

Ann E. Davis
Marist College
Poughkeepsie, NY
12601

Ann.Davis@marist.edu

Marist College
3399 North Road
Poughkeepsie, NY 12601
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Contested Continuity:
Competing Explanations of the Evolution of the Corporate Form

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Short Abstract

The history of the electric utility industry provides the occasion for testing competing explanations of the emergence and persistence of the corporate form. This industry, characterized by capital intensity, intense competition, and attractive investment opportunities, along with rapid technological change and legal and regulatory changes, provides lessons for newer industries with network externalities.

Long Abstract

Drawing on the work of institutional economics (Dolfsma, Finch, McMaster 2011; Davis 2015) and business history (Marglin 1974; Lazonick 2014; Chandler 1962, 1977, 1990; Noble 1977), the evolution of the electric power industry in the US will be examined to test competing explanations of choices of finance and technology. In an industry with technical economies of scale (Hughes 1983; Arthur 1996), the corporate form magnified scale and leverage to ultimately create unsustainable financial vehicles (Cudahy and Henderson 2005). The public utility holding company was part of the new financial institutions in the 1920s, like the deregulated virtual corporation in the early 2000s. In spite of

regulation regarding prices and financial disclosure, the collapse of electric power corporations were a significant part of the financial collapse of both the 1930s and the early 2000s. Competing explanations include the role of professional training for engineers (Kline 1992) to rules of operation for financial institutions. Public enthusiasm for the stock market (Ott 2011; Cudahy and Henderson 2005, 98-113)) and the power of financial bubbles (Perez 2002; Shiller 2008) were part of the culture of both periods. In this context, questions can be raised regarding the definition of “capital,” whether the physical equipment, organizational assets, allowable rates of return (Berk 1994, 2009), or stock market valuation (Tobin 2001). The ways in which the value of capital is subject to regulatory, professional, communication media, and legal changes, is also part of the investigation of the evolution of the corporation and the persistence of this familiar form (Luhmann 1995; Staheli 2013).

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I. Constitution of “Social Facts:” Reifying Abstractions and Symbols

The following examination makes use of contrasting theoretical approaches to interpret a case study of the electric utility industry. Several theoretical approaches can be categorized into either 1) self-referential, self-reproducing systems (Luhmann 1995) in contrast with 2) socially embedded analyses (Poovey 2002; Searle 2010; Foucault 1970; Maniglier 2013). Luhmann analyzes “self-referential systems” as being emergent, “autopoietic,” reproducing itself by distinguishing the system from the environment by means of a boundary (Luhmann 1995, 15-36). Luhmann’s approach provides a general theory for all social systems, whereas the other approaches refer to the historical dimension, with concepts such as “social imaginary,” “Background,” or *epistemes*. These meaning systems are specific to particular eras and geographies, embedded in cultural traditions which refer to material objects in the natural world, as well as human patterns of production and use of those objects (Latour 2013).

II. Groups vs. Individuals

The specific “object” of examination in this case study is the “corporation,” a socio-legal form which has persisted for millennia, with roots in the church, local government communes, and early business companies (Davis 2015; Hodgson 2015, 204-234). In spite of this institutional persistence, there is also constant variation in and contestation of the corporate form and its meaning, which provides a useful example for analysis. In respect to the contrasting approaches above, can the corporate form be understood to reproduce itself, or to be subject to varying and conflicting uses, rules, and interpretations of given historical institutional contexts?

The corporation is a group of individuals cooperating for a common end, often treated in law and economics as an “individual” entity or person. The definition of the corporate form is “a judicially recognized entity possessing key attributes of legal personality, such as the legal power to contract and to own property” (Kraakman 2001, 148). In addition, other typical characteristics of a business corporation include investor ownership, delegation of decision-making to a single authority, limited liability, and transferability of shares (Kraakman 2001, 148-151; Bratton and Levitin 2013, 787-788).

Social forms like the corporation provide structure and meaning to social interactions, but are also a form of discipline and abstraction. The long-term history of certain business practices has been studied in historical context. For example, the discipline of documentation provided the base for formation of a partnership system in thirteenth century Florence (Padgett 2012). The concept of the market as a system as measurable by empirically grounded numbers gave credence to the market before its actual operation, a type of performative enactment (Poovey 1998, 2008).

For Padgett (2012, 169-173, 193-198), the increasingly widespread use of double-entry bookkeeping enabled companies to develop relationships with each other through financial flows, in late fourteenth century Italy. This new accounting system facilitated transactions across distance and among a variety of commodities and owners, a new form of abstraction. The existing systems of guilds and patrilineal

marriages were repositioned into a foundation for “financial capitalism,” with money as a unit of account and a purpose of operation. The “partnership system” was a set of legally autonomous companies linked through one person or through a small set of controlling partners, instead of partnerships based primarily on family ties.

In a modularized partnership system, the senior owner is both inside (entrepreneur) and above (financier) his array of companies at the same time. The multiplicity of heterogeneous account books that he is forced to manage, keeping track of complex cross-flows of goods, finance, and credit, necessitated systematization and abstraction analogous to the arrangement of space in a linear-perspective painting. Current accounts, which really were reified people and customers, were arrayed mathematically, with double-entry bookkeeping used to calculate the financial flows and the businessman’s own line of movement, called profit (Padgett 2012, 203).

For Poovey (1998, 29-91), the system of double-entry bookkeeping provided a format for abstracting individual transactions into a set of balances, which reveal profitability as well as support the credibility of merchants in seventeenth century England. Based on a standardized format, these consistent practices helped to make transparent the source of merchant’s profit, in a period when usury was still considered sinful. The standard methods of entry enabled the position on the page of the ledger, whether debit or credit, to also abstract the position of the writer, which could be any person trained, entrusted, and supervised in that role. This system of writing helped support a system of markets for later theorists, which likewise operated by consistent rules. The careful specification of a given entry with quantities and prices helped to make the use of numbers more accepted, as a general way of representing reliable “facts” regarding the real world. This system of accounting helped translate the concrete object into the abstract money form.

III. History of the Corporate Form

The corporation was most clearly represented by the guild and commune in early modern Europe. The rise of the business corporation was primarily in the context of long distance trade, often chartered by the government. The merchant corporation was a key instrument in the development of colonies, where the sovereign power was granted to a limited group of individuals on behalf of the crown (Kelly and Kaplan 2001, 1 – 26; Kelly 2006, 161-167; Siedentop 2014).

In the nineteenth century, in the context of the industrial revolution, the business corporation was considered a private entity, owned by stock holders, who hired managers, workers, and facilities and shared in profits. Stock shares in the corporation were traded on capital markets, which were co-constituted with the corporate form (Sabel 1991). Managers in turn organized production technologies, facilities, and sales capacities on behalf of the corporation. Workers were not members of the corporations (unlike guilds), but had contingent employment contracts (Davis 2015a). General incorporation laws in the early nineteenth century provided for a democratization of the corporate form, in contrast to the privilege granted by the state (Wright 2014). The freedom of contract doctrine with respect to labor was replaced in the early 20th century US in Brandeis court, with workplace rights such as minimum wages, maximum hours, seniority rules, safety, right to organize, and pensions.

The state was involved in the delineation of the corporation, and subject to the politics of the designation of specific powers, such as limited liability (Poovey 1995; Pincus 2009; Wennerlind 2011; Stern and Wennerlind 2014). The business corporation became embedded in financial flows of the

market and the state, and helped to stabilize and reproduce those financial flows (Davis 2015a, 124-134, 142-150). Because money is the most abstract form of value (Appadurai 2016, 2), stabilization of the value of money requires continual qualitative and quantitative transformations, such as its measurable purchasing power of commodities, the purchasing power of labor, such as Keynes' money-wage units (Keynes 1964, 37-45), and the organization of production processes with increasingly rapid "throughput" (Chandler 1977). Because money is only a symbol of value, it is prone to the "problematic of representation" (Poovey 2008, 5), and periodic collapse of expectations. In such cases the material object of collateral provides a substitute, which can stabilize confidence and reassures the investors. Because money is an "institutional fact," based on belief or "credit", money works best when its value is not questioned, what may be termed "Searle's paradox" (Poovey 2008, 26; Searle 2010, 107, 109-115, 119).

IV. Paradox of the Corporate Form

The corporation is a paradoxical form due to its role as a social group with specific delegated powers and also an object of property owned by that social group. As a group of individuals, the corporation is clearly human, but as an object of property the corporation is treated as inert matter to be shaped at will by its owners. For Searle, the corporation is an "institutional fact," with documented enactments by authorities, carrying deontic power for the individuals who consent to the arrangement to accomplish social goals, or "collective intentionality" (Searle 2010, 115). This legal entity can be described by numbers, helping to verify its existence and to provide confidence to its owners, investors, employees, and contractors (Poovey 1998).

A. A Financial Abstraction

In addition to abstraction typical of language use, as a type of generalization (Tomasello 2014), there is a unique aspect of abstraction typical of capitalism and/or modernity (Marx 1967; Postone 1996). Regarding the type of abstraction particular to capitalism, there are financial circuits encompassing various types of corporation, with varying types of property. The financial circuits constitute a "hybrid" entity (Latour 1995; Bennett 2010), which makes use of life forms for increases in productivity and utility, reflected in expansion of value in financial terms. This expansion of value is then attributed to money itself, as a capacity for "self-expansion," which is a form of reification.

Different types of "property" are mediated by means of financial flows, which incorporate the various rights of property over objects, both living and dead (alienation, recombination, division, control, extraction). The term "property" includes minerals as well as both plants and animals, and parts thereof, as well as humans, in the form of labor. The process of declaration of "property" is legal and institutional, and varies historically (Davis 2015a).

The "agency" of financial flows is comprised of various roles, which are cognizant of signals and rules, which can be automated. The various agents include lender, CEO, investor, entrepreneur, owner, banker, regulator, worker, and the borrower. The financial system integrates these roles into a single complex interrelated unit, the "economy," which appears impersonal and automatic, a "hybrid" system of human and natural objects. The seller "alienates" her property, subordinating it to the system of markets and pricing, which enables her to buy commodities which benefit from the global division of labor, a form of power. In this sense, the "economy" is a self-referential system of financial flows.

The “economy” is an abstract entity itself, operating as if autonomously of humans and the natural world, yet encompassing human life and the global ecosystem. The “science” of economics is written in the idiom of third person, like professional natural science, even though the economy has a performative dimension (MacKenzie 2006). The tone of third person “objectivity” lends a stability to a complex simultaneous interdependent system, performing a stabilizing function, which is obviated in moments of market panic and tumult in times of crisis. The experts of the system, the “economists,” may be vaguely aware of “Searle’s paradox,” but conceive of the economy as a perpetual motion machine, subject to impersonal market forces, rather than contingent human elements.

The private business corporation, often called a “firm” in economic theory, has non-financial relationships among employees, once the labor contract is completed. The labor process is conducted in concrete terms, regarding the specific commodity being produced, the specific labor skills, and the technologies involved, as well as the source of knowledge. The specifics of the concrete process of production are not relevant to the value of the firm in financial terms, nonetheless, only its rate of return as calculated by various abstract ratios, such as productivity, profit, and debt/equity ratios. Managerial techniques are focused on increasing productivity and using capital to reduce labor per unit output (Smith 1994, 300-312).

B. Money as a Self-Referential System

There is a special role for money as the representation of abstract value in the economic system. For Luhmann, money provides the vehicle for separation of the economic from the social system.

“In the *economic system* of modern society, the accompanying self-reference was realized through the use of money as communication...The modern economic system has its unity in money....The value of money regulates the system’s autopoietic reproduction....The *interconnection of the conditions for closure and openness* brings about the *differentiation of the economy* because the *unavoidable coupling* of self- and other-referential meaning references in all economic operations requires special structural conditions for which there is nothing corresponding in the system’s environment (Luhmann 1995, 461-462; italics in original)

For Davis (2010, 2013), money serves as the boundary of the public and private, allowing one to leverage the other. The discipline of money and accounting includes every aspect of business and personal life (Davis 2015b). Financial circuits are part of a self-reproducing system of money flows, vulnerable to disruption (Dolfsma, Finch, and McMaster 2011) but capable of discipline and regulation. The boundaries of the market system are flexible, as Smith noted, and the pace of financial turnover tends to increase (Smith 1994, 19, 310-359).

C. Finance as the Performance of Abstraction

The corporation itself is a form of abstraction (Smith 1994, 800). The separation of ownership and control reduces the unique personality of the entrepreneurial founder to the abstract role of owner, shared with other stockholders (Berle and Means 1932; Hannah 2011). At distinct periods there are waves of reorganization, as well shifting corporate forms, such as the turn-of-the-century merger wave (Morris 2005, 251-263; Lamoreaux 1985) and the rise of the holding company form (Bonbright and

Means 1932). The financing and later consolidation of railroad companies, for example, expanded the power of the investment banks, as well (Carosso 1987; Chandler 1977, 90-93).

VII. Case Study: Electric Utility Industry and Path Dependent Historical Evolution

The economy understood as a self-referential system delineated by financial flows may nonetheless require stabilization of meaning. This case study of the electric utility industry explores the role of the abstract forms of the corporation and financial flows in the concrete industry and historical context. At present, there is only opportunity for a brief sketch of a larger project.

Edison the inventor was already embedded in a system of corporate capitalism (Schiffer 2008, 8). He was able to conceive of electric light and power as a system because of his own reputation and his personal access to capital (Friedel and Israel 2010), as well as the century of innovation that had preceded his work. Like the financial system itself, the electric grid was an endogenous technological form, shaped by entrepreneurs and financiers to support economic expansion. Edison conceived of the entire system, which Insull was able to build, including the choice of regulated private utility (Hughes 1983, Lambert 2015).

There is an interesting comparison of Insull and Enron, in terms of new infrastructure industry with network externalities (electric power generation and energy trading) (Cudahy and Henderson 2005, 37-38, 92-93). Like the holding company for Insull, the gasoline pipelines, and later energy assets, provided a concrete commodity to stabilize the value of the corporate stock. This material foundation then provided the leverage to raise capital to extend the Enron business model, ultimately to unsustainable levels (Bratton 2002; Healy and Palepu 2003).

The finance industry is also characterized by economies of scale, mirroring and supporting the growth of the network industry. There is a common “currency” of electric circuits and financial flows. The House of Morgan increased its scope and scale by means of the syndicate system, a cooperative alliance of investment banks to finance specific projects of increasing magnitude (Chernow 1990; Pak 2013; Carosso 1987). The corporate forms of the industry and finance mirrored each other in this cumulative and complementary evolution. First the investment banks were private partnerships, then becoming public corporations after IPOs, complementing the multinational manufacturing corporations and global supply chains (Shiller and Akerlof 2015, 26-30; Milberg and Winkler 2013). The regulation of finance and industry also evolved due to political process among institutional participants (Seligman 2003; Bratton 2002, 1278-1280).

In terms of choice of technique, finance may drive the technology toward increasing economies of scale (when there was in fact a choice of smaller scale, such as the municipal electric power and traction companies in the nineteenth century). Then subsequently the technology enables finance to expand scale and speed of turnover, a complimentary dialectical process. Finance helps raise capital for innovation, but is subject to the collapse of expectations when the technology in use disappoints the initial investor enthusiasm (Perez 2002). The further evolution of corporate form, along with financial innovations, led to “financialization” of the nonfinancial corporation (Orhangazi 2008b). Finance itself can be considered a general purpose technology, along with the information technology industry and the internet (Bresnahan 2012).

VIII. Conclusion and Implications

Within the context of a self-referential financial system, the corporations and investment banks are complementary, each supporting the stabilization and growth of the other, alternately abstract and concrete production processes and financial flows. The position suggested by the examination of the electric utility industry is that finance and technology are complementary and mutually constituted, while subject, nonetheless, to a problematic of representation. Scandals and financial crises lead to collapse of meaning, threatening stability of institutions, with political ramifications (Coffee 2012; Bratton and Levitin 2013), with subsequent changes in rules, laws, and corporate form.

In summary, self-referential symbol systems are feasible within a socio/linguistic/institutional framework. In this case, financial circuits are stabilized by government laws and regulations, as well as corporate form and norms and roles, specialized expertise, and political process. For the market system as a whole, the government serves as market-maker, stabilizer, and regulator (Akerlof and Shiller 2015, 149-162), the “ghost in the machine,” visible only in the context of financial crises which are inevitably blamed on its now-visible, inevitably inadequate performance.

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