Further Readings

Cosmides, L., & Tooby, J. (2005). Neurocognitive adaptations designed for social exchange. In D. M. Buss (Ed.), *Handbook of evolutionary psychology* (pp. 584–627). Hoboken, NJ: Wiley.

Ermer, E., Guerin, S., Cosmides, L., Tooby, J., & Miller, M. (2006). Theory of mind broad and narrow: Reasoning about social exchange engages TOM areas, precautionary reasoning does not. *Social Neuroscience, 1*(3–4), 196–219.

Choking Under Pressure

We have all heard the term *choking under pressure* before. In the sports arena we talk about the *bricks* in basketball when the game-winning free throw is missed. In academic domains, we refer to *cracking* in important test taking situations. But what exactly do these terms mean and why do less-than-optimal performances occur—especially when incentives for optimal performance are maximal?

Definition

The desire to perform as well as possible in situations with a high degree of personally felt importance is thought to create *performance pressure.* However, despite the fact that performance pressure often results from aspirations to function at one's best, pressure-packed situations are where suboptimal skill execution may be most visible. The term *choking under pressure* has been used to describe this phenomenon. Choking is defined as performing more poorly than expected, given one's skill level, and is thought to occur in many different tasks.

Analysis

Some of the first attempts to account for unwanted skill decrements can be traced back to investigations of the arousal–performance relationship. According to models of this relationship (often termed *drive theories* or the *Yerkes–Dodson curve*), an individual's performance level is determined by his or her current level of arousal or *drive.* Too little arousal, and the basketball player will not have the tools necessary to make the shot. Too much arousal, and the shot will be missed as well. Although drive theories have been useful in accounting for some types of performance failures, they fall short in a number of ways. First, drive theories are mainly descriptive. That is, drive theories link arousal and performance, but they do not explain how arousal exerts its impact. Second, within drive theory models, there are often debates concerning how the notion of *arousal* should be conceptualized (e.g., as a physiological construct, emotional construct, or both). Third, there are situations in which certain types of drive theories have trouble accounting for observed behavior. For example, one derivation of drive theory (i.e., social facilitation) predicts that one's dominant response will be exhibited in high-arousal or high-drive situations. However, this does not always seem to hold when the pressure is on.

Building on drive theory accounts of performance failure, more recent work has attempted to understand how pressure changes how one thinks about and attends to the processes involved in skill performance. These accounts are often termed *attentional theories.* Two main attentional theories have been proposed to explain choking under pressure.

First, *distraction theories* propose that pressure creates a distracting environment that compromises working memory (i.e., the short-term memory system that maintains, in an active state, a limited amount of information relevant to the task at hand). If the ability of working memory to maintain task focus is disrupted, performance may suffer. In essence, distraction-based accounts of skill failure suggest that performance pressure shifts attention from the primary task one is trying to perform (e.g., math problem solving) to irrelevant cues (e.g., worries about the situation and its consequences). Under pressure then, there is not enough of working memory's limited resources to successfully support both primary task performance and to entertain worries about the pressure situation and its consequences. As a result, skill failure ensues.

Although there is evidence that pressure can compromise working memory resources, causing failure in tasks that rely heavily on this short-term memory system, not all tasks rely heavily on working memory (and thus not all tasks should be harmed when working memory is consumed). For example, well-learned sensorimotor skills, which have been the subject of the majority of choking research in sport (e.g., simple golf putting, baseball batting, soccer dribbling), are thought to become proceduralized with practice such that they do not require constant attention and control—that is, such skills are not thought to depend heavily

on working memory at high levels of learning. How then do such skills fail, if not via the consumption of working memory resources? A second class of theories, generally known as *explicit monitoring theories,* has been used to explain such failures.

Explicit monitoring theories suggest that pressure situations raise self-consciousness and anxiety about performing correctly. This focus on the self is thought to prompt individuals to turn their attention inward on the specific processes of performance in an attempt to exert more explicit monitoring and control than would be applied in a nonpressure situation. For example, the basketball player who makes 85% of his or her free throws in practice may miss the game-winning foul shot because, to ensure an optimal outcome, the player tried to monitor the angle of the wrist as he or she shot the ball. This component of performance is not something that the basketball player would normally attend to. Paradoxically, such attention is thought to disrupt well-learned or proceduralized performance processes that normally run largely outside of conscious awareness.

From the previous description of distraction and explicit monitoring theories, one might conclude that performance pressure exerts one kind of impact on cognitive skill performance and another kind of impact on sensorimotor skill performance. It seems more likely, however, that pressure always exerts at least two different effects: It populates working memory with worries, *and* it entices the performer to try to pay more attention to step-by-step control, resulting in a double whammy. These two effects may be differentially relevant to performance depending on the attentional demands of the task being performed. If a task depends heavily on working memory but does not involve much in the way of proceduralized routines (e.g., difficult and novel math problem solving), then it will suffer from pressure-induced consumption of working memory, but it will not be harmed by the attempt to focus what attention remains on step-by-step control that is also induced by pressure. Conversely, if a task relies heavily on proceduralized routines but puts little stress on working memory (e.g., a well-learned golf putt), then that task will suffer from performance pressure because of the shift of attention to step-by-step control and not because the overall capacity of working memory has been reduced.

In conclusion, research examining the choking under pressure phenomenon does not seek merely to catalogue instances of performance failure but also attempts to shed light on the reasons why skills fail in high-stakes situations. Such knowledge aids in the development of training regiments and performance strategies designed to alleviate these less-than-optimal performances.

Sian L. Beilock

See also Arousal; Attention; Automatic Processes; Drive Theory; Social Facilitation

Further Readings

Baumeister, R. F. (1984). Choking under pressure: Self-consciousness and paradoxical effects of incentives on skillful performance. *Journal of Personality and Social Psychology, 46,* 610–620.

Beilock, S. L., & Carr, T. H. (2001). On the fragility of skilled performance: What governs choking under pressure? *Journal of Experimental Psychology: General, 130,* 701–725.

Beilock, S. L., & Carr, T. H. (2005). When high-powered people fail: Working memory and "choking under pressure" in math. *Psychological Science, 16,* 101–105.

Gray, R. (2004). Attending to the execution of a complex sensorimotor skill: Expertise differences, choking and slumps. *Journal of Experimental Psychology: Applied, 10,* 42–54.

Close Relationships

Definition

Why are we attracted to some people? How do people know they are in good relationships? Why do people fall in love? Does good communication really produce successful relationships? Are men really from Mars and women from Venus? These are just some of the intriguing questions that social psychologists attempt to answer. Indeed, the study of close relationships has become one of the most important domains in social psychology over the past several decades.

But what are close relationships? It turns out that answering this question is not as easy as it seems. One key concept, developed by Harold Kelley and John Thibaut in the 1960s and 1970s, describes close relationships in terms of *interdependence.* Close relationships differ from having acquaintances by the profound way in which the well-being and psychological

ENCYCLOPEDIA OF Social Psychology

1

Roy F. Baumeister
Florida State University

Kathleen D. Vohs
University of Minnesota

EDITORS

A SAGE Reference Publication
SAGE Publications
Los Angeles • London • New Delhi • Singapore

For information:

SAGE Publications, Inc.
2455 Teller Road
Thousand Oaks, California 91320
E-mail: order@sagepub.com

SAGE Publications Ltd.
1 Oliver's Yard
55 City Road
London EC1Y 1SP
United Kingdom

SAGE Publications India Pvt. Ltd.
B 1/I 1 Mohan Cooperative Industrial Area
Mathura Road, New Delhi 110 044
India

SAGE Publications Asia-Pacific Pte. Ltd.
33 Pekin Street #02-01
Far East Square
Singapore 048763

Printed in the United States of America.

Library of Congress Cataloging-in-Publication Data

Encyclopedia of social psychology/editors, Roy F. Baumeister, Kathleen D. Vohs.
p. cm.
Includes bibliographical references and index.
ISBN 978-1-4129-1670-7 (cloth)
1. Social psychology—Encyclopedias. I. Baumeister, Roy F. II. Vohs, Kathleen D.

HM1007.E53 2007
302.03—dc22 2007014603

This book is printed on acid-free paper.

07 08 09 10 11 10 9 8 7 6 5 4 3 2 1

Publisher:	Rolf A. Janke
Acquisitions Editor:	Michael Carmichael
Developmental Editors:	Carole Maurer, Paul Reis
Reference Systems Manager:	Leticia Gutierrez
Project Editor:	Tracy Alpern
Copy Editors:	Colleen B. Brennan, Robin Gold
Typesetter:	C&M Digitals (P) Ltd.
Indexer:	Julie Sherman Grayson
Cover Designer:	Candice Harman
Marketing Manager:	Carmel Withers