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1

Introduction

Whether in the form of toxic derivatives or fake Libor submissions, the growing list of financial misdeeds that emerged from Wall Street since the beginning of the global financial crisis has fueled a decade-long debate about financial reform. Consider, for instance, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, often described as the most significant change to financial regulation in the United States since the 1930s. Opponents of Dodd-Frank object to its excessive rigidity, arguing that it will starve US companies of the necessary capital. Proponents of stricter regulation, on the other hand, fault Dodd-Frank for its limited effectiveness, pointing to the continued problem of the too-big-to-fail banks. While resolution of this debate remains elusive, one intriguing outcome of the discussions has been the recognition that the moral standards on Wall Street, and not simply the standards set by the law, are critical to a healthy financial system. For instance, the National Commission on the Causes of the Financial and Economic Crisis concluded in 2011 that "there was a systematic breakdown in accountability and ethics," adding that this erosion of standards of responsibility and ethics "exacerbated the financial crisis."[1]

Concern about ethics underlies a visible shift in financial regulation within the United States and United Kingdom. In the United States, the initial regulatory response to the crisis took the form of structural reform, based on laws, rules, and prohibitions. This was exemplified by the Volcker Rule and its stipulated ban on proprietary trading in commercial banks. Subsequent efforts by American regulators, however, shifted to the norms and values in Wall Street banks. For instance, in October 2014, the president of the New York Federal Reserve, William Dudley, organized the Workshop on Reforming Culture and Behavior in the Financial Services Industry, including among its attendees the chief executives of major Wall Street banks. In his opening speech, Dudley announced that "improving culture in the financial services industry is an imperative."[2] Using the word "culture" as many as forty-five times, Dudley emphasized its inescapable presence and importance: "culture," he remarked, "exists within every firm, whether it is recognized or ignored, whether it is nurtured or neglected, and whether it is embraced or disavowed."

A similar shift has taken place in the UK. Shortly after the financial crisis, the Independent Commission on Banking Report of 2011 took a structural approach to reform, issuing recommendations to "ring-fence," or legally separate, the retail and investment arms of British banks. In subsequent years, however, the emphasis turned to culture. The Salz Review of Barclays Bank, published in 2013 after the Libor scandal, concluded that "bankers were engulfed in a culture of 'edginess' and a 'winning at all costs' attitude," adding that these traits contributed to the bank's malpractices.[3] The Kay Review, commissioned by the British government to address short-termism in the City, found that "a culture of trust relationships, which is actually central to making financial services work, has been displaced by essentially a culture of transactions and trading."[4] The bank culture agenda culminated in the creation of the UK Banking Standards Board in 2015, an organization that aims to "raise standards of behavior and competence across the [financial] industry."

What emerges from these developments is a novel approach to financial reform, ostensibly aimed at bank culture but substantively centered on morality in the financial industry. Indeed, when a journalist pressed Dudley to specify what he meant by reforming culture, his response was that "culture is too broad a way to describe this. I think, reflecting on it, it's really about ethics and conduct."[5] The bank culture agenda thus stands in contrast with the traditional regulatory emphasis on outlawing misconduct and aligning incentives. Moral norms, unlike laws or incentives, do not speak to interests, but to underlying assumptions, prevailing customs, and the institutionalized definitions of right and wrong. By underscoring the moral dimension of markets, the new approach equates to an implicit admission that no amount of tinkering with bonuses or legal rules can, in the absence of ethical change, address the shortcomings of the financial industry.

Predictably, the culture agenda has been met with skepticism among Wall Street executives. Some have objected that culture is too vague a concept to prove effective, while others have added that culture lacks practical and actionable implications. The bankers' resistance was poignantly captured by the words of the US Comptroller of the Currency, Thomas J. Curry, who was tasked with the unenviable job of listening to the bankers' complaints. "I've had some bank executives and directors say, 'I'm not a damn sociologist,'" Curry explained to a reporter from the *Wall Street Journal*.[6]

Disparagement aside, the bankers' response is remarkable for its accurate reflection on disciplinary expertise. Ever since Max Weber's study of the

Protestant work ethic, sociologists have claimed for their own discipline the problem of how culture shapes the economy. In Weber's case, the celebrated German sociologist first hypothesized a connection between moral beliefs and economic development. "Calvinist believers were psychologically isolated," Weber famously wrote, adding that "their distance from God could only be precariously bridged, and their inner tensions only partially relieved, by unstinting, purposeful labor." Once material success came to be seen as a sign of God's favor, people were free to engage in trade and accumulation of wealth, and capitalism grew and expanded in Northern Europe. Weber's approach was central to sociology for much of the twentieth century, bolstered by the view—subsequently developed by the midcentury sociologist Talcott Parsons—that society is held together by shared values and "moral consensus."[7] In Parsons's formulation, moral norms and values are the central guide of action. Situations provide the means and conditions of action, values motivate the pursuit of certain ends rather than others, and norms limit the choice of the means to achieve those ends.

Over the past decades, however, Parsons's formulation has come under attack from contemporary sociologists, culminating in an alternative perspective of culture centered on practice. The alternative is chiefly associated with the work of Ann Swidler, who disputed the Parsonian contention that values are the key link between culture and action. A values-based account, Swidler argued, overlooks the fact that people may share common aspirations while remaining widely different in their behavior. For instance, explaining the absence of economic achievement by the urban poor in terms of a "culture of poverty" presupposes that the poor do not share the values and aspirations of the middle class, but working-class youth surveys repeatedly report that they value middle-class aspirations such as education, secure friendships, stable marriages, and steady jobs.

Instead of shaping action through internalized norms and values, Swidler added, culture influences action by creating a set of cultural competences that allow people to achieve some ends and not others. After all, one can hardly pursue success in a world where the accepted skills, style, and informal know-how are unfamiliar. Returning to the culture of poverty debate, Swidler wrote that "if one asked a slum youth why he did not take steps to pursue a middle-class path to success, the answer might well be not 'I don't want that life' but instead, 'Who, me?' " Lack of familiarity with an environment, in other words, is a roadblock to success. Swidler adds that culture influences action not by providing the ultimate values toward which action is oriented, but by "shaping a repertoire or toolkit of habits, skills, and styles from which people construct strategies of action." Swidler's emphasis on practice, often referred to as the "toolkit" perspective, stands in clear contrast to Parsons's view of culture as values. "Action is not determined by one's values," Swidler concludes. "Rather, action *and* values are organized to take advantage of cultural competences."[8]

Taken together, the positions adopted by the bankers, regulators, and sociologists discussed so far suggests a peculiar landscape of intellectual alliances. Although sociologists have steered clear of Parsons's emphasis on shared norms and values, the latter has resurfaced in economic reports and reviews of the crisis, a phenomenon that is apparent in characterizations of banks in terms of a "culture of edginess," or a "culture of transactions and trading." A similar take on culture is found among academic economists. Thus, a well-known economic study by Luigi Guiso, Paola Sapienza, and Luigi Zingales equated culture with values, drawing from survey data on "how values are perceived by employees."[9] Similarly, Andrew Lo has proposed the existence of a "Gordon Gekko" effect in financial organizations (making reference to the infamous Hollywood villain) whereby "an epidemic of shared values" can lead to excessive risk-taking.[10] Culture is presented by Lo as an all-encompassing determinant of behavior. As with a nasty virus, once an organization catches the wrong sort of culture, there is little that their members can do. At the risk of oversimplifying, one is tempted to conclude that the global financial crisis has posthumously granted Parsons his much-desired wish for intellectual influence over economists.

Paradoxical as the above might sound, the alternative is no less surprising. Skepticism toward the cultural reform program on Wall Street, certainly in its values-based version, includes sociological followers of Swidler as well as bank executives who resist the supervisory expansion of the Federal Reserve. This is admittedly not a real coalition, for the said sociologists are chiefly opposed to Parsons, while the bankers are simply against additional rules. Indeed, this would not even be a happy coalition, for as we learned from Thomas Curry, bankers are keen not to be taken for sociologists. Nevertheless, it is not too much of a stretch to argue that opposition to the vagueness and ineffectiveness of a values-based cultural reform places academic supporters of Swidler and profit-minded Wall Street executives in the same intellectual camp.

The post-crisis debate, in sum, seems to have bred some unusual travel companions. The odd pairings are revealing of the depth with which financial devastation in 2008 has shaken up the intellectual foundations that traditionally sustained the financial industry. The idea, central to financial economics, that morality can be analytically extricated from the study of finance, has been thoroughly called into question by the official reports and reviews of the crisis. The study of finance, these reports emphasize, should be broadened beyond approaches that omit references to ethical dilemmas. They should incorporate, as Maureen O'Hara has written, "more focus on ethical issues in finance."[11] The same conclusion applies to the practice of bank supervision: whereas regulators traditionally entrusted the elimination of misconduct on Wall Street to the care of the legal system, they now favor an approach that targets the bankers' ethics directly.

There is, in sum, an emerging consensus that if financial reform is to make progress, morality needs to be brought back into finance, both in practice and the study of finance. Yet, given the sociological arguments noted above, moving beyond well-intended but often ineffective interventions on bank values calls for answers to two pending questions. The first concerns the moral diagnosis of the crisis: if not through overly materialistic values such as greed or impatience, how exactly did morality contribute to the banks' troubles? Put differently, once one abandons the enticing but ultimately unsatisfactory idea that bankers have fundamentally different morality than the rest of people in society, the moral drivers of the crisis suddenly become obscured. The challenge then, as with the analyses of underachievement among the urban poor, is to formulate an understanding of what went morally wrong on Wall Street that does not caricature bankers as Hollywood villains. A second pending question concerns the prognosis for financial reform: if presenting bank employees with a brand-new set of values—much in the way that they might be given a new corporate uniform—is unlikely to alter their actions, what type of reform might avoid a repetition of the problems that led to the crisis? That is, if moral interventions solely centered on values are unlikely to do the trick, what form of cultural change will?

A partial answer to these two questions can arguably be found in the literature on morals and markets associated with Viviana Zelizer. The work of this influential sociologist has systematically explored the ways in which morality enables and legitimizes the development of otherwise controversial market transactions. For instance, her seminal study of life insurance in the early nineteenth century showed that insurers had to grapple with the moral resistance of their potential customers, American wives, who objected to profiting from a husband's hypothetical death.[12] Their qualms were only overcome when insurers reframed their product as compensation for economic rather than affective loss, presented insurance as a form of preserving the welfare of orphan children, or claimed that insurance was a way of avoiding the indignity of a pauper's burial. Zelizer's analysis thus suggests that morally ambiguous markets can be made viable if the necessary frames and practices are put in place. In a similar vein, Michel Anteby has documented how adherence to certain practices makes commerce in human cadavers for medical research morally acceptable.[13] He found that buying and selling of such specimens for research purposes is nowadays deemed satisfactory if it is not for profit, if it has the doctor's consent (not only that of the family), and if the cadavers are kept whole rather than cut into pieces. In sum, and as Marion Fourcade and Kieran Healy have observed, markets can be seen as "moral projects," that is, enabled and made possible by arrangements that create moral boundaries and draw moral distinctions between the sacred and the profane.[14]

While insightful, the morals and markets literature has not yet offered specific prescriptions for financial reform, nor engaged financial markets. In this regard, one promising point of departure is the sociological literature on finance. One of the early contributors to this literature, Mitchel Abolafia, paid special attention to the institutional mechanisms that create restraint. Building on a comparison across three financial settings (bond traders in a bank, pit traders in a commodities exchange, and specialists at the New York Stock Exchange), Abolafia challenged the argument that a trading culture inevitably leads financiers down the path of opportunism, as a Parsonian analysis would contend. He argued instead that restraint can be instilled through the "norms, rules and procedures to which members of the trading community are habituated."[15] For instance, he argued that the Treasury bill auction scandal of 1991 that brought down Salomon Brothers was the result of an environment, constructed by the investment banks in the 1980s, "with minimal interdependence, extraordinary incentives for self-interest, and minimal constraints on behavior." It was the lack of restraint created by such structures, Abolafia argues, rather than opportunistic moral values, that led bankers to withhold information from clients, post false bids in trading platforms, or front-run customers.[16]

There is one sense, however, in which Abolafia's account is of limited relevance to the debate about financial reform. Over the past four decades, Wall Street has been reshaped by the adoption of economic models, electronic trading, and derivative instruments, to the point of undergoing what some have described as a "quantitative revolution." Yet, partly because of the time in which Abolafia's fieldwork was conducted (the early 1980s), his analysis does not engage with quantitative finance. The resulting gap is problematic, because quantitative tools have not only made it possible for traders to measure and calculate formerly incalculable magnitudes like option value or expected loss. Tools like the Black-Scholes equation, Value at Risk, or those that determine variable compensation, have introduced a distinctively instrumental dimension to decision-making. Thanks to them, a trader can precisely calculate the personal gains to be had from various courses of action. For that reason, reforming Wall Street along the lines of Swidler and Zelizer would not only entail drawing moral boundaries between the acceptable and unacceptable, but also would grapple with the fact that traders have been explicitly equipped by models and formulas to be calculative in their actions and address the moral implications of such orientation.

The Social Studies of Finance

How, then, do economic models mediate morality on Wall Street? Over the past fifteen years, an emerging literature known as the "social studies of finance" has laid out the theoretical groundwork to address this question. Scholars in this discipline have built on a seminal essay by Michel Callon that called for a new focus on the tools and devices used by market participants.[17] Examples of such tools include an auction house for strawberries, or the algorithm that set the closing price for stocks at the Bourse de Paris. Artefacts such as these, Callon noted, are of key significance to markets. They frame choice, reduce uncertainty, and have the potential to make calculation possible. Before such technologies were available, Callon explained, markets could reasonably be expected to depart from an economist's ideal of rational choice, and plausibly be subsumed within the sociology of networks or institutional theory. However, once markets are conceived as "collective calculative devices," as the title of an article by Callon and Fabian Muniesa reads, the mediating role of market devices becomes crucial to explain economic outcomes.[18]

Of particular interest is Callon's contention that market tools such as economic models may have an active, rather than passive, role in valuation. As economic theories and models are incorporated into practical tools, they can influence the outcome of economic decisions, and in some cases corroborate the theory that inspired the tool in the first place. Callon refers to this mechanism as *performativity*, a concept originally used by philosopher John Austin to argue that speech not only describes but also consummates—that is, performs—action. For example, the utterance "I apologize" allows an actor to simultaneously ask to be forgiven as well as describe a statement. In a similar vein, Callon wrote, the incorporation of material tools in markets implies that "economics [. . .] shapes and formats the economy, rather than observing how it functions."[19] In other words, that economics is performative.

Over the past fifteen years, a vibrant literature in the social studies of finance has developed these ideas, shedding light on the mediating effect of economic models on markets. In a landmark study on the topic, Donald MacKenzie and Yuval Millo examined the effects of the Black-Scholes equation on the prices of stock options, documenting the performative effect originally hypothesized by Callon. These authors showed that although the predictions of the Black-Scholes formula were inaccurate when first developed in 1973, once the formula was adopted by financial exchanges and Wall Street banks, option prices changed in line with the model's predictions.[20] As the authors wrote, "option pricing theory [. . .] succeeded empirically not because it discovered preexisting price patterns but because markets changed in ways that made its assumptions more accurate."[21] In a related vein, Karin Knorr Cetina and Urs Bruegger examined the mediating effect of trading terminals on the social relations among traders and their subjective experience of the market. They found that as market participants abandoned one-to-one telephone conversations and began interacting through text in trading terminals, the importance of social relations within trading floors diminished, and social order was reconstituted as interaction on-screen.[22]

As these analyses illustrate, the social studies of finance have provided scholars with key building blocks to understand the effect of economic models on markets. While other economic sociologists remained focused on the effects of networks and institutions on markets, scholars in the social studies of finance placed the mechanistic world of theories, artifacts, and formulas at the core of their research program. This approach afforded a unique opportunity to engage with the content, and not just the social context, of markets, moving from questions such as "who talks to whom?" to questions around valuation. In doing so, the social studies of finance became a source of enthusiasm and inspiration for young scholars.

I can attest to such excitement, because I was a direct witness to it. Although I missed the first gatherings of the sociologists of finance in Germany and France during the late 1990s, I understood full well the theoretical significance of the ideas that were being woven together. In the year 2001, my coauthor David Stark and I organized an international workshop of the Social Studies of Finance in New York City and debated the findings of our fieldwork on Wall Street with Callon, Knorr Cetina, and other pioneers.[23] Over the past two decades, this literature has grown to encompass a long list of topics such as the history of the stock market ticker, the social consequences of credit scoring, or the political economy of high-frequency trading.

Models and Morals

Nevertheless, the financial crisis has also laid bare the limitations of the social studies of finance. The material view of markets and society that underlies most of this literature has barely considered morality, much less the effect of economic models on moral norms. Furthermore, this gap was not the product of casual oversight, but happened for a reason. Callon's theory of performativity, which underlies much of the social studies of finance, is based on a broader sociological perspective—Actor Network Theory—that he developed with Bruno Latour and others, and that presents material objects as the glue that makes society durable. As such, research on performativity is generally skeptical of explanations based on invisible social forces.[24]

Perhaps the clearest illustration of such skepticism is Latour's discussion of the effect of speed bumps on car drivers. City planners often build speed bumps in the roads next to schools in order to ensure that drivers moderate their speed. The driver's goal, Latour notes, will be altered by the speed bump, from slowing down to avoid risk to the students to slowing down to protect the car's suspension. "The driver's first version appeals to morality, enlightened disinterest, and reflection," Latour writes, "whereas the second appeals to pure selfishness and reflex action." "In my experience," Latour concludes, "there are many more people who would respond to the second than to the first," implying that norms are less dependable than self-interest.[25] Objects, in other words, beat morals as means of social control.

As much as the example of the speed bumps demonstrates the need to add objects to social theory, Latour's illustration also points to the limits of such an approach. It is not difficult to find counterparts of a speed bump in a Wall Street bank. One example is the legal mandate for US banks to invest in securities that have a minimum credit rating of BBB or equivalent—a provision originally aimed at ensuring that banks did not make overly risky investments. Another speedbump-like requirement is the imposition of capital requirements aimed at limiting the extent to which banks can take risks with borrowed capital. The performance of these two financial speed bumps during the crisis, however, has been decidedly disappointing. The ratings of subprime mortgage turned out to be inaccurate, to the extent that even the highly rated "super senior" tranches of mortgage derivatives lost almost their entire value. Furthermore, the presence of capital requirements made things worse, as they pushed banks into investing in mortgage securities. Speed bumps, and more generally the use of material devices in markets, are thus not always sufficient to instill restraint. The Wall Street version of a car driver that confronts a speed bump cannot be assumed to be willing to slow down near the school but might well find a way to avoid the constraint: buy better tires, adjust the suspension, or perhaps even drive on the sidewalk and endanger other pedestrians.

As the above example suggests, scholars in the social studies of finance may have gone too far in their attempts to redress the sociological neglect of material devices in markets. When it comes to restraint, there are limits to the effectiveness of material artifacts that have no concern for broader norms. Stripped of their normative associations, devices like ratings or ratios become a practical obstacle to sidestep, rather than an effective instrument for control. This much was implicitly recognized by Callon himself in his more recent concept of "*homo economicus 2.0*" and his call for a model of individual action that combines materiality with sociological traits such as sociability, identity, or affect.[26] The goal, then, is not to replace decades of social theory with hard material objects, but to arrive at an understanding of markets that combines both. The role of morality has not yet been considered in this new approach.

One notable exception to the above is Caitlin Zaloom's research. Traders, she argues, attribute moral significance to being alert, to a reflexive engagement with the market, and to being disciplined—to the point that many see trading profits as "market-based virtue" (p. 177). But whereas Zaloom's research has persuasively challenged an amoral view of traders, it has not considered how economic models can give rise to moral complications such as those that surfaced in the 2008 crisis. (See Zaloom 2012.)

The limits of the social studies of finance bring me back to the central question that Abolafia left unresolved: what are the effects of economic models on morality in financial organizations? When taking stock of the existing literature, one cannot but conclude that there is a gap. Cultural sociologists like Swidler have developed a toolkit perspective that emphasizes concrete practices over abstract values, but this literature has not yet considered financial markets, nor economic models. The same can be said of Zelizer's literature on morals and markets. On the other hand, the social studies of finance has grappled substantially with the effect of economic models on markets, but has not considered the effects on morality. The interplay between models and morals, in other words, remains unexamined, leaving a number of questions unanswered. For instance, are moral norms simply abandoned when traders use equations like Black-Scholes and resort to calculative decision-making? Alternatively, are models used differently when traders adhere to certain ethical norms? If so, how? In sum, a full decade after September 2008, understanding how morals and models come together remains a crucial but pending task in our diagnosis of the crisis, as well as in addressing the problems that led to it.

Why This Book?

The above brings me to my own motivation for writing this book. The global financial crisis that started in 2008 might have seemed like a golden "opportunity" for an academic like myself. Although trained in management, the subject of my research is Wall Street, and my studies draw on organizational and sociological theory. Starting in 1999, I spent three years conducting fieldwork at the equity derivatives trading room of an international bank located in Lower Manhattan, which I will designate with a pseudonymous name, *International Securities*. Between 2003 and 2007, I published several articles based on this research, coauthored with David Stark, and won two research awards for them.[27] Starting in 2006, I joined the faculty of Columbia Business School and gained intellectual as well as geographical proximity to the banks on Wall Street. From the window of my office at Columbia, I could almost see the towers that housed these banks in Midtown Manhattan. To the extent that the cause of the global financial crisis of 2008 was located somewhere on Wall Street, I may have seemed ideally equipped to unearth it.

This was not, however, how the crisis felt at the time. The billion-dollar losses and controversial practices that came to light at Lehman Brothers and other banks in September 2008 put me in a state of perplexity. I could not grasp the connection between the misbehaviors at the failed banks and the practices of the traders that I had witnessed years earlier at International Securities, for the executives I had followed seemed hard-working and ambitious, but also honest and prudent. I could only imagine two possible explanations for this inconsistency: either my traders had managed to dupe me for the three years of my fieldwork, or their trading room that I had observed operated on a different planet than that of Lehman Brothers. Both alternatives, however, seemed equally implausible, so I spent the fall of 2008 suffering from an academic version of cognitive dissonance, unable to reconcile what I believed to be true with the daily events reported in the news.

The solution to the puzzle came to me as I recalled an event that took place one year earlier. Back in the fall of 2007, that is, four months *before* the failure of Bear Stearns in March 2008, I invited the manager of the trading room of International Securities to give a presentation to my MBA class at Columbia. I will refer to this executive as “Bob,” again a pseudonym. At the time, I was teaching a core management course that was distinctively unpopular with some of my Wall Street-bound students. Inviting Bob was not just a form of intellectual recognition but also a self-interested attempt to improve my deficient teaching ratings, as I thought that my students would enjoy listening to a successful Wall Street executive.

What happened during that session changed how I think about Wall Street. In his presentation to my students, Bob shared an aspect of his career that had not previously surfaced in my fieldwork. Before managing the trading floor that I studied at International Securities, Bob had occupied a high-ranking position in the derivatives division of another bank, which I will refer to as Premier Financial. This bank experienced a number of scandals and eventually disappeared. Bob had left the bank untainted by scandal in the 1990s and took early retirement at an age when most people are still hoping for their first career break. Retirement gave him plenty of time to think about what had gone wrong. Two years later, when he decided to go back to work and run the equities division of International Securities, he put the lessons from Premier Financial into practice, and designed a trading room that was unlike the rest of Wall Street.

Fast forward now to my MBA classroom at Columbia in November 2007. In his lecture to my students, Bob focused on his experience at Premier Financial in the 1990s. In front of eighty MBA students, many of whom were eager to join Wall Street after graduation, Bob spoke candidly about the problems he confronted during his time at Premier, and about the challenges that persisted on Wall Street. He was critical. The large banks, he said, were too big, and too complex. They were badly managed. “Mark my words,” he told my class, “when the next crisis comes, which it will, *not one but two* of the large banks will disappear.”

At the time, the failure of two Wall Street banks did not seem even remotely plausible to me. Indeed, none of my students picked up on Bob’s prophecy in their questions at the end of the lecture. However, barely four months later, Bear Stearns was being acquired by JP Morgan at the fire-sale price of $10 per share. Six months after that, Lehman Brothers was filing for bankruptcy. Had I not taken the trouble to tape Bob’s talk and write the date on the audio file, I would have scarcely believed that Bob was so prescient in his prediction.

Bob's lecture cast in new light the research I had conducted at International Securities in the early 2000s. I now understood that the trading room that he had assembled was his own attempt to address the problems he had confronted at Premier Financial, including the excessive size and complexity of Wall Street banks. Furthermore, Bob's timely prediction of an impending bank failure suggested that his diagnosis of Wall Street's dysfunctions was not too far off the mark. When I put these two observations together, I understood that the trading room I had observed for three years was not *representative* of the average investment bank on Wall Street, but *illustrative* of what a possible solution to the challenges that plagued the financial industry might be. In other words, the trading room was less useful than I had hoped as a *description* of other banks on Wall Street, but a potentially valuable guide as a *prescription* for them.

Hence this book. In the chapters that follow, I unpack and clarify the insights from my original fieldwork at Bob's trading floor, placing them in the broader context of the financial crisis. The research design that I adopted is primarily ethnographic, combined with revisits and oral history interviews. Like other studies of trading floors, such as Karen Ho's *Liquidated* or Vincent Lépinay's *Codes of Finance*, my study relies on participant observation, and specifically on the practices that I observed on the equities trading floor of International Securities from 1999 to 2003. Yet this book differs from the first generation of Wall Street ethnographies in that it combines my original fieldwork with subsequent revisits to the bank's trading floor and its protagonists. My research design thus conforms in part to Michael Burawoy's concept of "punctuated revisit," that is, an ethnographic project where the researcher returns to the original site over a time period spanning at least ten years.[28]

Why such revisiting? The simple answer is a combination of curiosity and necessity. Before 2008, returning to the bank satisfied my genuine interest, supported my teaching, and helped me complete the academic articles that I was writing. After Lehman's bankruptcy, the revisits served a different goal: they were my way to try to reconcile my original findings with the media representations of reckless trading on Wall Street. Once I grasped that International Securities held relevant lessons for the policy debate on financial reform, my revisits became a means to articulate such lessons.[29]

My Core Argument

In the chapters that follow, I make two core claims. The first one concerns the key question that motivates the book: what are the effects of economic models on morality in financial organizations? I argue that the introduction of models threatens to exert a reconstitutive effect at various levels of the bank, altering the degree to which ethical norms are enforced, self-enforced, and interpreted. Specifically, I contend that the use of models for the purpose of corporate strategy and risk management can lead to a shift away from business relations between companies and the banks that lend them money, and toward transaction-based banking where banks treat each lending transaction as a single deal and focus on its risk. In addition, I posit that the introduction of models in top management may contribute to a managerial discourse based on rationality and self-interest that sacrifices the customers' interests. Furthermore, in the relationship between managers and traders, the use of models for risk management can erode managerial authority as well as generate perceptions of injustice when these models fail. Such perception may then invite retaliation and reckless decisions on the part of the traders. Finally, in the relationships between traders and the bank's customers, the informational asymmetry created by models helps traders capture most of the value they generate, incentivizing them to develop needlessly complex models. Taken together, models thus pose a risk of transforming a bank's strategy, discourse, control, and commercial relations, giving rise to perceptions of injustice and to what social psychologists call moral disengagement.[30] Moral disengagement disables the mechanisms of self-condemnation that are typically associated with immoral conduct, opening the bank to the unrestrained pursuit of self-interest. I refer to this phenomenon as *model-based moral disengagement.*

Models, however, need not create disengagement. Such outcomes can be avoided through organizational strategies and practices that I also identify. At the level of strategy, banks can avoid asset classes that create information asymmetries between them and their corporate customers, as such asymmetries invite abuse. One example is the use of "over-the-counter" derivatives such as interest rate swaps, where banks structure a made-to-measure contract with the customer that may be difficult for them to understand, making them vulnerable to abuse. At the level of discourse, managers can put forth a rhetoric that underscores the importance of organizational norms over financial returns. These norms may include collaboration, compliance with the law, or respect for back-office employees. They can be mobilized and enforced in offsite meetings, internal labor markets, or through an organizational layer of middle managers, but the primary enforcement vehicle is one-on-one interactions between employee and line manager. This enforcement of norms, however, also requires limiting the use of models for the purpose of control, as models constitute a rival and often incompatible source of authority. I refer to the deployment of organizational measures to prevent model-based moral disengagement as *proximate control.*

Proximate control builds on contemporary sociological understandings of culture, in that it provides a toolkit of strategic directions, framings, and practices, thereby approaching what Swidler termed a strategy of action. By relating a toolkit approach to the use of economic models, proximate control combines a cultural and a material sociological approach to financial reform. Proximate control also builds on the morals and markets literature developed by Zelizer, bringing economic models into the debate over how to improve moral standards in finance. Specifically, it invites parallels between the post-crisis debate on financial reform and the reforms initiated by insurance companies in the nineteenth century that made a morally dubious market morally acceptable. In this regard, proximate control is different from the values-based "bank culture" regulatory agenda, providing instead a practice-based approach to reform that is not driven by speeches, workshops, or attempts at inculcating values. Given its rejection of a consensus view of morality, proximate control is not aimed primarily at corporate responsibility units, compliance departments, risk management, or human resource teams that aim to influence an organization as a whole. Proximate control aims instead at the concrete and all-important relationship between a trader and his direct line manager, as it is in that close vicinity where the nuances of right and wrong can be established and practices can be modified.

Performative Spirals

The second key argument in this book concerns the organization of modeling on Wall Street. The topic became central to sociological debate over the financial crisis following MacKenzie's claim that the billions lost by Wall Street banks were due to silos in their modeling process.[31] The organization of modeling is especially important when the models are performative rather than simply descriptive, because in a performative context those models can actively change market value. I thus ask, how should banks organize the use of economic models to take into account their performative effects?

I consider one of the key applications of economic models on Wall Street—modern arbitrage. My observations of this trading strategy on the equities floor of International Securities suggest that as much as models help make calculation possible by reducing informational uncertainties, they also leave numerous uncertainties unresolved. As a result, modern arbitrage is neither mechanistic nor purely calculative, but requires instead the use of judgment, social cues, and inputs from various traders, both within and outside the trading room. In other words, modeling is not simply technical, but social. The arbitrageurs' need for social cues calls for organizational integration across desks, but such integration is problematic given the differences in assumptions, methods, and standards that characterize the various trading strategies. Integration, however, can to some extent be accomplished through the managerial promotion of informal relations across desks on the floor.

I further argue that modern arbitrage is performative in several ways. I document how arbitrageurs conceptualize stocks in terms of narrow *financial properties* such as mean reversion or merger probability, and these properties are dependent on the models and tools required to evaluate them. The relationship between models and stock prices is performative, in that the models are not external to the valuation process but an integral part of it. Such performativity is in some cases weak, in the sense that the models only provide the infrastructure needed to isolate and measure financial properties without impacting prices. In other cases, the performativity is strong, in that the model impacts prices and brings them closer to the model's predictions.[32] For instance, the use of implied probabilities in merger arbitrage relies on models that assume an absence of arbitrage opportunities. Over the years, the growing adoption of this strategy has contributed to reducing arbitrage opportunities, thereby bringing the market closer to the model's assumption.

Finally, I contend that the performative relationship between models and financial properties is not stable over time, but marked by a spiraling dynamic. Once an economic model becomes widely adopted, the arbitrage strategy that it sustains becomes less profitable. As a new model is subsequently developed, new financial properties will come into view and overlap with the existing ones. There is thus a reciprocal relationship between economic models and financial properties, which I denote as a *performative spiral*. The presence of such a spiral has implications for how a trading room should be structured: as a trading room incorporates new models and tools, novel forms of organizational integration will become necessary. This changing need for integration explains the shifting layout of the desks in the bank I studied, and I refer to this organizational pattern as a *performative trace*.

In conclusion, my two core claims in this book are centered on the moral and knowledge-related effects of economic models on financial markets. Models have a moral dimension and a knowledge dimension; their joint effect has implications for the sociological debate on the global financial crisis, as accounts of the crisis have advanced an organizational or moral perspective but have barely integrated the two. While MacKenzie and other scholars have centered their account on the problems created by organizational silos in the credit rating agencies and Wall Street banks,[33] others such as Neil Fligstein and Alexander Roehrkasse have attributed the crisis to unethical activity on Wall Street.[34] I contend that both problems were in part an outcome of the reorganization that took place on Wall Street at an organizational, technological, and regulatory level, starting in the 1980s. This included the disappearance of the investment banking partnerships (in which partners were jointly liable, and forced to monitor each other), the adoption of economic models, and the repeal of the Glass-Steagall Act. These changes had problematic moral consequences such as model-based disengagement. Furthermore, the introduction of new models, including those involved in the growth of credit derivatives, gave rise to new evaluation practices without the organizational changes that were necessary to integrate such practices.

Chapter Outline

In the chapters that follow, I divide my arguments in two sections. The first section, which encompasses chapters 2 to 7, introduces my original fieldwork from 1999 to 2003 and my account of how modeling was organized on the trading floor of International Securities. Chapter 2 situates my study within the original sociology of finance and introduces the core ethnographic breakdown that motivated my project: while existing studies described trading floors as loud, stressful, and chaotic, the trading room that I encountered at International Securities in 1999 was quiet and orderly. The reason for such disparity was the introduction of information technology during the 1990s, which had replaced loud oral communication as the key information exchange mechanism. This change in turn led Bob, the manager of the floor, to rethink the trading room as a space for interpreting and debating economic news and events.

Beyond the addition of the Bloomberg terminal, the key difference between the trading strategies I witnessed at International Securities and those reported by sociologists of finance in the 1980s was the widespread use of economic models. What challenges did those models pose? Chapter 3 considers this question by introducing a statistical arbitrage trader named Todd and his use of financial algorithms. Todd's strategy also illustrates the novelty entailed in modern arbitrage, that is, the exploitation of mispricings across markets for securities whose value is ambiguously related. There was a tension, I also noticed, running through Todd's work: whereas he sought to avoid psychological biases by relying on rigid decision rules, the uncertainty introduced by his algorithms often forced him to abandon his rules and rely on his judgment, as well as on social cues from the floor. Such tension is illustrative of a broader challenge posed by uncertainty in quantitative finance, which demands that traders develop precise numerical estimates and subsequently call them into question.

If, as the case of Todd suggests, social cues were a valuable complement to the use of models, how to ensure that those cues are present on the trading floor? Chapter 4 considers Bob's answer to this question by introducing the sales desk at International Securities, along with its convivial work atmosphere. Sales traders such as Scott, Joe, and Jim did not buy or sell stocks for the bank's proprietary account but executed trades for their customers instead. Their skills and resources, including humor, excitement, charisma, or business contacts at the stock exchanges, were different from and complementary to those of other traders on the floor. In the course of my observations, I also noted that the sales traders appeared to be engaged in a number of seemingly controversial practices such as earning soft-dollar commissions, crossing the Chinese Wall, or pulling pranks on accidental callers to the bank's phone line. By examining the ways in which these sales traders adopted, modified, and conceived of these practices, I was able to learn about their practiced, as opposed to stated, morality.

What are the distinctive advantages of using economic formulas on a trading floor? In chapter 5 I consider this question by introducing Max, a senior trader at the merger arbitrage desk and a mathematically gifted trader. Max bet on whether announced mergers would actually be completed. More important, he was able to combine stock prices with economic models, plot them on a Bloomberg terminal, and estimate his rivals' expectations about a pending merger. He then used these inferred expectations to refine his own estimates of merger probability. This allowed him to test his own hypothesis against the rest of the market, question his assumptions, or ponder what he might be missing. Such possibilities reduced the risk of mistakes in Max's bets, allowing him to take larger positions and realize higher returns. The case of Max revealed to me what was truly new, different, and to some extent magical, about the use of models in trading.

While the cases of Todd and Max pointed to social cues as a key aspect of quantitative finance, there was another, less salient but equally important social dimension: management. Chapter 6 shifts the book's focus from the traders to the managers who supervised them. I consider three different managers: the head of Risk Management at International Securities, a senior trader who was in charge of Todd's desk, and a manager whom Bob had tasked with promoting collaboration across desks. The challenges and difficulties these three individuals encountered revealed the organized and to some extent hierarchical nature of professional trading and the need for an organizational lens. My observations of these managers also point to a difficult tension between technical and managerial expertise.

As much as economic models give traders a unique ability to observe aspects of a stock that the naked eye cannot see, my study revealed another, even more intriguing aspect: performativity. In chapter 7 I consider the performative effect of economic models and their influence on the financial properties of securities such as stocks. New representations of value, typically in the form of new economic models, devices, and tools, reveal new properties of the securities, which can themselves be represented and profitably exploited. I capture this dynamic with the concept of performative spiral, defined above. Bob exploited the successive waves of innovation in modeling by aligning the layout of the trading room with the emerging interdependencies between the properties of the stocks. I refer to this dynamic as performative trace, also defined above.

The first half of the book, in sum, concerns the use of knowledge on the trading floor, focusing on models, traders, and the connection between them. The second half turns to morality on Wall Street, and the moral consequences of economic models. Chapter 8 is motivated by an observation that changed how I thought about the bank: the integration of knowledge across desks that I had originally observed was not simply the result of material processes such as the rotation of the desks or a low-monitor policy, but of organizational norms of collaboration that Bob enforced on the trading floor. Norms were enforced by Bob and a dedicated team of middle managers who fired or shamed deviant employees, constructed shared experiences in offsite meetings, and introduced a system of internal careers that rewarded following those norms with career promotion. Organizational norms, and not simply spatial features or material objects, were behind the remarkable degree of collaboration across desks that I observed.

While my emphasis on social relations might evoke an idyllic narrative where social factors dominate technical imperatives, the two were in fact interrelated. Exploiting social relations on the floor, as Bob did, gave rise to new challenges and pitfalls. In chapter 9, I examine Bob's handling of risk in light of his own reluctance to rely on the figures produced by the bank's Risk Management department. If not by means of numerical risk estimates such as Value at Risk, how did Bob promote restraint among his traders? As I found out, he limited the potential scope for losses by exercising judgment: he and his team considered potential scenarios, comparing alternative courses of action in the future. However, such judgment could also prove problematic. In 2001, Bob's judgment compounded the losses experienced by Max at the merger desk; upon further analysis I understood that the losses were an instance of model-based loss amplification, which David Stark and I called *resonance*. By resonance, I mean the spurious confirmation of a trader's estimate arising from the use of economic models. The solution that Bob subsequently adopted entailed a greater reliance and appreciation for his traders' ability to intuitively sense danger.

None of the accidents, errors, or disasters that I witnessed on the trading room prepared me for the scale of losses that beset Wall Street in September 2008. Chapter 10 presents my observations of the global financial crisis from Bob's vantage point. By September 2008, Bob had joined a different bank, Global Trust (pseudonym), and had become chief executive of one of its US subsidiaries. My regular meetings with him from August 2008 until the summer of 2009 thus provided me an insider's perspective into the crisis and exposed to a domain that had barely surfaced in my study: morality. I observed the moral outrage at the crisis experienced by Bob and other Wall Street insiders, as well as Bob's contention that moral judgments can help managers evaluate their subordinates' use of models in situations of uncertainty. Bob attributed the global financial crisis to the organizational changes that had taken place on Wall Street since the 1980s, along with their moral side effects. Wall Street, he told me a few days after Lehman's bankruptcy, did not die in September 2008, but had already been dead for years.

What did Bob mean by "dead"? In chapter 11, I unpack Bob's comment by turning to the modern history of Wall Street, as seen through Bob's professional trajectory in the securities industry since the early 1980s. This trajectory included the growth of the derivatives industry, the disappearance of the partnership form, and deregulation. I focus on the derivatives scandals of the mid-1990s, leveraging Bob's experience at another major bank, Premier Financial. Although largely overlooked, the 2008 crisis arguably had its predecessor in the derivatives scandals of 1994 and 1995. At the time, Wall Street banks signed over the counter derivatives agreements with corporations that resulted in sizeable losses for the latter. Also at that time, pioneering banks like Premier Financial began using risk management models as a tool for control and restraint rather than as a way to ascertain overall exposure. The mid-1990s crisis reveals the moral complexities posed by new and unfamiliar financial instruments, especially when the standards for prudent behavior are set by a mathematical formula such as Value at Risk. My analysis theorizes this dynamic with the concept of *model-based moral disengagement*, defined earlier in this chapter.

While an abundant literature on the global financial crisis has documented its devastating economic consequences for American workers, few ethnographies have documented its impact on Wall Street employees, or what it meant for them. In chapter 12, I consider this point, revisiting the protagonists of my fieldwork at International Securities in 2015, Todd, Max, and Bob, seven years after the crisis. By that time, Todd had left Wall Street, Max was closing a hedge fund he had recently founded, and Bob was running a conservative public-interest law firm. My meeting with Todd underscored the scarcity of committed and competent top management on Wall Street. My conversations with Max revealed his nostalgia for the investment banking partnerships of the early 1980s, as well as the advantages of Bob's management approach, which sought to replicate elements of the partnerships. Finally, my meetings with Bob spoke to the current debate on financial reform, alerting me to the presence of a feedback loop that connects bank size, economic models, and moral disengagement. In light of this loop, Bob advocated the breakup of Wall Street banks.

I conclude in chapter 13 by bringing together the emerging themes of the book into an overarching framework. I consider integration, organizational norms, judgment, moral disengagement, and the breakup of Wall Street banks. I propose the concept of *proximate control*, a hands-on approach to management that stands in contrast to what governmentality scholars such as Peter Miller and Nikolas Rose have called government at a distance. Proximate control calls for better supervision of quantitative traders by resisting the temptation to evaluate those employees using models. It entails a combination of the social and the technological, such as preserving face-to-face interaction on the trading floor, the use of personal evaluation of quantitative results, or the qualitative judgment of financial calculations.

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