The Cambridge Handbook of Human Affective Neuroscience

ARMONY, Jorge (Ed.), VUILLEUMIER, Patrik (Ed.)


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The Cambridge Handbook of Human Affective Neuroscience

Edited by
JORGE ARMONY
McGill University

PATRIK VUILLEUMIER
University of Geneva

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PATRIK VUILLEUMIER
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To the memory of
David Servan-Schreiber, superb colleague and
generous friend who introduced me to, among many
other things, the field of Human Affective
Neuroscience (JA)
Jon Driver, a truly inspiring mentor whose
guidance and friendship have been a unique
experience that is still very much alive in my work (PV)
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List of Contributors

ADAM K. ANDERSON, University of Toronto
JORGE ARMONY, McGill University
ANTHONY P. ATKINSON, Durham University
SONIA BISHOP, University of California
CAROLIN BRÖCK, University of Tübingen
ROBERTO CABAZA, Duke University
FRANCES S. CHEN, University of Freiburg
HUGO D. CRITCHLEY, University of Sussex
MAURICIO R. DELGADO, Rutgers University-Newark
RICARDO DE OLIVEIRA-SOUZA, D’Or Institute for Research and Education (IDOR)
GREGOR DOMES, University of Freiburg
JUDITH DOMÍNGUEZ-BORRAS, University of Geneva
JOSEPH E. DUNSMOOR, Duke University
THOMAS ETHOFE, University of Tübingen
DOMINIC S. FARERI, Rutgers University-Newark
LESLEY K. FELLOWS, McGill University
SOPHIE FORSTER, University of California
KATHERINE GARDHOUSE, University of Toronto
NATHALIE GEORGE, GHU Pitié-Salpetriere
JAY A. GOTTFRIED, Northwestern University Feinberg School of Medicine
JUNG EUN HAN, McGill University
AHMAD B. HARIJI, Duke University
NEIL A. HARRISON, University of Sussex
MARKUS HEINRICH, University of Freiburg
LIST OF CONTRIBUTORS

ALISHA C. HOLLAND, Boston College
ANDREAS KEIL, University of Florida
ELIZABETH A. KENSLER, Boston College
JOHANNA KISSLER, University of Bielefeld
OLGA KLINEC, Max Planck Institute for Human Cognitive and Brain Sciences
STEVEN KOELCH, Free University of Berlin
SYLVIA K. KREIBIG, Stanford University
BENJAMIN KREIFELS, University of Tübingen
ROBERT KUMSTA, University of Freiburg
KEVIN S. LABAR, Duke University
RAMON J. MCCORY, University College London
APRAITA MOHANTY, Stony Brook University
JORGE MOLL, D’Or Institute for Research and Education (IDOR)
JOHN F. O’DOHERTY, California Institute of Technology
LETICIA OLIVEIRA, Universidade Federal Fluminense
MIRIAM PEREIRA, Universidade Federal Fluminense
LUÍS PESSOA, University of Maryland, College Park
K. LUIT PHAN, University of Illinois at Chicago
PIERRE RAINEVILLE, University of Montreal
DAVID SANDER, University of Geneva
ANNETT SCHIRMER, National University of Singapore
CATHERINE L. SESSLER, Royal Holloway, University of London
TANIA SINGER, Max Planck Institute for Human Cognitive and Brain Sciences
CHANDRA SEKHAR SRIPADA, University of Michigan
PEGGY L. ST. JACQUES, Harvard University
ESSI VIDING, University College London
PATRICK VUILLEUMIER, University of Geneva
DIREK WILDGRUBER, University of Tübingen
AMY WINECOFF, Duke University
ROLAND ZAHN, University of Manchester

Introduction

Understanding human emotion and the mechanisms underlying its generation or expression has been a central preoccupation of thinkers for millennia. Yet, its scientific study, particularly from a biological perspective, is quite recent, especially in comparison to that of other mental processes, such as vision, language, attention, or memory. Despite this late start, neuroscience approaches to emotion have experienced a dramatic growth over the past decade. This has led to the birth of the new area of affective neuroscience, which has extended the field of cognitive research initiated in the previous decade. This new development was in large part due to important advances in the use of noninvasive functional neuroimaging techniques – such as positron emission tomography (PET), electroencephalography (EEG), magnetoencephalography (MEG), and, particularly, functional magnetic resonance imaging (fMRI). Together with refinements in more traditional methods, such as lesion studies, behavioral measures, and physiological recordings, the new techniques helped scientists make subjective and "private" affective processes more "visible" and amenable to experimental research in humans.

Largely building on previous research in neurophysiology, human affective neuroscience research began by focusing on the so-called basic emotions, particularly fear, mostly through visual stimuli (e.g., facial expression). However, as illustrated in the wide range of topics covered here, emotion research now covers different sensory modalities, processes, interactions with other systems, as well as individual differences. Emotion is now an accepted component of many "unrelated" disciplines, such as social psychology, economics, marketing, politics, and philosophy.

This book is intended to provide a wide yet comprehensive, up-to-date, and authoritative review of the cognitive neuroscience of human emotion that is both rigorous and accessible. Naturally, to keep the book manageable and of a reasonable size, we had to make some difficult choices in terms of its contents. Rather than choosing a few snippets from the entire field of affective neuroscience, we decided to focus on a specific area within the field. With this in mind,
Section I

INTRODUCTION TO HUMAN AFFECTIVE NEUROSCIENCE