

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
Organized by: Dieter Heyer & Rainer Mausfeld
Funded by: Deutsche Forschungsgemeinschaft

The conference will address 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 idea of "direct perception", Hoffman's "observer mechanics", Shepard's ideas on resonance) concerning the principles of perception have revolved around the attempt to bridge the gap between the (often "meagre") sensory input and the actual performance.

The conference will focus on attempts to theoretically understand the interaction of restrictions and invariants of the physical environment, theoretical limiting factors of the sensory system, and restrictions on the categorization and interpretation of sensory information that have been internalized in the course of evolution.

SPEAKERS:

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

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There will be invited speakers only, no parallel sessions, with ample time for discussions. Unlike other conferences the aim of the Helmholtz Conference will be to present a rsum of the state-of-the-art of the field and its foundational problems and challenges. As befits the occasion, presentations at the Helmholtz Conference will address a wider scope of fundamental psychological problems of visual perception. Rather than giving mere technical presentations of current empirical findings, lectures will point out which classical questions are still unsolved, which conceptual problems are often hidden behind apparently clear facts, and discuss tacit assumptions of present research perspectives.

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

The subject matter and approach will be of interest to academics, researchers and practitioners alike.

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

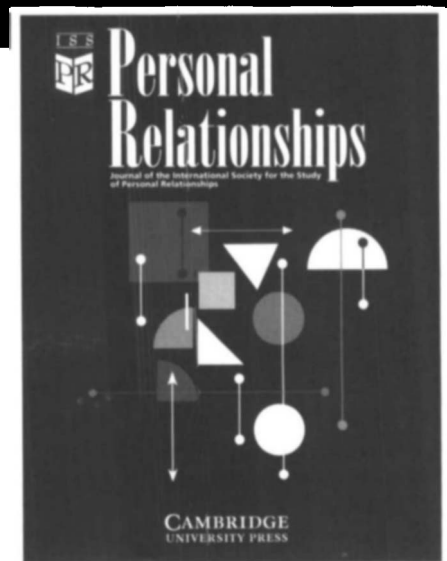
Empirical research, review articles and descriptions of new research methods, from scholars working in all aspects of personal relationships and relevant disciplines, may be submitted.

Please submit 4 copies of manuscripts in APA style. For expediency, a title page and abstract may be sent by E-mail or by fax to the editor who will advise the author of the assigned associate editor to whom the manuscript should be mailed.

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.
Fax: (61-7) 365 4466 E-mail: pn@psych.psy.uq.oz.au



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.

Through ISSPR you can meet others in the field, stay informed of important developments, keep up with current research and assessment measure, and discover useful literature.

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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New Editorial Office Address

As of 1 September 1994, the BBS Editorial Office will move to Southampton, United Kingdom. From that date (but not before), please address all BBS correspondence to:

Behavioral and Brain Sciences
Department of Psychology
University of Southampton
Southampton SO9 5NH
United Kingdom
[as of 1 Sept. 1994 only]

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New Instructions for Authors and Commentators

Beginning in 1995:

- (1) All Commentaries and Responses will, like Target Articles, have abstracts (~60 words). This is to ensure full coverage by abstracting services.
- (2) In addition to the hard copies of all submissions, we will also require an electronic version, either by email or on disk. This is to prepare the way for electronic processing of all submissions.

BBS Email Address

For now, BBS's email address is still

`harnad@princeton.edu`

BBS Associates: Those of you who have not done so are asked to send us your email address so you may receive electronic Calls for Commentators.

Behavioral and Brain Sciences

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.*

Editing The publishers reserve the right to edit and proof all articles and commentaries accepted for publication. Authors of articles will be given the opportunity to review the copyedited manuscript and page proofs. Commentators will be asked to review copyediting only when changes have been substantial; commentators will not see proofs. Both authors and commentators should notify the editorial office of all corrections within 48 hours or approval will be assumed.

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 3 (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.

Characteristics of dissociable human-learning systems

David R. Shanks, University College London, and Mark F. St. John, University of California at San Diego

The proposal that there exist independent explicit and implicit learning systems is based on two distinctions: (1) learning that takes place with versus without concurrent awareness and (2) learning that involves the encoding of instances (or fragments) versus the induction of abstract rules or hypotheses. Implicit learning is assumed to involve unconscious rule learning. We examine evidence from subliminal learning, conditioning, artificial grammar learning, instrumental learning, and reaction times in sequence learning, and conclude that unconscious learning has not been satisfactorily established in any of these areas. In contrast to the distinction between conscious and unconscious learning, the distinction between instance and rule learning is a sound and meaningful way of taxonomizing human learning.

With Commentary from RA Carlson; A Cleeremans; Z Dienes & J Perner; KJ Holyoak; HD Kimmel; J Lachter; CJ Marsolek; H Nagata; G Overskeid; P Perruchet; AS Reber; A Rizzo & O Parlangei; LR Squire; F Svartdal; and others.

Two distinctions of hippocampus-dependent memory processing

Howard Eichenbaum, State University of New York at Stony Brook, Tim Otto, Rutgers University, and Neal J. Cohen, University of Illinois at Urbana-Champaign

The hippocampal system participates in (1) the temporary maintenance of memories and (2) the processing of a particular type of memory representation. Amnesia data suggest that these two properties of hippocampal memory processing are orthogonal. Together with anatomical and physiological data these findings support a model of cortico-hippocampal interactions in which the temporal and representational properties of hippocampal function are mediated separately.

With Commentary from JP Aggleton; JJ Bolhuis & IC Reid; JM Fuster; JA Horel; LE Jarrard; DB Katz & JE Steinmetz; N McNaughton; MA Good & RGM Morris; L Nadel; LR Squire, S Zola-Morgan & P Alvarez; E Tulving & HJ Markowitsch; and others.

Multiple book review of *The creative mind: Myths and mechanisms*

Margaret A. Boden, University of Sussex

Some creativity involves novel (improbable) combinations of familiar ideas (e.g., poetic imagery and analogy). A deeper type involves the exploration, and transformation, of structured conceptual spaces. Transformation enables ideas to be generated which (relative to that conceptual space) were previously impossible. Conceptual space, and ways of exploring and modifying them, can be described by computational concepts. Connectionism, and various models of analogy, suggest how novel combinations of ideas might arise. As for the deeper form of originality, most current AI-programs focussed on creativity are concerned only with defining and exploring conceptual spaces. However, a few attempt also to transform them.

With Commentary from A Bundy; RL Campbell; M Donald; A Garnham; G Grasshoff; MF Ippolito; K Rehkemper; VA Shames & JF Kihlstrom; DK Simonton; RJ Sternberg; M Treisman; HLJ van der Maas & PCM Molenaar; RW Weisberg; and others.

Among the articles to appear in forthcoming issues of BBS:

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

"Controversies in Neuroscience: II" (Neural transplantation)

"Controversies in Neuroscience: III" (G Protein, Receptors in the retina and brain)

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

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

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