

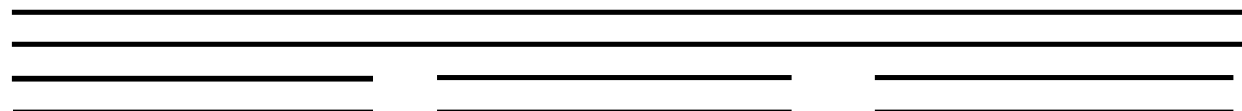
# THE ASCAP NEWSLETTER

## Across-Species Comparisons And Psychopathology Newsletter

Volume 6, No. 11,15 Nov 1993 (Cumulative #72)

"Put up in a place/ where it is easy to see/ the cryptic admonishment/ T.T.T. "When you feel how depressingly/ slowly you climb./ It's well to remember that/ Things Take Time."

Grook by Piet Hein<sup>1</sup>



### Newsletter aims

1. A free exchange of letters, notes, articles, essays or ideas in 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

*The ASCAP Newsletter is a function of the International Association for the Study of Comparative Psychopathology<sup>2</sup>*

#### IASCAP Executive Council:

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#### IASCAP Mission Statement:

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

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### New subscription time

Please subscribe now to The ASCAP Newsletter, Vol 7, No.s 74 through 85, Jan-Dec, 1994! Send American dollars or use a credit card number: UTMB's accounting no longer accepts foreign currency. For using the credit card mechanism, we will accept Master-Card, VISA, Discover or American Express. We need the card type, number, expiration date, & your signature.<sup>3</sup>

### Meeting Plans

A number of things are now more settled:

(1) Paul Gilbert is working to arrange an **IASCAP** meeting site in Philadelphia for May 21 and 22, 1994, just before the American Psychiatric Association annual meeting.

(2) Sue Gardner and the ASCAP Newsletter office will work on reserving a block of rooms in Philadelphia. We need to know how many are likely to take advantage of this. Please contact us as soon as you know you might be coming.

(3) The most important part of our meeting will consist of discussions to determine the new name, mission statement, future course, and organization of the what we now call **IASCAP**.

I present and extend a recent discussion with Paul in my essay on name and mission this issue (page 4).

(4) How our scientific meeting should go is yet to be determined. Please let us know your opinion. There will *not* be a joint meeting of the **IASCAP** and the Association for the Advancement of Philosophy and Psychiatry (AAPP). After Michael Alan Schwartz expressed interest in a joint meeting of **IASCAP**

and AAPP, I sent him a letter based on conversations that I had had with **IASCAP** members I knew were available and willing to commit to such a program. I replicate it below because it could form some of the framework for the scientific part of our meeting.

AAPP's theme for 1994 will be 'The influence of philosophy on the development of psychiatry.' Perhaps not meeting with them is just as well because a joint meeting with another association before we have defined ourselves more precisely may be premature. In any event, we are grateful to Michael Alan Schwartz for giving us a template that helped us to get together this first time after forming.

Dear Michael:

As we discussed on the telephone, a number of us from **IAS-CAP** are interested in your proposal of a joint session for a half-day as a component of your annual meeting. This is a letter describing these for your use.

My talk would be on the need for psychiatry to have a basic science of its own parallel to that for the rest of medicine based on William Harvey's discovery of circulation: my proposal for a Harviean basic science is called sociophysiol-ogy. I gave a parallel talk at the AAP meeting last March.

John Price from Sussex, England, was the first person to articulate a social rank hierarchy theory of depression 26 years ago and could provide the history and development of the theory, now termed "involuntary subordinate response." He will be in New Zealand at the medical school in Wellington for six months and intends to come back by way of the APA in Philadelphia.

Another pioneer in this area is child/family psychiatrist, Leon Sloman, from the Clarke Institute of Toronto, who would be interested in presenting on an integration of Price's agonistic dimensions of depression with the affiliative axis such as that explored by Bowlby.

A fourth psychiatrist interested in this area is John Beahrs from the University of Oregon, who has been prolific in the production of books and articles on Engel's biopsychosocial model. He has been interested in the evolutionary biology of deception and would present on this topic.

John Pearce is a Cambridge, MA, psychiatrist who does "evolutionary psychotherapy." He is positioned to contribute a paper on "Psychotherapy and Common Sense." He is articulate about how evolutionary principles determine his therapeutic relationship with patients.

Randolph Nesse, psychiatrist from the University of

Michigan, is an advocate of "Darwinian Medicine," which was featured in Newsweek even! - he is writing a book on the subject with noted evolutionary biologist, George Williams. This approach considers that many features which come to the foreground in disease are in fact evolved, biologically adaptive features of the human organism such that care should be given to "correcting" them - which may be to the person's detriment.

Finally, there are other speakers such as Dan Wilson on "Psychiatric epidemiology," and John Birtchnell on "relating" -see piece in the newsletter - who are people I could touch base with yet should there be the interest. Paul Gilbert, our current president, is a prolific contributor and is an excellent speaker; he strongly applauds this initiative. Mark Erickson, another member, has already spoken to your group.

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Letters: October 19, 1993

*The Bibliography of Human Behavior is a unique reference tool which I hope that you will mention in the ASCAP Newsletter.*

*Hiram Caton, Griffeth U, Brisbane, Australia*

BOOK NEWS by Greenwood Press. The Bibliography of Human Behavior. Editor-in-chief: Hiram Caton. Associate editors: Frank K Salter, JMG van der Dennen. This centers on research on human behavior based on biological models, methodologies, or findings. Over 6,700 entries from journals, monographs, and books have been selected in concert with a worldwide network of learned societies and scholars. The entries are organized under twenty broad subject groupings, and access is aided by author and subject indexes.<sup>4</sup>

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Letters: 22 October 1993

*The kind review of my four books on the evolution of human intelligence was deeply appreciated. Your insights were truly discerning. One always wishes for reviews of this kind. Unfortunately, if the work is controversial, it is rarely so well received.*

*You are correct in emphasizing my philosophical perspective on these issues. In retrospect, this is the Aristotlian tradition: to go to the frontier of scientific research in order to draw philosophical*

conclusions that have factual support.

*Immanuel Kant in the eighteenth century and Ernst Cassirer in our own period exemplify this ideal. The great mysteries in human behavior that are a consequence of the eruption of high human intelligence in western Europe and Asia after 100,000 B.P. have led us to our paradoxical international social dilemmas at the end of our current century. The work of ASCAP reflects this great puzzlement: how to understand and then possibly remediate human psychopathology, in my own conceptual view, so aberrant in the biological tradition.*

*As you well know, my interest in ASCAP is theoretical rather than clinical, as with most of our members. However, there is no more important dimension to this mystery than clinical analysis. It is from the facts and experience of your research that the next stages of theoretical knowledge will be derived.*

*Your readers probably should know that all the books are now being published and distributed by Peter Lang International Publishers, New York/Basel<sup>P</sup>*

*Seymour Itzkoff, Smith College, Northampton, MA, USA*

## EMAIL

by John Pearce

As mentioned briefly last issue, ASCAP now has an email mailing list. Here is how it works: you need an Internet address. Mine is JKP@world.std.com -- my initials JKP are my identifier at a particular computer, namely, "world", run by "std" (Software Tool and Die). The last part, "com", means it is a commercial account in contrast to an organizational or educational account. You need an address to do business with Internet. You can be anywhere in the world, as long as a local computer is hooked up to Internet.

Send your address to me, at my address (247 Lakeview Avenue, Cambridge, MA 02138) and I will put you on the ASCAP list. When you want something posted to everyone on the list, send it to ASCAP@world.std.com -- quick as a wink, it will pop up in everyone's host computer. You can reply easily to any message, either posting to the whole group or just one person (or more). Really easy.

With Internet you can talk to anyone in the world -- cheap and in seconds. If you become used to email you will want to check-in every day to get your mail. If you check-in rarely you may find that you have too much sitting waiting for you. It could be junk mail. I check-in 2-3 times a day.

If you want to get the Human Behavior and Evolution Society mail, you must write to Gene Mesher at gmesher@ccit.arizona.edu - Gene will put you on the list.

If you work for an academic or other computer-wise institution, the local computer office will help you get up and going. If you are on your own, you must have a personal computer that can sign-on to a commercial computer by modem/telephone. I pay Software Tool and Die \$5 a month and \$2 an hour connection time. This is a bargain. Computer time can be expensive - it used to be very expensive. The host computer can be anything from a Unix workstation, to a mini computer, to a mainframe. The size of the host is irrelevant, except that mainframes are usually very expensive.

The American Society of Clinical Psychopharmacology is setting up a mailing list.

~~Just what,~~ you might wonder, is a mailing list? ~~It's this:~~ you send stuff to the mailing list address and it relays it out to everyone on the list. I keep the list up-to-date on my host computer. There is no charge for this on my computer.

A mailing list is different from a bulletin-board. A bulletin-board remains resident within a computer, usually a little one, like a PC. You call up the PC bulletin-board at no charge except the phone time. Of course, if the bulletin-board is located a long distance away, the phone bills are expensive. In contrast, Internet zips all mail directly to your local computer. Your local computer holds it until you log-on. Your local computer pays its electricity bills by charging you for the time you log on.

The mailing list is great for any specialized interest. It needs to be small enough that the number of messages does not become excessive. The obvious thing to do is to have multiple lists reflecting particular interests.

## ASCAP/IASCAP mission and name-change

by Russell Gardner

### *Tasks before us*

A major agenda item at our business meeting in May, 1994, entails name change. Paul Gilbert and I in a recent trans-Atlantic telephone conference agreed that such a change might beneficially occur in order to raise the interest of potential new society members, and also, as we discussed it, to refine more explicitly our mission. As readers know, we've also discussed this in print. We hope that others of you agree (we need much discussion)

In this telephone discussion - extremely helpful in clarifying things for me - Paul and I discussed two major things: First, I discovered that we had differed on *what* would change. I had assumed only **IASCAP** would change, not ASCAP too! --I guess as originator I have a proprietary interest. Contrariwise, he had assumed that both would change *pari passu*, depending on how things worked out.

Second, we concluded that we should focus upon defining the core conceptual agreement shared by most subscribers (perhaps implicitly -- if implicit, however, we should make the implicit explicit). He said, "I know we have basic plan in the mission statement and all that, but..." (his trailoff implied that this term and concept doesn't adequately do the job that for him it needs to do).

But what he mostly emphasized and what we agreed upon was that, for us at least, making comparisons across species is only one of several means to the end, not the end itself. The present title of the newsletter does not communicate our core conceptual agreements, but a less central part of the work. Other methods of gathering information and making inferences co-occur around a core concept: for example, clinical work provides the chief means for making inferences of many ASCAP readers. Although across-species comparisons as a direct means of work are important and should be highlighted, this avenue is not a central methodology of most readers, and is potentially misleading to potential new readers.

And I add here that a variety of other domains exist for examining means: other psychological and psychiatric research; neuroimaging; studies of work-site relationships (remember Mike Waller's

essays); archeological, anthropological, and psychometric data seen in the context of philosophy (prominently cited by Seymour Itzkoff). Molecular biology and biochemistry as often seen in the pages of Science and Nature are fundamental to our thinking; while these *are* often across-species comparisons, this is not the focus that makes them interesting.

I agreed with this point (elaborated beyond the conversation), but then slyly suggested that perhaps the new designation could retain the letters but change what they stand for. This might take some creativity which may be hard but nevertheless possible. Like rhymed poetry, a new name embodying the core features with the same initials might pose a fruitful challenge to our collective creativity. Perhaps it wouldn't even be that hard. The following, for example, took but a few minutes to compose: Associated Salacious Changes Are Possible!

Humor and personal considerations aside, The ASCAP Newsletter has a name recognition that perhaps should be maintained, what with its nearly six accumulated volumes and (with this edition) 72 issues. Some continuities may best remain. But perhaps we can come up over the next several months with a new name within the old initials that is both widely recognizable and meaningful. In the rest of this essay, I hope to review some of the issues as grist for the mill.

### *What is the core concept?*

As mentioned by Paul, the mission statement of The ASCAP Newsletter mentions basic plans because they have represented a way of labeling the core concept for us. There are problems with the term beyond the fact that basic plan is a concept whose meaning is not instantly translatable into a meaningful new name for the association.

Although I'm not attached to the term basic plan (in the sense of wanting to retain it), I do admit responsibility for it and discussing my view of it may clarify what I understand about the core concept. Several years ago, I gave a talk at an annual meeting of the American Psychiatric Association as a part of a symposium organized by Brant Wenegrat and Randolph Nesse. At that time, it seemed a reasonable summarizing term and we used it when we composed the mission statement at Odintune in July, 1991, when John Price, Leon Sloman, Michael Chance and I initiated the formation of **IASCAP**.

How specifically is basic plan a core concept for the problems often featured in the newsletter? An example is that depression might represent an involuntary submission which is common not only to depression but other communicative states that are experienced by people without the clinical syndrome but in severe interpersonal circumstances (eg, those who must submit to a harsh authoritarian person fully in command) and by other animals (in parallel circumstances). This implies that it is an adaptive reaction pattern. This was first studied in chickens in the earlier years of the century, as reviewed by John Price and Leon Sloman.<sup>6</sup> For another example, an alpha communicational propensity state may be another instance of a basic plan realized in both a psychiatric illness and in normal states of both people and animals.<sup>7</sup> There may be many others.

A basic plan represents a potentiality homologously embedded in the genome expressed when the situation seems to call for it. Homology refers to a feature shared not only by two species but by their joint ancestor, like the bill of not only a crow and a seagull, but the species of bird once ancestral to both. For the involuntary submission example, this hypothetical<sup>^</sup> was already encoded in the genome of an ancient animal that gave rise to both birds and mammals. Actually, the joint ancestor with this homologous genome-neuronal-behavioral pattern may have been even more ancient than a bird -- fish for example. We need not stop at fish: Jean Gilbert (from the same Derby, England, as Paul Gilbert) has information she will share with us in a near future issue on social rank of cockroaches!

We expect that certain sequences of nucleotide base-pairs code constellations of neuron arrangements that in turn underlie propensities for certain perceptual sets and consequent actions. Stimuli provided by conspecifics have more relevance for attention and action than stimuli from other species. Thus, how people, chickens, fish and cockroaches look, sound and smell are particularly relevant ~ respectively ~ for other people, chickens, fish and cockroaches. Not that there aren't in-terspecies communications: many people find fish and chickens good to catch and eat and cockroaches are distressing. But communications intraspecies probably have greatest meaning for most animals.

Important though they are, recognition signals and the details of saliency for any particular person or other animal are probably less basic than the facts of dominance, submission, nurturance, and

the other modes of interaction. But some of these may be the results of tinkering arrangements, some basic and others less basic (a maternal dominance may be modified to provide nurturance, for instance, or vice versa).

Testing hypotheses of homology represents an anticipation of the eventual decoding of human, chicken and fish genomes as these relate to behavior. Thus, whether these behavior patterns are indeed homologous - as opposed to representing the forces of convergent evolution ~ will probably await a final analysis of DNA sequences although other evidence may come to bear on the topic as well. Some beginning ideas of how this analysis might get accomplished on a molecular level are detailed in an essay for next issue based on articles in a recent issue of Science on (1) the basic and less basic plans of maize and a grass ancestral to it, teosinte, and (2) a potential basic plan of aggression unleashed by the absence of a monoamine oxidase A gene in some Danish men.

#### *Problem with basic plan as name of core concept*

So what is the problem with the concept of basic plan? In my thinking, the wording implies a *single level of fundamental program*. There is a base and there is a structure above the base. This stems from its origin in *bauplan*, a German word referring to body plan, the matter-of-fact English word used by Stephen Jay Gould in his summary of the weird invertebrate body plans evident in the Burgess shale, before the present successful ones achieved their dominance.

But this metaphoric image belies the fact that basic plans seem piled upon one another in a crazy tower, with more fundamental ones tinkered with to produce more recent, less fundamental variations of it. The architectural image doesn't do justice to the concept. Without a fundamental basic plan of the eukaryote, another basic plan underlying multicellularity can't exist; without multi-cellularity, the respective basic plans of vertebrates and invertebrates would not have been actualized.

So while basic plan might signal a particular level of organization relevant for our interests, it is in fact a loose concept based on morphology. We need something better. Think on this as I review some related conceptions mentioned in the past.

#### *Synonyms and conceptual relatives of basic plan*

In Human Nature and Suffering. Paul Gilbert reviewed that Linnaeus in the 18th century noted

uniformities in structures of animals, which he called ideal ground plans.<sup>9</sup> Ernst Mayr summarized the concepts of developmental channeling and bauplans, or, as he put it, "what the comparative anatomists now call the morphotype." But these of course are limited to the body's structure.<sup>10</sup>

Paul Gilbert noted that Brant Wenegrat first suggested that Jung's archetypes could refer to evolutionary biology and has repeatedly suggested how much he likes that idea himself. This stems from Jung's psychoanalytic formulations. It may connote upon reflection what geneticist Francois Jacob refers to as resemblances in depth, but the term, archetype, does not automatically imply geneticist Jacob's implications.<sup>11</sup> Indeed, for many observers, the opposite is implied: that top-up analyses only have been done and that hypotheses are assumed to be true on evidence from conversational information only. The term archetype signals Jung and his intuitive psychoanalysis rather than scientifically based genome-neural-behavioral analyses.

Kalman Glantz and John K Pearce in their 1988 Exiles from Eden: Psychotherapy from an Evolutionary Perspective discuss how genes stay the same even though the environment changes and hence there are adaptational mismatches between current behavioral tendencies and the environment of evolutionary adaptedness.<sup>12</sup> People have genetically determined communalities in that we like to be in groups, for example, and to relate to groups of particular sizes. Or we behave in subtle gender-associated ways shaped by natural selection, as in environments of evolutionary adaptedness (EEAs) that may be quite different from civilization.

Randy Nesse, George Williams and many others of the HBES membership use model problems stemming from the use of population genetics. Their ideas of genes staying the same are generally on a recently evolved level ~ they don't go all the way back to chickens, fish and cockroaches. Richard Dawkins ~ fondly regarded by Mike Waller - emphasizes differences in discussing survival machines, of course, but in a chapter entitled *Immortal Coils*, he notes in mentioning the differences amongst a mouse, octopus and oak tree that "in their fundamental chemistry they are rather uniform, and in particular, the replicators that they bear, the genes, are basically the same kind of molecule in all of us-from bacteria to elephants. We all are survival machines for...molecules named DNA."<sup>13</sup>

Molecular biologists work with these concepts all the time, with some terminological possibilities: highly conserved genes are those that exist across many species and determine the core structures. Housekeeping genes are examples: once the genes responsible for the eukaryotic cell set in place, they have stayed there and highly conserved coded sequences that assure this are of less interest than are those that correlate with those that are different. In the last issue's review of Seymour Itzkoff's quartet of books, I mentioned genomic foundations in referring to this same concept: these are biochemical communalities that unite various living creatures.

Kent Bailey refers to paleopsychology in the very title of his 1987 book.<sup>14</sup> He refers, as do John Price and many others, to Paul MacLean's triune brain with its ancient components that are with us in our present brains as well, the reptilian and paleomammalian brains. In making this emphasis, Kent omits the disciplines on either side of the psychological, the social and the molecular.

Lyrical anthropologist Loren Eiseley noted that "The nineteenth century, in the efforts of men like Hughlings Jackson, came to see the brain as an organ whose primary parts had been laid down successively in evolutionary time, a little like the fossil strata in the earth itself."<sup>15</sup>

Leo Buss states that "A new "fossil record," writ in the genome, is now accessible and is being read in necessarily piecemeal fashion."<sup>16</sup> In a fundamental current biochemistry text, the following is said, "[T]he majority of reactions and most of the enzymes that catalyze them are found in all living things, from bacteria to people; for this reason they are believed to have been present in the primitive ancestral cells that gave rise to all organisms." "[Histones] are among the most highly conserved of all known proteins: there are only two differences in the amino acid sequences of histone H4 in peas and cows, for instance."

17

The journal Science now has an annual issue devoted to genomics (this year's version was 1 Oct). The caption for the cover reads (astonishingly for our theme here): "As humans and mice look at each other through the eyes of the Human Genome Project, their similarities, which make the mouse a key model system, are more important than their differences."

Iranus Eibl-Eibesfeldt describes on the first page of his 1989 Human Ethology. "It is important, however, that we are also aware of the more primi-

tive action and reaction patterns that determine our behavior, and to not pretend as if they did not exist. It is especially in the area of social behavior that we are less free than we generally assume." Eibl-Eibesfeldt I: Human Ethology. NY: Aldine de Gruyter, 1989, p3.

Malcolm Slavin and Daniel Kriegman refer to intrapsychic deep structure in their 1992 book.<sup>18</sup> Helen Fisher in her new book which has been mentioned in these pages by John K Pearce, The Anatomy of Love, suggests, "Our need to keep each other's time reflects a rhythmic mimicry common to many other animals."

Homology means that a trait that members of two species possess in common was a trait that a common ancestor of the two also had. Thus, for example, the blood of the coelacanth is more similar to that of a tadpole than to that of any other fish. Such is a shared-ancestral character, retained from the common ancestor. Shared-derived characters are new traits or modifications that arose more recently, but along lines of common descent. The brains of humans and of chimpanzees are different brains, with the human version amplifying size by a factor of three. But they are derived from a same common ancestral brain.

Darwin intuitively knew much of this of course: in his Expression of The Emotions, he refers in his earliest pages to how Sir Charles Bell who had written in his third edition of Anatomy and Philosophy of Expression (1806) that there was an intimate relation which exists between the movements of expression and those of respiration. Bell and Darwin were discussing the possibility of ancestral respiratory physiologies antecedent and basic to communicational physiologies.

However, in a quick scan of those or his volumes that I have, I could not find where Darwin explicitly named a communicational equivalent of bauplan. Instead he refers to force of habit and associated habitual movements in man -- albeit inherited habits, eg, p 253, "The expression here considered [raising of the upper lip to reveal the canine teeth], whether that of a playful sneer or ferocious snarl, is one of the most curious which occurs in man. It reveals his animal descent; for no one, even if rolling on the ground in a deadly grapple with an enemy, and attempting to bite him, would try to use his canine teeth more than his other teeth."

In a paper I wrote in 1982 that brought John Price, Leon Sloman and myself together, I state "for all social mammals there are distinctive

**neuropsychological "organismic" states that underlie behavior patterns correlated with social position.** These patterns have as their evolutionary origin the instant transmittal to others the particular group role assumed for the moment by the individual. Such efficient communication provides survival advantage."<sup>19</sup>

Later I coined a word **psalic** to describe this in the specific context of communicational biology. The word comes from the acronymic derivations of programmed spacings and linkages in con-specifics and propensity states antedating language in communication.<sup>7</sup> I was pleased to see that CUM Smith positively refer to the psalic concept in his recent article in the Brit J Psychiat: he begins that article with the note that the same 28 bones in the first land-dwelling vertebrates exist also in the human.<sup>20</sup>

#### *ASCAP or another term*

So after all this, consider still another alternative wording for ASCAP generated while sitting here: Archetypal Species Communicated Around Paleo-psalico-psycho-patho-logical science (or the P could simply stand for the P factor Seymour Itzkoff highlighted), that helps us understand the frontal lobes the actions of which are perhaps basic to much of human communication. After all, the way that humans uniquely interact probably stems from that brain region, although its precursor instructively exists in other species.

As American teenagers say, "Just kidding."

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## **Basic Principles of Psychological Kinship Theory**

by Kent G Bailey & Helen E Wood

In 1979, Pierre van den Berghe said that "If kinship is indeed the most basic, universal, successful, and ancient basis of sociality in all social organisms, and if kin selection continues to be powerfully operative in even the most complex human societies, we can expect the idiom of kinship will be extended to forms of social organization larger than the family."<sup>21</sup> He discusses various pseudo-kinship relations at the individual level (eg, honorary kin, fictive kin, ritual kinship as in godparents, and so forth) and at the collective level in the form of tribal, ethnic, and nationalistic "families"

comprised of both consanguinal and affinal members.

Five years earlier, Derek Freeman had coined the term "behavioral kinship" to describe deep emotional attachments and kin-like relations between nonkin, and he detailed the marvelous example of Winston's Churchill's lifelong attachment to his beloved nannie, Mrs Everest. Herein we will outline our approach to kinship relations and nonkin extensions, with emphasis on the constructs of biological kinship and psychological kinship. Portions of this paper were presented at the recent HBES conference in Binghamton, New York.<sup>23</sup>

Kinship is the primary organizing principle in human relations and is one of the central concerns of anthropology. Kinship and marriage have been at the core of anthropological theory for a century, and are fundamental to all the social sciences. Kinship encompasses a multitude of social patterns of recognition; classification; marriage and child-rearing practices; time, space, and resource sharing; and stratification in both animals and humans.

In humans, kinship also involves complex linguistic systems of naming and structural systems of classification (eg, patterns of lineage and descent) that reflect the symbolism, values, and beliefs of particular societies and cultures. Ultimately kinship is about how people relate to each other in their "stable arrangements for day-to-day living,"<sup>24</sup> and "solidarity of the members of the kinship unit" is its most fundamental principle.<sup>25</sup>

Meyer Fortes, in *Kinship and The Social Order*, described kinship as a set of norms that are "...focused upon a general and fundamental axiom...of prescriptive altruism and further, "Kinship is binding: it creates inescapable claims and obligations. Ultimately, kinship helps us distinguish between loved ones, acquaintances, strangers, and enemies, and it provides order and stability in what would otherwise be chaotic and maladaptive social interaction."<sup>27</sup>

At base, kinship is the product of a process of *classification* that typically occurs unconsciously or with minimal conscious awareness. Recognizing and classifying others is a natural response that operates through brain mechanisms particular to a given species.<sup>28</sup> Human beings may possess analogous mechanisms in the brain, but these can be modified and elaborated through learning experiences and cultural influences.<sup>29</sup>

In humans, kinship involves an implicit "decision"

to classify an individual "as kin" that may be facilitated by one or a combination of perceptual cues and ontogenetic factors including phenotypic resemblance to self/family, immediate need for support, current levels of stress, cultural definitions of kin, and possible genetic recognition mechanisms cued to perceived similarity. Classification in humans is frequently associated with perceptions of obligation and entitlement, some of which are reinforced by societal mandates and legal codes, as in the distribution of property in cases of intestacy or divorce litigation.

### *Biological and Psychological Kinship*

Most cultures view *close blood relatives as kin*, and the immediate family and extended family would be considered kin in most contexts.<sup>31</sup> *Biological kinship* is therefore defined as blood relatedness plus the attribution of "familiness" whereby a given individual is perceived and classified as a "real" family member with all the benefits and obligations thereof. Thus, biological kinship requires both blood relatedness *and* classification as a family member. This means, for example, that a child who has no knowledge of his natural parents could enjoy neither biological nor psychological kinship with them because no classification is involved, whereas a beloved adopted child would qualify as psychological kin but not biological kin.

Ultimately, *all* kinship relationships in humans are psychological, for the processes of kin recognition, classification, and categorization occur basically at the psychological levels of perception, emotion, motivation, and cognition. We classify others in terms of what we see, hear, feel, and think about them. Once we classify another as biological or psychological kin, we begin to feel a very special emotion that has baffled poets and scientists alike - "love."<sup>32</sup> In psychological kinship theory, love is the emotional/motivational component of kinship. Positive or kinship-like feelings toward others *without classification as kin*, include admiration, infatuation, liking, respect, and fondness ~ but not love in the deeper sense.

Biological kinship is a very special category, for blood relatedness carries with it automatic implications of familiness, love, and mutual responsibility. Once a person is recognized and classified as a close biological relative, the biological link cannot be broken, even though the person may die, abandon the family, or be ostracized by the family. Only when we are completely unaware of our blood relationship to another are we free of the biological



link and its array of obligations and emotional attachments. For example, the young mother whose infant is given up for adoption at birth may cope emotionally with the loss, but she cannot fully nullify her "love" or dissolve the biological linkage; by contrast, the infant, who is unaware of being adopted, is spared the agony of longing for the unseen natural mother. Thus, the mother must cope with the greatest of all kinship deprivations --the loss of a child ~ whereas the adopted child senses no deprivation. Once the criteria for biological kinship are met, biological relatedness plus classification "as family", the consequences are, for all practical purposes, permanent.

The development of *psychological kinships* represents a way of extending kinship beyond its biological boundaries to where anyone can be kin (in theory) with anyone else. Psychological kinship is defined as *classifying another "as family" irrespective of actual genetic relatedness*. Thus, establishment of a psychological kinship requires that one *classifies* another "as family" with all the panoply of benefits and obligations thereof, including feelings of love often indistinguishable from those felt toward biological kin.

Psychological kinship is analogous to the concept of phenocopy in genetics; indeed, psychological kinship copies the real thing without actual family biological relatedness.

Given that evolution is highly parsimonious and favors elaborating old systems over erecting new ones, we argue that psychological kinship uses basically the same neuropsychological architecture that originally evolved to subserve biological kinship; that is, we recognize, classify, and feel preferences toward kin (both biological and psychological) basically as our ancestors once did toward blood relatives in original evolutionary environments.<sup>18</sup> More specifically, in psychological kinship we employ *the proximal* perceptual, motivational, and reward mechanisms that originally evolved for the *ultimate* purpose of mediating adaptive, kin-selective relations among biological family members.

Psychological kinship represents a middle ground between the altruistic, kin-selected family relations sociobiologists speak of and the more emotionally neutral but highly functional reciprocal altruism between minimally familiar nonkin. Psychological kinship represents a flexible category where biological nonkin can be used to extend the biological family or to substitute for the biological family when the need exists. The adap-

tive benefits of psychological kinship are obvious for those who have no biological family ties or a diminished family structure, and intense, mutually supportive relations with nonkin may be the only resort for persons faced with death of loved ones, abandonment, natural disasters, war, kidnapping, and the like. A single psychological kinship may be the difference between survival and death in those circumstances; reciprocal altruism would be far less likely, on a probabilistic basis, to provide the necessary resources to guarantee survival. In the famous Stockholm Syndrome, the desperate kidnapping victim forms a powerful emotional attachment (kinship or kinship-like) with the kidnapper, which is more likely to assure survival in the long run than would reciprocal bargaining or deal-making.

Once a psychological kinship forms between two persons, they are real kin in the classificatory sense and each is a "loved one" to the other. Although attachment and love may appear as strong in psychological kinships as in biological ones, as in adoptions, marriage, or bonding in combat, jural and social obligations, entitlements, and responsibilities are generally less binding in psychological kinships. Occasionally a friend or lover may assume major responsibility for a severely ill or dying person, but typically blood kin must bear such burdens.

In wealth-sharing and patterns of inheritance, biological kin are usually favored over psychological kin, and, aside from adoption and marriage, blood kin are more likely to share time together over the entire life span, live in the same residence, and participate in lineage-based marriage, funereal, and celebratory rituals. Although psychological kinships are maintained more by hedonic reinforcement than jural or moral obligation, they are still powerful mediators of social behavior, especially in modern industrial societies where the immediate family includes little more than husband, wife, and children. Human beings evolved in small bands *where everyone in the band was "family,"* and it behooves us today to extend our families to distant kin and nonkin for social support, health, and happiness.

#### *A kinship continuum*

Psychological kinship theory postulates a kin-> nonkin continuum, proceeding from binding degrees of benefits/obligations and high levels of kinship selection at the extreme kinship pole to the absence of these factors at the extreme nonkin pole. The continuum may be segmented into the

following categories: *biological kin* (blood relatives), *psychological kin* (nonrelated persons classified as kin), *kin-like relations*, *reciprocal exchange relations* without kinship, and *hostile interactions* between "outsiders." Biological kinship and psychological kinship are "real" kin relations, but considerable empirical research is needed to determine how biological and psychological kin differ in their patterning of benefits/obligations, and preliminary data are being analyzed.

Kin-like relations are warm and pleasurable, but classification "as kin" is not involved and there is no implication of permanence, benefits, or obligations. Friendly interaction between a salesperson and customer, a brief romantic affair, helper-helpee interactions in disasters, or a pleasant round of golf with strangers exemplify kin-like relations. Reciprocal exchange relations typically occur between acquaintances/strangers and are materially based, but interactants may choose to employ kin-like behavior in effecting their business ends; the ends, nevertheless, remain the *sine qua non* of the interactional process. At the extreme nonkin pole, relations are between antagonistic outsiders who may tolerate each other for exchange purposes, or they may engage in internecine hostilities including murder, warfare, or genocide. At this extreme pole, the kinship selection processes and kin preferential processes of one individual or group come at loggerheads with those of other individuals or groups, and mutual altruism is at its nadir and mutual antagonism at its peak. In recent weeks, we have seen the Israelis and Palestinians move from the extreme nonkinpole to a miraculous but tenuous level of economic exchange (peace for peace), but they hardly came to "love" each other in the process. It seems that once biological and psychological kinships form, they are extremely difficult to nullify or modify even for the sake of world peace.

We appreciate this opportunity to outline psychological kinship theory in the Newsletter, and we look forward to commentaries from **IASCAP** members. In future issues we will comment on the implications of the theory for psychotherapy, the stress-affiliation link, and health psychology.

## **The interdependence of agonistic and affiliative behaviour**

by John Price & Leon Sloman

What follows is a response to John Birtchnell's suggestion (Sep 1993 ASCAP) that some of us are "vertical thinkers" and talk about social hierarchies to the exclusion of affiliation. It represents the results of discussions at odd times during the Human Behavior and Evolution Society (HBES) meeting at Binghampton, August, 1993. We tried to list as many areas as possible in which agonistic behaviour (the primitive work-horse of the vertical dimension) and affiliative behaviour interact. We found they could be classified into two main categories:

### Instances in which the object of agonistic behaviour is also the object of affiliative behaviour

"The fiercest anger of all, the most incurable, is that which rages in the place of dearest love" said Euripides, and still over two thousand years later we find that the fiercest battles over the vertical dimension occur in loving marital and family relationships. In a loving relationship, the cause of agonistic behaviour may be a conflict over affiliation, or the weapon used may be borrowed from the affiliative repertory.

### *Use of withdrawal of love (or threat of same) as a weapon*

When someone feels angry, they often want to hurt the other as much as possible. They will use any weapon that comes to hand. If they are in a loving relationship with the person they want to hurt, they may know that the most hurtful thing they can do is to deny their love. Therefore they say "I hate you" or "I no longer love you" or, even worse, "I never really loved you", or, playing it dirty, "The child you think I had by you is not really yours." These statements are not true, usually, and therefore have nothing to do with affiliative behaviour, or with the termination of affiliation (unless they are taken literally, and the weapon misfires). Such statements are used because they are the most effective way of inflicting pain, which is one of the main goals of the angry person. The result may be to cause suffering, depression, and even a clinical depressive illness, as the following case illustrates:

A male university student was referred with severe endogenous depression. He was indeed very depressed, and said, "I can't concentrate on my studies, I can't laugh with my friends, it all seems pointless." There was impairment of sleep and appetite. He told the therapist that a month previously his fiancée had asked him to take off a cheap metal ring which had been given him by a former girl-friend. He had refused, saying, "It's only a bit of metal." She had withdrawn her love, and shortly after this he became depressed.

The therapist pointed out to him that a ring is a symbol of commitment, and that if he wore a symbol of commitment to another woman, he could not expect his fiancée to commit her love to him. The patient accepted that he was in the wrong and had acted badly, and as an act of atonement he gave the ring to his fiancée. She was then able to forgive him, and his mood started to improve. The active submission of taking off the ring had replaced the involuntary yielding of depression. As a result of this episode he learned that he could not have his own way all the time, but must accommodate to the needs of his partner.

This case illustrates one complex interaction of agonistic behaviour and attachment behaviour. In the agonistic mode the mental state is one of wanting to hurt the other person, and any methods that come to hand may be used. This patient's fiancée knew that the most hurtful thing she could do was to withdraw her love, and this was far more effective than punching him on the nose. The withdrawal of love was not a part of attachment behaviour; it was borrowed, as it were, from attachment behaviour for use in agonistic behaviour, and it was not real. But the recipient can easily be confused and mistake it for real, in fact its effectiveness in causing pain depends on just such a confusion. Therefore it is a dangerous weapon which can easily get out of hand and go too far.

This case also illustrates the different attitude to values adopted by men and women. The patient thought the ring to be of no importance because it was made of some base metal, and had no financial worth. His fiancée was not interested in its resale value, but only in its symbolic value as a sign of commitment to another woman. Its transfer to her own possession was a symbol of his renewed commitment to her, and possibly also a symbol of his ability to learn to accommodate his base male attitudes to her own more refined value system. We expect she will keep it till it rusts away.

### *Conflict over affiliative behaviour*

Agonistic behaviour is the primitive method of settling conflict, and the vertical dimension reflects the result of previous agonistic interaction (and predicts the outcome of future agonistic interaction). Conflict can be about anything, including affiliation; in fact, in a loving relationship conflict is very likely to be about affiliation. A person either gets too much of it from the other, so that his need for "distance" is unsatisfied; or, more often, he gets too little of it, so that his need for "closeness" is unsatisfied. In either case, he suffers "frustrative non-reward" which can give rise to either aggression or depression (depending on the result of a complex appraisal system). We know that one of the common causes of the "battered wife syndrome" is an attempt by a wife to leave her husband. The latter at first coerces her to stay, and finally takes the view that, "If I can't have her, no-one is going to have her."

### *Inhibition of aggression due to affiliative factors*

A man may want to hit his wife, but does not do so because she has told him she will leave him if he does so, and he does not want to lose her. Or he may refrain from hitting because his mother told him that men do not hit ladies; or because a similar rule has been absorbed from other cultural sources.

This inhibition is of particular interest in the causation of depression. We have suggested that a catathetic (putting-down) signal lowers RHP if it not reciprocated in full measure; and lowering of RHP is probably the final common path in the complex network of causal chains leading to depression. It does not seem to matter what reason there is for non-reciprocation; it could be the usual one that the person concerned is losing an agonistic encounter, but it could also be an affiliative reason that has nothing to do with losing. And yet the effect seems to be the same. RHP is reduced and may trigger the "involuntary subordinate strategy." An exception to this is when the husband is so secure that he is unaffected by his wife's aggression, and, for instance, discounts it as her "time of the month" or uses the arousal associated with it to switch the context of interaction from agonistic to sexual.

### *Strengthening the affiliative bond through agonistic interaction*

Lorenz claimed that an affiliative bond which had been tested by a sequence of agonistic interac-

tions followed by reconciliation might well be stronger than a bond not so tempered in the fire of agonism. Some support for this comes from De Waal's work on reconciliation in chimpanzees. This is a large subject which we will not do more than mention here.

#### *Attractiveness of power and resources*

It is well known that human females are attracted to high ranking men, and that "money is the best aphrodisiac." This is natural because such men are better able to provide resources for their children.

For the same reason, possibly, men may find rich and high-ranking women attractive, although many men are put off by dominating behaviour in a woman (and perhaps nowadays women are increasingly turned off by dominating behaviour in men). This is a field being explored by David Buss, who spoke at the meeting.

#### *The demonstration of attractiveness by valour in battle or successful generalship*

Agonistic performance has been monitored during history probably as closely as batting and bowling averages are monitored in England today. Battle against neighbouring groups is an excellent projective test for females to assess the desirability of men as husbands and lovers, and for parents to discriminate between competing sons-in-law. Bravery, reliability, altruism, co-operativeness and endurance could be observed in the old days and now can even be seen on television.

Anthropologists enquiring about the sources of prestige in various societies are often told that the greatest reputation goes to the man who leads the group successfully in battle.

#### *Exchange of affiliation for agonistic support*

Those who study reciprocal exchange in monkeys have found that the reward for support in agonistic interactions may be not only support in future interactions but some affiliative behaviour such as grooming.

#### *Ontogeny and Phylogeny*

During the course of growth and development the child must learn to integrate mechanisms that may have originated at different stages of phylogenetic development. There are a number of studies which demonstrate that a "secure attachment" predicts a healthy functioning of agonistic

mechanisms. On the other hand, an "insecure attachment" is associated with "victim" and "victimizing" behavior and social withdrawal all of which are associated with aberrant functioning of submissive and dominant mechanisms.<sup>33</sup>

#### *Psychotherapy*

Patients in therapy often demonstrate the intertwining of mechanisms of attachment and aggression. For example, patients may react to their own deep-seated anger by feeling unloveable, which generates a never-ending quest for reassurance. Patients who have been abused may feel that the therapist who doesn't get angry with them therefore doesn't care about them.

A 50-year-old female patient described how she had felt "insignificant" to her mother before she died, because the mother had invited other friends along when they went out rather than giving the patient undivided attention. The therapist and patient had been discussing termination and the patient agreed that she felt she was "not significant" to the therapist. She also acknowledged that she had been experiencing rage towards the therapist for "abandoning her", even though she herself had raised the issue of termination. She accepted the therapist's interpretation that feeling "insignificant" was a way of signalling "no threat" to the therapist. She also reported her awareness that she was trying to turn off her anger because she knew she couldn't win. My (LS) formulation was that as an adolescent she had experienced rage about her mother's death. Her knowledge that she could not prevent her mother's death made her feel that nothing could be achieved by expressing this anger. This realization triggered the "involuntary subordinate strategy" which manifested initially as feeling "insignificant." This illustrates how loss of a loved one can trigger similar mechanisms to losing a hierarchical encounter.

#### Instances in which the result of agonistic behaviour depends on affiliation

##### *Dependent rank*

Ranking theory cannot ignore affiliation because in most primates, and most of all in human beings, rank depends on alliances with other group members. Concerning non-human primates, Bernstein & Gordon wrote.<sup>4</sup>

"...animals living in a society depend more on alliances and coalitions rather than on individual

fighting skills to maintain their social position. Thus a scrawny old female supported by many generations of offspring and long associations with other females and adult males may maintain a position of unquestioned superiority over young males of much greater fighting ability. So, too, may an old male retain his high rank, eventually losing to a challenger not because of his failing fighting abilities but because of the successful recruitment of support from group members by the challenger. After such a defeat, a new order is established incorporating all animals into a society that recognises the new relationships".

This dependence of rank on alliances has been amply confirmed by more recent primate studies. Bernard Chapais sums up his review of ranking behaviour in female Cercopithecine monkeys as follows:<sup>35</sup>

"Perhaps the most general principle emerging from the present review is that any female seeks to outrank any other female against whom she is given sufficient alliance power".

In their introduction to their book on alliances, Harcourt and De Waal sum up their view of alliance formation and agonistic behaviour in man and other primates:<sup>36</sup>

"If we view the dominance hierarchy as the vertical component of social organisation, the network of affiliative and kinship ties can be viewed as the horizontal component. In many species these two components exist side by side without much interplay. The remarkable social complexity of human and non-human primates is brought about by their capacity to (1) alter competitive outcomes and dominance positions through collaboration, and especially (2) establish social bonds for this very reason. Alliance formation links the vertical and horizontal components of social organisation by making an individual's dominance position dependent on its place in the affiliative network. Consequently, this network becomes an arena of dominance-related strategy.

These phenomena can be described under the headings of parental influence, female dependence on her male consort, and the forging of alliances:

#### *Parental influence*

We know that in humans social rank is frequently hereditary. If we doubt this we only have to go to Buckingham Palace and make an application to be crowned king. What is now being realised is that

the same applies to a lot of monkeys, and it seems likely that kin-dependent rank was a characteristic of the common simian-human ancestor some 40 million years ago. So there have been a lot of generations for natural selection to act on the links between rank and kin affiliation. We recommend the volume by Harcourt and De Waal, especially the chapters by Chapais and Datta. In these monkeys, interventions by parents and other relatives in the quarrels of youngsters result in the rank ordering of whole matriline, within which the daughters are ranked according to the "youngest ascendancy principle," so that each youngest daughter ranks immediately below her own mother, and is dominant not only to her older sisters, but to all females who rank below her mother. One can visualise the hectic social life of the group as the youngest daughter of the dominant female achieves a rank reversal with every other female in the group, except her mother, as she grows up. In these Cercopithecine monkeys, rank and kinship are the same, at least for the females.

#### *Female dependence on male consort*

In a number of animal species, the rank of a female depends on the rank of the male she is associated with. This results in some very flexible rank situations, especially in harem situations such as the hamadryas baboon, in which the male consorts with whichever of the harem females is in oestrus. As a result, each female rises to the top of the female hierarchy once a month, and just as surely falls to the bottom once a month; and it seems as if, when they enjoy their brief reign at the top, they are more concerned to avenge past slights when they were down in the past than to build up credit for when they will be down in the future.

Real, if less dramatic, changes occur with human beings. When an English lady is widowed, she traditionally hands over the manor house to the wife of her eldest son and retires to the dower house, where her power is much reduced and she yields formal precedence on social occasions (such as order of going into dinner) to her daughter-in-law. In other cultures, the situation of widows is even worse; for instance, it may be thought that "widows are unlucky and should be shunned."<sup>37</sup> Shweder continues:

"In the Hindu moral world the death of a husband has more than moral significance, and its metaphysical meanings run deep. Traditional widows in India spend the balance of their lives absolving themselves of sin (fasting, praying,

withdrawing from the world, reading holy texts). In their world of retributive causation, widowhood is a punishment for past transgressions. The fact that your husband died first is a sign telling you that you must now undertake the task of unburdening yourself of guilt, for the sake of your next reincarnation on earth. In such a world the flame of your husband's funeral pyre is appreciated (understood and experienced) as though it was the romantic analogue of the last plane to Lisbon in the movie Casablanca. If you are not on the plane it is likely to be a very long time until you see him again, if ever. A shared cremation absolves sins and guarantees eternal union between husband and wife, linked to each other as god and goddess though the cycle of future rebirths."

#### *The forging of alliances*

Two can fight better than one, so the result of any conflict depends more on who is fighting with whom than on the fighting ability of any particular individual. Alliances may be formed with kin and non-kin. A famous mythical example of the latter is the alliance between Theseus and Pirithous, who formed an unbeatable team and must have caused grief around the Aegean Sea in those early days.

#### Discussion

We think it must be clear from the above that agonistic and affiliative behaviour are inextricably intertwined in human interaction. The reasons we talk more about agonistic behaviour are twofold. First of all, it is in relation to agonistic behaviour that the "biological advantage" of depression lies. If there were no agonistic behaviour there would be no depression. You cannot say the same about affiliative behaviour. Depression plays no adaptive role in relation to affiliative behaviour - its manifest connection with affiliative behaviour is secondary, due to the enormous importance for agonistic behaviour of alliances and dependent rank. We have hypothesised that depression is an intensified and prolonged "involuntary subordinate strategy" and this should not be needed for affiliative behaviour which should be egalitarian (at least between adults). Depression can maintain the stability of close relationships that are threatened by conflict, but at the expense of symmetry; the depressed person switches into a subordinate role and the relationship becomes complementary (in terms of power); if there were no vertical dimension this form of "relationship homeostasis" would not be necessary.

Secondly, the relation between depression and

loss of loved ones has been well documented and discussed by others, whereas the relation of depression to agonistic behaviour has, we feel, been largely overlooked; and the reason for this is the lack of an evolutionary perspective in previous thinking. In particular, the failure to distinguish the relative rank of the object of hostile expressions in depressed patients has concealed the very considerable degree of agonistic inhibition in depression, which we believe to be its main adaptive function.

The treatment of depression should include attention to affiliative networks. It is not sensible to ask the depressed person to make new friends, because all social initiative is inhibited, and the therapist would just be setting the patient up for further failure. However, the mental state of depression is conducive to mending feuds in existing relationships, especially when the feud is due to pride on the part of the patient. As Alexander Shand said many years ago, "Sorrow abates pride."<sup>38</sup> When the patient has recovered, there is the possibility of extending the social network, and of resuscitating friendships which have lapsed; we believe that a wider and closer network of friends and relations would be one factor in preventing relapse.

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Mayer AD, Rosenblatt JS: Contributions of olfaction to maternal aggression in laboratory rats (*Rattus norvegicus*): effects of peripheral deafferentation of the primary olfactory system. J Comparative Psychol 1993; 107:12-24.

*Abstract: We examined the effects in postpartum female rats.... of olfactory deafferentation by intranasal ZnSO<sub>4</sub> on maternal aggression and retention of aggression 24 hr after pups are removed. When females were tested with pups, effects of deafferentation depended on postpartum interval; anosmia failed to reduce aggression on Lactation Day 3 (L3), but anosmia was associated with moderate reductions on L8-L12. We propose that postpartum aggression is stimulated initially by hormonal factors associated with late pregnancy but later is supported by exteroceptive stimulation. After removal of pups, although aggression scores were lower across treatment conditions, anosmic females had shorter latencies to attack and tended to elicit more submissive behavior from intruders. Data suggest that odor cues from conspecifics normally inhibit aggression by females, but this inhibition is reduced during lactation.*

Pellis SM, Pellis VC, McKenna MM: Some subordinates are more equal than others: play fighting amongst adult subordinate male rats. Aggressive Behavior 1993; 19:385-393.

Adult male rats living together form dominance relationships, with one dominant and the remainder adopting subordinate roles. In previous studies, it was shown that in adult male pairs, the subordinate rat initiates more playful contacts and retains a more juvenile response to the playful contacts by the dominant. In this experiment, triads were used to examine the play between subordinate males. The subordinates directed fewer playful contacts to each other than to the dominant rat, and there was a symmetrical play relationship between the subordinates. After the dominant was removed from the colony, one subordinate became the dominant. Playful interactions amongst these pairs increased, with the subordinate initiating more playful contacts than the dominant. Furthermore, from a similarly low frequency of juvenile-type response to playful contact to each other when in triads, the subordinate in the dyads increased its frequency of juvenile responses to the dominant partner. This supports the hypothesis that the playful behavior of subordinate male rats towards the dominant is an adaptive response, serving a "friendship maintenance" function. Finally, when in triads, one subordinate was more playful with the dominant than the other subordinate. It was the least playful subordinate that was the most likely to become the dominant. This suggests that within a colony, not all subordinates are the same.

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Holekamp KE, Smale L: Ontogeny of dominance in free-living spotted hyaenas: juvenile relations with other immature individuals. Animal Behavior 1993;46:451-466

Abstract: This study documents the development of rank relations between free-living juvenile spotted hyaenas, *Crocuta crocuta*, and (1) members of the peer cohort, (2) older non-sibling juveniles, and (3) older siblings. All agonistic interactions observed among 67 juvenile members of one large spotted hyaena clan were recorded, both in natural contexts and following experimental presentation of food. Within peer groups,

juveniles of both sexes initially exhibited aggression and appeasement without regard to their social partners' maternal ranks. This changed during ontogeny such that juveniles came to direct aggression only towards peers from lower-ranking matriline, and only appeased peers from higher-ranking matriline. By 6-8 months of age, intra-cohort ranks were highly correlated with maternal rank. The same age-related trends found in juveniles' interactions with peers were also observed in aggressive and appeasement interactions between younger and older juveniles, despite their differences in body size. However, juveniles directed a greater number of coalitionary attacks against older juveniles than against peers. Presence of mothers during their offspring's aggressive interactions strongly influenced interaction outcomes of juvenile? less than 6 months of age. At approximately 8 months of age, juveniles rapidly outranked their older siblings, who had previously dominated them. Juveniles 12-36 months old could be ordered in a linear hierarchy in which ranks were transitive and isomorphic with maternal ranks. Ontogenetic trends in outcomes of rank-related interactions revealed no significant sex differences. Female dominance, characteristic of rank relations among adult hyaenas, was not expressed among juveniles in their natal clan.

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Cao B-J, Peng N-A: Magnesium valproate attenuates hyperactivity induced by dextroamphetamine-chlordiazepoxide mixture in rodents. European J Pharm 1993;237:177-181

Abstract: A mixture of dexamphetamine and chlor-diazepoxide induces hyperactivity in both mice and rats. This type of hyperactivity has been proposed as an animal model of mania. Magnesium valproate itself had little influence on the activity of normal mice and rats. Acute pretreatment of mice with magnesium valproate (75-300 mg/kg p.o., 37.5-150 mg/kg i.v.) attenuated the mixture-induced hyperactivity. Pretreatment of rats with a single dose of magnesium valproate (75-300 mg/kg p.o. or i.v.) also counteracted the locomotor hyperactivity caused by the mixture. The effects of magnesium valproate in the mixture-treated mice and rats could be abolished by bicuculline and picrotoxin, but not isoniazid. These findings suggest that the antimanic effect of valproate may be related to its ability to enhance the postsynaptic effects of gamma-aminobutyric acid (GABA).

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  2. c/o R Gardner, 4.450 Graves Building (D28), University of Texas Medical Branch, Galveston, TX 77555-0428. FAX: 409-772-6771. For ASCAP Newsletter Volumes 3 (1990), 4 (1991), and 5 (1992), please send \$18 (or equivalent) for each 12 issue set. The first two volumes (1988 and 1989) of thirteen and twelve issues respectively are available on request without cost. For subscription to the 1993 and 1994 sets of 12 issues each (Volumes 6 and 7), the cost is \$20/year. Make checks or money orders out to "Department of Psychiatry and Behavioral Sciences, UTMB" or send your credit card type, number, expiration date and signature.
- At this time **IASCAP** is an "informal" organization and has no official budget beyond the newsletter itself.
3. As mentioned in a previous issue, we had hoped that there might be a European station in England but this is running into problems: there would still be difficulty with non-English currencies; there would have to be an additional secretary in England; it needs more discussion than the trans-Atlantic telephone costs allow and should be taken up in a business meeting as in May, 1994. Paul suggested that we use credit card mechanisms which will be an avenue for handling the foreign currency problem.
  4. Greenwood Publishing Group  
88 Post Road West, Box 5007, Westport, TC 06881-5007. Shipping add \$3.50 in U.S., \$5 in Canada.  
Price. \$95.00 ISBN 0-313-27697-0. 60C pages.
  5. Series: THE EVOLUTION OF HUMAN INTELLIGENCE Volume I The Form of Man, 1983 336 pp. 0-8204-1303-8, \$25.00  
Volume II Triumph of the Intelligent, 1985 210 pp. 0-8204-1305-4, \$25.00  
Volume III Why Humans Vary in Intelligence. 1987 392 pp. 0-8204-1304-6, \$25.00  
Volume III The Making of the Civilized Mind, 1990 309 pp. 0-8204-1154-X, \$57.95  
Postage & handling: \$3 for 1st book; \$1.50 for each additional book. Checks payable to Peter Lang Publishing, 62 W. 45th St, 4th Floor, NY, NY, 10036.
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