THE NEW ATLANTIS
A Journal of Technology & Society

Special Issue

Information, Matter, and Life

Editor's Note

The theme of this issue of *The New Atlantis* might at first seem either too obvious or too abstruse to interest a general audience. On the one hand, it feels as if everybody already knows about how information theory has opened avenues of investigation in physics and biology and how information technology continues to revolutionize research. What else is there to say? On the other hand, a collection of essays digging deeply into these subjects risks being too detached from ordinary concerns. Who but scholars would want to read it?

But there are aspects of the relationship among information, matter, and life that deserve closer attention, that have a direct bearing on how we understand ourselves and our world—and so shape our moral and social lives. These are the kinds of subjects our authors prod in these pages.

To begin, **Luciano Floridi** writes about how in order for philosophy to contribute to today's most pressing problems, it will need to reflect seriously on information and engage with developments in computer science. Next, **Daniel N. Robinson** shows why there is more to experience and knowledge than the explanations and information offered by scientists.

Raymond Tallis addresses a topic that is intimately understood and yet remains deeply mysterious: time. Picking up on the notion of the "arrow of time" or the "arrow of information," he argues that the physicist's understanding of time cannot account for our subjective, lived experience of time.

Ari N. Schulman explores another aspect of subjectivity: what it is like to see or feel. He revisits a famous thought experiment that asks whether there is more to *knowing* something than just having all the information about it.

Stephen L. Talbott challenges the idea that organisms can best (or only) be understood in terms of such mechanisms as genetic information and natural selection. Living beings exhibit a purposive striving—a *telos*—that cannot be reduced to information, and cannot be explained away. In a complementary essay, **Murillo Pagnotta** describes the uses and abuses of "information" in biology and how the concept contributes to false ideas about determinism.

Finally, **Charles T. Rubin** explores the meaning of the technological project to unite information, matter, and life. Through an interpretation and critique of *Ex Machina*, a movie about artificial intelligence and robotics, he invites us to a richer understanding of what it means to be human and to be free.

A motif running through these essays is that, especially in contemporary science, information has become something of an ideology. At its extreme, this ideology holds that, as James Gleick puts it in his book *The Information*, the whole universe is "a computer—a cosmic information-processing machine." There are more modest versions of the ideology, as when computer metaphors are used to describe human beings, saying, for example, that our brains are "wired" a certain way or that we are "programmed" by our genes. Whether extreme or modest, however, the

ideology of information has implications for our understanding of the universe. These big questions about fundamental reality are inextricably bound up with our self-understanding, including our beliefs about free will and the nature of consciousness. And these beliefs are in turn bound up with much more practical questions of how we can live well together.

Information and "info-talk" are so pervasive that they increasingly are taken for granted. In offering this special issue, we hope to hint at an alternative to the ideology of information—an alternative understanding of information and information theory that is grateful for many of the powerful tools they make possible, but that is aware of their limitations and wary of their intrusions into inappropriate domains.

* * *

Publication of this special issue was made possible through the support of a grant from the John Templeton Foundation; the opinions expressed are those of the authors and do not necessarily reflect the views of the John Templeton Foundation.