of wonder and strangeness, and found that I belonged." There are other pavilions in the Giardini in which the artists seem to want to counter the surrounding brouhaha with the restorative calm of an aestheticized minimalism—Heimo Zobernig in the Austrian pavilion, Pamela Rosenkranz in the Swiss one—but Jonas succeeds on a larger scale than any of the rest in incorporating the world's noise and disorder, perhaps its ultimate decay, into an eerily discordant hymn to endangered life. ■

Star Stuff?

by MICHAEL SALER

Sapiens
A Brief History of Humankind.
By Yuval Noah Harari.
Harper. 443 pp. $29.99

In *Sapiens*, Yuval Noah Harari recounts how humans have developed from brutes to demigods in the course of their evolutionary history: a grand narrative, one would think, but he perceives it as a comic-tragedy, and details it with mordant humor. Even the book's subtitle, *A Brief History of Humankind*, is punning, making "Brief" the soul of wit. At slightly over 400 pages, the narrative is indeed concise, but *Sapiens* is also an extended brief about the suffering our species has caused itself and others. (The "historical record," he summarizes for his jury of readers, "makes *Homo sapiens* look like an ecological serial killer.") "Brief" is also used ironically, since *Sapiens* is manifestly "big" in key respects. Harari, an Israeli historian, may not have anticipated that his tome would become such a huge hit: Following its initial publication in Hebrew in 2011, it has become available in 26 languages, and the online lecture series derived from it has attracted 65,000 auditors. But Harari also knows that *Sapiens* is a characteristic work of "Big History," a relatively new field of research that spans everything from the Big Bang (which Harari mentions in his first sentence) to speculations about the future (which Harari offers in his last chapter).

Because *Sapiens* summarily dispatches over 13 billion years of cosmic and terrestrial history in its opening paragraphs, focusing instead on our species' trials and tribulations during the past 70,000 years, it might more accurately be defined as "Deep History," another recent approach to historiography that extends the historian's remit to the origins of the human species. Like Big History, Deep History views the lack of written records for human "prehistory" as an inspiring challenge to historians rather than an insurmountable obstacle, one that can be overcome by recent scientific findings and techniques. Both subfields have provoked controversy, but even more excitement, within and outside of academia. (Bill Gates has committed some of his personal fortune to institutionalizing Big History in high schools: See his bighistoryproject.com.) Deep History has brought historians and biologists into mutually beneficial conversations, both hoping to promote a degree of consilience while avoiding the reductive conclusions that plagued sociobiology in earlier decades, to say nothing of earlier pseudosciences like phrenology and eugenics. Histories Big or Deep by David Christian, Daniel Lord Smail, Jared Diamond, Ian Morris, and others have appealed to lay and professional audiences alike, especially over the past 10 years.

The similar global success of *Sapiens* raises the question: Why are works covering such vast timescales popular today, when in other respects we remain fixated on the hyperpresent, as manifested in tweets, instant news updates, and high-tech innovations that come so swiftly they have made "planned obsolescence" itself obsolete? One answer is that the Internet's surfeit of information prompts a craving for the orientation provided by large narratives, those user-friendly global and historical positioning systems of the mind. These fell out of fashion in the heyday of postmodernism, when claims to objectivity and universality were regularly attacked for being subjective and self-interested. Contemporary "metanarratives," however, tend to be more conscious of their status as provisional guides rather than God's-eye views. And the new availability of Big Data and visualization tools for tracking patterns over time and space, such as Google's Ngram Viewer and Stanford's "Mapping the Republic of Letters" project, gratify this hunger for temporal and spatial bearings in handy ways.

Through the ubiquity of such tools, scholars and laypeople alike are slowly being acclimatized to thinking in the long term, an outlook encouraged by Jo Guldi and David Armitage in *The History Manifesto* (2014). They argue that an emphasis on what the historian Fernand Braudel called the *longue durée* back in 1958 is now the approach best suited to a world awash in data of extended times and climes. Critics of *The History Manifesto* reasonably point out that while Big and Deep may be appealing, even seductive, size matters: Extra-large will not fit all, and specific historical questions will always determine the scope and method of investigation. Yet the existence of the debate itself (quite lively on Twitter, of all places) is testimony to the reincarnation of Braudel's project.

In an age desperate to transform the raw data of information into knowledge and perhaps spiritual meaning, Big History's holistic, materialist, and secular orientations promise more than intriguing patterns. The human story becomes sublime when situated within such a vast, naturalistic framework. Big and Deep histories evoke a sense of wonder by tracing our genealogies back to those cosmic forces that continue to resonate in our everyday lives, as well as to those transforming periods in human existence that likewise have an occult influence on our actions today. (Noting that more than 90 percent of our diet comes from food sources domesticated between 9500 and 3500 BC, Harari observes: "If our minds are those of hunter-gatherers, our cuisine is that of ancient farmers.") Carl Sagan famously proclaimed that "We're made of star stuff." Big and Deep histories remind us that we are also the stuff of forager bands, agricultural settlers, and scientific creator-destroyers. This panoramic origin story amounts to a thoroughly modern myth—empirically valid, analytically plausible, but still a myth. Its creators follow the prescriptions of two former presidents of the American Historical Association, Carl Becker and William H. McNeill, both of whom argued that historians are contemporary bards. (McNeill, a proponent of the *longue durée*, called his 1985 address to the AHA "Mythistory.")

It requires a deep breath to chant a rough summary of this big myth: In the beginning, a cosmic singularity generated the laws of physics, which governed the creation of the stars, which produced the chemical elements that contributed to the creation of Earth and the appearance of life, which was subject to the blind evolutionary processes that led eventually to *Homo sapiens*, whose singular capacity for collective learning enabled it to invent ingenious techniques for harnessing

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energy, which may ultimately result in its self-destruction or its transformation into a whole different species. Darren Aronofsky's *Noah* (2014) marvelously brought aspects of this IMAX-sized myth to life in an animated sequence of the creation story in the Book of Genesis. A self-described atheist, the director imbued the film with modern cosmological and evolutionary themes (and accurately defined *Noah* as "the least Biblical Biblical film ever made"). Indeed, the movie is more of an indirect testament to the mythic allure of Big History than to the Old Testament on which it was based.

In charting these trends and selecting illustrative details, Big and Deep historians do not exclude history's traditional emphasis on human agency and contingency. But they do insist that human history, no less than natural history, is partly explicable by elemental forces and processes. Traditional categories of historical analysis, such as class, gender, and ethnicity, are joined by concepts like energy, gravity, complexity, chaos, and entropy—terms that these historians use both literally and figuratively to find meaning in the *très longue durée*.

Identifying humans not only as national citizens and global subjects, but also as denizens of nature and the products of cosmic evolution, Big and Deep historians refuse to confine themselves to the past. Their emphasis on lengthy trends practically mandates that they speculate about where we might be headed; their scientific framework serves them well in contemplating near- and long-term possibilities. (You could call it the Deep Future.) This is an imaginative luxury considered off-limits to most historians, and another appealing feature of the *longue durée*. (It's telling that one early precursor, 1920's *The Outline of History*, was written by that spinner of "scientific romance," H.G. Wells.) Christian's *Maps of Time* (2005), Morris's *Why the West Rules—for Now* (2010), and Harari's *Sapiens* all provide potential ends as well as beginnings to human history, each citing works of science fiction alongside science fact. (Morris's book relishes science fiction, borrowing concepts from Isaac Asimov and Robert Heinlein; it also includes a photo of himself as a boy, clutching a Dalek.)

But there's a lurking danger to the Big and Deep embrace of broad patterns: Sharp outlines can obscure outliers, and quantification can overwhelm qualification. While recent historians of the *longue durée* have avoided the explicit metaphysical commitments of earlier conjectural historians like Hegel, Spengler, and Toynbee, they are not immune to the seductive temptations of reductive laws and neat models. They can be implicitly teleological in their visions, finding that the "natural" course of history gravitates toward more complex societies and a unified world. Plausible empirical arguments can be made for these general trajectories, of course, but there's a risk that complex, contingent events will be subtly cast as ineluctable historical schemas. Diamond's *Guns, Germs, and Steel* (1997) has been accused of "geographic determinism" (a charge its author denies), and Morris's emphasis on the interplay of geographic and sociocultural factors ultimately led him to favor "maps, not chaps." All historians struggle with balancing chance and constraint in their interpretations, but the commanding view from on high produced by the *longue durée* risks seeing history as a lot less slovenly than it may well be.

Big and Deep histories also address some of the more alarming contents of those perpetual tweets and news flashes, such as environmental destruction. By effacing many of the distinctions between human and natural histories, these writers question the anthropocentrism of traditional historical accounts. They situate humans among other species in the biosphere, highlighting their interrelationships, and effectively limn the tremendous impact that we have had on the environment—especially in the past 200 or so years, as a result of the Industrial Revolution. Harari, for example, dwells on the multiple extinctions caused by *Homo sapiens* over the course of history, a record he and others consider as devastating as the meteor impact that wiped out the dinosaurs 65 million years ago. "We have the dubious distinction of being the deadliest species in the annals of biology," he insists. "If we knew how many species we've already eradicated, we might be more motivated to protect those that still survive." Here, the Big and Deep historical stress on the interplay between nature and culture provides a qualified measure of hope for our future. Humans are shown to be Nietzsche's predatory beasts, impelled by instinctual drives, but they are also revealed as his *Übermenschen*, capable of overriding many of these drives through collective learning and adaptation.

All of these factors account for the popularity of Big and Deep works like Harari's. *Sapiens*, however, also became a phenomenon because it is a punchy digest of more nuanced and detailed studies. Harari is a lucid, charming writer, capable of encapsulating difficult concepts and complex stories and spinning them into a masterful synthesis. Ironically, the apparent simplicity of his account might lead some to dismiss *Sapiens* as not-so-Deep History. The book's trappings encourage such a snap judgment: *Sapiens* lacks a bibliography, and its scanty references barely acknowledge alternate or dissenting views. Harari can be cavalier about these, stating loftily at one point: "I don't mean to claim that there is no exception to this rule. A good historian can find precedent for everything. But an even better historian knows when these precedents are but curiosities that cloud the big picture."

He can also be contradictory and, at times, facile. While acknowledging that there are no determinate laws in history ("history is what is called a 'level two' chaotic system"), Harari proffers a few "iron laws" of his own and asserts that human history ultimately does have a pattern, "an inexorable trend towards unity." Some of his formulations are so breezy that tufts of truth waft away. Describing the collapse of the Soviet empire in 1989, he asserts that when the elites in Moscow and the Eastern bloc (with the exception of Romania and Serbia) "realised that Communism was bankrupt, they renounced force, admitted their failure, packed their suitcases and went home." This would surprise Mikhail Gorbachev, who believed at the time that communism could be reformed.

Deep History is not immune to the temptations of reductive laws and neat models.

But those who dismiss *Sapiens* as just another installment of "History for Dummies" would be mistaken. Harari's synthesis is hard-won: He has read widely, even if his citations don't always reveal this, and his occasional glibness is a calculated strategy. Many of his grand pronouncements are followed by some reassuring version of "In fact, things were never quite that simple." He intends to entertain, while posing serious questions worth entertaining. *Sapiens* will fascinate teenagers and adults alike, and it may be one of the few nonfiction books to have the crossover appeal of much of today's "YA" fiction. (There is plenty of adolescent humor: Harari illustrates a point about how culture can trump biology by captioning a picture

of Pope Francis, "The Catholic alpha male abstains from sexual intercourse and raising a family, even though there is no genetic or ecological reason for him to do so.")

Readers will learn about the major events in human history that transformed "an insignificant animal" into one that "stands on the verge of becoming a god." Harari focuses on three revolutions: the Cognitive Revolution 70,000 years ago, in which *Homo sapiens* developed the capacity for symbolic communication; the Agricultural Revolution 12,000 years ago, which led to the rise of populations, empires, extended trading networks, and unifying "imaginary orders" like religion and money; and the Scientific Revolution 500 years ago, which became intertwined with the growth of capitalism and imperialism—galvanizing globalization, the increased production and use of energy, and environmental ruin. Within these turning points, he discusses the origins and developments of animist, polytheist, and monotheist religions, as well as the ideologies (which he believes are no less "religious") of liberalism, capitalism, communism, and Nazism. He muses that, if we do not destroy ourselves first, we are likely to replace evolution by natural selection with evolution by our own "intelligent design," re-creating ourselves as a new species with the superpowers and longevity of gods.

Sapiens, then, can best be appreciated as a quirky essay by a moralist who embraces both Big and Deep History and uses them to raise large and profound questions. Harari accomplishes exactly what Guldi and Armitage recommend in their manifesto for historians: "Renewing the connection between past and future, and using the past to think critically about what is to come." In this light, his simplifications have a serious purpose and can be thought-provoking. He has a gift for memorable apothegms: Money, he argues, may be decried as the root of all evil, but it is also "the apogee of human tolerance," given that it's "the only trust system created by humans that can bridge almost any cultural gap, and that does not discriminate on the basis of religion, gender, race, age or sexual orientation." (Nor does he ignore the "dark side" of money's ability to translate everything into its soulless and instrumental standard.) Harari also has a fresh way of encapsulating the Scientific Revolution, seeing it as "a revolution of ignorance" rather than of knowledge: "Modern-day science is a unique tradition of knowledge, inasmuch as it openly admits *collective* ignorance regarding *the most important questions*." Modern European imperialism was affected by this new outlook, which he effectively demonstrates by comparing two maps from the 15th and 16th centuries. The former is replete with imagined geographic details about areas such as Africa, of which the Europeans actually had little knowledge, while the latter is largely empty, challenging its early-modern viewer to question, explore, and appropriate.

As the author of a history of imaginary worlds and the increasing acceptance of the imaginary in modern life, I was especially struck by Harari's emphasis on the centrality of fictions and the imagination to human history. Western culture has long been suspicious of the imagination, for centuries defining it as inferior to reason and potentially dangerous to established order. Beginning in the late 18th century, the imagination was gradually reclaimed by Western thinkers, artists, and the public. It is now understood to be inextricable from reason—an insight provided by Sherlock Holmes, and one reason for his iconic status—and is pervasive in the media. Yet it's remarkable how little credit or attention the imagination receives as a force in history. Harari may simplify a complex, ambiguous, and highly variable theme, but he has captured an essential truth.

What others have seen as *Homo sapiens*'s unique capacity for symbolic communication, and have described in terms of "social constructions" and "imagined communities," Harari presents simply as "stories," "myths" about "imagined orders." He extends those terms to cover everything that is not the natural world as described by science. While constrained by biology and physics, our species coexists in imaginary worlds of its own devising. He argues that fictions foster social cooperation and rapid cultural evolution, promoting our outstanding ability to adapt and innovate:

> Sapiens have thus been living in a dual reality. On the one hand, the objective reality of rivers, trees and lions; and on the other hand, the imagined reality of gods, nations and corporations. As time went by, the imagined reality became ever more powerful, so that today the very survival of rivers, trees and lions depends on the grace of imagined entities such as the United States and Google.

Thus fictions also foster false hierarchies, maladaptive behaviors, and oppressive social relations. "Biology enables, Culture forbids" is Harari's pithy explanation for sociocultural inequities. "One good reason to study history" is that it exposes the power struggles that turned "figments of imagination" into frequently repressive social structures. For those who worry that historians of the Big and Deep will fall prey to deterministic views or other sins of scientism, Harari is a welcome exemplar of a historian who uses the *longue durée* to stimulate counterfactual thinking and the search for alternatives to the status quo. He is a "Mythistorian" in McNeill's sense, affirming that "We study history not to know the future but to widen our horizons, to understand that our present situation is neither natural nor inevitable, and that we consequently have many more possibilities before us than we imagine."

Harari reserves his largest question for the end of his account, though it is foreshadowed by a litany of complaints about the course—for him, curse—of human history. He doesn't romanticize the many millennia we've spent as foragers, but he does side with those who believe that this period witnessed "a more comfortable and rewarding lifestyle" than the succeeding Agricultural Revolution, "history's biggest fraud." Perhaps following Newton's laws, things go rapidly downhill from there. In our own period, economic inequalities suggest that "the growth of the modern economy" might likewise turn out to be another "colossal fraud." Harari acknowledges that there has been a reduction over time in childhood mortality, famine, disease, and military conflict; average life spans have increased alongside calorie intakes. Yet "the Sapiens regime on earth has so far produced little that we can be proud of." Advances in science may allow us to transform ourselves into *Homo superior*. Being designed by us, however, these future entities are likely to be as restless and dissatisfied as their forebears.

Harari's key Big and Deep question is this: What do we really desire? Is there a way to attain human happiness, or even to know what it is? His numerous references to Buddhism, and his acknowledged interest in meditation practices, suggest that the Buddhist concern for suffering and its alleviation through the cessation of endless desires informs his interpretation of history's vicissitudes. At its core, *Sapiens* argues that we don't know ourselves, let alone recognize the needs of other species. We have too often been misled by our own fictions. History is also a fiction, but one tempered by fact and argument: a form of myth—a useful fiction—that can yield the enlightenment of self-knowledge. The original title of Harari's book was *From Animals Into Gods*, but *Sapiens* is a better one: It means wisdom. ■