

## PROLOGUE

# Transforming How We See the World

*When he looked at me with his clear, kind, candid eyes, he looked at me out of a tradition thirteen thousand years old: a way of thought so old, so well established, so integral and coherent as to give a human being the unself-consciousness of a wild animal, a great strange creature who looks straight at you out of his eternal present.*

The epigraph, from Ursula Le Guin's science fiction novel *The Left Hand of Darkness*, describes the encounter of protagonist Genly Ai with Faxe, acolyte of the Zen-like cult of the Handdarata and their tradition of "unlearning" (57). "Given to negatives" (57), the Handdarata would immediately recognize "unthought" as indicating a kind of thinking without thinking. There is thought, but before it is unthought: a mode of interacting with the world enmeshed in the "eternal present" that forever eludes the belated grasp of consciousness.

"Unthought" may also be taken to refer to recent discoveries in neuroscience confirming the existence of nonconscious cognitive processes inaccessible to conscious introspection but nevertheless essential for consciousness to function. Understanding the full extent of their power requires a radical rethinking of cognition from the ground up. In addition, because the very existence of nonconscious cognitive processes is largely unknown in the humanities, "unthought" indicates the terra incognita that beckons beyond our received notions of how consciousness operates. Gesturing toward the rich possibilities that open when nonconscious cognition is taken into account, "unthought" also names the potent force of conceptualizing interactions between human and technical systems that enables us to understand

more clearly the political, cultural, and ethical stakes of living in contemporary developed societies.

The first step toward actualizing this potential is terminological ground clearing about conscious, unconscious, and nonconscious mental processes.

“Thinking,” as used in this book, refers to the thoughts and capabilities associated with higher consciousness such as rationality, the ability to formulate and manipulate abstract concepts, linguistic competencies, and so on. Higher consciousness is not, of course, the whole or indeed even the main part of this story: enhancing and supporting it are the ways in which the embodied subject is embedded and immersed in environments that function as distributed cognitive systems. From a cluttered desktop whose complicated topography acts as an external memory device for its messiness-inclined owner, to the computer on which I am typing this, to the increasingly dense networks of “smart” technologies that are reconfiguring human lives in developed societies, human subjects are no longer contained—or even defined—by the boundaries of their skins.

Part of the book’s project is to analyze and explore the nonconscious cognitive assemblages through which these distributed cognitive systems work. In choosing the definite article (*the* cognitive nonconscious), I intend not to reify these systems but rather to indicate their systemic effects. When my focus is on individual subjects, I will use the more processually marked term “nonconscious cognitive processes.” The power of these assemblages, however, is maximized when they function as *systems*, with well-defined interfaces and communication circuits between sensors, actuators, processors, storage media, and distribution networks, and which include human, biological, technical, and material components. In these instances, I will refer to the cognitive nonconscious, a term that crucially includes technical as well as human cognizers. As noted in chapter 5, I prefer “assemblage” over “network” because the configurations in which systems operate are always in transition, constantly adding and dropping components and rearranging connections. For example, when a person turns on her cell phone, she becomes part of a nonconscious cognitive assemblage that includes relay towers and network infrastructures, including switches, fiber optic cables, and/or wireless routers, as well as other components. With the cell phone off, the infrastructure is still

in place, but the human subject is no longer a part of that particular cognitive assemblage.

Although nonconscious cognition is not a new concept in cognitive science, neuroscience, and related fields, it has not yet received the attention that I think it deserves. For the humanities, its transformative potential has not yet begun to be grasped, much less explored and discussed. Moreover, even in the sciences, the gap between biological nonconscious cognition and technical nonconscious cognition still yawns as wide as the Grand Canyon on a sunlit morning. One contribution of this study is to propose a definition for cognition that applies to technical systems as well as biological life-forms. At the same time, the definition also excludes material processes such as tsunamis, glaciers, sandstorms, etc. The distinguishing characteristics, as explained in chapter 1, center on interpretation and choice—cognitive activities that both biological life-forms and technical systems enact, but material processes do not. A tsunami, for example, cannot choose to crash against a cliff rather than a crowded beach. The framework I propose, although it recognizes that material processes have awe-inspiring agency, comports neither with vitalism nor panpsychism. Although some respected scholars such as Jane Bennett and Steve Shaviro have given reasons why they find these positions attractive for their purposes, in my view they are not helpful in understanding the specificities of human-technical cognitive assemblages and their power to transform life on the planet.

I see this ongoing transformation as one of the most urgent issues facing us today, with implications that extend into questions about the development of technical autonomous systems and the role that human decision making can and should play in their operation, the environmental devastation resulting from deeply held beliefs that humans are the dominant species on the earth because of their cognitive abilities, and the consequent need for reenvisioning the cognitive capabilities of other life-forms. A correlated development is the spread of computational media into virtually all complex technical systems, along with the pressing need to understand more clearly how their cognitive abilities interact with and interpenetrate human complex systems.

As this framework suggests, another contribution of this study is to formulate the idea of a *planetary cognitive ecology* that includes both

human and technical actors and that can appropriately become the focus for ethical inquiry. While traditional ethical inquiries focus on the individual human considered as a subject possessing free will, such perspectives are inadequate to deal with technical devices that operate autonomously, as well as with complex human-technical assemblages in which cognition and decision-making powers are distributed throughout the system. I call the latter cognitive assemblages, and part 2 of this study illustrates how they operate and assesses their implications for our present and future circumstances.

Here is a brief introduction to the book's plan and structure. Part 1 focuses on the concept of nonconscious cognition, with chapter 1 developing a framework for understanding its relation both to consciousness/unconsciousness and material processes. Chapter 2 summarizes the scientific research confirming the existence of nonconscious cognition and locates it in relation to contemporary debates about cognition. Chapter 3 discusses the "new materialisms" and analyzes how these projects can benefit from including nonconscious cognition in their frameworks. As nonconscious cognition is increasingly recognized as a crucial component of human cognitive activity, consciousness has consequently been scrutinized as incurring costs as well as benefits. We can visualize this dynamic as a kind of conceptual seesaw: the higher nonconscious cognition rises in importance and visibility, the lower consciousness declines as the arbiter of human decision making and the dominant human cognitive capability. Chapter 4 illustrates the costs of consciousness through an analysis of two contemporary novels, Tom McCarthy's *Remainder* (2007) and Peter Watts's *Blindsight* (2006).

Part 2 turns to the systemic effects of human-technical cognitive assemblages. Chapter 5 illustrates their dynamics through typical sites ranging from traffic control centers to piloted and autonomous drones. Chapter 6 focuses on autonomous trading algorithms, showing how they require and instantiate technical autonomy because the speeds at which they operate far transcend the temporal regimes of human decision making. This chapter also discusses the implications of these kinds of cognitive assemblages, particularly their systemic effects on destabilizing the global economy. Chapter 7 explores the ethical implications of cognitive assemblages through a close reading of Colson Whitehead's novel *The Intuitionist*. Chapter 8 expounds on the utopian potential of cognitive assemblages and extends the argument

to the digital humanities, proposing that they too may be considered as cognitive assemblages and showing how the proposed framework of nonconscious cognition affects how the digital humanities are understood and evaluated.

In conclusion, I want to present a few takeaway ideas that I hope every reader of this book will grasp: most human cognition happens outside of consciousness/unconsciousness; cognition extends through the entire biological spectrum, including animals and plants; technical devices cognize, and in doing so profoundly influence human complex systems; we live in an era when the planetary cognitive ecology is undergoing rapid transformation, urgently requiring us to rethink cognition and reenvision its consequences on a global scale. My hope is that these ideas, which some readers may regard as controversial in part or whole, will nevertheless help to initiate conversations about cognition and its importance for understanding our contemporary situations and moving us toward more sustainable, enduring, and flourishing environments for all living beings and nonhuman others.