

3. The First Blind Spot: Value in Digital Capitalism

If we are to interpret the current age—in which digital technologies exert an unprecedented influence—beyond this observation and render visible at least the contours of a new capitalism, it is vital to first take a closer look at basic economic processes. Has the nature of these processes changed? Or are we simply seeing a new set of options and phenomena embedded in familiar economic processes? My use of the word ‘simply’ is not to be misunderstood: to my knowledge, no-one ever proclaimed a ‘supermarket capitalism’ when corner shops disappeared. Nevertheless, this change entailed a dramatic cultural shift, for instance, in consumption patterns and food value chains, among the actors involved and in terms of working conditions, all of which had countless economic and social implications, including the concept of supermarkets finding its way into the Cold War’s ideological battle (Hamilton 2018). Regardless, it certainly seems appropriate to consider whether basic economic mechanisms are changing in digital capitalism.

The analyses presented in the previous chapter ultimately focus precisely on this aspect, albeit without reaching a convincing conclusion. One question that is at the heart of any analysis of capitalism—including digital capitalism—and that is left unanswered (by both authors) is the question of where and through which mechanisms *value* is created. Dan Schiller effectively omits this level (although he does clearly name the actors who benefit the most), critically addressing only the *value chains* (as opposed to the *commodity chains* he favours), a term which, from his vantage point, is highly suspicious in terms of ideological motivation. Michael Betancourt directs our attention to the valorisation of behaviour on social media platforms, but imprecisely equates value and exchange value. Hence, he offers no explanation as to whether or where exactly value would have to be reconsidered or conceived differently in digital capitalism.

We shall therefore begin this chapter with this very subject matter, i.e. the question of value. In order to do so, we can draw on Mariana Mazzucato (Chapter 3.1) and her book *The Value of Everything* (2018), in which she examines, among other things, the issue of value and the question of how and where it is created. In doing so, she exposes the ideological motivation behind most standard explanations offered by the world’s business schools. Her perspective both complements

and questions the claims put forward by Dan Schiller and Michael Betancourt. Above all, however, through her focus on value creation, she opens the door to more in-depth considerations. What becomes clear is that we live in a world in which the creation of value and the corresponding mechanisms are interpreted rather obliquely, if not at least rather one-sidedly. Breaking through this pattern is imperative for an analysis of capitalism in the digital age. In a second step (Chapter 3.2), we shall dig a little deeper in categorial terms, indeed into the concept of value, and consider value's two facets under the capitalist mode of production: use value and exchange value. Drawing on Scott Lash (2002), we raise the question of whether these two facets—or rather, the relation between the two—have reached their end in digital capitalism. As I hope to demonstrate, both aspects of value remain intact in digital capitalism, as does the contradictory relationship between them, which is not at all disappearing, but, in fact, becoming more visible once again. The categories of value, as well as use value and exchange value, take us one crucial step further in our analysis of digital capitalism and in tackling the remaining questions (Chapter 3.3). The third subchapter thus forms a kind of bridge to the development of my own central hypothesis on the increased significance of the distributive forces, the foundations of which shall be subsequently addressed.

3.1 Mazzucato or the rediscovery of value

One voice that is frequently cited in the debate on capitalism in the digital age is that of London-based economist Mariana Mazzucato. She has shown how much of the supposed innovative entrepreneurial capacity of Silicon Valley and (not only) the digital economy was ultimately based on government funding and thus public subsidies (Mazzucato 2018: 189–228, 2015). Unlike the two authors introduced above, who focus on the digital aspects of current capitalism, Mazzucato explores the economic logics and processes as well as the altered role of the state. According to Mazzucato, the latter acts as *entrepreneurial state* and bears the investment risks, while the private economy only enters the fray once profits can be made at minimum risk. To Mazzucato, the Digital is only one of many examples thereof, alongside, e.g. the pharmaceutical industry (see Mazzucato 2018: 207–213, 2015: 70–73 and 87–90); or 'green' technology (see 2015: 121–152 and 153–178).

Mazzucato illustrates the digital phenomena of current capitalism with many empirical examples, all of which prove the same dynamic: the state bears the risks, while the actual rewards are reaped by the private economy and its investors. Much like Dan Schiller (see Chapter 2.1), Mazzucato takes the US Department of Defense and the advent of the Internet as her starting point (see Mazzucato 2015: 80–85), reconstructing a similar evolutionary process for other technologies,

too, which were in fact vital for the development of iPhones and iPads (see *ibid.*: 93–120). In her analysis, Mazzucato seeks above all to demonstrate a normatively desired, new role of the state, which not only creates favourable conditions for innovation, but also benefits from its success. Her examples are not always convincing nor is every detail accurate, a weakness in the text that has gladly been pointed out by those adhering to the kind of economic schools that prefer the free market and a 'lean state' (see, e.g. Mingardi 2015). Yet the essence of her argument remains unaffected: innovation is not the result of entrepreneurial activity alone, but requires an enabling social and institutional setting. Karl Marx would refer to this setting as the 'development of the productive forces'—which we shall return to in Chapter 4.1.

So, while Mazzucato's focus is on the dynamic as such, she does not consider it to be an intrinsic phenomenon of what Dan Schiller calls 'digital capitalism'. In her book on value, the Digital has a marginal role and does not constitute the decisive causal variable. And yes, Mazzucato also addresses the dynamics of network effects, the significance of the 'first movers', the virtual monopoly position of Google, Facebook, etc. and the market-creating base constituted by digital platforms (see 2018: 213–219). Nevertheless, she spends little time exploring these observations shared by a wide range of authors, from those writing in features sections to Paul Mason. Mazzucato makes a fundamental distinction between value creation and value extraction and proceeds from this vantage point in her examination of the phenomena of the digital economy—particularly the platform economy (see *ibid.*: 219–221). She proposes returning to the long outdated economic differentiation between productive and unproductive labour (see *ibid.*: 220). We shall examine Mazzucato's analytical categories in more detail shortly. What is important to establish at this point is her most central argument that the labour through which Google, Amazon, etc. generate their earnings and profits—advertising revenues—is ultimately unproductive, as it adds no value to an actual productive act (i.e. the search request on Google, the message posted on Facebook). The value that Google and others extract, she argues, emerges from the extra-economic sphere: the public purse continues to fund the infrastructure—from the Internet to 5G networks—while the behaviour of users constitutes the unpaid productive collective base. Mazzucato not only describes these processes, but she considers them through an analytical economic lens and criticises the prevailing logic, according to which the enormous advertising revenues of the Internet giants are considered productive by GDP measures, although they are in fact unproductive. Moreover, she criticises the fact that the innovation that is only made possible through us

all collectively in the form of Big Data is being appropriated by private economic interests.¹

It is certainly worthwhile to briefly turn to the new (and renewed) consideration of value and its significance which Mazzucato develops in her book *The Value of Everything* (2018). Firstly, her brief history of value (see 2018: 21–56) shows how economic theory initially defined value on the basis of a collective, almost existential utility and via the involved labour: while the mercantilists of the 16th century followed a restricted notion of value creation pertaining only to elementary goods (such as food or housing, but also gold) (see *ibid.*: 21–28), the 18th-century physiocrats regarded the necessary labour ploughed into agriculture and the soil as the source of value creation (see *ibid.*: 28–33). The 19th-century classical economists like Adam Smith and David Ricardo also concentrated on the expenditure of labour (see *ibid.*: 33–47), though they expanded their view to take into account the significance of machines and industry. During that same period, Marx demonstrated *why* (and not only *that*) human labour is the decisive factor for creating value (see *ibid.*: 47–55).

Mazzucato starts off by spelling out Marx's central views regarding value creation. To him, the only source of value is human labour. It is the determining factor of value and the source of Marx's famous surplus value, which emerges from the difference between the value created by wage labour and the wage paid for the time worked. Capitalists appropriate this surplus value, i.e. they generate a profit by exploiting workers. Here, Mazzucato emphasises that the “production boundary” follows a different course than, say, in Adam Smith (see Mazzucato 2018: 8–11).

This “production boundary” shift is one of Mazzucato's central arguments. In her view, it can be logically deduced from her brief history of value in economic theory with which it remains closely intertwined. In both instances, it is defined who or what is productive (in the sense of creating value) and who or what is unproductive (in the sense of extracting value). The side of that boundary that

1 Shoshana Zuboff's argument is similar in economic terms, although it focuses on user behaviour: she analyses this as surplus behaviour which the digital corporations (above all Google) had not even aimed at originally. What she means by “behavioral surplus” (see 2019: 63–98) are the data on behaviour that are no longer used only for the improvement of services (see *ibid.*: 75) and may encompass all levels of our (online) behaviour: “our voices, personalities and emotions” (*ibid.*: 8). What ought to be added to this list, in my view, are those data that do not pertain to behaviour, but its precondition: life itself—vital signs such as pulse frequency, sleep rhythm or heart rate variability. Zuboff traces how Google, too, took a while to understand what could emerge from this “behavioral surplus” in combination with “data science, material infrastructure, computational power, algorithmic systems, and automated platforms”: “an unprecedented and lucrative brew”. As a result of this “lucrative brew”, the “behavioral surplus” becomes the “cornerstone” of a new way of acting (*ibid.*: 83).

an industry, a profession, a social sphere or class then occupies decides whether they are “makers” or “takers”. This, in turn, has far-reaching implications for the social status and economic opportunities of the respective recipient of such an ascription. Mazzucato regards this ascription as one of the main causes of social inequality, particularly because the extraction of value by “makers” (in industry) is considered legitimate and thus automatically merely conceded to the “takers” (in finance).

In her historical depiction of how the definition of value was first modified and ultimately abandoned, Mazzucato seeks to show one thing in particular: the question of where the boundaries run between productive and non-productive, between value creation and value extraction, depends on ascriptions, narratives and ideology—and is not determined by some economically unequivocal fact. Rents,² which doubtlessly lie outside the production boundaries, are thus understood as “*unearned income*” in classic value theory, whereas “[p]rofits were instead the returns earned for productive activity inside the boundary.” (2018: 9)³

Mazzucato focuses her attention on the question of where and with which rationale the boundary between productive and unproductive is drawn, referencing in this context the corresponding differences well known to classic economics: to Marx, she asserts, labour is always productive for capital, as it generates surplus value and thus profit—including the labour associated with the circulation sphere. She notes that unlike Smith, who classified production labour as productive, but service labour as unproductive, Marx acknowledges the ‘productivity’ of both spheres for capital and makes no distinction along the lines of work tasks, professions or industries. To Smith, for example, the skilled worker at an assembly line in the car manufacturing industry would be productive, yet the marketing agent at that same company would not; by contrast, in the eyes of Marx, both fulfil a productive role from the perspective of capital, the worker in the production sphere and the marketing agent in—or, rather, directed at—the circulation sphere. We shall return to the Marxian argument at a later point and seek to clarify why the labour of the skilled worker is as indispensable for the generation of value (or, in Mazzucato’s words, the creation of value) as that of the marketing agent **is** for the realisation of value on the market. The value created ‘at the front’ can only be extracted ‘at the back’ if it is sold on the market. One central aspect she develops in

2 Mazzucato uses the word ‘rent’ here, meaning all forms of regular income obtained through the provision or use of a certain good (be it housing space, licences or temporary rights to usage). If we were to follow this definition, any gain resulting from streaming services or SaaS would also constitute ‘rent’ and thus unproductive and unearned income in the digital economy. Marx also uses the term ‘rent’ to denote unproductive income, e.g. earnings from financial speculation.

3 Here, in an endnote, she refers to a book on physiocratic theories that was published in the 1960s. A glance at the book by Ronald L. Meek shows that the wording in this school of economic thought was even more catchy, as the unproductive areas were referred to as “sterile” (2008: 20).

this context is that the generation of value has already been optimised—not least aided by digitalisation—to its very limits, which is why the realisation of value becomes increasingly important to businesses strategically, and many of the current phenomena of the digital economy associated with their business models aim precisely at this: ensuring and optimising the realisation of value on the market. Considering my own hypothesis in this book, Mazzucato's rediscovery of value thus represents a far more helpful approach than Dan Schiller's analysis of digital capitalism.

After all, Mazzucato also, and in particular, shows how the view of economic theory on value initially continued to change historically and substantively, only to effectively disappear entirely with time. Before the classic proponents of value theory, such as Smith, Ricardo and Marx, the debate about the definition and the sources of value creation took centre stage in economic theory formation for centuries. Then, all of a sudden, the debate shifted—but not to reconceive the category or further refine it: to put it simply, the matter “virtually vanished from economics departments” (Mazzucato 2018: 8). That which had constituted the subject of lively scholarly disputes and the core of opposing economic schools of thought for centuries gave way to the “intellectually impoverished idea of value [...] that value is determined by the dynamics of price, due to scarcity and preferences” (*ibid.*). This shift was completed by the marginalists of neoclassical economics during the 20th century (see *ibid.*: 57–74), who subjectivised the concept of value: value arises from what individuals deem valuable to them. The—always insinuated—scarcity of a good further adds to an increase in value. If something is scarcely available, demand rises—supply and demand become the decisive factors. Value is no longer the result of expended labour, but the price that is paid: “what is bought has value” (*ibid.*: 11). She thereby criticises a reductionist concept of value, which, as we have identified, is the guiding theme in many of the analyses of digital capitalism produced thus far (see Chapter 2.3).

Mazzucato aims at a macro-analysis of present-day capitalism and especially at the altered relationship between the financial and the real economy. In her book, she therefore critically addresses venture-capital dynamics and the innovation label attributed to entrepreneurs, presenting examples from the digital economy and, particularly, Silicon Valley (2018: 189–227). Yet still, the analysis or even the proclamation of digital capitalism is not her objective. At the heart of her study lies what she refers to as “casino capitalism” (see *ibid.*: 135–160) and the critique of economic indicators that blur the connection between value generation and value extraction. Guided by theoretical precision and based on empirical analyses, she expounds on how comprehensively the investment logic of the financial world has been adopted by modern capitalism and what effects this is having on the economy, society and the public sector. “Asset management has grown into one of modern capitalism’s defining characteristics.” (*ibid.*: 159) Whether the Digital

is heralding a new phase of capitalism is left unanswered by Mazzucato. She does, however, embark on a path that may well take us forward: if we wish to trace the changes in capitalism, it might be advisable to first retreat from the visible phenomena and start off with fundamental economic concepts. Mazzucato directs our attention to the concept of value, and I would like to follow in these productive footsteps on the next few pages. We shall heed her recommendation to engage with Karl Marx's labour theory of value: "In Marx's hands, value theory became a powerful tool for analysing society." (ibid.: 57) Yet instead of inspecting macro-links proceeding from the concept of value, the analysis initially leads us, so to speak, even deeper into the concept of value, namely to the two sides of a commodity: exchange value and use value.

3.2 Whoever speaks of value ...

According to the previously discussed diagnoses of digital capitalism, everything is becoming more abstract and immaterial—only Dan Schiller points out the material side of the Internet. However, there are just as many empirically confirmed and theoretically well-founded counterarguments, ranging from Ursula Huw's critique of the myth of the "weightless economy" (1999) to the proposition of a both material and virtual, all-encompassing (accidental) megastructure called *The Stack* by Benjamin Bratton (2016). Nevertheless, this strand of scholarly engagement with digital capitalism rather remains at the margins and hardly makes any mark, especially beyond academic discourse. So, why does the Immaterial continue to be overemphasised? Why do those diagnoses receive the most attention that deal with the abstract, and often only a snapshot thereof, such as the platform economy or social media?

Apart from the many possible explanations that likely have more to do with publishers' marketing strategies and media resonance, there is at least one thing that is striking about the analyses of digital capitalism presented on the previous pages—except for that by Mariana Mazzucato (2018): both authors, Schiller as well as Betancourt, operate with Marxist terminology, albeit rather imprecisely. At times, only fragments from his *Critique of Political Economy* are adopted as long as they fit the authors' own argument; at other times, individual terms are used but not actively applied as analytical tools.

What is lost in this is precisely what makes Karl Marx's political economy so unique: a comprehensive analytical and dialectical perspective. Only Mariana Mazzucato, through her analysis of value, points in this direction. And while Dan Schiller does indeed describe the material side of digital capitalism and thereby emphasises the 'other' side of the Immaterial, he does not actively incorporate the contradiction between the material and the Immaterial into a dialectical analysis.

Michael Betancourt, for his part, fully sides with the Immaterial and defines the material as part of old industrial capitalism. Such a one-sided interpretation of digital capitalism can frequently be found. Often enough, this may be due simply to the fascination with novelty and innovation and the urge to understand it. Still, other analyses not only reject such a combined consideration of the Immaterial and material *within* digital capitalism, but, against the digital background, declare the whole idea of dialectics to be antiquated.

To Scott Lash (2002), for example, the proclaimed end of the industrial society simultaneously entails the obsolescence of dialectics as a whole (from Hegel via Marx to the French poststructuralists). He illustrates this with a view to the “dualism” of use and exchange value. According to Lash, this “dualism” is a characteristic feature of industrial society and therefore automatically becomes anachronistic in the information society (which was the term still used back in 2002). Old, traditional commodity-producing capitalism was still driven by the contradistinction between use value and exchange value, which is to say, between the transcendent, in the sense of the sphere of use value, and the empirical, instrumental rationality of the exchange value (see *ibid.*: 9). Apart from the baseless boldness of releasing use value, of all things, into transcendence and thus situating it outside the realm of our sensuous perception (raising the question of how the actual ‘use’ could ever be performed), Lash’s argument appears to fall short for two other reasons: *firstly*, particularly at the height of industrialisation, capitalism produced masses of immaterial goods alongside material commodities: services, products of intellectual labour, information and entire systems of cultural practices of scientification. Any one-sided interpretation that associates ‘old’ with ‘material’ and ‘new’ with ‘immaterial’ neglects the fact that, empirically speaking, both aspects unquestionably existed and exist in both phases of capitalism. *Secondly*, Lash fails to present a reason why the dualism of use value and exchange value dissolves in the information society; once again, the driving force simply seems to be the pure dominance of the Immaterial: “But the logic of informationalization is altogether different. Unlike the logic of commodification, it is not dualist. It is an immanentist logic. It explodes and partly marginalises the exchange value/use value couple.” (Lash 2002: 9)

While the logic of commodification—i.e. the process of becoming (or turning something into) a commodity—still exhibited the dualism of use value and exchange value, both become irrelevant as a result of informatisation, simply because of a logic immanent to information and the sheer mass of information, Lash contends. This argument is hardly convincing. It seems as if the Digital is particularly good at one thing: commodification. Ever since the birth of capitalism, the commodity form has burgeoned; it is proliferating and incorporating ever more areas and spheres of human and social life, making the latter predictable in the truest sense of the word. Although this is not an invention of digital

capitalism, commodification reaches an unprecedented scale as a result of digitalisation. In her book *Surveillance Capitalism*, Shoshana Zuboff (2019) more recently expounded quite trenchantly on what we all experience in our everyday lives: the way in which—in the current state of digitalisation—even individual social micro-acts or human utterances can be turned into commodities. Indeed, this would rather suggest that the significance of the contradistinction between use value and exchange value was increasing. Lash does not explain his contrary claim and leaves the question unanswered as to how and why digitalisation, of all things, should decouple use value and exchange value. Instead, he describes the manifestations of this process of disintegration—as everything is becoming ‘disembedded’: actors, humans, non-humans, networks, cultural and material objects and above all—and here the argument becomes circular—information. Lash thus rather imprecisely applies Marxist theory while nonetheless claiming it to be the basis of his argument. Although it is important to note that while I use the word ‘imprecisely’, that is not to say that Marx’s writings ought to always be adhered to adamantly as if they were Holy Scripture. On the contrary, if the world changes and existing categories are no longer appropriate, he can and should be dethroned. In fact, Marx would be the first to do just that: his famous self-description, ‘All I know is that I am not a Marxist’, is no coquetry.⁴

Lash is imprecise, even with regard to his central topic, as he uses dualism and dialectics synonymously. Yet these two terms must be distinguished very carefully. Dualism comprises two matters or properties which are clearly and distinctly distinguishable as being different in nature such as fish and meat, although this distinction is often interpreted unobtrusively as a contradistinction (see Ritsert 1997: 76). In dialectics, by contrast, it is necessary to distinguish dialec-

4 In the original: “Tout ce que je sais, c'est que je ne suis pas Marxiste.” (Engels 2001: 7; emphasis in the original) This remark is taken from a letter by Friedrich Engels to Conrad Schmidt from 1890. In it, he describes how Marx critically distanced himself from the French ‘Marxists’ of his day; with a view to the debate in Germany, Engels himself criticises: “In general the word ‘materialist’ is used by many of the younger writers in Germany as a mere cliché with which to label anything and everything without bothering to study it any further; in other words, having once attached the label, they imagine they have sorted things out.” (Ibid.: 8) However, according to Engels, it is simply a “guide to study”, not a “tool for constructing objects” (ibid.). Engels considers the task at hand to be investigating in detail “the existential conditions of the various social formations [...] before an attempt is made to deduce therefrom the political, legal, aesthetic, philosophical, religious, etc., standpoints that correspond to them. Little has been done along these lines hitherto because very few people have seriously set their minds to it [...] Instead, the only use to which the cliché (anything can be turned into a cliché) of historical materialism has been put by all too many [...] is hastily to run up a jerry-built system out of their own relatively inadequate historical knowledge—for economic history is as yet in its infancy—thus becoming great prodigies in their own eyes.” (Ibid.) If we were to replace the term ‘materialist’ with ‘digital’ and ‘historical materialism’ with ‘digital capitalism’, the quote would indeed appear highly topical.

tical oneness in contradiction from logical identity in difference: “Common sense isolates an immobilizes qualities, properties and aspects of things. [...] Dialectical logic transcends static assertions but it does not destroy them. It does not reject the principle of identity, it gives it a content.” (Lefebvre 2009: 26) The analytical distinction between dialectics and dualism is not so simple, however, for whoever engages with dialectics cannot help but use dualistic terms as well, yet dialectical thought overcomes the simplicity of dualism: “All dialectical relations are intrinsic relations, but the reverse does not hold true. Intrinsic relations are characterized by their relata being separate but interdependent, in an opposing and complementary way, and in that they form a unity or totality.” (Israel 1979: 57)

We could dismiss this as philosophical hair-splitting and academic banter. And indeed, it is undoubtedly of zero relevance for our next Amazon purchase. Yet for the question of whether digital capitalism differs at its core from its industrial predecessor, this differentiation between dualism and dialectics is quite crucial.

The dualist considers exchange value and use value to be two distinct manifestations of a commodity. As a result, one of the two may change without affecting the other in any way. The dialectician, then, sees use value and exchange value as interlocked in an infinite struggle. They represent two entirely irreconcilable concepts—quality versus quantity—and yet they cannot exist without one another. Any product can have only a use value. A commodity, by contrast, always has both. A product is initially produced only for use, regardless of whether this is the early hominid hand axe or an open source algorithm for Machine Learning. Yet the commodity has been produced for sale and therefore invariably contains both: use value and exchange value. If one value side changes, then this must, at least from a dialectical perspective, necessarily entail an effect on the other side of value, or at least on the relation between the two or even on the entire commodity form as such. A dualistic perspective is in a somewhat more convenient position here, as it can claim the dissolution of one side or the other without the entire construct of the commodity, with its two manifestations of value, collapsing.

Of course, both perspectives are admissible, and my aim here is not to declare one of them false and the other true. Everybody is free to analyse our digitalised world with whatever intellectual toolkit they wish. After all, academic and social discourses thrive on informed friction and perhaps also on the contestation of the different concepts (incidentally, these days, it sometimes appears as if we have forgotten the fact that dispute—of course, always assuming a civilised form—can be something highly productive). My intention, however, is to demonstrate why a dialectical perspective can contribute far more to an understanding of current and allegedly digital capitalism than a dualistic perspective.

Few will be surprised to learn that Karl Marx expresses his rejection of the misunderstanding of dualism as dialectics. In his text *The Poverty of Philosophy* (1976a), for example, he deals in great detail with the dialectics of Proudhon and

exposes it as a moralist dualism of good and evil. Yet above all—and Mariana Mazzucato has concisely and precisely transferred this subject matter into the present (see Chapter 3.1)—Marx explicitly rejects a dualist notion of use value and exchange value, instead preferring a dialectical understanding: “So far two aspects of the commodity—use value and exchange value—have been examined, but each time one-sidedly. The commodity, however, is the direct unity of use value and exchange value, and at the same time it is a commodity only in relation to other commodities.” (Marx 1987: 282)⁵ We could also say: one refers to substance, the other is (merely) the relation. To Marx, use value and exchange value not only oppose one another in a contradictory relation (in the sense of ‘distinct’), but they determine one another and are inextricably coupled within the commodity. “A commodity can only therefore become a use value if it is realised as an exchange value, while it can only be realised as an exchange value if it is alienated and functions as a use value.” (Marx 1987: 284) In other words: “While one values the commodity as a means of survival, the other sees such necessities as a means of valorization.” (Haug 1986: 15)

Correspondingly, if the aim is to analyse digital *capitalism*, one has to argue either with or against Karl Marx (and, by all means, beyond him), but one cannot elude him. And it is certainly worthwhile being open to his ideas. Particularly the distinction between product and commodity, use value and exchange value, shows how inspiring it can be to make clear-cut analytical distinctions between something that in real life we only encounter in intertwined forms. Because we only buy what we need (or think we need). And because only that which someone, somewhere, at some point in time, needs (or think they need) can be sold. It is this intricacy that sets dialectics apart from the dualism: understanding that in the real capitalist economy we turn a product with substantial and specific use qualities into a commodity, thereby attributing a second and entirely contradictory side to one and the same ‘thing’ which is determined exclusively in quantifiable and rational terms.

Exchange value and use value differ in their logic from fish and meat. The relation between the two differs in a fundamental and contradictory way, while

⁵ *Translators note:* For an overview of which texts by Marx's and Engels's are included in which of the many volumes, go to: <https://www.marxists.org/archive Marx/works/cw/>. For volumes I, II and III of *Capital*, which have been taken from the MECW here (Vols. 35, 36, 37), we should also mention the translations by Ben Fowkes and David Fernbach (Penguin), as they are also commonly used as English reference, occasionally varying in the specific wording. For the sake of consistency and online retrievability, however, all Marx and Engels quotes in this book are taken from the MECW, published between 1975 and 2004 by International Publishers (New York) (in collaboration with Progress Publishers (Moscow) and Lawrence and Wishart (London)) and re-edited as e-books by Lawrence and Wishart in 2010, with in-text references referring to the original publication date of the respective volume.

they are closely interwoven nonetheless. Neither the use value nor the exchange value of a commodity come separately—if they are separated from one another, the commodity form ceases to exist. A car is produced as a commodity, i.e. for the market; in this market, however, the exchange value can only be achieved (or, in simple terms: a sale can only be made) if someone actually needs and can make use of the car's use value (pertaining to the vehicle's capacity to drive and provide transport, but today this also includes the online entertainment system or the car's value as a status symbol). Yet, as we all know, the need is not enough: the person willing to buy the commodity must also be able to afford the requested sales price (if need be, via leasing contracts or instalment payments).

Let us return once more to the example of the hand axe and the open source algorithm. Both are products that were made by humans because someone (either oneself or someone else) has a specific use for the produced 'thing'—at least this is assumed (and the hominid may be just as mistaken here as the program developer who shares her code on GitHub or Tensorflow). And yet, there are material differences: the hominid will have had little time and few resources left over to make a very specific, new variant of hand axe without any prospect of an exchange; the demand for that particular tool should have existed at least in their own or neighbouring tribes. And given that there would have been only very few other human settlements nearby, the extent of the effort ought to be carefully calculated. As should the production itself: one chip too many or at the wrong angle or with slightly excessive force, and not only would the whole effort have been in vain, but the potentially rare, hard raw material would become useless.

For the coder, things are somewhat easier: she can connect with potentially interested users across the world. So, if there is no-one in her village or hip urban neighbourhood who needs the most recent variant of Nearest-Neighbour calculations, then there will still always be somebody somewhere in the world who recognises the code's use value and wants to use it. Likewise, potential mistakes are not a problem. Should the code still be 'buggy', it can be fixed. A mistake with the statistical models? Presumed the wrong data type somewhere? A too narrow or too broad parameter setting? Not a problem: all you need is debugging and an update.

The hominid may in fact barter the produced hand axe, say, for a wild boar or something else. The probability of such an exchange occurring depends on whether both sides see a comparable use value satisfied by the object of their respective counterpart. The open source coder actually does not exchange; she makes her work available at no charge. But that is something particular in her world, which is why it has its own name. It is not simply software development (where it is insinuated that someone wants to earn money). She lives under capitalism and in an age in which exchange cannot even take place without exchange value, i.e. quantification. And in which most of what is produced sees the light of day precisely because of this exchange value. In this world, everything is trans-

lated into money, so to speak. Exchange is no barter, but a purchase or sale. Our open source coder has (at least in this instance) intentionally removed herself from this cycle. She would have to be able to afford this, of course, as no-one is going to pay her rent just because she provides such a beautiful, elegant and (hopefully largely) bug-free code at no charge.

It would be difficult to explain all this to the hominid. Perhaps he or she is already familiar with market-like meetings with other groups of hominids at which various use values are exchanged. And the negotiations will most likely focus not only on the need and use, but also on the labour that was expended in the hand axe's production. And the idea to use shells or something similar as a medium of exchange might have even already been around, too.

The crucial difference, interpreted from a dualistic perspective, would be that the hand axe is material, whereas the open source code is immaterial. As a result, the potential beneficiaries of the use value, the error resilience in production and the respective resource consumption would be different in each case. The hand axe can only ever be used by one person at a time and shows wear and tear; the open source code can be used by an infinite number of users again and again, and there is no material wear and tear (although there might be rapid obsolescence due to technological advancement). Broadly speaking, this is, by and large, the lens through which most diagnoses of digital capitalism have to be read: the argument is that because one is material and the other immaterial, because production dominates one form and information the other, because while in the past the decisive factors were hands, muscle power and material, today they are clicks, brains and bandwidth, and because one shows wear and tear and cannot be copied while the other can be infinitely reproduced and remains as immaculate as on day one, digital capitalism is a new kind of capitalism. This is ultimately what we learn from the analyses presented by Michael Betancourt and Scott Lash.

It was in fact intentional that I did not compare a 1970s Detroit plant worker at General Motors to a software developer at SAP in Walldorf or a 21st-century Silicon Valley start-up. The example of hand axe versus open source code is a contradistinction that can actually work in the dualistic sense. Yet neither of the two examples is genuinely capitalist. The hominid was spared the onset of capitalism and its predecessors. The open source coder, of course, lives in the midst of capitalism, but this small segment of her activity in life creates an intentionally non-capitalist niche (albeit a highly fragile one that is long being beguiled—if not down-right engulfed—by the exchange logic). Seeing as both the hominid and the open source coder create products—but not commodities—and thus use values—with no intention of exchange, it suffices to consider those differences resulting from the material conditions (in the narrowest sense of the word) of production in each case, the distinct constitution of the products and the correspondingly differing forms of use.

Yet if we were to consider the car industry worker and the salaried software developer through the same analytical lens, a—to continue in the vein of Scott Lash, dualistic—erroneous outcome would be the result. For if we merely compare the materiality of the produced car and its material production process to the immateriality of software and its programming (in the sense of non-material), we certainly gain a number of intriguing insights at the micro-level of activity. But to base the otherness of two distinct forms of capitalism (i.e. social modes of economic activity and production) on this alone is inadmissible for logical reasons. Indeed, the analyses presented thus far (Chapters 2.2 to 2.4) are not limited to this comparison, but proceed from it: use value is characterised by the Digital; it can be endlessly reproduced, and, as a result, the corresponding exchange value becomes negligibly small.

If digital capitalism were to entirely and fundamentally differ from its predecessor, the task would be to investigate—and Scott Lash did attempt just that, albeit with a rather unconvincing outcome—whether this dialectical contradiction between use value and exchange value is undergoing any kind of change or at least some sort of shift. After all, this dialectical relation is characteristic of capitalist economic forms and represents, not only to Karl Marx but also to Karl Polanyi, a key moment in the emergence of modern industrial capitalism (Chapter 4).

Hence, it is worth taking a closer look at this relation and possible changes thereof in digital capitalism. Let us first try to better understand what exactly Marx is describing when he refers to the dialectical contrastive pair of use value and exchange value. While the exchange value, in the sense of a quantitative relation, expresses a proportion, a quantitative ratio, on the basis of which the most diverse use values are exchanged, the use value pertains to the qualitative aspects, the actual usefulness of a commodity:

“The utility of a thing makes it a use value. But this utility is not a thing of air. Being limited by the physical properties of the commodity, it has no existence apart from that commodity. A commodity, such as iron, corn, or a diamond, is therefore, so far as it is a material thing, a use value, something useful. This property of a commodity is independent of the amount of labour required to appropriate its useful qualities. When treating of use value, we always assume to be dealing with definite quantities, such as dozens of watches, yards of linen, or tons of iron. The use values of commodities furnish the material for a special study, that of the commercial knowledge of commodities. *Use values become a reality only by use or consumption*: they also constitute the substance of all wealth, whatever may be the social form of that wealth. In the form of society we are about to consider, they are, in addition, the material depositories of exchange-value.” (Marx 1996: 46; emphasis added)

The slightly old-fashioned language aside, Marx is saying something equally fundamental and central in this passage: the use value of a commodity denotes nothing more and nothing less than the fact that it can—potentially—be needed by someone for something; that this need is utterly and completely of a qualitative nature and can thus not be quantified as such; that this need can arise situationally and individually, meaning that it indicates no ratios or figures that would allow to ascertain required quantities for exchange.

That is to say, if the use value can be measured by usefulness, which, moreover, can only ever be realised exclusively through human appropriation and use, there is primarily no reason why this definition cannot be transferred to non-physical-material goods. Correspondingly, the use value of an e-book can only come to fruition through the act of reading, the usefulness of an image editing software only in its specific application, namely the editing of a digital image, and a computer game only when it is played (and perhaps not even really so until you reach level 3). One may, however, feel inclined nonetheless to call into question Marx's remarks with a view to digital capitalism, seeing as the 'ton of iron' and the reference to the commercial knowledge of commodities sound so temptingly obsolete and like industrial society, they almost 'smell' of anachronism.

Yet use value is potentially inherent to any commodity. Every commodity may have a certain use for a certain purpose at a certain point in time, regardless of whether what Marx calls the physical body of the commodity is material or immaterial. Should the use value that is potentially contained in the commodity be realised, this requires human activity. The use value must be processed, depleted, used or consumed—i.e. appropriated in some way or another. In this sense, use value is something that may potentially be inherent in the respective form of a thing, but can only be realised during the process of appropriation. This statement also applies to those products that could be regarded as paradigmatic of digital capitalism. The (seeming) non-materiality of an operating system or a software, an app or a bot is not as immaterial as the authors discussed here would have it. Code is not nothing; it enables certain things and prevents other things. Software, for example, is always specifically optimised for a certain type of processor, compatible with a certain operating system, etc. The Immortal, too, harbours a certain sphere of purpose, a potential usefulness—a use value. The use value of text editing becomes accessible during the process of writing. And no matter what you do or how hard you may try, you will neither elicit a 3D animation from a text editing program nor from a script language like HTML or any other programming language that is not capable of 3D functions.

So, ultimately, when applied to seemingly immaterial products, nothing has changed about Marx's fundamental message concerning the use value. I therefore refer to them not as immaterial, but as abstract-physical. What applies to both types of products is that a potential use value is inscribed in both the physical-ma-

terial and the abstract-physical bodies of the commodity, such as driving as the potential use value of a car or the writing of a text as the potential use value of a text editing program. What both physical bodies of the commodities share, moreover, is that the potential use value produced in each case cannot be separated at will from the material-physical or abstract-physical conditions of the body of the commodity. Hence, both—the car and the text editing program—can in fact be used in multiple ways, but only within certain given limits, i.e. in some way or another that is posited in a material sense: “One and the same use value can be used in various ways. But the extent of its possible applications is limited by its existence as an object with distinct properties.” (Marx 1987: 269)

In sum, there is no qualitative difference in the use value of abstract-physical and material-physical products. The topicality of use value can thus be salvaged for digital capitalism. This does not tell us, however, whether the dialectical relation between use value and exchange value remains equally untouched. After all, compared to industrial capitalism, there is a fundamental difference in the production of (the physical bodies of) the commodities bearing the respective use values, as is addressed by Jeremy Rifkin, Michael Betancourt and Paul Mason.

So, what holds equally true for both cars and software as physical bodies of commodities is that their potential use value is realised exclusively in the context of their use or appropriation.⁶ That is why it may be true that each car has to be produced anew, while software can simply be copied to another device via download and thereby be appropriated through use by another person. For, while potential use values that are tied to material-physical bodies of commodities cannot be reproduced at will but always require the production of a new physical commodity, the potential use values associated with abstract-physical commodities can be reproduced as desired, as only the data medium of the actual ‘immaterial’ body of the commodity needs to be ‘produced’ or copied or simply made accessible via the cloud. In this sense, the dialectical relation between use value and exchange value must by all means be considered more carefully.

Yet if there are no substantial changes to the use value in the digital age, as we have seen, then there would have to be some sort of change to the exchange value side, otherwise, from a dialectical perspective, there would be no fundamental shift to be observed in the first place. All of the authors cited thus far agree that the exchange value is decreasing, even though they speak, somewhat imprecisely,

6 For the sake of completeness, it should be added here that the use value/exchange value dialectics also continue to apply in the case of the seemingly immaterial good of a person-oriented service: the difference compared to material-physical commodities is simply that the transaction between service client and service provider, the production process of the commodity and its appropriation by the service client are not separated temporally as a sequence of events, but that the production of use value, the appropriation of use value and the realisation of exchange value all coincide simultaneously in accordance with the *uno actu* principle.

about price or costs or zero-marginal costs. It decreases because less living human labour had to be invested to produce another product in the sense of a new (albeit digitally materialised) use value. This is enabled by technological progress in the digital realm (more bandwidth, more powerful processors, more sophisticated frameworks and SDKs, etc.) and numerous organisational optimisations (from standardisation via agile software development and *continuous integration, dockers and sandboxing* to flexible server rent that is dynamically adjusted to the actual amount of traffic, and much more).⁷ As a result of the combination of both—technological progress and organisational optimisation—the variable costs per 'produced' unit decrease. The required labour is less. The value decreases (which says nothing about the price that can ultimately be achieved on the market). This diagnosis is in fact shared by a diverse range of economists—and whoever bases themselves on Marx might add that all this would also have implications for the surplus value, profit rates and similar. This dispute, then, is of no interest to us at this point. What is important is something far simpler, and an indispensable element of the next step in the argument: reducing production costs per unit through technical and organisational measures is anything but typical for digital capitalism. Indeed, the entire history of capitalism could be written (and in fact often is) as a long sequence of technical and organisational improvements in the various manufacturing industries, always in an attempt to minimise variable capital—i.e. human labour—and achieve precisely one effect: cost reduction.

Yes, the phenomena are changing. Something like a 5-axis turning milling centre and server farms cannot be easily compared to one another. Nor can holistic production systems and agile development processes (although in both cases the old and the new display more similarity than one might assume at first glance). And yet, nothing about the economic core, at the analytical level and in the dialectical relation between use value and exchange value, changes under digital capitalism—at least initially. Use value and exchange value arise from the same mechanisms; they are of a similar substance analytically, they remain mutually contradictory and yet continue to be bound to one another. In other words, business as usual? Not quite. There is a change in the dialectical relationship—at least I would claim as much: the dialectical relation is not dissolved, but *the paradox arises that the increasing exchange value compatibility of the physical bodies of the commodities renders the potential use values more visible—and more significant.*

The example of an app illustrates this: the initial production process that needs to be performed just once (i.e. in the act of programming) engenders an abstract-physical commodity (the code) which proves particularly compatible with

⁷ As it were, this is also made possible by the general transformation of the social forces of production, which includes, say, the corresponding educational institutions and professional profiles, but we shall leave this aspect aside here.

exchange value (through compilations and reproducibility): if one wishes to supply more commodities to the market, this requires no renewed production process in the sense of programming; the app must simply be made available via, say, Apple's App Store. This seemingly complete separation of the production of use value from commodity production initially appears like the capitalist dream come true: invest just once in means of production and living labour for the production process of app programming, reproduce the use value as often as needed at very low investment costs for cloud server structures and realise an exchange value on the market each time that is far above the cost of making the app available.

These conclusions, which derive from the reproducibility of the potential use value, may indeed be interpreted as a new direction of movement in the dialectical relationship between use value and exchange value. Only when this relationship is reduced to the alleged dualism of use value and exchange value, as Scott Lash does (see above), do you run the risk of mistakenly concluding that the relationship might be irrelevant or dissolving altogether. In reality, the ostensible assertion of the dominance of exchange value leads to the opposite: it renders visible, in a new quality, the significance of living labour and the use value aspect of its products and processes of appropriation.

On the one hand, what remains unchanged is that the potential use value is equally and indistinguishably inherent both in the original and the copy, and also remains relevant for the realisation of value: only the app that meets an existing need or one that has been created (through human labour) will be downloaded and bought. The use value itself continues to be realised through usage, which also represents some form of human labour or playful activity. On the other hand, it becomes clear that if no additional human labour is expended or this occurs only in a very mediated form, in order to 'produce' another product, then no new exchange value is created either. That is to say, this additionally created use value would not really have to cost much or even anything at all. The fact that access to this use value costs a fee regardless appears normal to us and is explained or indeed justified—pointed out by Mariana Mazzucato, as shown above—in the dominant economic theories with reference to demand and supply or the genius of an individual entrepreneur. Given the (virtually) zero marginal costs, Paul Mason hopes for the end of capitalism. In order to realise exchange value regardless, new and if possible exclusively controlled ways of exchange are invented, which brings us to all the other diagnoses in which the platform economy is identified as the truly novel feature of digital capitalism. There is—and current diagnoses of the times indeed expose as much—discursive and real obfuscation of what is becoming more visible: only if human labour is expended does the product, as a commodity, acquire an economically measurable value.

The more interchangeable the form of a commodity becomes, and the more the commodity approximates the exchange value in terms of its quality (seeing

as it is abstract-physical in this case), or only appears to do so (given that the exchange value is an economic abstraction, after all)—the more it points to that which (seemingly) lies behind it. This direction of movement illustrates with unrivalled clarity that exchange value and use value are also locked in a dialectical relation in digital capitalism: there is no chance that one might assert itself over the other; one can gain in dominance only if the other (and that which lies behind it) becomes more visible as well. Use values—and even workers' interests—can be realised “only through the needle's eye of valorization” (Negt/Kluge 1993: 57). And this circumstance has so far not changed substantially under digital capitalism—yet the eye of the needle is becoming more visible, and therefore also that which is supposed to pass through it. The character of the eye of the needle itself will continue to be of interest to us in the following, as will the question of whether the relation between use value and exchange value of the most special of all commodities—labour power—has changed under digital capitalism.

3.3 Continuing the search for the new

The analyses put forward by Mariana Mazzucato help us understand capitalism in the digital age, whereas those proclaiming a digital capitalism do not. Mazzucato considers what is changing economically, and she regards the Digital as phenomenon, not cause. Michael Betancourt also claims to do the same, and yet, his analyses are not nearly as economically motivated and sound as those of Mazzucato. This became especially obvious in our above discussion of the concept of value. Likewise, the engagement with Scott Lash's thesis on the change in the relation between use value and exchange value has taken us a step further. Yet several questions remain that need clarification.

The productive element of unproductive labour: why do capitalism and economic theory succeed in maintaining the myth of the (un-)productive, which the latter itself exposed? Ideologies and narratives can undoubtedly be extremely powerful, and linguistic reframing persists even in the face of all obvious inadequacy (one need only consider the example of employee (in German: *Arbeitnehmer*, literally: 'labour taker') and employer (in German: *Arbeitgeber*; lit.: 'labour giver'): who really gives and who receives in this relationship?). All of this may be true. But could and should one not ask: *for whom* is this relationship productive, or unproductive, beyond this narrative? Karl Marx emphasises that non-productive labour can by all means add to the productive power of capital, and that the “production of the means of communication, the physical conditions of circulation, [...] do not constitute a special case”. (Marx 1986: 457)

No advertising revenues without the commitment to advertising spending: almost all current analyses of the digital economy more or less elaborately address the

particularly high levels of advertising revenue earned by Google and friends, criticising the unpaid labour by users that is harnessed to that purpose (in Zuboff: 'behavioural surplus'). This is correct and largely undisputed. What is often overlooked in this context, however, is that online user behaviour is an important asset for designing far more targeted and better individually adapted advertising than in the past. Yet all of this is only lucrative (that is, in the sense of active capital, 'productive') if other individual capitals are willing to pay for this advertising. If the advertising budgets are only shifted from offline to online media, then this may simply point to a change in the use of media. And if advertising budgets rise significantly and online advertising is merely added to offline advertising, then this could be explained by strategies of market expansion. In that case, that which is new would be a mere phenomenon of digitality. But could this change not also hint at a shift in significance that is occurring at a deeper economic level? After all, only then would it be legitimate to speak of digital capitalism.

The new superabundance, really? I may be excused for adding this rather colloquial question tag, but what can you say when superabundance (of exchange values or capital) in one form or another is actually presented as something that is new about digital capitalism? Mariana Mazzucato has shown how the redefinition of value as something subjective is also accompanied by the insinuation that scarcity increases the value. Many current analyses of digital capitalism regard its alleged capacity to produce digital products in infinite numbers, and at almost no cost, as a systemically new quality of digital capitalism. In these approaches, superabundance is something new in this particular stage of capitalism. But is it really specific to present-day capitalism? Which consequences (apart from endlessly increasing profits among only a small number of players) would this entail?

Place and source of value realisation: Mariana Mazzucato has brought the question of value *creation* (or value generation) back onto the agenda in a very inspiring way. And she has sharpened our view of (new) processes of value *appropriation* or value extraction. And yet, do these two perspectives suffice to understand current capitalism and the special role of the Digital in it? After all, the blind spot—including in Mazzucato's brilliant *tour de force* through various centuries of economic theory—continues to be the *realisation* of value. Does it exhibit a new or changed significance in current capitalism? Does it at least help to partially explain the success of current digital business models, and more convincingly so than the mere reference to the fact that they exist?

If these four questions can be answered and these answers unearth something new in analytical terms, or at least some new shifts in meaning become visible, then the talk of digital capitalism would perhaps make sense. I claim that value realisation—thus far, the second blind spot in the presented analyses—holds the actual answer. I believe that capitalism has reached a level at which the realisation of value constitutes the true challenge for many businesses. After all, most

businesses have optimised value creation to the utmost, and only few major players profit systematically from value extraction. Mazzucato already touches upon this aspect. With reference to Marx, she briefly describes the significance of value realisation on the market and cites Marx's prediction that corporations will emerge—commercial capitalists—whose business model is geared towards the value realisation of other, value-generating businesses. Mazzucato illustrates this based on the example of Amazon, without further developing the argument: "Under capitalism the commercial capitalists realize the value produced by the production capitalists. To apply Marx' theory to a modern-world example, Amazon is a commercial capitalist because it is a means by which production capitalists sell their goods and realize surplus value." (Mazzucato 2018: 53)

We shall see at a later point that the fact that commercial capitalists use the Internet today is by far not the only new phenomenon—otherwise even Amazon would essentially be no different from a commercial capitalist in pre-digital times. The only thing that would have changed in this case would be that not only the means of commerce but also the markets on which trade takes place are based on digital infrastructures and therefore take on a global dimension. This is certainly new, particularly to this extent, and merits attention for that reason alone—but it can only be the starting point, not the endpoint of the analysis of modern-day capitalism.

One reason for this may be that superabundance—or, in old-fashioned terms, the logic of overproduction—has reached a point, just like Michael Betancourt's scarcity of capital—again, to use an old-fashioned term, over-accumulation—, whereby the realisation of value on the market has become the actual obstacle. Ultimately, only what can be sold is productive, which brings us back to Marx. What Mazzucato exposes as the narrative of economics is thus not only ideology but reflects the state of current capitalism itself. This could explain *why* the digitally enabled forms of advertising and marketing and the major players of digital commercial capital are so important, not only as a business model of commercial capital but particularly for production capital and its increasing strategic reliance on value realisation. We shall continue to pursue this argument—the allegedly increased relevance of value realisation—in Chapter 5. However, before we do, we need to overhaul our theoretical toolkit and, moreover, examine whether the analyses of the emergence of original—i.e. production-based, industrial—capitalism can really help us to understand capitalism in the digital age.

