



THE BRUNSWIK SOCIETY

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Gillis, Bernieri Study Social Perception

*John Gillis, Frank Bernieri
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Frank Bernieri and I have now completed four studies of social perception (specifically, the judgment of rapport) in a Brunswikian framework.

The first study established that there were indeed ecologically valid nonverbal cues which allowed the rapport between individuals in dyadic interactions to be accurately assessed. Judges, as you might guess, demonstrated less than maximum achievement since they weighted cues inappropriately. By some standards, however, they did quite well as we shall elaborate in November.

Study two involved a cross-cultural replication (Greece) in which results were very similar to those obtained with American college students.

In study three we looked at whether judges' policies with this videotaped, real-life (we like to think) task were a function of prior experience. We studied this by "priming" judges in various ways to pay attention to certain cues (e.g., smiling, proximity, gestures) and determining the effects on reported and actual policies.

Finally in our fourth effort we compared the efficacy of cognitive and outcome feedback on performance when cues were presented either in the form of bar graphs or in vivo, as aspects of videotaped interactions. While cognitive feedback (actually task information or feed forward) demonstrated its usual superiority in the former condition, it was actually less effective than outcome feedback when individual cues had to be discerned and evaluated from an on-going interaction.

We look forward to describing all of this at the Brunswik Society meetings.

International Symposium Honoring Egon Brunswik to be Held in Vienna

The Institute "Vienna Circle" is sponsoring an international symposium, *Wahrnehmung und Gegenstandswelt: Neue Aspekte der Grundlagen von Psychologie und Wissenschaftstheorie (Perception and the World of Objects: New Aspects of the Foundations of Psychology and Philosophy of Science)* to take place November 25-27 in Vienna on the occasion of the 90th birthday of Egon Brunswik (1903-1955).

The aim of the symposium is twofold: (a) the description and critical examination of the life, work, and influence of Egon Brunswik and (b) his importance for present psychology and philosophy of science.

The program will include the following speakers:

Donald T. Campbell (Lehigh University): "The Perceptual Constancies as a General Epistemological Model"

Kenneth R. Hammond (University of Colorado): "Expansion of Egon Brunswik's Psychology, 1955-1995"

David E. Leary (University of Richmond): "Making a Virtue of Necessity: Egon Brunswik's Search for Objective Relations in an Uncertain World"

Bernhard Wolf (Universität Koblenz-Landau): "Vicarious Functioning als zentrale Prozeßcharakteristik für Individuum und Gesellschaft"

Peter Weibel (Städel-Schule Frankfurt, Institut für Neue Medien): "Die Entwicklung des Wahrnehmungsbegriffes von Egon Brunswik bis zum orbitalen Zeitalter"

Gerhard Benetka (Universität Wien, Institut für Psychologie): "Egon Brunswik in Wien—Werk und Wirkung am Institut für Psychologie der Universität Wien"

Rainer Born (Universität Linz, Institut für Philosophie): "Egon Brunswik und Cognitive Science"

Achim Eschbach (Max-Planck-Institut für Psycholinguistik Nijmegen): "Egon Brunswik und der Bühler-Kreis"

Lubomir Kostron (Universität Brno, Institut für Psychologie): "The Use of Brunswikian Concepts in Management Selection Procedures"

The Ninth Annual International Invitational Meeting of the Brunswik Society will be held on Saturday, November 6, 1993, at the Omni Shoreham Hotel in Washington, DC. The meeting will begin at 8:00 a.m. with a continental breakfast and will conclude at 5:00 p.m. Lunch will not be provided. A meeting registration form can be found on the last page on this Newsletter. Please detach this form and mail to Len Adelman by **October 15**. He also requests that you notify him if you will need any audio-visual equipment other than an overhead projector and screen.

Production and distribution of the Brunswik Society Newsletter is supported by the Center for Research on Judgment & Policy, University of Colorado, Boulder
—Mary Luhring, Editor—

Brehmer Continues Work on Dynamic, Distributed Decision Making in Sweden

Berndt Brehmer, Department of Psychology, Uppsala University, Sweden

We have been busy, as usual. We continue our laboratory work on dynamic decision making using NEWFIRE (a PC version of DESSY) and MORO. Our current experimental work is concerned with the effects of introducing economic considerations in dynamic tasks, such as gains and costs for using the resources, and with the sources of information that people use when making decisions in a dynamic task. We have some very interesting results on frequency information in dynamic tasks which we hope to write up soon. We are also trying to develop the distinction between two kinds of knowledge: epistemic knowledge (or domain knowledge) and heuristic knowledge, and to understand how our subjects are able to organise their own work under time pressure.

The work on distributed decision making uses D3FIRE, the distributed version of the fire fighting simulation. Our research here is concerned with the effects of different architectures of decision making and the possibilities of local coordination compared to centralised coordination, how different architectures interact with time pressure, and with various forms of decision aids. The experiments with D3FIRE are very time consuming and costly, but I think (hope) that what we learn will be worth the effort.

The European research project that I inherited from Jens Rasmussen has finally come to an end, so I do not have to travel around Europe as much. I hope that I will have more time for writing now.

In our more applied work, we continue our work in process plants and the new forms of information systems. This is also difficult and time consuming work, and not many publications come out of it. We are now also involved in a project on selection and training of air traffic controllers, and I am learning a lot about

air travel from that project that I would rather not know.

A few minutes now and then, I also think about my book on dynamic decision making, but I have not made too much progress. Most of my efforts with respect to books have gone into editing. There will be a book on risk which should come out in Spring, and I am also involved in two books on safety.

Brunswick Network

Please sign up for the Brunswick list on Internet. Berndt Brehmer suggested an electronic network of Brunswikians at the first Brunswick Society meeting. Technology has finally caught up with him, and it is now so easy to maintain a list that there is no reason not to. I don't expect a lot of traffic on this list, but it will be nice to have it when we need it, for example, to request information or share interesting results.

—Thomas Stewart

Adelman Involved in Military Research

Len Adelman
Department of Operations Research
& Engineering
George Mason University

We have been actively involved in four projects this year.

First, we recently completed data collection oriented to better understanding the information order effects previously obtained with Patriot air defense officers. In addition, we expanded the research focus to teams.

Second, we were involved in a decision support system evaluation effort in which we used the multitrait-multimethod matrix to assess the technical adequacy of the system's weighting method.

Third, we have developed a prototype system simulating Army division-level command and control processes.

Fourth, we completed the analysis for an experiment evaluating the current AWACS interface and a cognitively engineered revision to it. We found consistent squadron by interface interactions. The cognitive engineered interface improved performance for personnel from two of the three squadrons.

Hammond Prepares Manuscript on Human Judgment and Social Policy

Kenneth R. Hammond
Center for Research on Judgment & Policy, University of Colorado

Last year I explained that I had been working on a book manuscript tentatively entitled *Human Judgment and Social Policy: Irreducible Uncertainty, Inevitable Error, Inevitable Injustice*. I indicated that I hoped to have a reviewable draft by December (p = .5). I was careful, however, not to say which December. But now I will: December 1993. It has been difficult, but rewarding. Despite my age, I have learned a great deal because I have had to come to grips with a number of difficult problems that I had put in my "next month" file. Now there is no next month; it's now or never. Those of you who wish to find out what these problems are and what I tried to do about them, can find out by writing to me, asking to read a draft copy of the manuscript, and promising to provide me with criticisms. I have had considerable help so far from Mike Doherty and his students and others. I hope to have more critiques.

Ninth Brunswick Society Meeting to be Best Ever

Kenneth R. Hammond, Center for Research on Judgment & Policy, University of Colorado

The program for the November 1993 meeting of the Brunswick Society will be the best ever.

It will include talks from such outstanding Brunswikians as **Donald Campbell** (Brunswick's teaching assistant at Berkeley in the late 1930s and holder of many honorary degrees) and **Gerd Gigerenzer** (perhaps the most vigorous and outspoken contemporary Brunswikian theorist and researcher).

Closer to the applied side, a panel arranged by **Kim Vicente** (a cognitive engineer at Toronto) will include **Alex Kirlik** (Georgia Institute of Technology) and **Robert Mahan** (University of Georgia); commentators will be **Len Adelman** and **Andrew Sage** (both from George Mason University). The panel will ad-

dress the problem of the design of the interface between the operator and the system s/he controls.

John Gillis and **Frank Bernierl** (Oregon State University) will present results from their work on social perception that run exactly counter to those generally accepted in social psychology today.

John Rohrbaugh (SUNY—Albany) will report on his consulting work in Hungary where he used his general theory of decision conferencing to assist the Hungarians in their transition to democratic government.

Tom Tape (University of Nebraska College of Medicine) will present his work on the stability of medical students' choices of career. **Tom Stewart** (SUNY—Albany) will present some new ideas on the technical aspects of the application of the lens model equation in the context of Tom Tape's work. **Bob Wigton** (University of Nebraska College of Medicine) will describe a new computer program for presenting medical material. There will be more.

Obviously this is not an occasion for a member of the Brunswick Society to miss.

Poses, Collaborators Analyze Clinical DM for Sore Throats, Congestive Heart Failure

Roy Poses, Medical College of Virginia, Virginia Commonwealth University

After a long and stormy course, our manuscript that uses a Brunswikian-inspired analysis of physicians' decision making for patients with sore throats to analyze practice variation across different geographic areas finally has been accepted for publication in *Medical Decision Making*. We used logistic regression analysis to model the decision to give empiric antibiotics as a function of multiple clinical cues. To attempt to model practice variation we also included interaction terms between geographic site and the cues and a term for geographic site alone. We found that the models of the decisions made at the two sites were actually very similar. Only one interaction term was strongly significant and one was of borderline significance. The site term was not significant. Therefore, most of the practice variation actually seemed to be due to differing prevalence rates of the clinical cues and to a small extent to different weights given to one or two of the cues. This analysis may be of some methodologic interest to Brunswikians.

However, its results are actually radical in the world of health services research. The current paradigm there is that practice variation is not due to variation in patients' clinical characteristics and that most physicians' decisions are idiosyncratic and irrational.

We are planning to do further analyses of clinical decisions using similar logistic regression models for our bacteremia and critical care datasets. We also have acquired a dataset on the treatment of urinary tract infections.

We are continuing to collect a wide variety of data on patients with congestive heart failure. We hope to begin more traditional Brunswikian analyses of physicians' judgments for these patients within the year. We eventually will also analyze a wide variety of decisions made for these patients.

Important collaborators in all of the above work include Randall D. Cebul, MD; Robert S. Wigton, MD; Wally R. Smith, MD; and Donna Alexander-Forti, MS (soon to be PhD).

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Stewart, Lusk Use Expanded Lens Model

Thomas Stewart
Center for Policy Research
SUNY—Albany

I have completed (with Cindy Lusk) a paper describing how a decomposition of the Brier skill score, coupled with an expanded lens model, can be used to decompose judgmental performance into seven components. We attempted to organize a sample of J/DM literature into this framework, with some success. Further work within this framework includes (a) analysis of data to determine how components of skill vary with such factors as experience and task complexity and (b) simulation studies to determine how components of skill behave when properties of the environmental and subject system are known. The first set of simulations will focus on the distribution of G and other measures of similarity in weights.

Vicente Sets Up Cognitive Engineering Laboratory

Kim Vicente, Department of Industrial Engineering, University of Toronto

During this past year, I moved to the Department of Industrial Engineering at the University of Toronto. I have set up the Cognitive Engineering Laboratory, whose aim is to conduct basic and applied research on how to introduce information technology into complex work environments. Several projects are currently underway.

One of these is concerned with the impact of interface design on the cognitive processes of human operators controlling a simulated process control system, under both normal and abnormal conditions. This research is being driven by a theoretical framework, Ecological Interface Design, that, in Brunswikian terms, attempts to have a one-to-one correspondence between distal and proximal variables, thereby resulting in

an information-rich "transparent" display. This "microworld" research presents a number of theoretical and methodological challenges that cannot be addressed by standard J/DM techniques. These challenges result primarily from the fact that subjects are engaged in real-time closed-loop control of a complex dynamic system governed by physical laws that presents subjects with continuous feedback. Thus, methods such as the Lens model are not sufficient to capture subjects' behavior.

A second research project is concerned with investigating human cognitive activities in a very different setting, that of an engineering design organization. We are currently involved in a field study of the process by which human-machine systems are designed. The goal is to try to understand the constraints imposed by the design environment, and the activities of individual designers so that we, as cognitive engineers, have a better idea of how to present our research results to designers. This will allow us to provide human

factors guidance in a manner that is consistent with the environmental and cognitive constraints governing the design process and designers, respectively. In addition, this research will provide some insight into cognitive processes in a different type of complex environment.

A third project, which is of more general interest, is a naturalistic study of memory that I published this past year with Bill Brewer from the University of Illinois (*Cognition*, 46, 101-128). This paper consisted of a naturalistic and experimental study of the memory of scientists. We found (thanks to some help from Reid Hastie) several well known psychological experiments that have been repeatedly and systematically distorted in the literature. Our results indicate that some of these errors may be due to the biases of reconstructive remembering, a la Bartlett's seminal findings. As far as we know, this is the first theoretical and experimental study of the impact of memory on the process of doing science.

Cooksey Preparing Handbook for Judgment Analysis

*Ray Cooksey
Department of Behavioural Studies
University of New England
Armidale, Australia*

I am currently working on a Handbook for Judgment Analysis which I hope to publish next year. The handbook is to present the paradigm and methodology (including statistical issues) associated with the conduct of SJT studies and the various subparadigms (IPL, MCPL). I envision the handbook to be a general guide to researchers in the area as well as an introduction to the paradigm in general—perhaps suitable as a graduate text for a specialist seminar or short course on SJT and judgment analysis methods. I am currently searching for a publisher.

Joyce, Colleagues Continue to Develop SEIQoL in Ireland

C. R. B. Joyce, Royal College of Surgeons, Dublin, Ireland

Dick Joyce relinquished his appointment at the Psychiatrische Universitaetsspalklinik, Bern at the end of August and is now Visiting Professor at the Royal College of Surgeons in Ireland (Dublin), where the very active group that includes Professors Ciaran O'Boyle and Kevin O'Malley, Dr Hannah McGee, Ann Hickey, and others is continuing to develop, simplify and eventually computerize the SEIQoL (Schedule for Evaluation of Individual Quality of Life). The Manual is available from Dr. O'Boyle at RCSI, Mercer St Lower, Dublin 2, Ireland (E-Mail: CBOYLE@IRLEARN.UCD.IE).

Geller, Connolly Study Psychosocial Criteria for Heart Transplants

Stacie Geller and Terry Connolly, Department of Management & Policy, University of Arizona

Since November, 1992 Terry Connolly and I have continued our work on the influence of psychosocial factors on the heart transplantation decision process.

Many heart transplant programs consider psychosocial criteria in deciding whether to accept a patient for transplant surgery. This investigation examined how individual members of a cardiac transplant team (University Medical Center, Tucson, Arizona) arrive at these decisions and how these individual judgments are combined into a consensual team decision. Policy capturing was utilized as a way to understand and model clinicians' decision-making. Further, in an effort to usefully standardize the psychosocial information used in patient assessments, we developed a consensus weighting formula for the whole transplant team. This formula, in finished form, could be thought of as preserving the shared judgmental expertise of the team, and thus as a labor-saving device that allows the best and most careful weighing and balancing of factors to be brought to bear uniformly on every case regarding selection decisions.

Our next objective was to test this model against empirical data from the outcomes of the cases the transplant team evaluates. The UMC Program has now transplanted in excess of 200 patients; they maintain extensive records on each of them. A retrospective review of these files has been done to assess a number of measures of patient outcomes: survival time, morbidity, functional status, employment status, quality of life, ease of patient management, and adequacy of patient self-care. We examined the extent to which these outcome measures can be predicted by measures, including psychosocial measures, available at the time of initial evaluation. As with the consensus judgment model, the find-

ings from this empirical prediction model imply no binding constraints on the team's screening decisions. Both mod-

els should, however, add to the information available to the team at the decision point.

Internet for Brunswikians

A new Internet list for Brunswikians has been established. To subscribe, send a message to

LISTSERV@ALBANY.bitnet or LISTSERV@albany.edu

The body of the message should contain only one line:

Sub BRUNSWIK Your Name

The message is a computer command, so it has to be spelled right and no pleasantries are allowed. To send a message to the list, use one of the following addresses:

BRUNSWIK@ALBANY.bitnet or BRUNSWIK@albany.edu

Please remember that commands (to subscribe, unsubscribe, etc.) go to the "LISTSERV" address and messages of interest to Brunswikians go to the "BRUNSWIK" address.

Tom Stewart will serve as moderator for the list. If you have questions, send a message to "TS460@ALBANY.bitnet" or "TS460@ALBANY.edu" or call him at 518-442-3855.

Rothert Continues Investigation of Hormone Replacement Therapy

Marilyn Rothert, College of Nursing, Michigan State University

The Michigan State University decision making group has continued its study of an educational intervention to inform and empower women regarding hormone replacement therapy. This study is funded by the National Institute for Nursing Research, NIH. Women were randomly assigned to one of three groups: brochure only, lecture discussion, or decision support group. The decision support group was designed to use the concepts of Social Judgment Theory and Decision Analysis, modified to be practical and relevant to consumer decision making in health care. The intervention was completed by 252 women. Monthly data on decisions, changes in decisions, and actual behavior is being collected over a 12-month period as well as data on expected correlates and predictors of decisions and behavior post intervention. These include satisfaction with decision, satisfaction with provider, perceptions, control, knowledge and sociodemographic behavior. Data collection will be completed in January, 1994.

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Brunswik Meeting Registration

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