

# ASCAP

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September 1997

'During assessment, respect [depressed] patients' personal identity; that is *avoid* reassuring them when they talk of their helplessness and confirm their idea that things do require effort.'

V.F. Guidano and G. Liotti, 1983 <sup>1</sup>

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**ASCAP Society Mission Statement:**

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

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

**ASCAP Newsletter Aims:**

- ◆ A free exchange of letters, notes, articles, essays or ideas in brief format.
- ◆ Elaboration of others' ideas.
- ◆ Keeping up with productions, events, and other news.
- ◆ Proposals for new initiatives, joint

***The ASCAP Newsletter* is a function of the ASCAP Society.**

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

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

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

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

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# ADDRESSED TO & FROM ...

## ***The Triune Brain***

I am grateful to Timothy Perper and Martha Comog for their remarks on e-mail about Jung and evolutionary psychology. The conference at Texas A & M University which they mention was originally planned to be a USA launch of our book *Evolutionary Psychiatry*, and both my co-author Anthony Stevens and I were present. The conference proceedings are due to be published under the title *The Evolution of the Psyche* (editors D. Rosen, R. Gardner & M. Luebbert). Westport, CT: Greenwood Publishing Group. Further information is available from David Rosen at: [ahr@psyc.tamu.edu](mailto:ahr@psyc.tamu.edu).

In any event, the conference became a major confluence of people coming to the same place from different directions -Jungians, psychiatrists, evolutionary psychologists and biologists, and was a great success. It was not a success as a book launch, because our book did not get there. Likewise, at a recent evolutionary biology conference at the London School of Economics to launch *The Maladapted Mind: Classic Readings in Evolutionary Psychopathology*, edited by Simon Baron-Cohen (Hove, UK: Psychology press, 1997) there were plenty of people but no book.

Talking about precursors of evolutionary psychology, I recently read Charles Horton Cooley's *Human Nature and the Social Order* (Charles Scribner's Sons, 1902; reprinted by Transaction Press, New Brunswick, 1983) and I could not help thinking that if the group of Chicago pragmatists had continued to influence the social sciences, and their influence had not been blocked by the backlash to Social Darwinism, we would now be in the mainstream of an evolutionary sociology.

May I ask the members of this group for help? We have found Paul MacLean's concept of the triune brain very useful in conceptualising the relation between mood, emotion and rational strategies of escalation and de-escalation (see our book pages 222-226) and we feel this makes a significant contribution to the treatment of depression. But we have been criticised for using MacLean's model which has been described as outdated and wrong. We have been looking for reviews of MacLean's book *The Triune Brain in Evolution* (1990) and have found a favourable review in the *Journal of Nervous and Mental Diseases*, but extremely unfavourable reviews in both *Science* and *American Scientist*.

Can anyone direct us to other reviews of his book, or of his

work? Has anyone the expertise to comment on his ideas? In general, it seems that other disciplines, especially psychiatry, find his ideas stimulating and helpful, but his fellow workers in the neurosciences say he is just wrong, and his model is misleading. Should we abandon him?

John Price

100042.2766 @compuserve.com

## ***Evolutionary Psychology***

I have read *The ASCAP Newsletter* for May and found it very interesting. It is really the kind of thing that I have been looking for. I believe, as you do (RG), that there is a lot more room for research and discussion on the subject of the story-telling animal than so far has been exhibited in this exciting new field of evolutionary psychology. I also agree with E.O. Wilson, who wanted to see the evolutionary paradigm extended to the humanities as well as the social sciences. It seems to me that there is room for fiction, non-fiction, and poetry that directly addresses the paradigm, that in fact proves and dramatizes the paradigm. I have learned a lot about human behavior from Aesop's fables as well as from Darwin, Robert Trivers, Frans de Waal, and the biologists. I look forward to seeing more of ASCAP.

Dale Evans

## **FUN**

The August 1997 issue of the *ASCAP Newsletter* was fun. I really enjoyed the pictures of so many people whose work I admire. Also, Glenn Cochran's comments about psychiatrists as friends were useful. I think that the profession could do much with the idea of teaching friendship. There are some churches now that set up programs and do training sessions on being supportive friends to fellow members of the congregation.

Certainly, teaching families to live in hedonic mode through churches and schools could be beneficial to our society. And psychiatrists are exactly the people to do such outreach, particularly through sociophysiological concepts. So I very much liked his ideas. -- I'm still thinking about the Elementary Pragmatic Model (EBM) related articles. I do struggle with these models that are supposed to reduce complex concepts to "one size fits all". This seems to have some merit but I have to mull it over a bit.

Carolyn Reichelt  
lreichelt@mem.po.com

### ***International Congress of Applied Psychology***

The organizers of the 24th International Congress of Applied Psychology, which is taking place 9-14 August 1998,

in San Francisco, California, have issued the Congress 2nd circular, which includes Congress registration and housing reservation materials. The early registration deadline is 1 April 1998.

This hosted by the American Psychological Association (APA) on behalf of the International Association of Applied Psychology, the Congress program will feature an array of individual and group presentations on:

Organizational Psychology  
Psychological Evaluation and Assessment  
Psychology and National Development  
Educational, Instructional, and School Psychology  
Clinical and Community Psychology  
Applied Gerontology  
Health Psychology  
Economic Psychology  
Psychology and Law  
Political Psychology  
Sport Psychology  
Traffic and Transportation Psychology

and other areas such as applied social, applied developmental, human factors and ergonomics, and social issues. The Congress program will also offer: an exhibit of major publishing, technological, and psychological companies; continuing education workshops; site visits to clinics; laboratories, and industrial

settings; and excursions to nearby tourist attractions.

To request a copy of the circular, contact:

Congress Secretariat APA  
Office of International Affairs  
750 First Street, NE  
Washington, D.C., 20002-4242

Fax: (202)336-5956  
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**Russell Gardner, Jr.,  
c/o Frank Carrel,  
Department of  
Psychiatry & Behavioral  
Sciences,  
University of Texas  
Medical Branch,  
Galveston, Texas  
77555-0428, USA.**

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Word or ASCII format  
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Thank you.**

## **Forward and Table of Contents for the September Special Issue of ASCAP**

At the ASCAP Meeting this year, President Bailey supported the idea that there be a theme issue in which summaries of the day's proceedings each from 4-8 pages long be published (with some in other newsletter issues as required by the vicissitudes of contributions and space).

This idea was endorsed but extensively discussed. It was decided that it would be in the September issue.

### **The papers that are being presented (along with their author's names and page numbers are):**

Kent Bailey -- Welcome and keynote address.  
"Evolutionary Kinship Therapy:  
Merging Psychotherapy Integration  
and Kinship Psychology" pages  
6-10 references - page 29

Helen Wood - "Staying in the "Therapy Zone":  
Kinship and the Art of  
Therapeutic Process" pages  
11-13 references - page 29

Russell Gardner  
& Vickie Butler - "Managing the Unspeakable:  
Case Report of a  
Sociophysi-ological  
Treatment" pages 14-17  
references - page 29

Dan Wilson - "Inherent Advantages of the  
Manic-Depressive Polymorphism:  
A Guide to Psychotherapy" pages  
18-22  
references -- pages 30-32

Ferdo Knobloch -- "Integrated Psychotherapy and  
Evolutionary Psychology" pages  
23-26 references - page 32

### **Due to space limitation, the following articles will be featured in the October issue of the *Tie ASCAP Newsletter*.**

John S. Price -- "Goal Setting in Psychotherapy:  
A Contribution from Evolutionary  
Biology"

Andy Thomson -- "The 10 (Plus) Commandments of  
an Evolutionary Forensic  
Psychiatry"

Lynn O'Connor  
& Jack Berry -- "More about Guilt, Depression,  
and Submissive Behavior"

The Bakkers -- "Human Territorial Skills  
Training: A Practical  
Therapeutic Application of an  
Ethological Concept"

Leon Sloman -- "Evolutionary Principles in  
Psychotherapy; The Syndrome of  
Rejection Sensitivity"

We hope that all who read this special issue and the upcoming October issue will enjoy both of them. A lot of fine work by these authors went into the making of this special issue. Enjoy!!!



## *y Kent G. Bailey Evolutionary Kinship Theory: Merging*

### *Psychotherapy Integration & Kinship Psychology*

Psychotherapy is a species of human interaction<sup>1</sup> that establishes the therapist as a protective figure or secure base in a way that facilitates client growth and change.<sup>2</sup> Psychotherapy is a task-oriented and professional service relationship<sup>3</sup> whose roots nevertheless lie in ancient modes of human healing.<sup>4</sup> There are literally hundreds of approaches to psychotherapy, but over fifty years of empirical research has established the client-therapist relationship as the prime mover in the change process.<sup>5</sup> Therefore, I argue that psychotherapy should focus on the client-therapist relationship and its capacity to affect the feelings, thoughts, and behavior of both interactants in the course of treatment.

Surprisingly, the powerful models of evolutionary psychology and evolutionary psychopathology have been slow to find their way into the therapy room. The typical approach is for therapists to integrate evolutionary concepts and theories into their pre-existing treatment paradigms, disciplinary conventions, and preferred theoretical orientations. I refer to this as evolution-enhanced psychotherapy. Russ Gardner's sociophysiological therapy, Randy Nesse's cognitive-behavioral variation, Bailey and Wood's kinship approach, Leon Sloman's fusion of attachment and ISS theories, the evolutionary psychiatry of Stevens and Price, Paul Gilbert's integration of the evolutionary and Jungian models, the interpersonal process therapy of Ferdo Knobloch, and the various Bowlbian attachment approaches to psychotherapy<sup>6</sup> exemplify the evolution-enhanced approach.

The evolutionary psychotherapy of Kalman Glantz and John Pearce<sup>7</sup> was the first comprehensive attempt to deduce both a conceptual rationale and a treatment method from evolutionary principles. The Glantz and Pearce approach is a true evolu-

tionary psychotherapy that establishes evolutionary concepts and principles as the defining features of the psychotherapist's preferred treatment paradigm. They point out that throughout the periods when humans were evolving, our ancestors lived in small, intimate, and nomadic scavenging and gathering groups and, later, hunting and gathering groups. Our species has changed little biologically in the past 30,000 years or so, but our physical, social, and cultural environments have changed enormously. Thus, a mismatch was produced between our older genes and our newer living conditions. This mismatch is highly correlated with psychopathology in modern society - thus the corresponding high need for psychotherapy. The Glantz and Pearce evolutionary psychotherapy aspires to educate clients about their evolutionary past, reduce mismatch tensions where feasible, help the client create more healthy cognitive models, and increase the client's sense self-efficacy and "control of their destiny"<sup>8</sup> Moreover, the therapeutic alliance is a central aspect of treatment, and the client should experience it as a kind of "surrogate home." The therapeutic alliance may be seen as a kind of "two-person band" wherein the client's sense of inclusion and participation is crucial.

Evolutionary Kinship Therapy Following the Glantz and Pearce lead, many variations of true evolutionary psychotherapy are likely to appear in the next decade. The present paper represents one such attempt through the merger of psychotherapy integration and the new kinship psychology. In effect, this merger combines a generic or basic brand of psychotherapy with one of the more recent and exciting developments in evolutionary psychology. This approach should have special appeal to beginning psychotherapists who have not yet committed to a particular therapy system or model. This approach also has the advantage of avoiding negative transfer that can sometimes occur when revered models of long-

standing come in conflict with evolutionary principles. **Table 1** outlines the history and basic principle of psychotherapy integration, and **Table 2** summarizes the fundamental common factors in generic psychotherapy.

Kinship is a powerful concept that stretches across many levels of social behavior and Daly, Salmon, and Wilson recently outlined the basic principles of a comprehensive, evolution-based kinship psychology.<sup>9</sup> Their approach merges traditional kinship theory, Hamilton's inclusive fitness model, and the broader realm of evolutionary psychology into an exciting and provocative call to arms. They address biological, psychological (viz., fictive kinship), and kinlike levels of analysis, and they argue for a relationship-specific kinship psychology that deals with the particular demands of being a mother, father, mate, offspring, or grandparent. Our particular approach to kinship psychology has focused primarily on the distinction between biological kinship and psychological kinship,<sup>10</sup> and more recently on the role of kinlike relations in psychotherapy and other social contexts (see Wood article this issue). The kinlike category is especially noteworthy in modern industrialized countries where acquaintanceships and stranger-to-stranger interactions often predominate over biological and psychological kinships.<sup>11</sup> **Table 3** summarizes the basic assumptions of kinship psychology and **Table 4** summarizes the basic principles of kinship therapy.

**Figure 1** shows how the respective human natures or inclusive fitness systems of client and therapist feed into the initial working alliance and later into the ongoing therapy relationship in evolutionary kinship therapy. In this scenario, the client-therapist relationship is both a medium and causal contributor to therapy outcomes. Along with Bowlby and others, we theorize that stress augments interpersonal bonding processes and kinship formation, and, thus, transference and counter-transference issues are likely to reflect underlying kinship dynamics. The need for the client to experience kinship with the therapist may be especially strong- indeed, far stronger than the therapist may realize.<sup>12</sup> It follows, then, that the

underlying kinship dynamics will often be interwoven into the formal treatment paradigm and intervention strategy employed. The evolutionary kinship therapist will be highly sensitive to the kinship dynamics between him/her and the client as attempts are made to effect positive change in the client's life in the form of improved interrelationships between the drives to achieve biological and cultural success (see my earlier A/eivs/efferseries on mismatch theory and psychopathology).

In sum, the merger of the common factors of psychotherapy integration with the exciting new field of kinship psychology represents a relatively straightforward means of developing a true evolutionary psychotherapy unencumbered by pre-existing models and orientations. Hopefully, this and other evolution-based approaches will appeal to the next generation of psychotherapists who wish to start with a psychology of human nature and build their psychotherapy paradigms from there. c8

### **PGRAPH: Software for Kinship and Marriage Networks**

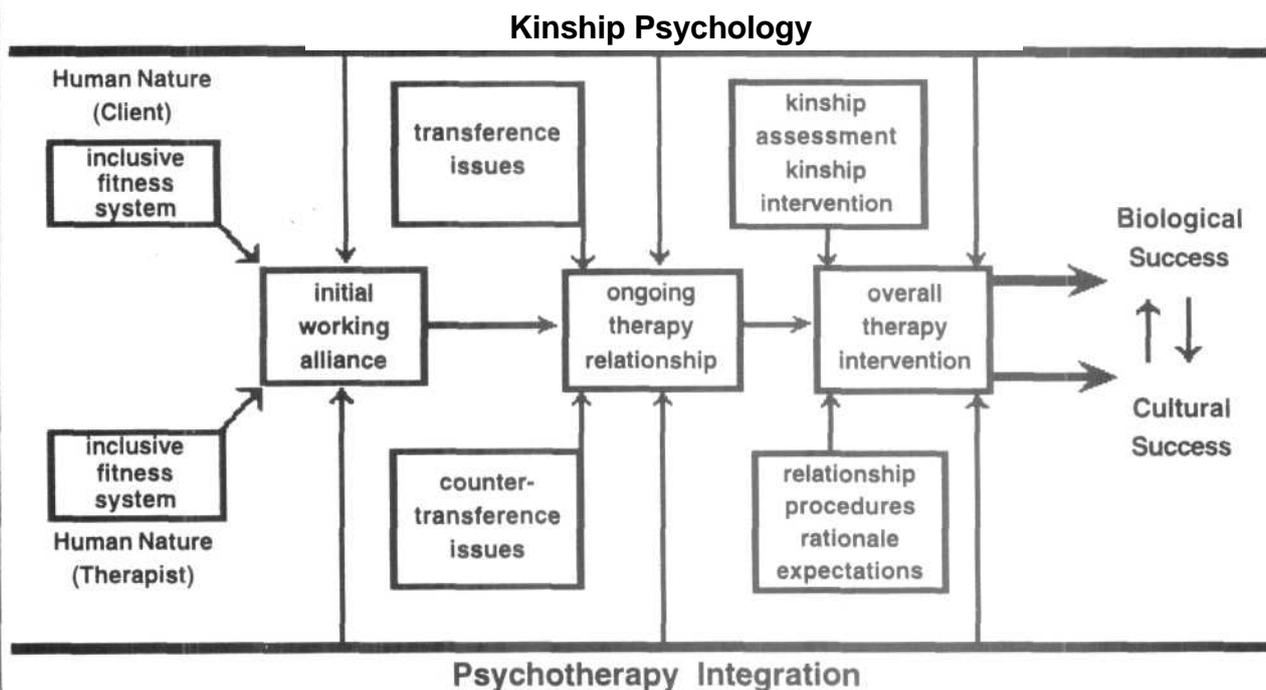
<http://eclectic.ss.uci.edu/~drwhite/pgraph/pgraph.html>

Douglas White and Patricia Skyhorse have developed this FTP site and completed the user's manual for Doug White's PGRAPH programs (c) 1997. You can download the updates, the MS-DOS version of PGRAPH or the PGRAPHW version for Windows, which is available for BETA testing (advanced options work only in the DOS version). The PGraph programs and accompanying analytic and utility programs are called "The Parente Suite." The Parente Suite User's Guide, Volume 1, containing the tutorial "Six Steps for Kinship Graphs: from Genealogical Data to Network Analysis," are presently only available by mail for a \$5 reproduction and mailing fee (an extra \$5 will register your copy of the programs and put you on our mailing list).

**TABLE 1 - PSYCHOTHERAPY INTEGRATION**

- I. In 1983, THE SOCIETY FOR THE EXPLORATION OF PSYCHOTHERAPY INTEGRATION was formed.
- II. The society as formed by therapists and researchers who were disenchanted with single-school approaches, theoretical dogma, and the general chaos of the field.
- III. The primary objectives of SEPI are to encourage communication and to serve as a reference group for exploring the interface between differing approaches to psychotherapy.
- IV. The official journal of SEPI is The Journal of Psychotherapy Integration, in effect since 1991.
- V. Psychotherapy Integration reached a milestone with the publication of the Handbook of Psychotherapy Integration, edited by John C. Norcross & Marvin R. Goldfried (1992; Basic Books).
- VI. In the Handbook, psychotherapy integration was most often addressed from the standpoints of either TECHNICAL ECLECTICISM or COMMON FACTORS approaches.
  - A. Technical eclecticism- the therapist borrows techniques from various approaches without accepting the overarching theoretical systems. The Multimodel Therapy of Arnold Lazarus is an excellent example.
  - B. Common factors- here the focus is on extracting from the vast body of literature on empirical psychotherapy research the smallest number of the most empirically proven methods and techniques.
- VII. Substantive literature reviews and extensive metaanalyses of psychotherapy research tend to support the common factors approach. Conversely, there is little empirical support for the notion that one therapy system, specific method, or particular theory is superior to another.
- VIII. The common factors approach implicitly attempts to define a "generic" or basic brand of psychotherapy that is highly informed by empirical data and minimally influenced by grand theories, particular personalities, or social trends within or without science.

**FIGURE 1 - EVOLUTIONARY KINSHIP THEORY**



### **TABLE 2 - SOME COMMON FACTORS IN PSYCHOTHERAPY**

- I. Jerome Frank's classic four components of psychotherapy:<sup>1</sup>
  - A. An emotionally charged relationship with a helping person.
  - B. A healing setting.
  - C. A conceptual scheme that rationally explains client's symptoms and provides a procedure for resolving them.
  - D. A mutually agreed upon ritual that requires the active participation of both client and therapist.
  
- II. Hal Arkowitz's four common factors in psychotherapy:<sup>2</sup>
  - A. A warm and positive relationship between client and therapist.
  - B. A set of procedures engaged in by the therapist that are thought to produce positive client change.
  - C. A rationale underlying those procedures which provides a plausible explanation for the client's symptoms and is logically connected to the procedures implemented .
  - D. Positive expectancies on the part of both client and therapist that the treatment will lead to beneficial changes.
  
- III. David Orlinsky's list of researcher's images of psychotherapy:<sup>3</sup>
  - A. Psychotherapy as mental health treatment.
  - B. Psychotherapy as personal education.
  - C. Psychotherapy as a reform or correctional process.
  - D. Psychotherapy as moral or spiritual redemption.
  
- IV. Bailey and Wood's (1997) dimensions of kinship psychotherapy:<sup>4</sup>
  - A. The species dimension- at base, psychotherapy is an exercise in human nature.
  - B. The relationship dimension- the most fundamental aspect of psychotherapy is the interaction of the client's human nature with that of the therapist.
  - C. The conceptual-procedural dimension- psychotherapy builds on natural sociality and the client-therapist bond by incorporating theory and technique into the treatment process.
  - D. The moral dimension- the therapist's values are central to choice and implementation of treatment moreover, therapist values are major correlates of client change in therapy.

### **TABLE 3 - BASIC ASSUMPTIONS OF KINSHIP PSYCHOLOGY**

- I. Human beings evolved as highly social creatures within small, fairly closed, and inbred social contexts.
  
- II. The human brain is primarily a social brain that was primarily designed to mediate social functions such as kinship recognition and classification processes, dominance-submission relationships, altruistic and cooperative behavior, the attention structure, complex processes of exchange and reciprocity, and a host of other functions including those surrounding mating, reproduction, & parenting.
  
- III. These complex and interrelated social processes were primarily organized around kinship recognition and classification processes that followed the logic of inclusive fitness theory.
  
- IV. So viewed, kinship was an adaptive set of mechanisms that helped to provide reproductive benefits, order, continuity, and meaning in social relations.
  
- V. These adaptive kinship mechanisms were encoded in the brain in the form of modular processes with their own cognitive algorithms, perceptual systems, and connections with the pleasure-pain hardware of the brain.

## **TABLE 4 - KINSHIP PSYCHOTHERAPY: BASIC PRINCIPLES AND APPLICATIONS**

### **Client-Therapist Relationship**

- I. Many clients- especially those under severe stress- want a psychological kinship with their helping agent, whether or not the agent encourages such kinship.
- II. For some clients, the professional helper or therapist may be the most important source of emotional social support in the client's life.
- III. Most helping agents or therapists tend to be unaware of or to underestimate the client's desire for psychological kinship.
- IV. Psychological kinship is a major commitment and the therapist will rarely enter into such a relationship, despite the client's natural wants and wishes.
- V. However, kinlike therapist behavior creates a warm and positive atmosphere that fosters an effective and pleasant client-therapist alliance, **(see Helen Wood's article in this issue)**
- VI. The kinship therapist will carefully monitor self and client kinship needs in therapy, and will closely monitor counter-transference and transference phenomena.

### **Methods and Focal Concerns**

- I. The kinship therapist will carefully assess the client's overall kinship system and availability of social support.
- II. Within the broader assessment of social support, the kinship therapist will carefully assess specific kinship anomalies, losses, and deprivations in the client.
- III. The kinship therapist will be especially sensitive to imbalanced kinship relations where one member of the kinship dyad gives or receives much more than the other, or where one loves the other more than is reciprocated.
- IV. Such imbalanced or nonmutual kinship relations are especially problematic in relation to self-esteem and physical and psychological health .
- V. Within the context of the generic integrative and kinship models, the kinship therapist will use supportive techniques, advice-giving and didactic procedures, and cognitive restructuring to aid the client in understanding his/her kinship pathology and in making appropriate adjustments in the spheres of kinship and social support.

## *Staying in the "Therapy Zone": Kinship and the Art of Therapeutic Process*

In December, 1995, the *American Psychologist* featured an article by Martin Seligman<sup>1</sup> on the results of a nationwide survey of psychotherapy effectiveness. The survey had been conducted by *Consumer Reports* during the previous year and was completed by 7,000 subscribers. Interestingly, the survey results again confirmed the frequent finding of equal efficacy across treatments as well as demonstrating equal consumer satisfaction across a variety of mental health disciplines. However, the real point of Seligman's article was that consumer-based surveys of experiences with psychotherapy in the field highlight "crucial" process elements of therapy - what one is tempted to call the art of therapy as opposed to the science of empirically derived techniques we so often associate with outcome studies.

A considerable amount of research has suggested that many of these crucial elements are comprised by the relationship between therapist and patient, and further that these elements significantly reflect what therapy researchers have referred to as "common factors." Still, these crucial elements, I believe, are often simply taken for granted or relegated to those nonspecific aspects of therapy that the student therapist somehow assimilates through trial and error. Can the art of therapy be explained? It is my contention that viewing the therapeutic relationship within the context of phylogenetically derived mechanisms of human relating - specifically, mechanisms of kinship recognition and classification - can provide some answers. Moreover, I suggest that there is likely a range of kinship relatedness that is most conducive to positive outcomes in therapy - a "therapy zone."

In a recent excellent chapter on kinship psychology, Daly, Salmon, and Wilson<sup>2</sup> highlighted a number of kinship universals. Among these were our basic human propensity to investigate and discover how

strangers and new acquaintances fit or do not fit into our kinship networks, and, further, that kin relations seem to be universally understood as arrayed along a dimension of closeness. Here, the authors were really commenting on a dimension of biological or genetic relatedness (for example, the understanding that brother is closer than cousin). However, if kinship truly represents a fundamental, phylogenetically derived way of relating then it makes sense to view all interpersonal relations in terms of kinship. In addition, we know that humans can and do regularly extend kinship beyond the boundaries of blood ties. For these reasons, in our work on kinship psychology at Virginia Commonwealth University, we have conceptualized all interpersonal relations on a continuum of kin relatedness, extending from the extreme of "true" kinship, to kinlike relations, to neutrality, and finally to hostile, "anti-kin" relations.

(ANTI-KIN <----->KIN-NEUTRAL <----->KINLIKE <-----> KINSHIP)<sup>3</sup>

The phrase kinship psychology, of course, implies that we have some understanding of the cognitions, motivations, and feelings that accompany kinship. What, for example, is the "psychological reality" (to borrow an expression from Daly, Salmon, and Wilson) of experiencing a true kinship versus experiencing a kinlike relationship? Much of our work at VCU has focused on clarifying the psychological correlates of the various kin relations high lighted on the continuum above. This effort has involved the development and validation of two new scales: one representing a subject's perception of familial love with a target individual; the second, representing the subject's perception of enduring obligations and entitlements in his/her relationship with the target individual.<sup>4</sup> Thus far, an examinaion of responses from nearly 600 undergraduate men and women who completed these and other affilia-tive measures has confirmed that prototypical close

biological kinships (for example, with a parent) as well as close kinships with genetically unrelated others (what we call psychological kinship) involve high degrees of love, warmth, liking and attachment; involve perceptions of enduring obligations and entitlements; and, very importantly, involve actual classification of these individuals "as family"<sup>4,5,6</sup> Although considerably more investigation is needed, the hallmark of the kinlike relationship appears to be warmth, and perhaps liking, in the absence of any expectation of permanence in the relationship or classification as "true" kin. One might expect, however, that kinship and associated reward mechanisms in the brain would become activated in kinlike relations. By contrast, in kin-neutral and reciprocal exchange relations, there is only minimal warmth, and kinlike behaviors might be employed deceptively for material gain. Brain mediated kinship mechanisms would not be activated in this case, or would be activated temporarily only in the one who is being deceived. Finally, anti-kin relations would be expected to involve none of these affiliative correlates, and would likely involve open hostility.

With the kinship continuum in mind, then, I suggest that a kinlike relationship between therapist and patient is most conducive to positive outcome. Certainly I am not suggesting that any therapy relationship is fixed or unitary. I am suggesting that good, experienced psychotherapists in day to day practice are able to maintain a homeostatic range of relatedness with their patients that is best characterized as kinlike. This is not exactly a revelation - a number of people in the history of psychology and psychiatry have emphasized relational elements in therapy that would exemplify this kinlike zone (Rogers is a fine example!). However, the proximate mechanisms of relatedness have been emphasized as opposed to the ultimate mechanisms. We might expect that, given the intimacy of therapy and the vulnerability of the patient, fundamental human kinship mechanisms frequently become activated in our patients. Many instances of what we call "transference" may be a genuine desire on the part of the patient to locate us in the kinship scheme.

It is up to the therapist, therefore, as the one who holds the power, and as the one who is trained, we hope, in what Glantz and Pearce<sup>7</sup> would call "the ways of the species" to create the conditions for a kinlike relationship. There are serious implications when clinicians move outside this kinlike "therapy zone." Experienced therapists are quite familiar with the dangers of moving too close to an actual kin relationship with the patient: for example, promising the patient more than we can offer, failing to recognize pathology, risk of extra-therapy relations. However, I believe that there are equally serious implications when we move too far toward kin neutrality: indifference toward the patient, treating the patient as the object of experimentation, and the risk of premature termination. In fact, we know that if patients decide to prematurely terminate, they will do so in the first several sessions -the very time when patients are likely at their most vulnerable and are struggling to determine the therapist's trustworthiness and level of concern.

Although there would seem to be serious implications for moving in either direction outside the kinlike zone, curiously no one in all of my training as a psychologist has ever warned me about the dangers of getting too neutral in therapy (except, of course, Kent Bailey - see his paper on evolutionary kinship therapy, this issue). I have received an abundance of advice about the dangers of getting too close. And yet as I have watched experienced clinicians in action, they clearly are not neutral. There would seem to be a discrepancy between what is formally taught and what is actually practiced day to day. For example, coursework in clinical psychology training, many classic theories (except perhaps the humanistic approaches), clinical staffings, and many large-scale efficacy studies emphasize therapy as an objective, scientific enterprise involving effective techniques - certainly kin neutral -while, on the other hand, trainees are often evaluated on their abilities to form effective bonds with their patients (see the figure below). I would add, however, that some of the newer common factors and integrative approaches do call attention to relational elements as effective ingredients of therapy. Furthermore, Seligman's "effectiveness"

studies, as exemplified by the Consumer Reports survey mentioned above, could be said to represent a concern for kinlike relational elements in therapy. In examining this discrepancy,

I am reminded of an interesting series of studies by Hans Strupp and colleagues<sup>8</sup> in which the researchers studied the effects of training manuals on the process of therapy. The authors commented that "at the same time therapists were becoming more intellectually sensitized to the in-session process, they were actually delivering a higher toxic dose of disaffiliative communications" (p. 20).

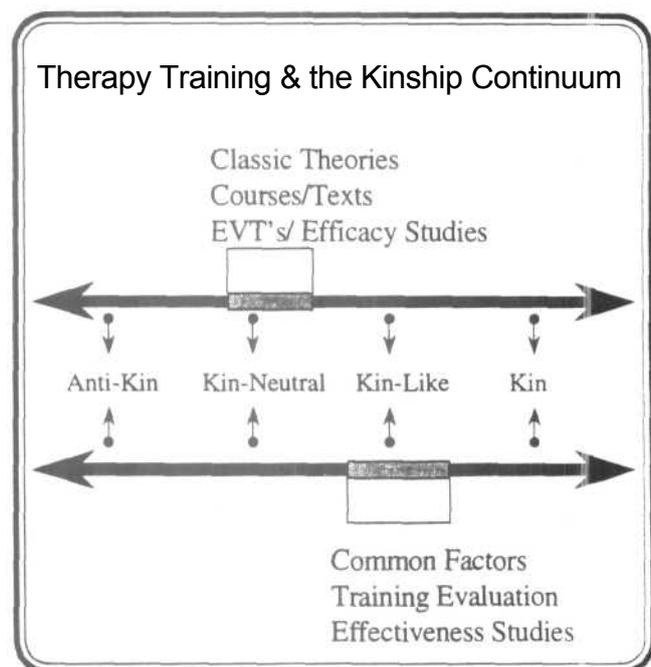
One case from my own training is particularly illustrative, I think, of the dangers of moving outside of the kinlike therapy zone. S. T. was a 29 year old, African-American woman who presented with symptoms of major depression. She was recently widowed, unemployed, and raising two small children. In addition, she had suffered multiple losses during her life and had little family support. Interestingly, she came to our clinic after prematurely terminating her therapy at a large inner city clinic.

S. T. was my second therapy case. Despite the differences between me and this patient, and probably because I knew virtually nothing about formal therapy techniques, we bonded very quickly. We called each other by first names, she was very open with me during sessions, and often brought her infant daughter into the therapy room with us. There was probably a danger here of moving too far toward a true kin relationship. (And I received a lot of advice about not getting too close). However, around session 3-4 something intervened that almost surely would have resulted in termination. The "something" was my first clinical staffing. In an effort to impress my colleagues and professors, I developed a case formulation that was founded entirely on what I was learning in my courses. The formulation looked good on paper, but everyone, including me, was visibly tense and uncomfortable during this staffing. In addition, S. T. and I were equally uncomfortable in the therapy session that followed. However, not a single person was able to

tell me why until my advisor, Kent Bailey, suggested to me that I had left out the human element -I had forgotten the patient.

At this point it occurred to me that I might actually be able to apply my research to the real world, and I was able to avoid what I think would have been a very serious mistake. In the end, while I would say that S. T.'s problems were still far from solved, she did move back to her home town, got a job, and was able to get some help from her grandmother and sister in raising the children. She and I parted on good terms and she called me one last time after the move to tell me about her new job.

I think that this movement across the kinship spectrum is probably typical for therapists in training. However, as we become more experienced clinicians we learn to gradually narrow the range of movement and maintain a generally kinlike relationship with the majority of our patients. Therapy necessarily involves the application of various scientifically derived techniques. In my view, therapy as an art involves the skillful application of these techniques within the context of a kinlike relationship, and with the understanding that therapy, as a human encounter, is not exempt from the basic kinship mechanisms that motivate: us all in our daily social interactions. c8



# ARTICLE:

by Russell Gardner, Jr., & Kathleen (Vickie) Butler

## *Managing the Unspeakable: Case Report of a Sociophysiological Treatment*

This is the case report of treatment for conversion disorder. NA, a 57 year old retired Merchant Marine navigator working on sign construction, had conversion aphonia after a weight struck his head on the job. He failed to speak for reasons other than brain damage. RG was the psychiatrist and VB the assigned medical student who participated in the five psychiatric sessions. After these he spoke again. The treatment featured sociophysiological principles.

Conversion disorders and their psychoanalysis illustrated "unconscious" processes a century ago. So little of neural function was known then that Freud disconnected his new work from his nineteenth century efforts as a neurologist. Moreover, he used the 19th century popular metaphor of the machine, not a physiological approach for which Darwin and Barnard had argued in 1873. Not until the mid-twentieth century were the recommendations realized. Now brain imaging, molecular analysis of the brain, and use of psychopharmacological probes of brain and behavior allow the emergence of a basic science for the psychiatric specialty parallel to that of other specialities. RG calls this "sociophysiology" as most psychiatric syndromes can be seen being social or communicational. This case report illustrates a behavioral level of analysis.

That the human brain and body show many features in common with other animals make animal models of psychopathology feasible. Also of course there are many features that contrast, the most consequential brain-size and correlated function. The human brain is three-times heavier than those of other large primates. The enhanced brain seems to be a social organ. Dunbar discovered the maximum size of social group correlates with brain size.<sup>1</sup> Think of the language areas of Wernicke and Broca. The nature of NA's problems emerged like a detective story illustrating denial, repression and displace-

ment as well as resistance, therapeutic alliance, transference, and working through. Yet its features also illustrate sociophysiological treatment. Inability to speak, of course, is quintessentially a communicational problem. RG and VB saw him first as consultants to Neurosurgery. They, Neurology, Speech Pathology and Neuropsychology each found no neurological damage. The neuropsychologist reported that NA did in fact once speak when asked if he was suicidal. He seemed taken off guard then vehemently denied such ideas, speaking for minutes. Then the patient noticed he was speaking and said, "What now?" He remained silent. Other than vocalizing, however, he communicated avidly, asking for help, cooperating graciously and meaningfully. He gestured, whispered, wrote furiously, telling how he was "motor mouth" before. He is a smiling, bearded, red-faced, lively man. Psychiatric examination showed him otherwise normal except for a slight choreiform movement of his head (from war injury). There were two other symptoms which we interpreted as conversion headache with which he typically awakened and conversion amnesia: he couldn't remember his address, phone number nor the date of his wife's death.

NA's beloved wife died 2 years before. He remains bonded to 3 daughters, two married. The youngest, aged 19 years, came in his emergency along with her husband from afar. NA had been heavy drinker of alcohol, but this stopped abruptly 12 years ago after a brawl with his brother. NA was stabbed, his brother hurt, and both jailed. He denied even temptation subsequently. He wrote proudly that he makes his own decisions.

Interspersed in the sessions were short hypnotic trances. In session 1, he complied with this idea though he seemed to anticipate an agonistic encounter. He wrote, "Put it to me straight." In the hypnotic sessions, RG used imagined scenes and

yes/no finger actions. He insisted on a particular relaxed posture and a focus on palmar perception of the chair arm edge. Most discussion occurred at times other than trances. In the first session, his youngest daughter and her husband participated, were clearly involved in the trances and his finger action answers, as caught up in it as he. Questions largely involved NA's permission or agreement on a number of details involving imagery along a path in a woods. Asking his permission seemed important for this feisty, sensitive man with many uncompromising attitudes. The guided imagery mostly featured a chest or a house. He could see violence and blood in these but others couldn't.

Between trances, RG questioned the daughter about her mother's death but she was silent. NA then wrote that he would tell the family secret. The wife had been diabetic with multiple devastating complications. She had shot herself in the heart. She had planned this in detail and in secrecy. She used a 22 caliber gun. But in a next trance, he asserted that this was not the reason that he couldn't let us see a form associated with blood and violence. As part of a gradual inquiry, RG asked whether the concealed form was man or woman, pursuing alternative possibilities (but presuming it to be a woman - the wife). But no, it was a man, his boss whom NA hated with passion! NA wrote that were he younger, he would have dispatched the man without hesitation. But that, he felt, would have meant he yielded to the devil. Though energetic and involved, NA was often sad in the session but again denied depression and suicidality. RG concluded more treatment was indicated and proffered out-patient follow-up. The patient quickly accepted.

NA arrived an hour early, and seemed shaken still. In the session, he expressed continued murderous rage towards the boss. He did free writing assignments which "flowed over." RG queried for possible "secondary gain" reasons causing symptom continuation, such as avoidance of work or the toxic boss. He wished to work and to work there. RG wondered if continuation of daughter/son-in-

law's stay or a power struggle with himself were factors. NA rebutted each of these but agreed that he was guarding against speech. This "felt right."

NA requested that RG analyze what was going on. So between sessions RG wrote a page-long sociophysiological analysis, noting in it that NA was intelligent and energetic but an injured man locked in power struggle with his employer. This was a response from the lower brain-body, not a considered thoughtful struggle, but rather similar to shivering as in response to cold: unthinking, automatic, reflexive. RG illustrated other examples of lower brain-body responses such as temper, panic, or cutting or shooting another.



RG also noted Sloman's points that giving in is a shiver-like response of angry defeat; by contrast, giving way, a higher brain response, is less tensioned. RG illustrated the latter two points with a picture and noted that the man on the left seems resentful of the overlord's instruction (if he does the instructed activity feeling thus, he will be giving in). Can he accept the overlord's mission as his own and do it without resentment, by owning it as his own conscious decision (giving way). RG included Price's related principles of negotiations: the beginning of the process is to perceive that one feels resentful of someone (like feeling mad). Next one helpfully realizes this is a signal that the body gives one of unresolved conflict. This means for resolution that negotiation between the conflicted parties must occur and this ends only when both parties feel ok about the agreement.

NA beforehand read and marked the page with many questions and frequent disagreements. In the

session RG and NA actively debated. RG was dominant (with nurturant features which included listening carefully) like a teacher with NA an eager student (he wished he had been able to go to college and had read avidly when in the Navy and Merchant Marine). When NA appreciated a point, he showed acceptance. RG queried NA about whether he agreed that the left figure's frown indicated resentment about the overlord's commands. NA agreed and RG asked, "Sound familiar?" NA grinned with understanding.

RG emphasized that giving way would mean coming to terms with his position in the hierarchy. NA rebutted, "I do know my place, but don't like it." RG noted such resentment signaled that he didn't accept his place. NA said he desired his boss's direct gaze as respect. RG said he asked too much. NA naturally dominates in most settings and RG supposed the boss's averting gaze means natural submissiveness. But his ownership position allowed him to occupy an "unnatural" superior role and thereby to be a "toxic boss." NA needs allies to help him think and then plan on such matters as handling the boss so that in fact NA is planfully in charge of his own life. By the end of the 4th session, all agreed that any plan should allow NA to retain dignity and enjoy job and not feel steam-boiler tensions. RG explained this could happen via the right storyline formation, the distinctly human contrast to other animals.

In session 5, all sensed the boss topic was done. Moreover, NA indicated with a gesture that he felt "sick up to here" with the aphonia. Before any trances RG put forth imagery involving a horse in harness. NA in his own powerful story-telling fashion recalled that he had once killed a horse in temper. It bucked him. With a large piece of wood he struck it on the head, killing it instantly. Lifelong he had had powerful reactions. He noted, however, that his wife was even more dominating, for instance, she could silence their daughters with a glance. He wrote "Me too" (i.e., wife dominated him). He wrote "me and wife not two but one." Not that they didn't have their difficulties, but any problem was resolved by the time the sun rose again.

When in trance, he saw results of violence, but his fingers said that RG and VB couldn't see; he could but they couldn't. RG sensed (astonishingly for the first time) that NA couldn't speak because he gazed upon the "unspeakable." But when it was hypnotically suggested, he did say both therapists' names. But no more as yet. Between hypnotic sessions, he jotted "Why no more?" RG suggested that what only he could see was unspeakable. RG noted the pair's closeness might have caused difficulty for NA in reconciling in himself how she died. RG pointed out that her leaving him that way was a unilateral decision that must be painful for him. The sun had risen again, many times, with the problem remaining unsolved still.

In the last trance of the session, NA agreed with RG that he would say additional things. But this agreement occurred only after a lengthy series of finger signals ambivalently saying both yes and no. RG noted NA could decide later what not to talk about. But there was a change. Now looking again in the imaginary chest, he indicated RG and VB could see the unspeakable thing now, but that he could not. He was now clearly ready to talk. But he removed from his imagery his wife's no longer unspeakable but now unseeable death. Resolution had not yet arrived.

The treatment did not end at session 5. Workman's Compensation authorities easily awarded 12 more sessions with RG, expressing gratitude that NA was motivated for work. He now finds the boss completely benign and said that he believes he himself changed, not the boss. Still 4 months later with 4 sessions to go, he cannot recall the date of her death and his address which had been even more her address during his years in the Merchant Marine. Using the term of Joseph Weiss, modern day science-based psychoanalyst from San Francisco, NA is working through a pathogenic belief.<sup>2</sup> Exactly what this is for NA remains unclear, but seems to involve a sense that for him she remains a living entity; he avoids stimuli that indicate the contrary. Weiss also notes in circumstances of delimited sessions that patients seem to adjust their pace of relinquishing the

pathological beliefs to that available although it does require time. From this thinking, NA's remaining symptoms will indeed be resolved in four more sessions. His headache disappeared after another hypnotic trance. He continues to free-write, work in the sessions, and deal with two impending separations from the treatment which he calls his "safety valve" (as talking to his wife had formerly been). One is a missed week for vacation and the other the final termination, all of which was laid out at the beginning.

**In summary, the principles illustrated in this sociophysiological treatment included:**

1. Allies help achieve personal alpha status. Goodall and de Waais have illustrated importance of allies in the alpha status of chimpanzees. With treatment, this patient became more alpha with respect to interrelated life areas that were defeating him: loss of his beloved wife and his management of the boss who inherited the wrath her behaviors caused. VB and RG had teacher-doctor qualities ultimately parent-like in nature. On the therapists' part, appropriate dominance combined alpha, nurturant and audience psalics (communicational propensity states shared with other animals). Allies resemble family members. Bailey and co-workers illustrate the family-like nature of therapeutic relationships (see contributions this issue).
2. Shiver/ATP model works. Shivers are lower brain-body responses comparable to those of non-human animals. A or allies are more available to humans than other animals because humans have an even more highly social brain. T, thought, is more available to humans as they discourse with allies. P, planning, is more available when thoughtfully discoursing.
3. Story-line imagery works in sociophysiological treatment. Some story-lines guiding actions but not altogether in awareness are wrong -- maladaptive; replacement stories may benefit

the patient by helping thinking and planning processes. Weiss's pathogenic beliefs are such maladaptive life storylines.

4. Sloman metaphor of giving in vs giving up has meaning. Giving in parallels shivering in response to cold; giving in is also the lower brain-body response of involuntary subordinates strategy. Giving way is a tension-relieving, planful non-opposition to a dominant or to uncontrollable forces.
5. Price formulation of human conflict negotiation interdigitates with this. If a person senses personal resentment of someone, this should translate into a signal of unresolved conflict. This in turn means that the conflicted parties should negotiate until both parties feel unresentful.
6. Resistance as a sociophysiological phenomenon can be more precisely defined than it has been in psychoanalysis. It refers to a patient's difficulty going along with a treater's suggestions/comments/etc. It fundamentally entails catathetic (put-down) comments and represents a lack of submission that in turn indicates agonistic conflict. With this, Chance's tense agonic mode or interpersonal atmosphere portends in the relationship. But when such items are discussed directly, the communications often turn out instead to be anesthetic (boosting), thereby increasing Chance's hedonic mode typical of good family life and much more salutary for effective therapy. c8



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## *Inherent Advantages of the Manic-Depressive Polymorphism: A Guide to Psychotherapy*

The social competition hypothesis of mood disorders<sup>1</sup> has marshaled a great deal of disparate evidence concerning the evolved basis of social behaviour in humans. In this model, manic-depression finds its origins in a hierarchy of behavioural strategies stabilised in phylogeny (Hawk-Dove ESS). This hierarchy is embedded at serial levels in the brain. That is, depressed mood is fundamentally a de-escalating algorithm of the reptilian midbrain and paleolimbic whereas mood elevation is a newer escalating algorithm of the mammalian limbic-cortical brain. The former is a social competition strategy of low risk-low gain whereas the latter is one of high risk-high gain.<sup>2</sup>

This anatomic-functional model of human paleoneuropsychiatry has been relied upon to more adequately contextualize manic-depressive genomics and phenotypy.<sup>3</sup> Essentially, a proportion of the population has variant genotypy which appears to have been phylogenetically favoured in social competition. However, this same genotypy is expressed in more pathogenic phenotypy as earlier adaptations are 'mismatched' in demographic transition to the Holocene situation.<sup>4</sup> A review of beneficial aspects which inhere to manic-depression is offered as a foundation upon which may be built therapies to promote more salubrious phenotypic expression of the polymorphism.

Manic-depression is a syndrome replete with extraordinary psychological nuances despite its manifestly biogenetic basis. The thought, language, intellect, behavioural and other aspects of manic-depression constitute a highly distinctive and fluctuant temperament well known to patients, family, friends and the world at large. Indeed, adaptive features of the syndrome can be gleaned from merely perusing the two current benchmark diagnostic instruments (*i.e.*, the *International Classification of Disease* [ICD-10] of the World Health Organisation and the *Diagnostic and*

*Statistical Manual* of the American Psychiatric Association [*DSM-IV*]). Indeed, 'increased clarity of thought' was identified in the *DSM-III* as a specific pathological feature of the bipolar spectrum! Of course, modulation is ever an issue. But advantage may well obtain with appropriately expansive mood; increased energy and productivity with decreased need for sleep; optimism and confidence; enhanced gregariousness, jocosity, speech and hedonism. A thorough review of current research — including methodological constraints — is available elsewhere.<sup>5</sup> Here it is feasible only to survey empirical research which makes plausible the notion that manic-depression conferred advantageous characteristics in phylogeny in hopes this may guide more adroit psychotherapy.

Surprisingly, some of the strongest empirical evidence that manic-depressive epigenesis can confer advantageous characteristics derives from the realm of clinical phenomenology itself. The neuromental details of these temperamental elaborations are intimately related to some of the most remarkable clinical phenomena within the manic-depressive syndrome. That the pendulum of mood states within manic-depression harboured manifold positive features was noted by even early researchers. Kraepelin<sup>6</sup> emphasised the activity and ingenuity as well as the peculiar mixture of sense and experience of hypomanics who thereby manage:

*"... to satisfy their numerous desires, to deceive their surroundings to procure for themselves all kinds of advantages, to secure the property of others for themselves. They usually domineer completely over their fellow patients, use them for profit, report about them ...,act as guardian to them, and hold them in check."* (page 61)<sup>6</sup>

This is, in a Darwinian if not a clinical sense, an extraordinarily positive commentary concerning a major psychiatric 'disease' as offered by one who is perhaps its unsurpassed authority. Kraepelin also noted the rich verbal skills of manic-depressives and observed expanded powers of rhyme and word association. These findings were replicated and extended.<sup>7,8,9,10</sup> Moreover, these observations are wholly compatible with the social competition model of mood states as enunciated by Price and colleagues.

Similarly, Janowsky<sup>11,12</sup> empirically identified five types of social control exercised by persons in elevated mood. The first interpersonal style is the manipulation of self-esteem in others, specifically the raising or lowering of others' self-assessment as a mechanism of social leverage. The second style is perceptiveness of vulnerability and conflict, specifically the capacity to intuit others' sensitivities and reveal or otherwise exploit these. The third style is the projection of responsibility, specifically the technique of attributing responsibility for one's actions to another. The fourth style is the progressive testing of limits, specifically attempts to extend beyond social constraints imposed. The fifth style is the alienation of kith and kin, specifically the distancing from family members. Like Kraepelin before, Janowsky (page 254)<sup>11</sup> noted a peculiar admixture of sociability stating persons in elevated mood states are "*simultaneously cementing and distancing.*" Again, these are both of Darwinian significance and entirely compatible with the idea that mood is a potent regulator of social competition.

Though far from definitive, there is evidence that manic-depressives have greater general intelligence than the population as a whole. Mason<sup>13</sup> documented that U.S. Army General Classification Test scores of persons with manic-depression were superior to the general population. More specifically hypomania has been related with heightened intellectual capacity Donnelly.<sup>14</sup> Robertson<sup>15</sup> found manic-depressives superior to normal controls on several verbal tasks. However, contrary reports are also available.<sup>16,17</sup> Similarly, important elements of

psychomotor and cognitive speed directly co-vary with mood states in manic-depressives — speech, reaction time and psychomotor activity.<sup>18,19,20,21</sup> The preliminary picture is one of manic-depressives suffering from poor concentration and distractibility when highly symptomatic but also having superior associational ability and fluency, particularly when hypomanic.

Empirical studies of interpersonal styles among persons with mood disorder also reveal phenomena with clear consequences in a general Darwinian context and the specific framework of social competition. Communication fluctuations have been reported.<sup>22,23,24,25,18,26,27</sup> Such typically include subtle changes in speech pace and prosody, gesticulation, facial expression, irritability or introversion. Pronounced gregariousness has been linked to the manic state.<sup>28,29,12</sup> Converse findings typify studies of depression<sup>30,31,32,33</sup> has evidence that depressives frustrate not only themselves but those nearby and can induce depression in others with their intensely personal discussions.

Hammen<sup>33,34</sup> further documented both that male depressives are assessed more severely by others than are female depressives and that depressives of either sex are viewed as undesirable potential allies or mates worthy of patent rejection. Gurtman<sup>36</sup> concludes that the social rejection of depressives is a highly robust finding which consistently arises in studies of diverse design. Meanwhile, Plutchick<sup>37</sup> has established that the manic profile is far more socially desirable than is the depressive presentation. This empirical work supports earlier psychoanalytic formulations that emphasised the 'obsessive need' for social approbation which characterises manic-depressives.<sup>38</sup> Likewise, the self-perceptions of manic-depressives comport with these attitudes of others. Thus bipolar persons experience, among many symptoms in the cycle of mood swings, marked changes in self-esteem and self-perception, expressed energy, sociability, and as noted below, sexual identity and sexual intercourse.

Certainly, fluctuations of sexuality is a central feature of the manic-depressive syndrome. This has obvious connections to natural selection. Not only was this 'lewdness in association with manic delirium' noted in antiquity,<sup>38a</sup> but libidinal aspects of manic-depression constitute major criteria in contemporary diagnostic schemata. Surprisingly, well-designed empirical studies of sexual behaviour in manic-depression are relatively rare. Still, available evidence suggest that some two-thirds of manics present with overt hypersexuality with at least a third so disinhibited as to publicly disrobe or expose their genitalia.<sup>22,39</sup>

Significantly, these libidinal phenomena are empirically independent from considerations of age, religion, social class and duration or recurrence of illness.<sup>40</sup> This study also documented that at least four in five of patients substantially increased sexual intercourse when manic and that women were especially prone to provocative displays of libidinal interest. These findings were largely replicated by Winokur.<sup>22</sup> Moreover, depression appears to induce a "neutering effect and hypomania or mania had an... enhancing effect on sexual identity" (page 292).<sup>5</sup> Spalt<sup>41</sup> has found that bipolar patients have a threefold greater lifetime experience of extramarital affairs and are far more likely to have greater than ten sexual partners. Such is strong, if indirect, evidence of possible Darwinian selection of manic-depressive genotypy via heightened social competition in reproductive activity. Clearly, more thorough analysis of the reproductive consequences of manic-depression would be useful.

Still, manic-depression has also been tied to issues of Darwinian consequence in other core aspects. Gibson<sup>42</sup> characterised families with manic-depression as much more concerned with issues of prestige and social approbation. Gibson<sup>43</sup> later specifies how this concern is 'skillfully' gratified as manic-depressives exhibit 'extraordinary' interpersonal perceptions with which they 'manipulate and exploit the feelings of others'. This finding echoes proposals made by William James (who with his brother, Henry, suffered severe bouts of affective

disorder). James noted that the ardour and excitable character of manic-depression produces, when paired with talent, "... *the best possible condition for the kind of effective genius that gets into the biographical dictionaries... their ideas possess them...*" (pages 23-24).<sup>44</sup> Myerson (page 20)<sup>45</sup> surveyed manic-depressives at McLean Hospital and found "... indefatigability, which one so often sees in the hypomanic state may well be a fortunate combination..." which confers exceptional social and historical value. An exhaustive chronicle of biographical studies further supports the idea that manic-depression correlates with diverse types of achievement.<sup>5</sup>

Andreasen was the first group to systematically investigate the relationship between mental illness and creativity in well-designed studies using modern psychiatric diagnostic criteria. Participants at the renowned University of Iowa Writers' Workshop were systematically compared with others matched for age, education and sex. Two thirds of the writers had histories of mood disorders, compared with only one-seventh of the controls. Andreasen<sup>27</sup> has subsequently extended the study sample over the past twenty years with even more robust findings. Eighty percent of the writers had been treated for mood disorders compared to 30 percent of controls. Forty-three percent of the writers had some degree of manic-depressive illness, as compared with 10 percent of the others. Risk of psychopathology in general and mood disorders in particular among families of writers was also vastly higher than in controls.

These findings led Andreasen to propose a familial, epigenetic association between mood disorders and creativity — bipolars are open to contradiction, take risks and defy order in ways which make them both more vulnerable and more original than the general population. The link between bipolar illness and creativity is genuine and extremely robust, Andreasen<sup>27</sup> maintains and this is consistent with other reports.<sup>46,47, 48</sup>

Furthermore, these data have been repeatedly replicated. Jamison surveyed top British artists

and writers as to their mood states and history of psychiatric treatment. Her eventual sample included only the heaviest of cultural heavy hitters: members of the Royal Academy, Queens' Gold Medal or Booker Prize winners, Drama Critics awardees, contributors to the *Oxford Book of Twentieth-Century English Verse* and so on. Jamison found psychopathology in epidemic proportions. Rates of bipolar illness hover at about one percent of the general population with major depression afflicting some fifteen percent. In Jamison's sample more than a third had sought formal treatment for mood disorders (drugs and/or hospitalisation), a rate 30 times that of the general population. Again, writers experienced the greatest burden of illness with more than half of the poets reporting formal psychiatric diagnosis and treatment for depression or mania. One-third reported mood swings, particularly the poets and novelists.

Biographers appear to be the least likely 'touched by creative fire' as they reported no history of mood swings or elated states. Jamison concludes that intense creative episodes are, in many instances, indistinguishable from hypomania. Such similarities suggest mild mania may provide intense energy in tandem with perceptions that, percolating through a discerning intellect and creative mind, can induce artistic marked production. Jamison also notes the many elements that mood states have in common with spiritual enlightenment and mystical states.

Another study is an exhaustive personal interviews of Parisian artists, writers and musicians.<sup>49</sup> This study compares information from recognised creative individuals with that from a comparison group matched for age, sex, background and achievement in non-artistic areas. Akiskal has previously reported on 750 of his US patients diagnosed with depression, manic-depression and schizophrenia. Ten percent of those with more moderately severe bipolar disorder were creative artists and writers. But severe manic-depressives had high rates of antisocial behaviour, notably violent crimes.

There is, conversely, only one modern study that addresses whether some mentally ill persons are more creative than the general population.<sup>50</sup> Subjects were seventeen manic-depressives, sixteen cyclothymics and eleven of their relatives with no psychiatric history. There were two control groups, one was free of diagnosed psychopathology altogether and the other had psychiatric diagnoses other than mood disorder. Creativity was assessed by evaluating jobs and avocational activities as well as the standardised Lifetime Creativity Scale. Creativity was significantly higher among manic-depressives, cyclothymics and their relatives than in the controls. Cyclothymes and relatives of manic-depressives manifested the highest levels of creativity. It appears that creativity is enhanced, on the average, in subjects with mild or even 'subclinical' expressions of the bipolar trait.

A variety of other psychometric features converge among manic-depressives and persons of creative temperament. First of all there is emotional reactivity. Artists and manic-depressives tend to be highly sensitive to stimuli in what Andreasen<sup>27</sup> calls an 'extremely fine-tuned' nervous system, sensitive to a wide range of stimuli, including pain. She has speculated that this results from dysfunctional afferent circuits which predispose to altered cognitive filtration of stimuli.

Disinhibition is another trait shared by creative and manic-depressive persons. Tarter<sup>51</sup> proposes a fundamental breakdown in inhibitory mechanisms is characteristic of most psychopathological conditions. This breakdown, which can also be induced by alcohol or drugs, leads to conscillient ideation which connects far flung concepts perhaps afforded by more direct neuromental access to unconscious material. Certainly, thoughts flow freely in mania with loose and novel associations and are other wise little constrained. Hypomania is also associated with superior powers of concentration and cognitive absorption evident even in childhood.<sup>52</sup> Children with prodromal signs of manic-depression have significantly richer imaginations than do groups of controls. Manic and hypomanics can manifest unusual intensity of focus, engage in

creative tasks and demonstrate impressive feats of memory or highly detailed concepts or drawings.

This bolsters the notion that manic-depressive epigenesis may facilitate rich and intense experiences due to traits not shared in the human genome as a whole. More systematic investigation into the psychopathology of genius may de-romanticise how some extreme individuals have enlarged our perceptions of reality. The largest study done to date further confirms the association found by Andreasen, Jamison and others.<sup>53</sup> For more than a decade Ludwig and associates have sifted through over 2,200 biographies of 1,004 eminent persons to delineate what characteristics produce high-order creativity.

Ludwig reports that creative artists, as a group, carry much higher prevalence of mental illness than do counterparts in more organised occupations. Further, between a third of eminent-artists-to-be exhibited psychiatric symptoms as adolescents. These ranged from hypochondria, moodiness and introspective fits to blatant psychosis, hallucinations and suicide attempts. These differences sustained into adulthood. Rates of psychopathology were between 77 percent for adult poets, musicians and novelists; 68 percent for painters, composers and writers of non-fiction. Eminent natural scientists, politicians, architects and executives were disproportionately affected compared to the general population, but at a rate considerably lower than that of artists.

Ludwig's explanation is circumscribed: creative people with mood or thought disturbances achieve eminence disproportionate to their number and tend to the arts more than business or the sciences. While psychopathology of the manic-depressive type is most strongly associated with artistic expression there is a developing body of evidence by which it is linked to other domains of societal leadership. Walter Bagehot<sup>54</sup> long ago identified the imperious will and energy of leaders who prevail in times of crisis. Subsequently, this concept has been the subject of increasing systematic study.<sup>55,56,5</sup> Likewise, religious temperaments

were early on noted to have a robust linkage to many constituent traits of the bipolar syndrome.<sup>57,44</sup> Goodwin and Jamison<sup>5</sup> review how the course of religious history has been influenced, repeatedly and directly, by manifestly bipolar persons. Similar analysis has taken root in the history of science.<sup>58</sup> Thus, alternatives to the current, biologically reductive disease concept of manic-depression is beginning to emerge as the syndrome is recast in the more positive lights and tones of Darwinism. This phylogeny shall inevitably reorder psychotherapeutic principles which have, heretofore, posited the syndrome in purely maladaptive terms. c8

### ***Rage of the Muse*** **Manic-Depressive Illness<sup>1</sup> Relation to Creativity**



<http://shrike.depaul.edu/~eanderso/table.html>

There is a stigma in our culture regarding the artistic temperament. Many in the vocational arts are stereotyped as over-dramatic, or angst-ridden: "a divine madness" as put by Edgar Allen Poe, afflicts these souls. However, through scientific research, this passion possessed by artists can often be a clinical mood disorder. Research further indicates that the predominate affective illness in these disturbed creative individuals is Bipolar Disorder or Manic-Depressive Illness. The severe mood swings, defining this mental disorder, has shown to enhance the productivity and the creative energy in an individual. The manic phase of this illness has proven to act as an electrifying force that energizes the spirit, while the frequent highs and lows gives the afflicted person great insight into abstract ideas.

Attention was brought to this connection between imagination and expression and the manic phase of this disorder by the biographical evidence of eminent poets, artists and composers who attest to a high rate of mood disorders and suicide, as well as institutionalization in asylums and psychiatric hospitals.

## INTEGRATED PSYCHOTHERAPY AND EVOLUTIONARY PSYCHOLOGY

The development of Integrated Psychotherapy<sup>1,2</sup> was speeded up by the needs of the newly-born National Health Services in Czechoslovakia in 1948 -- a country with a low prestige of psychotherapy - aiming to establish a system of intensive and cost-effective psychotherapy, accessible to all who might benefit. At the same time I kept in mind the words of Kurt Lewin - that a good theory is the most practical thing - and attempted to integrate the important ideas of psychoanalysis, learning theories and ethology. This development started in 1937, when I was split in my fascination for psychoanalysis by the methodological warnings of the Prague logical empiricists (R. Carnap, P. Frank: I was inspired by their unity-of-science thesis which led to my bio-social orientation), and continued after my emigration to North America in 1968. Here are the milestones of Integrated Psychotherapy. (Its practical achievements, what I believe is the most cost-effective system of psychotherapy in 7 sequential stages - will not be dealt with here.)<sup>1,2</sup>

### 1. Psychoanalysis:

For evolutionary psychology, the two most important ideas of psychoanalysis are perhaps those of repression - a strategy of deception and self-deception<sup>3</sup> which will be reformulated later in terms of group schema and transference. Freud demonstrated, in a quasi-experimental situation of treatment, how easy it is to shift an attitude from a kin to a non-kin person. (If the stories about the dogs attached to their masters can be trusted, this is much more difficult for some breeds of dogs.)

### 2. From Mentalistic Psychotherapy to the Psychotherapy of the Whole Organism:

I became aware of the one-sidedness and resulting low effectiveness of verbal psychotherapies in

1940, through I.H. Schultz,<sup>4</sup> the author of autogenic training (the complexes do not sit only in the mind, they are in the whole body), who helped me to see psychotherapy in the context of such activities as relaxation, hypnosis, yoga, meditation, and expressive dance." A psychotherapist who relies on talking only is like a soccer coach who has only interviews with the players and never sees them really playing."<sup>5</sup>

A useful model of the of the abreaction (catharsis) I found in the "therapy" of Leyhausen, a student of K. Lorenz, who treated a wild cat, named Freda. Because of a "bad rearing" in a zoo, she did not develop the fixed action pattern of killing bite in her sensitive period. Leyhausen designed an elaborate procedure, in which Freda, after being kept hungry for a long time was overstimulated by a competition for food with a conspecific, and the killing bite was finally activated and functioned since then. Such dramatic changes in deeply inhibited patients can be achieved by abreaction, particularly in a therapeutic community, provided the consequences of abreaction are worked through.<sup>1</sup>

### 3. From a One-Person Framework to an Interpersonal Framework:

Freud described self-defeating behavior perfectly, as a repetition compulsion, but explained it poorly. To my knowledge, it was Schultz-Hencke<sup>6</sup> in 1942 as the first who not only criticised the insufficiency of Freud's explanatory one-person-framework, but who offered an interpersonal explanation, the vicious circle of neurosis or the devil's circle. To be more clear than the (somewhat clumsy) author, I will give an example of an employee who, because of his experience with his father, expects the worst from every boss, so that he unwittingly teases out from every boss a behavior similar to that of his father: this experience pseudo-confirms his hypothesis about males in authority.

#### 4. From an Interpersonal to a Small-Group System Framework.

When studying in England learning theories with H. Eysenck and psychoanalysis with Anna Freud, I was fortunate to see the therapeutic community of Maxwell Jones and appreciated immediately its potential. In contrast to his large community, and his limited psychotherapeutic goals, I designed small therapeutic communities with the highest goals, of the size of 20-30 patients (the size of groups in which we lived as hunters-gatherers for 99 % of the human existence and which made us what we are today).

I established four therapeutic communities in Czechoslovakia and in Canada, two residential ones and two in the day centres. I became persuaded that this kind of therapeutic community (further ThC) is the most effective psychotherapeutic treatment, capable to discover the self-defeating behavior, and providing most powerful levers for change.<sup>12</sup> Also, it taught me to see every patient, even in individual treatment, as part of an invisible group, but making it visible by including others --family members, friends, co-workers -- in therapy, whenever needed. I came to the conclusion that a small social group is the minimum behavioral system in which an individual's behavior can be understood. The concept of group schema will show how far-reaching this statement is.

#### 5. Social Exchange:

Social life became the essential means of survival and social success became the essential determinant of inclusive fitness. Therefore it is understandable that calibrating the benefits and costs of the exchange (the benefits embracing goods, services, status, love, information and later also money), and discovering the cheaters, became vital, and led to a special module, "Darwinian algorithm", in brain.<sup>7-8</sup> Regrettably, Cosmides regards, similarly as Alexander and some others, social exchange and reciprocal altruism as synonymous concepts ("it is the same thing", she told me). However, following the use of 'social exchange' as used in social

psychology and sociology, I regard as important to distinguish both concepts. According to de Waal, if you forget a broom in the cage of a monkey, you have to go and get it. In contrast, when dealing with chimpanzees, you can show them an apple and point to the broom, and they will understand and participate in the exchange. That I will call social exchange, a capacity which the monkeys lack.

The idea of social exchange appeared in social sciences from the beginning of the century. In marital and family therapy it was introduced under the name of "motivational equilibrium", (Knobloch & Sefronova),<sup>9</sup> in 1954 and re-discovered and vulgarised two decades later by behavior marital therapists (the therapist assisting in contracts such as "sex for furniture"). But systematic theoretical work started with Homans<sup>10</sup> in 1958 and Thibaut and Kelley<sup>11</sup> in 1959.

Social exchange theories are accused of self-centred rationality (e.g., Caporael<sup>12</sup>), but that does not apply to sophisticated theories of social exchange such as the interdependence theory of Kelley & Thibaut.<sup>13</sup> It is based on the fact that people are sensitive not only to their own profit, but also to the profit of those interacting with them. The authors use matrices as used in the theory of games and the given matrix is transformed into an effective matrix. Human beings may strive to achieve their own maximum profit in their interaction (max-self, as in a zero-sum-game), but they are also often oriented to max-joint (the maximum sum of profits of both), to min-dif (the smallest possible difference of profits of both), or they may be oriented to a max-other (sacrifice). Since in good marriages there is a max joint and/or min-dif, the partners do not count the balances of every exchange, as is typical for bad marriages. Permanent and cautious counting is inimical to any close relationship, whether to a good marriage or to a close friendship.

The concept of social exchange will emerge again when talking about group schema and about the meta-selection. I also believe that the Darwinian

algorithm of social exchange is the basis of distributive and retributive justice. And although I value the theory of history based on historical materialism (Marx and Engels) and cultural materialism (M. Harris) as first approximations^ believe that social exchange plays an important role in history (including the drive to achieve "justice" by revenge between neighbouring tribes and nations).

## 6. Group Schema: (ASCAP, 1996;9(6):17-18)

We live in our natural habitat, small social group, even when we are alone – in our thoughts, dreams and fantasies. It is assumed here that the framework of group schema is innate - a group schema composed of role schemas: male-female authorities, male-female peers, male-female subordinates, and male-female intimate (sexual) partners. The individual group schema is shaped in ontogenesis by learning, possibly including the process similar to imprinting.

The individualised group schema has three functions. It is a cognitive map of social relations. Second, it is a playground for experimenting with social relations in fantasy. And third, it functions as a parallel market of social exchange ~ imagined rewards are also rewards and similarly are punishments. One product of group schema, based on the interaction with role schemas, is conscience and feelings of guilt. (According to K. Lorenz, dogs have conscience and feelings of guilt - they originate from wolves living in hierarchical packs, in contrast to cats, as de Waal notices, who do not show any feelings of guilt at all – their ancestors were solitary hunters.) Through group schema, society indoctrinates the individual day and night. (To the full understanding of group schema, the knowledge of the criticism of the intrapsychic --interpersonal fallacy is necessary.)<sup>1,14</sup>

## 7. Meta-Selection:

In contrast to what has been said so far, the hypothesis of meta-selection goes far beyond established facts. But if it will be confirmed, it will give new meaning to all what has been said so far,

creating a foundation for a far-reaching theory connecting dispersed themes of behavioral sciences. A year ago, I postulated,<sup>15,16,17</sup> meta-selection as the kind of selection beside natural selection and sex selection, a selection which is intra-specific as sex selection, but is a kind of group selection. As powerful as a superordinate breeder, the group-as-a-whole exerted one-directional selective pressure in the evolution of humans and pre-humans, and produced pro-social dispositions, altruism beyond reciprocity to one's group and to its members. The pro-social behavior developed as an equivalent of club membership fee, or taxes paid to the government. (Informative in this regard are the results of marital studies: whereas in problem marriages the spouses count rewards and costs, the spouses in good marriages do not: an exchange orientation, counting of give-and-take, is inimical to marital happiness.)

How did the meta-selection develop? In fierce competition, the better organised and better living groups survived. The group organisers (those with systematic power to influence and coerce the group: power coalition, power elite, ruling class, governing class, economic and cultural brokers such as shamans) set and reinforced the rules of conduct and the rules of social exchange determining what was fair and just.

What motivates the group organisers? Beside the interest which every group member has, they enjoy special bonuses (even if of smaller size during the evolutionary relevant era of hunters-gatherers than later when a king had 1,000 concubines).

What pressure do they exert? They set the rules of conduct and the rates of social exchange (fairness, justice); they supervise social exchange. They favor regarding non-kin as kin (with self as possible exceptions). They cultivate group morale stressing certain kinds of altruism, particularly for the group-as-a-whole. Social exchange has general support (including moral anger for rule breakers), with self as possible exception. Elementary examples can be found in de Waal's<sup>18,19,20</sup> observations on chimpanzees.

The genetic outcome? Altruism beyond reciprocity (sympathy, empathy, group concern) -- Sensitivity to social approval and to gratitude -- The development of group schema (group takes over private fantasy life) -- Submissiveness to authority -- Techniques of deception and self-deception (repression, "social filter": E. Fromm) - De-emphasis of the difference between kin and non-kin (Freud's transference being one example).

As the sex selection may be in conflict with natural selection (the colour and ornaments of male birds and fish may decrease the protection against predators), so features selected by meta-selection may conflict both with those selected by natural and sexual selection. The struggle to achieve a harmony among tendencies stemming from the three selections is our everyday destiny. Egoists, erotomans losing life pursuing sexual goals, and kamikazes represent three extreme ways missing the balance.

### 8. Darwinism - A Dangerous Idea?

The core of the theory of evolution is dangerous only to those who value superstition more than science. However, an unconfirmed interpretation of the evolution theory held as a dogma and urging for social action can be socially dangerous and damaging, as social Darwinism (or rather social Spenserism) was. A contemporary example is the misinterpretation of "selfish gene" - the concept which is semantically correct, but pragmatically disastrous. Even its author Dawkins<sup>21</sup> mixes its evolutionary and psychological meanings. "I am not advocating morality based on evolution. We are born selfish." And Hardy warns that the message of socio-biology is oriented toward the success of the individual, is Machiavellian and should not be taught in high schools and perhaps not even in undergraduate classes. Thiessen<sup>22</sup> disagrees and quotes Alexander that children should be taught about the selfish gene and when and when not to extend co-operation. *"Since genetic fitness is enhanced by helping relatives, parents should reinforce children more for helping close relatives than for helping distant relatives or*

*strangers. The concept of "right" and "wrong" would be instilled into children in a fashion that would increase their reproductive potential and that of their relatives with whom they share genes. Fortunately, children seem to follow the Selfish Gene more than they do the Golden Rule..."* (pages 286-289)

This is an abhorrent example of an uncontrolled speculation and of deriving "an ought" from an "is" (an is which is questionable and likely wrong). If the meta-selection hypothesis is valid, Hardy's concerns are unfounded and Thiessen's views are totally wrong. If the meta-selection hypothesis is right, humans have innate tendencies both of egoism and altruism beyond reciprocity and struggle every day with the difficult task of finding the balance. c8



### **Evolution's Voyage WebSite (Evolutionary Psychology)**

<http://www.evovage.com>

-  **What is Evolutionary Psychology? What is Evolution's Voyage? Assumptions**
-  **about EP to help guide you. Notebook**
-  **Entries Essays and Theories.**
- 

Evolutionary psychology is the science that seeks to explain through universal mechanisms of behavior why humans act the way they do. Evolutionary psychology seeks to reconstruct problems that our ancestors faced in their primitive environments, and the problem-solving behaviors they created to meet those particular challenges. From these reconstructed problem-solving adaptations, the science then attempts to establish the common roots of our ancestral behavior, and how those common behavioral roots are manifested today in the widely scattered cultures of the planet.

# ABSTRACTS & CRUNCHES...

**McGuffin, P. & Scourfield, J.:** A father's imprint on his daughter's thinking. *Nature*, 1997;387:652-653.

**Skuse, D.H.; James, R.S.; Bishop, D.V.M.; Coppin, B.; Kalton, P.; Aamodt-Leeper, G.; Bacarese-Hamilton, M.; Creswell, C; McGurk, R.; & Jacobs, P.A.:** Evidence from Turner's Syndrome of an imprinted X-linked locus affecting cognitive function. *Nature*, 1997;387:705-708.

**Crunch:** Normal females have two X chromosomes (one X in each somatic cell is inactivated), and males have an X and a Y chromosome, and in Turner's Syndrome (Ts) females have partial or complete deletion of one of the two X chromosomes. The X chromosome in Tx can be inherited from the mother or the father. 70% of monosomic Tx women have a maternal X chromosome.

Skuse, et. al., studied social cognition in two sets of women with Turner's syndrome, i.e., those who have the X chromosome inherited from the mother ( $X^m$ ) and those who have the father's X chromosome ( $X^p$ ). There were 80 subjects 6 years to 25 years old, and 55 of them were  $45,X^m$ . Girls with  $X^m$  tended to need more special education and had more social problems than  $X^p$  girls or normal males and females.  $X^p$  females were better able to inhibit inappropriate responses and had better verbal IQ than  $X^m$  females.  $X^p$  females scored better on behavior inhibition tasks than XX females and both  $X^p$  and XX females scored better than normal males.

An imprinted gene\* is one explanation for the findings. Some Ts women has partial deletion of the short arm of the X chromosome and it was suggested that the imprinted gene for social function and associated cognitive skills is on Xq or on Xp near the centromere. As expected, the single X would not be inactivated. Another explanation would be that a greater degree mosaicism

(normal 46,XX cell line present) in  $45,X^p$  women than in  $45,X^m$  women. Two mosaics were found, but they were  $45,X^m$ . This is the first report suggesting imprinting on the human X chromosome.

Boys are more at risk for developmental disorders that involve language and social skills. Is this because they receive X chromosome from the mother?

\*Genomic imprinting: The same gene may express different characteristics depending on whether it is inherited from the mother or the father. Part of the process of imprinting involves methylation of DNA which switches off the gene.

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**Singing Another's Song. *Science*, 1997,275:1883.**

**Crunch:** Chickens and quail are closely related but sing different songs and have different behaviors while singing. Chicks constantly crow without moving the head and quail sing 3 notes while bobbing the head. In the *Proceedings of the National Academy of Science* (4 March 1997), a report noting that quail midbrain cells implanted in a chick embryo, makes the chicken sing like a quail, but the chick does not bob its head. Transplanting quail brainstem cells, makes the chick sing like a quail and bobs its head. It is not clear how the transplanted cells elicit this behavior.

**Editor's Note:** These two crunches were by Beverly J. Sutton, M.D., ASCAP member.

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**Lane, R.D.; Reiman, E.M.; Ahem, G.L.; Schwartz, G.E.; & Davidson, R.J.:** Neuroanatomical correlates of happiness, sadness, and disgust. *American Journal of Psychiatry*, 1997;154:926-933.

**Abstract:** Happiness, sadness, and disgust are 3

emotions that differ in their valence (positive and negative) and associated action tendencies (approach or withdrawal). This study was designed to investigate the neuroanatomical correlates of these discrete emotions. Twelve healthy female subjects were studied. Positron emission tomography and [ $^{15}\text{O}$ ]H $_2\text{O}$  were used to measure regional brain activity. There were 12 conditions per subject: happiness, sadness, and disgust and three control conditions, each induced by film and recall. Emotion and control tasks were alternated throughout. Condition order was pseudo-randomized and counterbalanced across subjects. Analyses focused on brain activity patterns for each emotion when combining film and recall data. Happiness, sadness, and disgust were each associated with increases in activity in the thalamus and medial prefrontal cortex (Brodmann's area 9). These three emotions were also associated with activation of anterior and posterior temporal structures, primarily when induced by film. Recalled sadness was associated with increased activation in the anterior insula. Happiness was distinguished from sadness by greater activity in the vicinity of the ventral mesial frontal cortex. While this study should be considered preliminary, it identifies regions of the brain that participate in happiness, sadness, and disgust, regions that distinguish between positive and negative emotions, and regions that depend on both the elicitor and valence of emotion of their interaction.

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**Reiman, E.M.; Lane, R.D.; Ahern, G.L.; Schwartz, G.E.; & Davidson, R.J.; Friston, K.J.; Yun, L.S., Chen, K.: Neuroanatomical correlates of externally and internally generated human emotion. *American Journal of Psychiatry*, 1997;154:918-925.**

**Abstract:** Positron emission tomography was used to investigate the neural substrates of normal human emotion and their dependence on the type of emotional stimulus. Twelve healthy female subjects underwent 12 measurements of regional brain activity following the intravenous bolus administration of [ $^{15}\text{O}$ ]H $_2\text{O}$  as they alternated between

emotion-generating and control film and recall tasks. Automated image analysis techniques were used to characterize and compare the increases in regional brain activity associated with the emotional response to complex visual (film) and cognitive (recall) stimuli. Film-generated and recall-generated emotion were each associated with significantly increased activity in the vicinity of the medial prefrontal cortex and thalamus, suggesting that these regions participate in aspects of emotion that do not depend on the nature of the emotional stimulus. Film-generated emotion was associated with significantly greater increases in activity bilaterally in the occipitotemporoparietal cortex, lateral cerebellum, hypothalamus, and a region that includes the anterior temporal cortex, amygdala, and hippocampal formation, suggesting that these regions participate in the emotional response to certain exteroceptive stimuli. Recall-generated sadness was associated with significantly greater increases in activity in the vicinity of the anterior insular cortex, suggesting that this region participates in the emotional response to potentially distressing cognitive or interoceptive sensory stimuli. While this study should be considered preliminary, it identified brain regions that participate in externally and internally generated human emotion.

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**Matzinger P.: Tolerance, danger, and the extended family. *Annual Review of Immunology*, 1994;12:991-1045.**

**Abstract:** For many years immunologists have been well served by the viewpoint that the immune system's primary goal is to discriminate between self and non-self. I believe that it is time to change viewpoints and, in this essay, I discuss the possibility that the immune system does not care about self and non-self, that its primary driving force is the need to detect and protect against danger, and that it does not do the job alone, but receives positive and negative communications from an extended network of other bodily tissues.

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The ASCAP Newsletter  
Russell Gardner, Jr., M.D., Editor-in-Chief  
Frank Carrel, Managing Editor  
Department of Psychiatry & Behavioral Sciences  
Marvin Graves Building, Room 1.103  
University of Texas Medical Branch  
Galveston, TX 77555-0428  
Tel: (409)772-3475  
Fax: (409) 772-4288 or (409) 772-6771  
ASCAP E-Mail: [ascapd.utmb.edu](mailto:ascapd.utmb.edu)  
[rgardner@utmb.edu](mailto:rgardner@utmb.edu)  
[fcarrel@psypo.med.utmb.edu](mailto:fcarrel@psypo.med.utmb.edu)

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