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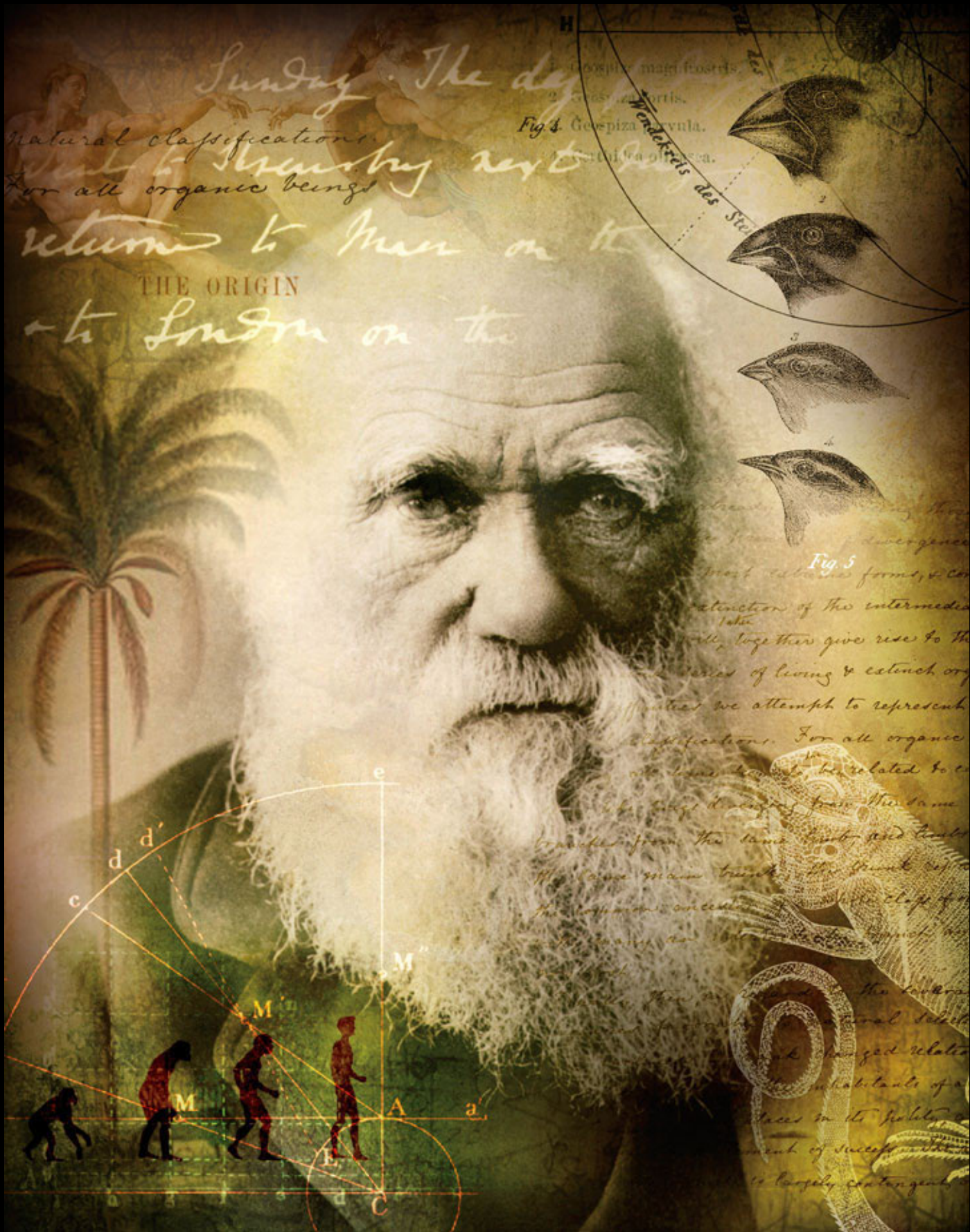


you feel uncomfortable
that down when you see
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forget my soul and
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Sunday. The day

Natural classifications.

For all organic beings

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THE ORIGIN

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Fig. 4. *Geospiza fortis*.

Geospiza fortis.

Geospiza fortis.

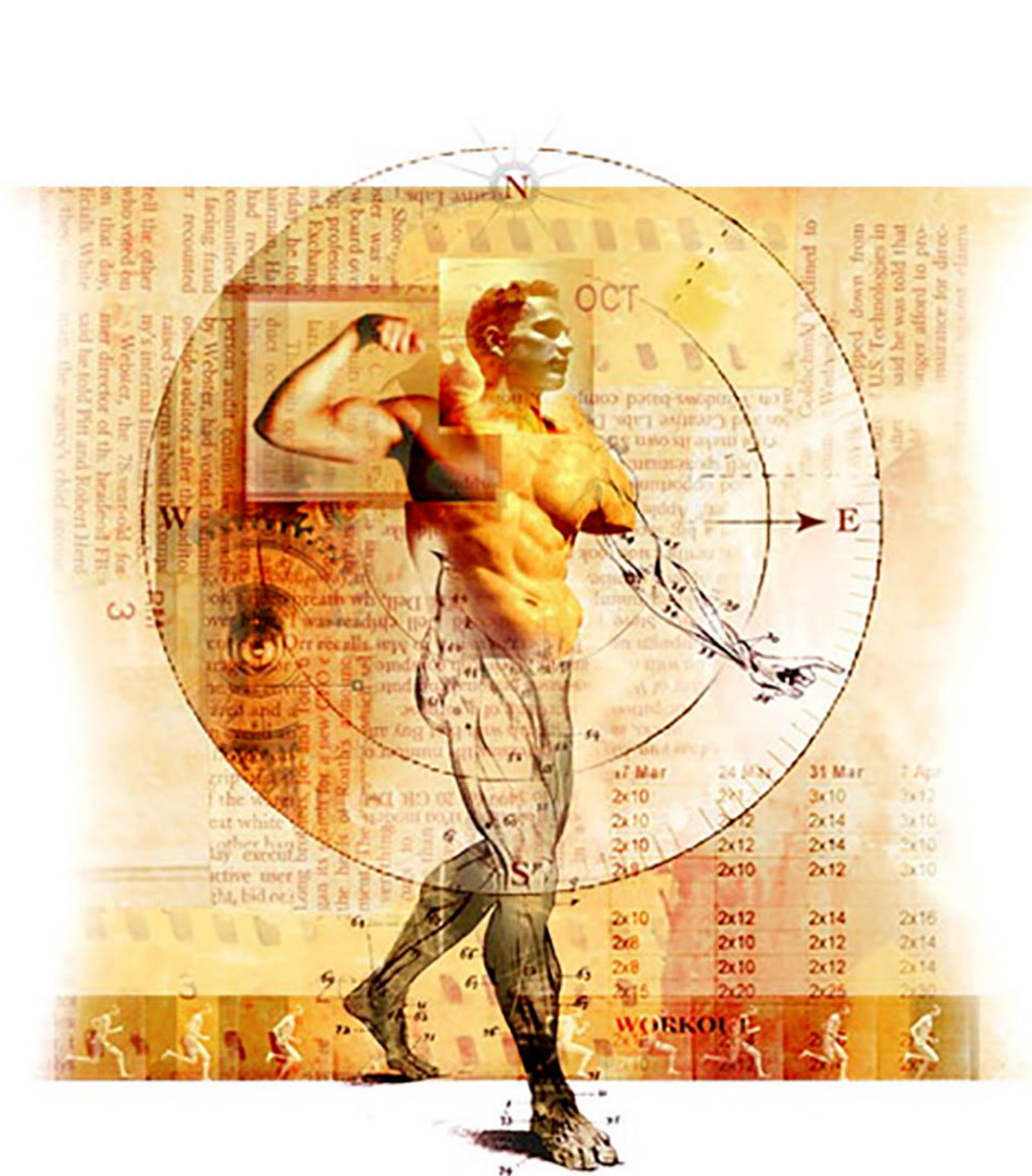
Fig. 5

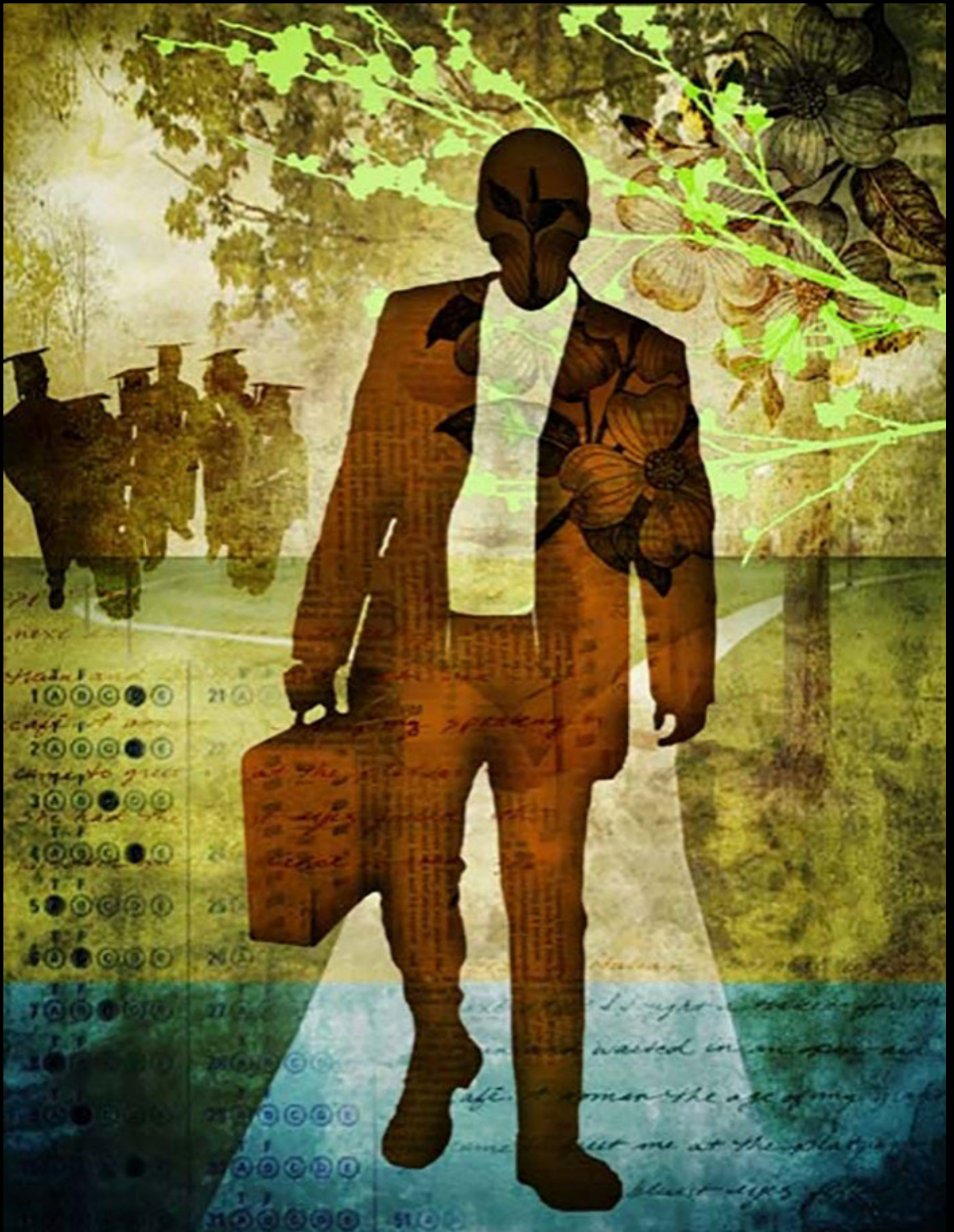














PROTECTION

















JITTERBUG

Waltz



And Other Stories

LAURA AUSTIN WILEY



DINNER *on the* MOON

And other Vignettes

LAURA AUSTIN WILEY

Adobe

After Effects CC

Visual Effects and Compositing

STUDIO TECHNIQUES

Mark Christiansen





Flexible IT, better strategy

John Seely Brown and John Hagel III

IT's critics say that it lacks strategic importance.
So why does technology keep getting in the way of good strategy?

Technology architecture is one subject guaranteed to make a chief executive's eyes glaze over. For many CEOs, the topic is mysterious. Even for those who understand technology better, it is a sore subject because today's IT architectures,¹ arcane as they may be, are the biggest roadblocks most companies face when making strategic moves.

Strategists have largely discredited classical notions of strategy formation. The empty biennial reviews of yesteryear are gone, superseded by "radical incrementalism,"² which emphasizes rapid waves of near-term (6- to 12-month) operational and organizational initiatives brought into focus by a shared view of a company's much longer-term (five- to ten-year) strategic direction. A quick sequence of focused incremental shifts can produce

¹An IT architecture is the overall structure of and interrelationships among the data, business logic, and interfaces of a company's computers and other hardware, applications, databases, operating systems, and networks.

²Radical incrementalism is related, but with crucial distinctions, to theories such as strategy by experimentation, the portfolio of initiatives, and time pacing. For radical incrementalism (discussed as "layered strategies"), see Chapter 9 of John Hagel III, *Out of the Box: Strategies for Achieving Profits Today and Growth Tomorrow through Web Services*, Boston: Harvard Business School Press, 2002; for strategy by experimentation, see Eric D. Beinhocker and Sarah Kaplan, "Tired of strategic planning?" *The McKinsey Quarterly*, 2002 special edition: Risk and resilience, pp. 48-57 (www.mckinseyquarterly.com/links/7473); for the portfolio of initiatives, see Lowell L. Bryan, "Just-in-time strategy for a turbulent world," *The McKinsey Quarterly*, 2002 special edition: Risk and resilience, pp. 16-27 (www.mckinseyquarterly.com/links/4916); for time pacing, see Kathleen M. Eisenhardt and Shona L. Brown, "Time pacing: Competing in markets that won't stand still," *Harvard Business Review*, March-April 1998, pp. 59-69. The key distinction between radical incrementalism and these other theories is that it emphasizes the need for a clear but high-level view of a company's longer-term (five- to ten-year) strategic direction to put more near-term initiatives, or "experiments," into context. Without this long-term context, the near-term initiatives begin to lose coherence.

Bytes and bits meet biotech

It takes supercomputers to decode biology, and tech firms are on the case

BY PAMELA SHERRID

The market for the most powerful supercomputers used to be dominated by America's weapons labs, where scientists use them to simulate nuclear explosions. But the atom is being overtaken by the genome—the genetic blueprint of humanity—and now it's the biologists, not just the bomb makers, who are demanding the fastest machines the tech companies can produce.

It's hard to find a kind word to say about the technology sector these days. But if there is life among the ruins, it is this: High tech and biotech are teaming up in big-dollar partnerships that could revive some ailing companies. More important, the combination of computing power and scientific know-how promises to untangle the secrets of genes and proteins, speeding the development of drugs that could treat cancers and a host of other diseases.

Even the weapons labs, of all places, are blessing the union: Sandia National Laboratories recently announced a business deal that would have been unthinkable a few short years ago. The lab, the path-breaking biotech company Celera Genomics, and the computer giant Compaq are teaming up to design the world's fastest computer, capable of performing 100 trillion operations per second, nearly 10 times as fast as today's state of the art.

Life science is the fastest-growing sector in the market for high-performance supercomputers already, and the real boom is yet to come. "DNA is digital information," says James Pierce, a professor at Philadelphia's University of the Sciences. "Life is an expression of information; that's why it's so beautifully adaptable to computers." The computer industry is adaptable, too. IBM is rushing to sell life-sciences companies everything from su-

percomputers to E-commerce tools, while the burgeoning market for biochips, tiny silicon wafers embedded with genetic material, has attracted high-tech powerhouses such as Motorola, Corning, and Agilent. In the new merger of infotech and biotech, biologists and drug companies will spur advances in computing power while computer geeks will play a pivotal role in the drive to treat disease.

Share the wealth. The marriage is also very much about money. High-tech companies are reeling these days from a fall-off in demand for everything from PCs to Web routers. Biotech is a safe haven. IBM estimates that worldwide sales of information technology in the life-sciences field could reach \$43 billion in just three years. The bounty will be shared across the infotech world, from makers of database tools such as Oracle Corp. to computer-storage giants such as EMC Corp.

The bonanza for infotech companies in life sciences, says Suresh Gunaskaran of Gartner Group, a computer-industry consultant, could rival opportunities of the past, like the personal computer and the Internet. "Life sciences will be a major part of our business," says George Turner, corporate vice president at Motorola, a company best known for its cellphones. But as makers of cellphones and Internet equipment know too well, companies can stumble even in a promising field.

The revolution, if events play out as hoped, will take place in the research labs of big drug companies and, eventually, in the doctor's office. Already information technology is changing the way drugs are discovered, and it promises to cut costs and shorten the time needed to bring promising medicines to market. Drug companies could not do without new software designed to organize, analyze, interpret, and store biological information.





BY PAMELA WEINTRAUB

THE ELECTROMAGNETIC RADIATION SURROUNDING US — ESPECIALLY FROM CELL PHONES — MAY POSE UNSEEN DANGERS TO OUR HEALTH. LEARN WHAT YOU CAN DO TO REDUCE YOUR EXPOSURE TO EMFs.

My Brooklyn neighborhood is one of the most historic in New York. Between the Guido Funeral Home — the destination of choice for many a Mafia send-off — the Gothic arches of St. Paul's Church, and the hundred-year-old brownstones, a time traveler from the past might be hard-pressed to see the forces, invisible to the eye, that are revolutionizing Brooklyn. They are the electromagnetic frequencies (EMFs) that move at the speed of light. They power not just an ever-expanding thicket of appliances and electric lights but more recently (and perhaps more ominously) a burgeoning network of cell towers, wireless routers and the ever-present cell phones that gird our lives.

While life in 2011 without cell phones and other wireless conduits has become unthinkable, a growing chorus has expressed concern about our immersion in EMFs, those invisible lines of force that surround all electrical devices — and increasingly, ourselves. We are being exposed "at a rate 100 million times greater than our grandparents were," notes Ann Looise Gittleman, Ph.D., author of *Zapped: Why Your Cell Phone Shouldn't Be Your Alarm Clock* and *1,268 Ways to Outsmart the Hazards of Electronic Pollution* (HarperOne, 2010).

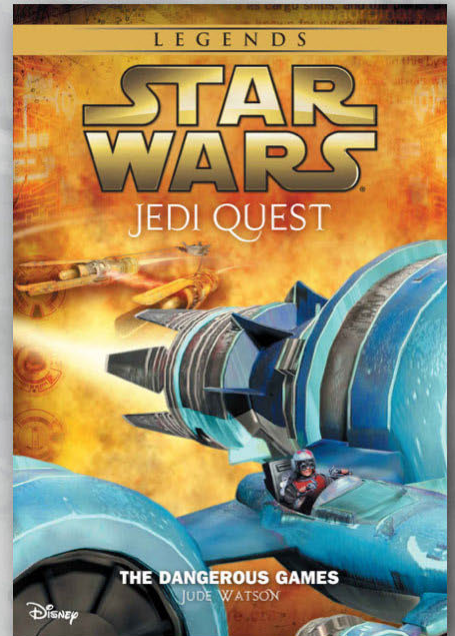
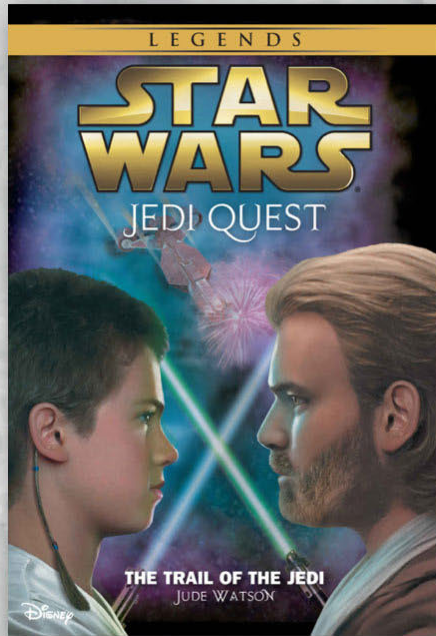
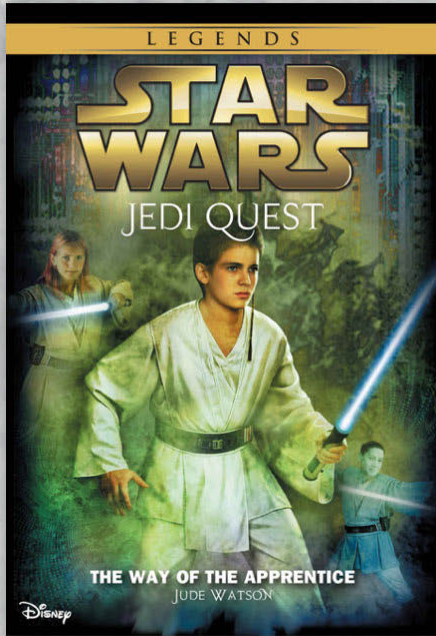
Worry only intensified this year after the World Health Organization (WHO) analyzed the data and called cell phones a possible carcinogen. The jury is still out on the range of possible

effects, but a raft of studies now link EMFs — especially those from cell phones carried close to our bodies — to brain tumors, damaged DNA, fertility problems, autism and attention deficit disorder (ADD). With cell phone usage surging from a hundred million people worldwide in 1997 to some 5 billion today, even small increases in risk could pose a serious global threat. The European Union has even warned that EMFs might bring about a health crisis comparable to those once spawned by smoking and asbestos.

The news, however, need not be that bleak. Although it's impossible to avoid exposure, simple changes are already lowering risk: The National Library of France has dismantled its wireless system. Germany has advised against wireless technol-

ogies in residential neighborhoods. Even Taiwan has dismantled hundreds of cell phone towers.

But when it comes to cell phones, change might have to come one person at a time. "Studies show people would rather leave home without their wallet than their cell phone. The cell phone has become an extension of the body," says Devra Davis, Ph.D., a longtime cancer researcher for the National Institutes of Health and president and founder of the Environmental Health Trust, an organization devoted to educating the public about controllable environmental health risks and policy changes needed to reduce them. According to Davis, "You can use cell phones safely so long as you don't keep them directly next to the body or brain."





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