

Announcement

From Codes To Cognition
Foundational Aspects of
Visual Information Processing

Centennial Conference
in Honour of Hermann v.Helmholtz

University of Kiel/Germany
17.-21. July 1994

The conference will address general fundamental psychological problems of visual perception in areas such as shape from shading, stereo vision, colour and form perception and attention. A basic theme recurring throughout the conference will be how perceptual achievements relate to sensory input. Since Helmholtz and his notion of "unconscious inferences", several theoretical intuitions (e.g. the concept of "ill-posed problems", Barlow's statistical model for the discovery of "independent coincidences", Ullman and Koenderink's discussion of Gibson's ideas of "direct perception", Hoffman's "observer mechanics", Shepard's ideas on resonance) concerning the principles of perception revolve around the attempt to bridge the gap between the (often 'meagre') sensory input and the actual performance.

- Attempts to theoretically understand the interaction of
 - restrictions and invariants of the physical environment,
 - theoretical limiting factors of the sensory systemas well as
 - restrictions on the categorization and interpretation of sensory information that have been internalized in the course of evolution
- will be the main focus of this conference.

SPEAKERS:

S.ANSTIS (San Diego), L.AREND (Princeton), H.B.BARLOW (Cambridge),
H.BÜLTHOFF (Tübingen), M.FAHLE (Tübingen), D.D.HOFFMAN (Irvine),
Chr.KOCH (Pasadena), J.KOENDERINK (Utrecht), D.MACLEOD (San Diego),
H.MALLOT (Tübingen), O.NEUMANN (Bielefeld), R.NIEDEREE (Kiel),
Chr.NOTHDURFT (Göttingen), E.PÖPPEL (München), W.PRINZ (München),
V.RAMACHANDRAN (San Diego), E.SCHEERER (Oldenburg), R.SHEPARD (Stanford),
G.SPERLING (Irvine), S.ULLMAN (Cambridge, Mass.), P.WHITTLE (Cambridge)

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Please send us your electronic mail address, if you have one. (If you don't have one, you are strongly urged to look into the advantages of getting one -- not only for BBS's sake!)

BBS is implementing more and more of its peer communication functions by electronic mail. This not only increases the speed and efficiency of BBS's interaction with the world biobehavioral and cognitive science community, but it dramatically increases its scope and range as well. Abstracts can be circulated by email in advance to allow potential commentators to nominate themselves. Referee reports can be submitted by email. The BBS Associateship can be more representatively canvassed to determine what topics and authors they would like to see treated in BBS. New Associates can be nominated by email, etc.

Electronic mail addresses can be sent to our regular mail address. (Any available *departmental* or *institutional email directories* would be very helpful too.)

**Behavioral and Brain Sciences
20 Nassau Street, Room 240
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Along with your email address you are encouraged to include your suggestions about current BBS editorial policy and directions you would like to see BBS take in the future.

Essential Reading from Cambridge

Beyond Adolescence

Problem Behavior and Young Adult Development

Richard Jessor, John E. Donovan, and Frances M. Costa

"...a major strength of this work is the merging of sociological and psychological concepts....In my view, Jessor and his colleagues have enriched the behavioral sciences; this book deserves a wide readership."

—*John H. Laub, Contemporary Sociology*

1992 328 pp. 9417-1 Hardcover \$39.95

Torture and its Consequences

Current Treatment Approaches

Edited by Metin Başoğlu

A comprehensive reference work on the medical, psychiatric, and psychological problems confronting the survivors of torture, and current treatments.

1992 550 pp. 39299-3 Hardcover \$95.00

The Inevitable Bond

Examining Scientist-Animal Interactions

Edited by Hank Davis and Dianne Balfour

"This stimulating book makes the reader aware of the importance and ineluctability of human-animal bonding and of the extent to which this may affect the quality of experiments."

—*Elizabeth Visalberghi, Quarterly Journal of Experimental Psychology*

1992 410 pp. 40510-6 Hardcover \$75.00

The Experience of Psychopathology

Investigating Mental Disorders in their Natural Settings

Edited by Marten W. De Vries

A thorough introduction to the Experience Sampling Method (ESM) in psychiatry—a method for collecting reliable data on patterns of behavior, thought, and feeling from real-life situations.

1992 446 pp. 40339-1 Hardcover \$115.00

Gestures and Speech

Pierre Feyereisen and Jacques-Dominique de Lannoy

Examines research on the relationships between the verbal and gestural domains from various perspectives: psycho- and sociolinguistics, ethology, social, cognitive, and developmental psychology, and neuropsychology.

Studies in Emotion and Social Interaction

1991 210 pp. 37762-5 Hardcover \$44.95

A History of Hypnotism

Alan Gauld

"...represents the highest standard of excellence. It is no hyperbole to say that this volume belongs on the bookshelf of every interested student of the field."

—*Melvin A. Gravitz, American Journal of Clinical Hypnosis*

1992 755 pp. 30675-2 Hardcover \$140.00

Spatial Vision in Humans and Robots

Edited by L. Harris and M. Jenkin

Explores the field of science which deals with the problem of inferring the structure of the world from vision. The problem is divided up into many separate tasks, such as extracting information about three-dimensional objects, or object recognition.

1993 400 pp. 43071-2 Hardcover \$59.95

The Social Psychology of Minority Influence

Gabriel Mugny and Juan A. Perez

Explores the processes and spread of social innovation: the mechanisms of this innovation are rooted in the conflict that minorities are capable of creating in others and introducing into the social system.

European Monographs in Social Psychology

Copublished with the Maison des Sciences de l'Homme

1991 204 pp. 39054-0 Hardcover \$69.95

The Egalitarians, Human and Chimpanzee

An Anthropological View of Social Organisation

Margaret Power

Challenges the perceived view of the normal social behavior of chimpanzees as aggressive, dominance seeking, and fiercely territorial.

1991 336 pp. 40016-3 Hardcover \$47.95

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ANNOUNCING A NEW JOURNAL

Personal Relationships

Journal of the International Society for the Study of Personal Relationships

PREMIERE ISSUE • MARCH 1994

Editor

Patricia Noller, *University of Queensland, Australia*

Associate Editors

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Keith Davis, *University of South Carolina*

Sandra Metts, *Illinois State University*

Susan Sprecher, *Illinois State University*

Personal Relationships will be the official quarterly journal of the *International Society for the Study of Personal Relationships (ISSPR)*.

Aims and Scope

The aim of this international, interdisciplinary journal is to promote scholarship in the field of personal relationships throughout a broad range of disciplines including:

- psychology • psychiatry • communication studies
- sociology • anthropology • family studies

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Personal Relationships will cover topics such as:

- equity • conflict • jealousy • attachment • love
- costs and benefits of relationships • sibling rivalry
- social support • loneliness • kinship • gender and sexuality

All personal relationships, romantic, marital, parent-child, and friendship will be explored including those between romantic partners, spouses, parents and children, siblings, and friends.

Manuscript submission

Empirical research, review articles and descriptions of new research methods, from scholars working in all aspects of personal relationships and relevant disciplines, may be submitted.

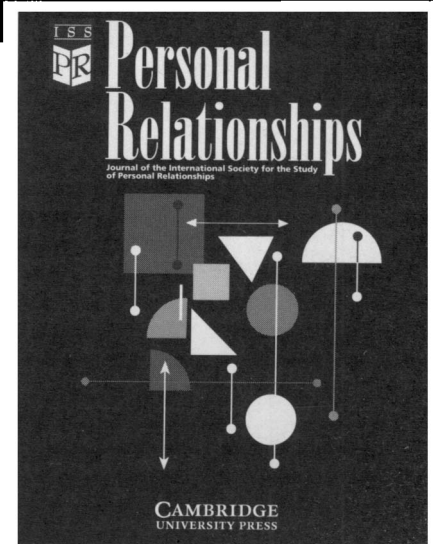
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Scholarly comment for selected lead articles may be sought by the editor and published to encourage debate over theoretical and empirical issues.

Please address material and inquiries to:

Patricia Noller, PhD., Editor, *Personal Relationships*, Dept. of Psychology, University of Queensland, St. Lucia, Queensland 4062, Australia.

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The **International Society for the Study of Personal Relationships** is the foremost scholarly society in this area of study. Members will automatically receive the newsletter, membership directory, and the journal, as well as an invitation to the biennial conference.

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For ISSPR inquiries

Please contact Dr. Catherine Surra, Child Development and Family Relations Dept., University of Texas at Austin, Gearing 117, Austin, TX 78712-1097. Phone: (512) 471-4120.

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ISSN 1350-4126

Volume 1 • Numbers 1-4 • 1994

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Instructions for Authors and Commentators

Behavioral and Brain Sciences (BBS) is a unique scientific communication medium, providing the service of Open Peer Commentary for reports of significant current work in psychology, neuroscience, behavioral biology or cognitive science. If a manuscript is judged by BBS referees and editors to be appropriate for Commentary (see Criteria below), it is then circulated to a large number of commentators selected (with the aid of systematic bibliographic searches) from the BBS Associateship* and the worldwide biobehavioral science community, including individuals recommended by the author.

Once the Commentary stage of the process has begun, the author can no longer alter the article, but can respond formally to all commentaries accepted for publication. The target article, commentaries, and authors' response then co-appear in BBS. Continuing Commentary and replies can appear in later issues.

Criteria for acceptance To be eligible for publication, a paper should not only meet the standards of a journal such as *Psychological Review* or the *International Review of Neurobiology* in terms of conceptual rigor, empirical grounding, and clarity of style, but it should also offer a **clear rationale for soliciting Commentary**. That rationale should be provided in the author's covering letter, together with a list of suggested commentators.

A paper for BBS can be (i) the report and discussion of empirical research that the author judges to have broader scope and implications than might be more appropriately reported in a specialty journal; (ii) an unusually significant theoretical article that formally models or systematizes a body of research; or (iii) a novel interpretation, synthesis, or critique of existing experimental or theoretical work. Occasionally, articles dealing with social or philosophical aspects of the behavioral and brain sciences will be considered.

The service of Open Peer Commentary will be primarily devoted to original unpublished manuscripts. However, a recently published book whose contents meet the standards outlined above may also be eligible for Commentary. In such a BBS Multiple Book Review, a comprehensive, article-length précis by the author is published together with the commentaries and the author's response. In special cases, Commentary will also be extended to a position paper or an already published article dealing with particularly influential or controversial research. Submission of an article implies that it has not been published or is not being considered for publication elsewhere. Multiple book reviews and previously published articles appear by invitation only. **The Associateship and professional readership of BBS are encouraged to nominate current topics and authors for Commentary.**

In all the categories described, the decisive consideration for eligibility will be the desirability of Commentary for the submitted material. Controversiality *simpliciter* is not a sufficient criterion for soliciting Commentary: a paper may be controversial simply because it is wrong or weak. Nor is the mere presence of interdisciplinary aspects sufficient: general cybernetic and "organismic" disquisitions are not appropriate for BBS. Some appropriate rationales for seeking Open Peer Commentary would be that: (1) the material bears in a significant way on some current controversial issues in behavioral and brain sciences; (2) its findings substantively contradict some well-established aspects of current research and theory; (3) it criticizes the findings, practices, or principles of an accepted or influential line of work; (4) it unifies a substantial amount of disparate research; (5) it has important cross-disciplinary ramifications; (6) it introduces an innovative methodology or formalism for consideration by proponents of the established forms; (7) it meaningfully integrates a body of brain and behavioral data; (8) it places a hitherto dissociated area of research into an evolutionary or ecological perspective; etc. In order to assure communication with potential commentators (and readers) from other BBS specialty areas, **all technical terminology must be clearly defined or simplified, and specialized concepts must be fully described.**

Note to commentators The purpose of the Open Peer Commentary service is to provide a concentrated constructive interaction between author and commentators on a topic judged to be of broad significance to the biobehavioral science community. Commentators should provide substantive criticism, interpretation, and elaboration as well as any pertinent complementary or supplementary material, such as illustrations; all original data will be refereed in order to assure the archival validity of BBS commentaries. Commentaries and articles should be free of hyperbole and remarks *ad hominem*.

Style and format for articles and commentaries Target articles must not exceed 14,000 words (and should ordinarily be considerably shorter); commentaries should not exceed 1,000 words, including references. Spelling, capitalization, and punctuation should be consistent within each article and commentary and should follow the style recommended in the latest edition of *A Manual of Style*, The University of Chicago Press. It may be helpful to examine a recent issue of BBS.

All submissions must include an indexable title, followed by the authors' names in the form preferred for publication, full institutional addresses, and electronic mail addresses. Target article authors must also provide numbered subheads to facilitate cross-reference by commentators. **Two abstracts**, one of 100 and one of 250 words, should be submitted with every target article. The shorter abstract will appear one issue in advance of the article; the longer one will be circulated to potential commentators and will appear with the printed article. A list of 5–10 keywords should precede all target article texts. Notes, acknowledgments, appendices, and references should be grouped at the end of the target article or commentary.

Illustrations: Tables and figures (i.e., photographs, graphs, charts, or other artwork) should be numbered consecutively. Every table should have a title; every figure, a caption. At least one reference in the text must indicate the appropriate locations. (For sizes, see below.)

References: Bibliographic citations in the text must include the author's last name and the date of publication and may include page references. Complete bibliographic information for each citation should be included in the list of references. Examples of correct style are: Brown (1973); (Brown 1973); (Brown 1973; 1978); (Brown 1973; Jones 1976); (Brown & Jones 1978); (Brown et al. 1979). References should be typed on a separate sheet in alphabetical order in the style of the following examples. **Do not abbreviate journal titles.**

Kupfermann, I. & Weiss, K. (1978) The command neuron concept. *Behavioral and Brain Sciences* 1:3–39.

Dunn, J. (1976) How far do early differences in mother-child relations affect later developments? In: *Growing points in ethology*, ed. P. P. G. Bateson & R. A. Hinde. Cambridge University Press.

Bateson, P. P. G. & Hinde, R. A., eds. (1976) *Growing points in ethology*. Cambridge University Press.

Preparation of the manuscript The original, **double-spaced** target article plus **eight single-spaced, double-sided** copies must be submitted. The entire manuscript, *including notes and references*, must be typed **double-spaced** (1/4-inch space between lines) on 8 1/2 by 11 inch paper, with margins set to 70 characters per line (not "justified") and 25 lines per page, and should not exceed 50 pages. Pages should be numbered consecutively. Commentators should send their original plus two copies. It will be necessary to return manuscripts for retyping if they do not conform to this standard.

Each table and figure should be submitted on a separate page, not interspersed with the text. Tables should be typed to conform to BBS style. Figures should be ready for photographic reproduction; they cannot be redrawn by the printer. Charts, graphs, or other artwork should be done in black ink on white paper and should be drawn to occupy a standard area of 8 1/2 by 11 or 8 1/2 by 5 1/2 inches before reduction. Photographs should be glossy black-and-white prints; 8 by 10 inch enlargements are preferred. All labels and details on figures should be clearly printed and large enough to remain legible even after a reduction to half size. It is recommended that labels be done in transfer type of a sans-serif face such as Helvetica.

Send all submissions, plus a disk (IBM-compatible if possible), to: Stevan Harnad, Editor, Behavioral and Brain Sciences, 20 Nassau St., Suite 240, Princeton, NJ 08542. **Electronic mail:** harnad@princeton.edu or harnad@pucc.bitnet. *In case of doubt as to appropriateness for BBS commentary, authors should write to the editor before submitting eight copies.*

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Authors of target articles receive 50 offprints of the entire treatment, and can purchase additional copies. Commentators will also be given an opportunity to purchase offprints of the entire treatment.

*Individuals interested in serving as BBS Associates are asked to write to the editor.

To appear in Volume 17, Number 2 (1994)

Offprints of the following forthcoming BBS treatments can be purchased for educational purposes if they are ordered well in advance. For ordering information, please write to Journals Department, Cambridge University Press, 40 West 20th Street, New York, NY 10011.

The representing brain: Neural correlates of motor intention and imagery

Marc Jeannerod, *Vision et Motricité, INSERM U94*

Motor preparation for actions and mental images of actions may have a common neural substrate. A large body of experimental and clinical data shows that from the content of motor imagery one can make good predictions about the actual motor patterns executed subsequently. Object-oriented action relies on a specific form of neural processing (distinct from other forms such as semantic processing), one that elaborates a pragmatic representation of objects.

With Commentary from R Bajcsy; JM Fuster; SC Gandevia; DH Ingvar; R Jackendoff & B Landau; RL Klatsky; J Pailhous & M Bonnard; W Prinz; J Requin; G Rizzolatti; and others.

A theory of visual stability across saccadic eye movements

Bruce Bridgeman, *University of California, Santa Cruz*, A. H. C. van der Heijden, *Leiden University*, and Boris M. Velichkovsky, *Moscow State University*

We address the problem of the apparent stability of perceived object positions in the world despite saccadic eye movements (visual direction constancy). Three information sources are used to achieve this constancy: proprioceptive inflow from eye muscles, efference copy outflow, and retinal information. No source by itself provides adequate information. Three solutions have been proposed: elimination, translation, and evaluation. Physiological and psychophysical evidence allows us to reject all three—no subtraction, compensation, or evaluation need take place. We offer an alternative "calibration" solution: correct spatiotopic positions are calculated anew from inflow, outflow, and retinal sources for each fixation.

With Commentary from E Chekaluk; H Deubel & WX Schneider; M Jüttner; H Mittelstaedt; JK O'Regan; AP Petrov; A Pouget & TJ Sejnowski; C Prablanc; DN Robinson; EN Sokolov; AE Stoper; A Trehub; AH Wertheim; and others.

Motion perception during self-motion: The direct versus inferential controversy revisited

Alexander H. Wertheim, *TNO Institute for Human Factors*

Is object motion perceived only from picking up visual information or is interaction with extraretinal efferent information necessary? Direct (Gibsonian) and inferential theories of perception provide competing explanations. A new inferential theory that agrees with the main premises of direct perception theory can explain quantitatively the interrelation between object- and self-motion percepts (visual-vestibular interactions), thereby dissolving the controversy and exposing some of its underlying misunderstandings. Empirical tests are reviewed and many motion perception phenomena are explained.

With Commentary from VI Belopolsky; B Bridgeman & J Blouin; N Da Vitoria Lobo; H Honda; N-G Kim & MT Turvey; S Mateeff & J Hohnsbein; T Probst; GE Riccio; XM Sauvan; WL Shebilske; AA Skavenski; TA Stoffregen; and others.

Among the articles to appear in forthcoming issues of BBS:

Multiple book review of M Boden, *The creative mind*

Multiple book review of A Karmiloff-Smith, *Beyond modularity*

D Shanks & M St John, "Characteristics of dissociable human learning systems"

H Eichenbaum, T Otto & NJ Cohen, "Two distinctions of hippocampal-dependent memory processing"

DS Wilson & E Sober, "Reintroducing group selection to the human behavioral sciences"

MS Humphreys, J Wiles & S Dennis, "Data structures and access processes: A first approximation to a theory of human memory"

"Controversies in Neuroscience: II" (Neural transplantation)

"Controversies in Neuroscience: III" (G-Protein receptors in the retina and brain)

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