

At Blackwell Publishing

Commissioning editor: Elizabeth Swayze

In-house project managers: Ken Provencher and Tiffany Mok

Production manager: Simon Eckley

Production editor and text designer: Jenny Phillips

Marketers: Alex Robinson, Desirée Zicko, Louise Cooper

Freelance project manager: Fiona Sewell

Copyeditors: Jean Ashford, Mary Franklin, Jacqueline Harvey,
Jane Kerr, Pandora Kerr Frost, Leah Morin, and
Fiona Sewell

Proofreaders: Helen Kemp, Marie Lorimer, Mary Malin, and
Colin Owens

Indexers: Philip Aslett and Marie Lorimer

VOLUME VIII

THE INTERNATIONAL
ENCYCLOPEDIA OF
COMMUNICATION

EDITED BY WOLFGANG DONSBACH

OBJECTIVITY IN SCIENCE –
PRAGMATISM



© 2008 by Blackwell Publishing Ltd

BLACKWELL PUBLISHING

350 Main Street, Malden, MA 02148-5020, USA
9600 Garsington Road, Oxford OX4 2DQ, UK
550 Swanston Street, Carlton, Victoria 3053, Australia

The right of Wolfgang Donsbach to be identified as the author of the editorial material in this work has been asserted in accordance with the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, except as permitted by the UK Copyright, Designs and Patents Act 1988, without the prior permission of the publisher.

Designations used by companies to distinguish their products are often claimed as trademarks. All brand names and product names used in this book are trade names, service marks, trademarks or registered trademarks of their respective owners. The publisher is not associated with any product or vendor mentioned in this book.

This publication is designed to provide accurate and authoritative information in regard to the subject matter covered. It is sold on the understanding that the publisher is not engaged in rendering professional services. If professional advice or other expert assistance is required, the services of a competent professional should be sought.

First published 2008 by Blackwell Publishing Ltd

1 2008

Library of Congress Cataloguing-in-Publication Data

The international encyclopedia of communication/edited by Wolfgang Donsbach.
p. cm.

Includes bibliographical references and index.

ISBN 978-1-4051-3199-5 (hardcover : alk. paper)

1. Communication—Encyclopedias. I. Donsbach, Wolfgang, 1949—

P87.5.158 2008

302.203—dc22

2007047271

A catalogue record for this book is available from the British Library.

Set in 10/13pt Minion

by Graphicraft Limited, Hong Kong

Printed in Singapore

by C.O.S. Printers Pte Ltd

The publisher's policy is to use permanent paper from mills that operate a sustainable forestry policy, and which has been manufactured from pulp processed using acid-free and elementary chlorine-free practices. Furthermore, the publisher ensures that the text paper and cover board used have met acceptable environmental accreditation standards.

For further information on

Blackwell Publishing, visit our website at
www.blackwellpublishing.com

Editors

General Editor

Wolfgang Donsbach, Dresden University of Technology, Germany

Advisory Editors

Jennings Bryant, University of Alabama, USA

Robert T. Craig, University of Colorado at Boulder, USA

Area Editors

Stuart Allan, Bournemouth University, UK

Kevin G. Barnhurst, University of Illinois at Chicago, USA

Charles R. Berger, University of California, Davis, USA

Hans-Bernd Brosius, Ludwig Maximilian University of Munich, Germany

Cynthia Carter, Cardiff University, UK

Robert T. Craig, University of Colorado at Boulder, USA

John D. H. Downing, Southern Illinois University, USA

Robert N. Gaines, University of Maryland, USA

Howard Giles, University of California, Santa Barbara, USA

Carroll J. Glynn, Ohio State University, USA

John O. Greene, Purdue University, USA

Michael Griffin, Carleton College, USA

Bruce E. Gronbeck, University of Iowa, USA

Robert L. Heath, University of Houston, USA

Klaus Bruhn Jensen, University of Copenhagen, Denmark

Hans Mathias Kepplinger, Johannes Gutenberg University of Mainz, Germany

Robin Mansell, London School of Economics and Political Science, UK

Debra Merskin, University of Oregon, USA

Katherine I. Miller, Texas A&M University, USA

Stephen D. Reese, University of Texas at Austin, USA

Rebecca B. Rubin, Kent State University, USA

Winfried Schulz, University of Erlangen-Nuremberg, Germany

Karen Tracy, University of Colorado at Boulder, USA

Patti M. Valkenburg, University of Amsterdam, the Netherlands

A. A. Betteke van Ruler, University of Amsterdam, the Netherlands

K. Viswanath, Harvard University, USA

Peter Vorderer, Free University Amsterdam, the Netherlands

Janet Wasko, University of Oregon, USA

Jürgen Wilke, Johannes Gutenberg University of Mainz, Germany

Karin Gwinn Wilkins, University of Texas at Austin, USA

Kyu Ho Youm, University of Oregon, USA

Physical Effects of Media Content

Jürgen Grimm

University of Vienna

The physical effects of media content are understood as the direct influence of the media on the organism. This includes mainly processes of physiological arousal as well as emotional effects evoking joy or fear, a pleasant mood or stress.

Early one-dimensional arousal theories (Lindsley 1951; Duffy 1962) stated that physiological arousal comprises unspecific activation on which degrees of alertness of the organism are dependent. Schachter used this assumption for a *two-factor model of emotion* according to which → emotion results from the combination of arousal and → cognition (Schachter 1964). For Schachter, positive and negative emotion are identical on a physiological level and can be differentiated only by cognitive evaluation and causal attributions (→ Excitation and Arousal).

This concept left its mark on communication research and inspired a great deal of research on media reception (→ Exposure to Communication Content). Sturm et al. (1982) used a combination of physiological and cognitive measuring to explore the emotional involvement of children while watching TV. They found that the breathing amplitude while watching a filmic story varies systematically with the dramatic course the story takes and its evaluation as “pleasant” or “unpleasant.” This parallelism of physiological indicator (Physiological Measurement) and cognitive evaluation can be seen as a solid arousal–appraisal conjunction according to Schachter (→ Physiological Measurement; Appraisal Theory). The authors also found inconsistent results: the skin conductance level (SCL) rose continually without a clear connection to cognitive evaluation.

Zillmann used the Schachter concept as a basis for his excitation transfer model which plays an important part in media violence research (Zillmann 1971). The model states that residual arousal caused by an earlier filmic event leads to cognitive re-evaluation in a new situation and thereby to reinforcement of existing behavior (→ Emotional Arousal Theory; Excitation Transfer Theory). For instance, hostile attitudes can be reinforced by highly arousing erotic content if the surrounding conditions (e.g., frustrating or annoying factors) stimulate aggressive behavior. On the other hand, it is possible to enhance helpfulness by showing frightening filmic material if the situation inspires pro-social behavior.

One problem of Schachter’s theory and its practical applications in communication studies is that the variability of cognitive interpretation of arousal tends to be overestimated and there is often not enough distinction between different arousal indicators. Film reception experiments by Lazarus and his colleagues (1962) show that the skin conductance level indicates stressful film events. Heart rate and blood pressure, however, indicate motor activation or pleasant arousal. According to the two-arousal hypothesis by Routtenberg (1968) and further developments by Gray (1982). Gray argues for at least two different arousal systems that can, depending on the surrounding conditions for the individual, either enhance or obstruct each other. The *behavioral activation system* (BAS) prepares the organism for motor activities, e.g., in the context of fight or flight, and easily reacts to rewarding cues. The *behavioral inhibition system* (BIS) is stimulated by fear, and

2 Physical Effects of Media Content

usually interrupts motor action and promotes cognitive activities (Fowles 1980). Both types of arousal can be influenced by cognition, but cannot be modified at will in any way.

With this concept in mind, the dissociation between the SCL (indicator for BIS) and heart rate (indicator for BAS) during the course of a dramatic filmic chase can be explained. In a viewer experiment (Grimm 1999), both arousal indicators ran parallel as long as a woman on the run (and with her the viewers) saw a chance of escaping several aggressive men (→ Experimental Design). When a few scenes later the men finally caught up with the woman and she realized the situation was hopeless, the viewers', and also presumably the victim's, BAS activities suddenly dropped while BIS arousal continued to rise. BIS thereby developed an obstructing function for BAS in order to protect the organism from useless and potentially damaging arousal and to make further cognitive operations possible (→ Emotions, Media Effects on).

Today, empirical research has shown that cognition does not only function as a subsequent attribute of arousal states, but also actively creates them. Zillmann (1988) proved that intentional exposure to media content can interrupt adverse moods and aggressive feelings. In dealing with frightening media content, the viewers use techniques of self-appeasement such as the affirmation "It's only a movie." In this way, unpleasantly high arousal levels can be regulated cognitively. On the other hand, people strive for arousal-inducing experiences to a certain extent in order to reach the arousal level that is suitable for them (Zuckerman 1979). "High sensation seekers" therefore prefer horror movies and pornography whereas "low sensation seekers" avoid intensively arousing movies (Zuckerman & Litle 1986). Buchsbaum & Silverman (1968) showed that a high level of arousal (BIS and BAS) is accompanied by higher cortical activity. According to this, "high sensation seekers" increase their cognitive arousal regulation together with the desired arousal intensity (→ Sensation Seeking). This leads to the assumption that the gratification of arousal-inducing media use is not only generated by the BIS–BAS activation itself, but also by the regulation of arousal. This view is consistent with the *emotion management concept* (Vitouch 1993; Grimm 2006) according to which frightening media stimuli are sought out to enhance fear control. This usually implies a strengthening of BIS in relation to BAS.

As a BIS-dominated activity, *television use* can have damaging effects on a long-term basis. Hill et al. (2003) showed in a longitudinal study that the intensive use of television correlates with lack of exercise (weak BAS) and obesity. The so-called "couch potato" effect can be seen as unwanted long-term effect of an otherwise efficient activity of excitement monitoring from a physiological point of view (→ Media Effects Duration).

Another rather underrated effect is the impact of heavy media use on the ability to concentrate. There is evidence that the continuous reception of fast shots and jump cuts in a movie may contribute to a state of enjoyable distraction, but will interfere with the ability to concentrate on something for a longer period of time (Christakis et al. 2004). Others, however, argue that television increases the speed of perception and thereby cognitive abilities.

SEE ALSO: ▶ Appraisal Theory ▶ Cognition ▶ Desensitization ▶ Emotion ▶ Emotional Arousal Theory ▶ Emotions, Media Effects on ▶ Excitation and Arousal ▶ Excitation Transfer Theory ▶ Experimental Design ▶ Exposure to Communication Content ▶ Media Effects Duration ▶ Physiological Measurement ▶ Sensation Seeking

References and Suggested Readings

- Buchsbaum, M. S., & Silverman, J. (1968). Stimulus-intensity control and the cortical evoked response. *Psychosomatic Medicine*, 30, 12–22.
- Christakis, D. A., Zimmerman, F. J., DiGiuseppe, D. L., & McCarty, C. A. (2004). Early television exposure and subsequent attentional problems in children. *Pediatrics*, 13, 708–713.
- Duffy, E. (1962). *Activation and behavior*. New York: Wiley.
- Fowles, D. C. (1980). The three arousal model: Implications of Gray's two-factor learning theory for heart rate, electrodermal activity and psychopathy. *Psychophysiology*, 17, 87–104.
- Gray, J. A. (1982). *The neuropsychology of anxiety: An enquiry into the functions of the septo-hippocampal system*. Oxford and New York: Clarendon.
- Grimm, J. (1999). *Fernsehgewalt: Zuwendungsattraktivität – Erregungsverläufe – sozialer Effekt: Zur Begründung und praktischen Anwendung eines kognitiv-physiologischen Ansatzes der Medienrezeptionsforschung am Beispiel von Gewaltdarstellungen* [Media violence: Attraction to exposure – arousal induction – social impact: Development and practical application of a cognitive-physiological approach of media reception research on filmic depictions of violence]. Opladen and Wiesbaden: Westdeutscher.
- Grimm, J. (2006). Vom Umgang mit Gefühlen beim Fernsehen: Theoretische Modelle und empirische Befunde [Coping with emotions while watching TV: Theoretical models and empirical results]. In B. Krause & U. Scheck (eds.), *Gefühle und kultureller Wandel* [Emotions and cultural change]. Tübingen: Stauffenburg, pp. 279–299.
- Hill, J. O., Wyatt, H. R., Reed, G. W., & Peters, J. C. (2003). Obesity and the environment: Where do we go from here? *Science*, 299, 853–855.
- Lazarus, R. S., et al. (1962). A laboratory study of psychological stress produced by a motion picture film. *Psychological Monographs*, 76.
- Lindsley, D. B. (1951). Emotions. In S. S. Stevens (ed.), *Handbook of experimental psychology*. New York: Wiley, pp. 473–516.
- Routtenberg, A. (1968). The two-arousal hypothesis: Reticular formation and limbic system. *Psychological Review*, 75, 51–81.
- Schachter, S. (1964). The interaction of cognitive and physiological determinants of emotional state. *Advance in Experimental Social Psychology*, 1, 49–80.
- Sturm, H., Vitouch, P., Bauer, H., & Grewe-Partsch, M. (1982). Emotion und Erregung – Kinder als Fernsehzuschauer: Eine psychophysiologische Untersuchung [Emotion and arousal – Children as viewers: A psycho-physiological study]. *Fernsehen und Bildung*, 16, 9–115.
- Vitouch, P. (1993). *Fernsehen und Angstbewältigung: Zur Typologie des Zuschauerhaltens* [Television and coping with fear: On a typology of audience behavior]. Opladen: Westdeutscher.
- Zillmann, D. (1971). Excitation transfer in communication-mediated aggressive behavior. *Journal of Experimental Social Psychology*, 7, 419–434.
- Zillmann, D. (1988). Cognition-excitation interdependencies in aggressive behavior. *Aggressive Behavior*, 14, 51–64.
- Zuckerman, M. (1979). *Sensation seeking: Beyond the optimal level of arousal*. Hillsdale, NJ: Lawrence Erlbaum.
- Zuckerman, M., & Litle, P. (1986). Personality and curiosity about morbid and sexual events. *Personality and Individual Differences*, 7, 49–56.