

**Tor Nørretranders, *Iluzia utilizatorului*,
Editura Publica, 2009**

Romanian translation of Tor Nørretranders, *The User Illusion. Cutting Consciousness Down to Size*, Penguin Press Science, 1999, translated by Laurențiu Staicu

Reviewed by Horia-Costin Chiriac¹

Tor Nørretranders, a Danish science writer, proposes in his book, *Iluzia utilizatorului* (Publica, 2009), a very interesting perspective on one of the most important problem in the history of philosophy, but also in the history of science: the problem of consciousness, more precisely, the problem of understanding the nature, the limits and the dynamics of consciousness. It is generally known that the understanding of consciousness is a key part of every scientific or philosophical endeavor of understanding the human being. Therefore, a step forward in this direction would have important consequences for various fields as epistemology, anthropology, psychology and many others. Tor Nørretranders succeeded both in underlying the main problem – the specific features of consciousness as one can understand them today using recent scientific results – and developing in the same time a coherent analysis of the multiple consequences of such discoveries on various themes and fields of investigation. He also emphasized with remarkable accuracy the importance of numerous links among the development of different scientific theories in natural sciences and collateral developments in psychology and information theory.

The book begins with an overview of some episodes in the history of modern physics, having in the center the character of James Clerk Maxwell. There are two aims for such an approach in the first chapter of the book. On one hand, the introduction of the so-called “Maxwell’s daemon”, an imaginary creature capable to identify and to separate the fast molecules of a gas from the slow ones, represented

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a key point in the conceptual development of thermodynamics, having also important consequences as regards the information theory and the central concept of “information bit”. Moreover, the information theory constituted an important departure point in the development of recent psychological approaches of human mind and consciousness. On the other hand, Maxwell himself was one of the most important scientists who became aware of the fact that unconsciousness played an important part in the process of obtaining the final form of the famous “Maxwell equations” that describe extremely well the properties of electromagnetic field. Together with Henri Poincaré, for example, he is one of those who understood the importance of unconscious processes even though in his period psychology did not develop proper concepts for understanding unconscious phenomena.

Consciousness represents the distinctive feature of human being that defines humanity and makes possible the development of knowledge. In the same time, its reflexive capabilities represented for a long time a fundamental condition for every attempt of understanding human condition and for every attempt of analyzing the human perspective about the universe. In this respect, at first glance, the book seems to be a reflective effort of understanding consciousness. However, the thesis of the book is a daring one and the arguments are tremendously various, the work of Tor Nørretranders having sometimes the characteristics of a wide synthesis. Introspection is not considered anymore the best method for defining consciousness, and the author uses many results of cognitive sciences and of neurophysiology for shaping an objective perspective on consciousness as a natural phenomenon.

An entire philosophical tradition that started with Descartes and continued with many great thinkers considered human being perfect capable to describe and to analyze himself using consciousness, therefore, such a tradition laid on introspection as privileged method for defining the human being by emphasizing his nature. For such philosophical tradition, the “transparent” human being was a viable concept. Tor Nørretranders is questioning such a tradition using some recent experimental results of Benjamin Libet and proposing even new concepts, like “exformation”, for better emphasizing the specificity of consciousness. “Exformation” would be, in this context, the information eliminated by consciousness in its effort of selecting only the indispensable information that could be used in shaping an image about the external world. The amount of information eliminated in the process of structuring a message represents also an indicator of semantic complexity of that message, in deep connection with the environment in which that message could be understood.

The basic idea of the book is that consciousness represents only a small part of the information stream we live in. First, we are able to analyze only a small part of what we really are. Second, consciousness gives us the illusion of living in a

continuous world. The arguments given by the author of the book are diverse and very well linked, emphasizing the physiological particularities of consciousness. The consequences of such a discovery are important not only for psychology, but also for epistemology. Human beings are not transparent for their own attempt of understanding “from within” the nature of their mind. Their reflective capacity is a fragmentary one. Thus, they are unable to describe themselves in their entire complexity of states and dispositions.

Basically, the main point of Tor Nørretranders is that our consciousness is extremely limited in comparison with the huge quantity of information – over 11 millions of bits – received every second by our brains from the sense organs. Usually, our consciousness processes 1-16 bits per second, and its limit is of approximately 40 bits per second. As a consequence, the author observes that millions of bits are condensed to a conscious experience that contains very few pieces of information. In order to arrive at the special state named “consciousness”, each of us discards millions of bits. Therefore, the amount of information is not essential for conscious experience, but the order of information is. In direct relation with this aspect, Nørretranders introduces the term of “exformation”. “Exformation” represents, as we already mentioned, the information that we have gotten rid of, and computation is the means by which we discard information. This way the author is able to connect physiological particularities of consciousness as a process with computer science theories, underlying the fact that artificial intelligence technology inspired the new paradigm in psychology and other sciences dedicated to the study of consciousness. Thus, most of what we experience is not conscious. Far more happens around us and to us than we can possibly be conscious of. We sense far more than we are conscious of and we do not know – we cannot consciously know – very much of what goes on inside us.

What is also extremely intriguing is that we cannot consciously see the raw world outside us. Starting from the experiments conducted by Benjamin Libet, Nørretranders observes, “We do not actually see what we sense. We see what we think we sense”. Rather, what we think of our senses represents an interpretation done by our unconscious minds, which are extremely active in discarding, filtering, and finally reconstructing the information coming in. What we experience directly is an illusion, a simulation that resulted from processing the incoming information. Our unconscious is permanently constructing for us the experience of a simulation. Moreover, it turns out that thinking implies a process of unconscious discarding of information and sorting through information, for discovering what is really important and what is dispensable. Therefore, thinking can be seen as highly unconscious, together with most of the experiences and operations that characterize a person.

All this unconscious activity takes about half a second, which makes us unable to experience the real time in real time. We experience it with half a second delay. Real time for us is about half second in the past. However, our minds make us believe there is no delay at all. Because of this readjustment made by our consciousness, “awareness of an outer stimulus is experienced as if it occurred immediately after the stimulus, even though in fact a half second passes before we become conscious of it.”

In this point, we can compare the situation described by Nørretranders with a point and shoot digital camera that has also video recording features. What we see on the LCD screen of such a camera is actually a delayed image of the processes that take place in front of the lenses of the camera. In the moment of turning on such a device, the electronic circuits are active but no image is present on the screen. This situation lasts for a few seconds, depending of the performance of the electronic system. Such a delay and such a “temporal illusion”, but much more complex and much more consistent as regards the ratio between the quantity of incoming information detected by our sensorial organs and the quantity of information we become conscious of, is present in human minds. Tor Nørretranders did not hesitate to identify, to exploit and to analyze the philosophical, moral, psychological and even religious implications of such a discovery that he considers to be “the user illusion”.

As every sportsman could easily figure out, our reactions are much quicker than half a second and we often react to a lot that we never ever become conscious of. Therefore, it is possible to react without being conscious of, even without being conscious why. Many of our reactions and responses could occur without our consciousness being informed about what happened. This way, some of our actions that are sparked off are reprogrammed without our knowing why. In the same time, it is possible that some of our reactions occur unconsciously. Nørretranders observes that the learning of certain skills is a conscious process, but the application of them is not.

There are important consequences of such a situation that have influence on fields like morals, law and epistemology. The ways we conceive our knowledge of the world should change. Tor Nørretranders does not hesitate to examine them. To give an example, we can mention the problem of Jewish moral versus Christian moral. The first insists on the control of the facts, of the actions that a person could take because of different wishes. The second insists not only on actions, but considers even the existence of certain feelings and wishes as being inappropriate and sinful. Because consciousness controls only a tiny part of the information processed by our brains, some decisions, some wishes and some reactions appear, come into being at the unconscious level of our mind. In this respect, the Christian

moral principles are almost impossible to be respected and the Jewish ones, although compatible up to a certain point with human capacities of self-control, have important consequences on our behavior, on our nonverbal language, on our reactions and they contribute in this way to undermine the human capacity of respecting entirely the principles of the Jewish moral.

The user illusion we live with has also important implications as regards the status and the dynamics of what we consider our knowledge about the world. Consciousness remains the privileged capacity of the human brain that helps us describe scientifically the properties of the physical systems, but the importance of unconscious processing of information regarding the world has also a great importance in our decisions and it cannot be neglected anymore, also because it could influence the process of elaborating new scientific concepts. The physiological limits of human consciousness and its structure, which is characterized by complexity – a concept placed by Tor Nørretranders between chaos and order – , represent for the author the departure point for an elegant argumentation that connects quite many and diverse fields of investigation and makes the book extremely interesting for very different categories of readers.