

The Behavioral and Brain Sciences

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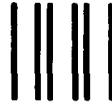
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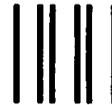


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The Behavioral and Brain Sciences

Instructions to 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 any area of psychology, neuroscience, behavioral biology or cognitive science. If a submitted 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 his article, but he can respond formally to all commentaries accepted for publication. The target article, commentaries and author's 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 the author submits a comprehensive, article-length précis to be published together with the commentaries and his 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. Authors submitting previously published articles for consideration should give full information of place of publication, date, and include permission from the copyright holder to reprint. 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 contents of 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:

- the material bears in a significant way on some current controversial issues in behavioral and brain science;
- its findings substantively contradict some well-established aspects of current research and theory;
- it criticizes the findings, practices, or principles of an accepted or influential line of work;
- it unifies a substantial amount of disparate research;
- it has important cross-disciplinary ramifications;
- it introduces an innovative methodology or formalism for consideration by proponents of the established forms;
- it significantly integrates a body of brain and behavioral data;
- 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

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, acknowledgements, appendixes, 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, Jones & Smith 1979) and subsequently, (Brown et al. 1979). References should be typed in alphabetical order in the style of the following examples:

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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, pp. 1–10. Cambridge: Cambridge University Press.

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

Journal titles should not be abbreviated.

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 accommodate approximately 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 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 8½ by 11 or 8½ by 5½ 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.

Authors are requested to submit their original manuscript with eight copies for refereeing, and commentators their original plus two copies, to: Stevan Harnad, Editor, The Behavioral and Brain Sciences, P.O. Box 777, Princeton, N.J. 08540.

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 will 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.

*Qualified professionals in the behavioral and brain sciences who have either (1) been nominated by a current BBS Associate, (2) refereed for BBS, or (3) had a commentary or article accepted for publication can become BBS Associates. Editors of learned journals and officers of scientific societies are invited to become BBS Associates *ex officio* for liaison purposes. Please write to the Editor for further information.

The Behavioral and Brain Sciences

To appear in Volume 3, Number 4 (1980)

Offprints of the following forthcoming BBS treatments can be purchased in quantity 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, N.Y. 10022.

The functional organization of posterior parietal association cortex

James C. Lynch, Mayo Clinic and Foundation

Behavioral-electrophysiological experiments, lesion studies in monkeys, and clinical investigations suggest that posterior parietal association cortex is concerned with several aspects of behavior and higher nervous function, and that the traditional label of "sensory association cortex" is no longer adequate to describe its multiple functions. It is proposed that the elementary units of several different independent neural mechanisms are distributed in posterior parietal cortex according to the columnar hypothesis of Mountcastle, and that some of these mechanisms are involved in sensory processing and perception while others are primarily concerned with visual attention and the initiation of certain classes of actions upon the environment.

With Commentary from E. Bisiach, G. Ettlinger, M. E. Goldberg & D. L. Robinson, J. Hyvärinen, E. G. Jones, R. Latta, M.-M. Mesulam, V. B. Mountcastle et al., D. N. Pandya & B. Seltzer, E. T. Rolls et al., H. Sakata, J. Schlag, E. A. Weinstein, and others.

Sketch of a componential subtheory of human intelligence

Robert J. Sternberg, Yale University

This article sketches a subtheory of human intelligence based on the *component* construct. Components differ in their functions (meta-components, performance components, acquisition components, retention components, transfer components) and in their levels of generality. A mechanism for the interaction among components of different kinds and multiple components of the same kind can account for certain interesting aspects of laboratory and everyday problem solving. A brief historical overview of alternative basic units for understanding intelligence is followed by a detailed description of the component as one of these units. Various kinds of components are distinguished, examples of each kind of component are given, and the use of each in a problem-solving situation is illustrated. A system of interrelations among the various kinds of components is described. Finally, the functions of components in human intelligence are assessed by considering how they can account for various empirical phenomena in the literature on human intelligence.

With Commentary from J. W. Berry, J. G. Borkowski, N. Brody, E. C. Butterfield, J. B. Carroll, A. Collins, D. K. Detterman, J. R. Frederiksen, J. P. Guilford, E. Hunt, D. P. Keating, P. Kline, H. Lansdell, C. M. MacLeod, J. W. Pellegrino, and J. R. Royce.

Are central pattern generators understandable?

Allen I. Selverston, University of California

Most rhythmic behaviors are produced by a specialized ensemble of neurons found in the central nervous system. These central pattern generators (CPGs) have become a cornerstone of neuronal circuit analysis. Studying simple invertebrate nervous systems may reveal the interactions of the neurons involved in the production of rhythmic motor output. Despite recent progress in this area, certain intrinsic features of CPGs make it unlikely that with present techniques we will ever completely understand any but the simplest of them. The chief impediment seems to be our inability to identify and characterize the total interneuronal pool making up a CPG. In addition, our general analytic strategy relies on a descriptive, reductionist approach, with no analytical constructs beyond phenomenological modeling. Current experimental strategies and their limitations are assessed in the context of these methodological considerations.

With Commentary from F. Delcomyn, W. O. Friesen, S. Grillner, E. Harth, D. K. Hartline, F. Huber, J. V. Luco, V. W. Pentreath, H. M. Pinsky, S. C. Reingold & A. Gelperin, H. F. Rowell, G. Székely, G. Wendler, A. O. D. Willows, and others.

Continuing Commentary

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Current BBS Associateship

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