

CHAPTER 4

Financial Information Reporting in the Earliest Wall Street

Inside the Nasdaq Building in Times Square in New York is a broadcast studio whose curved wall is lined up with dozens of electronic screens, each of them displaying the 'real time' trading price of a major stock or commodity. The centre of the screen shows the most prominent information: the change in price and percentage. A price in green means upward movement and a price in red means downward. The less prominent information occupies the bottom of the screen: the trading price is on the left; the volume traded is on the right. The multiple illuminated screens in the studio confirm a belief that technology has always been at the forefront of the financial industry. The same belief was held by nineteenth-century stock brokers; at that time men in top hats gathered around a machine that made a 'tick, tick, tick' sound when it printed out stock prices on a long strip of paper unwound from a wheel inside the machine. The symbol and the price were simultaneously printed by two type wheels: one had the letters A-Z, another had the numbers 0-9 and the fractions of 1/8. An ink roller installed beneath the type wheels impressed on a narrow paper strip unwound from another roll (Prescott, 1892). A modern day trader may not find the machine useful, but she will have no problem with understanding what the letters and numbers mean. Similarly, a nineteenth-century stockbroker may not understand what the gleaming electronic boards are, but he may still be able to recognise some of the abbreviated symbols (such as WU for Western Union) and understand what the prices mean.

The format of stock price display *seems* to be too stubborn to change, even though digital technology offers many possibilities to reformat the price display. The similar format of stock price display in the analogue and the digital

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eras may imply that the quality of financial information is the same: that the ticker in the analogue era provided updated information produced in the market as much as the computer in the digital era. I argue in this chapter that this is not the case in order to illustrate the third theme of the book: 'the production, distribution, and consumption of financial information—be it analogue or digital—rely on machines'. The machines give financial information a property: the ticker updated financial information at a longer time interval than the computer screen because the telegram could handle much less information than optical fibre. The limited information on the ticker focused on the performance of individual stocks rather than the market as a whole. In contrast, the television screens inside the Nasdaq studio give a more 'global' view of the market: a rallying market is illustrated with an overwhelming quantity of green numbers, while a crisis is signalled by the number of red arrows.

The brevity of price information in both the analogue and digital eras might imply that the 'message'—defined here as the presentation and quantity of information—is independent of the 'medium'—defined here as the technology through which the information is transmitted. However, what exactly does a 'medium' of price display mean in both the analogue and digital eras? Should a medium be limited to devices that users can see, such as the ticker and paper strips in the analogue era or the screen and charged electrons in the digital era? Should a medium include embedded code such as electrical pulses in the analogue era or compressed information packets in the digital era? Lastly, should the medium include the environment in which the devices are found, such as the room and the building that house the ticker? Or even the buildings that are located in a street found in a city? Despite the objects of study for media studies scholars being media, the medium is rarely studied. Lievrouw (2014) suggests that a constructivist stance in media studies privileges 'the technologies' social and cultural meanings and appropriations and framing technology primarily as an outcome or expression of culture' (p. 24) over how the social and material character of communication technology which is 'equally definitive and co-determining' (p. 24).

In order to understand how communication technologies give information a materiality which demands that users act on it, I argue in this chapter that a device (such as a ticker or a television screen) is better seen as an actor in a network than a medium in a communication process. As I wrote in the introduction, actors make up a network. Actors can be humans such as stock brokers or non-humans such as a ticker, electrical wires, and so on. One value of drawing on ANT in media studies is its strength in tracing the formation of the network (Couldry, 2005); therefore a case study of the *Wall Street Journal* in its infancy (1882–9) is the most appropriate to show how a network of financial news reporting was formed in early New York. The case study will point out a flawed assumption in journalism studies of the financial press during crises (see Lee, 2014c for a list of studies), which is that the press is a stable institution

in which human actors understand their roles and responsibilities, and that they use available tools to perform journalistic duties.

The case study will show that the publication of the first issue of the *Wall Street Journal* may best be seen as a technological outcome enabled by a network of actors. Human actors used technical devices to produce information whose spatial and temporal properties were constrained by the devices. I look at a network of three non-human and one human actors: the ticker, the printer, the physicality of Wall Street, and the runners. I start with the ticker and relate how Dow Jones' late adoption of it implies its view of the financial market. Then I look at the role of Wall Street runners and question if they played a more central role in the financial market than historical illustrations suggest. The third actor, the printer, gave financial information a specific quality. Lastly, I look at the physicality of Wall Street and argue that there is *no apparent* reason why it became the gathering place of the financial types in New York. However, the first three actors (the ticker, the runner, and the printer) had created the physicality in Wall Street which enabled a quick flow of financial information. The three actors had also extended financial news reporting beyond the 2.2-mile mile in lower Manhattan. Viewing financial news reporting as a network has three implications for an understanding of a financial crisis: first, the network is always temporary and in flux; second, information has different qualities; third, space and time are created when information passes through technological devices in a network.

Financial News Reporting as a Network, Not an Institution

Technological devices in a network are not a medium, but technical and discursive actors. To ANT scholars, an actor is 'whatever unit of discourse [that] is invested of a role' (Barry and Slater, 2002, 177). In other words, human and non-human actors have to be in a network to have functionality and meaning. A network is always temporary; it is formed when the actors are assembled. For example, the ticker in a nineteenth-century stock exchange and brokerage house belonged to a network called stock price reporting. In contemporary trading, a working ticker is technically obsolete and outdated; it is not used to report stock prices even though it is still capable of doing so if an operator sends Morse code through the wires. Some hackers have repurposed the ticker by connecting it to a laptop and turning it into a printer of python script and celebrities' tweets.¹ The hacking examples show that if we remove the ticker and assemble it with other actors, its function and meaning won't be the same. While hackers of the digital age are interested in connecting the ticker to a mess of wires and computer chips, I aim to lift the ticker up from its place in a nineteenth-century brokerage house and examine the tangled mess to which the ticker was connected. But this mess is important because it allows us to

know what the network and the actors were. Therefore, we ought to trace with what the ticker was connected to, where the device was housed, and with what and whom the device interacted in a nineteenth-century brokerage house.

In its infancy, Dow Jones Co. was a financial news service that distributed handbills to subscribers throughout the day. Nowadays, the *Wall Street Journal* is one of the three national newspapers in the US and is seen as a ‘must-read’ for business and financial types. The *Wall Street Journal* is classified as a quality press by critics and journalists alike. It is an, if not, *the* authority on financial news in the US. The press is seen to belong to the Fourth Estate in American society; an institution that should neither be influenced by politics nor swayed by money. The quality press is hailed as a watchdog of society. Therefore when newspaper magnate Rupert Murdoch purchased the *Journal* in 2007, there was an outcry due to Murdoch’s previous editorial interference at newspapers that he owned (Murdoch, 2017). At the same time, financial newspapers such as the *Wall Street Journal* have been criticised as unapologetic supporters of capitalism, the free market, and neo-liberalism (Tambini, 2010). For instance, scholars and political commentators questioned why the press did not foresee the coming of the Global Financial Crisis (see Schifferes and Roberts, 2015). The failure of the Fourth Estate to inform the public was explained by a shorter news cycle and journalists’ lack of knowledge of financial and economic matters (Lewis, 2010).

The view of the press as either a state watchdog or a capitalist lapdog is flawed. This assumption implies that the press is a stable entity and that employees understand their roles and responsibilities. In addition, the belief that the press is an institution assumes that only human actors have a role to play in financial news reporting; and that non-human actors such as the telephone, the computer, and the printer are mere tools that humans use to report news. An ANT theorist would ask very different questions: when a press release lands on a journalist’s desk, how does he report it? Does he mark up the press release with ink? Does she write up a news brief on a computer? Or do they ‘tweet’ it on a smart phone?

The *Wall Street Journal* as a Nexus of Information in the Nineteenth Century

Dow Jones began with the founders, Charles Dow, Edward Jones, and Charles Bergstresser, selling and distributing one-page, hand-written news bulletins to subscribers. The infancy period ended on the day when the first issue of the *Wall Street Journal* was printed on 8 July 1889. In the contemporary media landscape the *Wall Street Journal* is unarguably—though somewhat conveniently—categorised as a financial newspaper. However, in the late nineteenth century, the format of financial news reporting was experimental, unlike the broadsheet papers of today with their multiple-column layout. In many ways, the *Wall*

Street Journal can be called a late adopter of printing and ticker technologies, yet its use of hand-copying technologies produced a financial market in Wall Street.

History books on the *Wall Street Journal* commonly begin with the upbringing of the three founders. An educated man's upbringing seems to imply that his family background, education, and co-workers all shape how he sees his place in the world and how he can make a mark (or fortune) for himself. An ANT approach differs from the biographical approach because it does not privilege human actors over non-human actors (Callon and Law, 1995); human actors may invent and create technological devices, but human actors are also enabled by those devices to take up roles that they would not be able to perform otherwise. For example, news gathering requires a place for the financial types to trade, be it a street corner or a room in a building. Similarly, news printing requires a printer that can reproduce copies much faster than a human could. The ticker—the first non-human actor—may be assumed to be indispensable to stock price reporting, yet Dow Jones did not acquire one to report financial news.

The Ticker

The first stock ticker was invented in 1867, but Dow Jones Co. only leased one in 1897—thirty years after the invention of the device, eleven years after the business opened its door, and four years after the printing of the first issue of *Wall Street Journal*. Current writings explain Dow Jones' late adoption of the ticker with reference to the founders' distrust of the device's accuracy (Wendt, 1984). However, historical evidence does not suggest that the users complained about its inaccuracy; if anything, the ticker had significantly improved it ('Gold and stock reporting instruments', 1872). Before the ticker was installed in the exchange and brokerage houses, young boys were hired as runners to deliver stock prices scribbled on slips of paper. The ticker also shortened the time for delivery; after all, telegraph signals could travel much faster than the speediest runner. Gordon (1999) states that the founders were less interested in reporting individual stock prices than summarising market performance after it closed. Dow Jones was more interested in *describing* how the market was in order to *predict* what the market would be. Hourly updates of stock performance may not be useful to define and predict the market. The invention of Dow Jones Industrial Index created the stock market by defining its boundary and quantifying it based on select stock performance.

Before the ticker, young boys were hired to transport news around Wall Street. The different speeds of the runners and human errors led to price inaccuracy and time differentiation. By the time the runners rushed back to the exchange with buy orders, the prices could have been wildly different. To resolve the problem of price differentiation, the Gold Indicator was invented to report the price from the Gold Exchange to brokerage houses. An operator stationed

at the Gold Exchange sent the price information through the telegraph to a 'central' where wires were connected to the Gold Indicator installed in brokerage houses. When compared to the ticker, the Gold Indicator would have been an even more obscure instrument to today's brokers because it was a reporting telegraph. It only showed the latest price on the device but did not print out the prices (Prescott, 1892). The Gold Indicator was not useful to report securities because it could only report the price of one commodity. To remedy this shortcoming, the stock ticker was designed to print out prices in addition to receiving signals through the wires.

Imagine the wonder of printed tapes being unwound from the machine when it made the 'tick, tick, tick' sound! Similar to how gold prices were transmitted from the exchange to brokerage houses, a ticker operator encoded Morse code at the exchange from where the coded message reached a 'central' which then relayed the message to multiple receivers (Dyer and Martin, 1910). Because only twenty-five receivers would receive the coded message at any time (Dyer and Martin, 1910; 'Gold and stock reporting instruments,' 1872), it can be assumed that some brokerage houses would still have received the updates sooner than others. The ticker had narrowed time differentiation of stock reporting, but by no means was the difference completely eliminated.

The subliminal effect of the ticker is evident in historical illustrations. In one of them, the ticker occupies the central stage in an exchange—it is surrounded by and placed above men in top hats who consulted prices printed on a long tape unwound from the ticker. The ticker was the belle of a ball whose admirers all wanted to have a closer look. In another illustration, brokers sprinkled ticker tape fragments like confetti from office windows to celebrate a presidential parade in 1888 and a hometown baseball win. The ticker gave meanings to the paper tape. The stripes symbolised good news, therefore the jovial crowd did not mind being littered on.

Even though the ticker was a new wonder on Wall Street, Dow Jones did not acquire one. There is no record showing how much a ticker cost in the late nineteenth century, but it was evident that the ticker was in demand. For example, to make the ticker more exclusive, subscribers could lease a private line made up of superior materials so that they could learn of the stock prices a few minutes ahead of others by paying more (Prescott, 1892) (This is similar to today's practice of brokerage firms: they rent private lines from financial news services such as Reuters to gain a few seconds ahead of others). Another example to show the ticker was in demand is the anecdote that Thomas Edison's ticker saved him from the brink of starvation after receiving a large order and producing 1,200 in his workshop (Dyer and Martin, 1910).

Given Dow Jones' interest in understanding market performance as a whole, rather than individual stock performance (Gordon, 1999), the ticker may not have been useful. *Wall Street Journal* invented the Dow Jones Industrial Index to define the market boundary by quantifying it with the Dow Jones Industrial Index. Dow Jones took the average of ten transportation companies (railways,

steamship, and Western Union) after the market closed and deduced the market performance from the trading prices of the ten securities. In 1897, Charles Dow invented Dow Theory to predict market movement (Gordon, 1999). He stated that the market movement was only real if both the industrial average and transportation index moved in the same direction. If the industrial average went up but the transportation index did not, then the market would not be rallying. To Dow, the market was the trading of select transportation and industrial securities. However, it was only one kind of market in Wall Street. Another kind of market was a knowledge network formed by runners—the second actor in a network of financial news reporting.

The Runner

I argue in this section that runners were not a transportation or message delivery means, but a network of market knowledge. As such, runners took up a knowledge-bearing role not performed by non-human transportations/communication technologies, such as trains, horses, or the telegraph. Runners learned about the trade when they ran around the street. They also created new markets because some runners later established businesses to serve Wall Street brokers. When the runners disappeared from rushing around Wall Street, this knowledge system ceased to exist.

It is well said that before the railroad, a message could only travel as fast as a horse could run. Before the telegraph, a message could travel as fast as a train could run. The telegraph may have eliminated the need for a runner to physically transport a message from one place to another, but runners were not eliminated altogether. Even in the 1980s, runners were still used to deliver hand-written orders from brokers to dealers inside a brokerage house and an exchange.

Runners were knowledge bearers of the market, yet they were portrayed as playing only marginal roles in historical illustrations of Wall Street. The runner did not appear in every Wall Street illustration and was rendered invisible in historical documents. When the runner appeared in an illustration, he was standing alone among hundreds of market speculators. The lone runner usually stood idly waiting for someone to offer him a job. He did not appear to eavesdrop on the ongoing conversation between the speculators. The runner was portrayed as someone 'outside' the market, someone who did not interfere with activities in an exchange. In contrast to the ticker that occupied the central place in an illustration, the runner was marginalised.

To recognise the significance of runners in the market, Gordon (1999) calls them the 'glue' that created a single market by knitting together the brokers and the exchange, the street and the banks. However, I argue that this would have been impossible because different markets co-existed in Wall Street. In addition, the runners did not validate and share the information they were

paid to deliver. Nonetheless, they were knowledge bearers of the market because they played a role that could not be fulfilled by non-human conduits such as horses or trains. While the train timetable standardised local times, the locomotive itself was not conscious of time. In contrast, runners—however uneducated—were conscious of Wall Street temporality and spatiality: they would need to know the fastest route to deliver a messages and the busiest time of the day. All this knowledge helped them learn the business of the trade. An illustrative example is that financial companies such as American Express and Wells Fargo began as couriers of money and securities. Through delivering messages, they became knowledge bearers of the market and established banks and financial institutions (Gordon, 1999). The change in business shows that courier companies gathered market information about designated locations at designated times. By establishing conduits in a network, these companies gained knowledge about the movement of money and information. In another example, the founder of a *Wall Street Journal* competitor started his first job as a Western Union runner. He learned how important news was to Wall Street firms so he started a financial news courier business to feed the market's needs (Rosenberg, 1982).

Dow Jones also employed runners to accompany reporters at brokerage houses and the exchange. Wendt (1984) vividly describes the scene of runners delivering hand-written notes to the office: 'when a runner dashed down the steps and someone shouted, "Earnings! Earnings!" and the boys took up the chant, [Edward] Jones became a different man' (p. 28). This shows runners were not a 'neutral' means in the network of financial news reporting; their presence stimulating actions from other actors in the network. In the same way, non-human actors such as the printers also called for actions from other actors.

The Printer

After the runners rushed back to the Dow Jones office with written slips, the editors then composed the news ready for printing and distribution. However, the printer was not in the network at the very beginning. Newsprint reproduction relied on manifold writers, ink, tissue papers, and two-sided carbon papers. The first financial information service Dow Jones offered was a hand-written news bulletin called a 'slip' that was copied and distributed throughout the day. Hand-copied slips could be printed quickly and were then delivered by runners. Even though the rotary cylinder printer was invented in the 1840s, Dow Jones did not invest in one at the very beginning. However, the absence of a printer did not make financial news reporting impossible, it simply created a network of financial news reporting that produced information of a specific quality. For example, the total word count produced in a day on handbills only amounted to 800. The word limit dictated that news items be short and concise for speedy composition and hand-copying (Rosenberg, 1982).

Once the runners rushed back to the office with a scribbled note, the editors summarised it in one or two sentences before dictating it to the manifold writers. The writers then reproduced the news articles by using an ivory-tipped stylus to inscribe on a stack of twenty-four sheets of tissue paper (Rosenberg, 1982). The runners picked up the freshly written slips and delivered them to the subscribers around Wall Street. The manifold writers repeated the process again before another twenty-four copies were copied and distributed. Because there were more than twenty-four subscribers, it can be assumed that not all clients received the news at the same time, once again copying narrowed time differentiation but did not eliminate it.

One year after Dow Jones went into business, it added a new afternoon service by issuing *Customers' Afternoon News Letter*. The afternoon newsletter summarised all news items on the slips and was distributed to clients at 3:15 p.m.—fifteen minutes after the Exchange closed the market. As will be discussed in the following section, the exchange dictated how time was organised in Wall Street; the publishing of the afternoon newsletter further reinforced this market temporality.²

Two years after Dow Jones opened its doors, it acquired a hand-operated cylinder press to print news bulletins. Unlike the steam-powered high-speed rotary press that was already available in the market, the Dow Jones' machine was very humble: it could only hold 16 lines of types and printed on paper not larger than 5 × 9-inch in size. The slip format was restricted by human power: printing on a large sheet of paper required more pressure than human hands could provide (Plymouth College of Art and Design, 1972). The print was therefore more like a hand bill than a broadsheet newspaper. This limitation led to a specific quality of information: the news items were extremely brief. Each news item began with the time of the event and ended with a one-sentence statement of what the event was about. The earliest slip was more like a list of news by-lines or a collection of tweets than financial news articles that are printed in today's *Wall Street Journal*!

Three years after Dow Jones opened its door for business, it divided the printing into two sites. It acquired a steam-operated printer for the exclusive printing of *Afternoon News Letter*. The new printer was housed in Broad Street, 0.2 miles south of Wall Street.³ Nevertheless, the hand-operated cylinder printer continued issuing news bulletins from the Wall Street office at no. 15. News bulletins were produced at a half an hour interval during the market opening hours, from 10:00 a.m. to 3:00 p.m. (Wendt, 1984). The co-existence of the news bulletin and the *Afternoon News Letter* created two temporalities in Wall Street: one of 'breaking news' throughout the day; the other a daily conclusion of what happened in the street.

After seven years in business, Dow Jones renamed the *Afternoon News Letter* the *Wall Street Journal*. What made the *Journal* a newspaper on 8 July 1889 may not have been the contents or the reporting style, but the printing technology. The *Wall Street Journal*, unlike its former self the *Afternoon News Letter*, was four pages long. It was printed on both sides of a 15.5 × 20.75-inch sheet; on

each page there were four columns. One can say that the *Wall Street Journal* had grown up to become a standard broadsheet.⁴

The publication of the first issue of the *Wall Street Journal* had another significance: it redefined the concept of Wall Street from a physical locale to a financial market. The address of the inaugural issue was not listed as one in Wall Street, but no. 26 Broad Street where the printer was located. The *Journal* that was originated from Wall Street had by now moved some of its operations away from the original locale. The words 'Wall Street' was no longer restricted to reference the 0.7-mile long street in lower Manhattan, but to include a network of people, technology, and information that was enabled by the physicality of the street.

Wall Street Physicality

The last non-human actor discussed in this chapter is the physicality of Wall Street. In Ch. 3, I showed that a rural village in Bangladesh was seen as a contained local site; its economic activities were not linked to the financialised global economy. In contrast, economic activities that take place in Wall Street—although local—are assumed to be *always* global. Wall Street is now synonymous with the US, if not the global, financial market; geographically, it is only a 0.7-mile long street in lower Manhattan. The grand scale of Wall Street, as Latour (2005) wrote, is not rooted in its size, but its connections between Wall Street offices and those others in the country and the world. In the following, I show how financial activities that took place in the earliest Wall Street defined its local character as that of a trading place.

As a place, Wall Street yet represents other places, such as a stock *market*, a financial *world*, and a *centre* of money, power, and greed. To understand how a street became a market, a world, and a centre, we have to understand how Wall Street's physicality has enabled the flows of people, technology, and information. From a contemporary standpoint, it may seem natural for Dow Jones to open its business in Wall Street because the street was becoming a hub of brokerage firms and the home of the New York Stock Exchange. However, the assumption of Wall Street being a *natural* home for Dow Jones should be questioned. One way to do so is to investigate how Wall Street became the centre of financial activities in early New York City.

Wall Street existed before the city was named to honour the Duke of York in 1664. Existing documents about the first 150 years of New Amsterdam and New York do not suggest why stock traders chose Wall Street to be the gathering place. However, Wall Street physicality mattered to Dow Jones being a nexus of financial information. The geographical location of Wall Street in lower Manhattan mattered to a financial news service, as did the buildings erected along the street and the people who lingered there. In turn, the geography, the buildings, and the people enabled technologies of financial activities.

In the following, I examine Wall Street's physicality by looking at how the earliest traders gave the financial market a sense of temporality and spatiality.⁵

At the very beginning, Wall Street provided farmland for the earliest Dutch settlers. In 1730s, the street witnessed the trading of slaves, furs, and corn at its eastern end. Wall Street once hosted a city hall for public affairs and a tavern for maritime news exchange. It then became a residential street of the fashionable and the famous before it fell under British control. In the mid-eighteenth century, there was no private dwelling in Wall Street once it became a commercial thoroughfare.

Wall Street was called such because the Dutch erected a wall to prevent the British from invading the territory. The earliest Dutch settlers used untrimmed trees to mark the northern end (Hill, 1908) and built a palisade to mark the southern end. The sixteen-foot-tall palisade served the dual purpose of defending the Dutch against the British and of preventing cattle from wandering off (Hill, 1908). However, due to negligence and vandalism, the wall collapsed and the area behind the fallen wall became a reservation for troop movements. The new cross street where men gathered to trade was then named Wall Street (Gordon, 1999).

The New York Stock and Bond Exchange began with a few men lingering under some shady trees to broker public stocks issued by the Treasury (Hill, 1908). They gathered every morning from 11:30 a.m. to 12:30 p.m. during which hour the President read out the trading stocks from a list. The secretary dutifully recorded the quotations and sales, as well as the names of the buyers and sellers. The gatherers later signed the Butterwood Agreement outside no. 68 (Gordon, 1999). The Agreement standardised the commission rate and gave its members mutual priority in trading (Levinson, 1961). To join the exclusive club, brokers paid an initiation fee of \$25. There is no apparent reason why Wall Street should have been chosen other than it was an intersection. The first bank was not yet established when the exchange was formed.

After two decades of curbside trading, brokers organised themselves into the New York Stock and Bond Exchange by moving indoors to a building at No. 70. As the first proper exchange, the New York Stock and Bond Exchange could set the trading time from 10:00 a.m. to 3:00 p.m. By doing so, it excluded brokers who did not have enough money to buy a seat at the Exchange. However, trading was not completely closed to non-board members because they could wait till the Board closed at 3:00 p.m. to trade elsewhere. Nevertheless, the Board's sense of time and space dominated all temporalities and spatialities of trading. In the 1830s, the exchange held auctions twice a day: one at 10:30 a.m., another at 1:00 p.m. As traders had once done beneath the trees, the President read out the securities' names aloud during an auction. An indoor setting has not completely eliminated practices that originated from an outside setting. For example, an indoor space could have made trading possible in all weathers, but traders transported the sense of outdoor time indoor, restricting trading from 10:00 a.m. to 3:00 p.m.

The outdoor sense of spatiality was also transported indoors. For example, the Open Board—a less prestigious exchange that held continuous auctions throughout the day—did not have seats for brokers. Brokers instead gathered at specific areas to trade specific instruments on the floor. The areas were called posts, named after the lampposts where traders used to gather around on the street (Gordon, 1999). In another example, the New York Stock and Bond Exchange members paid dues to have a ‘seat’, literally a place where the members sat during the auction. The elimination of chairs had not changed the use of the word ‘seat’ to refer to membership. A ‘seat’ had become a right to trade inside the exchange rather than a chair to sit in.

The Exchange may have set the senses of trading time and place both inside and outside the building, but it could not ‘contain’ all trading activities because as long as there were traders, trading could take place at any time and in any place. During a Bull Market, freelance brokers took trading to hotels (such as Fifth Avenue Hotel in uptown) and the streets (Gordon, 1999) after the market closed. As a result, the volume traded outside the Exchange exceeded that traded inside the Exchange during a Bull Market (Gordon, 1999). The trading inside and outside the exchange had created different markets with different localities and temporalities.

Dow Jones’ first office was a strategic location. In 1865, the New York Stock and Bond Exchange was at no. 11 and Dow Jones was at no. 15. The Exchange not only defined when and where trading could occur, but it also defined the temporality and spatiality of financial news reporting. To capture market activities, the three Dow Jones founders worked different shifts in the office and on the street. One of them opened the office at 7:00 a.m. before heading out to the street to search for news at specific times and places (Wendt, 1984). The second owner then took over the office and searched for news at night when freelance traders met in uptown hotels. The news gathered at night was shared with the third owner who lived close to an uptown hotel. What were heard at night became ‘Morning Gossips’ of the following day (Wendt, 1984). The physicality of Wall Street enabled the 24-hour news gathering cycle which tested the journalistic determination of Dow Jones’ founders.

Implications of Seeing Financial News Reporting as a Network on Financial Crises

The case study of the earliest *Wall Street Journal* history has two implications for an understanding of contemporary financial crises: first, a newspaper is neither a stable institution nor a medium, it is a temporary assemblage of human and non-human actors; second, technologies had been invented to narrow spatiotemporal differentiation, yet they created new temporalities and spatialities instead of eliminating it.

After the Global Financial Crisis, scholars (such as Fahy et al., 2010; Tambini, 2010) and the public asked why the press, being the Fourth Estate of society, failed to forewarn the public about the collapse. Some explained this as an over-reliance on financial professionals and governments officials as news sources (Berry, 2013; Fahy, et al., 2010; Schiffrin and Fagan, 2013), others that financial journalists had neglected public interest (Schiffrin, 2011). The journalism profession worried that citizen journalists used unverified rumour and treated it as news on social media (see Mortensen, 2013). The examination of the earliest Dow Jones' operation from an ANT approach shows that the press is best not seen as a stable institution in which journalists all understand their roles and responsibilities. When the press is seen as an assemblage of human and non-human actors, financial newsmaking will be seen as an ongoing and often contested process. The availability of new digital technologies (such as Twitter, mobile phone camera) and the creation of new actors (such as public relations firms representing financial institutions, television financial analysts) reconfigured the network of financial news reporting. As mentioned in the introduction, the insights that ANT lend to media studies is its denial of the 'social' nature of the media; that is the media do not necessarily reflect or constitute the social world (Couldry, 2005). However, Couldry is less happy with ANT's indifference to how networks develop once they are formed and its neglect of unequal power between human and non-human actors. The earliest history of *Wall Street Journal* however shows that it is difficult to determine when a network will stop developing: while I ended the analysis at the printing of the first issue of *Wall Street Journal*, it is possible that other reporting and printing technologies would have enabled the founders to further experiment gathering financial information and reporting news in different ways. In addition, while humans ultimately decide what tools to use, tools enable humans to perform tasks that are *humanly* impossible. In this sense, it is hard to decide who has more power in altering the material world.

The second implication of the analysis is that technologies were believed to narrow spatiotemporal differentiation, yet the invention of technologies created new spatialities and temporalities. The co-existence of multiple technologies created markets in which different qualities of financial information circulated. The disjuncture in space and time, as I argue in this book, is the financial crisis. When the materiality of information is taken into account, a neo-classical economic assumption that perfect information will lead to a perfect market can be critiqued. ANT rejects the question whether information can be perfected, but instead asks what qualities it has. The earliest history of *Wall Street Journal* shows that technical devices had been invented to standardise financial information: from the use of human runners to the ticker tape. However, neither actor standardised information; instead they created a new sense of space and time: the runners navigated the physicality of the street while learning how to set up courier services; the ticker tape invited investors to gather in a room to

learn about the latest updates at regular intervals. Along with the analysis in Ch. 2 and Ch. 3, I have shown in this chapter that the creation of a new spatiotemporal order in turn created a market of specific information, that financial markets do not pre-exist before information flows through technical devices. To further investigate how technical devices produce a specific kind of financial information, I will examine the trading screen in the next chapter.

Notes

- ¹ See the Universal Stock Ticker (<https://www.sccs.swarthmore.edu/users/12/abiele1/ticker/>) and the Twittertape Machine (<http://www.twittertape.co.uk/>).
- ² A note of interest here is how and with what the *Afternoon News Letter* was reproduced. An archival copy of the newsletter on 'Today on WSJ' History (15 May 1884: Before the WSJ. <http://blogs.wsj.com/wsj125/2014/05/14/may-15-1884-before-the-wsj/>) shows that it has 48 lines on one page and the newsletter was printed on both sides. It looks like a reproduction done by a printer. Another source (Wendt, 1984), however, suggests that the reproduction technology was burnishing, adopted from bookbinding (Wendt, 1984). An agate stylus with a metal ball on top is used to inscribe on the paper. This technology could be tryptograph in which a stylus with a blunt end was impressed on a waxed sheet of paper on a coarse metal surface. In this process, a stencil is created by the displacement of wax (Batterham, 2008). It is, however, unclear how it was done and why it was superior to carbon-copied tissue paper.
- ³ Given Wall Street was a cradle of New York publications (Levinson, 1961), it may be possible that some publications shared the same printers. In November that year, the *Journal* took up commission from other publications to print newspapers on its printer.
- ⁴ The *Wall Street Journal* certainly did not invent the broadsheet layout because the first New York newspaper *The Sun* that began publication in 1833 had three columns.
- ⁵ Anecdotes of Wall Street history are drawn from three publications: *The Great Game: The Emergence of Wall Street as a World Power 1653-2000* (Gordon, 1999), *The Story Of A Street: A Narrative History Of Wall Street from 1649 to 1908* (Hill, 1908), and *Wall Street: A Pictorial History* (Levinson, 1961). Specific authors were only cited when they made unique points.