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Pataphysics of finance: An essay of visual epistemology☆

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ABSTRACT

Since the economic crisis of 2008, numerous observers have called into question the way that financial knowledge deals with economic reality. In this challenging context, the time has come to embark on a reflection about the role of finance (and financial knowledge) in our contemporary society. This article contributes to this reflection by expanding the process of research through a pataphysical parody illustrating the imaginary dimension of financial knowledge and its implications for accounting practices. Although this imaginary aspect of financial knowledge is often forgotten in finance, it is nevertheless very important since, as I will explain, it directly shapes the computerization of financial markets and can eliminate the economic referent of accounting signs. These claims will be discussed through the lens of a visual epistemology based on the science of imaginary solutions (pataphysics) to illustrate this imaginary nature of financial models. Discussion of the paradoxical consequences implied by increasing computerized implementation of an imaginary solution will ensue. More generally, this paper proposes, on one hand, an original (and critical) perspective on financial knowledge, and on the other hand, an invitation to discuss and escape (from) the mainstream paradigm for the purpose of promoting pluralism in finance.

1. Introduction

As a part of culture, science is a human activity aimed at developing justified beliefs about the world (Lyotard, 1979; Rorty, 1979). Some of these beliefs progressively crystallize and become stabilized conventions. However, scientific knowledge is, by definition, incomplete in various ways (van Fraassen, 1991), leading scientists to create an "objective illusion" (Baudrillard, 1981,1997) whose justification can be studied through several conceptual frameworks widely familiar to philosophers: realism, empiricism, constructivism, and so on. Science is a human practice and therefore a specific imaginary framework (shared by individuals) projected onto phenomenological events. This article deals with a very specific imaginary framework called financial economics ("finance"), which today refers to the science of "the allocation and deployment of economic resources" (Bodie, Merton, & Cleeton, 2009). Finance as a *field of research* emerged in the 1950s when many business disciplines sought to enhance their prestige by embracing quantitative methodologies developed in economics.[1] This paper will investigate the imaginary dimension of financial knowledge through a burlesque analysis of two well-known financial models and their implications both for the organization of financial markets and for accounting practices. My

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[1] On the emergence of financial economics, see Jovanovic (2008), Fourcade (2009) or Fourcade and Rakesh (2009).

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reflection will be based on what specialists in contemporary literature call "pataphysics," which, roughly speaking, refers to a sceptical questioning of the social conventions (presented as imaginary solutions) that structure our society. In extending pataphysical scepticism into the world of scientific inquiry, this essay can be seen as an argument, a plea[2] for pluralism in science (and more precisely in finance).

After defining pataphysics and its parodic way of dealing with knowledge, I will present, in the second section, two visual entities evoking two key financial models. For the purpose of the analysis, these two models will not be explicitly named in the second section (although readers familiar with the basics of finance will easily recognize them). The purpose of these illustrations is to emphasize the imaginary dimension of financial models and therefore their remoteness from the economic reality to which they refer. Because all scientific theories are idealized and incomplete representations of reality, there are several "imperceptible gaps" that exist between reality and scientific knowledge. These gaps result from the fact that all theories necessarily "miss something" about the reality that they are supposed to describe (van Fraassen, 1991). The visual parodies I propose aim to promote the necessary diversity of interpretations of these epistemological gaps propounded by the philosopher van Fraassen (1991). This paper will develop this perspective contrasting with the financial mainstream, which uses computerization of the financial sphere to shape financial reality in accordance with a specific theoretical framework. Replacing financial markets with their theoretical representation in this way tends to eliminate gaps between reality and models, therefore reducing the potential diversity of interpretations (pluralism) in finance. Although this trend towards computerization of the financial sphere is almost universal (i.e. it is seen in all countries regardless of the culture), this process does not necessarily imply a "uniformization of knowledge."

In the third section, I will illustrate the "reification of theory." After illustrating this phenomenon with concrete examples (flash crashes), I will explain how this evolution of the financial sphere results from a computerized implementation of financial (mainstream) knowledge: by increasing the atomicity (number of actors), the liquidity (number of transactions in one day) and the transparency (everything is recorded) of markets, computers have brought these markets closer to the theoretical (hence imaginary) concept of a "perfectly competitive market." In this context, we observe an imaginary construction of financial reality. The reification of theory (i.e. the theoretical representation of reality progressively becomes the reality) contributes to the development of a "financial hyper-reality" (Macintosh, 2003; McGoun, 1997; Schinckus, 2008), generating a paradoxical circumstance in which we have financial markets without an economic referent (automated trade is disconnected from economic reality) or traders (transactions are automatically traded by algorithms). This situation generates much debate about the potential bridge between the economic (productive) sphere and the financial (speculative) industry (Cooper, 2015; Walker 2016). I will investigate this aspect in the fourth section, in which the implications of this imaginary construction of the financial reality of accounting will be discussed.

2. Financial knowledge through the lens of pataphysics

Pataphysics is usually presented as "the science of imaginary solutions, which symbolically attributes the properties of an object, described by their virtuality, to their lineaments" (Jarry, 1996, p. 21). The word "pataphysics" was invented by a group of French schoolboys in the 1880s and used as "a barrage of mockery aimed at their unfortunate physics teacher, Mr. Félix-Fréderic Hébert" (Hugill, 2012, p. 207). The first article dealing with pataphysics appeared in 1893 in the magazine *L'écho de Paris littéraire illustré*. The author, Alfred Jarry (1873–1907), was an eccentric whose texts, novels and theatre plays were peppered with sarcastic and sceptical reflections on society.[3] Although Jarry's works featuring the fictional character "père Ubu"[4] defined all the symbolic foundations of pataphysics,[5] the relationship between pataphysics and science is rooted in the text entitled *Gestes et opinions du Docteur Faustroll, pataphysicien,* written in 1898 (but published in 1911). The character of Faustroll was a sixty-three year old scientist who was "an altogether more scientific and exceptional entity than Ubu" (Hugill, 2012, p. 220). This text, which is often considered as the bible of pataphysics, also clarified how a pataphysical perspective can be useful for analyzing scientific conventions. On this point, Vauberlin (2010) explained,

> "A reading of *Gestes et Opinions* suggests and makes possible an indefinite development of Speculation [. . .] But we must beware: Speculation here does not consist in leading Faustroll toward the imaginary, the extraordinary, the rare, the fantastic, or even toward humour, the nth degree, or pataphysics since Faustroll is already there! [. . .] Speculation here consists of a 'what if' (Vauberlin, 2010, p. 21)

In this context, scientific authority (symbolized by Doctor Faustroll) appears as the gatekeeper of scientific conventions, which are seen as a particular way of giving a meaning to the world/society. Pataphysics provides a burlesque way of discussing science and of illustrating the imaginary dimension of knowledge by speculating about *what* would happen *if* the conventions that govern our knowledge and society were structured in a different way. What if all scientific models were to become reality? What if scholars were to confuse their creation with reality? In his texts, Jarry dealt with such questions sarcastically by emphasizing that science tends to replace the old superstition of religion. Because pataphysics is the science

[2] One could claim that all ideas that must be defended are presumed guilty.
[3] See Hugill 2012, Chap. 9) for more details about Alfred Jarry's works.
[4] "Père Ubu," who personified the unfortunate teacher of physics (Mr. Hebert) was the monstrous protagonist of a theatre play written by Alfred Jarry.
[5] For instance, the symbol of *Gidouille* refers to the belly of Mr. Félix-Fréderic Hébert, Jarry's physics teacher.

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