

BBIS

Behavioral & Brain Sciences

An International journal of current research and theory
with open peer commentary

Volume 37 | Issue 3 | June 2014 | ISSN: 0140-525X

CAMBRIDGE
UNIVERSITY PRESS

Behavioral and Brain Sciences

Editors

Paul Bloom
Barbara L. Finlay

URL: <http://www.editorialmanager.com/bbs>

E-mail: bbsjournal@cambridge.org

Behavioral and Brain Sciences
Journals Department
Cambridge University Press
32 Avenue of The Americas
New York, NY 10013-2473, U.S.A.

Managing Editor

Gennifer Levey

Chief Copy Editor

Sumitra Mukerji

Proofreader

Rashidah Ismaili AbuBakr

Editorial Board

Affective Neuroscience

Stephanie D. Preston/U. of Michigan

Atypical Neurodevelopment

Simon Baron-Cohen/Cambridge U.

Behavioral Neurogenetics

Wim E. Crusio/CNRS UMR

Cognition and Artificial Intelligence

Zenon Pylyshyn/Rutgers U.

Cognitive and Decision Sciences

Nick Chater/University College London

Cognitive Development

Annette Karmiloff-Smith/Birbeck College

Cognitive Neuroscience

Moshe Bar/Gonda Multidisciplinary

Brain Research Center

Computational Neuroscience

Nestor A. Schmajuk/Duke U.

Evolution of Brain and Cognition

Dean Falk/Florida State U.

Evolution of Cognition

Celia Heyes/Oxford U.

Experimental Analysis of Behavior

A. Charles Catania/U. Maryland, Baltimore County

Language and Language Disorders

Max Coltheart/Macquarie U.

Linguistics

Robert A. Freidin/Princeton U.

Perception

Bruce Bridgeman/U. of California, Santa Cruz

Philosophy of Science

Massimo Piattelli-Palmarini/U. of Arizona

Primate Cognition

Laurie R. Santos/Yale U.

Social Cognition

Mahzarin R. Banaji/Harvard U.

Social Cognitive Neuroscience

Rebecca Saxe/MIT

Vision, Language and Computation

Shimon Edelman/Cornell U.

FOUNDING EDITOR (1978–2001)

Stevan Harnad

Editorial Policy *Behavioral and Brain Sciences* (BBS) is an international journal providing a special service called Open Peer Commentary* to researchers in any area of psychology, neuroscience, behavioral biology, or cognitive science who wish to solicit, from fellow specialists within and across these BBS disciplines, multiple responses to a particularly significant and controversial piece of work. (See Instructions for Authors and Commentators, inside back cover and also at <http://journals.cambridge.org/BBSJournal/Inst>) The purpose of this service is to contribute to the communication, criticism, stimulation, and particularly the unification of research in the behavioral and brain sciences, from molecular neurobiology to artificial intelligence and the philosophy of mind.

Papers judged by the editors and referees to be appropriate for Commentary are circulated to a large number of commentators selected by the editors, referees, and author to provide substantive criticism, interpretation, elaboration, and pertinent complementary and supplementary material from a full cross-disciplinary perspective. The article, accepted commentaries, and the author's response then appear simultaneously in BBS.

Commentary on BBS articles may be provided by any qualified professional in the behavioral and brain sciences, but much of it is drawn from a large body of BBS Associates who have become formally affiliated with the project (see <http://journals.cambridge.org/BBSJournal/BBSAssoc>).

Qualified professionals are eligible to become BBS Associates if they have (1) been nominated by a current BBS Associate, (2) refereed for BBS, or (3) had a commentary or article accepted for publication. A special subscription rate is available to Associates. Individuals interested in serving as BBS Associates are asked to view the full instructions for joining at <http://journals.cambridge.org/BBSJournal/Inst/Assoc> and then email bbsjournal@cambridge.org.

© Cambridge University Press 2014. 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. Policies, request forms, and contacts are available at: <http://www.cambridge.org/rights/permissions/permission.htm>.

Permission to copy (for users in the U.S.A.) is available from Copyright Clearance Center, <http://www.copyright.com>, email: info@copyright.com.

Subscriptions *Behavioral and Brain Sciences* (ISSN 0140-525X) is published bimonthly in February, April, June, August, October, and December. The subscription price of Volume 37 (2014) for *institutions* is US \$1391.00 for print and online and US \$1118.00 for online only in the U.S.A., Canada, and Mexico; and UK £820.00 for print and online and UK £661.00 for online only elsewhere. The subscription price for *individuals* is US \$392.00 for print and online and US \$353.00 for online only in the U.S.A., Canada, and Mexico; and UK £229.00 for print and online and UK £208.00 for online only elsewhere. For *BBS Associates*, with proof of eligibility with order, US \$139.00 in the U.S.A., Canada, and Mexico; and UK £87.00 elsewhere. For *students*, with proof of eligibility with order, \$116.00 in the U.S.A., Canada, and Mexico; and UK £68.00 elsewhere. Subscription price includes surface postage. Single parts cost US \$263.00 (UK £131.00) plus postage. *Institutional* orders may be sent to a bookseller, or, in the U.S.A., Canada, and Mexico direct to: Cambridge University Press, 32 Avenue of The Americas, New York, NY 10013-2473 email: journals_subscriptions@cambridge.org; in the U.K. and rest of the world to: Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 8RU, England, e-mail: journals_subscriptions@cambridge.cam.ac.uk. *Individuals* must order direct from the Press. You may also subscribe through the Cambridge Journals website, <http://journals.cambridge.org/bbs>.

Postmaster: Send address changes in the U.S.A., Canada, and Mexico to *Behavioral and Brain Sciences*, Cambridge University Press, Journals Dept., 100 Brook Hill Drive, West Nyack, NY 10994-2133, U.S.A. Send address change elsewhere to *Behavioral and Brain Sciences*, Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 8RU, England.

Online availability *Behavioral and Brain Sciences* is part of the Cambridge Journals Online (CJO) service at <http://journals.cambridge.org>.

Institutional subscribers: Access to full-text articles online is currently included with the cost of the print subscription. Subscription must be activated; see <http://cambridge.journals.org>.

Advertising Inquiries about advertising should be sent to the Journals Advertising Department of the Cambridge or New York Office of Cambridge University Press.

*Modelled on the "CA Comment" service of the journal *Current Anthropology*.

Contents Volume 37:3 June 2014

Smaldino, P. E. The cultural evolution of emergent group-level traits	243
Open Peer Commentary:	
Abrams, M. Maintenance of cultural diversity: Social roles, social networks, and cognitive networks	254
Caporael, L. R. & Garvey, C. K. The primacy of scaffolding within groups for the evolution of group-level traits	255
Chudek, M. & Henrich, J. Tackling group-level traits by starting at the start	256
Davis, T. & Margolis, E. The priority of the individual in cultural inheritance	257
Doebeli, M. & Simon, B. Studying the emergence of complicated group-level cultural traits requires a mathematical framework	258
Fuentes, A. Feedback, group-level processes, and systems approaches in human evolution	259
Gerkey, D. & Cronk, L. What is a group? Conceptual clarity can help integrate evolutionary and social scientific research on cooperation	260
Ibbotson, P. Group-level expression encoded in the individual	261
Kim, K., Jeon, J. & Park, Y. Culture as an aggregate of individual differences	262
MacDonald, K. Reinventing the wheel on structuring groups, with an inadequate psychology	263
Mattei, T. A. Interdisciplinary benefits of a theory of cultural evolution centered at the group-level: The emergence of macro-neuroeconomics and social evolutionary game theory	264
McCain, R. A. Collaboration in classical political economy and noncooperative game theory	265
Muthukrishna, M. & Schaller, M. Individual-level psychology and group-level traits	265
Nonacs, P. & Kapheim, K. M. Cultural evolution and emergent group-level traits through social heterosis	266
O’Gorman, R. Homogeneity of mind can yield heterogeneity in behavior producing emergent collaboration in groups	267
Okasha, S. Emergent group traits, reproduction, and levels of selection	268
Panchanathan, K., Mathew, S. & Perreault, C. Explaining group-level traits requires distinguishing process from product	269
Read, D. W. The substance of cultural evolution: Culturally framed systems of social organization	270
Santana, C. & Weisberg, M. Group-level traits are not units of selection	271
Schank, J. C. Strong group-level traits and selection-transmission thickets	272
Scott-Phillips, T. C. & Dickins, T. E. Group-level traits can be studied with standard evolutionary theory	273
Shuai, L. & Gong, T. Language as an emergent group-level trait	274
Sosis, R. & Kiper, J. Why religion is better conceived as a complex system than a norm-enforcing institution	275
Taylor, D. J. & Bryson, J. J. Replicators, lineages, and interactors	276
Theiner, G. & Sutton, J. The collaborative emergence of group cognition	277
Waring, T. M. & Goff, S. H. Coordination, cooperation, and the ontogeny of group-level traits	278
Wilson, D. S. Groups as units of functional analysis, individuals as proximate mechanisms	279
Zefferman, M. R. & Richerson, P. J. Many important group-level traits are institutions	280
Author’s Response:	
Smaldino, P. E. Group-level traits emerge	281

Hibbing, J. R., Smith, K. B. & Alford, J. R. Differences in negativity bias underlie variations in political ideology

297

Open Peer Commentary

Brandt, M. J., Wetherell, G. & Reyna, C.

Liberals and conservatives can show similarities in negativity bias 307

Buck, R. Emotional attachment security as the origin of liberal-conservative differences in vigilance to negative features of the environment 308

Cacioppo, J. T., Cacioppo, S. & Gollan, J. K. The negativity bias: Conceptualization, quantification, and individual differences 309

Charney, E. Conservatives, liberals, and “the negative” 310

Federico, C. M., Johnston, C. D. & Lavine, H. G. Context, engagement, and the (multiple) functions of negativity bias 311

Feldman, S. & Huddy, L. Not so simple: The multidimensional nature and diverse origins of political ideology 312

Hodson, G. Is it impolite to discuss cognitive differences between liberals and conservatives? 313

Hogan, P. C. Negativity bias, emotion targets, and emotion systems 314

Inbar, Y. & Pizarro, D. Disgust, politics, and responses to threat 315

Janoff-Bulman, R. & Carnes, N. C. Motivation and morality: Insights into political ideology 316

Jost, J. T., Noorbaloochi, S. & Van Bavel, J. J. The “chicken-and-egg” problem in political neuroscience 317

Kinzler, K. D. & Vaish, A. Political infants? Developmental origins of the negativity bias 318

Lilienfeld, S. O. & Latzman, R. D. Threat bias, not negativity bias, underpins differences in political ideology 318

Ludeke, S. G. & DeYoung, C. G. Differences in negativity bias probably underlie variation in attitudes toward change generally, not political ideology specifically 319

Malka, A. & Soto, C. J. How encompassing is the effect of negativity bias on political conservatism? 320

Morgan, G. S., Skitka, L. J. & Wisneski, D. C. Political ideology is contextually variable and flexible rather than fixed 321

Motyl, M. & Iyer, R. Will the real fundamental difference underlying ideology please stand up? 322

Olivola, C. Y. & Sussman, A. B. Many behavioral tendencies associated with right-leaning (conservative) political ideologies are malleable and unrelated to negativity 323

Petersen, M. B. & Aarøe, L. Individual differences in political ideology are effects of adaptive error management 324

Pornpattananangkul, N., Cheon, B. K. & Chiao, J. Y. The role of negativity bias in political judgment: A cultural neuroscience perspective 325

Robbins, P. & Shields, K. Explaining ideology: Two factors are better than one 326

Schwartz, S. H. Negativity bias and basic values 328

Sedek, G., Kosowska, M. & Rydzewska, K. The importance of adult life-span perspective in explaining variations in political ideology 329

Tritt, S. M., Inzlicht, M., & Peterson, J. B. Confounding valence and arousal: What really underlies political orientation? 330

Vigil, J. M. & Strenth, C. Facial expression judgments support a socio-relational model, rather than a negativity bias model of political psychology 331

White, A. E. & Neuberg, S. L. Beyond the negative: Political attitudes and ideologies strategically manage opportunities, too 332

Authors' Response

Hibbing, J. R., Smith, K. B. & Alford, J. R. Negativity bias and political preferences: A response to commentators 333