



Article

Recovering critique in an age of datafication

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Abstract

This article starts out from the need for critical work on processes of datafication and their consequences for the constitution of social knowledge and the social world. Current social science work on datafication has been greatly shaped by the theoretical approach of Bruno Latour, as reflected in the work of Actor Network Theory and Science and Technology Studies (ANT/STS). The article asks whether this approach, given its philosophical underpinnings, provides sufficient resources for the critical work that is required in relation to datafication. Drawing on Latour's own reflections about the flatness of the social, it concludes that it does not, since key questions, in particular about the nature of social order cannot be asked or answered within ANT. In the article's final section, three approaches from earlier social theory are considered as possible supplements to ANT/STS for a social science serious about addressing the challenges that datafication poses for society.

Keywords

Actor Network Theory, datafication, Latour, social order, symbolic power

The fact that we have greater access to the web through our various connected devices . . . gives companies far greater ability to affect our behavior. As companies combine their increased connectivity to consumers, with the ability to collect, mine and process customer data at faster speeds, we are faced with a future where everything becomes potentially more habit forming. (Eyal, 2014: 10–11)

Society has become a matter of concern. In the later years of the 21st century's second decade, a growing stream of books and articles has been published that express concern, even anxiety, at how the conditions of collaborative human existence ('society') are

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being negatively transformed through the uses of what once we would have called 'new media'. The term 'new media' is no longer useful for capturing the now utterly banal embedding of digital interfaces of many sorts into our working and resting lives, and the emergence across those platforms of new forms of power: in particular, the power to gather, aggregate, process, store and act upon data extracted from the flows of everyday life (the article's opening quote comes from a book that popularizes this power). The rising tide of concern at platform power is not in doubt. Concern is targeted not just at practices of data use, but also at the corporate rationalities that drive such practices, including 'the profoundly ideological role' of beliefs in the power of data (Van Dijck, 2014: 5). Listen, for example, to the popular historian Yuval Harari (2015): 'a critical examination of Dataist dogma is likely to be not only the greatest scientific challenge of the twenty-first century, but also the most urgent political and economic project' (p. 459).

If a major intellectual, indeed civic, battle about datafication and its implications for 'society' is under way, how well-placed are the social sciences to wage this battle? Do we have the tools to get in view what is problematic about datafication for social life? Do we have a clear enough idea any more of what should count as critique, and on what empirical and normative resources it depends? Academic critique can play an important role in civil society's response to this incipient datafication of the social world. But, if it is to do so, its toolkit, dominated as it currently is by perspectives derived from Actor Network Theory (ANT) and science and technology studies (STS), must be supplemented by critical resources from earlier social theory. At a time when the very fabric of our shared world is being reconstructed, the possibility of *social* critique needs to be recovered; highlighting that need is the goal of this article.¹

To note, as I did, that society is becoming 'a matter of concern' is to echo a distinction made by Bruno Latour (2004) in a well-known essay, but to apply it to an object that Latour has regularly tried to deconstruct. In a self-reflexive piece written amid the strident rhetoric of the George W Bush era, Latour challenged the usefulness of critique whose goal was always to deconstruct selected 'matters of fact', while lacking any positive appreciation of how 'matters of concern' emerge from complex interactions between people and things in the world. The essay offered a new vision for how critique would work:

The critic is not the one who debunks, but the one who assembles. The critic is not the one who lifts the rugs from under the feet of the naïve believers, but the one who offers the participants arenas in which to gather. (Latour, 2004: 246)

This *anti*-deconstructionist approach has been reflected in Latour's (2013) subsequent work which rejects (in some respects, unobjectionably) organicist accounts of society and argues for a different mode of critical social science. The latter involves joining

the real Copernican revolution through which we finally *entrust ourselves* to the vast movements of these chains [of people and things] so as to receive new capacities and properties from them, on the side of the quasi subjects, and new functions and uses, on the side of the quasi objects. (p. 428, added emphasis)

This approach not only seeks to problematize the distinction between 'subjects' and 'objects'; it puts more store on building complex descriptive accounts of what and how

things happen, and less store on achieving a critical distance. Trust more in the complex chains that cross everyday life, it seems to say; trust less in the social scientist's old instinct of doubt and deconstruction. Or, as Geoffrey Bowker (2014) put it sharply, 'flatten[] all categories and replac[e] theory with method' (p. 1796). But how well does this approach equip us for the battle over datafication that is under way? What resources might we need to supplement or move beyond Latour's apparent abandonment of deconstructive critique and critical theory?

In trying to find a way forward, this article will first reflect on the assumptions that underlie Latour's position, in particular, his scepticism about standard ontologies of social science. Latour's position will be used as an exemplar for ANT/STS, not because it is the only version (it is not: the work, for example, of John Law might also be considered), but because it is the version whose distinctive philosophical underpinnings (its so-called 'flat ontology') has had the widest influence in reorienting our theorizations of the social world. There have, of course, been earlier critiques of ANT, including for its approach to critique itself (Collins, 2010; Whittle and Spicer, 2008); it is not the article's point to summarize those earlier debates, let alone the huge literatures on ANT and wider STS to which, in certain ways, they respond. The point instead is to renew the critical interrogation of, in particular, Latour's version of ANT in the context of the social sciences' biggest contemporary challenge: the emergence of Big Data practices and infrastructures.²

In reflecting on these questions, this article will also in an exploratory fashion propose some alternative conceptual resources for critical engagement with practices of datafication (Van Dijck, 2014) and their incipient role in the corporate re-construction of social life. The aim is not, as if by *deus ex machina*, to offer here a new, fully formed and comprehensive critique of datafication. The goal, rather more modestly, is to note a number of potentially important critical resources that are occluded by the current dominance of approaches associated with ANT.

Nor will this article attempt to summarize the many lines of critique of contemporary data practices which have *already* emerged across communications and media research, critical data science, critical race studies, legal theory and social theory.³ The goal instead, through three contrasting examples of largely neglected lines of critique, is to illustrate the *shadow* which ANT's dominant version of 'critique' has cast over debates in the data field. With less deference to ANT, a broader critical toolkit for investigating datafication can be built, but without sacrificing the attention to complexity so characteristic of Latour and the research traditions with which he is associated.

A clue to the sort of theoretical deficit that needs addressing comes from the strange synergy, noted by Mark Andrejevic (2013), between how marketers popularize ways of influencing behaviour through non-cognitive means and the intellectual positions on 'affect' taken up by writers normally considered to be 'critical' (pp. 155–156). An example of the former would be the emergence of neuromarketing and sentiment analysis as forms of behavioural influence, fuelled by continuous data streams from subject monitoring (see article's opening quote). There is, as Ruth Leys (2011) argues, a surprising convergence between such pragmatic approaches to brain science and psychological influence (less politely called 'behaviourism') and the uses of brain science by theorists who draw enthusiastically on the notion of affect (e.g. Brian Massumi and Nigel Thrift):

‘what we are witnessing today is the embrace by the new affect theorists in the humanities and social sciences of *the same anti-intentionalism* that for more than twenty years now has been entrenched in the sciences of affect’ (p. 469, added emphasis). Leys’ point is not that affect theorists intended this unfortunate alliance, but that it was an unwitting result of other intellectual moves. The details of the affect debate do not concern us here. What matters is how, from Leys’ critical perspective, it illustrates the wider costs for critique that can flow from abandoning any positive account of the embodied agency of the reflexive human subject. Could the same be true of Latour’s downgrading of the social? As human beings become the target of Big Data and artificial intelligence strategies for behavioural influence (Frischmann and Selinger, 2018), the stakes in sustaining a critical perspective on social transformations could not be higher.

In what follows, I will use as exemplar of the problematic ‘gap’ in critical social thought, not affect theory, but Latour’s influence on social science through ANT and STS. Other influences on contemporary social analysis could perhaps have been chosen, but I choose ANT/STS because it is precisely that tradition which even scholars looking to critique contemporary data practices (Green, 2019) often see as the required toolkit for the critical data scientist. There are good reasons, however, for believing that ANT/STS, given its general philosophical biases, cannot provide, or sustain, a sufficient toolkit for addressing critically what is going on with data in society today.

The sense of something missing

One of the achievements of work drawn from ANT/STS has been to enhance social science research’s grasp of the *complexity* of social processes, that is, how many varied combinations of persons, actions and resources come to have the stability we call ‘social’. It would be absurd to suggest that renewing critique means surrendering this advance in descriptive complexity. Insistence on the complexity of how ‘the social’ is assembled was part of the force of Latour’s argument in *Reassembling the Social* (Latour, 2005). It would be particularly absurd to give up those hard-won achievements at a time when technological infrastructures of unprecedented complexity underpin datafication: the vast inter-connected grid of computer processing and storage, software-driven interfaces and protocols, and human collaborative practice that Benjamin Bratton (2016) calls ‘the stack’. But this does not mean that ANT provides a *sufficient* complexity for the analytical task in hand. What sorts of complexity do critics of a datafied society need to grasp? Inevitably, due to lack of space, the analysis that follows will be highly schematic and it will draw on only some of the critiques of datafication that have been emerging.⁴

First, there are the challenges that datafication – and the privatization of social knowledge production from Big Data and artificial intelligence – produce for older models of social knowledge, and the categories they generated. Take, for example, the idea of poverty as a socially caused phenomenon, one that can only be understood, by attention to all the socioeconomic factors statistically correlated with it. As US sociologists Marion Fourcade and Kieron Healy (2013) write, older rationales for giving the poor ‘more favourable terms *because they were poor*’, that is, *socially* disadvantaged, have now in the United States largely been replaced with ‘the idea . . . that the terms of credit ought to depend solely on one’s prior credit-related behaviour’, that is, on the

risks those people pose within commercial risk systems, as tracked by impersonal algorithms (p. 566). The issue is not that algorithmic calculations which draw on pervasive data collection *necessarily* undermine older categories of social understanding. The issue is that the prioritization of automated large-scale data collection over, for example, other inputs to social knowledge (the statistical analysis of survey data and interviews that generated the concept of social poverty in the 19th and early 20th centuries) has begun to change how we come to know the world we call social and public (Van Dijck et al., 2018).

Second, there is the challenge to older forms of expertise and judgement that are not respected by the new datafied model of social knowledge. Take for example the use of algorithmic processes in local government and the courts, especially in the United States, but also in the United Kingdom and other countries. What consequences does this have for established forms of authority to manage social processes? US legal scholars Robert Brauneis and Ellen Goodman's (2018) conclusion from a study of the United States is bleak: opaque algorithms, they claim, risk 'hollow[ing] out the decision-making capacity of public servants' by creating a distance between their decisions and the evidence-gathering processes on which those decisions must rely.

Third, through these and many related changes across the whole social terrain, there is a risk that, over the longer term, human beings will come to lose hold of the expectation that social knowledge should be grounded in how people, not machines, interpret the world. New versions of social epistemology are emerging (Pentland, 2012) in which network dynamics and machine-recorded traces of human activity are considered more consequential than anything like human voices. Similar concerns arise from the increasingly pervasive use of devices to quantify 'the self', that is, to substitute automated readings of data extracted from the body for the individual's self-monitoring (Crawford et al., 2015). Indeed, marketers already normalize the idea of this loss of voice, when they claim, through artificial intelligence (AI), 'to know' their 'customers better than they know themselves'.⁵ The point here is not to ignore today's profound entanglements between humans and technological assemblages that ANT/STS approaches can help us appreciate, but rather to recall that the point of social knowledge is to understand those entanglements (and their outcomes) from the perspective of human goals, the goals that orient human life.

Critical social research then needs to understand a whole series of interlinked transformations, whereby, what counts as social knowledge, and who/what counts as an input to social knowledge, is changing. This is, in turn, changing our conception of 'society' as a whole. The resulting new form of 'social knowledge' is not theoretical in nature; it is a *practical understanding* of what is socially actionable, perhaps even a new mode of 'governance by proxy' (Elkin-Koren and Haber, 2016). From the emerging combination of corporate rationalities of datafication, and the changes that datafication encourages, even compels, in *us* as social actors, emerges a new social order that positively requires a critical response. Politics aside, such changes in how human beings and their actions are categorized have implications for the quality of human life (Nussbaum and Sen, 1992).

This large-scale social and economic transformation is being played out as much in China as in North America and Europe (Creemers, 2017). Indeed, the emerging visions

of social order can be seen most clearly, and without obfuscation, in the policy documents of China. The Chinese government sees the goal of its artificial intelligence programme not in terms of enhancing freedom or self-knowledge, but as ‘a market improvement of the social and economic order’ (China Copyright and Media, 2015). China’s order is not based on freedom, and yet, it draws on broadly the same technological system of computer-based connection that is being installed in the West, indeed a more streamlined version of it. Many may, of course, not accept China’s positive evaluation of the resulting transformation, but, if so, the challenge is to generate alternative evaluations. What role can critical social theory play here? Does ANT’s apparent aloofness from normative positions help or hinder this project?

ANT’s distaste for traditional forms of social critique – and even for the notion of ‘the social’ itself – has complex origins, that are worth unpacking. Latour’s work has been characterized throughout by an acute scepticism towards the very term ‘social’, and traditional understandings of it. This reached its high-water mark in Latour’s book *Reassembling the Social* (Latour, 2005). At the root of this scepticism towards ‘the social’ is a fundamental principle in Latour’s own philosophical thinking, which Graham Harman brings out well. Latour (1988) once recalled a flash of insight he had, aged 25, on a country road in France when he began to ask himself a seemingly new type of question:

What happens when nothing is reduced to anything else? What happens when we suspend our knowledge of a what a force is? What happens when we do not know how their way of relating to one another is forever changing? (pp. 156–157, quoted Harman, 2009: 14).

Here is the origin of ANT’s famous ‘flat’ ontology.

Leaving aside the question of whether a ‘flat’ ontology is itself coherent (what, one might ask, grounds ANT’s *insistence* on its own metaphysical position?),⁶ let us focus, following Harman’s lead, on how *particular* Latour’s own philosophical position is. It is an attempt to radically free up our descriptive language so that we appreciate fully the actual plurality of the world. Let us take for granted that the empirical programme which emerged from this philosophical stance (ANT/STS) *did* enable social science to attend to a much wider range of material processes, forms and structures. The urgent question, given that today are emerging corporate and/or governmental strategies to build a different type of *social order* through datafication, is whether ANT/STS have the tools to explain and evaluate the forces through which that new order is being constructed.

How much indeed can a philosophy of radical *anti*-reductionism (or as Latour (2002) once called it a reverse reductionism, where the part is always ‘larger’ than the whole) help us grasp a world where a general project of social re-construction (and, in a sense, reductionism) is under way – a project, driven by huge corporate and governmental resources, and focussed on the re-gearing of social order so as to better serve capital’s drive to generate economic value from data? Remembering the old distinction between administrative and critical research, could it be that the endless urge to oppose reductionism traps us in a hunt for ever more intricate descriptive languages to map the patterns of contemporary power that misses the larger picture? Could the resulting ‘descriptivism’⁷ lose sight of the critical question: how is the overall order of social life being reconfigured to promote particular corporate and governmental interests on the basis of new and

radical forms of reduction – the reduction of human life to configurations from which profit through data can be maximally extracted?

Let us acknowledge that Latour (1999a) himself has generally been sceptical about the degree to which ANT even offers a theory of the social world. That said, it is hard to see how the tradition of ANT/STS, given its default *scepticism* about broader theorizations of the social world, can help us answer key questions required of critical accounts of datafication, even in Latour's (2013) latest development of his position. Those key questions are the following: How do complex *social orders* emerge, that is, through what sorts of institutional action as well as infrastructural resource? How can we understand the *larger forces* which shape the emergence of particular types of order, and the resulting forms of *power over* such order? Answering those questions is surely essential to avoid the trap of administrative research at a time of unprecedented technosocial change and institutional innovation – the age of datafication.

In what follows, rather than seeking to prove a negative (i.e. systematically show that ANT/STS never answer such questions), I seek instead to identify resources elsewhere within the social sciences that can help us provide better answers to those questions.

There is social theory beyond Latour

Latour's philosophically motivated suspicion of any theory that offers 'deeper' explanation of social processes as opposed to 'flat' descriptions of the ever-contingent configurations of sociotechnical assemblages makes him a suitable paradigm for the distinctive approach to social explanation whose usefulness today needs to be interrogated. I am not denying there is much to be gained from a close understanding of such assemblages and their role in shaping social processes and institutions, including the formation of publics (Marres, 2017): the need for detailed unpacking of how contemporary information interfaces work is precisely a consequence of the interrelatedness of contemporary power (Bratton, 2016). However, additional approaches are needed if we are to do more than unpack the details of how such interfaces operate and come into being. We need approaches to understanding complexity that, by also addressing questions of *value*, help us grasp the larger social order, and associated forms of hierarchy and exclusion, being built through processes of datafication. To frame the challenges for social understanding today in terms of *order* (Wrong, 1994), we need new tools beyond the ambit of ANT/STS. The issues with datafication already noted – how it is transforming social knowledge, reducing the types of entity and process that can be inputs to social knowledge – *require* approaches to understanding the resulting order which prioritize the concerns of human beings in the social world. There are many examples of such approaches within earlier social theory on which it would be possible to draw.

There is space here only for three brief examples of neglected theoretical work that might usefully advance our understanding of *how* datafication affects the quality of human lives, but they will be enough, I hope, to make clear that there is a much wider universe of social theory on which we can draw, work that Latour's version of ANT and STS has cast into shadow in recent years. As noted at the outset, the goal is not here to define comprehensively the toolkit we need for a social-theoretical approach to

datafication, but to suggest a range of possible approaches on any or all of which accounts of datafication might wish to draw. The selection from social theory that follows is oriented to the question of what sort of social order datafication involves, and how, and through what social and economic dynamics, that emergent order might be sustained.

The idea of social order

One question on which social science research today needs to take a position concerns order itself. That term is missing from the ontology of ANT/STS. Reintroducing it, does not mean returning to the functionalist notion of social order that dominated the social sciences in the 1950s (the work of Talcott Parsons): such approaches assumed a neat homology between convergent values and co-functioning systems/infrastructures which is not remotely plausible in the 21st century of planetary communications infrastructures. But it does mean developing an account of how, under today's complex infrastructural conditions, relative social order emerges and how relative social disorder is (generally) avoided. Can an account be developed of social order which is adequate to the complexity of today's sociotechnical configurations and the plural values that work across them? Put negatively, could there be a 'cost' for our hopes of understanding social order, if our focus remains locked on specifying, in ever more detail, contingent, highly heterogeneous, multi-actor networks of objects and people?⁸

Two specific costs can be identified. One cost flows from ANT/STS's relative disinterest in the distinctive position of *human agents* within the assemblages it uncovers: indeed, as is well-known, ANT has often championed the equivalent agency of persons and things. Sometimes, this has even involved denying the intentionality of both people and things, as in Latour's (1999b) statement that 'purposeful action and intentionality may not be properties of objects, but they are also not properties of humans either. They are properties of institutions, apparatuses' (p. 192).⁹ We are back here, by analogy, to the convergence Ruth Leys found between affect theory and practical techniques of behavioural influence which both appear to deny the intentionality of the human subject. Yet, by denying (or heavily discounting) the intentionality of human beings and their ability to reflect on and regulate their position in the world, ANT seems often to be blind to today's concern with defending human freedom and reflexive agency against the consequences of datafication (Frischmann and Selinger, 2018).

Another cost exacted by ANT's dominance concerns our larger picture of social order. ANT avoids asking questions about the larger social order in which a particular assemblage emerges and stabilizes. Insofar, as this means avoiding assumptions of the mythical 'functioning' of a loosely assumed social order, this is helpful. But insofar, as this means *not even asking* questions about the larger ordering at work in contemporary societies, above the level of specific assemblages, it is deeply unhelpful. For Latour (2005), 'the social' is assembled piece by piece, and any appeal to a broader notion of the 'social' is outlawed as a 'short-cut' (p. 16), associated with the social theory of Durkheim. Instead of such dogmatism, what is needed is to think about complexities of social organization in a non-functionalist way, but without closing off questions of the large-scale accumulation of power and their implications for human agency.

One route to such an understanding of social order lies through the German social theorist Norbert Elias, a figure who influenced both Foucault and Bourdieu, but whose standing in many countries (excepting Germany and Holland) has waned massively over recent decades. Some years before Latour, Elias had already developed a concept designed to move beyond functionalist accounts of ‘individual’ and ‘society’. This was the concept of figuration (Elias, 1978, 1991, 1994 [1939]). In an attempt to build an account of social complexity from the bottom up, Elias (1978) introduced ‘figuration’ as a term for ‘networks of individuals’ (p. 15), through whose interwoven interactions patterns of *interdependence* emerge which help make up the social.¹⁰ (Elias’ (1978) goal was to grasp ‘the special kind of order associated with processes of social interweaving’, which meant ‘start[ing] . . . from the connections, the relationships, and work[ing] . . . out from there to the elements involved in them’ (p. 116). Elias himself said little about how figurations work together in larger patterns on a social scale, but such an account can be built (see Coudry and Hepp, 2017: 71–78). The important point here is that there is intrinsic to the concept of figuration a concern with the position of *human beings* within figurations and the personal and moral tensions to which membership of figurations gives rise. Elias (1978) comments on this poignantly:

People often seem deliberately to forget that social developments have to do with changes in human interdependence and with changes in men themselves. But if no consideration is given to *what happens to people* in the course of social change – changes in figurations composed of people – then any scientific effort might as well be spared. (p. 172)

Elias anticipates here by four decades not just the moral gap faced by today’s attempts to renew critique in the face of a dehumanizing infrastructure of datafication (Zuboff, 2019; Coudry and Mejias, 2019),¹¹ but today’s tendencies within social science towards mere descriptivism that I have already noted.

How is social order sustained?

If something like Elias’ concept of figurations might form a basis for thinking about social order, and the order of datafied social worlds, are there other concepts that could help us clarify how such social order is *sustained*? This is the second area where ANT/STS’s theoretical resources need to be supplemented. For a way forward, we can turn to Luc Boltanski, another French sociologist who, like Latour, was part of the revolt against non-pluralist versions of social critique offered by an earlier generation (Pierre Bourdieu).¹²

In a recent book *On Critique*, Boltanski (2011) attempts quite explicitly to rehabilitate the notion of critique for a radically pluralist and heterogeneous social world through a distinction between world (*monde*) and actual reality (*réalité*). While recognizing the infinite plurality of *possible* orders within the world, Boltanski (2011) argues that ‘reality tends to coincide with what appears to hang together . . . [that is] with order’ (p. 57). What shapes this order? It is the institutions that have *power over* appearances (over ‘the whatness of what is’ (p. 56)). For Boltanski, legal institutions are particularly important, but we surely must add those institutions involved in fashioning the new datafied social

knowledge. To recognize this sort of power, we must make the leap from default anti-reductionism to acknowledging how definitional powers not only exist but endure and become embedded in daily life in concrete ways. To do this, Boltanski must draw on the notion of social order that ANT/STS avoid. It is not that ANT/STS lack accounts of how *something like* definitional power emerges for certain purposes (Callon and Latour, 1981); it is rather that they seem uninterested in the force and long-term consequences for social life in general that follow from such power.

Here Boltanski's insistence on the long-term ordering force of definitional power links to aspects of earlier 20th century social theory (Durkheim's theory of categories which grounded Bourdieu's work on symbolic power) that Latour (2005), following Gabriel Tarde, Durkheim's rival, firmly rejected. Interestingly, but unsurprisingly, given the crucial role of data processes in recategorizing the world, categorization is one term from early 20th century social theory that has remained alive (Bowker and Star, 1999). Following Boltanski, not Latour, also enables links to contemporary work that would otherwise remain cut off from social science's version of critique entirely. Think, for example, of Judith Butler's (2016) important work on regimes of visibility and recognizability which seeks to deconstruct the workings of contemporary regimes of mediated power, not through an analysis of assemblages and infrastructures, but instead by analysing how powerful institutions regularly recognize some people as human and others as not:

The point . . . [is] to ask how . . . norms operate to produce certain subjects as 'recognizable' persons and to make others decidedly more difficult to recognize. The problem is not merely how to include more people within existing norms, but to consider how existing norms allocate recognition differentially. (p. 6)

Meanwhile, work on algorithmic categorization's impacts on social justice (Benjamin, 2019; Noble, 2018; O'Neil, 2016) cries out for a bridge between critical data studies and wider social theory. Only an account of the role of representations in social order can provide that bridge. To say this, again, is not to underestimate ANT's specific explanatory power in grasping technosocial formations of great complexity. Yet, we can appreciate this while also noting a less remarked synergy: between Latourian disinterest in the idea of substance (*any* enduring form: Harman, 2009: 17), affect theory's and Latour's disinterest in the intentionality of enduring human actors (noted earlier), ANT's disinterest in questions of symbolic representation (Coudry, 2008) and the growth of non-representational theory as an ally of broader affect theory (Thrift, 2008). Taken together, these tendencies represent a bias in social understanding that needs to be questioned.¹³

Underlying social and economic dynamics

The third area where ANT must be supplemented if critical theory is to confront the social order emerging through datafication concerns the larger social and economic forces shaping that order. This is even harder to discuss within a short compass! While there are competing accounts of those larger processes,¹⁴ there is a common ground among such accounts on taking seriously the questions about what shapes social order

framed long ago by Karl Marx.¹⁵ The assemblages of today's digital platforms may have emerged in part independently, under pressure of varying business models and patterns of innovation, doing their work through countless detailed affordances. But it is simply not plausible to believe that their social significance can be explained without any discussion of wider economic forces, indeed of capitalism itself. Capitalism is not something ANT tends to address – unsurprisingly, since capitalism is not a social form that can be understood by considering its every detail bit by bit. The whole point of Marx's social theory, by contrast, was to argue that, while capitalism certainly derived from contingent starting-points, whose influence gradually, and not inevitably, spread across the social terrain, the emergent force of capitalism represents a *totalizing* social order. Similarly, we can today interpret datafication in terms of norms of behaviour, rules of law and pervasive 'trajector[ies] of naturalization' (Bowker and Star, 1999: 299), which make datafication ever harder to resist and may well, therefore, be generating a new social order.

While acknowledging the detailed work on datafication by Marxist critics (e.g. Fuchs and Mosco, 2017), I will focus here on the most elaborate rethinking of Marx's critical *social* theory in recent decades which was offered by the late Moishe Postone (1993), work whose full impact, especially for considering datafication, has not been realized. Postone interprets Marx's theory of capitalism less as a theory of economic order rethought from the perspective of labour, and instead as a social order which organizes work in a historically distinctive way (capitalist labour) based on commodity exchange. The key point for this article's argument in Postone's (1993) *magnum opus* is this: Marx's goal was to build, through incremental analyses of economic and social processes, a larger 'theory of the *historical constitution* of determinate, reified forms of social objectivity and subjectivity' (pp. 15–16, added emphasis). For Postone (1993), only a social theory with such ambitions can grasp the wider order of capitalism, a world built not on direct social relations like previous economic orders, but on the 'personal independence [of human actors] in the framework of a system of objective dependence' (p. 125). Through this larger order, 'individuals are now ruled by abstractions' (Postone, 1993: 125, quoting Marx, 1973: 164). Although there is no space to develop this, there are important implications here in Postone's version of Marx for understanding the force of the abstractions of social life represented by data practices and algorithmic judgement (Skeggs and Yuill, 2016; Couldry and Mejias, 2019, chapter 1 and, though not referring to Postone, Alaimo and Kallinikos, 2017).

The point, once more, is not to deny that ANT might help us understand how some aspects of how such large-scale forms of dependence emerge and become black-boxed. The point rather is that ANT stops short before asking the key question that we must pose and answer: why this sort of order now, driven by what sorts of underlying force, with what sort of stability, based on what resources and driven by what overarching dynamics? Crucial here for understanding the human consequences of capitalism are the ways in which reflexive human beings become changed by capitalism, changed by new norms which form a "'system" . . . constituted by an abstract, homogeneous and objectifying form of practice' (Postone, 1993: 158). At the root of Marx's (and Postone's) drive to theorize capitalism as a totality – which, as Postone (1993) emphasizes, is absolutely *not* homogeneous in its composition (p. 153), but rather totalizing in its effects – is a moral

question absent entirely from ANT: the question of what consequences do social orders have for human beings and the things they value (Sayer, 2011). This is the question we saw Elias asking too. Postone (1993) sums up the moral challenge for critical theory as one of confronting capitalism's 'increasingly destructive movement . . . as a movement of objectified capacities that have become independent of human control' (p. 384). To register this, we surely need less descriptivism and more concern with the actual constraints on human agency and their consequences for the quality of human life.

Conclusion

This article has offered an exploratory, and therefore provisional, argument that asks whether the critical resources recently inherited by social science for an age of datafication are currently adequate to its understanding. My conclusion has been that they are not.

I have argued, schematically rather than systematically, that what appears to be critical work in social science today tends to rely too much on theoretical resources shaped by the legacy of ANT/STS. The scepticism of that tradition towards larger explanations and theorizations of social order means that critical work on datafication is currently hampered. To overcome this, a corrective is needed.

The challenge for critical social science today is to understand the form and dynamics of processes of datafication, and their consequences for wider social orders that characterize the contemporary social world from the United States to China. But the turn to data collection, extraction and processing as an organizing principle in *both* business and society (Myers West, 2018) requires a version of social theory that adopts a critical perspective towards processes of social formation themselves on the largest scale – unless, that is, the academy has abandoned any critical relation to economic power. Under these circumstances, Latour's slogan that 'the whole is always smaller than its parts'¹⁶ is deeply unhelpful, however teasingly paradoxical it once seemed. How *can* this offer a plausible ontology of platforms and digital infrastructures, the world of Facebook and Google, Alibaba and Tencent, NSA and Palantir? How can such playfulness do anything but *obstruct* us from grasping emergent forms of platform power and the *new scale* of social processing which they are helping to generate? If the response is, as ANT's has standardly been, that the concept of scale is itself unhelpful, that only underlines doubts about whether critique can still safely rely on ANT as an exclusive framework of analysis.

As sources for an alternative way forward, I have offered three possible ways in which such a supplement might proceed: notions of social order from Norbert Elias; Luc Boltanski's and Judith Butler's contrasting accounts of definitional and categorical power; and the social theory of capitalism developed by Karl Marx and Moishe Postone. Others may well be possible. What matters is that such alternatives are actively explored: until now, aspects of ANT/STS's thinking have operated, largely, as a roadblock to such exploration.

Put more bluntly, a datafied world poses difficult challenges to social science today. To address those challenges which confront us as both academics and citizens, critical sociology must be revived. That sociology, and its social theory, will need to be more

normative (affirming its critical distance from forces of datafication under way), and more 'reductionist' (registering actual forces of reductionism in the everyday power of institutions). It will also need to be more appreciative of the longer tradition of critical sociology that three decades of work on technology inspired by Latour have enriched, but certainly not supplanted.

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Notes

1. For an interesting parallels to this argument, see Emejulu and McGregor (2019) for the educational field and Törnberg and Törnberg (2018) in general sociology.
2. For an excellent survey of this challenge, see Kitchin (2014).
3. Among books and major reports, see Andrejevic (2013), Bratton (2016), Broussard (2018), Cheney-Lippold (2017), Christl and Spiekermann (2016), Cohen (2019), Crawford and Joler (2018), Eubanks (2018), Fairfield (2017), Foer (2017), Frischmann and Selinger (2018), Gillespie (2018), Gray and Suri (2019), Greenfield (2017), Harcourt (2015), Lanier (2018), Hildebrandt (2015), Noble (2018), O'Neil (2016), Pasquale (2015), Sadin (2016), Schneier (2018), Silverman (2015), Susskind (2018), Turow (2017), Vaidhyanathan (2018), (Wu, 2016), Zuboff (2019). This is not to mention myriad important articles on related topics, including for example, Kitchin (2014), Dalton and Thatcher (2014) and Iliadis and Russo (2016). For the author's own contribution to these debates, see Couldry and Mejias (2019).
4. For the broader debate, see the literature loosely summarized in Note 4.
5. From the website of US data marketing company Tresata Inc: <http://tresata.com/solutions> last consulted April 2018.
6. For useful earlier critique of this, see Whittle and Spicer (2008).
7. This article was largely completed when I discovered a Rodney Benson 2014 talk on the 'new descriptivism', later published as Benson (2017). For related remarks see Couldry (2014).
8. For a parallel point, see Appadurai (2013: 258).
9. I am not claiming there that this statement of Latour's is necessarily typical of ANT scholarship, or even that Latour himself would still hold to it. But it is symptomatic of a shift of emphasis in thinking about agency which has costs, when it starts to shape research priorities.
10. It is worth noting that a prominent earlier critic of ANT, Donna Haraway, has also developed the concept of 'figuration' to capture alternatives ways in which we might think about human beings' place in the world. This approach is however a long way from Elias' use of figuration to denote specific types of practical interdependence within the sociology of action.
11. Compare Axel Honneth's (2013) comment that 'moral categories have all but disappeared from the theoretical vocabulary of sociology' (p. 98).
12. For an interesting comparison of Boltanski and Latour's non-Bourdieuian approaches to critique, see Guggenheim and Potthast (2012).
13. I have, for example, argued for the explanatory power of ANT in understanding the emergence of media as institutions (Couldry, 2008).
14. See for example, Zuboff (2019), Couldry and Mejias (2019).

15. One could also argue that ANT falls short of the critical potential of Andrew Feenberg's work on technology, for example, with its deep grounding in political economy. But I use Marx here, merely as an example of a further possible line of critique of datafication.
16. See Latour, Jensen, Venturini, and Grauwin Boullier, 2012. Thanks to Ulises Mejias for drawing my attention to the relevance of this piece. See also Latour (2002).

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