

Bioethics

CALL FOR PAPERS

Special Issue for 1989

The Scientific, Philosophical and Ethical Uncertainties of Pain

There is a range of issues relating to pain which cross the boundaries of science, philosophy of mind and ethics, and have implications for our treatment of foetuses, infants, older humans in abnormal conditions, and non-human animals.

What can we know about whether, and to what degree, beings in these categories are capable of experiencing pain ?

What are the ethical implications of any uncertainty we may have about the pain they feel ?

We invite contributions on any aspect of these issues, or on related ethical problems in biomedical research or medical or veterinary practice.

Such problems include, but are not limited to:

- * animal experimentation
- * medical uses of the human foetus
- * late abortions
- * painful procedures on newborn infants
- * painful procedures on older patients with an inability to consent

Contributors who are in doubt about whether their topic will be suitable for the issue are invited to send us an outline of their work. The editors may be reached by writing:

Professor Peter Singer/Dr. Helga Kuhse
Centre for Human Bioethics
Monash University
Clayton
Victoria 3168
AUSTRALIA

Deadline for submission of papers is **January 15, 1989.**

Journal of EXPERIMENTAL AND THEORETICAL ARTIFICIAL INTELLIGENCE

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NEW



The aim of JOURNAL OF EXPERIMENTAL AND THEORETICAL ARTIFICIAL INTELLIGENCE (JETAI) is to advance scientific research in artificial

intelligence (AI) by providing a public forum for the presentation, evaluation and criticism of research results, the discussion of methodological issues, and the communication of positions, preliminary findings and research directions. Work in all subfields of AI research, including work on problem solving, perception, learning, knowledge representation, memory and neural system modelling will be within the scope of JETAI. JETAI will contribute to the advancement of AI as a scientific discipline in the following ways:

- **Through editorial statements and editorial policy, JETAI will encourage AI research that adopts a scientific rather than engineering methodology.**
- **JETAI will publish papers reporting research relevant to the computational understanding of intelligence regardless of their disciplinary origin.**
- **JETAI will provide a forum for an active and lively discussion of foundational and methodological issues in AI research and for critical discussions of results and techniques published either in JETAI or elsewhere in the AI or cognitive science literature.**
- **JETAI will publish the broad range of AI research quickly – the Editors will strive to maintain a three month turnaround time between submission and a publication decision.**

Subscription Information

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Institutional Rate: US\$120 £65

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Cognitive Studies from Bradford Books

PERSPECTIVES IN MEMORY RESEARCH

edited by Michael S. Gazzaniga

"A uniquely comprehensive and authoritative treatment of current work on the biology and psychology of memory. In scope, it ranges from the molecular changes that occur when memories are established, through recent advances in the theory of memory organization, to the practical applications of this work in the improvement of personal memory. Every serious student of this basic cognitive process will want this volume near to hand." — George A. Miller, Princeton University

Includes essays by Ira Black, Gary Lynch, Gordon Shepherd, Terrence Sejnowski, Marta Kutas, Stephen Kosslyn, Michael Gazzaniga, and William Hirst.
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CONCEPTS, KINDS, AND COGNITIVE DEVELOPMENT

Frank C. Keil

Weaving together issues in cognitive development, philosophy, and cognitive psychology, Frank Keil provides a coherent account of how concepts and word meanings develop in children, adding to our understanding of the representational nature of concepts and word meanings at all ages.

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Robert Cummins

Here Cummins gives a sophisticated survey of the strengths and deficiencies of traditional accounts — by Locke, Fodor, Dretske, Millikan, and others — of the nature of mental representation. He then provides his own provocative and detailed "interpretational" approach.

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edited by Lynn Nadel

Covers recent research into the psychobiological concomitants of Down syndrome, including results that show surprising improvements in cognitive functions such as language.

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Built around a detailed analysis of an aphasic patient, MK, who exhibits a set of bizarre and fascinating symptom-complexes that make him "four patients in one," *Missing the Meaning?* is an extended case study rich in contributions to lexical theory.

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[His] thesis is to interpret introspection as the replay of perception." — *American Journal of Psychology*
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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**. The original manuscript plus **eight copies** must be submitted.

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

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, 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, Jones & Smith 1979) and subsequently, (Brown et al. 1979). References should be typed in alphabetical order in the style of the following examples. **Journal titles should 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, pp. 1–10. 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 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 double-spaced original manuscript with **eight copies** for refereeing, and commentators their original plus **two copies**, to: Steven Harnad, Editor, Behavioral and Brain Sciences, 20 Nassau St., 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.*

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.

Behavioral and Brain Sciences

To appear in Volume 11, Number 4 (1988)

Numerical competence in animals: Definitional issues, current evidence, and a new research agenda

H. Davis & R. Pérusse, *University of Guelph*

There is renewed interest in numerical competence in animals, but theoretical and definitional confusion have arisen from inconsistent terminology for numerical processes and procedures. "Counting" has been used to describe activities having little to do with what it means in the human literature. We propose a consistent vocabulary and theoretical framework for evaluating numerical competence and we apply this schema to a variety of recent experiments. Some evidence of transfer is essential in demonstrating higher order ability such as counting or "sense of number." In "protocounting," alternatives to counting (e.g. subitizing) have been precluded, but no evidence of transfer has yet been demonstrated. To show that animals are capable of "true" counting, future research will have to demonstrate numerical competence across test situations.

With Commentary from ST Boysen; RA Burns; B Chauvin; ARH Gellatly; WK Honig; A Karmiloff-Smith; EM Macphail; JA Nevin; IM Pepperberg; U Seibt; P Suppes; RK Thomas; E von Glaserfeld; RC Gallistel; BJ McGonigle.

Developmental explanation and the ontogeny of birdsong: Nature–nurture redux

T. D. Johnston, *University of North Carolina at Greensboro*

The view that the behavioral phenotype can be partitioned into inherited and acquired components remains widespread and influential, especially in the study of birdsong development. Isolation-rearing experiments offer only a crude analysis of the contribution of experience to song development and provide no information at all about genetic contributions to development. Because developmental questions are so often posed in terms of the learned–innate dichotomy, the possible role of nonobvious contributions to song development has been largely ignored. An alternative approach, based on Daniel Lehrman's interactionist theory of developments seems more promising.

With Commentary from J Alcock; S Dehaene & J-P Changeux; H-R Guttinger; J Hirsch; SN Khayutin & LI Alexandrov; DE Kroodsmá; JP Kruijt & C ten Cate; RE Lemon; PC Mundinger; S Oyama; PJB Slater; E Thelen; and others.

Research on self-control: An integrating framework

A. W. Logue, *SUNY at Stony Brook*

The tendency to choose a larger, more delayed reinforcer over a smaller, less delayed reinforcer (self-control) varies with the current physical values of the reinforcers, the subject's experience and current factors other than the reinforcers. Mischel's social learning theory, Herrnstein's matching law, and optimal foraging theory have each incorporated these indirect effects on self-control by postulating unobservable mechanisms, representing a subject's behavior as a function of a perceived environment. An evolutionary framework can encompass all three models and contribute to describing and predicting self-control.

With Commentary from EJS Sonuga-Barke; E Fantino & R Preston; L Green & EB Fisher, Jr.; AI Houston & JM McNamara; S Imada & H Imada; J Kuhl; JE Mazur & RJ Herrnstein; OF & CS Pomerleau; N Yamamura; and others.

Among the articles to appear in forthcoming issues of BBS:

D Lightfoot, "The child's trigger experience: Degree-0 learnability"

J Deregowski, "Real space and represented space: Cross-cultural perspectives"

JS Turkkan, "Classical conditioning: The new hegemony"

LE Krueger, "Reconciling Fechner and Stevens: Toward a unified psychophysical law"

DM Buss, "Sex differences in human mate preferences: A study of 37 cultures"

LR Caporael, "Selfishness examined: Cooperation in the absence of egoistic incentives"

GL Gottlieb et al., "Strategies for the control of movement"

S Chevalier-Skolnikoff: "Tool use and sensorimotor intelligence"

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