

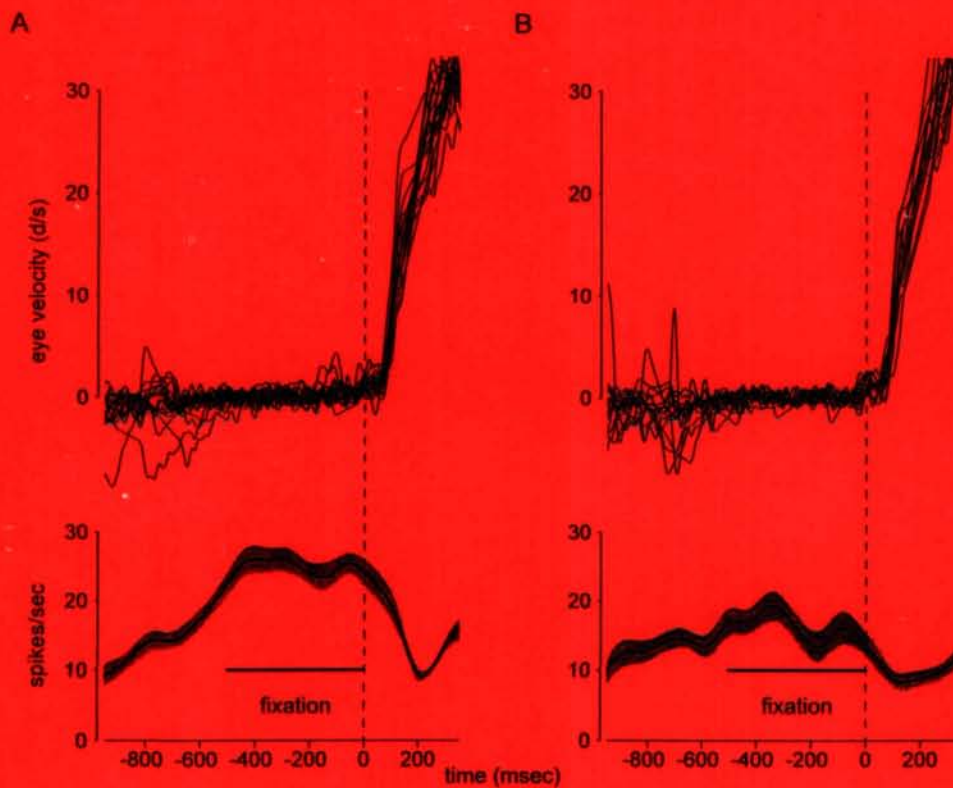
VISUAL NEUROSCIENCE

VOLUME 14

SEPTEMBER/OCTOBER 1997

NUMBER 5

83961|cover14/5



An international journal for
experimental and theoretical research

CAMBRIDGE
UNIVERSITY PRESS

ISSN 0952-5238

V I S U A L N E U R O S C I E N C E

(ISSN 0952-5238)

EDITOR

PETER D. SPEAR

University of Colorado at Boulder

ASSOCIATE EDITORS

Laura Frishman, *College of Optometry, University of Houston,*
4901 Calhoun Road, Houston, TX 77204-6052. E-mail: lfrishman@uh.edu
Stewart Hendry, *Zanvyl Krieger Inst., Johns Hopkins University,*
Baltimore, MD 21218. E-mail: HENDR_S@jhvmshcf.jhu.edu

Robert Marc, *Dept. of Ophthalmology, University of Utah School*
of Medicine, 50 North Medical Drive, Salt Lake City, UT 84132. E-mail:
robert.marc@hsc.utah.edu
John Maunsell, *Division of Neuroscience, Baylor College of Medicine,*
1 Baylor Plaza S-603, Houston, TX 77030. E-mail: maunsell@bcm.tmc.edu

EDITORIAL BOARD

Paola Bagnoli, *University of Pisa, Italy*
Curtis L. Baker, Jr., *McGill University*
David G. Birch, *Retina Foundation, Dallas*
Dwight A. Burkhardt, *University of Minnesota, Minneapolis*
Vivien Casagrande, *Vanderbilt University School of Medicine*
Christine Curcio, *University of Alabama at Birmingham*
Dennis M. Dacey, *University of Washington*
Edgar (Ted) DeYoe, *Medical College of Wisconsin*
Barbara L. Finlay, *Cornell University, Ithaca*
David Fitzpatrick, *Duke University*
Stewart H. Hendry, *Johns Hopkins University*
Eric M. Lasater, *University of Utah*
Barry B. Lee, *Max-Planck-Institute for Biophysical Chemistry, Göttingen*

FORMER EDITOR (1992–1996)
JAMES T. MCILWAIN, *Brown University*

Steven C. Massey, *University of Texas Health Center, Houston*
Ian G. Morgan, *Australian National University*
Neal S. Peachey, *Loyola University Medical Center*
Roberta Pourcho, *Wayne State University School of Medicine*
Kathleen S. Rockland, *University of Iowa*
Helen Sherk, *University of Washington*
S. Murray Sherman, *SUNY Stony Brook*
Malcolm M. Slaughter, *State University of New York, Buffalo*
Keiji Tanaka, *Riken Institute, Japan*
Margaret H. Tigges, *Emory University*
Trichur R. Vidyasagar, *Australian National University*
H.-J. Wagner, *Eberhard-Karls-Universität, Tübingen*
Stephen Yazulla, *State University of New York, Stony Brook*

FOUNDING EDITOR (1988–1991)
KATHERINE V. FITE, *University of Massachusetts, Amherst*

Visual Neuroscience (ISSN 0952-5238) publishes experimental and theoretical studies concerning the neural mechanisms of vision. Contributions may deal with molecular, cellular, and systems-level processes in both vertebrate and invertebrate species. Studies based exclusively on clinical, psychophysical, or behavioral data will be considered if they are related to neural mechanisms. Appropriate research areas include: photoreception and transduction, subcortical visual pathways, developmental processes, visually guided behavior, retinal structure and function, cortical mechanisms, oculomotor control, and substrates of perception.

Visual Neuroscience features full-length research papers, short communications, and review articles that critically examine topics related to the journal's principal focus.

Visual Neuroscience is indexed in Current Contents/Life Sciences; Science Citation Index; MEDLINE; Ocular Resources Review; Neuroscience Citation Index; and in the SCISEARCH and ISI/BIOMED databases.

Editorial Office: Peter D. Spear, Editor, *Visual Neuroscience*, University of Colorado at Boulder, Old Main 1-43, Campus Box 275, Boulder, CO 80309-0275, USA. Telephone (303) 492-7294. Fax: (303) 492-4944. E-mail: peter.spear@colorado.edu.

Publishing, Subscription and Advertising Offices: Cambridge University Press, 40 West 20th Street, New York, NY 10011, USA; and (outside the US and Canada) Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, England.

Published Bimonthly. Annual institutional subscription rates: US \$425.00 in the US, Canada, and Mexico; UK £275.00 + VAT elsewhere. Individual rates: US \$152.00 in the US, Canada, and Mexico; UK £99.00 + VAT elsewhere. Single part rates: US \$73.00 in the US, Canada, and Mexico; UK £49.00 + VAT elsewhere. Special rates for students (with certification of status): US \$88.00 in the US, Canada, and Mexico; UK £69.00 + VAT elsewhere. £79.00 for members of the Society for Neuroscience, the Association for Research in Vision and Ophthalmology, and the European Society for Neuroscience. Prices include postage and handling.

Information on *Visual Neuroscience* and all other Cambridge journals is available via <http://www.cup.org/> in North America and in the UK via <http://www.cup.cam.ac.uk/>.

Copyright © 1997 Cambridge University Press

All rights reserved. No part of this publication may be reproduced, in any form or by any means, electronic, photocopying or otherwise, without permission in writing from Cambridge University Press. *Photocopying information for users in the U.S.A.:* The Item-Fee Code for this publication (0952-5238/97 \$11.00 + .10) indicates that copying for internal or personal use beyond that permitted by Sec. 107 or 108 of the U.S. Copyright Law is authorized for users duly registered with the Copyright Clearance Center (CCC) Transaction Reporting Service, provided that the appropriate remittance of \$11.00 + .10 per article is paid directly to: CCC, 222 Rosewood Drive, Danvers, MA 01923. Specific written permission must be obtained for all other copying.

Printed in the United States of America.

Periodicals postage paid at New York, NY, and additional mailing offices. Postmaster: send address changes in the US and Canada to: *Visual Neuroscience*, Journals Department, Cambridge University Press, 110 Midland Avenue, Port Chester, NY 10573-4930.

Cover Diagram. Neuronal activity for predictable and unpredictable target motion for two different neurons (one in A–B, the other in C–D). (A) In this block of trials, the target always started to move (vertical dashed line) 500 ms after it appeared. At top are individual eye velocity traces during fixation and pursuit initiation. At bottom is mean cell discharge (thick line) and standard error of the mean (shaded area). (B) In this block of trials, the target started to move either 500 or 1000 ms after it appeared with random presentation, but only 500-ms trials are shown. The neuron is more active in trials where the animal can know when the target will start to move. See Figure 9 on page 860 in the article by Heinen and Liu.