ACCOUNTING: IF IT IS TO BE SCIENCE, IT IS THE NORMATIVE APPROACH

Octávio Valente Campos[1]

1 A BRIEF SUMMARY OF THE HISTORY OF THE QUESTION

A thorough analysis of the opposition between positive and normative accounting must consider not only modern epistemological aspects or the chronocentric supremacy of one field over the other, much less the mere display of more sophisticated mathematical methods. In this dichotomy, one must seek the foundations from which both originated and, to do so, go back at least as far as the classical Greeks.

In seeking to attain knowledge of beings, Aristotle (2002), in his Metaphysics, explains that things are composed of an essence/substance (*ousía*) together with their accidents (*symbebēkós*). Essence is that which makes a being what it is - its proper and necessary nature, without which it would cease to be itself; for example, being rational belongs to the essence of man. An accident, by contrast, is a characteristic that may be present or absent without altering fundamental identity - such as being tall, being seated, or having tanned skin; these properties may change, yet the man remains a man. Thus, essence is the permanent core of being, whereas accidents are contingent and mutable attributes. In the concrete being, essence and accidents are jointly present.

Approximately 1,600 years later, in the High Middle Ages, the Scholastics, in addition to creating the universities, recovered Aristotle and greatly developed his logic and dialectics, shaping the foundations of what we know as science without losing the ontological focus. For Thomas Aquinas (2002), we know the world through abstraction, drawing from the particular that which can be universally apprehended by the intellect; yet it is in the return to the concrete that truth and the conformity between intellect and reality can be verified. The cognitive process involves abstraction, but this limitation does not condemn man to remain confined within his own consciousness. Abstraction is an operation of intelligence upon reality, not the replacement of reality by a mental construction.

[1] Professor and Auditor General of the Federal University of Minas Gerais (UFMG). Professor at the Center for Graduate Studies and Research in Controllership and Accounting (CEPCON). PhD in Controllership and Accounting from the Federal University of Minas Gerais (UFMG). Master's degree in Controllership and Accounting from the Federal University of Minas Gerais (UFMG). Bachelor's degree in Accounting from the Federal University of Viçosa (UFV).

Breaking with this tradition four centuries later, amid the Protestant Reformation and absolutist monarchies, modern Science - beginning with Francis Bacon and René Descartes - starts to limit itself in its abstractive process: it isolates from the concrete being those aspects susceptible to measurement and then begins to confuse this abstracted cross-section with the whole of reality.

Bacon (2000) - a court intellectual who, toward the end of his life, was convicted of corruption - proposed that knowledge should begin with the methodical observation of facts. Rather than starting from general principles to explain particular cases, science should proceed in the opposite direction: gather observations, compare them, subject them to experimentation and only then progressively ascend to more general propositions. The problem begins when this proposal turns into a philosophical impossibility. Facts do not arrive before the intellect already separated, classified, and accompanied by their own explanation. It is consciousness that decides what to observe, which differences to regard as relevant, and under which concepts what has been observed will be interpreted. There is, therefore, no entirely pure scientific fact that precedes every concept. Experience may refute an idea and compel the intellect to correct it, but it cannot think in its place. By progressively subordinating knowledge to that which can be observed, experimented upon, and converted into useful results, the Baconian program opens the way for science to cease asking primarily what things are and instead to ask what can be done with them.

In another direction, Descartes (2016), doubting the senses, calls everything into doubt and finds something he cannot doubt: if he is doubting, he is thinking; and if he is thinking, he exists - cogito, ergo sum (I think, therefore I am). In the classical tradition, being precedes thought: man thinks because he exists and because his intellect is cognitive, capable of apprehending something of reality. In Descartes, the existence of the subject himself appears as a certainty reached from the act of thinking. It is no longer the concrete being that serves as the starting point of knowledge; rather, the subject's inner certainty becomes the criterion by which ontological being may once again be admitted. He does not definitively deny the external world - he appeals to the existence of God, for otherwise reality would be merely the illusion of an evil genius - but he radically alters the starting point of knowledge.

Bacon and Descartes therefore begin from opposite directions, yet they help produce a common result. The Briton concentrates science on experience subjected to observation and experiment; the Frenchman seeks to ground it in the certainty of the subject and in the mathematical representation of matter. In both cases, the concrete being, considered in its unity, tends to be replaced by a partial cross-section: on one side, that which can be observed and manipulated; on the other, that which can be clearly conceived, precisely measured, and

mathematically represented. Reality as a whole then comes to be judged according to criteria extracted from only one part of it.

In Kant (2001), who sought to reconcile Hume's (1999) skepticism with Newton's (1999) physics, the question undergoes a decisive shift. Experience supplies sensible content, but that content is necessarily organized by the a priori forms of sensibility, establishing an insurmountable boundary between the phenomenon and the thing-in-itself. Science retains a certain objective validity within the domain of possible experience, but it can no longer claim to know things as they are in themselves. Thus, true knowledge of being (scientific truthfulness) progressively gives way to the validation of the representations that the subject constructs about being (scientific validation).

Influenced by Immanuel Kant, Comte (1995) systematizes modern science as positivist and abandons the aspiration to know the first and final causes of things, thereby restricting science to discovering only the laws that regulate relations among phenomena. This confines scientific knowledge to what can be observed, compared, and related by laws. Substance and essence are simply declared inaccessible to science, which limits itself to studying only the relations among those parts of substance that can be measured, thereby definitively distancing itself from concrete beings.

By definition, the criteria of measurement are not themselves subjected to the scrutiny of positivist science and are therefore established by convention by some individual or group possessing sufficient power to do so. Yet, according to Auguste Comte, positivist science was to discover the laws governing society and provide the foundations for its reorganization, ultimately aiming at the emergence of a techno-scientific religion (the Religion of Humanity), endowed with sufficient priestly power to determine the paths of humanity in accordance with "reason." In some sense, this goal has been achieved, for when someone criticizes a famous scientist or a prevailing theory - sometimes rightly, at other times not so much - he is quickly excommunicated by today's mainstream without even being brought before an inquisitorial tribunal. Depending on its reach, this editorial may cause some to label me, at the very least, a heretic or, in contemporary language, a pseudoscientist.

Of course, for certain fields of knowledge, especially the so-called hard sciences, the technological gains achieved with the aid of this methodology are unprecedented. This creates enormous academic confusion between obtaining a technology and knowing, or becoming scientifically cognizant of, beings. With the advent of the steam engine, transportation and industry advance enormously, surpassing animal power and opening the way to modernity. Yet knowing how the machine Works - pressure, piston, gears - is not equivalent to understanding the being "horsepower," nor the being that is the machine itself.

Technical knowledge instrumentalizes the world. Electricity, for example, reveals man's power to transform reality, but it also lays bare the confusion: mastering a technique does not mean understanding being. To this day, there is no ontological definition of what electricity is. Positivist science describes its behavior and measurable properties (electric charge, current, voltage, electromagnetic field), formulates mathematical laws (Coulomb, Maxwell, Faraday), and creates extremely sophisticated technologies based upon it. Yet the primordial philosophical question, *quid est?* (what is it?), becomes unanswerable and is therefore ignored.

In the so-called social sciences, this has become an acute problem. The technological mastery that benefits the hard sciences has been used effectively in the social sciences whenever there is an ambition to transform society - tightening certain screws or moving certain levers so as to steer it in a particular direction. In other words, social engineering, which by definition can only be carried out by the hands - and results in the concentration of power in the hands - of those who control these instruments. Technology gives man more than power over nature: it increases the power of those who possess it over those who do not.

Voegelin (2002) exemplifies the use of such social engineering in the revolutionary movements of the twentieth century, which, starting from messianic conceptions and drawing on the available technology - especially radio combined with political propaganda - acquired the power to reach entire masses of people at a speed never before seen. Names such as Joseph Goebbels, Andrei Zhdanov, and Mikhail Suslov became famous for this. By contrast, the absolutist king Louis XIV, however concentrated his power may have been, still had to rely on the horse as the fastest means of transmitting messages through the villages of France in order to recruit supporters for his army (compulsory national military conscription came later, as a product of the French Revolution).

Also in the twentieth century, behavioral psychology, audience segmentation, advertising repetition, and techniques of persuasion expanded, increasing companies' capacity to influence preferences, behaviors, and customs, and to create or rapidly alter the tastes of entire population masses. The speed of changes in fashion is a visible manifestation of this phenomenon. Outside these instrumental applications, positivist methods in the social sciences have more often generated little more than the self-reinforcing circulation of studies within the same academic groups.

It is also essential to understand the role of mathematics in the scientific method. Mathematics is a language that formalizes relations and inferences, facilitating the logical argumentative process in syllogisms; thus, the more abstract the analysis, the more mathematical sophistication is required to preserve coherence between premises and conclusions. It is a facilitator and should

therefore not be treated as an end in itself. Because mathematics is fascinating and seductive, this inversion becomes common and produces a certain fetishism. Moreover, the more abstract the premises, the more limited the conclusions, regardless of the robustness of the mathematical method employed. There are also highly sophisticated models built upon biased or false premises, producing muddled conclusions that are gradually softened by subsequent studies under the claim that modern science is always evolving.

2 ACCOUNTING

Because human beings are not omniscient, there is a constant demand for information across the most varied domains, ranging from the atomistic and pragmatic information required to obtain the next meal to cosmological and transcendent questions concerning the origin of the universe or the existence of God. Within this broad horizon, accounting arises from the need for information about economic activity. Evidence of this can already be found in Mesopotamia.

It is also known that human consciousness is incapable of apprehending a being in its totality, still less of generating complete information about it for a third party, since the being under study itself is not capable of fully revealing itself at any given instant. After all, a real being, a stone, for example, contains within itself more information than an entire treatise on mineralogy; and the word "dog" does not bite. Yet the classical scientific end is to know as much as possible about a being, like a curve that forever approaches an asymptote without touching it. For this reason, Accounting seeks to provide all relevant information: both that which is condensed in the financial statements and the entire range of supplementary and detailed information contained in the notes, in addition to the explicit recognition of contingent accounts. There is, therefore, the spirit of a constant pursuit of ontological knowledge of an economic being as a whole, both in its *ousía* (essence) and in its *symbebēkós* (accidents).

The accountant's activity in producing informational reports about a given entity is directed toward making that entity known to interested parties, or information consumers. The relationship between suppliers and consumers of accounting information is not bureaucratic but economic. The clearer, more comparable, and more reliable the data produced, the lower the risk premium required for investment: shareholders accept a lower expected return, creditors may charge lower interest rates, and the company obtains resources at a lower cost. Therefore, because this is a commercial exchange between suppliers and consumers of information, the tension between the two generates a trade-off between the costs and benefits of information.

For Kelsen (2009), normativism is not valid because it is true, just, or even intelligent; it is valid because it was enacted by the competent authority pursuant

to another norm that granted that authority its competence - and so on successively, up to the fundamental norm. For Hayek (1973), by contrast, before being condensed into a pronouncement and imposed by some office, a good rule arises from the accumulated experience of several concrete individuals who try, err, compare, and correct. This means that a regulator may confer binding force upon a practice already tested and approved in the relationship between accountants and users; what the regulator cannot do, although it often imagines otherwise, is decree by the stroke of a pen, ex nihilo, that an inadequate representation has become informationally true or relevant.

Accordingly, normative accounting can be regarded as a science only if - in addition to the continuous pursuit of the economic ontological being - it standardizes only those rules discovered and improved through interaction among its participants. The centralization of power in one or a few individuals to determine legally the best way to generate knowledge would possess informational validity only in the hypothetical scenario of their omniscience.

It is also important to understand that the pursuit of legal standardization has informational usefulness only when greater comparability among entities is desired. The functional distinction between accounting intended for management (managerial accounting) and accounting directed to external owners, creditors, and investors (financial accounting) only began to take shape after the Industrial Revolution; its conceptual bifurcation, however, was consolidated only in the mid-twentieth century, when the term "normative accounting" gained some prominence and information intended for external users became subject to increasing legal standardization in order to enable comparisons among companies. From this branch also emerged certain problematic theories, such as agency theory; but that is a subject for another editorial.

The scientific method developed by Aristotle begins with the collection of the opinions of the wise (a literature review) and, on the basis of this material, proceeds to sift convergent and divergent points and, through dialectics, to confront competing hypotheses. In contemporary epistemology, Popper (2013) adds little to this, placing greater emphasis on falsifiability, which in some sense was already incorporated into Aristotelian dialectics. Indeed, several hypotheses of positivist accounting can be falsified, just as accounting information can be verified in order to assess the faithfulness of its representation. As for experiments, neither positive nor normative accounting conducts them. Therefore, in light of everything presented regarding this dichotomy, I conclude that, philosophically, it is easier to defend the scientific status of normative accounting.

3 FUTURE PERSPECTIVES

A deep fissure can be observed in the foundations of positivism within the hard sciences. Husserl (2012) shows how modern science, since Galileo, has progressively replaced the concrete world of experience with an idealized and mathematically reconstructed nature, eventually taking the product of its method to be the totality of the real. The equations continue to work; what has been lost is the awareness that numbers, measurements, and models acquire meaning only upon the prior ground of the lifeworld, in which things are perceived, compared, and judged by concrete subjects. Science has attained formidable precision regarding its objects, but it no longer fully understands either the origin of its own idealizations or the human meaning of the knowledge it produces.

Phenomenology points to the need to attain knowledge of beings by describing things as they are and seeking their concreteness, in a manner akin to what accounting, in some sense, seeks to do. Edmund Husserl's body of work is so vast that its editorial preparation will require more than a century. In addition to the works published during his lifetime, the philosopher and mathematician left approximately 40,000 manuscript pages written in shorthand. Their assimilation and incorporation into the philosophical canon may substantially alter the philosophical mainstream and, consequently, the scientific one.

Still within the philosophical field critical of positivism, the twentieth century saw the emergence of major thinkers such as Lavelle (1934), Santos (1961), and Zubiri (1980). In the empirical sciences, seemingly irreconcilable paradoxes have arisen, such as those associated with the measurement process in quantum physics. The famous thought experiment of Schrödinger's Cat exemplifies such paradoxes, appearing from the outset to violate the basic principles of non-contradiction and the excluded middle as defined by classical logic.Gato de Schrödinger

From these ambiguities, Smith (1995), drawing on Aristotelian-Thomistic metaphysics, seeks to incorporate and transcend the advances and limitations inherent in positivism. The quantum enigma would not arise properly from its mathematical formalism, but from the Cartesian assumption that the whole of reality is reducible to the universe quantitatively described by physics. The author interprets the quantum state as a set of potentialities and measurement as the passage through which one of those possibilities is actualized in a determinate event. As in Husserl, the problem would not lie in the efficacy of the calculations, but in the illegitimate leap by which a methodological abstraction is elevated to the condition of the totality of being.

In Accounting, although the expression "normative accounting" is modern, the normative function of accounting is ancient, as has been well documented at least since Ancient Egypt. Therefore, in the dichotomy between positivist accounting and normative accounting, the latter is far more directly connected with what accounting has done throughout its history. Indeed, positivist

accounting lives only from data extracted from normative accounting, whereas normative accounting has existed and will continue to exist independently of positivist accounting. The reverse is simply a material impossibility.

For this reason, positivist accounting appears destined for a short life. If it lasts 200 years, from a holistic perspective such as the one presented here, it will be no more than a breath. Its origin can be traced to the work of Ball and Brown (1968), whose great merit was to observe—through a petitio principii—what accounting users had already known for millennia: accounting information is relevant.

That being so, it was not positivist accounting that demonstrated the relevance of normative accounting; rather, the former merely showed—while appropriating part of the importance of the latter—that through its abstractive methodology it is also possible, in limited cases, to reach the same conclusion already known by all users. Of course, within the current scientific community, the positivist view prevails to such an extent that it is difficult to conceive that an accountant—even while carrying out the full routine of producing information for small or large economic enterprises—may be applying a scientific method that is more concrete and robust than positivist methodology. Yet scientific dogmas always prevail for a time, until they are overcome.

The Socratic method of appealing to sincere testimony has always been a good means of overcoming dogmas. Therefore, we positivist researchers need to place one foot outside our cognitive bubble and ask ourselves the following question: Is the research I have been conducting contributing to and discovering something about the concrete world, or have I merely been feeding back the dogmas already stabilized by my academic community—dogmas that only that community demands and values?

REFERENCES

Aristóteles. (2002). *Metafísica* (M. Perine, Trad.; G. Reale, Introd. e coment.; Vols. 1–3). Loyola.

Bacon, F. (2000). *The new organon* (L. Jardine & M. Silverthorne, Eds.). Cambridge University Press.

Ball, R., & Brown, P. (1968). An empirical evaluation of accounting income numbers. *Journal of Accounting Research,* 6(2), 159–178. https://doi.org/10.2307/2490232

Comte, A. (1995). *Discours sur l'esprit positif* (A. Petit, Ed.). Vrin. (Original work published 1844)

Descartes, R. (2016). *Discours de la méthode* (L. Renault, Ed.). Flammarion. (Original work published 1637)

Hayek, F. A. (1973). *Law, legislation and liberty: A new statement of the liberal principles of justice and political economy: Vol. 1. Rules and order*. University of Chicago Press.

Hume, D. (1999). *An enquiry concerning human understanding* (T. L. Beauchamp, Ed.). Oxford University Press.

Husserl, E. (2012). *A crise das ciências europeias e a fenomenologia transcendental: Uma introdução à filosofia fenomenológica* (D. F. Ferrer, Trad.). Forense Universitária.

Kant, I. (2001). *Crítica da razão pura* (M. P. dos Santos & A. F. Morujão, Trads.; 5ª ed.). Fundação Calouste Gulbenkian.

Kelsen, H. (2009). *Teoria pura do direito* (J. B. Machado, Trad.; 8ª ed.). WMF Martins Fontes.

Lavelle, L. (1934). *La présence totale*. Fernand Aubier.

Newton, I. (1999). *The Principia: Mathematical principles of natural philosophy* (I. B. Cohen & A. Whitman, Trans.). University of California Press. (Original work published 1687)

Popper, K. R. (2013). *A lógica da pesquisa científica* (L. Hegenberg & O. S. da Mota, Trads.; 2ª ed.). Cultrix.

Santos, M. F. dos. (1961). *Filosofia concreta* (Tomo III, 3ª ed.). Logos.

Smith, W. (1995). *The quantum enigma: Finding the hidden key*. Open Court.

Tomás de Aquino. (2002). *Suma teológica: A criação, o anjo, o homem: Vol. 2. Parte I, questões 44–119*. Loyola.

Voegelin, E. (2002). *As religiões políticas* (T. M. da Silva, Trad.). Vega.

Zubiri, X. (1980). *Inteligencia sentiente: Inteligencia y realidad*. Alianza Editorial; Fundación Xavier Zubiri.