THE BOUNDARY PROBLEM IN A SURVEILLANCE SOCIETY

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Abstract: *This paper looks at the problematic nature of intertwined boundaries as they have evolved over time. Traditional accounting literature takes firm boundaries as self-evident, essentially affirming current institutional structures. An overview of the management contributions of Robert Owen and Henry Ford demonstrates the overlap between private and public interests in industrial and consumer societies. This sets the stage for a discussion of problematic boundaries in a digital surveillance culture where management not only strives to control worker and consumer behaviors, but is also subject to reverse surveillance. The paper concludes that if the accounting profession does not pay more attention to the overlapping nature of boundaries, it risks having its voice become more and more irrelevant to conversations about significant ethical problems inherent in a digital society.*

Introduction

The distinction between financial and managerial accounting has traditionally been based on a simple line of demarcation between external and internal stakeholders. 'Financial' reporting processes assemble and categorize information that is verified by auditors before delivery to stakeholders *external* to the corporate boundaries. 'Managerial' accountants plan, coordinate, and motivate the achievement of monetary and other objectives associated with an organization's *internal* operations. Recent scholarship suggests that there is often no bright line separating the internal and external stakeholders. The accounting literature seems to largely ignore the indeterminate nature of public and private or internal vs. external operations. This paper will argue that unrealistic assumptions about the nature of boundaries in business and society prevents the accounting profession from addressing significant ethical issues associated with the modern surveillance society.

Mainstream accounting research is built on economic principles which assume individuals and firms function as separate, readily identifiable entities utilizing objective information to make rational decisions. Studies by Ferguson et al. (2005, 2006, 2007, 2010) argue that the decision models presented in commercial accounting textbooks are presented as they are neutral and rational but implicitly prioritize management and shareholder goals over environmental and social goals. Economic models emphasize the competition between individual interests as they downplay collective social processes that inform and underlie the ideals and objectives of individual actors. The connection between personalized individual objectives and the broader society is not merely a question of 'which comes first, the chicken or the egg?' Orthodox financial and economic theory is based on the assumption that individuals act independently and have wide freedom of choice. Outside the economics, accounting, and finance disciplinary boundaries, alternative perspectives suggest that it is not at all clear how much latitude individual managers have in their decision choices (Barker 1993, Souitaris, Zerbinati, & Liu 2012, Bailey 2013, Claeyé & Jackson 2012, Prasad & Prasad 2000, Ryner 2015, Dobbin, Schrage & Kalev 2015, Garner 2016). These scholars characterize management agency as operating within the confines of an 'iron cage' where actions are severely constrained by institutional, social, and cultural forces.

Accounting ethics education is sometimes taken to mean instruction aimed at helping professionals develop an appropriate depth of insight concerning how their actions will impact other stakeholders (Armstrong, Ketz & Owsen 2003, p. 3). The questions raised often assume that the focus of attention is on a single decision maker faced with choices at a point in time within a specific socio-technical cultural system. The accounting entity concept that informs market-based models underlying mainstream accounting practice and research treats the boundary between private and public interests as self-evident. Dominant accounting conceptual frameworks implicitly ignore the interdependence and overlap between conceptual units of classification. Financial regulators write rules that must be followed by those within their national and regional jurisdiction, but the effects of any mis-steps in regulation are not constrained by geographic boundaries. Aftershocks associated with the 2008 sub-prime mortgage crisis continue to impact the global economy more than a decade after the Lehman Brothers bankruptcy (Amaro 2018). Modern digital technologies allow unprecedented levels of surveillance, influence, and control of social interactions even as digitally connected markets and personal spaces pose significant boundary problems in a system where it is not always clear who is watching whom. For this reason, it is important to closely examine the accounting profession's assumptions and concepts about the boundaries between private and public or even business and government domains.

This chapter will first explore assumptions about decision-usefulness, accuracy, and entities that are embedded in accounting professional literature. The body of the paper then considers the social engineering efforts of Robert Owen (1771-1858) and Henry Ford (1771-1858). Echoing the sentiments of Foucault (1975, p. 31), the intent of the history section is not to merely stare at the past, but to lay a foundation for understanding the present. These biographical sketches are used to illustrate the complex intersection between managerial agency, institutional power, and socio-cultural forces in a period of significant change. The final section of the paper will argue that modern technologies have extended societies' efforts at behavioral control from systems of pan-optic surveillance, a concept popularized by Jeremy Bentham (1843), to a more complex system of mutual surveillance that Brivot and Gendron (2011) refer to as a super-opticon. The paper concludes that modern technologies make the accounting profession's traditional individualistic view of reporting entities untenable. In a digital environment where business, government, and personal boundaries are inherently intertwined, treating ethics as merely a question of individual decision makers complying with rules and codes of behavior is counter-productive to any aspirations the accounting profession might have of providing genuine ethical leadership in service to the public at large.

The Rhetoric of Decision-Usefulness and Accurate Accounting

Solomons (1991) observed that the accounting profession understands itself primarily as providing a neutral technology that models an objective economic reality that is separate and distinct from the observer. Horvat and Korosec (2015) argue that this perspective masks and makes it virtually impossible for accountants to address the ethical, social, and political problems inherent in their representations. The conceptual frameworks of the FASB (Financial Accounting Standards Board) and IASB (International Accounting Standards Board) depict financial reports as providing neutral, transparent information useful for investor and creditor decision-making. Zeff (2017) claims the decision-usefulness approach in these conceptual frameworks arose out of Clark's (1923) idea of 'different costs for different purposes' and his subsequent influence on William Vatter, George Staubus, and George Sorter at the University of Chicago. The decision-usefulness criterion was originally intended to emphasize that neither historical cost nor market value representations would satisfy all users. Therefore, because no single measurement approach could suffice, the reasoning was that standardized information is useful only to the degree that users recognize the limitations and qualities of the information provided. Whatever form of standardized data is provided, users will need to make appropriate adaptations to the specific decision context.

Despite 'different costs for different purposes' foundations of the decision usefulness criterion, the business press today commonly treats accounting 'accuracy' as if accounting numbers are inherently capable of providing an objective, 'correct' representation of economic stocks, flows, and claims. This idea that accounting numbers can somehow be exact and neutral carries over into documents authored by regulators and academics. Moore (2017b) notes that Sarbanes-Oxley regulations passed after the 2001 Enron problems require financial officers to affirm financial statement 'accuracy' and popular cost/managerial textbooks make declarative statements that activity-based costing is 'more accurate' than traditional allocation methods. In the short term, marginal costs may be the most relevant for some decisions. In the long run, it is not only variable and fixed costs of production, but also selling and administrative costs that must be covered whether these costs are allocated to inventory accounts or not. The accuracy rhetoric in regulatory and pedagogical discourse downplays the degree to which accounting information is context sensitive and consequently incapable of being standardized in such a way as to be equally appropriate for all decision or evaluative purposes. Williams (1987), Bayou, Reinstein, & Williams (2011), and Williams & Ravenscroft (2015) view the FASB/IASB decision-usefulness criterion as a vacuous, falsely-neutral concept that diverts attention away from substantive issues like distributional justice, fairness, and stewardship.

Searle (1995), Rudkin (2007), Ferguson *et al.* (2005, 2006, 2007, 2010) and Moore (2017b) all note that professional, pedagogical, and regulatory literatures downplay the degree to which accounting is impacted by subjective choices. Accounting representations model future events that are inherently unknowable in the present, e.g., default rates on receivables, liabilities for post-employment health care costs, and the useful lives of assets subject to physical and technological obsolescence. Determining where to draw the lines between related entities or among departments, and properly classifying hybrid instruments like credit default swaps and convertible bonds are examples of problems in traditional accounting classification systems that are incapable of a definitive answer. And yet, the double entry accounting systems that predominate in external and internal accounting reporting are built on an Aristotelian taxonomic logic that pretends every business transaction can be uniquely mapped to disjoint categories. When classifications are inherently subjective, but users assume the data is objective, this mismatch can sometimes be used to manipulate perceptions of financial reality to such an extent as to sabotage or implode the basic market infrastructure. This was arguably the case in the subprime market crisis of 2008 (Moore 2017c).

Not-So Self-Evident Boundaries

The FASB and IASB concept frameworks not only downplay those cases where elements within the financial statements do not fit neatly into rigid taxonomic categories, but also choose to treat boundaries of the overall reporting entity as self-evident and objectively determinable. This approach inherently affirms the appropriateness of the parameters of property rights set in place by current juridical systems, leaving no space for critical assessment of the ethical status of existing power structures. And yet the legal community itself does not treat entity boundaries as a given. Heller (1999) holds that the common perception of a simple dichotomy between private vs. public interest simply does not hold in legal theory and practice; private property rights are often overridden by restrictions imposed for a public purpose. Iacobucci and Triantis (2007) demonstrate that legal scholars sometimes treat firms as integrated persons and at other times as bundles of rights; moreover, these different approaches yield different legal and business decisions. In contrast, the treatment of firm boundaries as *self-evident* in accounting and neo-liberal economic theory inherently discourages discourse about the socio-political problems associated with boundaries that demarcate access to tangible and intangible resources.

Questionable boundaries were associated with the special purpose entities used to hide Enron losses before its implosion in 2001. Other boundary problems were implicit in the interlocking financial guarantees between entities associated with the Orange County bankruptcy of 1994 and the global subprime crisis of 2008 (Moore 2017b). When firms share the risks and rewards associated with leased equipment, there are difficult theoretical and practical problems associated with determining which party controls the residual interest. Rather than being self-evident, boundary lines are in fact the source of many problems in accountability (Moore 2017a). The drawing of boundaries is inherent in the responsibility reporting systems used by firms to match and attach costs to departmental and other cost objects. Drawing the boundaries between firms, departments, and the parameters of private and public activities is implicitly associated with the ethical administration of property rights. Indeterminate boundaries between firms and society at large, coupled with fuzzy departmental lines within a firm, can create practical problems in assigning responsibilities and in determining the dividing lines between private and public life.

Accounting practitioners essentially function as taxonomists who divide up and classify the results of economic transactions. That being the case, why is it that so little attention has been paid to boundary problems in accounting professional literature? Porter (1999, p. 96) argues that professions that are highly vulnerable to criticism from outsiders avoid the exercise of judgment, choosing to hide behind seemingly objective rules and standards. Professional groups with weak status may also adopt public relations programs that divert attention away from controversial issues. Allegiance to the popular neo-classical economic view that *laissez faire* markets can spontaneously enhance market transparency and efficiency seems to be at the heart of recent campaigns to emphasize the accounting profession's role in promoting a 'prosperous society' (Pathways 2015, Chartered Accountants 2017, Barth 2018). These efforts implicitly assume that if businesses are given virtually unlimited freedom to use all legally available information, then that data will help maximize shareholder and societal returns. The implied political stance seems to be that governments should only restrict business freedom when there is a clear and present danger to the social order. On the other hand, Western societies also seem to value individual privacy rights. Balancing the freedom needed to enhance productive efficiency and protection of privacy is a significant normative issues. Treating boundaries as self-evident would arguably seem to privilege big business freedom over individual privacy.

The Entity Problem in Codes of Ethics

Boundary problems are downplayed not only in the financial accounting literature, but in some management accounting codes of ethics as well. Cost and managerial accounting textbooks targeted to the U.S. market often include in their first chapter a discussion of ethics that includes the Institute of Management Accountants' (IMA 2017) Statement of Ethical Professional Practice (Garrison, Noreen, & Brewer 2015; Datar & Rajan 2018; Hansen & Mowen 2018). The IMA code emphasizes professional competence, confidentiality, integrity, and credibility. The code concludes with a process for resolving ethical conflicts. The code requires that information be kept confidential except when disclosure is authorized or legally required. The code states that information should be communicated fairly, but its guidelines seem to emphasize management over public rights. For example, the IMA code notes that communications must be 'in conformance with organization policy and/or applicable law.' When accountants find that company policies or actions conflict with personal sensibilities about public interest parameters of ethical behavior and the divergence cannot be resolved by discussion within the organizational chain of command, the code directs the accountant to talk to an impartial advisor in order to determine a course of action. The code adds a caveat that one would be well advised to consult their own attorney, as opposed to the company attorney, to discuss their obligations and rights.

The IMA's code of conduct is presented as a factual artifact with no critique of its problematic assumptions about the separation of private and public duties. One could easily read this procedure for resolving ethical conflicts as prioritizing company rights *vis a vis* those of a management accountant contemplating whistleblowing in a situation where a corporation is operating in a manner contrary to the public interest. As the membership dues to the IMA are often paid by the employing firm, perhaps it is not surprising that the code would not explicitly encourage whistleblowing. On the other hand, college textbooks serve as a tool to introduce aspiring accountants to the profession's stance on public interest responsibilities in society. While consulting an attorney may indeed be prudent advice, the lack of critical discussion about the public interest problems inherent in the code suggests that textbook authors either do not recognize, or simply do not place a high priority on discussion of the problematic boundaries of public and private interests. By treating organizational policies as largely beyond reproach, the code seems to assume that there is a strict dividing line between internal and external rules and obligations.

Boundaries and the Theory of the Firm

In contrast to the FASB, IASB, and even IMA literature, a 2010 study by the Institute of Chartered Accountants of England and Wales (ICAEW 2010) concludes that the traditional assumption that the boundaries of the firm are readily determinable has a serious conceptual flaw. The agency theory definition of 'the firm' as a 'nexus of contracts' derives from a 1937 study by the economist Ronald Coase. Coase argued that firms exist as an institution because they offer a more efficient means of production than relying on formal contracts negotiated in a market setting. According to Coase, informal internal relationships allow 'the firm' to operate with lower transaction costs. The 2010 ICAEW study points out that the conventional Coasian logic makes it impossible to distinguish between firms and markets. If a firm is merely a nexus of contracts, then the organization is enmeshed in the larger market and the two cannot be separated.

Modern businesses routinely offer incentives for managers to work toward organizational objectives by tying bonuses to accounting measures of departmental performance. These metrics are built on a system of joint cost allocations and boundary lines that are Thomas (1969) and Devine (1985) have demonstrate to be inherently arbitrary. Because department boundaries and allocation of costs across department lines always include an element of subjectivity, rewards systems are inextricably entwined with problems of distributional equity whether those being rated recognize it or not. Ross Watts, Jerold Zimmerman, and Michael Jensen are among the researchers who helped revive the Coasian (1937) definition of a firm, giving impetus to a voluminous stream of positivist and agency theory-based accounting research from the 1970s to the present. And yet even Zimmerman's (2017) MBA management accounting text is built around the use of mini-cases which illustrate problems that arise when bonus schemes are tied to accounting numbers. The cases demonstrate that accounting-based bonus schemes cause managers to act like market competitors, completely overriding the Coasian theoretical rationale that cooperative rather than competitive relationships are the *raison d'être* for firms to even exist as an institution.

So how is it that firms continue to be perceived as separate and autonomous units, when the employees are arguably acting more like independent contractors than like the warm, cooperative team members that agency theory says would reduce transaction costs? A heterodox assumption about the underlying rationale for the existence of firms is that socially accepted boundaries work as artificial mechanisms to override the slim profit margins otherwise associated with purely competitive markets. The French philosopher Rousseau (1754, p. 64) noted that

> The first man who, having fenced in a piece of land, said 'This is mine', and found people naïve enough to believe him, that man was the true founder of civil society. From how many crimes, wars, and murders, from how many horrors and misfortunes might not any one have saved mankind, by pulling up the stakes, or filling up the ditch, and crying to his fellows: Beware of listening to this impostor; you are undone if you once forget that the fruits of the earth belong to us all, and the earth itself to nobody. (p. 64)

This alternative view of the boundaries of private property contrasts starkly with the conventional view of firm boundaries as self-evident lines of demarcation put in place to act as a boon for societal prosperity through more efficient production of goods and services.

Rousseau's skeptical view of private property suggests an alternative rationale for the existence of the institution of business firms. The legally protected boundaries of firms and private property serve as a mechanism that sanctions roping off what might otherwise be 'common' resources in a manner that is publicly accepted while allowing managers and stockholders to override the slim profit margins that would prevail under perfect competition. Hardin (1968) argues that while privatization can serve as a mechanism necessary to prevent the irresponsible overuse of resources held in common, privatization increases accessible benefits for some parties while inherently limiting rights and freedoms for others. In short, continuous reassessment of the effects of boundaries would is an essential foundation for maintaining a fair and equitable social order.

Orthodox economic thought is built on an assumption that individuals seek to maximize personal self-interest. Adam Smith (1776) and Frederick Hayek (1976) argued that when individuals seek to maximize their personal utility, they create a spontaneous order that benefits the overall society by rewarding efficient production of goods and services. In contrast, Veblen (1904, 1921) saw recurring financial depressions and market crises as evidence that financial managers use boundary lines as tools to sabotage and throw orderly markets into disarray. In the modern digital business environment, the characterization of firms and accounting reporting entities as distinct entities with self-evident boundaries is untenable (Moore 2017a,c). The voluntary nexus of contracts undertaken by what we refer to as a 'firm' does not produce a static boundary line. Firms exist as fluid, dynamically managed sets of relationships. The accounting profession's dominant rhetoric that boundaries are self-evident reinforces extant power structures, upholding the ability of governments and corporate units to utilize traditional boundaries as a tool to maintain current power structures by delimiting the impact of competitive forces.

Hayek (1976) and Rand (1989) strongly opposed business and regulatory agendas being guided by normative objectives. Classical and neo-classical economists argue that when left to their own devices, individuals will make rational decisions resulting in outcomes far superior to those imposed by normative regulatory interventions. As a critic of orthodox economics, Veblen argued that "[t]he institutional basis of business enterprise—the system of natural rights—appears to be a peculiarly unstable affair" (1904, p. 375). Whereas Rand painted altruism as an immoral restraint on individual freedom to choose, Durkheim (1893) argued that individual actors have an implicit moral obligation to society at large. Danley (1994) suggests that both the micro-managerial (individualist) and the macro-managerial (collectivist) approach to economic theory contain inherent logical inconsistencies. Hodgson (1998, p. 172) claims "just as structures cannot be adequately explained in terms of individuals, individuals cannot be adequately explained in terms of structures." It is not an either or dichotomy. Both individual and macro forces have to be considered; classical economic foundations of accounting largely ignore the collectivist point of view. The next section of the paper will look at two historic cases that illustrate the dynamic nature of social, business, and government boundaries.

Owenism and Fordism as Mechanisms of Control

Robert Owen (1771-1858) and Henry Ford (1771-1858) both recognized that the interdependencies between firms and the surrounding society could be harnessed to engineer a new social order. Both individuals began their career at a critical junction where new technologies were transforming how businesses operated. Managing a textile mill in Scotland, Owen successfully negotiated the turn from a system of agrarian manual-labor production to the use of large scale machine manufacturing in the early nineteenth century. In early twentieth century America, Ford not only utilized complex machinery in a standardized assembly process, he was also instrumental in actively promoting a shift toward a consumer model where businesses began to actively create consumer demand through manipulation of desires to acquire the products of industry. Both Owen and Ford understood the overlapping boundaries between production processes, workers, and consumers as evidenced by their programs to influence employees' behaviors away from the work site and their engagement in politics. This historical background sets the stage for the final section of the paper that considers similar issues associated with modern business and government use of digital technologies.

Robert Owen

Robert Owen is a prominent personality in studies of the Socialist and labor movements in Scotland, England, and Europe. In contrast, the American accounting/business academy treats Owen as a fringe figure at best. Owen's management ideas are highlighted because they arose out of the societal disruptions effected by the mechanization of production. Owen's scant influence in the U.S. may stem in part from his failed attempt at creating a Utopian socialist society at New Harmony, Indiana. In the UK, Owen is remembered as instrumental in the political movement to outlaw child labor, regulate working hours, provide health care services for employees, encourage trade unions, and provide for free schools. Owen was also instrumental in cooperative ventures and labor exchange movements (Podmore 1924, pp. 374-422). The labor cooperatives which developed as an offshoot of Owen's social ideology created an alternative currency based on labor time equivalencies which has some notable parallels to the modern bitcoin movement. The American business academy affirms *laissez-faire* liberalism and decries socialist ideology with little attention paid to how post-WWI red scare tactics (Nelles 1920) were instrumental in squelching honest academic debate about the pros and cons of both positions, treating the liberal ideology as the only acceptable stance. Rarely given credit in the American academy, Owen's ideas were nevertheless prescient of what are now mainstream practices in labor law, human resource policy, and educational practice throughout the U.S. and other developed economies.

Robert Owen was born in Newton, Wales in 1771. He infrequently re-visited his birth village during his lifetime though he moved back there prior to his death in 1858. Having received only a rudimentary formal education, he left his home at the age ten to become an apprentice for a seller of cloth and other household goods in Stamford, then in London (Podmore 1924, pp. 16-22). He tried his hand at entrepreneurial activities producing and selling 'spinning mules', a type of machine used in the manufacture of cloth. He learned about business through trial and error and careful attention to financial recordkeeping. By the time he has twenty-one years old he was managing a state of the art textile mill in Manchester, England. He later took over management of a large mill at New Lanark in Scotland, married the owner's daughter, and became a major stockholder.[1] Getting in on the ground floor with more mechanized spinning and weaving of cloth, Owen's father in law had established the New Lanark mills in a rural setting on the River Clyde in 1783 (Podmore p. 49). The mill owners utilized some child apprentices supplied by poor houses for work in the mills (Harrison 1969, p. 161), but also built living quarters to attract families to the rural site. Owen attributed the alcoholism and deviant behaviors of lower class members of society to the influence of environment on character formation. Having been active in the intellectual circles in the Manchester Philosophical and Literary society, when Owen took over the New Lanark work and living facilities he saw an

[1] See time line from Robert Owen Museum http://robert-owen-museum.org.uk/time_line and/or Robert Owen and New Lanark OpenLearn course from Open University http://www.open.edu/openlearn/history-the-arts/history/history-art/robert-owen-and-new-lanark/content-section-0?active-tab=description-tab

opportunity to use the mills as a test case that could demonstrate the impact of improved environment on moral behavior.

Some of his work site experiments in social engineering presage the modern focus on child centered education. Owen referred to the factory school as an Institution for the Formation of Character. Pupils were taught about geography and morals prior to, rather than after, learning to read. Now preserved as a UNESCO world heritage site[2], the New Lanark schools used colorful maps, pictures of animals, music, and dance as elements of pedagogy. The classrooms operated on a tutorial system with a high student to teacher ratio that minimized cost. Owen's philosophy was that corporal punishment, praise, and blame were all to be eschewed in favor of stimulating natural curiosity through competitive educational games. Dressed in simple uniforms, the children attended school from infancy through age ten when they started work in the mill. Initially, parents were concerned that keeping children in school up to the age of ten would hurt the family earnings. The early childhood program and the availability of a cafeteria for public meals overcame these objections because freeing up women for factory work helped replace the younger children's earnings.

The New Lanark mills soon became an important site for industrial tourism (Harrison 1969, p. 152). Businessmen, social reformers, and monarchs came to New Lanark not only to witness Owen's educational innovations, but also to see the results of his behavioral experiments on the adult laborers. Owen was a teetotaler who saw alcoholism as a threat to both workplace productivity and family stability. Caretakers patrolled the streets at night identifying and fining workers for public drunkenness. Those offending more than three times could be fired (Podmore, p. 85). But Owen also relied on other measures to bring social pressure on users of alcohol. Private alcohol stores were prohibited on the company grounds; alcohol was sold only through the company canteen with cumulative purchases of alcohol recorded by clerks. Canteen profits were set aside to pay for the school expenses (p. 86).

With up to two thousand employees working at the mills, the work and living environment fostered the spread of contagious disease. The cotton lint and the warm, moist environment in the mills were conducive to the spread of tuberculosis and other respiratory diseases. Under these conditions, Owen saw the need to promote bathing and household cleanliness. Inspectors visited residences and made reports on insect infestation or violations of the prohibition on allowing animals within the personal space (Podmore, p. 87). Deductions from workers' wages were used to fund health services.

Owen's philosophy of avoiding praise and blame among the young children did not carry over into factory operations. A comprehensive inventory of worker behavior was conducted weekly with the results put on display by a 'silent monitor' hung at the assigned work station. The color-coded monitor consisted of a four-sided block of wood suspended on a string or wire. The impact of the devices was not unlike modern electronic badges or certificates which reward desired workplace behaviors. Silent monitor colors ranged from black (for bad behavior) to blue (indifferent), yellow (good), and white (excellent) (Podmore, p. 90). The block face was arranged to give all other workers a visual assessment of their fellow worker's rating; it was as if the results of a modern 360-degree performance assessment were made public. In today's industrial setting, the Society for Human Resource Management warns that the use of peer ratings can cause employee morale problems and worker attrition (Taylor 2011). For Owen that was exactly the point—to use peer pressure to encourage workers to shape up or ship out.

Attention gained from visitors touring the mill encouraged Owen to become a regular speaker, author, and social activist. He was invited to speak to the Scottish Legislature in 1816 on the issues of cotton tariffs, work hours, and child labor in the mills. Owen demonstrated a keen awareness of the role of public relations in business and social reform. He purchased over thirty thousand copies of newspapers that published his editorial opinions or covered his addresses in support of the Factory Act, receiving help with mailing costs through a franking agreement with Lord Lascelles in the Legislature (Podmore, p. 238). Still, his proposals for limiting work hours to ten and a half

[2] See http://www.newlanark.org/ with picture of a classroom at http://www.newlanark.org/visitorcentre/tour-classroom.shtml

per day and increasing the age at which children could be employed to ten met with considerable resistance from other mill owners. Fellow industrialists argued that shorter work hours would put them at a disadvantaged in competitive global markets (Podmore, p. 198), an argument often used by modern businesses in response to proposed environmental regulations.

Though he himself experienced considerable financial success, Owen was keenly aware of how industry's technical innovations were disrupting the social order and creating conditions of widespread unemployment among the uneducated classes. This fear of unemployment by his workers no doubt discouraged complaints about encroachments on their personal freedom associated with Owen's management techniques. By middle age, Owen turned over day to day mill operations to others as he increasingly emphasized projects aimed at instituting what he called a 'new moral order'. He was especially interested in promoting the use of cooperative work arrangements to alleviate the plight of the unemployed. Owen spent, or squandered some might say, much of his accumulated capital on the purchase and operations of the short-lived U.S. based Utopian community in New Harmony, Indiana.

Owen was invited to speak on his vision of a new social order to the American President and members of Congress twice in 1825 (Johnson 1970). While Owen's ideas gained some traction with the intellectual set in the U.S., he abandoned the U.S cooperative living sites after 1828 except for brief visits. Owen's lack of acceptance in America was in part due to the lack of economic success, but perhaps even more importantly due to a backlash against his religious ideas. Even though Owen's cooperative living centers allowed free access to religious services of the members' free choice, Owen was targeted by a noted Christian spokesman for a highly publicized debate aimed at demonstrating that Owen was out of step with mainstream religious orthodoxy. Reverend Campbell set out to expose Owen's disavowal of Calvinist principles of determinism and blame. Owen felt that if a God figure pre-determined the course of one's life, it was illogical to think of either improving society or casting blame (Madden & Madden 1982). Campbell used these ideas to convince his pro-Christian audience that Owen was either a deist or atheist, and therefore not to be trusted.

Back in the British Isles, Owen found more receptive audiences for his socialist experiments even though many of these arrangements also met with limited economic success. Nevertheless, his English and Scottish experiments established an organizational pattern often seen in modern retirement and condominium associations, trade cooperatives, and systems of mandatory education for children. Owen's ideas inspired the creation of cooperative buyers' clubs which were started in London and other locations. These cooperative Labour Exchanges created a form of currency that foreshadows certain elements of modern cryptocurrencies as an alternative to monies backed by a sovereign government. Labour Notes were issued based on the time spent in creating products; these notes, rather than direct barter, could then be used to receive equivalent time and materials from other producers. The Labour Notes were intended to allow producers to have full access to the value of their time without an intermediary capitalist taking a share of the profits (Harrison 1969, pp. 197-207). A secondary purpose of the Labour Notes is that they could potentially serve as a hedge against volatility in sovereign currency values. In this arrangement we see an attempt to use business practices as an alternative to sovereign powers to control markets.

Owen's long-term disavowal of organized revealed religions and his eventual rejection of the primacy of private property were at odds with the aims of the landed gentry of his day. His cooperative organizational models contrast sharply with modern neo-liberal individualism and may explain his lack of influence in the American academy today. Still, the Owenist movement illustrates that large firms have the power to both control worker behaviors and to work for social reforms with effects that extend far beyond the bounds of the traditional work day. On the other hand, the religious backlash demonstrates that even highly influential business leaders are constrained by normative social forces not entirely under government or corporate control. Most sovereign nations today employ contributory schemes to finance health and superannuation plans; these have significant parallels to the methods pioneered in Owen's educational and communal living experiments. Still, these arrangements exist within a dialectic tension where some members of the business press (Roberts 2010) vehemently argue for fewer government regulations. These arguments are typically bolstered by reference to Smith's (1776) 'invisible hand' or Hayek's (1944) *Road to Serfdom* thesis that government-coordinated social interventions will eventually create more problems than they solve.

Henry Ford

Henry Ford invented neither the automobile nor the assembly line production system based on interchangeable parts. The Ford genius was only partially exemplified by his technical proficiency, and even more so by his ability to get in tune with the motivations of potential consumers. Ford excelled in creating both the desire for automobiles and mechanisms to finance prospective owners' dreams. Born in 1863 to a farm family in Michigan, Ford was interested in clock works and other machines from a young age. He apprenticed as a machinist in Detroit in 1879. He subsequently had various jobs in the Dearborn and Detroit area, taking bookkeeping classes at a Detroit business school. In 1891 he became an engineer for Edison Illuminating Company while working to develop a gas-powered vehicle on the side. He resigned from Edison in 1899 to form the Detroit Automobile Company, a marginally successful venture according to Watts (2005).

Like Owen, Ford recognized the need for publicity to drive business. To that end, he used his notoriety from successful automobile races in 1901 and 1902 to attract the capital to operate on an adequate scale. Ford mastered the use of newspaper stories, advertising, dealer word of mouth, radio shows, and ghost-written articles to drive sales of automobiles and farm machinery as well as to push his views of morality. Ford even seemed to court negative publicity if it would keep his name in front of the public. Nye (1979) suggests that Ford may have chosen to file a liable suit against a major newspaper as a publicity stunt; Ford's feigned ignorance of common facts of American history in the widely covered court case helped him solidify his image as a friend to uneducated customers of modest means.

Ford's strategy for attracting and retaining highly productive employees was to pay an above average wage. Even as the economy was faltering in 1914, Ford offered a $5 dollar a day wage. Roughly double the wage level of his direct competitors, the strategy got the attention of workers and newspapers alike. Along with the Ford strategy of paying higher wages was an implicit assumption that with higher wages the workers would be willing to work at a more rapid pace and not unionize. In addition to a higher base pay, workers who wanted to be considered for the profit sharing plan had to submit to inspections by the Social Work department on criteria that included passing a household cleanliness inspection, avoidance of heavy drinking or gambling, and a commitment to forego renting out sleeping quarters to 'borders' as Ford felt sharing quarters with persons outside the family unit was bad for the moral development of children (Watts 2005, 200-224). Nash (1970, 162) points out that Ford even undertook a campaign to promote traditional folk dances because he felt jazz was associated with a loosening of sexual mores. On the other hand, Watts (2005, 331-340) and Dahlinger (1978) provide credible evidence that Ford built a house on his property for an administrative assistant with whom he had a long term relationship that produced a son he never formally recognized.

Even wealthier than Owen, Ford used corporate resources to influence political processes through newsletters and sponsored radio shows. Moreover, he used his name recognition and personal funds to run for public office and to charter a ship used to head a largely unproductive peace mission to Europe in 1915 (Kraft 1978). Historians are highly critical of how Ford used his notoriety to actively incite anti-Semitic sentiment prior to the U.S. entry into World War I. Ford's anti-Semitic newspaper articles from 1920-1927 were even reprinted in Germany as a four-volume set while Hitler was quoted as saying he kept a picture of Ford next to his desk (Woeste 2012). Ford accepted the Grand Cross of the Supreme Order of the German Eagle in 1938, the highest honor bestowed by the Hitler government on a foreigner.[3] Though initially opposed to American involvement in WWI, Ford Motor Company benefited from profits on military contracts once the war was declared. Unlike Owen, Ford did not regularly socialize with either industrialists or intellectuals.

Like Owen, Ford's success in business gave him the confidence and financial resources to promote his personal ideals of how society should be reshaped. Ford frowned on the use of debt to purchase products like furniture or musical instruments even as he helped promote the use of automobile financing arrangements to enhance consumer demand for his own products.Vestiges of the techniques pioneered by both Owen and Ford to

[3] See https://rarehistoricalphotos.com/henry-ford-grand-cross-1938/

control the personal behaviors of their employees beyond the parameters of the manufacturing site can be seen in modern day human resource departments' use of smoking cessation, weight loss, and exercise programs to motivate behaviors that will decrease the cost of health care and absenteeism. These employee health initiatives and the use of advertising and publicity to generate brand recognition have come to be accepted as merely how business is done. The next section argues that in the digital environment the boundaries between the business and personal sphere are even more blurred than in the eras of Owen's social industrial experiments or Ford's early efforts to control production, consumer demand, and the political environment.

Ethical Issues in a Data-Driven Economy

Big Data and the modern internet-of-things make it imperative to revisit the traditional assumptions that persons, businesses, and government are separate and distinct entities. What does it even mean to be a 'separate' person in a technological environment where every movement and interaction is susceptible to being recorded by cellphones and smart appliances transmit data that can be analyzed and used by business to promote sales or by governments and their associated political parties to influence political outcomes? Political actors, accounting standard setters, and accounting professional groups seem to take it as a given that more data will lead to better decision making in support of a more prosperous society. Still, some critics warn that the ubiquity of data currently accessible by data miners when coupled with a public naiveté about privacy issues and a *laissez-faire* business ideology poses new ethical challenges.

O'Neil (2016) argues that uncritical use of data to effect social control increases inequality and threatens traditional democratic ideals. As an insider in the Big Data revolution, O'Neil (2016) chronicles her discomfort with the potential for misuse of data. She argues that good teachers can be fired and have no recourse when falsification of the prior year's data by a predecessor teacher causes new measures to show a decrease in performance (pp. 5-6). She also suggests that online rankings based on dubious criteria play too big a role in the college recruitment process (pp. 50-67). Algorithms that track recidivism and loan default rates by neighborhood re-double the obstacles faced by responsible mortgage applicants who want to finance a home in their community of origin.

Probabilistic data on one's genetic background can increase the cost of insurance, possibly influencing hiring processes. An arrest record, even one that was later proven to be based on false premises, can enter into the databases employers consult for pre-employment background screening and decrease the chances for employment. If a pre-hire has ever spent time in prison or carried a high balance on a credit card, this can stigmatize them and cause seemingly neutral algorithms to implicitly rule out the individual's chances of getting a chance to work on turning around their legal or financial history. Prison sentences in theory have a specific time frame, but background checks mean even allegations of wrong doing or growing up in the wrong neighborhood can have a lifelong negative impact.

Even when registrants on social media sites think they have opted out of having their data shared with advertisers, it is not always clear what major digital media platforms know about users or how personal data is being used (Weinberg 2018). The ability to track users' location through automobile and phone GPS systems poses a tradeoff between privacy and protection of other members of the public. Some court decisions suggest that law enforcement officers need search warrants to access location information; it is not clear that this is always the case in practice (Welty 2018). Questions about purchases of Chinese developed security equipment in the U.S. suggests that even sovereign governments worry that manufacturers of devises may have more access to private information than they are willing to admit (Selyukh & Palmer 2013). Even Tim Cook, the CEO of Apple, warns that there is a need for data privacy laws similar to those put in place in Europe to reign in the what he refers to as the 'data industrial complex' (Snider 2018). Presumably, his concerns extend not only to issues in how businesses use consumer data, but the power that governments have to demand that web-based firms release data or restrict access for political purposes. Lohr (2015) argues that

> All successful technologies raise alarms and involve trade-offs and risks. ... The outlook for the technology we call big data is not fundamentally different. ... The ever-smarter algorithms of big

> data can be seen as the new power brokers of society, determining what information we see, products we're offered, and life opportunities we're presented. (p. 213)

Both O'Neil (2016) and Lohr (2015) are concerned about the degree to which data algorithm parameters remain a black box. It is not uncommon for persons to be unaware that they have been subjected to data screening techniques. Potential hires or credit applicants may have no choice but to submit to parameters used for screening purposes. When an unfavorable employee performance evaluation is received, the individual may disagree with the interpretation of the results of the data, but have no reasonable, cost effective mechanism for challenging the results. Terms of employment typically allow employers to use silent, but highly invasive, screening of emails and phone conversations. Modern employees, like the Lanark mills employees or Depression-era Ford employees, have little choice but to submit to surveillance regimes because of the fear of not being able to find another job where conditions would be any different.

Chessel (2014) points out that there is a wide gap between what companies can do with data and what they should do with it. Chalcraft (2018) notes that while information professionals have articulated numerous codes of ethical practice, many of these are not mandatory. The major challenge in dealing with the Data-fication of modern society may be in fostering a broad recognition that information algorithms may appear neutral in structure even as they reinforce problematic power structures. Another problem is that the potential for surveillance may work to discourage employees from raising concerns about the loss of personal autonomy and freedom in the workplace and society at large.

Owen-ism and Ford-ism utilized Bentham's (1843) concept of the pan-opticon where management holds the power to track, measure, and influence human behavior through calculative mechanisms. Staples (2014, p. 11) argues that as modern forms of everyday surveillance have evolved they have added new features that are particularly concerning. These features include: 1) the anonymous, but permanent, collection of data through methodical automatic processes, 2) the targeting of biological bodies for assessment and regulation, 3) the ubiquitous use of tracing devises, and 4) tracking of the population at large, not merely those who have been administratively adjudicated as criminals or deviants. In this environment it would seem to be unconscionable that members of a profession associated with the concept of 'accountability' should not have a normative position on the uses and applications of invasive digital technologies beyond minimalist compliance with the letter of existing laws. And yet one might also concur with Staples (2014, p. 206) that listing definitive "prescriptions for what is to be done would ... only be a stunning display of hubris" as long as members of the profession and society at large do not even recognize that there is a problem associated with the overlapping boundaries between the private, business, and governmental arenas of action. According to Foucault (1988, p. 1), the source of human freedom rests on a willingness to "never accept [anything] as definitive, untouchable, obvious, or immobile." Treating boundaries as self-evident prevents recognition of the very structures that threaten personal freedom. The concluding section will focus on issues that management accounting educators need to consider as they guide accounting and business students in a critical exploration of significant ethical issues associated with the changing boundaries of society.

Moving Beyond Individual Ethics and Compliance

Business and accounting programs commonly treat finance, economics, and accounting as subjects that can be abstracted and kept distinct from their socio-historical context. But the boundary transformations that have occurred in the process of shifting from an agrarian society subject to the whims of nature to a digital society where businesses and consumers interact in a web of mutual influence and surveillance are highly relevant to the practices and ethical concepts associated with management accounting. Many of the responsibility accounting techniques that appear in cost and managerial textbooks were created in the industrial era where management was clearly the driving force in determining the goals of the firm and in putting in place the boundaries for units under their command. Figure 1 summarizes the differences and similarities in boundary problems for agrarian, industrial, consumer, and digital societies. In agrarian societies, businesses and individuals were at the mercy of weather and health epidemics. Beginning with the industrial revolution, governments and businesses alike began to exert some measure of control over the forces of nature. As a consumer society took hold, medicine, agriculture, and professional services were converted into financial products. In the interconnected digital era, data has come to be seen as the key to controlling consumption, politics, and social behavior. In a surveillance society, managers not only measure and reward employee behaviors but are themselves increasingly held to account by advocacy groups that have their own ideas about managerial objectives. In a digital environment, the internet of things has caused personal, work, and political/public spheres to become increasingly intertwined with boundaries that are rarely simple and objectively determinable.

Textbooks for management accounting and business ethics are primarily geared toward decision making by individual persons within an accounting or business firm under a given set of laws. Given that societies are not static but continuously evolving, a focus on ethics as mere compliance with existing laws is an insufficient foundation for ethical practice. While accounting institutions are often slow to adopt new concepts, university business and accounting programs are currently feeling significant pressure from business leaders and accrediting bodies alike to include more treatment of data analytics in academic programs. In response to these calls for action, it is important to be mindful of the boundary problems associated with tools that capture data for the implicit purpose of tracking and manipulating subjects. Though social and environmental concerns are sometimes included as case material in business ethics texts, one is hard pressed to name a single college level textbook in management accounting that provides a basis for critiquing current laws and institutional structures. Boyce *et al.* (2012) provide a rare example of an accounting course designed to examine the calculative practices embedded in socio-cultural systems. It is not clear that accounting educators on the whole are even aware of the critical role played by grading, attendance, and learning management systems in policing unstated, but implicit societal values (Walker 2010). Boundaries are central areas of contention whether the dividing line concerns the assignment of costs and responsibilities to specific departments within a firm or the delimitation of 1) geopolitical parameters that impact the market for workers, 2) sexual categories, 3) environmental responsibilities, 4) personal privacy, 5) tax domicile, 6) regulated financial taxonomies, or 6) those allowed to engage in a specific profession. Even discussions about how intangible financial assets should be measured and reported in financial statements are normative issues about boundaries.

It is perhaps not surprising that Western societies and their academic institutions alike uphold a loyalty to the rule of law to effect and maintain order. However, that does not imply that boundaries and borders should be viewed as self-evident. Durkheim (1893) noted that the sources of solidarity and cohesion in society change as the work force splinters into more finely grained divisions of labor. It may be that digital media are supplanting church, family, community, and government regulatory structures that have traditionally served as sources of social cohesion. Mezzadra and Neilson (2013) see global mass migration movements and the increasing politicization of geopolitical borders as an attempt to revisit traditional assumptions about boundaries and borders. Issues associated with new technologies that allow opportunities for businesses, governments, and even citizen groups to keep each other under the lens of a super-opticon of digital scrutiny can gradually be dealt with through changes in laws and regulations, but only if society recognizes there is a problem. In a digital surveillance society, it is problematic for textbooks and academic programs in ethics, business, and accounting practice to continue the traditional code of silence about the purposes and side effects of administrative boundaries.

Large public accounting firms are regulated by state governments and federal agencies. Partners of these firms typically avoid political issues and rarely challenge existing regulatory structures, seeking instead to help their clients remain as unhampered as possible in their pursuit of personal gains. State boards of accountancy often impose an ethics requirement before licensure and continuing education afterwards. Unfortunately, most of these ethics programs focus on parameters of behavior that sidestep many substantive normative value issues. In particular, insufficient attention is placed on the ethical problems associated with the use and collection of data by businesses, governments, and advocacy groups.

The academy could be a force for developing critical thinking among new recruits to the profession. That seems not to be happening in academic environments where 'normative' research is considered a pejorative term and institutionally sanctioned ethics training does not address social justice issues that are inherent in existing laws, institutions, and professional boundaries. This paper has argued that in today's environment it is illogical to think of individual rights as separate and distinct from the institutions and forces that shape the social norms. If accounting practitioners and academics do not pay more attention to normative concerns associated with boundaries, the accounting profession will forfeit an opportunity to have a voice in significant conversations that need to be take place about the potential for the use and abuse of data in a setting where private, public, and business interests have become intimately intertwined.

Figure 1
The Evolution of Boundaries in Society

Agrarian Feudal Society	• Land rights impact access to resources for cultivation; separation of aristocracy from craft and agricultural workers takes place. • Weather impacts crop output. • Family and religious norms control behavior. • Medicine has limited ability to contain the spread of disease.
Owen-ist Industrial Society	• Rights to equipment and other financial resources become even more important than land. Social separation of capitalists and workers takes place. • Weather issues are less impactful as production shifts indoors. • Industrial norms exert a stronger influence over worker behavior. • Industrialists take an interest in education and medical issues to enhance worker productivity.
Ford-ist Consumer Society	• Access to financing becomes as important as wages and other factors of production. • Weather issues create new opportunities for development of instruments to control or protect consumers from the forces of nature. • Mass media becomes an increasingly important influence over behavior. • Not only manufactured products, but education, medicine, and services are converted into financial resources.
Digital Society	• Access to information is used to effect control over productive processes, weather, financing, education, and consumption. • Point of use data from material and digital interfaces is used by government and corporate entities to track and influence social behaviors. • The line between formal and informal communications media becomes blurred. • Social advocacy groups begin to amass and utilize data to push back against perceived abuses by government and corporate players.

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