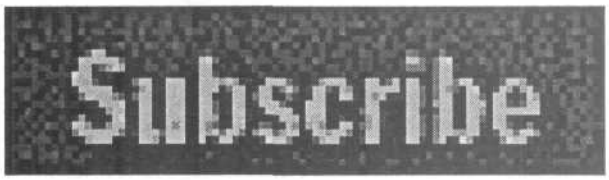
c. Cherek, D.R., Spiga, R., Egli, M.: Effects of response requirement and alcohol on human aggressive responding. *J Exp Anal Behav.,* 1992;58:577-587.

Cherek, D.R., Bennett, R.H., Grabowski, J.K.: Human aggressive responding during acute tobacco abstinance: effects of nicotine and placebo gum. *Psychopharmacology,* 1991;104:317-322.

[10] Power, M.: The cohesive foragers: human and chimpanzee. In M.R.A. Chance (Ed): Social Fabrics of the Mind. Hove, UK,: Lawrence Erlbaum Publishers, 1988, pp. 75-103.

[11] Shinn, C.H. (Edited by Paul, R.W.): *Mining Camps: A Study in American Frontier Government.* New York, NY: Harper & Row, 1884, 1965, p. 119.

[12] Shinn, p. 110-111.



YES! IT IS THA T TIME OF YEAR A GAIN!

From: Frank Carrel, Managing Editor, *The ASCAP Newsletter* Subject: Membership/Subscription Dues To: All ASCAP Members/Subscribers

Good News! The membership/subscription dues remain at $35.00.

Please, everyone get their membership/subscription dues in by 1 January 1997. On that date, your subscription/membership will have lapsed.

In order to keep the membership/subscription fees at present levels, I ask for everyone's attention to this matter! Thank you!

As of 15 December 1997. *The ASCAP Newsletter,* will celebrate *10 years* of publication as a newsletter. May we have a happy 10th Anniversary Year with *The ASCAP Newsletter!*