

RICHARD A. LIPPA



Psychology Press

Gender,  
Nature,  
and  
Nurture

SECOND EDITION

---

# **Gender, Nature, and Nurture**

---


*Page Intentionally Left Blank*

---

# **Gender, Nature, and Nurture**

**Second Edition**

Richard A. Lippa  
*California State University, Fullerton*

 Psychology Press  
Taylor & Francis Group  
NEW YORK AND LONDON

---

First published 2005 in Great Britain by  
Psychology Press Taylor & Francis Group

This edition published 2014 by Psychology Press  
711 Third Avenue, New York, NY 10017

and by Psychology Press  
27 Church Road, Hove, East Sussex, BN3 2FA

*Psychology Press is an imprint of the Taylor & Francis Group, an informa business*

© 2005 by Taylor & Francis Group, LLC  
Psychology Press is an imprint of Taylor & Francis Group

International Standard Book Number-13: 978-0-8058-5344-2 (Softcover)  
Library of Congress Card Number 2005001509

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Trademark notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

---

**Library of Congress Cataloging-in-Publication Data**

---

Lippa, Richard A.  
Gender, nature and nurture / Richard A. Lippa.—2nd ed.  
p. cm.  
Includes bibliographical references and index.  
ISBN 0-8058-5344-8 (hbk : alk. paper)—ISBN 0-8058-5345-6 (pbk. : alk. paper)  
1. Sex differences (Psychology). 2. Gender identity. 3. Nature and nurture. I. Title.  
BF692.2.L555 2005  
155.3'3—dc22  
2005001509

---

ISBN-13: 978-1-410-61294-6 (ebk)

---

*In loving memory of my mother, Alice Lippa*

---

*Page Intentionally Left Blank*

---

# Contents

<b>Preface</b>	xiii
<b>Introduction</b>	xvii
<b>CHAPTER 1: WHAT'S THE DIFFERENCE ANYWAY?</b>	<b>1</b>
<b>The Study of Sex Differences</b>	<b>4</b>
<b>Combining the Results of Many Studies: Meta-Analysis</b>	<b>9</b>
<b>What Do Meta-Analyses Tell Us About Sex Differences?</b>	<b>12</b>
Are There Sex Differences in Personality?	12
Are There Sex Differences in Boys' and Girls' Activity Levels?	16
Are There Sex Differences in Risk-Taking?	17
Are There Sex Differences in Social Behaviors?	18
<i>Aggression</i>	18
<i>Helping Behavior</i>	20
<i>Moral Behavior</i>	21
<i>Conformity and Social Influence</i>	22
<i>Group Behavior</i>	22
Are There Sex Differences in Nonverbal Behavior and Nonverbal Perceptiveness?	24
Are There Sex Differences in Sexuality?	26
Are There Sex Differences in Criteria for Mate Selection?	30
Are There Sex Differences in Occupational Preferences and Interests?	30
Are There Sex Differences in Cognitive Abilities?	33
Are There Sex Differences in Physical Abilities?	34
Are Men More Variable Than Women on Some Traits?	35
	<b>vii</b>



<b>Beyond Meta-Analyses: Other Possible Sex Differences</b>	36
Are There Sex Differences in Mental and Behavioral Disorders?	36
Are There Sex Differences in Emotional Experience?	39
Are There Sex Differences in the Self-Concept	41
Are There Sex Differences in Children's Play and Friendship Patterns?	42
<b>Summary</b>	44
<b>CHAPTER 2: MASCULINITY AND FEMININITY: GENDER   WITHIN GENDER</b>	46
<b>The Search Commences</b>	47
The Analogy Between Masculinity–Femininity and Intelligence	48
The Bipolar Assumption	49
What Is Masculinity–Femininity Related to?	53
<b>Masculinity and Femininity as Separate Dimensions</b>	55
Cracks in Terman and Miles' Edifice	55
The Rise of Androgyny	56
Putting Androgyny to the Test	59
Masculinity, Femininity, and Psychological Adjustment	61
Whither Androgyny?	62
<b>But Don't Masculinity and Femininity Make Sense to Most of Us?</b>	64
Components of Masculinity and Femininity	65
Masculinity and Femininity as Fuzzy Concepts	66
<b>Deconstructing and Reconstructing Masculinity–Femininity</b>	68
Recapitulation	68
Resurrecting Masculinity-Femininity: Gender Diagnosticity	69
What Is Gender Diagnosticity Related to?	73
Is There a "Deep Structure" to Masculinity–Femininity?	77
<b>Summary</b>	79
<b>CHAPTER 3: THEORIES OF GENDER</b>	81
<b>Levels of Explanation Applied to Gender</b>	81
<b>Biological Theories</b>	85
Evolutionary Theory	85
The Genetics of Sex	94
Hormones and Male Versus Female Development	97
Structural Differences Between Male and Female Nervous Systems	99
Are Hormones Everything?	102
Recapitulating Biological Theories	103
<b>From Nature to Nurture</b>	104
Social Learning Theories	104
Cognitive Theories of Gender	106

<i>Kohlberg's Cognitive-Developmental Theory</i>	106
<i>Gender Schema Theories</i>	108
Social Psychological Theories of Gender	110
<i>Gender Stereotypes</i>	110
<i>Social Role Theory</i>	112
<i>Gender Stereotypes as Self-Fulfilling Prophecies</i>	114
<i>Stereotype Threat</i>	114
<i>Self-Presentation and Social Constructionist Theory</i>	115
<b>Summary</b>	117
<b>CHAPTER 4: THE CASE FOR NATURE</b>	119
<b>Animal Experiments</b>	121
<b>Humans With Unusual Early Exposure to Hormones</b>	122
Congenital Adrenal Hyperplasia Females	122
Androgen-Insensitive Males	123
Reductase-Deficient Males	124
Effects of Estrogen: Diethylstilbestrol Children and Turner Syndrome Women	125
<i>Females Exposed to DES</i>	125
<i>Turner Syndrome</i>	126
<b>Correlational Studies of Hormones and Behavior</b>	127
Testosterone and Human Behavior	128
Physical Characteristics Related to Prenatal Testosterone	132
Other Hormones and Gender-Related Behaviors	132
<b>Hormones and Maternal Behavior</b>	133
<b>"Natural Experiments" and Sex Reassignments</b>	136
<b>Biology and Human Sex Differences</b>	137
<b>The Case for Biological Influences: Sex Differences in Aggression, Visual-Spatial Ability, and Sexual Behavior</b>	140
Physical Aggression	140
Visual-Spatial Ability	142
Sexual Behavior	145
<b>Demonstrating Biological Influences on Individual Differences in Masculinity and Femininity: Behavior Genetic Studies</b>	150
<b>Summary</b>	153
<b>CHAPTER 5: THE CASE FOR NURTURE</b>	155
<b>Learning to "Do Gender"</b>	157
Boys' and Girls' Toy Preferences	158
Parental Treatment and the Social Learning of Gender	159
Teacher Influences	164

Peer Influences	165
Learning Gender After Early Childhood	166
Modeling Gender	168
Learning Gender From the Mass Media	169
<b>Self-Socialization of Gender</b>	172
Gender Knowledge	172
Gender Knowledge and Sex-Typed Behavior	174
Social Influences on Gender Knowledge	177
<b>Consequences of Gender Stereotypes</b>	178
Enacting Stereotypes	178
Self-Fulfilling Prophecies and Behavioral Confirmation	180
Stereotype Threat: When Negative Stereotypes Undermine Performance	182
<b>Broader Social Factors and Gender</b>	183
Social Role Theory	183
<b>Coda</b>	186
<b>Summary</b>	187
<b>CHAPTER 6: CROSS-EXAMINATIONS</b>	189
<b>Summary</b>	218
<b>CHAPTER 7: GENDER, NATURE, AND NURTURE: LOOKING TO THE FUTURE</b>	219
<b>Causal Cascades and Causal Thickets</b>	221
Gender as a Complex Causal Cascade	221
Causal Cascades and the Nature–Nurture Debate	223
Cascades, Fulcrums, and Social Interventions	226
Causal Cascades and the Two Faces of Gender	229
<b>Gender, Nature, and Nurture: Some Real-Life Concerns</b>	233
Rearing Girls and Boys	234
Childhood Gender Segregation: Can It Be Reduced?	235
Gender in the Classroom	237
<i>Solutions for Problems Faced by Girls and Boys in the Classroom</i>	237
<i>The Value of Same-Sex Schooling</i>	239
Gender and the Digital Divide	241
Sexual Harassment and Assault: Are They Male Problems?	243
Husbands and Wives: The Nature and Nurture of Close Relationships	244
<i>Rearing Children</i>	245
<i>Divisions of Labor</i>	246
<i>Harmony, Disharmony, and Divorce</i>	247
<i>Child Custody</i>	248

---

CONTENTS

**xi**

Gender in the Workplace	249
<i>Parental Leave, Daycare, and Mommy Tracks</i>	250
<i>Sex Differences in Employment and Pay</i>	251
<b>Political Animals: Men and Women Who Govern</b>	254
<b>Women and Men in the Military: The Battles of the Sexes</b>	257
<b>Coda</b>	259
<b>Summary</b>	259
<b>Glossary of Key Terms and Concepts</b>	261
<b>References</b>	271
<b>Author Index</b>	311
<b>Subject Index</b>	327

---

*Page Intentionally Left Blank*

---

## Preface

I don't know about you, but throughout my life I have been puzzled by the behavior of both men and women. When I go to the gym, I am bemused by men's animated conversations about football games and cars, and when I go to a local gift shop, I am equally bemused by women who endlessly discuss how "darling" various ceramic figurines are. I don't think I am alone in finding both men and women somewhat inscrutable, each in their own way. And I am certainly not alone in pondering the nature and nurture of gender.

Most of us spend a considerable amount of time trying to understand what makes individual boys, girls, men, and women tick, so most of us constantly grapple with gender, either consciously or unconsciously. We live and work and play with members of both sexes, and inevitably, we love and loathe individual males and females. If nothing else, the topic of gender carries with it immense egocentric appeal, for we all possess gender, in one form or another. And of course, the topic of gender is intimately tied to other favorite topics: love, sex, and romance. In a more serious and political vein, our personal views of gender are linked to other important attitudes, about affirmative action, sexual harassment, women in the military, and a host of other topics. For all of these reasons, gender is a hot topic: in everyday conversations, on talk shows, and in popular books.

Gender is also a hot topic among scientists. It has long been the focus of a veritable cottage industry of empirical research in the social and biological sciences, and after decades of concerted effort, scientists now have a lot to say about the causes and consequences of gender. The book you are about to read—*Gender, Nature, and Nurture*, second edition—presents a straightforward and accessible summary of scientific

findings about gender. It offers a balanced and fair-minded account of what science currently does and does not know about the behavior of males and females, and it describes the major theories that have attempted to explain gender differences, gender similarities, and gender variations.

Because *Gender, Nature, and Nurture* is, on one level, a primer of gender research, it is ideally suited for classes on the psychology of women, the psychology of men, gender roles, and gender. It can also serve as a stimulating accompaniment to introductory psychology and critical thinking classes, for it addresses many mainstream topics in psychology (personality, abnormal behavior, social behavior, cognitive abilities, biological psychology, behavioral genetics, evolutionary psychology) from the vantage point of a single unifying theme—gender. Students who read *Gender, Nature, and Nurture* will necessarily exercise their critical thinking skills as they evaluate competing theories and integrate complex strands of empirical evidence. They will also learn how scientific research applies to real-life, public policy questions. They will come to appreciate that science is an ongoing debate as much as a fixed and finished body of facts.

*Gender, Nature, and Nurture* should appeal to the general reader, too, because it provides a readable, up-to-date summary of research on a topic that affects us all. In addition to presenting scientific findings, the book tackles many important real-life questions. Should boys and girls be reared alike? Should mothers be granted custody of young children more often than fathers? Is sexual violence a male rather than female problem, and does it have biological roots? Should corporations treat male and female employees the same? Why do men still earn more than women do, and what should society do about this difference? What roles should women and men assume in the military? Consideration of these questions demonstrates that scientific research can have important social consequences and that the nature–nurture debate is not just an academic exercise.

Reflecting the rapidly evolving research literature on sex and gender, the second edition of *Gender, Nature, and Nurture* addresses many new topics and findings. The added content includes the following:

- Updated research on sex differences in personality
- Results of a meta-analysis of sex differences in real-life measures of aggression
- Discussion of sex differences in children’s activity levels
- Discussion of sex differences in moral thought and behavior
- Research on cross-cultural consistencies and variations in men’s and women’s sexual behavior

- Research on sex differences in antisocial behavior
- An expanded account of sex differences in children's play
- Research on masculinity, femininity, and psychological adjustment
- A section on nonhormonal, direct genetic effects on sexual differentiation
- An expanded account of social learning theories of gender
- An expanded account of social constructionist views of gender
- A section on hormones and maternal behavior
- A section on the digital divide and research on male's and female's attitudes toward computers
- A section on gender, work, and pay

Writing a book is a complex process that involves many people. The following reviewers carefully read the first edition of *Gender, Nature, and Nurture* and offered many valuable and constructive suggestions for the second edition: Nanci Weinberger of Bryant College; Sharon G. Portwood of the University of Missouri, Kansas City; Mary E. Kite of Ball State University; Christia Spears Brown of the University of California, Los Angeles; and Lori Van Wallendael of the University of North Carolina, Charlotte. Thanks to Lawrence Erlbaum Associates Editor, Debra Riegert, for guiding this project from inception to completion. Thanks, too, to Larry Erlbaum for supporting this project, and thanks to the Erlbaum staff for transforming a set of word processing files into an attractive, finished book. And most of all, thanks to the many scholars who have ceaselessly probed the nature and nurture of gender. Their work encourages us all to celebrate the amazing diversity of men and women and to appreciate the common humanity of all people, regardless of their sex or gender.

Richard Lippa  
*Psychology Department*  
*California State University, Fullerton*



---

*Page Intentionally Left Blank*

---

# Introduction

*The phrase “nature and nurture” is a convenient jingle of words, for it separates under two distinct heads the innumerable elements of which personality is composed. Nature is all that a man brings with himself into the world; nurture is every influence from without that affects him after his birth. The distinction is clear: the one produces the infant such as it actually is, including its latent faculties of growth of body and mind; the other affords the environment amid which the growth takes place, by which natural tendencies may be strengthened or thwarted, or wholly new ones implanted.*

—*English Men of Science: Their Nature and Nurture*  
Francis Galton (1970/1874)

Ever since Sir Francis Galton created one of science’s few bone fide sound bites—“nature versus nurture”—the nature–nurture debate has reverberated through the halls of academia. To what extent *are* important human characteristics innate or learned? Nowhere is this debate more contentious than in the study of gender.

Given that gender is the topic of this book, it is perhaps ironic to start with a quote from Galton, who didn’t even deign to include women in his purview (“Nature is all that a *man* brings with *himself* into the world . . .” [italics added]). Although Galton is credited with originating the nature–nurture debate in psychology, he is also sometimes criticized for being sexist and racist. Whatever Galton’s ideologies, his words are an appropriate starting point, for they not only set the tone for the nature–nurture debate but also hint at the political and ideological overtones that would come to inflame that debate.

Today, to ask whether there are biological factors that lead to sex differences is not just to pose a scientific question. It is to scrape open old wounds inflicted by sexist ideologies and to confront stubborn prejudices on all sides. Biological theories of gender *have* been used to belittle and oppress women in the not-so-distant past; thus, it is no wonder that contemporary feminists view such theories with suspicion. Phrases such as “anatomy is destiny” and “heredity is destiny” have served too often as predictions of positive destinies for in-groups (men) and negative destinies for out-groups (women).

Still, no one can doubt that men and women *are* biological creatures. Although unique in many ways, humans are animals and, like other animals, we have been molded by evolutionary forces that sometimes produce sex differences. We are not just enculturated men and women; we are also embodied men and women. Too often in the study of gender, biological theories have been relegated to the category of *politically incorrect* or even *reactionary*.

Unfortunately, partisans on both sides of the nature–nurture debate have too often talked past one another. Sometimes, they have even hurled invectives at one another. So why write a book that places itself (not to mention its author) in the crossfire of such a rancorous debate? One simple answer is that the nature–nurture controversy—whether applied to gender or to other topics—is fascinating. It touches upon a host of important real-life questions. To what extent can parents influence their children’s personalities and intellects? What are the limits of educational enrichment? Are geniuses born or made? Is sexual orientation innate, learned, or chosen? Can mental illness be in our genes? Does violence come from bad blood or bad environments?

Like Galton, we want to know how much a person’s environment can “strengthen or thwart” preexisting tendencies. Is it possible to imagine a society, for example, in which women commit more murders than men? Or one in which women like to watch football on TV more than men do? Like Galton, we wonder whether the proper environment can “implant wholly new tendencies” in people. Could we rear a generation of women who are as interested as men in being engineers, or a generation of boys who play with babydolls as much as girls do?

One thing is clear. Over a century of research on the nature–nurture question has produced an explosion of new methods and findings. Were Galton alive today, he would be amazed by the complex mathematical techniques and huge database of modern behavioral genetics, despite the fact that he was the originator of the twin method in psychology. Galton would likely be overwhelmed by advances in biological psychology, neuroscience, and molecular genetics. He might even find himself

modifying some of his strong hereditarian beliefs after examining a century's worth of social scientific research.

Today, to understand the nature and nurture of gender we must look to a multitude of disciplines: molecular and behavioral genetics, evolutionary biology, endocrinology, neuroanatomy, ethology, anthropology, sociology, and many branches of psychology. But before we can sift through all of the data, we must first pose a preliminary and deceptively simple question: What is it that we are trying to explain? That is, what is *gender*? This question forms the central topic of Chapters 1 and 2 of this book. Chapter 1 ("What's the Difference Anyway?") summarizes scientific findings on *sex differences* in people's behavior and traits. Chapter 2 ("Masculinity and Femininity: Gender Within Gender") summarizes research on gender-related individual differences *within each sex*. Chapter 3 ("Theories of Gender") presents prominent theories that have attempted to explain these two sides of gender.

Chapters 4 and 5 present research evidence on the nature and nurture of gender. Chapter 4 ("The Case for Nature") argues strongly for the power of biological evolution, genes, hormones, and neural structures to produce sex differences in behavior and gender-related individual differences within the sexes. Chapter 5 ("The Case for Nurture") argues just as strongly for the power of culture, social roles, social learning, stereotypes, and social settings to produce the very same phenomena. Chapter 6 ("Cross-Examinations") presents an imagined debate between a personified Nature and Nurture. Each side attempts to pick apart the other side's case and to sow seeds of doubt in the reader's mind about both strong nature and nurture accounts of gender.

The final chapter ("Gender, Nature, and Nurture: Looking to the Future") strives for a theoretical synthesis, and it examines how the nature–nurture debate touches upon real-life public policy questions. Offering a *cascade model* of gender, Chapter 7 proposes that biological and social factors trace an interdependent causal cycle over the course of an individual's life and that gender is a phenomenon that can be explained only from a developmental perspective. From the vantage point of Chapter 7, nature and nurture form the inseparable *yin* and *yang* of gender development.

Chapter 7 next applies the cascade model to broader public policy questions. Should parents rear boys and girls the same? Is same-sex education beneficial or harmful? Should employers offer men and women the same parental benefits? Should judges in child custody cases treat mothers and fathers alike? Are men and women biologically destined to experience conflicts in their intimate relationships? Do biological or social factors lead to male sexual violence and coercion? Why do men

still earn more, on average, than women do, and should society intervene to eliminate the disparity? Why do men hold elective office more than women do, and do women bring new leadership styles to government and business? Should the military treat men and women alike?

None of these questions is trivial. Some will require a Solomon-like wisdom to resolve. Research on the nature and nurture of gender can help us frame these questions more precisely and, perhaps, to answer them more wisely. More broadly, research can help us to understand better the nature of each sex and to nurture that which is admirable in both.

---

# **Gender, Nature, and Nurture**

---

*Page Intentionally Left Blank*

## What's the Difference Anyway?

*"Tell me, how does the other sex of your race differ from yours?"*

*He looked startled and in fact my question rather startled me; kemmer brings out these spontaneities in one. We were both self-conscious. "I never thought of that," he said. "You've never seen a woman." He used his Terran-language word, which I knew.*

*"I saw your pictures of them. The women looked like pregnant Gethenians, but with larger breasts. Do they differ much from your sex in mind behavior? Are they like a different species?"*

*"No. Yes. No, of course not, not really. But the difference is very important. I suppose the most important thing, the heaviest single factor in one's life, is whether one's born male or female. In most societies, it determines one's expectations, activities, outlook, ethics, manners—almost everything. Vocabulary. Semiotic usages. Clothing. Even food. Women... women tend to eat less... It's extremely hard to separate the innate differences from the learned ones. Even where women participate equally with men in the society, they still after all do all the childbearing, and so most of the child-rearing...."*

*"Equality is not the general rule then?..."*

*—The Left Hand of Darkness  
Ursula K. LeGuin (1969)*

In her award-winning science fiction novel, *The Left Hand of Darkness*, Ursula K. LeGuin describes the planet Gethen, where all the people are hermaphrodites capable of both fathering and mothering a child. The people of Gethen cannot comprehend the difference between male and female. When the Terran ambassador, Genli Ai, visits Gethen, he must negotiate with people who have never experienced gender. As a result,



---

sample content of Gender, Nature, and Nurture

- [Tales from a Not-So-Dorky Drama Queen \(Dork Diaries, Book 9\) online](#)
- [read online Karl Marx's Theory of History for free](#)
- [download online The Big Book of Realistic Drawing Secrets: Easy Techniques for drawing people, animals, flowers and nature](#)
- [download Dreadnought \(H.I.V.E., Book 4\) online](#)
- [Monster Hunter Legion pdf, azw \(kindle\), epub, doc, mobi](#)
- [read online The Phantom of the Hastings Caves book](#)
  
- <http://jaythebody.com/freebooks/Tales-from-a-Not-So-Dorky-Drama-Queen--Dork-Diaries--Book-9-.pdf>
- <http://bestarthritiscare.com/library/Karl-Marx-s-Theory-of-History.pdf>
- <http://test.markblaustein.com/library/The-Heartache-No-One-Sees--Real-Healing-for-a-Woman-s-Wounded-Heart.pdf>
- <http://schroff.de/books/Fat-Loss-Happens-on-Monday--Habit-Based-Diet-and-Workout-Hacks.pdf>
- <http://transtrade.cz/?ebooks/Satanism--Magic-and-Mysticism-in-Fin-de-si--cle-France--Palgrave-Historical-Studies-in-Witchcraft-and-Magic-.pd>
- <http://patrickvincitore.com/?ebooks/An-Introduction-to-Social-Constructionism.pdf>