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UNIT 1 Evolutionary Perspectives

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- 1. Was Darwin Wrong?**, David Quammen, *Online Extra, National Geographic Magazine*, November 2004
Evolutionary theory is not just an ephemeral guess, but is **a well-established set of concepts** that has come to be critically important to **human welfare, medical science**, and **understanding the world around us**. 2
- 2. The Facts of Evolution**, Michael Shermer, from *Why Darwin Matters*, Henry Hold & Co., 2006
Evolutionary theory is rooted in a rich array of data from the past. While the specifics of evolution are still being studied and unraveled, the general theory is the **most tested in science**, tests spanning the past century and a half. 8
- 3. Evolution in Action**, Jonathan Weiner, *Natural History*, November 2005
More than 250 scientists around the world are **documenting evolution in action**. Some of the most dramatic cases are those that result from the **ecological pressures** that human beings are imposing on the planet. 15
- 4. The Other Darwinism**, Franz de Waal, from *The Age of Empathy*, Harmony Books, 2009
Some have interpreted Darwin's **theory of natural selection** as a validation of dog-eat-dog **laissez-faire capitalism**. Franz de Waal cautions that while competition is a factor in how evolution works, so are **cooperation and empathy**. 19
- 5. The Latest Face of Creationism**, Glenn Branch and Eugenie C. Scott, *Scientific American*, January 2009
Creationists have long **battled against** the **teaching of evolution** in the classroom. Because of a series of **legal setbacks**, their **strategies** have had to evolve from promoting their own perspective to **undermining science literacy**. 26
- 6. Why Should Students Learn Evolution?**, Brian J. Alters and Sandra M. Alters, *Defending Evolution in the Classroom*, Jones & Bartlett Publishers, Inc., 2001
In explaining how organisms of today got to be the way they are, the **evolutionary perspective** helps us to make sense of the **history of life** and explains relationships among species. It is an **essential framework** within which scientists organize and interpret **observations**, and make **predictions about the living world**. 32



UNIT 2 Primates

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- 7. The 2% Difference**, Robert Sapolsky, *Discover*, April 2006
Now that scientists have decoded the **chimpanzee genome**, we know that we share **98% of our DNA with chimps**. So how can we be so different? The answer lies in the fact that a **very few mutations** make for some **very big differences**. 39

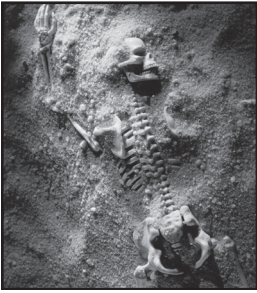
The concepts in bold italics are developed in the article. For further expansion, please refer to the Topic Guide.

8. **The Mind of the Chimpanzee**, Jane Goodall, from *Through a Window*, Houghton Mifflin, 1990
It has long been recognized that the differences in anatomy and physiology between apes and humans is only a matter of degree. Because of the work of Jane Goodall, we have come to realize that there is continuity in the **mental** and **emotional developments** as well. 42
9. **Got Culture?**, Craig Stanford, from *Significant Others*, Basic Books, 2001
The study of the **rudimentary cultural abilities** of the **chimpanzee** not only sharpens our understanding of our uniqueness as humans, but it also suggests an **ancient ancestry** of the **mental abilities** that we and the chimpanzees have in common. 47
10. **Dim Forest, Bright Chimps**, Christophe Boesch and Hedwige Boesch-Achermann, *Natural History*, September 1991
Contrary to expectations, forest-dwelling **chimpanzees** seem to be more committed to **cooperative hunting** and **tool use** than are savanna chimpanzees. Such findings may have implications for the understanding of the course of human evolution. 51
11. **Thinking Like a Monkey**, Jerry Adler, *Smithsonian*, January 2008
Sometimes, rather than simply observing primates, researchers try to decipher their **thoughts and intentions** by subjecting them to **experimental trials**. In this case, the issue has to do with whether **rhesus monkeys** have a **theory of mind**. 55
12. **Why Are Some Animals So Smart?**, Carel Van Schaik, *Scientific American*, April 2006
Observations of **orangutans** in the wild show that the more individuals have an **opportunity to learn from one another**, the more **innovative** and **intelligent** they become. 59
13. **A Telling Difference**, Stephen R. Anderson, *Natural History*, November 2004
Some animals, such as the bonobo named **Kanzi**, have amazing **communication skills**, but evidence that they are capable of **abstractions and grammatical structuring** like humans is lacking. 64



UNIT 3 Sex and Gender

- Unit Overview 68
14. **What Are Friends For?**, Barbara Smuts, *Natural History*, February 1987
An understanding of **friendship bonds** that exist among baboons is not only destroying our stereotypes about monkeys in the wild, but is also calling into question the traditional views concerning the **relationships** between the **sexes** in early hominid evolution. 70
15. **Face-Offs of the Female Kind**, Marina Cords, *Natural History*, September 2008
Among the **blue monkeys** of Western Kenya, **territorial battles** reveal some rather peculiar group dynamics. For one thing, **females fight far more often than males** and for another, **the higher the rank, the more they seem to depend on those at the bottom** when the group splits into two. 76
16. **What's Love Got to Do with It?: Sex among Our Closest Relatives Is a Rather Open Affair**, Meredith F. Small, *Discover*, June 1992
The **bonobos'** use of sex to reduce tension and to form **alliances** is raising some interesting questions regarding human evolution. Does this behavior help to explain the origin of our **sexuality**? Or should we see it as just another primate aberration that occurred after the split from the human lineage? 80
17. **Mothers and Others**, Sarah Blaffer Hrdy, *Natural History*, May 2001
In many species, including our own, **mothers are assisted** in rearing their offspring by others. The more we adhere to this evolutionary heritage of **"cooperative breeding,"** the more likely we are to raise **emotionally healthy children**. 84



UNIT 4

The Fossil Evidence

Unit Overview

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18. **The Woman Who Shook up Man’s Family Tree**, Donald C. Johanson and Kate Wong, from *Lucy’s Legacy*, Harmony Books, 2009

Don Johanson and Kate Wong show that **the search for fossil hominids** is a daunting task. It requires sufficient financial support, access to promising **research sites** in remote areas, **collaboration** among a variety of specialists, **physical endurance** and that most elusive quality of all—**sheer luck**.

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19. **The Human Family’s Earliest Ancestors**, Ann Gibbons, *Smithsonian*, March 2010

A rare hominid skeleton from 4.4 million years ago displays some surprising features, such as a skull and pelvis that hint at **upright walking** combined with hands and feet that show **a facility for climbing trees**. Is she our direct ancestor or an early offshoot?

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20. **Scavenger Hunt**, Pat Shipman, *Natural History*, April 1984

Microscopic analyses of tooth wear and cut marks on bones, combined with an increased understanding of the advantages of **bipedalism**, point in the direction of a **“Man the Scavenger”** model rather than **“Man the Hunter.”**

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21. **The Scavenging of “Peking Man,”** Noel T. Boaz and Russell L. Ciochon, *Natural History*, March 2001

Dragon Bone Hill in China is the site of the cave that yielded the first, and the still largest, cache of fossils of **Homo erectus pekinensis**. In the process of applying **new methods of analysis** to the evidence, the authors try to determine whether these relatives of ours used **fire**, and whether they were **cannibals, hunters, or the hunted**.

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22. **Missing Persons? Missing No Longer**, Richard Dawkins, from *The Greatest Show on Earth*, Free Press, 2009

As the **fossil record for human evolution** becomes more complete, it is increasingly difficult to pigeonhole particular specimens into **discrete categories**. This is as it should be, says Dawkins, for it means that, contrary to the claims of Creationists, **most of the important “missing links” have been found**.

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UNIT 5

Late Hominid Evolution

Unit Overview

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23. **Hard Times among the Neanderthals**, Erik Trinkaus, *Natural History*, December 1978

In spite of the coarseness of their lifestyle and the apparent **violence** between individuals, **Neanderthal** skeletal remains reveal a prehistoric record of affection and respect, and they should be accorded the status of **human beings**.

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24. **Rethinking Neanderthals**, Joe Alper, *Smithsonian*, June 2003

Contrary to the widely held view that **Neanderthals** were evolutionary failures, the fact is that they persisted through some of the harshest climates imaginable. Over a period of 200,000 years, they had made some rather **sophisticated tools** and have had a **social life** that involved taking care of the wounded and burying the dead.

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25. **Twilight of the Neanderthals**, Kate Wong, *Scientific American*, August 2009

With their large brains and enormous strength, **Neanderthals** were well suited to the rigors of hunting ice age mammals. But as the **climate changed** and a **new kind of human appeared** on the landscape, their numbers dwindled and **they could no longer compete**.

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26. **The Great Human Migration**, Guy Gugliotta, *Smithsonian*, July 2008
Although **modern humans** made **forays out of Africa** much earlier, they did not actually penetrate Western Europe until about 40,000 years ago, as the last pockets of **Neanderthals dwindled to extinction**. 139
27. **The Birth of Childhood**, Ann Gibbons, *Science*, November 14, 2008
Unlike our closest relatives, the apes, **humans depend on their parents for a long period** after weaning. **New investigative technology** has allowed researchers to determine **when and why our long childhood evolved**. 144
28. **The Brain**, Carl Zimmer, *Discover*, November 2008
Facial expression is not simply a form of **communication** that can be traced back through our primate ancestry. Nor are the facial muscles themselves simply rooted in our fish ancestry. One of the most startling findings gained from recent research is that **making faces helps us understand what other people are feeling**. 148
29. **The Cook's Body**, Richard Wrangham, from *Catching Fire*, Basic Books, 2009
Many of the **physical features that characterize modern humans** and that set us apart from our Australopithecus ancestors, such as our smaller jaws, can only be explained, says Wrangham, not by the **Man the Hunter** theory, but, rather, by the **Cooking hypothesis**. 151
30. **The Naked Truth**, Nina G. Jablonski, *Scientific American*, February 2010
Recent findings lay bare the **origins of human hairlessness** and hint that naked skin was a key factor in the emergence of other human traits, such as the **ability to cover long distances in the pursuit of food**. 156



UNIT 6 Human Diversity

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31. **Can White Men Jump?: Ethnicity, Genes, Culture, and Success**, David Shenk from *The Genius in All of Us*, Doubleday, 2010
Clusters of **ethnic and geographical athletic success** prompt **suspicions of hidden genetic advantages**. **The real advantages are much more cultural**, more nuanced, and less hidden. 164
32. **Skin Deep**, Nina G. Jablonski and George Chaplin, *Scientific American*, October 2002
Although recent **migrations** and **cultural adaptation** tend to complicate the picture, **human skin color** has evolved to be dark enough to prevent sunlight from destroying the nutrient **folate**, but light enough to foster the production of **vitamin D**. 168
33. **How Real Is Race?: Using Anthropology to Make Sense of Human Diversity**, Carol Mukhopadhyay and Rosemary C. Henze, *Phi Delta Kappan*, Volume 84, Issue 9, 2003
The authors claim that **race is not a scientifically valid biological category**. Instead, looking at it as a historically specific way of thinking about categorizing and treating human beings, **race can be seen as a cultural invention**. 172
34. **The Tall and the Short of It**, Barry Bogin, *Discover*, February 1998
Rather than being able to adapt to a single environment, we can—thanks to our **genetically endowed plasticity**, change our bodies to cope with a wide variety of environments. In this light, research suggests that we can use the average **height** of any group of people as a barometer of the **health** of that particular society. 180
35. **Body of Evidence: The Dead Man's Story**, Doug Hanson, *Law Enforcement Technology*, July 2005
There is an increasing need for **forensic anthropology** in **law enforcement** and, in particular, the **crime scene investigation**. Anthropological expertise and professional testimony can greatly increase the strength of a legal case once a suspect has been brought to trial. 184

The concepts in bold italics are developed in the article. For further expansion, please refer to the Topic Guide.

36. **Dead Men Do Tell Tales**, William R. Maples, from *Dead Men Do Tell Tales*, Broadway Books, 1994
 This classic piece by Maples maintains its relevance as a plea for the continued and expanded use of **forensic anthropology**. There are just too many **stories yet to be told** and so much **justice yet to be carried out**. 186



UNIT 7

Living with the Past

Unit Overview 190

37. **The Viral Superhighway**, George J. Armelagos, *The Sciences*, January/February 1998
 The modern world is becoming a **viral superhighway**. Environmental disruptions and international travel have brought on a new era of human illness, one marked by new diabolical **diseases**. 192
38. **The Perfect Plague**, Jared Diamond and Nathan Wolfe, *Discover*, November 2008
Globalization, **changing climate**, and the threat of **drug resistance** have conspired to set the stage for that **perfect microbial storm**: a situation in which an emerging pathogen—another HIV or smallpox perhaps—might burst on the scene and kill millions of people before we can respond. 197
39. **The Inuit Paradox**, Patricia Gadsby, *Discover*, October 2004
 The **traditional diet** of the Far North, with its **high-protein, high-fat** content, shows that there are no essential foods—only **essential nutrients**. 202
40. **Dr. Darwin**, Lori Oliwenstein, *Discover*, October 1995
 The application of **Darwin's theory of evolution** to the understanding of **human diseases** will not only help us better treat the symptoms of diseases, but also helps us understand how microbes and humans have evolved in relation to one another. 207
41. **Curse and Blessing of the Ghetto**, Jared Diamond, *Discover*, March 1991
Tay-Sachs disease is a choosy killer, one that targeted Eastern European Jews above all others for centuries. By decoding its lethal logic, we can learn a great deal about how **genetic diseases** evolve—and how they can be conquered. 211
42. **Ironing It Out**, Sharon Moalem, from *Survival of the Sickest*, HarperCollins, 2007
Hemochromatosis is a **hereditary disease** that disrupts the human body's **ability to metabolize iron**. To understand why such a deadly disease would be bred into our genetic code, we need to take a closer look at **European history**, the **bubonic plague**, and **medical practices that were discredited**. 216
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