Review of: "The Unrevealed Causes of Prosperity"

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Algorithmic process, epistemological pluralism, and economic life

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Abstract

This review explores the epistemological presuppositions of Algorithmic Thinking Theory, on which Bin Li (2023) draws to explain why and how market-government diversity intensifies the prosperity of nations and provides them with a strategic advantage in a competitive age. The review then offers some avenues for deepening the epistemological framework of Algorithmic Thinking Theory with regard to what is proposed in a concise and rigorous manner, particularly in light of Khwarizmi's book entitled "*al-Jabr wa al-Muqabala*" (Calculation through restoration and comparison), in which he considers that the computational process could only be applicable to the quantifiable facts of people's daily lives. This important clarification, which deserves attention, provides an opportunity to better explore Algorithmic Thinking Theory and provide it with a more in-depth epistemological framework.

Keywords: Epistemological pluralism, Economic life, Algorithmic Thinking Theory

The word algorithm derives from the Latin form algorismus, distorting the name al-Khwarizmi (780-850), to refer to a computational process. As al-Khwarizmi writes in his book "al-Jabr wa al-Muqabala" (calculation through restoration and comparison), the idea is to solve everyday problems through a computational process (al-Khwarizmi, 1937: 16). Without explicitly referring to Muhammad al-Khwarizmi, whose book was written in Arabic, Li (2023) relies on this original representation consisting of approaching problems through computation, which spread in Europe from the middle of the 12th century. Hence his formula:

$$\text{Thinking} = \text{computation} = (\text{Instruction} + \text{information}) \times \text{speed} \times \text{time}$$

This conceptual equation fundamentally refers to Plato's epistemological theory, according to which mathematical entities are abstract entities that exist independently. Consequently, we do not invent Mathematics, but we discover it in several ways depending on the perspective adopted, which reflects a vision of the world. Hence the existence of a variety of philosophies of mathematics: realism, intuitionism, aestheticism, formalism, structuralism (Bouleau, 2021).<\/p>

Based on this algorithmic approach, economic life can be approached from "multiple angles under the Algorithmic

Thinking Theory (ATT)", to use an expression from Li (2023), who uses a purely mathematical vocabulary intended for a specialized or scholarly audience. From this perspective, there could not exist a single, optimal, and general algorithmic model capable of theorizing economic life in all its diversity, richness, and complexity.

Li's pluralist algorithmic approach could particularly be useful as a topos, in the sense of Grothendieck (2022), to better understand the epistemological postures underlying indicators of competitiveness that differ over a long period, beyond those of the International Institute for Management Development (IMD) and the World Economic Forum (WEF), not only according to the historical trajectory of each country in a resolutely comparative perspective, but also according to geostrategic opportunities and constraints, and financial and human resources and techniques available. Such a topos would bring worldviews and power issues into play (Belabes, 2001).

While restrictions on data, calculation, and knowledge lead to the adoption of simple computational models and the standardization of society, openings up in terms of data, computation, and knowledge offer the opportunity to innovate in complex computational models and to liberate society to generate modes of organization that are not based solely on market value. Hence the importance of the commons beyond the 'micro/macro', 'private/public', 'market/government' dichotomy to which Li refers, bearing in mind, consciously or unconsciously, the Chinese model through which the State intervenes massively but always with a view, typically entrepreneurial, to a positive-sum game beneficial to all (Tingyang, 2018).

Finally, it should be noted that it is often difficult to know exactly what is meant by the term 'algorithm'. Some call it a 'cooking recipe', others a 'set of calculation procedures', and still others simply a 'computer program'. This vagueness in no way prevents the term algorithm from flourishing just about everywhere, particularly in data science circles. Li's epistemological position seems to overlap to some degree with al-Khawārizmī's original idea of solving everyday problems by a computational process that does not claim to be the only one.

It should be noted that al-Khwarizmi never claimed that the method of computation used was capable of being applied to all the facts of daily life, but only to what could be quantified, as the following passage testifies:

"I have written on the subject of calculation by restoration and comparison an abridged book encompassing the subtlest and noblest of calculation needed by people in their inheritances, donations, partitioning, judgments, trades, and in all the transactions there are between them concerning the surveying of land, the digging of canals, engineering, and other things relating to its aspects and arts" (al-Khwarizmi, 1937: 16).

Based on this approach, Li believes that economic life can be approached from several angles using a common language: computation. This saves time, productivity, and money, while enriching the content of knowledge likely to have a positive impact on economic analysis, through a dynamic of improvement capable of accounting for a universe in the making, i.e., in a perpetual process of transformation (Whitehead, 1929).

This approach could be enriched by considering the performative nature of language, which achieves the reality it states when it is supposed to describe the facts, and by considering the resilience of systems alongside efficiency, as is the case in the modeling of natural systems, while specifying that the algorithm as a common language could only be applicable to

the quantifiable facts of economic life. As Edgar Morin (2009: 6) writes:

"The most important things in life cannot be quantified. Love, happiness, peace of mind: these things absolutely cannot be calculated".

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