

Platforms, Algorithms and Subjectivities: Active Combination and the Extracting Value Process – An Introductory Essay

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In the last decade, and in a considerable portion of the world, digital platforms have colonised important areas of social life (Srnicsek 2016; van Dijck, Poell and de Waal 2018), from production to services and logistics, from training to communication, and to social reproduction, all of which have remediated (Bolter and Grusin 2003) and remodelled social relations and organisational processes. While predominant theories of mediation of the 1980s and 1990s still presupposed a dichotomy between physical and virtual reality, in the hybrid networks of contemporary digital societies, matter and information are no longer so easily separable (Lupton 2016; Manovich 2013).

Rather than building ‘digital doubles’ – informational identities that transcend us and ultimately come to dominate us (Haggerty and Ericson 2000) – our subjectivities are both represented and constituted by algorithmic identities (Cheney-Lippold 2011), and then recursively reproduced (Beer 2016; Airoidi and Rokka 2019), which show how machines, in their various

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components, never really confront us, but appear to be an integral part of our life processes: we rely on intelligent objects, make friends on social networks, take selfies, record voice messages to share online, or perform lifelogging based on our bodies' performance. Algorithms are not to be understood as an abstract entity with purely quantitative relevance; they do not infer only computational processes for the statistical-mathematical knowledge of society, or merely promise to be useful in order to select and constitute some social actors at the expense of others (Morozov 2013; Airoidi and Gambetta 2018). Rather they work in networks of associations that qualitatively modulate the weaving of society (Thrift 2007). As a result, in a variety of self-quantifying practices (Lupton 2016; Moore 2018), data on subjects' practices, produced by tracking and self-tracking, in turn affect those subjects' attitudes, dispositions, relationships, preferences and behaviours by constitutive representations. The pervasive power of these devices attracts, persuades and often forces millions of people, companies and public institutions into having a 'digital presence' as well as into digital self-promoting performances – the screen window display (Codeluppi 2007) as *the* place and way to showcase the performance and network of selves. This inextricable intertwining of such platforms with our lives is now evident in the context of the social, cultural and economic structures of a platform society.

Underlying Tendencies

Different types of 'platforms', according to Srnicek, mark so-called platform capitalism via different processes of value creation, which in some cases rely on production/appropriation processes (Fuchs 2010), in others on income and extraction (Rigi and Prey 2015). Also integrated into such economies are platforms that do not involve a monetised exchange of goods and services, such as platforms that promote peer-to-peer relationships (De Rosnay and Musiani 2020) and are oriented instead toward the pooling of goods, resources and knowledge, towards the production of commons (Teli, Lyle and Sciannamblo 2018). Related to these issues, data metric power has a syntactic and semantic function that can govern us 'at a distance'. The metric power of numbers guides us without emotion or violence (Beer 2016). It is not the numbers that punish us if we do not reach certain standards, it is us blaming ourselves after having measured our defeat (Risi, Briziarelli and Armano 2019). Moreover we emphasise that these socio-technical devices function as black boxes (Pasquale 2015), based on non-transparent algorithms that continuously extract data from subjects.

In such a context, this book, instead of concentrating on the infrastructural and technological dimensions of platform capitalism, emphasises relational and organisational questions, in particular the ambivalent logic of connection/disconnection, the production of the neoliberal subject (Armano, Teli and Mazali 2020; Bartoletti 2020) and its complex intersectional nature in relation to

the internet (Benski and Fisher 2013; Risi 2016), issues of what has been termed 'onlife' (Floridi 2015), and the transformative potential of these phenomena. In this regard, a key point worth noting is the active combination (Alquati 1994, 2021) between the capitalist means of production and human activities. Such active combination consists in the concatenation of – *agencement* – (Gherardi 2015) between human and digital machine, or to return to Alquati, it connects the ability of the living human with the procedures encoded in the algorithm, which pervade and structure different productive and reproductive activities, from increasingly digitised work, to social media in urban spaces and in everyday life, (Farooq and Grudin 2016). Active combination is a fundamental part of the process of extracting value (Mezzadra and Neilson 2018) and simultaneously modelling subjectivity.

We are in this sense motivated by a concern with the integral power of platforms and their algorithms in shaping our societies. The power we describe is not explicitly coercive or violent, it does not use disciplinary sanctions in the traditional sense but, by constantly monitoring and surveilling us (Greenfield 2017; Zuboff 2019) it imprisons us through evaluation, reporting and ranking (Merry 2016). Exemplifying this, Ned Rossiter and Soenke Zehle explore this in Chapter 2, critically reflecting on the pervasiveness of algorithmic governance processes, and, in doing so also represent this book's ambition to respond to the call for 'algorithms awareness' (Bucher 2012) and the extent to which people are aware of a life shaped by algorithmic selection (Eslami et al. 2015). In fact, the coding of our data, the rules of algorithms, the identity we are assigned and, in part, the identity we assign ourselves as a 'data subject' (Ruppert 2011) or 'measurable types' (Cheney-Lippold 2017, 47), appear to remain hidden from most of us. The key question is not that platforms, through their own algorithmic logics, determine the polarisation of social and working behaviour, but rather that specific 'modes of feeling', through platforms, become forms of subjectivity, implicit ways of selecting choices and ultimately of looking at the world. After all, subjectivities are not tangible entities but reflective combinations of practicing and experiencing social relations, thus reifying those instrumental social links mostly only adequate for value extraction does not simply mean to give up on our species-being, or subordinate it to fetishism, but to also lose the battle for critical consciousness and radical collective mobilisation against current capitalism. In this way, an algorithmic production of subjectivity constitutes the concrete result of particular relational scenarios, in which each participant adds his/her own contribution to a collective moment. The work of platforms is ontogenetic: they circumscribe the boundaries of thought and action as well as define the subjects and objects that belong to them.

Accordingly, in order to start tracking and understanding how this totalising reality operates, we could start by asking what kind of conceptualisation of the digital media environment is needed to tackle this opacity. Most of the chapters included in this edited collection examine digital media as a complex field formed at the intersection of objective structures and subjective

practices. In line with such perspectives, Peters claims that media are much more than tools, as they constitute the primary conditions of possibility for people to exist: ‘Media are our infrastructures of being, the habitats and materials through which we act and are’ (2015, 15). What does this mean in the context of platform capitalism? On the one hand, ‘in a time when it is impossible to say whether the nitrogen cycle or the Internet is more crucial to the planet’s maintenance’ (Peters 2015, 2), digital platforms and the algorithms that power them, could be regarded as organisational and infrastructural environments, co-developing and co-depending on capitalism. Notions such as ‘datafication’ (van Dijck 2014), ‘algorithmic culture’ (Striphas 2015) and ‘algorithmic life’ (Amoore and Piotukh 2016) describe a social imaginary that operates as a social power (Manovich 2001), capable of producing a field where computational logic meets an individual’s consciousness (Bucher, 2018) and practical knowledge (Bilić 2016). And most importantly, all these notions point to how coded information as data acquire informational value (Zuboff 2019).

According to van Dijck et al., ‘platforms do not reflect the social: they produce the social structures we live in’ (van Dijck, Poell and de Waal 2018, 2): platforms intervene (Gillespie 2015) and mix social norms and sociotechnical norms specific to online environments creating a symbolic field and practices that delimit specific ways of relating – often distinct from offline ones – and that preside over new processes of signification of being together. The construction and management of sociality that operates through platforms is therefore not defined by a simple transfer of pre-existing dynamics into technological spaces, but is shaped by the architectures and *affordances* (Papacharissi 2011) of the platforms themselves, which circumscribe the possibilities and forms of relationships between individuals.

Platforms

Affordances can be defined as the ‘socio-technical architectures’ of platforms (Papacharissi 2011), which imply their ‘capacity to shape the agency of human actors’ (Caliandro and Gandini 2017, 11). During the Covid-19 crisis, citizens had to stay at home and avoid going out: in that context the affordances of platforms were the boundaries of their territories of self, i.e. the limits within which sociality could take place and be reconstructed. Platforms operate therefore as monitoring systems that quantify and direct people, as the Covid-19 crisis exemplified. Here, Marco Briziarelli and Emiliana Armano’s chapter focuses on this new dynamic of platform extension during the pandemic, while Niccolò Cuppini, Mattia Frapporti and Maurillo Pirone’s contribution delves into the impact of the pandemic on logistics. Platforms, by remotizing social relations, allow degrees of autonomy even when proximity is not possible. They provide subjectivities with an apparent individual freedom: a well-defined space, with

specific technological possibilities and limits (i.e. affordances) that predetermine the margin of people's actions. For example, how the sense of privacy has changed by the interweaving of possibilities of subjectification opened up by specific technological affordances and related practices developed by users, which concern the relationship between online public and private spheres (Boccia Artieri 2014; 2020).

Overall, this edited volume stresses an economic definition of platforms as enterprises (Langlois and Elmer 2013) that, combining digitalisation and commodification (van Dijck, Poell and de Waal 2018), have become the flagship of a new stage in capitalist development (Srnicek 2016). Also, part of the macro-scale infrastructural nature of platform capitalism, and the power to aggregate billions of bits into intelligible and valuable information, is the capability of actors moving in the digital sphere to find each other as 'needles in the haystack' (MacCormick 2012, 25). In this regard, an assumption of this book is that platform algorithms give us a location in social space and time; an economic, social, cultural and psychological positionality. As Zittrain (2008) claims, platform economy is generative and dependent on specific kinds of subjects as it relies on the active participation of leisure time users and wage workers (Langlois and Elmer 2013). As a result, everyday life is increasingly experienced as a platform existence (van Dijck, Poell and de Waal 2018) mediated by algorithmic infrastructures. Platforms do not only mediate sociality, but also work as performative intermediaries that co-produce and shape social life, which increasingly takes place in and through algorithmic media (Bucher 2012). In fact, platforms are based on algorithms that gather, aggregate and classify (big) data, spontaneously or unconsciously produced by users, which allow platforms to suggest content to their audience.

In this context, we think two aspects stand out. Firstly, as van Dijck (2014) claims, platforms are more constitutive of the *lived environment* rather than simply reflective of our social context in that they are concurrently defining and setting the limits, as well as providing new opportunities, for most of our mediated social relations. Secondly, most of the contributors to this book share the assumption that one of the most important social situations where we can simultaneously examine how we perform technologically mediated interactions and how such interactions subjectify us is when operating as labouring subjects in social cooperation with others.

Algorithmic Powering

The fact that neoliberal subjects acquire a mentality in which everyone becomes his own entrepreneur, exposing and selling his own social skills and attitudes as if this were a natural fact (Gorz 1994), describes a realm where subjects are considered as responsible for their life opportunities and successes as an entrepreneurial project needing investments.

In that respect, we support Chicchi and Simone's thesis, which effectively describes neoliberal society as a performance society (2017). The new social imperative, based on individual performance, takes on a concrete corporate determination through the generalisation of the enterprise form as a subjective form adapted to the productive needs of post-industrial capitalism. Subjectivities have become fundamental performative agents of new kinds of individuals who, through self-management, can fully realise their own aspirations, express their own personalities, access knowledge and better control their inner emotions (Boltanski and Chiapello 1999). As a result, neoliberalism becomes coextensive with all society by generating one of the great paradoxes of platform-driven subjectivities, i.e. the tension between abstraction and a rich individualisation, exploitation and enjoyment, auto-direction and hetero-direction (Armano, Teli and Mazali 2020). As Lazzarato (2014) understands it, we could define it as the tension between social subjection and machinic enslavement.

As we have already suggested, we assume algorithms do not simply exercise controlling and predicting power, but they also have an *onto-formative* capacity: they organise the relationships between users and the surrounding environment, by selecting and reinforcing a social order that not accidentally resembles social platforms (Mackenzie 2015). Such productive capacity is far from being impartial (Gillespie 2015; Airoidi and Gambetta 2018): in fact, algorithmic systems can embed cultural biases and reproduce various kind of social discriminations (e.g. Noble 2018). Furthermore, the protection of users' privacy and the opacity of how users' data are employed is increasingly recognised as of serious, worldwide public concern. While individuals act on platforms within their affordances (Caliandro and Gandini 2017) and relate to algorithms as in a 'love-affair' (Finn 2017), new and complex algorithmic identities are shaped and performed through opaque categorisation processes based on users' gathered data (Cheney-Lippold 2011; Gillespie 2014).

Algorithms powering platforms can systematise and translate users' attitudes, dispositions, relationships and behaviours in functional data in order to favour classifications and micro-targeting. Both discourses and practices around Big Data shape the way individuals are tracked and conceptualised. As we note, companies use algorithms to establish typologies of identities based on gender, race, geographical position and average expenditures (Cheney-Lippold 2011; Ruppert 2012). Search preferences and selected content are shared and combined with reaction feedback, which constitutes the basis for further interaction between users and content as well as between user and user. The subjectivity of the sharing user plays a fundamental role in this process: in fact, based on their identity, users circulate content and join networks with the hope of both shaping their own social networks and joining collective conversations (Payne 2012). People are frequently not aware that while users produce data, that data are appropriated by algorithm developers, in 'cultural environments of growing datafication and automated decision-making' (Markham 2020). Hence the issue

of ‘algorithms awareness’ (Hargittai et al. 2020; Gran, Booth and Bucher 2020; Risi, Bonini and Pronzato 2020) and the extent to which people are conscious of a life shaped by algorithmic selection mechanisms (Eslami et al. 2015).

The feedback cycle is in indeed *recursive* (Airoldi and Rokka 2019) because the algorithm powering these kinds of platforms produces recommendations based on ‘my recommendations’, when I am asserting my dietary preferences and giving cues regarding my leisure activities. In this encoding and decoding loop, named *recursive* (Beer 2013; 2016), algorithm and subject are fused in a machinic reciprocal learning. Acknowledging the dynamicity of this human-machine relationship, Cheney-Lippold (2011) describes how algorithms construct fairly complex identities: such complexity certainly gets more refined and qualified. In platform capitalism, individuals become multiplicities, endlessly subdividable ‘dividuals’ (Deleuze 1992). Such ‘dividual’ status means that we all carry multiple layers of algorithmic identities (Elmer 2004) and we temporally inhabit different categories that are in turn differently constructed by competing interpretive machines (Cheney-Lippold 2017). Therefore, complex processes of the abstraction of subjects are, in our view, a symptom of the subsumption of people (not simply as workers) under platform capitalist forms. As Galloway (2004) claims, we are indeed confronting an abstract subjectivity, perfectly functional because digital platforms do not need our first and last name but merely a cluster of descriptive information. Furthermore, when this external subjectification meets the ways in which platforms *internally* shape individuals by generating motivations and practices, we are still confronting an abstract subjectivity that finds inner drivers to self-govern and self-activate, in agreement with neoliberal governmentality.

Examined in more detail, the neoliberal subject of platform capitalism is the result of the combination of different converging tendencies: the performative propensity to put him/herself on display (Codeluppi 2007), the desiring of conspicuous social visibility (Bucher 2012), and self-branding skills (Marwick 2013); the tendency of establishing and maintaining, through social platforms, a surplus of relational recognition as well as shared content (Bolter and Grusin 2000); and finally, being mobilised by a neoliberal ideology that links the boundless expansion of social platforms with limitless capital accumulation combined with a managerial approach to the management of resources such as social capital (Dardot and Laval 2009).

In our view, these internalised motivations are combined with external compelling pressures. We, for instance, refer to what Dean (2010) defines as the injunction to actively join the constant flow of communication and information (Armano, Teli and Mazali 2020). Furthermore, as a sign of the general neoliberalisation of social life, we receive instigations from multiple sources to remain flexible and to keep improving ourselves in order to better respond to market fluidity and the imperatives of a flexible kind of accumulation (Harvey 1989).

Against Machinic Agency?

This integral mode of subjection combines freedom and subjection, as well as abstraction and elements of a relatively genuine individuation, but also Deleuze and Guattari's (1987) combination of people and technology: the machinic. In this sense, most of the contributions to this edited volume, while not necessarily explicitly drawing on the notion of machinic subjectivity, point to the question of active combination and of agency in the human-machine relationship (Ziewitz 2016), the varying relations of power, and some of the opportunities for both subordination and resistance. Platforms become the stage and their algorithms the choreographers for digital social actors, and, as with any stage, they constrain and simultaneously make possible socially shared practical meanings. On such a stage, we become *identified subjects* and *identifying objects*, we are monitored and we monitor ourselves through tools evaluation, reporting, and ranking (Merry 2016): individuality is understood in a processual sense, since it is partly acquired and partly constructed by the process of algorithmic 'individuation' (Prey 2018).

Agency in the human-machine relationship also means recovering the Marxian take on individuation as a positive process of human assertion: becoming free, critically reflective subjects who can be the 'technologically conscious user' (Beer 2009) and who strive to take ownership of their own data (Nafus and Sherman 2014). In this sense, the question of human-machine agency remains dialectical on both sides of the equation because datafication does not simply provide venues for a quantification of the self critically exemplified by Moore (2018) and Zuboff (2019), it also provides users with enormous informational and knowledge capital.

This ambiguous power relation between platforms and users also speaks to questions of hegemony. As Read (2003) observes, the idea that subjects become productive suggests a capitalist subsumption process that exceeds the formal and real and tends towards what we could call socialised subsumption, a mode of subjection that implies what Gramsci (1975) defines as catharsis – the hegemonic dynamic that transforms coercion and necessity into freedom and deliberation.

The Book and Its Chapters

The book is divided into two main parts: 'Theoretical Foundations' and 'Case Studies.' In the first part of the volume, we provide an overview of some of the main theoretical nodes that define the intersection between platform capitalism and the subjectivities inhabiting it, operating through it and confronting it. The overall narrative that emerges from the first part shows how the logic of platforms, based on algorithmic computing and measurement mechanisms, extends the ethos of the enterprise form to all aspects of subjective existence,

bringing to fruition the combination of hi-tech libertarianism and economic liberalism, which has characterised digital culture since its origins. Assuming the active combination between such subjectivities and information and communication technologies to be a fundamental part of the process of extracting value, the second part of the book examines concrete processes in which neoliberal subjectivity is defined within the digital environments of the platforms' affordances. We thus focus on the spaces of uncertainty of the algorithmic determination of subjectivities and the possible forms and modalities of resistance, experimentation, neo-mutualism and cooperation. Chapters in the first part of the collection share a broader approach to the subject by trying to theorise the social and historic conditions that allow algorithmic subjectivities to emerge, operate, thrive and develop in new directions. In doing so, these contributions deal with digital and platform capitalism as a general stage where dynamics of social reproduction (and partially social transformation) take place.

One important factor of social reproduction in platform capitalism is analysed by Hasmet M. Uluorta and Lawrence Quill in their reexamination of the so-called 'Californian Ideology'. Their chapter offers important insights into how people understand their relationship with their work, technology and history, and how subjects make sense of the tensions between capitalism's crude realities and its utopian thrust. They argue that while the original *telos* of progress of the techno-libertarians has been called into question in recent times, many aspects of the Californian Ideology have been naturalised: for instance, digital connectivity is both problematised and taken for granted; social media may be regarded as dangerous but also necessary; the neoliberal positive prejudice for private market self-regulation is still accompanied by deep scepticism in state institutions.

Californian Ideology naturally combines with what Rossiter and Zehle define as algorithmic governance, because, as they assume, a mode of subjection necessarily implies a mode of governance. As they note, modes of governance within institutional settings are increasingly shaped by algorithmic architectures of organisation, which, while posing limits to political possibility, are nonetheless radically dissimilar from the traditional experience of politics.

While Rossiter and Zehle explore neoliberal governance experienced by neoliberal subjects in their understanding of political power, public services and access to public resources, Briziarelli and Armano investigate the relation of digital labour and urban space production in the context of a crisis of capitalism. They argue that the Covid-19 pandemic-induced circulatory crisis has prompted a compensatory response that can be described as digital spatial fix, which combines measures against the crisis as well as subsumptive phenomena mainly under capitalist forms such as *digital abstract space* and machinic fix capital. They illustrate this by examining how the private residences of many workers are being subsumed as digital abstract space wherein their subjectivities are *domesticated*. Like Briziarelli and Armano, Cuppini, Frapporti and

Pirone examine the Covid-19 pandemic context as a privileged site to study platform capitalism and its operators. They provide an important assessment of the potential consequences of the pandemic on platform workers, specifically in the field of logistics. They suggest that the crisis has resulted in increased platformization (and their algorithmic systems) of society. The forced reorganisation of social spaces (e.g. public and private, work and leisure spaces) has had a considerable impact on how subjects understand their positions in relation to work and work control, social surveillance, but also in the spread of the entrepreneurial culture associated with the Californian Ideology.

Another theoretical aspect examined in the first part of the book is provided by Heiner Heiland's contribution, which returns to the subject of algorithmic governance by employing a black box metaphor. The nature of so-called black boxed algorithmic-driven governance, which is characterised by automatisa-tion, made impersonal, and powered by machines, becomes an abstract political and administrative power. As a result, Heiland describes a permanent asymmetry of knowledge between subjects and governance. Crucially, Heiland also points to the current theoretical gap between logic and control, contending that social processes cannot be controlled in the same way as technical processes.

An issue implicitly examined in all these chapters is the general question of freedom in relation to current information and communication technologies. In this respect, explicitly exploring questions of human-machine agency, Emiliana Armano, Daniela Leonardi and Annalisa Murgia claim that, in delivery platforms, the power of algorithms is implemented through an active combination with living human capacity, which allows the digital machine to reproduce itself. As they argue, in a system of mediated relationships, this process makes subjects particularly exposed to the logic of rating and ranking, which ultimately shapes the formation of (counter)subjectivity. In their relational analysis of digital capitalism, they contend that a virtual space shaped by algorithms can represent a potential space for struggle.

The remaining chapters in this section deal with another fundamental theme examined by this book: the relationship between subjectivity, value and labour. Andrea Miconi reasserts Marx's labour theory of value in order to push back against a general tendency to both underestimate the role played by living labour and the tendency to reify the very notion of the platform. The author detects three main problems: the tendency to ignore labour altogether, the pre-eminence of data extraction over other forms of value production, and the incongruence between the notion of the multi-sided market and commodification. In part responding to Miconi's concerns, Patrick Cingolani's chapter contends that platform capitalism is defined by its ability to thrive on the extraction of free labour. Questioning how capitalism exploits and profits from free activities by making consumers contribute to the improvement of products, techniques and tools, this chapter underscores how capital develops a full range of new methods of exploitation.

In contrast to Part I, the Case Studies section of the book is dedicated to the examination of empirical cases; everyday practices of neoliberal subjects

and the constant process of subjection in which they are involved. All of the chapters here provide insights into how, in different social circumstances, the tensions within human-machine agency relations materialises especially in the context of a digital labour process. Alberto Cossu, for example, points to the ambiguous opacity of platform capitalism, echoing Heiland's discussion about the black box, examining individual amateur investors in crypto-financial markets. Based on digital data gathering and content analysis, Cossu claims that such digital traces empower these new investors with unprecedented possibilities for creating value and, at the same time, they become subject to data gathering by companies that analyse and sell their aggregated behaviours. Overall, Cossu sheds light on new forms of 'ideological' currency that places subjectivities within the capitalist relations of production.

While Cossu considers an integration of subjectivities through ideological incorporation, Milena Franke and Valeria Pulignano consider the subordination aspect of such processes of subsumption of subjects. They analyse a deficit of agency within a food delivery platform in Belgium in order to understand how asymmetric power relations unfold within platform work. In interlinking the 'triangular' relationship between platforms, individual clients and workers they claim subordinating social relationships not only reconfirm coercion as a key component of the capitalistic relations of production but illustrate how labour platforms simultaneously empower and disempower actors.

Elisabetta Risi and Riccardo Pronzato examine the role of algorithms in creating prosumers and explore the creation of interlocking roles between user practices, algorithmic hybridisation, programmability and self-quantification. As they argue, as everyday life is currently being datafied and fed into an algorithm that processes and transforms it into behavioural and recursive models, individuals become 'data subjects' and algorithmic prosumers. The authors describe a process of co-development between algorithms and data subjects: while algorithms are in constant need of information in order to understand and predict how platform users utilise these typifications in order to make sense of their daily actions, users are provided with constitutive material for identity formation.

Also examining the topic of identity formation, Jacopo Anderlini and Carlo Milani explore how practices of reappropriation of technology that conceal 'appropriate' social and technical organisation can prefigure new sociotechnical imaginaries, and how they shape digital spaces, infrastructures, social interactions and relations. They examine how practices of reappropriation demonstrate how to envision alternative social organisations, such as mutualism, as well as alternative technology usages more suited for solidarist digital communities.

In a different social arena, but with similar concerns regarding power relations and how they are mediated by platforms, Robert Ovetz deals with the automation of higher education. With the introduction of online technologies such as Learning Management Systems, Zoom and Canvas, Ovetz argues that

the automation of higher education efficiently produces self-disciplined workers who work remotely, allowing higher education institutions to remain highly profitable. Ovetz considers how platforms are intended to deskill academic labour, impose new processes of algorithmic management, and control and surveil it, with extractive processes of knowledge enclosure that are separated from the social body. Thus, like Franke and Pulignano, and Cingolani, Ovetz is concerned with the mediating role of online technologies in extracting value.

Interestingly enough, Davide Arcidiacono, Ivana Pais and Flaviano Zandonai examine another way in which platforms are mediating power relations, in this case between the state and its citizens. They turn the focus towards the platformization of welfare services, thus going beyond business-oriented merchant perspectives that dominate the field of Platform Studies. The authors analyse the peculiarities of organisational design when welfare services adopt new platform architecture, examining how algorithms and artificial intelligence upend previously institutionalised forms of social welfare and the ways platforms alter how individuals interact with the state. The platformization of welfare services leads to solutions that overcome the traditional bureaucracy of local welfare systems and, at the same time, redefines the role of social workers not as simple public administrators of welfare, but according to a logic of process and collaboration never experienced before.

Following Risi and Pulignano, Tatiana Mazali and Nicoletta Gay explore further performative aspects of platform subjectivities, exemplified by the functioning of ranking systems on main social networks. They claim that the logic of digital ‘positioning’ of the self has exacerbated many emerging practices related to the self, such as branding, self-marketing, self-positioning, processes of individualisation, identity fragility, as well as, in the realm of work, precarization and impoverishment of incomes. They point to the need to generate new ranking systems in order to act as countermeasures against the inequalities and the lack of diversity in our society, mitigating them, and providing fairer and less discriminatory outcomes.

Focusing on the aspects of platform work where workers’ behaviour is antagonistic to platform logics Maurizio Franzini and Silvia Lucciarini examine gig workers and how their precarious condition becomes politically productive of alternative forms of mobilisation and unionisation of workers, signalling the role of new worker organisations in advocating for them. These workers, despite being particularly exposed to the most troubling aspects of platform capitalism and algorithmic management, are also at the vanguard of envisioning possible forms of resistance.

Cracking Open the Black Box

The various perspectives that this book contains represents a significant addition to the corpus of studies on platform capitalism by offering a critical sociology

that, by studying the interactions and productive tensions between digital platforms and their users' practices, achieves a delicate balance between opposing tendencies, such as between the objective or the subjective, the structural and the contingent moment, the particular and the general. It contributes to cracking open the black box by providing a perspective that does not treat technology as a fetish with a life of its own but as a set of social relations, which are mediated by technological hardware, capitalist interests, social and cultural biases and, last but certainly not least, conscious and productive human activity. Thus, while, for instance, many contributions to this collection assume the centrality of digital platforms, which provide a training ground for mass actions that shape users' behaviour in the delineation of a new public space of production and life (Risi, Bonini and Pronzato 2020), and function as surplus value extracting machines (Mezzadra and Neilson 2018), platforms can only achieve this through the active participation of users. After all, the various processes of subjectification the chapters describe imply, more or less explicitly, a double movement: an objectification of the subject – being subjected to platform power – and a subjectification of the object – the platform being empowered by human signification and human praxis. In other words, on the one hand, in interrogating the technology/human agency relationship, this book suggests that human agents interacting through platforms are increasingly conditioned by the ongoing process of capitalist subsumption of their subjectivity, yet on the other hand, such processes make platforms interdependent and interconnected by people's actions. Thus, the more platform capitalism establishes relations of subordination with its operating subjects, the more dependent subjects become on the platform for their agency.

In conclusion, it seems appropriate to emphasise the urgency of continuing to explore and critique digital capitalism, because, like a hegemonic substratum of 'truths', the more its digital totality becomes preponderant, the less visible and less open to critique it becomes. Our tentative remedy against that opacity is to approach technology and the subjects operating through it as social processes, which, we argue, pushes back against the risk of fetishising technology with the mystique of an *arcana imperii* kind of power. The perspectives showcased in this book, ranging from enthusiasm to disappointment, and from involvement to disenchantment with digital technology invite scholars to continue their research into these complex interconnections.

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