A S C A P N E W S L E T T E R

Across-Species Comparisons And Psychiatry Newsletter
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> An interactional paradigm .. suggests .. that psychological events [stem] from:
> 1) continuously ongoing bidirectional .. interaction between individuals and environment
> 2) continuously ongoing reciprocal interaction [among] subsystems within the individual
>
> ohman and Magnusson [1]

(c/o Russell Gardner, 1.200 Graves Building (D29), University of Texas Medical Branch, Galveston, TX 77550)

For the philosophy guiding this newsletter, see footnote on p. 7 [2]. Newsletter aims; 1. A free exchange of letters, notes, articles, essays or ideas in whatever brief format.
2. Elaboration of others' ideas.
3. Keeping up with productions, events, and other news.
4. Proposals for new initiatives, joint research endeavors, etc.

Notes: Yesterday, because contrast/comparisons of human and non-human "natures" are ASCAP's mission, I was asked how is "human nature" unique? I ask you; is it social organization?

A quote of interest stems from a recent interview with UMich's Barbara Smuts[3]. She notes that friendships abound in primates (cf Chance's hedonic mode) and hypothesizes "that primate intelligence, including our own, originally evolved to solve the challenge of interacting with one another." To explore this further, she plans to examine the behavior of dolphins: "The dolphins..evolved totally independent[ly] of nonhuman primates for over 60 million years ..[but] along with monkeys..apes and humans, dolphins show the largest brains in relation to body size. And work with captive dolphins indicates that they form..close relationships with each other; they're socially complex, flexible, adaptable animals ..[as is] true of primates.

"..chimpanzees and bottlenose dolphins..both live in fission-fusion societies—that is, individuals travel..in small parties of variable size whose composition is constantly changing. A second parallel is.. long-term male coalitions in reproductive competition (Richard Connor)..and a third is that in both chimps and dolphins, the females tend to travel in smaller, core areas, whereas..males..range more widely. Those three characteristics are found together, so far as we know, only in chimpanzees and bottlenose dolphins.. they're not common among mammals.

"These parallels in brain evolution and social evolution suggest a possible link between the evolution of a large brain and cognitive capacities, and certain aspects of social life. There's not enough to prove the case, but there's enough.. to make comparative studies of apes and the dolphin family interesting."

Smuts implies that large brains to mediate complex social organizations independently evolved in aqueous and terrestrial ecosystems to produce similarities in "primate nature" and "dolphin nature." We note that this suggests these were elaborated from a bauplan (basic plan)[4] that had already been present before 60 million years ago (mya), just as ancestors common to bats and birds had bauplan forelimbs but not wings.

Bauplan issues are current. Two 1988 examples stem from the May-June Amer Sci and Sep 15 Nature. Both note extraordinary diversity in characteristics displayed by animals within a species, diversity previously as-

sumed to have emerged after speciation, now sees to have pre-dated speciation, ie, to be part of a more basic bauplan. Thus, reptiles have done well in the extreme ecosystems of deserts, but their forms are "spectacularly dlverse"l5). This is best explained by "preadaptation": characteristics that helped the animal adapt to the desert were there before they entered the desert.

In nice, the major histocompatibility (MHO complex has very high diversity[6]: "It has..been assumed that these differences accumulated after species inception.. [E]vidence [suggests]..a large part of the MHC polymorphism pre-dates speciation and is passed on from species to species...[A]llelic differences..must have arisen before the separation of mice and rats from a common ancestor more than 10 mya."

Besides the Smuts interview in the Sep-Oct Amer Sci, C DeLisi describes an additional project important for our concerns, The Human Genome Project (pp488-93). Someday we will learn which parts of our genome are basic bauplan and which encode subsequently evolved "design features" that make us distinctively human. In the Reichelt-Price exchange later in this (and in the next) issue we see illustrated how human versions of the bauplan of ritual agonistic behavior may get played out — versions we conjecture, that may require the bigness of brain that humans exhibit.

Letters Aug, 1988

It struck me that this paper [abst below]..contains ..aspects stated in ASCAP "Philosophy and Goal": 1) comparison of animal behaviors across species 2) natural history biology combined with cellular-molecular biological research, & 3) psychiatry.

Thank you for ASCAP.
A. Randrup, St. Hans Mental Hosp., Roskilde, Denmark.

Indeed, you are right. We may refer in future issues to data on other facets of dopamine metabolism and cocaine. RG

Randrup A, Sorensen G, Kobayashi M: Stereotyped behaviour in animals induced by stimulant drugs or by a restricted cage environment: Relation to disintegrated behaviour, brain dopamine and psychiatric disease (1988) Jpn J Psychopharmacol 8: 313-327. Abst: Stereotyped behaviour can be produced in animals both by stimulant drugs (amphetamine, methaamphetamine, cocaine, etc) and by a restricted cage environment. Strong evidence indicates that the effect of stimulant drugs is mediated through a primary effect on brain dopamine, and further knowledge is now being acquired through studies on dopamine receptors, tolerance and reverse tolerance to amphetamines and the neural connections of dopaminergic sub-systems with other subsystems in the brain. The forms of stereotypy induced by a restricted cage environment have been compared with other effects of this type of environment on behaviour and general health. This has led to a hypothesis that stereotyped behaviour may function as a survival (or defence) strategy in an unfavourable milieu. Some evidence indicates that brain dopamine is also involved in the mediation of stereotyped behaviour induced by the environment. The relevance of these results in clinical psychiatry is discussed. Stereotypy (and related disintegrated behaviours) is a well known feature of several Mental diseases.

More Letters Sept 6, 1988

In ASCAP #5 (p5) PGilbert describes his thoughts about the blurring of the important distinction between inclusive fitness strategies and competitively derived RHP strategies. The way I see it, the "blurring of the distinctions" between the two sets of strategies can be attributed to the overlap between the nature of the strategies. I believe that the ability to nurture is very much influenced by competitive pressures[7]. For example, there is considerable evidence that altruism promotes suc-

cess. Although the term "altruism" in the sociological literature is used in a somewhat different sense from the concept as we use it, there is an overlap. Furthermore, when the individual reacts very negatively to failure in competitive situations, this may interfere with nurturing over a number of generations. Multigenerational transmission of problems is described in the family therapy literature and Murray Bowen carries this further by describing how the weakest member of a sibship is likely to have problems that interfere with his/her parenting so that over a number of generations one observes a progressive increase in the psychopathology of the most vulnerable member.

One can look at the relationship between altruism (inclusive fitness) and dominance and submission (competitiveness) in another way. I feel that the individual's degree of altruism is going to be related to the quality of bonding he has established. The quality of bondinq and the nature of the dominance and submissive behaviors may be closely interrelated. For example, a disturbance in bonding may contribute to problems in dominance or submission later in life. I would be interested to hear what others have to say on this topic.

Leon Sloman, Clarke Institute of Psychiatry, Toronto, Ontario

• 18 Aug 88

...I have been asked by the editor of Lancet to write an editorial commenting on Robinson's paper on self-esteem in the July issue of the B.J.P.; so am working on that at the moment and it is helping roe to clarify my ideas on the relation between R and self-esteem. I will go along with your R rather than RHP (ASCAP # 9) — perhaps one could use R for humans and RHP for animals...

J.S.Price, Milton Keynes, Engl.

Reichclt-Price Exchange

C Reichelt (CRR): In the May newsletter, Dr Price (JSP) discusses R in sterling (no pun intended) terms and says that catathetic signals depress R in the recipient until eventually R becomes so low that the signaler gains nothing further from devaluing the signalee and the catathetic behavior ends.

I'M troubled by something I see as important to consider in all of this. In practice, often the depressed patient's low self-esteem, as expressed in self-denigrating remarks, angers the individual (usually, I suppose, the spouse) emitting the catathetic signals. In other words, what the patient uses to beg for a letup in criticism, often leads to an increase in criticism rather than less. Indeed, the patient may learn to not express the felt low self-esteem to the spouse in order to lessen the verbal punishment. But the patient's R continues to drop because of a sense of entrapment. The patient can't deflect the catathetic signals by showing diminished R for fear that he/she will provoke additional hostility, but he/she also can't fight back for the same reason. This bind leads to more self-hatred. The patient has no way at all of defending against aggression, because lowered R doesn't lead to a stable system in this case.

The patient may eventually descend to a point of zero R and become suicidal. However, that gesture can be a vigorous attempt at a catathetic communication toward the perceived aggressor. In this way, the patient enhances his own R at the very moment when it would appear that he has nothing left. By dying, he enriches himself .. or attempts to.

Additionally, I'm not sure that the lowered R of the depressed person actually does enhance the R of the catathetic signaler. At least it often doesn't. Because, in practice,

that signaler is usually the spouse or a family member, and because expression of the patient's lowered R is often associated with guilt on the part of the aggressor, the result is that the patient's lowered R lowers that of the catathetic signaler(s) of the family rather than raising it. Not to mention financial and social effects of mental illness on families

Also guilt, anger and catathetic signals toward the patient are also present in families where the acute or (especially) chronic illness is not one with apparent evolutionary significance.

So while I think that the concept does make a great deal of sense, there are some important aspects of the experience of depressive illness where it needs further explanation.

JSP: CRR has identified two characteristics of the relation between depression and R which I think can be very confusing. First, what is depression in system terms? Is it an agent of change or an agent of homeostasis? I will come back to this later {& next issue] and take up first the criticism that the depressed mood seems often directed against the depression itself.

Criticism of the depressive symptoms. A recent patient in my clinic had a disagreement with her husband because she had taken a part time job. He was against it, partly because it undermined his status as the sole provider for the family, and partly because it gave her opportunities for meeting other men. However, it was difficult for him to put these points across in rational argument. Instead he made a general attack on her, criticising her intelligence, her appearance and her parents. She became mildly depressed and her ability to run the house was impaired, but she hung on to the job which was "the only thing that kept me sane." Then the husband switched his attack to her household management, finding fault with everything. These attacks were more effective; she had known the previous attacks were unjustified, so that even if they were painful they did not really get to her. However, she knew that the attacks on her household mangement were justified because she was too depressed to do her work up to its former standard. So, knowing she was in the wrong, she was more vulnerable to the criticism and she became more depressed. She became too depressed to go to work and she gave up her job.

CRR mentions a husband getting angry at a wife's complaints of depression. In the case above the husband got angry because his house wasn't cleaned properly. In ASCAPI6 p5 I mentioned the husband who was angry at his wife's tearfulness ("you'd feel better if you didn't cry all the time"). Some husbands get angry at lack of sexual response, others at weight loss or gain. Wives get angry with the depressed husband who doesn't do jobs around the house or leaves them half done.

To criticise someone for being depressed is an effective strategy for producing change. First of all the victim cannot fight back, because she knows the accusation is true. Secondly, the more depressed she gets, the more there is to criticise, which makes her even more depressed, and so on, in escalating fashion, until an end-point is reached. In the above case, the end-point came when she gave up her job, which is what her husband had wanted in the first place. He had got his own way. She had played (subconsciously) a yielding strategy in the form of depression - a strategy of not getting her way. The end-point may not be so tangible as giving in over a specific issue, such as the patient who gave up her job; it may just be a reversal of dominance, or the loss of equality by one spouse.

But once the snowball of depression has started down the hill, CRR asks, "what is to stop it?" In many cases, once the end-point is reached, the other spouse stops sending catathetic signals. In the case of my patient, the husband became much More "understanding" when she had given up the job and he realised that she was "ill", and needed to be off work for medical reasons. Sometimes, though, R goes on falling until it gets to levels unimaginable to those who have never been depressed, and in doing so allows others to achieve biological goals which otherwise would have been denied them. Another patient realised her husband was having an affair with the baby sitter. This made her depressed, and she was unable to object when her husband brought the baby sitter to live at their house, telling her that being depressed she needed more help with the children. She believed she was so worthless that she did not deserve a man of her own. Some patients believe that they do not deserve to live, others that their children would be better off without then. Such beliefs indicate very low R.

Both these women might have "played" an escalating rather than a yielding strategy. If they had experienced elevation of mood rather than depression, they would have had the courage and the energy to fight back and make their husbands fell in the wrong and depressed. Or, less likely, they would have been able to maintain symmetrical relationships with their husbands, standing up for their rights but not putting their husbands down. Of course, neither would have had any choice over whether she became elated or depressed. The switch mechanism is probably in the corpus striatum, what MacLean calls the "reptilian brain", well below the level of any brain mechanisms which subserve choice.

The amplifying, positive feedback situation outlined above, in which criticism of the depression leads to more depression which leads to more criticism, etc, is only one of many similar processes seen with depression. It might be helpful to list some of these.

Positive feedback loops in depression

1. At the intrapsychic level. Depressed people have a depressing view of events, which is in turn depressing. They selectively recall unfavourable events from the past. The classical psychiatric view is that the depression comes first and the depressed mood is secondary. In systems terms the direction of causation is irrelevant.

Recently there has been interest in changes in causal attribution during depression [8]. Depressed people may attribute aversive life events to internal, stable, global causes, and this leads to more depression. Internal attribution has replaced non-contingency in theory of learned helplessness - which makes sense as we know that a lot of depressives have too much contingency, as when they feel personally responsible for disasters they read about in the newspapers. What could be more depressing that feeling responsible for, say, the IRA?

Finally, if aversive life events cause depression, what about getting depressed about having depression?

2. In the mind-body subsystem. At the vegetative level depression is usually associated with loss of sleep and reduction of food intake, both of which have been identified as causes of depression. In some "atypical" depressions there is hyperphagia (excessive eating) and this may lead to obesity which gives a negative self-image and thus increases depression. There is often constipation which gives rise to a negative chain of reasoning; eg, ideas that the body is not working properly or that the

gut contents ate rotting and invading the system with the foul products of putrefaction, or even that the bowels are totally seized up, turned to concrete and will never open again.

At the musculo-skeletal level depression nay be associated with loss of poise and disorders of both posture and gait {9] of which the subjective experience may be depressing and which nay lead to negative feedback from others. There are also aches and pains, which are not only depressing in themselves but they may also give rise to ideas of serious malfunction and disease. A tension headache is often interpreted as evidence of tumour of the brain, the intercostal pain due to breathing irregularity is put down to heart disease; the epigastric discomfort known as "butterflies in the tummy" is attributed to stomach cancer.

Likewise other symptoms are given a gloomy interpretation which leads to further pessimism and anxiety; palpitations of anxiety, for instance, may be experienced as acute heart disease presaging imminent death.

3. At the executive level. The loss of energy associated with depression leads to failure to carry out tasks and thus to accumulation of dirty dishes, unanswered letters and unemptied dustbins; so that increasing quantities of rubbish and other evidence of incompetence and failure surround the depressed person and cannot but have a further depressing effect. Moreover, neglect of self-care leads to a deterioration of skin, hair and clothes so that to look in the mirror is depressing.

4. At the social level. Depression leads to isolation which for most people is depressing. If there was just avoidance of people who make one feel bad, such as enemies, the depression might serve a homeostatic function in this respect; but on the contrary, the depressed person avoids friends and relatives who would, if they were permitted, cheer him up.

Klerman [10] investigated the "comunication of distress" function of depression, postulating that it served as a "cry for help" which mobilised social resources. However, after studying a group of 40 depressed women and a matched control group he came to the conclusion that the depression had alienated the women not only from friends and relatives but even from their husbands and children. Henderson [11] put forward the idea that depression was a form of care-eliciting behaviour, particularly when it was associated with attempted suicide. While this nay be true over the short term, it is the general experience that people avoid the depressed person and do not give him care. As the saying goes, "Laugh, and the whole world laughs with you; weep, and you weep alone."

5. At the therapeutic level. The depressed person tries to get himself out of the trough, but these efforts are more likely to make things worse than better. The only drug generally available is alcohol, and while in some depressed persons this numbs the pain of the depression for a while, he is soon left with not only the pain but also the hangover. The same applies to other drugs of the sedative/hypnotic group. Samuel Johnston recognised the dangers of alcohol for the depressed person, saying "Melancholy should be combated by all means except by alcohol."

Many depressed patients make extraordinary efforts to cure themselves, even without the added stimulus from friends to "pull yourself together" or to "snap out of it." These efforts fail, and this failure enhances the depression.

A Possible Paradox: consider between now and next issue: Is depression an agent of change or an agent of homeostasis? Consider sending a note.

ASCAP #12 (15 Nov 88) will feature more Price-Reichelt exchange and notes from the U Michigan meeting on "Evolution, Psychology and Psychiatry" October 28, 29, and 30, 1988, in Ann Arbor, MI.

1. o h m a n A, Magnusson D (1987): Introduction: An interactional paradigm far research on psychopathology. In Magnusson D, ohman A (eds) Psychopathology: to Interactional Perspective New York: Academic Press.

2. ASCAP philosophy and goal, High scientific importance rests on comparing animal behaviors across-species to understand better human behavior, knowing at we do so that evolutionary factors M a t be considered for understandin? properly sick behaviors. To accomplish these comparisons, very different new ways of viewing psychological and behavioral phenomena are required. This it turn explains why we need lev words to defile aid illustrate new divisions of comparisons across species, We expect that work in natural history biology combiied with cellular-molecular biologic research will emerge as a comprehensive biologic basic science of psychiatry. Indeed, this list happen if we are to explain psychiatric illnesses as deviations from normal processes, something not possible now. Compare to pathogenesis in diseases of internal medicine.

Some neologisms that hopefully will help implement these goals are those of:

a) Michael I. A. Chance: "hedonic" and "agonic" refer to the tone of groupings of conspecifics (members of a same species) i.e., relaxed and fun-loving versus tense and competitive. First initiated with CJ Jolly in 1970, this term is referenced fully in ASCAP #1, Footnote 1.

b) John S. Price: "anathetic" and "catathetic" describe conspecific communications. Catathetic messages "put-down" whereas anathetic signals "build-up" the resource holding potential (R) of target individuals.

c) Russell Gardner, Jr.: "psalic" is a 2 way acronym: Propensity States Antedating Language In Communication and Programmed Spacings And Linkages In Conspecifics. This describes communicational states conjecturely seen with psychiatric disorder and normality (human and non-human), ie, alpha psalic seen in manics, high profile leaders and dominant non-human animals. light psalics are named alpha (A), alpha-reciprocal (AR), in-group omega (IGO), out-group omega (OGO), spacing (Sp), sexual (S), nurturant (N), and nurturant-recipient (NR).

All of the above new or renewed terms are initiated or elaborated in Chance, MRA (Ed) Social Fabrics of the Mild, due out in 1988, published by Lawrence Erlbaum Associates, love and lev fork.

3. Ackerman S, Smuts B: American Scientist Interviews.American Scientist 1988;76:494-9.

4. Ploog D: An outline of human neuroethology Human Neurobio 1988;6:227-238.

5. Huey RB: Review of Ecophysiology of Desert Reptiles by SD Bradshaw, Academic Press, 1986 American Scientist 1988;76:302.

6. Pigueroa F, Gunther B, Klein J: MMC Polymorphism pre-dating speciation Nature 1988;335:265-267

7. Sloman L: Inclusive fitness, altruism and family adaptation. Canadian Journal of Psychiatry 1903;28:18-23.

8. Brevin CR: Depression and casual attributions: what is their relation? Psychological Bulletin 1985;98:297-309.

9. Sloman L, et al: Gait patterns of depressed patients and normal subjects. Amer J Psychiat 1982; 139:94-97.

10. Klerman GL (1974): Depression and adaptation. In (eds) Friedman RJ, Katz MM: In the Psychology of Depression Washington DC: VHWinston, pp 127-145.

11. Henderson AS: Care-eliciting behavior in H I . J Nerv Ment Dis 1974;159:172-181