



Henry A. Nasrallah, MD
Editor-in-Chief

Darwin's discovery emerged in the midst of and despite his overwhelming mental and physical health problems

Is Darwin still relevant? Advanced human brain breaks evolutionary rules

You may have noticed the buzz about Charles Darwin in the news: 2009 marks the 200th anniversary of his birth and the 150th anniversary of his monumental description of evolution in *On the Origin of Species*. Celebrations are scheduled around the world to honor the scientist who coined the phrase "natural selection" to explain the heritable process by which adaptive evolution occurs.

But is Darwin's theory of evolution still relevant? The "game-changer" that is transforming evolution is the genetic mutation that led to dramatic growth in the primate cortex—especially the frontal lobe—culminating in the emergence of *Homo sapiens*. The overdeveloped brain that has helped our species adapt and survive may be transforming us into predators of all other species and a hazard to our planet.

Survival regardless of 'fitness'

Humans are discovering so much about biology and treatment of disease that we are disrupting natural selection and undermining the tyranny of "survival of the fittest." A triumph of modern medicine (the antithesis of eugenics) is salvaging those who in Darwin's day would have died and allowing them to survive and perpetuate their genes:

- Children born with metabolic errors no longer are doomed to succumb before their childbearing years.
- Premature 1-pound infants who never would have survived before are routinely doing so now.
- Women can conceive in their 60s, well after menopause.
- Medical advances have enabled humans to parry the deadly assaults of bacteria, viruses, and parasites.
- Future scientific advances will certainly include genetic engineering, which will eliminate the sometimes grim determinism of heredity.

continued on page 16

continued from page 14

Conversely, humans' intelligence has enabled us to wreak havoc on other species. Tens of thousands of animals and plants have vanished because flourishing humans have survived and wittingly or unwittingly exploited, polluted, and injured the environment. Of course, a pathologic evolution may backfire on us, despite our highly evolved brain. However, humans may still adapt and survive, albeit in a dramatically altered, even inhospitable world. Or maybe not, as war and weapons of mass destruction appear to be unique inventions of the human brain.

Darwin's psychiatric challenges

What does this have to do with psychiatry? Disorders of thought, emotions, cognition, and volition are probably the price humans paid for a dramatically evolved brain. Evolutionary psychiatrists have linked these disorders to traits that may have survival value in carriers but cause maladaptive behaviors in some individuals.

Darwin's own struggles with disabling mental illness¹⁻⁵ are perhaps the most eloquent testimony that classic evolutionary principles may not apply to humans. His symptoms included panic attacks, agoraphobia, social anxiety, depersonalization, obsessions and compulsions, depression, suicidal impulses, visual hallucinations, and psychosomatic complaints (eczema, dizziness, and irritable bowel syndrome). Beginning in his 20s, he confined himself to his home for decades, undergoing futile interventions (such as water therapy) and taking antiquated remedies for his afflictions.

Yet Darwin's genius was never compromised by his lack of psychiatric or physical fitness. His explanation for evolution—which made him one of the most famous scientists of all time—emerged in the midst of and despite his overwhelming health problems.

Thus, Darwin's achievements embody the notion that the mutation that led to the hyper-developed human brain is the nemesis of evolution as he conceived it. He also serves as an inspiration to everyone who suffers from mental illness. His landmark contribution to science is a forceful rebuttal to anyone who regards psychiatric illness as synonymous with "lack of fitness."

Happy birthday, Darwin!



Henry A. Nasrallah, MD
Editor-in-Chief

References

1. Barlow N, ed. The autobiography of Charles Darwin, 1809-1882. London, UK: Collins; 1958.
2. Colp R Jr. To be an invalid: the illness of Charles Darwin. Chicago, IL: The University of Chicago Press; 1977.
3. Desmond A, Moore J. Darwin: the life of a tormented evolutionist. New York, NY: Warner Books; 1991.
4. Barloon T, Noyes R. Charles Darwin and panic disorder. JAMA. 1997;277(2):138-141.
5. Picover CA. Strange brains and genius: the secret lives of eccentric scientists and madmen. New York, NY: Quill William Morrow; 1998.

Department Editors

William P. Carter, MD

Assistant Professor of Psychiatry
Harvard Medical School at McLean Hospital

Dale D'Mello, MD

Associate Professor
Michigan State University

Leslie P. Lundt, MD

Affiliate Faculty
Idaho State University, Pocatello

Douglas Mossman, MD

Associate Program Director
University of Cincinnati College of Medicine

Lorraine S. Roth, MD

Assistant Professor of Psychiatry
Rosaling Franklin University of Medicine and Science

Editorial Staff

EDITOR Alice V. Luddington, ELS

SENIOR EDITOR Jeff Bauer

SENIOR ASSOCIATE EDITOR Erica Vonderheid

Art & Production Staff

DESIGN DIRECTOR Jonathan S. Bernbach

SENIOR ART DIRECTOR Naina S. Lal

ART DIRECTOR Carl F. Menz

PRODUCTION SUPERVISOR Gayle Graizzaro

PREPRESS MANAGER Robert Thatcher

SENIOR PRODUCTION MANAGER Donna Pituras

PRODUCTION COORDINATOR Lee Schweizer

Publishing Staff

SENIOR VICE PRESIDENT, GROUP PUBLISHER

Jennifer J. Day

PUBLISHER Kenneth A. Sylvia

NATIONAL SALES MANAGER Sharon J. Spector

MARKETPLACE ACCOUNT MANAGER Julian Knight

ADVERTISING SALES COORDINATOR Maria Walsh

SENIOR WEB EDITOR Peter A. Kelly

WEB DEVELOPER Jaclyn Siegelski

VICE PRESIDENT, SPECIAL PROGRAMS Cathy Herbert

DIRECTOR OF EVENTS David Small

CONFERENCE MARKETING MANAGER Kathy Wenzler

AUDIENCE DEVELOPMENT DIRECTOR Ken Robinson

AUDIENCE DEVELOPMENT MANAGER Brian Galletta

REPRINTS MANAGER Dina Conway

Editor-in-Chief Emeritus

James Randolph Hillard, MD

Officers of Dowden Health Media, Inc.

CHAIRMAN Carroll V. Dowden

PRESIDENT J. Roger Friedman

PRESIDENT, PROFESSIONAL DIVISION

AND CUSTOM MEDIA Robert J. Osborn, Jr.