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Why grids in accounting?

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ABSTRACT

Grids are ubiquitous in the modern world. This paper explores how the concrete spaces of urban grids, some of the earliest forms of grids, parallel the spaces of today's accounting grids. The origins of these urban grids afford profound insights into the preference for grids as employed in contemporary accounting. The reasons for grids are here explored in the framework of the structural properties introduced by Giddens: signification, legitimation, and domination. Grids are shown to signify issues with positive connotations that can also be related to accounting, such as efficiency, quantification, and rationality, as well as transcendental ideals about "correctness", "justice", "truth" and "equality". These significations legitimate grids and their contents and produce domination of the issues gridded. Domination is also achieved by grids signifying and legitimating control and order. Moreover, the prevalence of grids can be explained by their simplicity and their ability to be easily extended; these characteristics assist in the signification of the contents gridded, thereby again legitimating grids themselves as well as their contents and producing domination of the accounting space. Underlying all these factors is the so-called oblique effect according to which humans have an inherent physical preference to see issues around them in gridiron forms.

1. Introduction

"Let us be of good cheer, for I see the traces of human beings!"

-Aristippus

In Book VI of his *Ten Books on Architecture*, Vitruvius recounts an anecdote about the Socratic philosopher Aristippus, who, upon discovering geometrical figures drawn in the sand on a shore upon which he had been shipwrecked, concluded that the area was inhabited (Smith, 2003). More striking, however, are those man-made straight lines that lie on the land itself—not inscribed on a beach for a stranded philosopher to stumble upon before being washed away, but more permanently cast in the form of streets, highways, walls, fences, canals, railroads, windbreaks, hedgerows, plantations, farms, orchards, cities,

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suburbs, power lines, natural gas lines, wind farms, solar arrays, *et cetera*. They are the physical analogs on the landscape of the graticule, the meridians and parallels that are engraved on maps. This paper explores how the surprising explanations for these urban *grids* are analogous to the explanations for the (virtual) grids ubiquitous in accounting.

While such geographic grids are *familiar*, accounting grids are virtually *iconic*. Without numbers or texts arranged in clearly defined rows and columns,[1] the general public, not to mention more than a few accountants themselves, might not identify those numbers or texts as "accounting." However, while accounting studies have analyzed accounting as numbers or texts (discourses), less attention has been devoted to accounting as the production of pictures and images (Quattrone, 2009, p. 96).

A limited number of scholars have, however, addressed the pictorial dimensions of accounting (Quattrone, 2009) and the deliberate and partly unintentional effects of such imagery (Daly & Schuler, 1998; Davison, 2010), although the unintentional effects have not yet been widely addressed. Nor has this research ignored the significance of grids, which are not only an *arrangement* of data but also an *image* of it. Studies have examined the simplicity of grids (Quattrone, 2009), their adaptability (Carmona, Ezzamel, & Gutiérrez, 2002), and even their higher-order "spirituality" (Macve, 1996; Thompson, 1998). Other scholars have dealt with the relations between concrete non-accounting, i.e., architecture, and more abstract or virtual accounting (Hopwood, 1990) and with accounting and space (Carmona & Ezzamel, 2009). Yet this work has not addressed grids; thus, what we believe to be a fertile connection has never yet been made. For example, whereas Hopwood (1990, pp. 8–9, 1994) focuses on the visibility and control implications of concrete and accounting spaces, we also suggest deep-seated, highly non-rational and previously undiscovered reasons for an affinity for grids and thus for the preference for representing accounting and financial statements as grids. The more familiar significations of street grids are negative: repetitive, homogeneous and stultifying; however, grids are acknowledged here as flexible, both as systems of planning and as signifiers (Kostof, 1991).

In this paper we argue that the abstract/virtual accounting grids in financial statements and accounting information technology (IT) systems, however important the connotations that scholars have acknowledged, are much more than a pictorial convention. They are a direct descendent of concrete geographic grids, the urban street grids imposed on space by the earliest civilizations, and the origins of these urban grids in ancient times afford profound insights into the origins of grids as employed in contemporary accounting. Researchers have so far expressed relatively little interest in studying the relationship between accounting and space (Carmona & Ezzamel, 2009, p. 138). We acknowledge that studies of concrete space, i.e., urban grids, can account for our preference for the gridded accounting space. Giddens' (1976, 1979, 1984) three properties of structure—signification, legitimation, and domination—offer an especially useful theoretical tool for elucidating the connections between geographic grids and accounting grids. For the most part, this tool has been used in accounting research for its explanatory power regarding individual companies and such managerial issues as the signification of profits, legitimation by technical standards, and the domination by management or shareholders (Ahrens & Chapman, 2002; Conrad, 2005; Gurd, 2008). Here we use it in a broader context and in a more philosophical and visual setting, resulting in showing higher-order connotations. The link between urban planning and accounting is also brought forward by looking at the parallels between urban maps and accounting grids, interpreted as maps of accounting.

This study explores some of the earliest concrete forms imposed upon humans, adding a new dimension to the evidence from more recent times. The subject of urban grids allows us to move further back in time toward the past than any other manifestation of grids could have, simultaneously studying multiple types of urban grids found in multiple parts of the world serving multiple functions. There appear to be inherent human tendencies at work here, tendencies that have existed perhaps for thousands of years and that can most effectively be revealed by delving deep into the history and origins of such forms of parallel and perpendicular alignment. An analysis of the origins of grids, as explicated by historians, is included in this paper (Castagnoli, 1971; Fleming, 2002; Lynch, 1981; Mazza, 2009; Paden, 2001; Stanislawski, 1946); however, these historians have tended to base their explanations of grids almost exclusively on the functions (of either a practical or higher-order nature) that grids served or were assumed to have served for the rulers and the inhabitants of the sites. It is necessary, however, to supplement these analyses with the literature on the oblique effect, the phenomenon that humans observe horizontal and vertical lines more effectively than oblique lines (Appelle, 1972; Essock, 1990; Latto & Russell-Duff, 2002), showing the subtlety of the reasons for grids.

[1] We employ the familiar definition of a grid as the parallel and perpendicular arrangement of straight, orthogonal lines. The word "grid" has referred to things as wide-ranging as bricks, clay tablets, maps, musical notation, perspective painting, print, boxes, information, landscape features, and of course financial statements. Each of the items in this list is a chapter in Hannah B. Higgins' (2009) interdisciplinary exploration *The Grid Book*. According to the Oxford English Dictionary (1989), the first use of the word in 1839 meant "an arrangement of parallel bars with openings between them; a grating". However, "grid" is a shortened form of the word "gridiron," which has been used for hundreds of years since the late thirteenth century when it was "a cooking utensil formed of parallel bars of iron or other metal in a frame, usually supported on short legs, and used for broiling flesh or fish over a fire". And it was also "a similar structure employed as an instrument of torture by fire". By the late nineteenth century, the word "gridiron" was being "[a]pplied to objects resembling or likened to a gridiron": specifically in 1883 to a city having a "formal and gridiron-like plan of the streets" and in 1892 to Chicago being "criss-crossed by a gridiron of railway tracks". And by 1918, such real "gridirons" had become virtual "grids" of orthogonal lines, the word having acquired the meaning "a network of lines, especially two series of regularly spaced lines crossing one another at right angles; specifically one provided on a map as a means of specifying the location of places and objects". Shortly thereafter by 1926 a "grid" might refer to "a network of high-voltage transmission lines and connections that supply electricity from a number of generating stations to various distribution centers in a country or a region, so that no consumer is dependent on a single station" and by 1943 might be "used of any network that serves a similar purpose for other services".