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## President's Column

### Teaching Graduate Psychopathology

Daniel N. Klein

State University of New York at Stony Brook

When Craig Neumann reminded me that my column for the newsletter was due shortly, I was in the midst of preparing my graduate course in Adult Psychopathology, a course that I've taught every other year for the past decade. I have also been enjoying Roddy Roediger's Presidential column this year in the APS Observer in which he presents his thoughts on a variety of topics related to academic

Psychology that are often discussed informally, but rarely addressed in print, such as course requirements in doctoral programs, keeping up on the literature, and preparing CVs. As part of SRP's mission is to help train future generations of psychopathologists, and teaching graduate courses in psychopathology is one of the ways that many SRP members contribute to this process. It struck me that it might be of interest to discuss

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## Members' Corner

### Associational processes in the language disturbances found in schizophrenia

Brendan A. Maher  
Harvard University

The history and evolution of research in psychopathology and brain science is often lost in the morass of empirical data. The editors of the Newsletter suggested that it might be worthwhile to consider the back-

ground of how ideas and approaches that now seem obvious came to be established. For an initial glimpse, it seemed The first attempts to study associational processes in psychopathology

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## PRESIDENT'S COLUMN

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some of the issues involved in teaching such a course here in this column.

Psychopathology is a broadly integrative field that draws from all the traditional areas of psychology, newly emerging areas such as cognitive and affective neuroscience, and other disciplines such as psychiatry, epidemiology, genetics, and neurobiology. At the same time, it has become increasingly methodologically diverse, requiring some understanding of a number of approaches that are often not part of the standard graduate curriculum, such as neuroimaging, multivariate genetic modeling, and advanced statistical approaches to analyzing longitudinal data. While it was never sufficient to teach psychopathology from the perspective of a single discipline (or worse, a single theoretical perspective within a single discipline), the prerequisites for obtaining even a superficial overview of the field have expanded enormously in the past 20 years.

Thus, one of major challenges is how to incorporate the necessary background information in at least some of these areas into the course, given the time constraints available. In the program at Stony Brook, students' knowledge of areas such as genetics, neuropsychology, and neurobiology varies, and many students require some background before they can make sense of current genetic and neurobiological research in psychopathology. Hence, I have found it necessary to devote four-five hours early in the course to present-

ing very basic information about genetic linkage and association studies, approaches to assessing neurotransmitter functioning in human subjects, and structural and functional neuroimaging.

Another significant challenge is balancing the tension between breadth and depth. Most courses are not long enough to cover most of the major disorders in detail, hence tradeoffs and sacrifices are inevitable. Students have diverse interests and needs, and these can conflict, even within the same student. For example, clinical students require breadth for their training as practitioners in order to have a basic understanding of a wide range of clinical problems. However, their training as clinical researchers might be best furthered by studying a few disorders in greater depth. As most of us probably do, I try to strike a compromise, covering most of the major disorders, but singling out several for more extensive discussion, hoping that they will serve as exemplars of the kind of work that is being done on a variety of different disorders.

Another facet of the depth versus breadth issue is the degree of emphasis on descriptive psychopathology versus empirical research on pathogenesis and maintenance. Ideally, I think that psychopathology should be taught as two parallel courses; a traditional three-credit didactic course focusing on current theories and research on mechanisms and a one- or two-credit course focusing on descriptive psychopathology. The latter could be part of a diagnostic practicum or

clinical grand rounds where students could observe patients with a variety of forms of psychopathology, although a good set of videotapes might also suffice. Many clinical programs offer Assessment or Intervention sequences that are structured along these lines, but the teaching of Psychopathology tends to be more isolated from clinical experience. This is unfortunate, as clinical observation remains a rich source of research hypotheses, and the empirical literature has a much greater impact on students if they can connect it to their experiences and activities in the clinic.

Most programs offer a separate course on child and adolescent psychopathology. This has the virtue of limiting the amount of material that we have to know and pack into an already crowded course. However, it raises the question of where the boundaries between these areas lie. As it becomes increasingly clear that psychopathology rarely appears *de novo* in adulthood, the traditional split between child and adult psychopathology appears more and more arbitrary. We may be at the point where it makes more sense to combine child and adult psychopathology courses into a single life span sequence, perhaps divided along the lines of internalizing, externalizing, and psychotic disorders, rather than to offering separate courses in child and adult psychopathology. Unfortunately, there are strong barriers to change, and the curriculum generally lags behind the field.

Another set of issues concerns the class format and the nature of the assigned

readings. Of course, this depends in large part on the size of the class and the nature of the students. My class usually consists of about 20 students, so a variety of formats are possible. However, I am inclined to teach Psychopathology primarily through lectures. Despite the many virtues of class discussions and student presentations, they tend to limit the amount of content that can be covered. Psychopathology is a particularly content-rich course, and I feel obligated to cover a considerable amount of material, particularly since one of the goals of the course is to help prepare the clinical graduate students to be competent practitioners. I feel that graduate students should be immersed in the primary literature of their field, so I have never considered using one of the several textbooks or edited volumes that might be appropriate for a graduate class. I use the lectures to cover the basic information that I think students should be familiar with (e.g., clinical presentation and course, and epidemiological, genetic, psychosocial, and neurobiological aspects of the disorder), and use the readings to give them greater depth in selected areas and approaches. Although I assign a few “classic” papers, especially in the early part of the course dealing with conceptualizations of psychopathology and research approaches, I try to assign disorder-specific readings that have been published in the last two or three years, and to distribute them among qualitative and quantitative reviews and empirical reports of clinical, psychosocial, and biological research. Finally, a major problem that psycho-

pathology instructors face, although it is hardly unique to us, is how to keep up with the field. Typically, our interests are limited to one or two disorders, and then often to only a subset of the kinds of research done in that area. Even if we ignore the ever-growing number of specialty journals, there are over a half-dozen first-tier journals in Clinical Psychology and Psychiatry, and a similar number of top-tier general psychology, medical, and science journals that we must keep tabs on. I try to cope with this by skimming the titles and abstracts of articles in the major journals on a regular basis and keeping a running list of papers that strike me as potentially important. My approach to book chapters is, unfortunately, less systematic. I spend two busy but rewarding weeks before the start of class reading through the papers on my list, updating my lecture notes, and choosing the assigned readings.

Attending SRP (and other meetings) is also useful in trying to stay reasonably up to date. It might also be helpful to find some way to share syllabi and reading lists for Psychopathology related courses and seminars. I have begun to explore whether the SRP website can be used for this purpose, and would welcome suggestions. In the meanwhile, if anyone is interested in getting a copy of the syllabus that I just finished preparing for my course, email me at dklein@notes.cc. sunysb.edu.

A good graduate psychopathology course provides students with a framework for viewing the field. In addition, for some

students, it can influence the research questions and directions that they pursue, both in graduate school and during their careers. Finally, it can provide students with a model that they can draw on when it is time for them to develop their own graduate psychopathology and undergraduate abnormal psychology courses.

## MEMBERS' CORNER

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under controlled conditions were conducted at Heidelberg by Aschaffenburg (1896), a colleague of Kraepelin. He was primarily interested in the reaction time of associative responses to tachistoscopically presented sequences of single noun stimuli, rather than in the content of the responses themselves. Reaction times of patient samples were reported to be longer than those of normal controls. The content of the responses was classified into three basic types, the objective type (responds to meaning), the constellation type (responds to emotional connotations) and the predicate type (responds to vivid inner images.) No systematic attempt seems to have been made to connect this typology to the clinical phenomena of psychopathology. The Kraepelinian approach was employed by Jung (Jung and Riklin, 1904) and in Jung's case led to focus of interest on the constellation type, and the relation of strong emotion to underlying complexes of ideas. His own later work utilized associations in individual cases as an aid to clinical treatment.

Bleuler (1911/1950) placed the association processes as the first of the three simple functions that are disturbed in schizophrenia. He conceptualized the disturbed overt utterances of the patient as reflections of more basic disturbance of thought-processes. Hence sequences of loosely associated phrases or sentences would be faithful representations of disturbed thinking, not of disturbed speech. The psychopathologist's task was to understand what the underlying thinking disorder was, using interpretation as a tool. For Bleuler the basic thought disturbance seems to have been that elements of different idea-complexes would appear in the patient's utterances. "Often ideas are only partially worked out, and fragments of ideas are connected in an illogical way to constitute a new idea" (Bleuler, 1911/1950. p.9)

There were two major problems with this approach. One was that the method of interpretation did not permit controlled quantitative research. The other fundamental problem was the assumption that fragmented speech reflected fragmented thought. That disturbances in utterance might arise from malfunction in the normal basic neuropsychological processes that achieve the overt expression of the intended utterance was not considered.

The word association test rested on this assumption, and made it possible to identify associations that were statistically normal from those that were atypical as well as sometimes bizarre. For example, Kent and Rosanoff (1910) reported that schizophrenia patients were likely to pro-

duce associations that were rarely produced in a sample of 1000 normal controls. However, many controls did not give a high frequency of normative responses and even more telling was the report by Moon et al (1968) that many schizophrenia patients had hearing and attentional difficulties, and that these were responsible for their unusual associations to the spoken stimulus words. When stimulus words were presented visually, the frequency of unusual associations diminished substantially.

An additional concern is that single responses to verbal stimuli presented to the patient do not necessarily tell us what we want to know about the kind of disturbances that occur in utterances by the patient in the natural social habitat. For these reasons researchers became interested in the possibility of the systematic analysis of the role of associations in patients' spontaneous utterances. Some of the first such studies were reported by Julius Laffal (e.g. 1963). Laffal developed the analysis of "contextual associates" whereby the investigator seeks to detect the complex of associations that center around a particular theme word. The technique requires the investigator to select a specific index word and then tabulate the frequencies of other words that are found in proximity to it in the body of the utterance. The outcome of the technique was to provide hypotheses about the implicit connections between ideas and the content of utterance but had no specific relevance to the general phenomena of psychotic utterances.

The advent of computer programs designed to examine characteristics of extended language discourse opened up the possibility of studying the language of schizophrenia patients on a larger scale than had been feasible before. One of the early programs was the General Inquirer, designed to tabulate the content of language samples (Stone, Dunphy, Smith & Ogilvie, 1966). With two student colleagues the present writer decided to adopt a different approach to the analysis of utterance in schizophrenia. We would begin at the beginning by looking for any significant differences in components of the spontaneous utterances of patients who had received a diagnosis of schizophrenia. We obtained a sample of documents written spontaneously by patients with a schizophrenia diagnosis. They were received in response to a request mailed to a large number of psychiatric hospitals across the country. With the General Inquirer we were able to tabulate a variety of content categories and syntactic characteristics, paying particular attention to the differences between patients judged by the hospital to have thought disorder (TD) and those judged to be free of thought disorder (NTD). The analysis was post hoc and exploratory. One of the most striking findings was that the TD documents had a high frequency of sentences in which the number of noun objects exceeded the number of noun subjects. Inspection of actual sentences that contained several object nouns in one sentence indicated that they often consisted of obvious chains of associations. (Maher, McKean &

McLaughlin, 1966). This, in turn, generated another question, namely, why was there no associative chaining around subject nouns.? Was there something significant about the distinction between a subject and an object, such as the difference between the activity of a subject and passivity of an object ? Or was it simply that object nouns frequently occur at the end of a sentence or clause and that the significant question was, what is happening at the end of a sentence that permit associations to enter into the utterance?

One possibility was that as the predictability of words increases toward the end of a sentence, the attentional demands in listening are reduced and the possibility of intrusions from external or internal sources is increased. In the schizophrenia patient internal intrusions might come from activation of internal associations, and their intrusion perhaps reflected a deficient inhibition. We reversed the question to ask "Why don't activated associations intrude into normal utterance?" One hypothesis might be that this is due to the effective operation of inhibition, and that in TD schizophrenia patients inhibition is impaired. This model was presented in Maher (1983). It included the deduction that an activated association might "intrude" into normal utterances when it would be compatible with the intended meaning of the utterance. Neither speaker or listener would experience it as a disruption.

Schizophrenia patients who are not currently displaying disturbance of utterance might, nonetheless, be more likely to

have a higher associative content in their utterances than controls. To investigate this we recently developed a procedure reminiscent of Laffal's analysis of contextual associates. We scan an undisturbed utterance word by word, each word being a potential source of associational activation. We might expect to find some associates to appear at points where they do not distort the intended utterance. This kind of analysis requires a dictionary of normal associations, and a computer program that scans each word (the index word), performs a dictionary search to ascertain whether an associate subsequent to the index word appears within the scan range, records it and calculates a total for the text that has been scanned. In a preliminary pilot study normal utterances of schizophrenia patients received significantly higher association counts than did those of healthy controls. It presents the possibility that analysis of utterances in psychometrically-defined schizotypes and others at risk for schizophrenia might enable them to be identified early, and that we might gain further insight into the pre-clinical development of schizophrenia.

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❖ A Note from the Editors. ❖

Please accept our apologies for a delayed newsletter. Also, we hope that you will continue to submit your ideas for commentaries and articles.

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## IN MEMORIAM

**Dr. Philip S. Holzman**, a past president of SRP and an active member of the organization since its inception, passed away on June 1, 2004. Dr. Holzman's vision and ingenuity have left an indelible imprint on research in psychopathology and stretched the power of psychology paradigms. He was an acknowledged master of the art of psychological experimentation. His landmark studies of oculomotor function documented the presence of abnormal smooth pursuit eye movements in individuals with schizophrenia and their clinically unaffected relatives. He appreciated early the value of studying unaffected family members, and discovered that both eye tracking dysfunction and thought disorder occurred frequently in the relatives of individuals with schizophrenia. With these discoveries, he founded an entire field of study central to the pathophysiology and genetic liability for schizophrenia.

Dr. Holzman served on the editorial boards of numerous scientific journals and on the scientific advisory boards of numerous scientific organizations. He authored or co-authored several books and hundreds of original scientific publications.

Among his many accolades, Dr. Holzman was the recipient of the prestigious Lieber Prize from the National Alliance for Research on Schizophrenia and Depression (NARSAD). In 1994, he was awarded our Society's Joseph Zubin Award for lifetime contributions to the understanding of psychopathology. He also received the American Psychological Foundation Gold Medal Award for life-

time achievement in the field of psychology, the Stanley R. Dean Award from the American College of Psychiatrists, the William K. Warren Award from the International Congress on Schizophrenia Research and the Townsend Harris Medal of City College of New York. His most recent award was bestowed in 2002, when he was honored for exceptional research and mentoring by the American Psychological Foundation as the first recipient of the Alexander Gralnick Research Investigator Award.

Among his many professional honors, Dr. Holzman was a member of the Institute of Medicine of the National Academy of Sciences, a fellow of the American Academy of Arts and Sciences, and a member of the Board of Trustees of the Menninger Foundation. He served on the Scientific Advisory Committee to the Health Program of the John and Catherine T. MacArthur Foundation and was a member of the Board of Scientific Counselors of NARSAD.

Dr. Holzman was a beloved friend and colleague, nurturing mentor, and intrepid researcher who enriched generations of scholars. His extraordinary vision, humor, relentless enthusiasm and indomitable optimism inspired all of those who had the privilege of working with him. It is of some consolation to know that his many contributions to the fields of psychology, psychiatry and cognitive neuroscience, including his love of teaching others, will serve as a lasting legacy to the Society of Research in Psychopathology and to the entire scientific community.

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## TALK HIGHLIGHTS



*Editors note. The membership was fortunate to hear Dr. Rutter speak at the Fall 2003 meeting of the Society. Below are highlights from his talk. Interested members are also referred to a recent publication upon which his talk was based, referenced below.*

Dr. Michael Rutter was awarded the 2003 Joseph Zubin Award. His research interests are focused on the developmental interplay between nature and nurture and on the use of natural experiments to test causal hypotheses about genetic and environmental mediation of risk in relation to normal and abnormal psychological development. The recipient of numerous international awards and honors, Dr. Rutter was elected to the Royal Society in 1987 and was knighted in 1992. A founding member of both the Academia Europaea and the Academy of Medical Sciences, he is also a foreign member of the U.S. Institute of Medicine. He was President of the Society for Research in Child Development from 1999 to 2001 and the International Society for Research into Child and Adolescent Psychopathology from 1997 to 1999.



“Pathways of genetic influences on psychopathology”

by Sir Michael Rutter

### Quantitative genetics: What is the strength of genetic effects?

The heritability statistic ( $h^2$ ), used to quantify the proportion of population variance accounted for by genetic factors, can provide an estimate of the degree to which genetic factors contribute to individual differences in the liability to experience psychiatric disorders. However, heritability does not indicate how the genetic factors operate.

Nearly all behaviors are genetically influenced to some extent, not simply psychiatric disorders. However because most psychiatric disorders are multifactorial, susceptibility genes are likely to be common allelic variations that influence normal functioning, rather than rare, pathological genetic mutations.

### Molecular genetics: What specific individual genes provide susceptibility?

As reviewed in the Harrison and Owen (2003) Lancet paper, four genes appear to confer risk for schizophrenia: neurogranin-1, COMT (catechol-o-methyl transferase), PRODH (proline dehydrogenase) and dysbindin.

Two genes that appear to provide an increased risk for ADHD are DRD-4 (a

dopamine receptor gene) and DAT-1 (a dopamine transporter gene).

### Modes of Genetic Mediation: How can genes indirectly lead to multifactorial psychiatric disorders?

Dr. Rutter raised the following questions: what if there are susceptibility genes for different components of the disorder, rather than there simply being susceptibility genes?

There are five alternative genetic routes to multifactorial disorders.

1. Susceptibility genes may join additively and independently with environmental risks to provide overall liability for some disorder.
2. Susceptibility genes may operate additively and dependently of environmental factors on subcomponents of the disorder.
3. Susceptibility genes may operate, together with environmental risks, on some subclinical dimensional behavioral trait, which then predisposes to a psychiatric disorder phenotype.
4. Genetic factors and environmental factors may jointly predispose to a dimensional trait that creates a disorder liability only if combined with some environmental stressor or adversity.
5. Genes, through gene-environment correlations, influence individual differences in exposure to environmental risk, which then predisposes to the phenotype.

### Broad Research Issues

1. What are the mechanisms involved in the nature-nurture interplay and how do they operate in terms of specific outcomes?
2. How do genes play a role in the neural underpinning of psychiatric disorders?
3. What do genetic factors suggest in terms of differentiating disorders?
4. How can genetic evidence be informative in terms of the role of risk dimensions and disorder dimensions?

Rutter, M. (2004). Pathways of Genetic Influences on Psychopathology. European Review, 12, 19-33.

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### ***19th Annual Meeting of the Society for Research in Psychopathology (SRP) - October 7-10, 2004***

The SRP 2004 convention will be held at the Chase Park Plaza Hotel in St. Louis, Missouri, from October 7th to 10th, 2004. This site is very close to Washington University and within walking distance to a number of wonderful St. Louis attractions. The Chase Park Plaza is a landmark St. Louis hotel with a legacy spanning since 1922. It is located in the trendy Central West End which is within very easy walking distance to wonderful restaurants, stylish sidewalk cafes, galleries, museums, and boutiques. The Chase Park Plaza is in close proximity to St. Louis' historic mansions and the beautiful Forest Park that includes 7 miles of

jogging and bike trails, equestrian trails, a Science Center, a fabulous Zoo, the Muny Opera, History Museum, Art Museum, golf courses, a lake with gondolas, a boathouse restaurant, tennis, ice skating and even a cricket field. The Chase Park Plaza itself has a wide range of amenities, including several excellent restaurants, a movie theater, a day spa, and a large well-equipped exercise facility (St. Louis Workout) in the hotel. For hotel reservations, the group rate provides for deluxe guest rooms at \$155 a night or one-bedroom suites for \$165 a night. Please call the hotel at 1-(877) 587-2427 for your booking sometime before September 7th, 2004. See the SRP web site for more travel information (<http://www.psychopathology.org>).

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## Awards 2003

Each year, the Society for Research in Psychopathology presents two awards, namely, the Joseph Zubin Award and the Smadar Levin Award.

**Sir Michael Rutter** was the 2003 recipient of the Joseph Zubin Award, given for lifetime contributions to the understanding of psychopathology. Dr. Rutter is Professor of Developmental Psychopathology and the Institute of Psychiatry at Kings College in London.

### **Smadar Levin Award**

The Smadar Levin Award is given at the Annual Meeting each year to the graduate student or other predoctoral individual who makes the most outstanding poster presentation.

#### **2003: Jelena P. King**

University of Waterloo

Advisor: Bruce Christensen (Center for Addiction and Mental Health, University of Toronto)

Quantifying visuomotor function in schizophrenia using a visual illusion paradigm: Evidence for selective dorsal pathway impairment.

#### **2003: Bernard P. Chang (honorable mention)**

Harvard University

Advisor: Mark Lenzenweger (at SUNY Binghamton)

Investigating somatosensory processing in familial schizotypes

#### **2003: Junghee Lee (honorable mention)**

Vanderbilt University

Advisor: Sohee Park

Delay-related maintenance activation in schizophrenia in a delayed-response task: An event-related fMRI study.



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