

Recensioni

Christof Koch **Consciousness: Confessions of a Romantic** **Reductionist**

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In recent decades, mainly because of the rapid development of new technologies and methodologies, neuroscientists have made many important discoveries about the human brain and cognition. These new methodologies have also led to an increasing interest in empirical and theoretical scientific research concerning the problem of human consciousness. Christof Koch's 2012 book is best considered in this context. For several years, Koch has been a leading researcher on the problem of consciousness from a neurobiological point of view. This book seems to be, in many respects, a result of his most recent reflections on the topic.

The main purpose of the book is to present a «slim exposition on the modern science of consciousness», informing readers how the natural sciences address the question: «how do subjective feelings, how does consciousness, enter into the world?», or more particularly, what it is about the brain that makes one «conscious of colors, of pain and pleasure, of the past and of the future, of yourself and of others?» (p. ix). This issue and its consequences for a number of other problems in contemporary research on mind are addressed in the ten chapters of the book.

The central question Koch's analysis focuses on concerns the problem of the interaction between brain and consciousness, which is also related to the *hard problem of consciousness*, as it is known in contemporary philosophical literature. This can be understood, roughly, as the problem of explaining how and why conscious subjective experience arises from physical processes (see D. Chalmers, *Facing up to the Problem of Consciousness*, in: «Journal of Consciousness Studies», vol. II, n. 3, 1995, pp. 200-219). Since science is still unable to account for this, many authors recognize an *explanatory gap* between the way in which we explain physical and conscious phenomena. Koch acknowledges the existence of both the hard problem (p. 3) and the explanatory

gap (p. 1-2); however, he maintains that all subjective states (pain, joy, taste, etc.) actually originate from «agitations of nervous matter» (p. 1). For him, the brain – as «highly organized matter» – produces some «particular vibrations» that «trigger conscious feelings» (p. 2).

Koch believes that the notion of consciousness as *emerging* from the brain is wrong (p. 118, 119). For him, «consciousness is a fundamental, an elementary, property of living matter. It can't be derived from anything else, it is a simple substance» (p. 119). In this sense, «any and all systems of interacting parts possess some measure of sentience» and «the larger and more highly networked is the system, the greater the degree of consciousness» (p. 120). The best current theory to provide an accurate account for this is the *Integrated Information Theory* (IIT) of Giulio Tononi. According to Koch, IIT is an elaborate version of panpsychism, the hypothesis that all matter is sentient to some degree: «Once you assume that consciousness is real and ontologically distinct from its physical substrate, then it is a simple step to conclude that the entire cosmos is suffused with sentience» (p. 132).

In order to better clarify his views on how the brain generates conscious experience, Koch discusses a variety of issues related to current studies on consciousness (e.g. the difficulty of defining this concept and the problem of attributing consciousness to non-human animals or machines). In his view, a better scientific understanding of how the neural system works, the development and use of new methodologies in the investigation of the brain, and new information obtained from animal brain research and brain-damaged patients can help to solve these problems, and show at the same time how physical processes are related to consciousness.

In connection with the problem of the physical causes of consciousness, the author also examines several related topics. One of these is the problem of free will, which has been central in philosophical and scientific debates for a long time. The problem, most generally and normally framed, refers to the capacity of rational agents to choose a course of action from various alternatives. Free will can be related as well with the capacity humans have to choose which actions

and behaviors are good or bad, right or wrong, from a moral point of view and, thus, to be considered responsible for their decisions and actions. Many authors claim that free will is strictly related to consciousness, since consciousness is required for rational deliberation and can also be considered the cause of our decisions and voluntary actions. However, for Koch, the idea that “conscious will” causes behavior is simply wrong since it violates natural laws: such interaction cannot occur since the universe is causally closed (p. 111).

Unconscious factors (controlled by neurons in the brain) play the central role in human decisions (pp. 77-78, 83), not rational and free deliberations. However, for Koch, human actions are also not preordained, because the «complex character of brains and deterministic chaos limit how accurately even the best-informed scientist of the future can predict behavior» (p. 111). This leads Koch to adopt a «more pragmatic, compatibilist concept of free will», namely living «as free of external and internal constraints as possible», with the exception of «restrictions that I deliberately and consciously impose upon myself» – such as ethical concerns (*ibidem*). Unfortunately, he does not explain in more detail what this “concept” might be and how exactly it might support (if it does) any kind or degree of freedom. However, according to the author, ultimately an answer to this and other issues related to consciousness will only be possible through the development of a complete and adequate theory of consciousness, which would also need to explain how and why consciousness arises from the brain.

As suggested by the title, the book is not a systematic academic research report and its main concern is not to present a specific scientific theory and defend it. As Koch says in the preface, it is “not just about science”, but also a “confession and a memoir” (p. ix). The book is thus a mixture of personal ideas, autobiographical experiences, speculative reflections and empirical research on consciousness. However, since Koch also aims to present some contributions to scientific research on consciousness, some brief considerations of this content seems appropriate.

Firstly, the author appears to believe that new empirical research, especially on the brain, will almost *singlehandedly* solve many problems which have their origin in the history of philosophy (p.

20, 41), such as the problem of consciousness and the problem of free will. According to Koch, the right strategy for finding a solution to the problem of consciousness and all related issues includes ignoring millennia of philosophical debates on these topics (see T. Crane, S. Patterson (eds.), *History of the Mind-Body Problem*, Routledge, London 2000), defining the phenomena in play in the most simple and general manner possible and focusing uniquely on new empirical research. However, he does not offer any real argument to justify this idea. In fact, one could challenge the view that this strategy will lead to a better comprehension of the problems, and argue, on the contrary, that excessive simplification of such debates may even give rise to more confusion, distortion and lack of clarity.

In fact, complex and controversial notions that are highly debated not only in the field of philosophy but also in that of psychology, such as *causation* (see A. Peruzzi (ed.), *Mind and Causality*, John Benjamins, Amsterdam 2004), *consciousness*, *qualia*, *mind*, *awareness*, *sentience*, *experience*, *feeling*, *thought*, *reason*, *unconscious*, *free will*, are used in the book with great inaccuracy and lack of clarity. More generally, one wonders whether ignoring the complexity in some of these issues and neglecting tradition of past discussions can really help to provide answers, because if one cannot define and determine the exact nature of the problem, one will hardly be able to find out how to solve it.

Secondly, Koch frequently states that “we know” that the brain causes or produces/generates consciousness phenomena (p. 23; cf. 16, 29, 42, 43, 54, 76, 113, 123, 124, 138, 147) and derives a number of conclusions on the basis of this assumption. However, in other parts of his work he instead asserts that this is a working hypothesis (p. 34-35) or that «we cannot yet pinpoint which regions [or neurons] of the brain underlie consciousness» (p. 54; cf. p. 28, 43, 112, 114). This inconsistency is highly problematic since in science it is necessary to specify and to justify what degree of certainty we ascribe to each hypothesis we rely on, what statements we take for granted, what our working hypotheses are and why we consider them to be promising.

However, Koch does not make clear what degree of certainty he attributes to the core-hypotheses discussed in his book nor does he specify whether they should be considered as

working hypotheses or as statements to be taken for granted. In the latter case, he does not clarify what empirical support there might be for the hypotheses he presents. Although we have a lot of data that show specific correlations between parts or processes of the brain and specific mental phenomena, to date we have not observed how exactly the physical brain *produces* a single belief.

Nevertheless, keeping in mind these limitations which should lead us to approach this work with caution, Koch's book provides very interesting information on brain function and its relationship to certain mental processes. For this reason, the book may make a significant contribution to debates on these issues. Moreover, the fact that he uses relatively non-technical language to present scientific research means the book can reach a broad audience and possibly promote interest in scientific research well beyond academic circles.

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