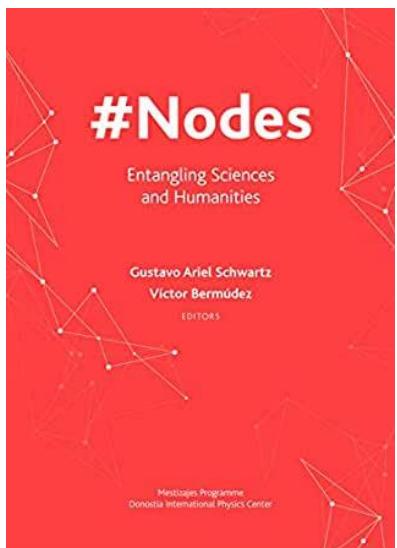


IT'S ALL IN THE MIX

Gustavo Ariel SCHWARTZ and Víctor BERMÚDEZ, eds., *#Nodes. Entangling Sciences and Humanities*. Bristol, Intellect Books, 2019, 540 pp. ISBN: 978-1-78938-073-6.



For a long time, a strict separation between the sciences and humanities has been assumed to exist, according to which the arts and humanities are inferior to the sciences for their subjective character. However, this separation has become destabilized in the last decades because it was accepted that both, sciences and humanities, aim at the exploration of reality, and the main difference between them is a methodological one: the sciences rely on rather objective methods, such as measuring or counting, whereas the research methods applied in the humanities are often subjective and focus on individuals' experiences in contact with the world surrounding them. Recognizing this gave rise to the assumption that these different branches of disciplines show intersections with each other and thus should no longer be separated from each other but are instead both to be involved and combined with each other when investigating reality.

This argument is sustained in *#Nodes. Entangling Sciences and Humanities*, edited by Gustavo Ariel Schwartz and Víctor Bermúdez. The book is contextualized within the *Mestizajes* programme at the Donostia International Physics Center, which brings scientists, artists, and writers together in order to investigate the interrelationship between science, humanities, and literature from an interdisciplinary perspective. By combining scientific, humanistic, artistic, and literary content, the editors bridge the gap between sciences and humanities and provide inspiring perspectives on the basic questions which have been occupying both the humanities and the sciences for a long time. The book makes a significant effort to prove that interdisciplinarity is a “necessary if not vital” (p. viii) feature of research in either area: On the one hand, the sciences can offer new instruments to the humanities, which is important in research branches like Cognitive Literary Studies, for example. But at the same time the humanities can also enrich the sciences with answers to so far unsolved questions and provide inspiring insights which could constitute a point of departure for further research. Therefore, the editors present a varied fan of research perspectives. The academic backgrounds of the contributors are as heterogeneous as they could possibly be. *#Nodes* includes contributions by mathematicians,

physicians, neurobiologists, philosophers, psychologists, semioticians, linguists, artists, and writers, who are all presented in short biographical sketches at the end of the book. Due to this diversity the spectre of contributions is also extraordinarily broad: the book contains academic articles and essays, as well as poems, paintings, drawings, and sculptures. The result is a mixture that is not only intellectually stimulating but also entertaining.

Structurally, *#Nodes. Entangling Sciences and Humanities* reminds the reader of a network itself: The 512-pages book is divided into ten chapters, which consist in several short articles each and bring together a plurality of perspectives on one topic: There are chapters on complex networks, metaphor, the cosmos, chaos and complexity, emergence, perception, memory, emotion, consciousness, and big data. This structure is held together by the editors' comments which ensure a smooth crossover between the single articles inside each chapter, while at the same time they establish connections between the various sections of the book and point to the interrelations between the topics dealt with. However, the existence of these connections does not mean that *#Nodes* must be read in a linear fashion. Indeed, the editors propose in the preface that the reader should choose his own path for reading, for example by using the explicit links between articles and sections, which enables him or her to interact with the book. A favourable feature of *#Nodes* that should be mentioned here is the use of the hash (#) in chapter headlines and in other occasions, for example to establish links between articles inside the book. It reminds of the linking of information in social media by means of the hashtag and in doing so this constitutes a transgression of the boundaries between print media and information on the Internet. This also points out to the fact that the contributions and sections of the book are interconnected and should be considered in relation to each other.

The content of *#Nodes* is divided into two interrelated parts, treated in five chapters each. On the one hand, there is a focus on the still overwhelming complexity of reality, which is treated in the chapters on complex networks, the cosmos, chaos and complexity, emergence, and big data. It is argued that the sciences have been ignoring this complexity for a long time and have been focussing on research methods investigation of rather simple systems with tools that cannot serve to investigate the complexity. Therefore, "today we are still, just as we were three centuries ago, dealing with simple objects" (p. 145). However, the humanities and especially literature have already been acknowledging complexity for a long time and can now get involved in scientific research on this topic. Furthermore, the idea of complexity is shaping the way of thinking, as inventions like the Internet make it easier to understand the concept.

The other focus of the book is on the convergence of the cognitive sciences and the humanities and includes chapters on metaphor, perception, emotion, memory, and consciousness. This part stresses the potential value of art and literature to the investigation of these matters because cognitive processes form the basis of literary and artistic creation and reception. The topics of all these chapters of cognitive interest are strongly interconnected, and so they constitute an example for the notion of complexity dealt with in the first part of *#Nodes*. For example, the chapter on memory explains that this cognitive mechanism is crucial to other cognitive processes, which in turn are important for itself.

Memory is defined in terms of a “mental time travel” (p. 295), which describes the capacity to remember past events and experience them mentally in the present again, but at the same time also a metaphorical mechanism which enables the subject to make predictions about the future. It is explained that memory interacts with perception and emotion and that it plays an important role in the construction of the self and consciousness.

Keeping in mind the aforesaid, *#Nodes* could be seen as a highly stimulating publication that offers many starting points to an interested reader who wishes to read more about the topics dealt with. The value of the book lies in the range of perspectives and topics covered in it, which converts reading it into an eye-opening experience that makes readers think differently about reality.

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