

Zero

IF YOU ARE READING THIS, as I am writing, in the first quarter of the 21st century, you live with me in a vast construction site we call “the Internet,” where a new form of human society is being built. If you are reading later—in or after the last quarter of the 21st century—it is over. The human race has entered the fourth era of its history. Humankind is now radically different. No one alive remembers what it was like to be human in the mid-20th century, when I was born.

The human race has changed, fundamentally, twice before on the way here. We have, to be sure, set up all sorts of graduation marks in the long history of humanity, from *homo habilis* to the onset of the Anthropocene. But, most generally, two things have happened to us. First, we gained—somewhere along the way that we cannot find in evidence dug from the ground, but perhaps two hundred thousand years ago—articulate spoken language. Second, some five thousand years ago, we began to write.

What has made us who we are is our ability to teach one another. We have thus ensured the inheritance of acquired characteristics, a process which defines culture. We have taught ourselves to work together, flexibly. We have evolved in Lamarckian fashion, at the speed of light compared to natural selection. Acquiring first speech and then writing enabled us, in two spectacular jumps, to transform the social process of teaching. Speech and writing successively created new sinews holding together the collective body of learning and behavior in each human community. Writing added durability and mobility to communication, vastly enlarging the geographic range of possible social organization. Writing enabled the state.

Now, at the beginning of the 21st century, we are undergoing a third fundamental alteration in our capacity to transmit knowledge. The transition to the fourth era of human history will be much more rapid than our previous leap into writing, just as that jump far outdistanced the pace at which humans adapted to the onset of complex articulate speech. The potential of universal persistent interconnection, as well as the possibility of perfect despotism; the elimination of ignorance and the transformation of work; the economy of attention and surveillance; the redefinition of the very purpose of human thought—all these profound and basic challenges to our understanding of human identity and society are already before us. We will be swept into those conundrums before we have fully registered their existence, let alone comprehended them.

Our modes of transmitting knowledge are also the fundamental mechanisms of power. We say we “empower” young people when we make them literate, teach them the skills necessary to make a living and express their ideas, needs and demands in the world. Those of us who make our living teaching are particularly aware that the learning relationship always channels, creates, sometimes abuses, power. But the most comprehensive and profound structures of power—power of the few over all others, reinforced by latent or actual violence and contested by symbolic or physical struggle—is also defined by our modes of teaching one another. Just as articulate complex speech turned the forms of primate dominance hierarchies within a small band of individuals—visible in our near-human cousins like chimp and bonobo—into the immensely more powerful social organization of the tribe, and writing then enabled tribes to evolve into states, the transformation through which we are passing

in this lifetime will ultimately result in a completely new form of social power, within which all individuals will develop and exist.

Just as even the earliest of states achieved degrees of physical extent and regulatory complexity literally beyond the imagination of tribal people unaided by writing, the extent and complexity of the organizations enabled by the networking of the species now going on are qualitatively different from the states, empires, and international organizations humanity has known for the last several thousand years. Primitive forms of networked organization already surveil, correlate, analyze and affect the personal behavior of billions of individuals, by direct intervention, trillions of times a day. Within two generations, these primitive forms of large-scale social control will have matured within the species-wide nervous system we are building. Every human mind will then develop, from birth to death, in direct connection to the Net. No forms of social power have ever existed that could aspire to the reach, or the intensity of effect, the Net itself will then wield, on behalf of whatever entities control the behavior of the Net that controls us.

Already the largest current wielders of social power—the States with their monopolies over the use of “legitimate” violence within and outside their territories—are seeking to dominate the Net, to master its forthcoming mastery of us all. As I write, less than 10,000 days into this process, the phrase “digital sovereignty” has become the symbolic token of the States’ determination not to be subsumed. Unsurprisingly, the States most loudly proclaiming the importance of this digital sovereignty are the least committed to the late-developing concerns of the era of civilization: “human rights,” “civil liberties,” and the concept of “civil society” apart from the State.

This ongoing struggle between the largest aggregations of social power, new and old, incompletely hides the increasing powerlessness of the individual. People easily adopt the new forms of networked life, “empowered” by the services and learning the Net delivers to them so long as they deliver themselves to it. But even as they experience the “convenience” of their new mode of life, they feel a hovering sense of loss of control. Even as the machines collecting their behavior offer them “a chance to be heard” about whatever they can say in 280 characters, even as the power of self-expression is democratized in ways that frighten the States, individuals feel more and more anxiously—if still indistinctly—that they are part of new systems beyond their control, or even their comprehension. This immunological response against “globalization,” this initially low-grade fever in the body politic, has already begun breaking down the forms of public rationality on which the most cherished human values of modern democratic civilization depend. In the year 2016, when I began this book, the world’s freest and most privileged citizens of the most advanced democratic societies began to wonder—as they will be wondering for a long time to come—why their politics seemed to be going crazy. But what the deplorers and “deplorables” shared, and will continue to share, is the sickening feeling of a world out of their control. Power is shifting, so that it is at once creepily near and maddeningly remote. We are experiencing, in our new collective nervous system, the nausea accompanying metamorphosis.

We are not, however, compelled to undergo a fate that seals the future of all our progeny and is already beyond our ability to change. Where my contemporaries and I live today *is* a construction site, but not yet a prison. The Net we are building

around ourselves may be already turning into a Net we do not want—it may already be an agent shaping the human mind even as the human mind shapes it—but it is an artifact of our devising, and it is still possible for us to alter. As we are made of genes, the Net is made of software. Software is written language made in the human mind, through which we teach both human beings and machines. Not just collectively, but also individually, we still possess the power to shape this new divinity to our human ends. As one of the architects who built the first fundamental layer of the Internet, my friend Dan Geer, says, “this is the last generation in which the human race gets a choice.”

It is the purpose of this book to explain—as best I can after a lifetime of preparation for the task—what the choice is, how to exercise it, and what the stakes are. I have spent half a century writing software, learning the history of the human race, lawyering and teaching lawyers how to make things happen in society using words, watching and learning and trying to affect this epochal process that some of us foresaw in our youths, and which has now begun transforming my species before my eyes. I hope that if you—the reader living in this amazing and frightening moment along with me—will give me a precious few hours of your time, I can teach you what you need so that together we can change, by the smallest and yet most crucial variations, the future of humankind.

For the reader half a century hence, nothing I can say here in this vein will be of great interest to you: You know how the story came out. Whatever we did or didn't do, for you human nature is already different. But this book may be of some use to you nonetheless. It may be able to map for you the location of something buried, not just out of sight but beyond mind, something you may not be able even to imagine without any living human being who can teach it to you. You want to find it if you can, however. We who lived in the 20th century cared about it very deeply. Indeed, we loved it with all our hearts, risked our very lives that those who came after us might have it. We called it freedom.