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Fritjof Capra & Ugo Mattei, **The Ecology of Law. Toward a Legal System in Tune with Nature and Community**. Berrett-Koehler Publishers, Inc., Oackland (CA), USA, 2015, 216 pages, hardback, € 22,71.

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This is a remarkable work for better understanding the evolution of human thought tied to the scientific paradigms that have led humans to the exploitation of natural resources. As the title suggests, the present book is a joint venture undertaken by two scientists working out the emergence of a new legal order: an "eco-legal" order. The theoretical foundations of such eco-legal order lie in the belief that law and science should be a convergent field if we want to fight our current ecological, social, economic and political crises. Today's challenges, from global warming to the many faces of the ecological and economic crises, are telling us of the need for fundamental changes. The present work puts forwards the view that changes have to bring with them a shift in perspectives and paradigms that often correspond to a tuning of our *modus vivendi*. The revolutionary element is the big emphasis on the importance of incorporating into the legal sphere concepts from modern science so that the legal order is consistent with the ecological principles that sustain life on this planet. For Mattei and Capra, law can become an integral part of the fight against overconsumption and pollution, with the possibility of bringing about a better world understood as a 'common good'.

The authors are well-known in their respective scientific fields. Fritjof Capra is a physicist and systems thinker who first gained international attention in 1975 with his book *The Tao of Physics*, which already drew linkages between modern physics and Eastern mysticism. Mattei is a well-known legal theorist of the commons, a comparative private law scholar and a commons activist.

With "The ecology of law" the authors foster a change of perspective, as well as a shift in the theoretical foundations of law and science. Their vision nurtures an organic and holistic view of life that is arguably crucial to contrast today's complexities. The point of departure of this contribution is the understanding that not only sciences and law are interrelated but every single part of human life with its environment is part of a whole. Perhaps the holistic approach is not as revolutionary as this merging venture between science and law, aimed at integrating the heart of legal discourse with the ecological principles that sustain our planet.

This is the first book that traces the parallel history of law and science from antiquity to modern times, showing how the two disciplines have always influenced each other until recently. Through this equivalence there is an illustration of the history and evolution of a legal system depicting its obsolete existence based on an outdated world view.

In the first chapter of the book there is a reconceptualization of law as an organic whole illustrating how its history and development resembles the evolution of natural sciences. In fact, from the beginning to the sixth chapter there is a well-knit and intertwined analysis of the parallel evolution of law and science under the same set of paradigms that deploy "the paradigm of short-term extraction, state sovereignty, and private ownership fuelled by money (itself a legal abstraction concentrated in the private hands of corporate banks) producing huge benefits to a few at the expense of the environment and local communities (pg.2)".

Already in the first pages, authors make a call for "eco-legal literacy" that is at the heart of their discourse and, we could say, it is the key element of this book: The ecological vision of

the law, that can have a tremendously empowering effect, "[c]an unleash the "power of people", reclaiming law as a common, to create a new eco-legal order that, following our systemic understanding of the world, can protect it for future generations" (pg. 28). Of course in order to comply with this important task the most important thing is the understanding of how nature sustains life.

Within the following chapters we find specific reasons that explain the failure of our current mechanistic vision of the world tied to the simplistic dualism created between private property and state sovereignty where law has served as an instrument of human domination over nature, "[i]ncrementally pushing people away from participating in nature's reproductive processes, overcoming the old medieval organic wisdom". The authors, through a fantastic and quite synthetic analyses of the history of Western Legal thought point to what could be one of the main 'dramatic' reasons for today's legal systems, the 'professionalization of law'. The authors emphasise the idea that the extraordinary contribution of Roman law to the Western legal tradition lies not so much in its recognition of private property, but in its formalization of a professionalized legal system capable of defining and enforcing proprietary interests on land as well as other things (pg. 47). Rendering law, through legal and social evolution, a technical system of rules completely inaccessible (especially as it is today) to the lay person. The process of academic legal development that affected the European continent described by the authors is compared in its similarities and particularities to the origin of the common law tradition in medieval England with the creation of the early centralised Royal Courts at Westminster Hall in London developing the common law of the Kingdom through their judicial decisions. The process of enclosure and the legalised erosion of the commons is also explained in these pages to allow us to picture the transformations that led to the rise of Western modernity. Modernity that required the "extraction", "accumulation" and "mobilization of natural and human resources" later understood as "capital" (p. 54).

The authors strive to give evidence of the outdated world view based on Cartesian and Newtonian model on the understanding that the Universe is far more complex than either Descartes or Newton had imagined. Already at the end of the nineteenth century, Maxwell's theory of electrodynamics and Darwin's theory of evolution had clearly gone beyond such model (pg. 91). Chapter five offers a clear conceptual understanding of the theory of evolution and the major scientific revolutions of the nineteenth and twentieth century starting from the Romantics change of scientific paradigm, introducing the view of the "organic" as the chief principle for interpreting nature and replacing the concept of mechanism. While in Physics the revolution passes through the discovery that, at the subatomic level, the world could no longer be decomposed into independent, elementary units (pg.91). While quantum physicists struggled with the conceptual shift from the parts to the whole, a similar shift was taking place in the life sciences. From these interdisciplinary dialogues emerged a new way of thinking that became kwon as "systems" or "systemic" thinking.

Therefore, putting together the scientific change of paradigm, in chapter six the authors seem to find some exceptional and progressive characteristics on the legal romanticism incorporating a holistic and an organic vision of life, but still the romantic and the Germanic vision of law just reinforced the fundamental Roman-law based, individualistic idea of Western law.

Therefore going beyond the evolution of scientific and legal thought by gripping the organic and holistic vision of life, the authors advance the powerful argument of law as commons and they strive to settle the conceptual basis of this argument by giving evidence of the idea that an "eco-legal" system is the only way out of this Universal recession. So, let's simply say that

this book is quite innovative, more within the legal arena than it could be in sciences. Considering that Mattei is an important activist in the field of commons it is not surprising that an important part of the arguments put forward by the present book demolish the current legal structure based on the concentration of power and exclusion, providing no alternative solution to the current economic and socio-political crisis. Therefore, in what the authors have called "the mechanistic trap" (chapter 7), there is a strong criticism of the current legal and economic structure, based on the concentration of power, the extraction of natural resources and exclusion based on a mechanistic vision of the relationship between humans and nature, and the 'sacred' institution of private property that the authors describe as the "unifying principle of social exclusion" (pg. 123).

The suggested "ecology of law" ties to the idea of creating a new ecological order founded on systems thinking rather than on an outdated mechanistic way of thinking. At the basis of Mattei's and Capra's proposal lies the conviction that we need a new ecological understanding of life, or "ecoliteracy" as well as a new kind of "systemic" thinking in terms of relationships, patterns and context. So, the first step should be the embracing of such an ecological vision of the law. This, of course, would give a specific role to the law for the building of commons by transforming the legal instrument in its main tool. There is a need to become aware of our own power to influence law through our aggregate action.

In the ecological legal system-someone will advocate for future generations and for the planet as a whole. One tool for this purpose is broadening the rules for who has "standing to sue", a legal term meaning that an individual has sufficient stake in a controversy to obtain a judicial resolution of that controversy. To accomplish this, we must stop perceiving the law as a closed principle of political sovereignty. Such a vision not only is far too narrow and doctrinal but also is based on the same pattern of exclusion and concentration of power that ecological thinking struggles against.

Putting the commons at the centre of the legal landscape with the metaphor of the 'network' will affect some of our extractive freedoms, which as we have seen, are currently founded on unlimited property rights and the rule of law (pg. 166). Thus, considering the well-structured and needed subversive vision of our current legal order, Capra and Mattei give as the conceptual framework required to start challenging even our current perception of what the "rule of law" is vested with an organic vision of life.

Therefore, one of the most valuable contributions of the present work is the fantastic analysis that the authors make of the afflictions of our current time based on a simplistic division of our reality between private property and state sovereignty with deep historical roots based on the cosmological world articulated by John Locke, Bacon, Descartes, Hugo Grotius and Thomas Hobbes, governed by atomistic individuals and mechanical principles. Such worldview continues to prevail in economics, social sciences, public policy and law and arguably prevents us from addressing properly our ecological problems. So, the main pride of the book is indeed identifying law as the key element of this problem, presenting law as our main tool of reaction: an ecological understanding of law, a genuine civic revolution and engagement overcoming 'hierarchy' and 'competition' as the main elements of the legal discourse.

Still, if there is eventually a criticism to be made of this work, it would include the lack of more living examples of the current growing commons movement and living 'networks' worldwide based also on a critical approach of the prevailing economic and legal theories. Furthermore, the risks of presenting law as "commons" are that we could suddenly fall into the dream that everything can be or should be called a "commons", but, still we need more eco-literacy on

current living and local experiences from the bottom-up approach that teach us how to find the power of our aggregate action to demolish our current understanding of the legal system. We need to see that law is not something that exists independently “out there” as an objective reality but a socially constructed order that belongs to the individual as a power that we must reclaim, so “[L]aw is always a process of communing”, an organic living part of life that evolves with us.