C A L L F O R P A P E R S

Investigators in Psychology, Neuroscience, Behavioral Biology, and Cognitive Science

Do you want to:

- ***draw wide attention to a particularly important or controversial piece of work?***
- ***solicit reactions, criticism, and feedback from a large sample of your peers?***
- ***place your ideas in an interdisciplinary, international context?***

Behavioral and Brain Sciences (BBS),

an extraordinary journal, provides a special service called Open Peer Commentary to researchers in any area of psychology, neuroscience, behavioral biology, or cognitive science.

Papers judged appropriate for Commentary are circulated to a large number of specialists who provide substantive criticism, interpretation, elaboration, and pertinent complementary and supplementary material from a full cross-disciplinary perspective.

Article and commentaries then appear simultaneously with the author's formal response. This **BBS** "treatment" provides, in print, the exciting give and take of an international seminar.

The editor of **BBS** is calling for papers that offer a clear rationale for Commentary, and also meet high standards of conceptual rigor, empirical grounding, and clarity of style. Contributions may be (*1*) reports and discussions of empirical research of broader scope and implications than might be reported in a specialty journal; (*2*) unusually significant theoretical articles that formally model or systematize a body of research; and (*3*) novel interpretations, syntheses or critiques of existing theoretical work.

Although the **BBS** Commentary service is primarily devoted to original unpublished manuscripts, at times it will be extended to précis of recent books or previously published articles.

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BBS's corrected 1982 impact factor of 6.370 . . . "places **BBS** in third place [out of 1300 journals indexed] . . . in the *SSCI Journal Citation Reports* . . . an impressive position for a journal that was then in only its fifth year of publication. By the next year, 1983, the citation impact factor for the target articles in **BBS** was 7.577 . . . now ahead of any other psychology journal. Even more germane to the question of the value of peer open commentary . . . the total of 119 citations to the commentaries was greater than the total citations to over 91% of the journals reported in *SSCI* . . . [G]ood scientists recognize that science progresses most rapidly by building on the ideas and observations of others, by its self-correcting nature, and by the free interaction of competing ideas and evidence."
American Psychologist

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Nature

"Care is taken to ensure that the commentaries represent a sampling of opinion from scientists throughout the world. Through open peer commentary, the knowledge imparted by the target article comes more fully integrated into the entire field of the behavioral and brain sciences. This contrasts with the provincialism of specialized journals . . ."
Eugene Garfield, Current Contents

". . . open peer commentary . . . allows the reader to assess the 'state of the art' quickly in a particular field. The commentaries provide a 'who's who' as well as the content of recent research."
Journal of Social and Biological Structures

". . . presents an imaginative approach to learning."
Library Journal

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Behavioral and Brain Sciences

Instructions for Authors and Commentators

The ***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.** *The original manuscript* **plus eight copies** *must be submitted.*

A paper for *BBS* can be (1) 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; (2) an unusually significant theoretical article that formally models or systematizes a body of research; or (3) 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, is also eligible for Commentary if multiply nominated by the *BBS* Associateship. A comprehensive, article-length précis accompanies the commentaries and 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 publications elsewhere. 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. 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 are that an article (1) bears in a significant way on some current controversial issues in the behavioral and brain sciences; (2) substantively contradicts some well-established aspects of current research and theory; (3) criticizes the findings, practices, or principles of an accepted or influential line of work; (4) unifies a substantial amount of disparate research; (5) has important cross-disciplinary ramifications; (6) introduces an innovative methodology or formalism for consideration by proponents of the established forms; (7) significantly integrates a body of brain and behavioral data; or (8) places a hitherto dissociated area of research into an evolutionary or ecological perspective.

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**. Authors should use numbered section-headings to facilitate cross-reference by commentators.

Notes to commentators. *The purpose of the Open Peer Commentary service is to provide a concentrated constructive interaction between authors and commentators of 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. Articles **must not** exceed 14,000 words (and should ordinarily be considerably shorter); commentaries should not exceed 1,000 words. 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*. A title should be given for each article and commentary. An auxiliary short title of 50 or fewer characters should be given for any article whose title exceeds that length. Each commentary must have a distinctive, representative **commentary title.** The contributor's name should be given in the form preferred for publication, the affiliation should include the full institutional address. **Two abstracts**, one of 100 and one of 250 words should be submitted with every 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 the text of the article. Tables and figures (i.e., photographs, graphs, charts, or other artwork) should be numbered consecutively in a separate series. Every table and figure should have a title or caption and at least one reference in the text to indicate its appropriate location. Notes, acknowledgments, appendices, and references should be grouped at the end of the article or commentary. 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 for bibliographic citations are: Brown (1973); (Brown, 1973); (Brown 1973; 1978); (Brown 1973; Jones 1976); (Brown & Jones 1978); (Brown et al. 1979). References should be typed in alphabetical order in the style of the following examples. **Journal titles must not be abbreviated.**

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 entire manuscript, including notes and references, must be typed **double-spaced** on 8½ by 11 inch or A4 paper, with margins set to 70 characters per line and 25 lines per page, and should not exceed 50 pages. Pages should be numbered consecutively. **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 must 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 and should be drawn to occupy a standard area of 8½ by 11 or 8½ by 5½ inches before reducing. 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.

Authors are requested to submit their original manuscript with **eight copies** for refereeing, and commentators their original plus **two copies**, to: Stevan Harnad, Editor, *Behavioral and Brain Sciences*, 20 Nassau Street, Suite 240, Princeton, NJ 08542. In case of doubt as to appropriateness for *BBS* commentary, authors should write to the editor before submitting eight copies.

It would expedite processing considerably if the (article or commentary) manuscript were also accompanied by floppy disk(s) (IBM-compatible, please indicate word processor software used) containing the full text.

Editing. The publisher reserves the right to edit and proof all accepted articles and commentaries. 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.*

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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, 32 East 57th Street, New York, NY 10022.

Neuroethology of releasing mechanisms: Prey-catching in toads

J.-P. Ewert, *Universität des Landes Hessen, Kassel*

Toads discriminate prey from nonprey by certain spatiotemporal stimulus features. The stimulus-response relations are mediated by innate releasing mechanisms with recognition properties partly modifiable by experience. Excitatory and inhibitory interactions among feature-sensitive tectal and pretectal neurons specify the perceptual operations involved in distinguishing prey from background, selecting features, and discriminating prey from predator; other connections indicate location. This information is transmitted by specialized neurons from the tectum to bulbar/spinal motor systems, providing a sensorimotor interface. Specific combinations of these projective neurons form "command releasing systems" that activate corresponding motor pattern generators for appropriate prey-catching action patterns.

With *Commentary* from MA Arbib; GP Baerends; JM Camhi; CM Comer; D Dennett; RW Doty; SOE Ebbesson; G Ehret; MA Goodale; P Grobstein; GA Horridge; D Ingle; SL Kondrashev; KA Stevens; G Székely; and others.

Levels of modeling of mechanisms of visually guided behavior

M. A. Arbib, *University of Southern California*

To bridge from complex behaviors to neural circuitry, we argue for schemas as intermediate functional constructs, and for neural layers as intermediate structural units. We discuss perceptual schemas for high-level vision and motor schemas for the control of dextrous hands. We introduce *Rana computatrix,* the computational frog, and argue that it can do for the study of neural circuitry what *Aplysia* has done for the study of subcellular mechanisms of learning. We analyze approach, avoidance, and detour behavior in terms of interacting schemas, and prey-recognition and depth perception in terms of interacting neural layers.

With *Commentary* from W Baird; J-P Ewert; K Gunderson; PIM Johannesma; P Langley; D Lloyd; AK Mackworth; N Matsumoto; G Székely; YQ Tang; JK Tsotsos; C van Leeuwen; W von Seelen; J Wagemans; HTA Whiting; and others.

Methodologies for studying human knowledge

J. R. Anderson, *Carnegie-Mellon University*

One must distinguish between mental algorithms and their implementation. Mental algorithms are abstract specifications of procedures that are executed in the mind. Implementational issues concern the speed and reliability with which these procedures run. Issues at the algorithmic level can only be explored by studying across-task variation. This contrasts with psychology's dominant methodology of looking for within-task generalities, which is only appropriate for studying implementational issues. Research at the algorithmic level promises more opportunities for scientific progress. The best way to study the algorithmic level is to look for differential learning outcomes in pedagogical experiments that manipulate instructional experience. The intelligent tutoring paradigm provides a particularly fruitful way to implement such experiments.

With *Commentary* from MA Arbib; KA Ericsson; J-P Ewert; R Glaser; AI Goldman; J Hendler; C Mortensen; AV Reed; P Smolensky; EP Stabler, Jr.; K Stenning; MM Taylor & RA Pigeau; DS Touretzky; JT Townsend; and others.

Among the articles to appear in forthcoming issues of BBS:

KR Rao & J Palmer, "The anomaly called PSI: Recent research and criticism"

JE Alcock, "Parapsychology: Science of the anomalous or search for the soul?"

EM Macphail, "The comparative psychology of intelligence"

Multiple book review of D Sperber & D Wilson, *Relevance: Communication and Cognition*

P Smolensky, "The hypotheses underlying connectionism"

CP Benbow, "Sex differences in mathematical reasoning ability in intellectually talented preadolescents: Their nature, effects, and possible causes"

AI Houston & JM McNamara, "A framework for the functional analysis of behavior"

II Glezer, MS Jacobs & PJ Morgane, "Implications of the 'initial brain' concept for brain evolution in cetacea"

Multiple book review of D Laming, *Sensory Analysis*

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