

GOVERNANCE FOR A PLANET UNDER PRESSURE

Book: Young, O. (2017). *Governing Complex Systems. The social capital for the Anthropocene.* The MIT Press. Cambridge, Massachusetts¹.

LEANDRA REGINA GONÇALVES²

The primary objective of this review is to introduce Young's last book. A book in which he made use of all his experience to discuss and present insights on the effectiveness of governance systems and the emerging challenges of the Anthropocene³.

Although it is not my intent to describe Young's academic success, trajectory, and achievements—since this noble task resided with well-known researcher, Ronald Mitchell (2013)—I could not fail to mention that, for more than 40 years, Oran Young, currently Professor Emeritus at the University of California, has promoted and stimulated knowledge about international institutions in various approaches (YOUNG, 2016).

During this time, Young set out to seek explanations for successes and failures in international cooperation initiatives (YOUNG, 1999) and to understand the role of institutions, and he has done so with an impressive ability to innovate his thinking, identify new research questions and perspectives, develop new tools and conceptual models, challenge scholars in various areas of thinking, and produce results that contribute to both decision makers and scholars of global environmental governance.

In "*Governing Complex Systems. The social capital for the Anthropocene*", the author brings his knowledge accumulated over the years to discuss the issue of environmental governance for a planet under constant pressure. In this book, he seeks answers to the governance of complex socioecological systems for recent periods marked by sudden and extreme changes with surprises, crises and periods of instabilities, plunged into great scientific uncertainties.

The current understanding of global environmental governance owes much to Oran Young's numerous theoretical, empirical, and methodological contributions. His great scientific production and participation in numerous forums in multidisciplinary

1. Oran Young, Distinguished Professor Emeritus Institutional and International Governance, Environmental Institutions, PhD, MA, Yale University; AB, Harvard.

2. Leandra Regina Gonçalves, Biologist, Phd in International Relations. Postdoctoral fellow at Oceanographic Institute and Researcher at the Environmental Governance of SP Macrometropolis Project (grant #2018/00462-8, São Paulo Research Foundation (FAPESP).

3. Anthropocene is a word used by some scientists to describe the most recent period in the history of Planet Earth, when human activities began to have a significant global impact on the Earth's climate and the functioning of its ecosystems.

fields, enables and animates the debate on the subject, whether one agrees or not with the premises exposed by the author.

Why are international environmental institutions formed? How? What are the types of effects they cause and the conditions under which they work? To answer these questions, the development of the concepts of institutional dynamics, interaction, and scale was fundamental (YOUNG, 2008).

In the book's preface, Young mentions his discussions with Elinor Ostrom, who has developed a line of research on common use natural resources (common pool resources) influenced by the new institutional economy. Her work is critical of that of Garrett Hardin's, who, in the 1960s, stated that the natural resources that are collectively used would be overexploited and destroyed in the long run.

Ostrom refuted this idea by conducting field studies on how people in small local communities manage shared natural resources such as pastures, fisheries, and forests. The author has shown that, when natural resources are used by a common pool, cooperation rules are established over time to know how such resources should be managed and utilized in an economically and ecologically sustainable way (OSTROM, 2015).

Based on his knowledge and in discussions with Ostrom, Young presented not a guide on how to deal with the conservation of common pool resources, but alternatives to their management through institutions, which according to him, does not guarantee the success of governance, but may contribute to the improvement of environmental health.

Unsurprisingly--although the cause of the impacts is not yet agreed among some experts--socio-ecological systems are currently facing many unprecedented challenges, including, but not limited to, ecosystem degradation, exploitation of natural resources, climate change, wealth inequality, and human conflicts. These interlinked challenges are threatening the sustainable development of society, and are invading and surpassing what has been called planet boundaries by Rockstrom and collaborators in 2009.

From the point of view of political action, the greatest challenge of this book is the search for an "institutional architecture" that can be, as suggested by Biermann (2007, p335), *"adaptable to changing circumstances, participatory through civil society involvement at all levels, as well as responsible and legitimate as part of a new democratic governance beyond the nation-state, and at the same time fair to all participants"*.

Young shares the same assumption and treats it with authority. For him, it is imperative to create institutions, rules, values and traditions to promote the management of common use resources effectively. This means to reshape governments to meet the needs of society. However, so that these institutions and agreements can focus on highlighting the benefits that the commons can provide societies on human well-being and quality of life, it is necessary that they be designed to govern complex systems, and this is the main purpose of the book, hence its title *"Governing complex systems"*.

In the introduction *"The Age of Complexity"*, the author states that the effectiveness of governance systems for conservation or issues related to environmental protection and/or sustainability depends on the development of institutions appropriately combined with biophysical properties and/or socioeconomic systems for which they are driven.

It is along this line that Young has been working with the institutional diagnosis tool

that corroborates the effort to create and implement systems and institutions that can, in fact, contribute to the solution of complex problems, especially in the environmental arena (YOUNG, 2002; OSTROM et al., 2007; YOUNG, 2008).

The book does not bring a “save the planet recipe” as using this theoretical tool or creating institutions that have interesting combinations of problem and solution does not guarantee the total success of the initiatives. It merely presents a fascinating challenge to those who want to venture into the debate about the nature and importance of institutions. It is more like a cake recipe, i.e. the result is not always the same since people do not necessarily have the same understanding and not even the nature of the problems bear any resemblance.

The thesis of this book brings a component that adds complexity to this “known” recipe. Solving ‘problems’ in the Epoch of the Anthropocene will require the creation and implementation of new mechanisms, capable of dealing with the characteristics of complex and constantly turbulent systems. Then, it is also important to bear in mind that, frequently, environmental problems or even decision-making process have a different timeline, and do not wait for the “recipe” for getting the transformations institutions needs to rightly address the challenges.

The book is divided into three main parts. The first one presents an overview of everything that has already been discussed and consolidated about environmental governance. The second part is where Young intends to present the challenges posed by the Anthropocene. And the third part clearly sets out what are, in his view and based on his broad experience, the new perspectives on governance as a strategy.

That being so, the book’s chapters begin with a discussion on the effectiveness of governance systems—a topic that does not allow for generalizations about the most effective determinants of institutions in dealing with environmental problems.

From the state of the art approach to regime effectiveness, the book then proceeds to a detailed examination of emerging Epoch of the Anthropocene challenges that are subject to changes that are abrupt, nonlinear, sometimes transformative, and often very difficult to be anticipated. The author also points out that the biggest problem in finding solutions to these issues, with tipping points and trigger mechanisms that push systems to critical limits and initiate such transformative changes, is that we have a certain limitation on the ability to predict the occurrence and intensity of such events and changes. For Young, the decision-making process in highly uncertain environments is still one of the biggest challenges in the coming years, whether to assess the fragility of the climate system or to assess the fragility of the global economic system.

The book concludes with an analysis of new approaches to governance that can then increase the social capital available to those seeking to devise effective responses to challenges posed in this uncertain future.

It would not be possible to advance in the presentation of this provocative book if I did not introduce the main characteristics of the complex socioecological systems.

Four main groups of characteristics, which mostly interact with each other, present challenges to those who seek to create and operate governance arrangements aimed at producing significant large-scale sustainable results (OSTROM, 2009; BERKES et al., 2008).

- 1) Connectivity or coupling among the components of the system;
- 2) Thresholds, triggers, and nonlinear change patterns;
- 3) Dynamic and directional process, and
- 4) Emerging properties and the frequency of surprises.

What Young wants to show in this book is that the most commonly known approach to governance has serious disadvantages as a means of dealing with a number of growing and prominent problems that arise in complex systems. Then, he begins a process of identifying alternative approaches that may prove to be more effective, such as tools for achieving sustainability in the Anthropocene.

In a modest way, while reaffirming his role as an intellectual that stimulates contemporary debate, Young believes his contribution to the book is more “to launch us on a journey rather than to ensure that we will arrive safely at our destination”. The book leaves avenues open to other thoughts, and this makes it even more interesting, as it instigates our minds to go further in the governance systems debate.

The author makes it clear that the changes do not mean putting aside all that we have learned about the institutions or the social capital we have accumulated over the last few years. However, “*living in the Anthropocene does demand an ability to transcend business as usual and break the bonds of path dependence*”. Young initiated this process by exploring the role of goal setting as a governance strategy. He then introduced the idea of principled governance and explored the contributions of good governance.

It is clear that, in addition to any theoretical approach that feeds the soul and stimulates thoughts and discussions about the importance of governance systems for the conservation of complex socio-ecological systems, the final chapter, which concludes “Science, Policy and the Governance of Complex Systems”, brings a more practical but non-empirical approach not only to be used and discussed by scientists and decision-makers, but also to subsidize the emerging—but already quite consolidated—discussion on the interface between science and policy, which permeates various areas of knowledge, and intellectual production, in efforts to produce knowledge to achieve the political and governance needs of complex socioecological systems.

To conclude, one of the characteristics of the book that most struck me is that the presented form and the knowledge accumulated over the years, which allowed Young to bring such an interdisciplinary knowledge that not only stimulates the thought of natural scientists, who are accustomed to working with ecosystems and conservation of nature, but also brings input to those who are interested in discussing the development of regimes and institutions, as well as their implementation and effectiveness. It brings knowledge to social scientists, to internationalists, to those who live, in practice, the application of institutions.

If one wants to read this book with a more critical perspective to balance the previously addressed positive points, one could say that a sample of empirical cases is lacking in this book. It may be that this is not the purpose of this book, but to be even more complete and to serve as a guide for researchers and practitioners, the presentation of three or four clusters of case studies could be of great value considering all this accumulated knowledge and this innovative approach.

On the other hand, a more optimistic view would tend to recognize here the opportunity to apply this knowledge and propose a new research agenda focused on discussing the challenges for environmental governance in the Anthropocene.

Finally, the book makes an enormous contribution to all those who seek to improve the discussion that permeates the construction of effective systems of environmental governance, and can certainly inspire other questions and answers, which can go beyond institutions and cooperation, so that we can navigate more peacefully the turbulent waves that await us in this already so present future.

References

BERKES, Firket. et al. (Eds.). **Navigating social-ecological systems: building resilience for complexity and change**. Cambridge University Press, 2008.

BIERMANN, Frank. "Earth system governance" as a crosscutting theme of global change research, **Global Environment Change**, v.17, p.326-37, 2008.

ELLIS, E. et al. Involve social scientists in defining the Anthropocene. **Nature**, 540 (7632), 192-193, 2016.

MITCHELL, Ronald. Oran Young and international institutions. **International Environmental Agreements: Politics, Law and Economics**, 13(1), 1-14, 2013.

YOUNG, Oran. (ed). **The effectiveness of international environmental regimes: Causal connections and behavioral mechanisms** (pp. 1–32). Cambridge, MA: MIT Press, 1999.

YOUNG, Oran. The Co-production of Knowledge about International Governance: Living on the Science/Policy Interface. **New Earth Politics: Essays from the Anthropocene**, 75, 2016.

YOUNG, Oran. Building regimes for socioecological systems: Institutional diagnostics. In O. R. Young, L. A. King, & H. Schroeder (Eds.), **Institutions and environmental change: Principal findings, applications, and research frontiers** (pp. 115–143). Cambridge, MA: MIT Press, 2008.

OSTROM, Elinor. A general framework for analyzing sustainability of social-ecological systems. **Science**, 325(5939), 419-422, 2009.

OSTROM, Elinor. **Governing the commons**. Cambridge University Press, 2015.

ROCKSTROM, Johan et al. A safe operating space for humanity. **Nature** 461 (7263), 472-475, 2009.

Submitted on: 09/05/2017

Accepted on: 06/12/2018

<http://dx.doi.org/10.1590/1809-4422asoc0091r1vu18L3RW>

2018;21:e00911

Review

