books & ideas.net

Working or Looting ?

by Arthur Silve

In his latest book, Carles Boix proposes to account for human history with a simple theoretical approach, where the interplay between warfare and production technologies determines the choice between production and violence. This, in turn, leads to different governance structures and inequality levels – and, eventually, to different performances in terms of innovation and growth.

Reviewed: Carles Boix, *Political Order and Inequality. Their Foundations and their Consequences for Human Welfare*, Cambridge: Cambridge University Press, 2015, 334 p.

In his latest book, *Political Order and Inequality*, Carles Boix revisits the history of humanity, from the Neolithic agricultural revolution to the modern industrial revolution. He proposes an original theory to understand key features of human history, where resources, production technology, and war technology, determine the political order, while political order determines the level of inequality and innovation. This is a bold book, reminiscent in its scope and aims of Jared Diamond's 1997 *Guns, Germs, and Steel*, Gregory Clark's 2007 *A Farewell to Alms*, or Oded Galor's 2011 *Unified Growth Theory*.

Carles Boix focuses here on the emergence of the state after the breakdown of a primitive, stateless society. Two groups fight to control violence, to enforce order to their advantage: the producers and the looters. Depending on which group the fighting technology advantage, the state takes different forms, monarchical, republican, or mixed. Each institutional arrangement, including the stateless society, comes with a different level of inequality, and the theory predicts that all stifle innovation and growth. In this context, the welfare improvements of the past two centuries, first in Northwest Europe and then in the countries of the World collectively known as the West, appear as an unexpected development.

This book is ambitious not only by the scope of the questions it addresses (how and why did the state emerge as a dominant form of political organization? Why do we observe such a variety of institutional arrangements? What kind of economies do different regimes contribute to shape?). It is ambitious as well by the methods it mobilizes, both theoretical and empirical. It grounds its claims in a formal model, and manages to reduce the number of determinants to a handful: economic innovation and warfare technology. This allows him to generate clear predictions about politics, growth and inequality. It also gathers sound quantitative evidence from the Neolithic to recent history, relying on cross-sections when data is available, constructing original instruments whenever possible, and providing narratives to support the more elusive aspects of the theory.

Roughly, Carles Boix distinguishes three phases: stateless societies, the emergence of the state to re-establish order, and the modern breakthrough. For each phase, the book documents how different geographical characteristics and technologies yield different political orders, and the resulting level of inequality.

Stateless societies

The formal model is a variation on the prisoner's dilemma (see box). An individual can produce–or loot another's production. If two individuals interact repeatedly, and if their endowments are similar enough, cooperation is possible even in the absence of formal institutions to establish order. Individuals cooperate and share the output. If they do not cooperate, they always face the risk of attracting the attention of their neighbors, and of being looted if they decide to produce.

The prisoner's dilemma is a game often analyzed in game theory, to show how rational individuals with an interest to cooperate may fail to do so because the decision to cooperate or defect is taken independently by each individual, with no way to commit to each other. The classic presentation of the game in normal form is:

	Individual 2 cooperates	Individual 2 defects
Individual 1 cooperates	(-1,-1)	(-5,0)
Individual 1 defects	(0,-5)	(-4,-4)

where (x,y) is the payoff to each individual, x to 1 and y to 2. It is easy to observe that whatever strategy the other individual chooses, cooperation is never a good strategy for a player. In equilibrium, they are both likely to defect and each get a payoff of -4, even though they would have had -1 if they cooperated.
Cooperation may become a sustainable outcome if the interaction is indefinitely repeated and if the two individuals are forward-looking enough. Indeed, in such a case, the mutual threat to defect in the future can provide an incentive to cooperate for both individuals.

When through innovation, or access to better resources, one group improves significantly its livelihood, it may attract unwanted attention from less successful neighbors. Some innovations are easy to replicate (fire, carved stone): their adoption does not lead to a breakdown of the situation of relative equality. Other economic successes are easy to share (hunting large animals). Some innovations, though, are harder to replicate or share, and may become a target for less productive neighbors. Inequality, within a group or between societies, breaks down the cooperative equilibrium.

The framework also allows a simple discussion of the patience and mobility of agents, the impersonality of exchange, the technology of predation, and the storability of the output. The main prediction of the model, though, is the importance of equality to achieve self-enforcing cooperation. Inequality, on the other hand, would break up cooperation, and require the creation of institutions to enforce a cooperative equilibrium.

To test this assumption, the book mobilizes archaeological material from the Paleolithic, cross-sectional information about 1100 contemporary foraging and nonforaging communities from the Ethnographic Atlas (a database on 1167 societies coded by George P. Murdock and published in the journal *Ethnology* between 1962 and 1980), and ethnographic reports on contemporary stateless societies. There are no direct measures of inequality in foraging societies, so the author relies on several indirect measures. Arguably, unequal societies would leave us with decorative artifacts and elaborate tools, accumulated by their wealthiest members. Within-group inequalities would require larger settlements. They may favor sophisticated inheritance rules and social stratification. Finally, unequal societies with a male deficit may display polygyny. On each of these points, no evidence supports the hypothesis of unequal foraging society. On the contrary, they seem to be highly egalitarian.

This observation extends to political inequality. The probability of state institutions or formal authority (both associated with political inequality) increases significantly as the local economy becomes more sophisticated, from foraging to fishing, to extensive agriculture, and finally to intensive agriculture. While highly suggestive, this evidence is not sufficient to establish a causal link between the type of economic activity and the emergence of formal institutions. The case of the Eskimo communities of Northwestern Alaska hints toward causality. The invention of the drag float, 1200 to 1400 years ago, made whale hunting relatively safer, enabling denser and larger human settlements. Then, around 1200 AD, climate change significantly reduced the number of whale hunting areas. It also affected the social structure of the Eskimo communities, which became strongly differentiated three-tiered social hierarchies. This shock can be argued to be exogenous: technology, which improved the livelihood of the Eskimo communities, also triggered the emergence of formal institutions.

Another interpretation of the data is that formal institutions favor a more elaborate type of economy: there could be a reverse causality between formal institutions and economic

sophistication, going in the opposite direction compared with the author's interpretation. One way to address this issue is to use a variation in the explanatory variable (economic sophistication), that would be exogenous, that is to say could not be causally determined by the explained variable (formal institutions), and check whether this variation seems to have an effect on the explained variable (formal institutions). Such an exogenous source of variation (formally called an "instrument") may be the "economic potential" of a region. Arguably, it has an effect on economic sophistication, but not on formal institutions. The author measures this effect, and checks that it is indeed correlated with formal institutions: this supports the claim that economic sophistication favors the emergence of formal institutions. Yet another interpretation of this correlation could be that human communities established themselves in regions best suited to their activity. Nevertheless, an effect of economic sophistication (and inequality) on the nature of the political order still seems to be the most convincing interpretation.

The emergence of the state

At some point, technological progress is bound to be biased. It favors some individuals, some communities, at the expense of others. This generates some inequalities. The cooperative equilibrium cannot sustain itself anymore. Society breaks down, or less efficient individuals plunder their successful neighbors, squandering their production. Society survives only if another order emerges out of a Hobbesian state of generalized conflict. One path is for the producers to provide the invaders with a sufficient transfer to encourage protection rather than theft. This is the Olsonian account of the stationary bandit, of the bandit-turned-king. Monarchy is one institutional form of state that reestablishes order on the ruins of the cooperative order.

Another path is for the producers to set up their own protection collectively. If they invest enough in defense, they may discourage invasion and looting, and enforce order in a new Republican regime. Republics were typically small, protected by strong natural defenses, and marred by the difficulty to address an agency issue between the army and the rulers. This may explain why there are so few examples of successful Republics, and why most were short-lived. The book mentions several examples, such as republican Rome, which became an Empire (a monarchy in this book's typology) in -27 BC under Augustus (Octavian), and the Ambrosian Republic of Milan, taken over by Francesco Sforza in 1450 to establish tyrannical rule over the duchy. Only Venice managed to employ mercenary troops while preserving its institutions from the 8th to the 18th century. Even the American Continental Army was posing a threat to the new American government, and was disbanded in 1784. Maybe because republics were such a rare occurrence, the author deplores the weak attention they received as an alternative path of state formation.

Boix also mentions mixed regimes, in which producers doubled as exploiters, and imperial republics, in which monarch and producers formed a coalition. To survive, republics and imperial republics required another form of equality, if not between individuals, at least between factions. Imbalances in wealth or power would quickly threaten the fragile equilibrium. The formal framework does not accommodate a third party, though the book briefly discusses coalition formation and stability (a coalition against who? the population, assumedly, though it is never introduced explicitly).

A central argument of the book is that the technology of conflict determines inequality, and which type of regime emerges. The framework considers two clearly delimitated groups: the producers, who took better advantage of innovations in the technology of production–and the looters, who benefited the least, and whose opportunity cost of conflict is lowest. If the technology of conflict favors the producers, they defend themselves against outside threats by establishing a republic. If, on the contrary, it favors the looters, they establish a monarchy to extract rents from the producers.

A recurring argument in the book is that producers tend to organize themselves in cities. Technologies of conflict facilitating the defense of cities–pikes, defensive walls, or strong natural barriers–would favor producers. Meanwhile, horses, chariots, and stirrups would help raids by nomad pastoralists to loot sedentary societies. Copper and bronze were relatively expensive and rare, which underpinned the emergence of specialized warriors and centralized power. Conversely, iron, whose general adoption came around 1200 BC, had an equalizing effect, economic and political, thanks to its widespread availability and relative cheap cost.

How to disentangle the effect of war technology on political order and on economic inequality from concomitant innovations in the technology of production? For instance, feudalism, which became the dominant form of political organization in Europe after Charles Martel's victory in Poitiers, may be a result of the development of the mounted shock army (costly and requiring specialization in warfare), or an effect of the introduction of the heavy plow (which helped create larger surpluses). The heavy plow was probably introduced too late to explain the rise of feudalism (around 1000 AD), but this is hardly sufficient to establish conclusively the role of heavy cavalry. The introduction of new materials and weapons is likely to be exogenous to the choice of political institutions, an argument against a reverse causality running from the latter to the former. Another observation is that weapons are expected to be more or less effective depending on geographical conditions. Feudalism was never successful in various spots in Medieval Europe, such as Sweden, Friesland, Dithmarschen, Balkan highlands, etc. A convincing interpretation is that the heavy cavalry was least effective in mountainous areas and marshes.

To sum up, innovations in both the warfare technology and the production technology can have an impact on the type of institutional arrangement that prevails, directly or through the channel of inequalities. It is hard to disentangle these concurrent mechanisms, but the

model accounts for the emergence of an institution to restore order and cooperation when the self-enforcing cooperative equilibrium breaks down.

The modern breakthrough

A feature common to all political regimes is the tendency of their political elites to stifle innovation. In a monarchy, the argument is straightforward: the aristocracy will not favor a disruption of the rent-seeking order. In a republic, less so: the wealth of the governing elite is founded upon a previous innovation. The presumption is that republican elites are less averse to innovation, though in practice, they face a similar dilemma: an innovation risks displacing them as rulers by favoring new centers of wealth accumulation. The sustained welfare improvements in Northwest Europe (and then other countries) in the past two centuries were hardly an expected development.

Based upon the shortcomings of three common explanations for this modern breakthrough (ideational, institutionalist, and Marxist), Carles Boix provides a fresh perspective on an old puzzle. The most famous proponent of the ideational view is probably Max Weber, who associated the economic success of Europe with Protestantism and the values it carried (thrift and hard work). However, recent empirical research failed to establish a link between economic modernization and religious practices (and with cultural explanations more generally). Institutionalists, led by Douglas North, emphasized the role of checks and balances, as well as social trust. They argued that the preeminence of Parliament unlocked innovation and growth in England after the seventeenth century. While institutions certainly play a role, they are themselves the outcome of some underlying process, which institutionalists did not illuminate. Finally, the book notes a similarity with Marx, inasmuch as he looked at the technological roots of institutional change; however, his theory does not match the history of the industrial revolution in Western Europe: the industrial revolution in England did not result in a political revolution, and the French revolution did not result from any significant technological change.

The formal framework developed to describe the cooperative social order is of little help to understand the modern breakthrough of the industrial revolution. Nevertheless, the concepts it emphasized lead to original and useful observations. In particular, the author emphasizes three unique features of pre-industrialization Europe: the formation of urban, proto-industrialized clusters, political fragmentation, and complementarity between a commercial economy and the warfare technology. Cities had the means to defend themselves, and initiated a process of endogenous growth. Textiles and the production of metal favored innovation, in locations where innovators would find protection. Mobility of individuals between independent sovereign states also limited rent-seeking in each location. Firearms were an expensive warfare technology, which gave an advantage to richer sovereign entities.

Finally, old elites found profitable to associate themselves with emerging commercial interests, through marriage and joint ventures. They stopped discouraging innovation and growth.

Conclusion

According to Carles Boix, economic innovation and the warfare technology are the key determinants of political order. In turn, the political order determines the distribution of resources, and affects innovation. Boix's mechanisms has roots in its predecessors, in Jared Diamond's emphasis on the impact of warfare technology, in Gregory Clark's and Oded Galor's consideration of Malthusian dynamics in the rise of the West, and in Oded Galor's addition of production technology and the accumulation of human capital. It is also an important contribution to this literature, when it combines technological innovation in production and in warfare, and when it considers very carefully the issue of inequality.

Political Order and Inequality mobilizes many narratives, several pieces of cross-sectional evidence on inequality from the Neolithic to modern times. Boix even manages to find causal evidence to support a few predictions of his theoretical framework. The result is a demanding book, written with crystal clarity, a must-read for anyone who wants to understand better the history of humanity. Does this book constitute the final word of social scientists on the questions of the emergence of the state and of the rise of the West? No. On the first question, while it gives a deserved role to rent-seeking and wealth inequalities in the rise of formal institutions, the reader would like more details about the characteristics of innovations that made rent-seeking possible. Several recently published working papers go further in their discussion of the concept of "appropriability", for instance. On the second question, the reader feels that the formal model developed in the book brings no light: it is as if the author had added Chapter 6 as an afterthought. Even at the end of this book, the modern breakthrough remains (almost) as puzzling as before.

Published in booksandideas.net, 30 November 2017.