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Financial Contagion in an Age of COVID-19: On Biological, Human, and Algorithmic Mimesis

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Abstract:

This article discusses the financial turmoil unleashed by the COVID-19 pandemic in March 2020. It argues that the market mayhem in which prices plummeted cannot be fully explained by real-economic factors such as uncertainty about the future global economy. Instead, I suggest analysing the events as a manifestation of financial contagion in which the mimesis of market participants becomes an independent explanatory force. In making this argument, the article returns to late nineteenth-century ideas about mimesis and social contagion as well as discussions about the collective mimesis—constitutive of a mimetic turn—that may result from social avalanches.

Keywords: contagion, COVID-19, financial markets, imitation, mimesis, social avalanche.

Introduction

The COVID-19 pandemic has brought much grief and anxiety to the world. As deaths from the coronavirus mount and the invisible foe brings wealthy, technologically advanced societies to their knees, the world has learned

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not to underestimate the shocks viruses can deliver. The outbreak's general implications are far-reaching, to say the least – the virus has allowed some authoritarian leaders to strengthen their grip on societies unmoored in crisis, and we have barely scratched the surface of COVID-19's impact on global economies. Given the widespread ramifications of COVID-19, it is no surprise that scholars from the social sciences and humanities seek to make sense of the crisis and understand its consequences. In this article, I contribute to the rapidly growing literature on the COVID-19 crisis, exploring particular, little-analysed aspects of the pandemic with a particular focus on their mimetic dimensions.¹

Specifically, I focus on how the spread of contemplated or actualised COVID-19-induced lockdowns generated unprecedented panic and turmoil – both of which phenomena are central to the history of mimesis – in the financial markets in March 2020. While markets have since (provisionally) stabilised, what is interesting about the March mayhem is how it manifested a connection between social and biological contagion: the biological infection triggered the social infection, in this case, in the form of market participants mimicking one another in a rapid downward spiral.

Links between the biological and the social have long been drawn in academic research. In the nineteenth century, the British sociologist Herbert Spencer likened society to an organism governed by the universal laws of evolution (Spencer 2002). Furthermore, the German sociologist Niklas Luhmann suggested, just over a hundred years later, that modern law operates like an immune system in guarding society's fundamental norms and rules against challenges (Luhmann 2004). Both found, in biology, a glimpse into society as a self-regulating system, albeit one that can evolve, mutate, or become infected if things go wrong.

In this article, my take will be somewhat different. I will use the March 2020 market panic as an entry into a broader discussion concerning social and financial contagion (with the latter constituting a particular form of social contagion). I argue that to better understand the nature of social and financial contagion – as well as how they manifested during the COVID-19 pandemic – it is helpful to return to an array of social theorists writing in the late nineteenth and early twentieth centuries. Like the present era, characterised as it is by the COVID-19 disruption, the *fin de siècle* was a period of radical social change in many Western societies. One analytical way of coming to terms with the sense of profound societal

transformation at this time consisted of mobilising ideas about mimesis and social contagion. I argue that these ideas are relevant for understanding the present situation, however different it may appear.

By focusing attention on financial contagion, this article recognises the importance of mimesis for understanding society – a point that is currently gaining traction in several fields in critical theory, including literary theory (e.g., Lawtoo 2013; 2016). However, compared to the work of, for example, Gebauer and Wulf (1995) that helped considerably in opening up the history of mimesis beyond realism and representation, I also point to the notion's broader analytical relevance, demonstrating how a sociological account can inform literary debates. Specifically, I agree with Gebauer and Wulf in their characterisation of mimesis as 'a *conditio humana*' (1995: 1; emphasis in the original). Human beings certainly establish social ties through mimesis. I also agree with their analysis of, for example, Walter Benjamin, for whom human mimesis is impacted by historical developments. That said, I argue for supplementing Gebauer and Wulf's cultural-aesthetic analysis of mimesis with a broader sociological perspective, and that doing so may be central to the mimetic re-turn. Such an approach can still draw inspiration from literary and aesthetic dimensions (and I shall make some, admittedly, cursory reflections in that direction), but it will nonetheless anchor the discussion of mimesis differently. Here, as I argue, when considering the kinds of mimeses that characterise present-day financial markets, it is increasingly the case that they play out between fully automated algorithms rather than between human beings. For this reason, and to address non-human mimesis, I conceptualise the notion of mimesis more broadly than Gebauer and Wulf. They relate mimesis to identification, proposing that it entails cognitive aspects and is thus 'distinct from mimicry, which implies only a physical and no mental relation' (1995: 5). Following this line of thought, they argue that 'mimesis can be regarded as a capacity that distinguishes human beings from animals' (1995: 319). I am less certain about reserving mimesis for the human domain. There are important developments within machine learning – including machine-learning-based algorithmic trading in financial markets – which suggest that non-human algorithms could be granted the capacity for proper agency as well as for mimesis (Borch 2021). Though I cannot discuss this in detail here, I offer a few related reflections in the discussion of the March 2020 market turmoil at the end of this article.

Five sections follow this introduction. I first discuss the market mayhem of March 2020 and demonstrate that, while it was driven in part by rational economic considerations about the global economy collapsing, the market movements went significantly beyond what any rational explanation can account for. I then make a significant jump back in time and explore some of the profound transformations that took place in the late nineteenth century – a period that is increasingly recognised as central for the theorisation of mimesis in the modern era (Borch 2019a). I argue that these transformations inspired widespread interest in notions of imitation, mimesis, and social contagion, and I look at how these are connected to biological infections. The third section zeroes in on one particular variant of *fin-de-siècle* mimetic thought – namely, what I call social avalanches, that is, situations in which heterogeneity is suddenly transformed into homogeneity and where imitation becomes dominant, if only temporarily. I use the discussion of social avalanches to return to debates about present-day financial contagion in the fourth section. There is a brief conclusion.

COVID-19 Financial Havoc

Except for China, where localised lockdowns were implemented in January 2020, and Vietnam and Italy, where similar measures were introduced in February, most countries began localised or national lockdowns around mid-March 2020. By then, the virus had already spread extensively and the first reported cases in most countries were several weeks old. When the WHO declared the COVID-19 outbreak a pandemic on 11 March 2020, it was reminiscent of Minerva's owl: the declaration belatedly attached a term to a situation, the severity of which was already widely and deeply recognised. In addition to being concerned about sickness (one's own or others'), for many people the consequences of the COVID-19 outbreak and the subsequent lockdown measures likely materialised in concerns about job security and having to adapt to home schooling, as well as adopting social distancing measures and navigating associated personal, mental, and social implications.

Financial markets too were concerned about COVID-19. With countries locked down, whether locally or nationally, global supply chains were immediately broken just as changing consumption patterns rapidly placed certain industries under immense economic pressure: although people

might have been hoarding toilet paper, travel bans meant that the tourism and hospitality industries fell apart. In this light, it would seem reasonable that stock prices plummeted. After all, according to conventional economic wisdom, stock prices partly reflect expected future earnings, so when companies or entire industries were suddenly put on hold, this should show in falling stock prices as well. Beyond this, after the 2008 financial crisis, quantitative easing programmes have bolstered financial markets, in effect generating artificially high stock prices. As a result, many investors had anticipated some kind of ‘correction’ anyway where markets would see stock prices decline as a result of an increasing disconnect between these and the fundamental value of the respective companies.

Though this suggests that markets were in for a dip in March 2020, things turned rather more dramatic than these ‘rational’ explanations can account for. This materialised in different ways. First, prices for stocks and other financial assets saw considerable declines. Around 10 March, the Dow Jones Industrial Average – a leading US American index – fell almost 10%, the largest collapse since Black Monday in October 1987. However, this was only the beginning. The following week, on 16 March, the same index plunged by almost 13%, the second-biggest one-day drop in history. Similar declines were registered in almost every market. The most spectacular fall-off happened in the oil market in the first half of March when a 24% drop generated the biggest one-week price decline since 2008 (CNBC 2020). This situation would become more severe in April when the price of West Texas Intermediate crude oil futures contracts collapsed by 300% cent and eventually turned negative. In other words, one would receive money for agreeing to receive crude oil. Negative interest rates are a phenomenon that was first seen after the 2008 financial crisis even though they subvert the wisdom of economic textbooks. However, being paid to receive one of the industrial economy’s most vital resources is arguably more mindboggling.

Second, markets saw fierce increases in ‘volatility’, that is, the movement in the price of securities. When prices move a lot, volatility is high, and vice versa. The key volatility measure is the Chicago Board Options Exchange’s so-called volatility index (VIX). The VIX is commonly referred to as the ‘fear gauge’, or ‘fear index’, because it is believed to measure how market participants see financial markets.² A high VIX means high volatility and high fear. At the end of February 2020, the VIX began to rise. This further intensified in early March, only to culminate on the 16 March 2020 when

the VIX reached its highest level ever, significantly above the levels found during the 2008 financial crisis.

Here, two points should be made about the COVID-19 induced financial panic. First, as I mentioned above, some of the havoc might be said to derive from reasonable concerns about the ‘real’ economy. With a global economy being brought to its knees (supply and demand both plummeting) and with the escalation of uncertainty about how the pandemic might be tackled and what its future economic consequences might be, it is not surprising that the prices of securities dropped and the VIX skyrocketed. That said, it seems that there are more explanations than ‘real’ economic ones behind the market turmoil. This is clear from the fact that prices quickly recuperated even though the global economy had not shown any signs of recovery (in fact, within a few months, financial markets more than fully regained the losses from March, even reaching new historical highs). To be sure, several countries quickly introduced COVID-19 economic recovery plans, which might somewhat explain the move toward a more positive market sentiment. However, these plans were often only introduced *after* the markets had recovered.

Second, considering this, understanding the market panic requires a different analytical lens. I suggest that mimetic theory may offer a valuable starting point here. Specifically, I propose to frame the market panic as an example of investors imitating one another in a downward-spiralling fashion, generating what I call a social avalanche in markets. I further suggest that to understand such mimesis, it is helpful to resuscitate a theoretical *fin-de-siècle* tradition that responded to profound social changes of a scale comparable to the changes COVID-19 introduced.

Modern Mimetic Theory

The late nineteenth century was an age of dramatic social transformation in many Western societies. Industrialisation and urbanisation fundamentally reshaped everyday life as did technological innovations such as the typewriter, the gramophone, film, the telephone, electric lighting, and other post-literary innovations (Kittler 1999; Pred 1990; Tickner 2000). Furthermore, this period saw waves of political unrest, with anarchist attacks assuming an almost infectious form in late nineteenth-century France (Barrows 1981). The profound transformations of society were

reflected in different types of work. Then and later, novelists from Émile Zola to Stefan Zweig, to mention just two, sought to capture the changes society was going through in the late nineteenth century. Zweig's memoirs neatly capture the overall loss of a familiar world and Zola explores the rise of unions and collective protest in an age of industrialisation (Zola 1993; Zweig 2009). Similarly, though with different means, social theorists tried to take stock of this development and many of them saw crowd behaviour as an emblematic manifestation of the turmoil society was going through. In crowds, so it was argued, individuals undergo a dramatic transformation; they are carried away by the collective mimetic force and momentarily lose their sense of self.

The interest in crowd behaviour was particularly intense in France in the 1890s, though it also manifested elsewhere both before and after this time. The most well-known discussion and the one that best captures the overall discourse is presented by Gustave Le Bon in his 1895 essay, *The Crowd: A Study of the Popular Mind* (Le Bon 2002). In it, Le Bon outlines a general diagnosis of modern society being run over by crowds, arguing that:

While all our ancient beliefs are tottering and disappearing, while the old pillars of society are giving way one by one, the power of the crowd is the only force that nothing menaces, and of which the prestige is continually on the increase. The era we are about to enter will in truth be the ERA OF CROWDS. (2002: x; emphasis in the original)

When explicating in more detail how crowds are constituted, Le Bon's analysis revolves around both mimetically and biologically inspired ideas. For example, though he considers crowds above all as psychological entities – a crowd is characterised by the 'mental unity' of its members, he says (2002: 2) – he also feels that they are akin to the ways in which cells are organised:

The psychological crowd is a provisional being formed of heterogeneous elements, which for a moment are combined, exactly as the cells which constitute a living body form by their reunion a new being which displays characteristics very different from those possessed by each of the cells singly. (2002: 4)

Further, just as a biological organism may be subjected to contagious dynamics, so the crowd is characterised by contagion. 'In a crowd every

sentiment and act is contagious,' argues Le Bon, 'and contagious to such a degree that an individual readily sacrifices his [*sic*] personal interest to the collective interest' (2002: 7). According to Le Bon, this contagiousness is derived not merely from the crowd's semblance with biological organisms, but also and especially from the crowd's alleged similarity to encounters between a hypnotising doctor and a hypnotised patient. Inspired (like many others) by contemporaneous French psychotherapy debates about hypnotic suggestion, Le Bon essentially proposes to transplant ideas about two-person hypnotic relationships onto a multi-person, collective level, arguing that the contagiousness of crowds and the reason why crowd members act alike are due to the crowd being based on a relationship between a hypnotising leader and a collective of hypnotised crowd members.³

The reference to psychotherapy may also explain Le Bon's penchant for analysing crowd behaviour in pathological terms. For Le Bon, the crowd signifies an outburst of irrationality, barbarism, and femininity – all characteristics, he believes, that undermined the civilised foundation of modern society. Such ideas make plain why Le Bon's work would soon face heavy critique. Indeed, although Le Bon's descriptive and analytical frameworks attracted immediate interest in sociology in the late nineteenth century, subsequent scholars consigned his work to the dustbin, arguing that it was overly biased and too conservatively politically charged (Borch 2012). This critique is fair, but his work, nonetheless, deserves attention because it encapsulates central *fin-de-siècle* ideas and debates that belong to a broader repertoire of mimetic concerns. Though other scholars at the time also subscribed to a largely conservative horizon, some of them offered more nuanced reflections on crowds. In particular, this can be found in the French criminologist and sociologist Gabriel Tarde's work, which has seen a renaissance in social theory since the 1990s with Bruno Latour and Deleuze-inspired scholars arguing for its present relevance (e.g. Latour 2002; 2012; Sampson 2012a; 2012b), a relevance that stretches to include a post-critical, post-literary turn in literary studies as well (e.g. Braga-Pinto 2019; Lawtoo 2013).⁴

Although Tarde (1892; 1893) published some early writings on crowds that reflected the same overall outlook Le Bon promoted – in fact, Le Bon might well have been inspired by them when writing his 1895 book – Tarde soon suggested a more complex analysis, in effect portraying crowds as entities in which imitation is particularly intense (Borch 2005; Tarde 1962).

Since, according to Tarde, imitation constitutes a social bond—a person imitating another person pays respect to that person—crowd behaviour is a manifestation of the social, rather than the negation of it (Tarde 1968). A similarly positive view was articulated by the American sociologist, Robert E. Park, one of the founders of the so-called Chicago School within sociology. Akin to Tarde, Park suggests that while crowds may seem to dismantle certain societal pillars, they also hold the potential for developing ‘a new social order’ (Park and Burgess 1921: 867), because ‘they serve to bring individuals out of old ties and into new ones’ (Park 1972: 78). Here, the modern city is the breeding ground for such new crowd-generated social ties.

As touched upon earlier, the mimetic foundation of crowds—their intense imitative dynamics—was itself formulated in a mimetic vein, developed on the basis, at least in part, of a biological template. Indeed, as convincingly demonstrated by Peta Mitchell (2012) and Priscilla Wald (2008), the late nineteenth century saw ideas about biological contagion morphing into notions of ‘social contagion’ and ‘moral contagion’. This contagion vocabulary would play a prominent role at this time and reflected some of the societal developments described above. Subsequently, social scientists drew heavily on theories of contagion to make sense of modern, rapidly urbanising societies ravaged by disease and disorder. The word *contagion* derives from the Latin *contagio*—meaning ‘contact’ or ‘touch’—and the packed frenzy of the burgeoning cities in the late nineteenth century was the perfect demonstration of contagion’s effects on social life. New York City saw its population almost double between 1880 and 1900, while Chicago’s more than tripled, providing optimal conditions for a rash of infectious diseases.

As Carla Cappetti notes in *Writing Chicago: Modernism, Ethnography, and the Novel*, Park’s interest in urban life was sparked in part by Walt Whitman’s ‘musings on the city’s surging life’ (Park cited in Cappetti 1993: 25). Revising his *Leaves of Grass* in the age of rampant late nineteenth-century urbanisation, Whitman (2004) presents an affirmative account of the modern metropolis and its body-to-body contacts. Rather than seeing the city as a source of infectious disease, Whitman puts forth a radical democratic project that ‘works to make agreement synonymous with physiological rapport’ (Esteve 2003: 23; see also Bennett 2020). It is this vision of a positive social order arising out of crowd behaviour that

resonated with Park. This was, however, a minority view, in part because, as mentioned, contagion was gradually being associated with the psychic domain. Indeed, while virologists have long recognised that dense cities can quickly become hotbeds of contagion, social scientists writing at the turn of the nineteenth century increasingly saw this happening in the psychic realm as well. In 1903, Russian psychologist and neurologist Vladimir Bekhterev – a rival to the far more famous Ivan Pavlov – wrote in *Suggestion and Its Role in Social Life* that:

Nowadays people talk so much about physical infection through ‘living contact’ (*contagium vivum*) or so called microbes that I feel it is useful to consider ‘psychic contact’ as well (*contagium psychicum*), which causes a psychic infection, whose microbes, although invisible with a microscope, nevertheless function here, there and everywhere, similarly to physical microbes, and are transferred through words, gestures, and movements of surrounding people, through books, newspapers, etc. (Bekhterev 1998: 1; emphasis in the original)

This notion of psychic contagion caused great concern among sociologists at the time, who worried about how dangerous ideas may spread swiftly in modern urban environments, turning societies on their heads. Edward A. Ross, one of the founders of sociology in America, even sees, in the myriad ‘mental contacts’ that city dwellers receive daily, a grave threat to democracy (Ross 1897). He felt that people would lose their ability to make political decisions in society’s best interests as they become overwhelmed by the city’s avalanche of cues and suggestions, enhanced by the press and modern communication technologies. To address this issue, Ross advocates physical measures aimed at promoting social distancing, including architecture designed to give people more space and carve out the mental and physical breathing room necessary for considered political engagement (Ross 1908).⁵

It is less clear if such measures would also address another of Ross’s concerns. Contrary to Whitman’s positive account of the inhabitants of modern cities, Ross describes the urban dweller as an ‘unsteady person whose ideas and preference flicker constantly in the currents of momentary popular feeling’ (1897: 397). Here, again, he was not alone. In fact, the reference to flicker individuality suggests a connection to broader modernist accounts (Borch 2020b). For example, in *The Great Gatsby*, the protagonist

Nick Carraway begins to enjoy New York City for ‘the satisfaction that the constant flicker of men and women and machines gives to the restless eye’ (Fitzgerald 2001: 37). According to Guy Reynolds, the ‘constant flicker’ is central to *The Great Gatsby*, but furthermore, it is ‘a key word for modernist writers’ more generally, with Fitzgerald probably being inspired by Conrad’s *Heart of Darkness* (Reynolds 2001: vi, n. 5). Ross clearly does not promote a similarly positive account of the constant flicker of modern life. On the contrary, he reasons that this flicker was at once a manifestation and a cause of modern individuals’ lack of grounding and their consequent propensity for being swept up by collective currents – a concern he shared with Conrad and other modernist writers (Lawtoo 2013).

Social Avalanches

Moving beyond Ross’s specific recommendations for how to curtail social contagion, it is worth recalling that the various theories of modern crowd behaviour were developed in response to the profound transformations society was undergoing at the time. These societal changes manifested in the kinds of individual transformations that crowd behaviour was believed to bring about. To highlight this sudden and dramatic transformation of individuality, leading sociologists compared crowds with *avalanches*.⁶ One was Emile Durkheim. Though a rival (and explicit critic) of Tarde in the French sociological landscape, he nonetheless articulates ideas about crowd behaviour that closely mimic Tarde’s. In his sociology of religion, in which he discusses the crowd ceremonies – so-called *corroborees* – of specific aboriginal tribes in Australia, Durkheim argues that:

Once the individuals are gathered together [in a corroboree crowd], a sort of electricity is generated from their closeness and quickly launches them to an extraordinary height of exaltation. Every emotion expressed resonates without interference in consciousnesses that are wide open to external impressions, each one echoing the others. The initial impulse is thereby amplified each time it is echoed, like an avalanche that grows as it goes along. (Durkheim 1995: 217–8)

In a similar vein, though not writing about religious ceremonies, German sociologist Georg Simmel – who discusses crowd behaviour in several writings – argues that, in crowds, ‘innumerable suggestions swing back

and forth, resulting in an extraordinary nervous excitation which often overwhelms the individuals, makes every impulse swell like an avalanche, and subjects the crowd [*Menge*] to whichever among its members happens to be the most passionate' (1950b: 93, translation modified; 1992: 70). He similarly noted that:

[Crowds] are characterized by casual stimuli making for enormous effects, by the avalanche-like growth of the most negligible impulses of love and hate, by an objectively quite understandable excitation in the throes of which the crowd [*Masse*] blindly storms from thought to deed – by an excitation that carries the individual without meeting any resistance. (Simmel 1950a: 35, translation modified)

So, just as an avalanche can be set in motion by a minor movement which then elicits a major landslide, these and other sociologists saw crowds as emblematic of abrupt transformations. What the crowd produces is, above all, an avalanche of individuality where people are suddenly carried away by the collective turmoil.

Elsewhere I have suggested going beyond a merely metaphoric use of the notion of avalanches (Borch 2020b). To this end, I mobilise the Danish physicist Per Bak's theory of 'self-organised criticality' which describes how in complex systems (including both human and physical systems) minor changes may trigger large system-wide avalanches (Bak 1997; Bak et al. 1987). In Bak's words:

complex behavior in nature reflects the tendency of large systems with many components to evolve into a poised, 'critical' state, way out of balance, where minor disturbances may lead to events, called avalanches, of all sizes. Most of the changes take place through catastrophic events rather than by following a smooth gradual path. The evolution to this very delicate state occurs without design from any outside agent. The state is established solely because of the dynamical interactions among individual elements of the system: the critical state is *self-organized*. (Bak 1997: 1–2; emphasis in the original)

Building upon this conception, my suggestion is to see crowd behaviour as portrayed by late-nineteenth and early-twentieth-century sociologists as one particular manifestation of 'social avalanches' in which heterogeneity (here, the heterogeneity of individuals) is suddenly transformed into homogeneity (people start acting alike). It is beyond the scope of the

present article to delve into the various aspects and implications of this conceptualisation. However, in view of promoting a mimetic turn or return in critical theory that goes beyond human/non-human binaries, it is crucial to underline two things. First, the notion of social avalanches is tied to a conception of ‘tensional individuality’ (Borch 2017b) which asserts, again building on the work of Tarde and others, that individuality is torn between external mimetic influence and internal anti-mimetic autonomy. Much social life plays out as an oscillation between these two poles; or perhaps, rather, it plays out in ways in which both poles co-exist such that individuality is rarely simply a matter of mimesis (only), nor a matter of anti-mimetic autonomy (only). Yet, in social avalanches – whether they manifest in crowd behaviour or otherwise – individuality’s tensional constitution is momentarily suspended, and individuality becomes fully mimetic. Second, social avalanches do not only materialise in traditional forms of crowd behaviour with individuals rubbing shoulders in the streets. Rather, and this is the central motivation for linking crowd theory to Bak’s work, social avalanches may materialise in many other types of contexts as well. This includes present-day financial markets, dominated as they are by fully automated computer algorithms: these too are sites for social avalanches, although here it is algorithms that see their heterogeneity being replaced by homogenous behaviours in markets (Borch 2020b). I want to use this observation as a steppingstone to return to the discussion of panic in the financial markets in March 2020 and the avalanche it laid bare.

Financial Contagion

It is worth noting, to begin with, that applying the basic ideas informing the conceptions of social contagion and social avalanches to financial markets is not new. At least since the early twentieth century, it has been widely argued that financial markets are characterised by the same basic crowd dynamics that the crowd theorists associated with urban life (Hansen 2021; Hansen and Borch 2019). Similar to the ways in which urban inhabitants may be carried away by the urban maelstrom, so, market participants were believed by observers and economists to be susceptible to the market’s hypnotic pull, with investors suddenly making investment decisions they would later sorely regret. In other words, the lures and dynamics of the metropolis

were recognisable in markets and even within the stock exchanges and their trading floors.

Despite the widespread circulation of such ideas, it was only in the 1990s that the notion of ‘financial contagion’ became popular within economics (Edwards 2000; Kolb 2011). Today, the notion plays an important role in analyses of how entire economies and their poor conditions may infect other seemingly well-functioning ones. This idea particularly took off after the 2008 financial crisis (Peckham 2013). In 2011, for example, Andrew Haldane of the Bank of England and Professor of Zoology, Robert May of Oxford University – writing in a long tradition of academics and journalists keenly aware of financial contagion – suggested using infectious diseases and biology to better understand and regulate financial systems (Haldane and May 2011).

What about the March 2020 havoc in financial markets? As I argued earlier, I am not convinced that a reference to ‘real-economic’ reasons is sufficient when seeking to explain what happened in the chaos when the COVID-19 infection spilled over into financial market contagion with market participants mimicking one another in a downward spiral. Rather, I suggest viewing the March events as an example of a social avalanche in financial markets. The markets were caught by a sudden collective turmoil in which social contagion amongst market participants acquired an independent force and explanatory power alongside real-economic considerations. In other words, the social avalanche on the financial markets had its own mimetic dynamics which toppled the markets independently of any real-economic factors.

The precise ways in which the financial contagion played out – who imitated who, what set the social avalanche in motion, and so on – cannot be established here. However, one thing is important to note concerning potential links between these specific events and theories of contagious crowds central to the mimetic turn. As mentioned earlier, these theories propose that people are suddenly swept up in crowds. For Le Bon, this was testimony to the irrationality of crowd behaviour: people no longer act consciously when being carried away by a collective force. Tarde would see imitation more openly, recognising that sometimes people imitate consciously and for rational reasons, and other times, such as in crowds, less conscious forms of imitation may dominate (Tarde 1962). I mention this because there is a branch of economic theory that ascribes imitation an important role in economic action, including in financial markets

(for example, Orléan 1989; Scharfstein and Stein 1990). However, this literature tends to suggest that economic actors have rational reasons for imitating others, including their rivals in the market (Hansen and Borch 2019). For Scharfstein and Stein, this translates into a theory outlining how investment managers rationally imitate other investment managers' decisions so as not to, comparatively, fall behind (Scharfstein and Stein 1990). In Orléan's work, this translates into a theory about informational uncertainty: given that, say, a trader is uncertain about how markets will develop, it is rational to imitate others who might possess superior information (Orléan 1989).

While these are interesting accounts, they are, in my view, too rationally conceived. Moreover, they fail to account for the fact that much trading today is algorithmically driven (Borch 2020b). These algorithms are not designed to imitate one another rationally, but they do consider what others are doing, and this type of interaction may generate intense imitation dynamics (Sornette and von der Becke 2011). This, I suggest, is what happened in the financial markets in March 2020. Market participants are constantly monitoring what others are doing, and this inter-observational set up is liable to generate an environment in which a small change in one part of the chain may quickly unleash an unanticipated and unintended escalation, a social avalanche.

Speaking about algorithms imitating one another takes the discussion of contagion back from the human to the non-human domain. While contagion was previously seen as a biological phenomenon and then applied to human interaction in crowded metropolises—including in the form of mental and moral contagion—inter-algorithmic contagion once again locates virality and mimesis in a non-human setting. Latour's (2005) and others' appreciation of the role played by non-humans is a valuable starting point for theorising this situation, except that Latour neither deals systematically with imitation nor goes far enough when it comes to understanding non-humans. What is most fascinating about fully automated algorithms in financial markets is not the ways they interact with humans (in human–non-human configurations) but rather that they entertain their own inter-algorithmic interaction order, with their own distinct strategies for dissimulation and mimicry (Borch 2017a; 2020b; 2021; MacKenzie 2019). While in some ways a caricature, this is precisely what Harris's *The Fear Index* (2012) seeks to establish in literary shape: automated trading offers a window into a present (and future) in which central forms of mimesis

and anti-mimesis, crowding, herding, and avalanching assume a non-human character, though with material effects on human life.

Conclusion

I have argued that financial markets too have been seriously affected by COVID-19. As the coronavirus spread worldwide in a matter of months, financial markets have been crippled in its wake. I have suggested that the market turmoil in March 2020, in which markets collapsed and volatility spiked, is an event that cannot be sufficiently explained by real-economic anxiety about the global economy being brought to a halt or perhaps even entering a recession mode. Instead, I have argued for seeing the market mayhem as an imitative event that goes beyond human/non-human divides. Specifically, I proposed resuscitating *fin-de-siècle* ideas about crowd, social, and mental contagion – all partly indebted to biological ideas and to psychotherapy – to understand better how collective forces may unleash intense mimesis. I further argued that these collective forces may play out in situations that do not have much in common with images of classical crowd behaviour. In making this point, I employed the notion of social avalanches to describe situations in which heterogeneity suddenly transforms into homogeneity. Finally, I suggested that the March 2020 market mayhem was precisely an example of a social avalanche: investors momentarily suspended their search for independent and different strategies and instead joined a collective mimesis causing dramatic drops in markets. Since the kinds of avalanches that take place in markets are increasingly driven by fully automated algorithms, we see here the contours of non-human mimesis. That scenario prompts important questions for sociological theory in general, and for reflections on mimesis more specifically. In particular, it suggests that Gebauer and Wulf's (1995) fascinating analysis needs to be considerably extended or supplemented by locating the discussion of mimesis beyond a human realm.

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Notes

1. This article draws on ideas I have presented elsewhere (Borch 2020a; 2020b; 2020c).
2. The VIX is at the centre of Robert Harris's science fiction novel on algorithmic trading, *The Fear Index*, in which an automated trading system runs amok (Harris 2012). For discussions of Harris's novel, see Hansen (2015) and Borch (2020b: 189–90).
3. For examinations of the field of French psychotherapy and its connection to crowd theory, see Borch (2019b) and Lawtoo (2013).
4. It should be mentioned that Latour's reading of Tarde conveniently emphasises those parts of the latter's work that fit with the former's and that Latour disregards Tarde's central inspiration from French *fin-de-siècle* psychotherapy as well as his interest in crowds (Blackman 2007; Borch 2014). It is also worth noting that, although Gilles Deleuze certainly recognises Tarde's analytical relevance, he does not discuss Tarde's work systematically, but relates to it, instead, in an ad hoc fashion (Deleuze 1994). That said, productive Deleuze-inspired Tardean analyses have been published on, for example, social media (Sampson 2020).
5. The parallels between Ross's measures and our own against COVID-19 – ranging from quarantines and lockdowns to travel bans and stranded cruise ships – are uncanny today. Physical social distancing clearly works against contagious viruses, though it requires discipline and broad support to be effective. Mental contagion, on the other hand, is a far trickier foe, not least because it is sometimes good for us. When people sing together from their balconies amid national lockdowns or support one another on the sprawling networks of social media, the sense of solidarity this provides can uplift, comfort, and inspire hope.
6. The term *avalanche* seems to have been used more widely in social theory in the late nineteenth and early twentieth centuries than today, arguably because the phenomenon it seeks to describe – crowd and collective behaviour – is generally theorised in more rationalist-individualist ways in current sociology (Borch 2020b).

References

- Bak, Per (1997), *How Nature Works: The Science of Self-Organized Criticality*, Oxford: Oxford University Press.
- Bak, Per, et al. (1987), 'Self-organized criticality: An explanation of the 1/f noise', *Physical Review Letters*, 59: 4, 381–4.
- Barrows, Susanna (1981), *Distorting Mirrors: Visions of the Crowd in Late Nineteenth-Century France*, New Haven: Yale University Press.
- Bekhterev, Vladimir M. (1998 [1897]), *Suggestion and Its Role in Social Life*, trans. Tzvetanka Dobрева-Martinova, New Brunswick: Transaction Publishers.
- Bennett, Jane (2020), *Influx and Efflux: Writing Up with Walt Whitman*, Durham, NC: Duke University Press.
- Blackman, Lisa (2007), 'Reinventing Psychological Matters: The Importance of the Suggestive Realm of Tarde's Ontology', *Economy and Society*, 36: 4, 574–96.
- Borch, Christian (2005), 'Urban Imitations: Tarde's Sociology Revisited', *Theory, Culture & Society*, 22: 3, 81–100.

Financial Contagion in an Age of COVID-19

- Borch, Christian (2012), *The Politics of Crowds: An Alternative History of Sociology*, Cambridge: Cambridge University Press.
- Borch, Christian (2014), 'Gabriel Tarde (1843–1904)', in Jenny Helin et al. (eds), *The Oxford Handbook of Process Philosophy and Organization Studies*, Oxford: Oxford University Press, pp. 185–201.
- Borch, Christian (2017a), 'Algorithmic Finance and (Limits to) Governmentality: On Foucault and High-Frequency Trading', *Le Foucauldien*, 3: 1, 1–17. <http://doi.org/10.16995/lefou.28>
- Borch, Christian (2017b), 'Tensional Individuality: A Reassessment of Gabriel Tarde's Sociology', *Distinktion*, 18: 2, 153–72.
- Borch, Christian (ed.) (2019a) *Imitation, Contagion, Suggestion: On Mimesis and Society*, London: Routledge.
- Borch, Christian (2019b), 'The Imitative, Contagious, and Suggestible Roots of Modern Society: Toward a Mimetic Foundation of Social Theory', in Christian Borch (ed), *Imitation, Contagion, Suggestion: On Mimesis and Society*, London and New York: Routledge, pp. 3–34.
- Borch, Christian (2020a), 'Corona, markedssmitte og sociale laviner,' in Nikolaj Schultz and Ole B. Jensen (eds), *Det epidemiske samfund*, Copenhagen: Hans Reitzels Forlag, pp. 41–53.
- Borch, Christian (2020b), *Social Avalanche: Crowds, Cities and Financial Markets*, Cambridge: Cambridge University Press.
- Borch, Christian (2020c), 'When Viruses Spread Social Contagion: What Covid-19 Teaches Us About Social Life', *culturecog.blog*, 9 April 2020, <https://culturecog.blog/2020/04/09/when-viruses-spread-social-contagion-what-covid-19-teaches-us-about-social-life>, accessed 9 April 2020.
- Borch, Christian (2021), 'Machine Learning and Social Theory: Collective Machine Behaviour in algorithmic trading', *European Journal of Social Theory*, <https://doi.org/10.1177/13684310211056010>.
- Braga-Pinto, César (2019), 'The Pleasures of Imitation: Gabriel Tarde, Oscar Wilde, and João do Rio in Brazil's Long Fin de Siècle', *Comparative Literature Studies*, 56: 1, 153–89.
- Cappetti, Carla (1993), *Writing Chicago: Modernism, Ethnography, and the Novel*, New York: Columbia University Press.
- CNBC (2020), 'Oil posts biggest weekly loss since 2008', CNBC, 13 March 2020, < <https://www.cnbc.com/2020/03/13/oil-markets-coronavirus-brent-crude-futures-in-focus.html> >, accessed 15 August 2020.
- Deleuze, Gilles (1994 [1968]), *Difference and Repetition*, trans. Paul Patton, London: The Athlone Press.
- Durkheim, Émile (1995 [1912]) *The Elementary Forms of Religious Life*, trans. K. Fields, New York: The Free Press.
- Edwards, Sebastian (2000), 'Contagion', *The World Economy*, 23: 7, 873–900.
- Esteve, Mary (2003), *The Aesthetics and Politics of the Crowd in American Literature*, Cambridge: Cambridge University Press.
- Fitzgerald, F. Scott (2001 [1925]), *The Great Gatsby*, Hertfordshire: Wordsworth Editions.

- Gebauer, Gunter, and Christoph Wulf (1995 [1992]), *Mimesis: Culture, Art, Society*, trans. Don Reneau, Berkeley, California: University of California Press.
- Haldane, Andrew G., and Robert M. May (2011), 'Systemic risk in banking ecosystems', *Nature*, 469: 7330, 351–55.
- Hansen, Kristian Bondo (2015), 'The Politics of Algorithmic Finance', *Contexto Internacional*, 37: 1081–95.
- Hansen, Kristian Bondo (2020), 'The Virtue of Simplicity: On Machine Learning Models in Algorithmic Trading', *Big Data & Society*, 7: 1, <https://doi.org/10.1177/2053951720926558>
- Hansen, Kristian Bondo, and Christian Borch (2019), 'Market Mimesis: Imitation, Contagion, and Suggestion in Financial Markets', in Christian Borch (ed.), *Imitation, Contagion, Suggestion: On Mimesis and Society*, London and New York: Routledge, pp. 91–106.
- Hansen, Kristian Bondo (2021), 'Financial Contagion: Problems of Proximity and Connectivity in Financial Markets', *Journal of Cultural Economy*, 14: 4, 388–402.
- Harris, Robert (2012), *The Fear Index*, London: Arrow Books.
- Kittler, Friedrich A. (1999 [1986]), *Gramophone, Film, Typewriter*, trans. Geoffrey Winthrop-Young and Michael Wutz, Stanford, California: Stanford University Press.
- Kolb, Robert W. (2011), 'What is *Financial Contagion*?' in Robert W. Kolb (ed), *Financial Contagion: The Viral Threat to the Wealth of Nations*, Hoboken: John Wiley, pp. 3–10.
- Latour, Bruno (2002), 'Gabriel Tarde and the End of the Social,' in Patrick Joyce (ed.), *The Social in Question. New Bearings in History and the Social Sciences*, London: Routledge, pp. 117–32.
- Latour, Bruno (2005), *Reassembling the Social: An Introduction to Actor-Network-Theory*, Oxford: Oxford University Press.
- Latour, Bruno, et al. (2012), "The Whole is Always Smaller than its Parts—A Digital Test of Gabriel Tarde's Monads", *The British Journal of Sociology*, 63: 4, 590–615.
- Lawtoo, Nidesh (2013), *The Phantom of the Ego: Modernism and the Mimetic Unconscious*, East Lansing: Michigan State University Press.
- Lawtoo, Nidesh (2016), *Conrad's Shadow: Catastrophe, Mimesis, Theory*, East Lansing: Michigan State University Press.
- Le Bon, Gustave (2002 [1896]), *The Crowd: A Study of the Popular Mind*, Mineola, NY: Dover.
- Luhmann, Niklas (2004 [1993]), *Law as a Social System*, trans. Klaus A. Ziegert, Oxford: Oxford University Press.
- MacKenzie, Donald (2019), 'How Algorithms Interact: Goffman's Interaction Order' ; in 'Automated Trading', *Theory, Culture & Society*, 36: 2, 39–59.
- Mitchell, Peta (2012), *Contagious Metaphor*, London: Bloomsbury.
- Orléan, André (1989), 'Mimetic Contagion and Speculative Bubbles', *Theory and Decision*, 27: 1–2, 63–92.
- Park, Robert E. (1972), *The Crowd and the Public and Other Essays*, Chicago: University of Chicago Press.

- Park, Robert E., and Ernest W. Burgess (1921) *Introduction to the Science of Sociology*, Chicago: University of Chicago Press.
- Peckham, Robert (2013), 'Economies of Contagion: Financial Crisis and Pandemic', *Economy and Society*, 42: 2, 226–48.
- Pred, Allan (1990) *Lost Words and Lost Worlds: Modernity and the Language of Everyday Life in Late Nineteenth-Century Stockholm*, Cambridge: Cambridge University Press.
- Reynolds, Guy (2001), 'Introduction: The Constant Flicker of the American Scene', in F. Scott Fitzgerald, *The Great Gatsby*, Hertfordshire: Wordsworth Editions pp. v–xix.
- Ross, Edward A. (1897), 'The Mob Mind', *Popular Science Monthly*, July: 390–98.
- Ross, Edward A. (1908), *Social Psychology: An Outline and Source Book*, New York: Macmillan.
- Sampson, Tony D. (2012a), 'Tarde's Phantom Takes a Deadly Line of Flight – from Obama Girl to the Assassination of Bin Laden', *Distinktion*, 13: 3, 354–66.
- Sampson, Tony D. (2012b), *Virality: Contagion Theory in the Age of Networks*, Minneapolis: Minnesota University Press.
- Sampson, Tony D. (2020), *A Sleepwalker's Guide to Social Media*, Cambridge: Polity.
- Scharfstein, David S., and Jeremy C. Stein (1990), 'Herd Behavior and Investment', *American Economic Review*, 80: 465–79.
- Simmel, Georg (1950a), 'Fundamental Problems of Sociology (Individual and Society)', in Kurt H. Wolff (ed. and trans.), *The Sociology of Georg Simmel*, New York: The Free Press, pp. 1–84.
- Simmel, Georg (1950b), 'On the Significance of Numbers for Social Life', in Kurt H. Wolff, ed. and trans., *The Sociology of Georg Simmel*, New York: The Free Press, pp. 87–104.
- Simmel, Georg (1992 [1908]), *Soziologie. Untersuchungen über die Formen der Vergesellschaftlichung*, ed. Otthein Rammstedt, Frankfurt am Main: Suhrkamp.
- Sornette, Didier, and Susanne von der Beche (2011), *Crashes and High Frequency Trading: An Evaluation of Risks Posed by High-Speed Algorithmic Trading*, Zurich: Swiss Finance Institute, Research Paper Series No. 11–63.
- Spencer, Herbert (2002 [1883]), *The Principles of Sociology. In Three Volumes, Vol. I*, New Brunswick and London: Transaction Publishers.
- Tarde, Gabriel (1892), 'Les crimes des foules', *Archives de l'Anthropologie Criminelle* 7: 353–86.
- Tarde, Gabriel (1893), 'Foules et sectes au point de vue criminel', *Revue des Deux Mondes*, 332: 349–87.
- Tarde, Gabriel (1962), *The Laws of Imitation*, trans. Elsie Clews Parsons, Gloucester, MA.: Peter Smith.
- Tarde, Gabriel (1968) *Penal Philosophy*, trans. Rapelje Howell, Montclair: Patterson Smith.
- Tickner, Lisa (2000), *Modern Life & Modern Subjects: British Art in the Early Twentieth Century*, New Haven: Yale University Press.
- Wald, Priscilla (2008), *Contagious: Cultures, Carriers, and the Outbreak Narrative*, Durham, NC: Duke University Press.

CounterText

- Whitman, Walt (2004), *The Complete Poems*, ed. Francis Murphy, London: Penguin Books.
- Zola, Émile (1993 [1885]), *Germinal*, trans. Peter Collier, Oxford: Oxford University Press.
- Zweig, Stefan (2009 [1941]), *The World of Yesterday*, trans. Anthea Bell, London: Pushkin Press.