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The Greater Transformation: Digitalization and the Transformative Power of Distributive Forces in Digital Capitalism

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ABSTRACT

This article discusses digitalization and its connection with the political economy of transformation. Its point of departure is Karl Polanyi's historical analysis as presented in *The Great Transformation*. Polanyi analyzed the development of "self-regulating" markets—with transformative and destructive consequences for individuals, nature, and society—and government efforts to contain these consequences. Polanyi's perspective is compared to Marx's theorem of the development of productive forces. Their respective focal points are different but complementary. For Polanyi, the decisive historical and theoretical break (and the cause of the destructive effects) lies in the act of purchasing human labor, whereas for Marx it lies in the act of producing value and in the relations of production as well as the relations of distribution linked to it. Working from this theoretical basis, current developments in digitalization are analyzed not as a further development within productive forces but as a transforming development of distributive forces. Following the logic of *The Great Transformation*, current developments should thus not be interpreted as a second great transformation but as the augmentation of the first, leading to a "greater" transformation associated with even more destructive potential. This leaves little hope for a smooth transition into any form of post-growth society.

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Digitalization as Transformation

Although the flowering of public discourse on digitalization¹ led to a resurgence of interest in concepts of transformation just recently, in sociology it experienced a renaissance much earlier. Prominently, Rolf Reißig called for a re-examination of the transformation concept ten years ago, arguing it should encompass not just transformation *within* the existing system of political economy but also the transformation of the system *itself* together with "origins, driving forces, and societal consequences," all without "mystification or wishful thinking about the possibility of redemption" (Reißig 2009, 33). This last thought seems especially appropriate in light of the current digitalization discourse,

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which is reviving the kind of redemptive thinking about technology once thought wholly discredited—that the introduction of new technology is always a form of “progress” including, more or less necessarily, social betterment—even as it equates the digital transformation to the industrial revolution in terms of historical significance. This stands in contrast to Reißig’s sober, less aspirational definition of transformation as an “intentional, interfering, formative development process that is itself subject to an organic-evolutionary dynamic” (42).

Reißig sees modern Western societies, and globalized society in general, as being in a “new, second broad era of transformation” (Reißig 2009, 18) in reference to Karl Polanyi’s great transformation. This era began in the 1970s as a “social and ecological restructuring of industrial societies” including corresponding changes in social systems, cultural patterns of interpretation, and lifestyles and wholly new structures of participation also in regard to “manufactured material wealth” (19). The key issue in this national and global path of development is sustainability. Following Polanyi, Reißig argues that a renewed democratic society must assert itself against the self-regulating market, set limits on it, and give it direction. One of Reißig’s central ideas is “future sustainability,” which in the twenty-first century means nothing less than a “fundamental change of course by securing sustainability as the result of a social-ecological and participative restructuring of the political economy” (97). This being Reißig’s positive-normative guiding principle, he places himself in the tradition of Polanyi, who according to Reißig characterized the primacy of democratic society and thus the end of self-regulating market society—but not the end of competitive markets—as a “radical” transformation (95).

Today, ten years later, it is difficult to set much hope in Reißig’s vision of future sustainability. Digitalization has exacerbated dramatically the amount of damage being done to the global ecology (Belkhir and Elmeligli 2018), civil rights have become more dependent on personal wealth even in the so-called democratic societies (see e.g., Gilens and Page [2014] for the USA), and hopes that the financial crisis of 2007/2008 would result in a new quality of political regulation of markets have long since withered (Kotlikoff 2018). The global economy subsequently also follows the tradition of Hopkins and Wallerstein’s “global commodity chains” (1986). The two authors started their analyses with the commodity sold at the end, from which they reconstructed the commodity chains spanning the world for this purpose. Using the example of ships and wheat flour, they showed that the production activities of these goods spanned the entire world as early as 1590 to 1790. In the face of persistent stagnation, new tendencies toward de-globalization seem to be emerging (Komolov 2020), whereas the global economy is above all leading to a crisis of democracy (Harris 2016). This is hardly surprising, since globalization processes, especially in the past three decades, have predominantly been pursued in the spirit of Neo-Liberalism (Yuan and Zhang 2017; Piketty 2020; Yu 2020). Dan Schiller, inventor of the term digital capitalism, was one of the first to show how digital technologies, from the beginning of the commercialization of the Internet, were used primarily for this purpose: to enforce and promote capitalism under neo-liberal auspices globally not only ideologically, but technically in a very concrete way, so to speak. For Schiller (1999), digital capitalism is defined as the historical process of networking the global market system.

This is all the more reason to critically appraise the digital transformation being painted so rosily in social discourses. The next section takes up this task through the lens of Polanyi’s analysis of the “great transformation” to market society, also highlighting

the parallels between Polanyi and Marx relevant to the transformation debate. In doing so, I advance a specific interpretation of Polanyi. This interpretation does not necessarily reflect a scholarly consensus, in part due to the brevity of this article and the complexity of the topic, but more importantly because recently recharged debates about the proper interpretation of Polanyi's oeuvre have shown that there is no major consensus on Polanyi's work except perhaps that it lends itself to different interpretations. Gereth Dale (2016, 4–5) writes, for example, that some authors offer a “soft” interpretation, putting Polanyi in the social-democratic mainstream, while others offer a “hard” interpretation and make him into a “red-blooded socialist.” Michael Brie differentiates three ways of reading Polanyi, varying between “Polanyi light,” “Polanyi faked,” and “Polanyi himself” (Brie 2017, 5–9; 2019). How to interpret Karl Polanyi's oeuvre from a Marxian perspective is an ongoing scientific debate. On the one hand, for Block (2003) Polanyi—although starting within a specific type of Marxist framework—developed his work further into the direction of an always embedded market economy. On the other hand, of the spectrum Lacher (2019) uncovers essential continuities in Polanyi's thoughts and stresses, that Polanyi's intention—although not following a socialism in the footsteps of Marx—extended far beyond a politically regulated capitalism. This thesis is strongly supported by the novel translation of Polanyi's “Socialist Accounting” (Bockman, Fischer, and Woodruff 2016), a writing from the early 1920s which unravels how Polanyi laid out a model of a future socialism, in which the economy is subordinated to society.

Below, I highlight an underappreciated aspect of Polanyi's argument: He wrote *The Great Transformation* not as a plea for the containment of market society—a common reading of those focused on the political implications of his work—but rather to demonstrate why containment is ultimately impossible. The aim here is neither a fusion of the works of Karl Marx and Karl Polanyi nor their irreconcilable confrontation. Like Domenico Losurdo describes Marx and Engels as “distinct personalities” (2018, 5), this is even more true for Marx and Polanyi. They analyze the same process from different perspectives. And, many would say, also with a clear difference in respect to market society, to the determinism of economic developments, or to class struggle. Predominant is Polanyi's interpretation as—and thus contrary to Marx—someone who believes in the possibilities of re-embedding. As is the case with all the classics, Polanyi's interpretations of his work (or rather, of his intentions) differ according to the viewpoint of the interpreters. Dale (2016, 4–5), for example, explains that Polanyi is interpreted by a wide variety of authors either as “soft” in the sense of a “social-democratic mainstream” or “hard” as a “red-blooded socialist,” and Michael Brie distinguishes three readings of Polanyi that oscillate between a “Polanyi light,” a “Polanyi faked,” and a “Polanyi himself” (Brie 2017, 5–9). For Polanyi, however—and this is overlooked by all interpretations that understand his work one-sidedly as a plea for containment—both directions of a “double movement” are equally phenomena of the one great and ultimately destructive transformation. Any containment of the self-regulating market—which even economic liberals regularly called for—Karl Polanyi sees as something that ultimately supports the utopia of the self-regulating market. For, economic liberals could plead that short-sighted trade union officials, Marxist intellectuals, greedy factory owners, and reactionary landowners prevented the utopia from being implemented, while the opposing side could cite the enclosures as evidence of the danger to society posed by the utopian principle of a self-regulating market (Polanyi 2001, 157). Thus, according to Polanyi, both protagonists and critics ultimately promote the same utopia.

Although citing Marx is now unfashionable at least within German social sciences, his work cannot be ignored if we want to understand the theoretical significance of digitalization. Hardly any other theorist discusses the connections between technology and social change, between state and market, and between individuals and action so clearly and so adequately to the complexity of the subjects. Marx is specifically helpful for answering the fundamental question of whether digitalization can or should be characterized as a transformation. The third section thus employs a Marxist perspective in a discussion of the digital transformation, characterizing it not as a development of productive forces but rather as a development of distributive forces. These comprise all technological and organizational measures and activities associated with value realization for (as risk-free as possible, as guaranteed as possible, and as constantly expanding as possible) value realization. Distributive forces, however, remain a part of the development of productive forces, they are neither detached from it nor do they replace it. But the distributive forces—as part of the productive forces—become increasingly significant. This has systematic reasons (which lie in the logic of a developed capitalism) and explains numerous phenomena of digitalization and its success (better and more fundamentally than without these analytical glasses).² The article closes with the argument that the transformative effect of distributive forces cannot be steered by society unless we are willing to disrupt the economic dynamics that cause them in the first place.

With Polanyi and Marx: Looking for the Great Transformation

Polanyi's investigation in *The Great Transformation* opens with the forceful sentence, "Nineteenth century civilization has collapsed" (Polanyi 2001, 3). Perhaps the recent resurgence of interest in his work is attributable to a similar sense that the cultural, economic, and social influences of twentieth century civilization are now finally completely overshadowed by new forces. Even though it seems fitting in today's political environment, we would be gravely oversimplifying Polanyi's analysis and missing the point if we interpreted its main message to be a forewarning of fascism. What is actually at the heart of Polanyi's critique is the "stark utopia" of the self-regulating market, in which he sees the "fount and matrix of the system" and the "innovation which gave rise to a specific civilization" that emerged in the nineteenth century (3). For Polanyi, the self-regulating market is a fundamentally destructive institution. "Such an institution could not exist for any length of time without annihilating the human and natural substance of society; it would have physically destroyed man and transformed his surroundings into a wilderness" (3).

In order to prevent this from happening, society "inevitably took measures to protect itself" (Polanyi 2001, 3) These measures "impaired the self-regulation of the market, disorganized industrial life," and eventually disrupted social structures rooted in the "market system" (4). In contradiction to many interpretations of Polanyi's work, this main argument is not about proving that it is necessary for society to contain a fundamentally destructive economic system. His actual intent is to show that an economy based on a self-regulating market system must of necessity be destructive and will always be destructive with or without society's efforts at containment.

In his own words, Polanyi's assertion "appears extreme if not shocking in its crass materialism" (Polanyi 2001, 4). Further, "[t]he mechanism which the motive of gain set

in motion was comparable in effectiveness only to the most violent outbursts of religious fervor in history” (4). Moving Polanyi’s analysis forward to the post-war world of the twentieth century, we should first note the balance of power between the world’s two great international political and economic regimes which lasted until the end of 1980s. Partly due to the competition of ideologies, as the market economy began to be newly reestablished in the West after World War II, it was reconstituted as a “social”—and thus a politically and socially impaired—market economy. However, beginning at the end of the 1980s at the latest, and continuing through the present day, the social and political checks on the market economy were being dismantled even as globalization began to be institutionalized transnationally. After the Eastern Bloc of socialist countries collapsed, a largely unimpaired and globally active self-regulating market reestablished itself that—to oversimplify Polanyi—is in need of new mechanisms to check its reach. However, the truer picture of Polanyi’s historical analysis of the origins of the self-regulating market economy is that he would have considered the reestablishment of a profit-driven market economy not only after the collapse of the Eastern Bloc but also its reestablishment in an “impaired” form after the end of the World War II to be fatally flawed. In both cases, it was and is bound to bring ruin upon individuals, the environment, and society.

Aside from the fact that today’s global market system is not nearly as “self-regulating” as its champions would like it to be, those readers of Polanyi who interpret his work as a plea for more containment overlook the fact that for him, both directions of what he diagnosed as the “double movement” (one towards market self-regulation, the other towards social self-protection) are phenomena of the one great transformation that had its origin in the emergence of a new kind of “merchant.”

In his preface to Polanyi’s book, Stiglitz refers to Polanyi’s idea of the “double movement” as “powerful argument,” sourced by Polanyi’s “extreme skepticism about disembedding the economy” (Polanyi 2001, xxviii). Thereby he provides a pointed explanation of Polanyi’s concept of the double movement: “market societies are constituted by two opposing movements—the *laissez-faire* movement to expand the score of the market, and the protective countermovement that emerges to resist this disembedding of the economy” (xxviii). That Polanyi sees this as a dialectical contradiction is shown by Stiglitz’s further remarks on the term: “Polanyi suggests that movement toward a *laissez-faire* economy needs the countermovement to create stability” (xxviii). At this point Stiglitz also refers to a crucial difference of Polanyi to market liberalism (which does not interest us at all here), but also to “orthodox Marxism,” namely with respect to “the range of possibilities that are imagined at any particular moment. Both market liberalism and Marxism argue that societies have only two real choices: there can be market capitalism or socialism” (xxix).

The topic of the double movement will be taken up below. The point to remember here is that the path of destruction Polanyi describes would still lie before us even if the course of human events brought something that Polanyi had not observed and did not necessarily expect. The reading of Polanyi that sees containment as, in the long run, no less destructive than no containment at all (even if containment is not the cause of that destruction), makes it possible to understand why Polanyi calls his own analysis “crass” and “shocking” in its implications (Polanyi 2001, 49). The assumption that a market economy will always need to be checked may well lend itself to many different ideas (for different actors) about reforms. But what is most important for Polanyi is

the analysis of the destructive power that lies not only in the heart of the market economy itself but also in the efforts of containment that follow in reaction to it. This is what made his perspective so revolutionary. For him, the “heart of the Industrial Revolution of the eighteenth century” lies in “an almost miraculous improvement in the tools of production, which was accompanied by a catastrophic dislocation of the lives of the common people” (35). This acceleration of the development of productive forces continues unabated and continues also to dislocate the “common people” globally and locally, now also with the aid of digitalization. Of course, dislocation affects different groups differently: the high-potential workers who reap big wages but are at permanent risk of burn-out due to work intensification and the blurring of boundaries between work and private life; the creative and hip but precariously situated solo gig workers; the Indian family who share a micro-task platform account; skilled auto workers under the shadow of relentless competition for the most profitable production sites; or the jobless whose lack of digital skills is a major hurdle for finding work on the local labor market. The phenomena of this dislocation span the globe, from German Böblingen to Indian Bangalore, and working people everywhere are in the sway of constant improvements in the means of production. Many even participate personally in the constant effort of improvement through structures of CIP (Continual Improvement Process, an element of lean management and of the Toyota production model) or OKR (Objective Key Results, a method of agile goal-setting and of monitoring goal attainment) production. All, however, are united through their participation in the economy as consumers, albeit with different financial resources and driven by different motivations. We return to this point below.

At the center of Polanyi’s thoughts is the evolution of the function of the merchant. Production “with the help of specialized, elaborate, expensive tools” could have been introduced into commercial society “only by making it incidental to buying and selling,” and “the merchant is the only person available for the undertaking of this” (Polanyi 2001, 43). The act of selling, for Polanyi, stayed pretty much the same, but the act of buying was transformed into something wholly new: the merchant no longer bought finished products but instead bought labor capacity and raw materials. “The two put together according to the merchant’s instructions, plus some *waiting* which he might have to undertake, amount to the new product” (43; italics added).³ So for Polanyi, the role of the merchant is decisive:

Contrast, for example, the merchant-producer’s selling activities with his buying activities; his sales concern only artifacts; whether he succeeds or not in finding purchasers, the fabric of society need not be affected. But what he buys is raw materials and labor—nature and man. Machine production in a commercial society involves, in effect, no less a transformation than that of the natural and human substance of society into commodities. (Polanyi 2001, 44)

Polanyi does not address the two substance levels of man and nature as additives, but as “habitation”—i.e., as a complex and naturally grown relationship, which is dissolved by the self-regulating market society under the exclamation “habitation vs. improvement” (cf. Polanyi 2001, 35–45). The force that changes society—in Polanyi’s words a transformation as total as the “metamorphosis of the caterpillar” (35–45)—thus lies in the act of purchasing, but more specifically it lies in the commodification of the human and natural substance of society, which before had never been for sale.

Polanyi locates the society-transforming power of the great transformation on the purchasing side. This implies, he writes, a sufficient and constant flow of raw materials and labor available for purchase (Polanyi 2001, 43). The selling side of the equation is not unimportant for Polanyi, although for him it does not carry the same transformative effect. In the end, the merchants can fulfill their role “as long as this activity will not involve him in a loss,” and because complicated machines are expensive, the sale of the products they put out must be assured and continuous (43).

Whereas Polanyi’s merchant simply “waits” out the time between the purchase of materials for production and the sale of a manufactured product, for Karl Marx this is the time during which the actual creation of added value occurs, which for him is the core moment of exploitation. For Marx, what happens in the so-called waiting period—the act of material production—is of overriding importance. This is the point at which the creation of value through the exertion of human labor capacity occurs, which in turn is the basis of the one-sided appropriation of the ensuing wealth in capitalism. It is unimaginable that Polanyi was ignorant of how central this “waiting period” was for Marx, as he cites Marx repeatedly throughout his text and is very critical above all of a “crude” Marxism with an “economistic prejudice” (Polanyi 2001, 168).⁴ Rather, by remaining silent on this point Polanyi chooses to emphasize a facet of the great transformation that was present but not prominent in Marx’s analysis.

Polanyi and Marx are similar in that they locate the society-changing transformation of capitalism in the commodification of things that never should have been commodified: human individuals, the environment, and the metabolism of human activity in interaction with nature.⁵ Marx focuses explicitly on how capitalism utilizes human individuals and nature, which is for him the most essential cause of transformation, noting repeatedly that he intentionally ignores for the time being other aspects. Whether Marx’s focus on value creation is evidence that he believed value realization to be unimportant is a subject of ongoing theoretical debate (cf. Luxemburg 1951 and, recently, Siefkes 2016). Certainly, Marx makes an analytical distinction between value creation in the production process and subsequent value realization on the market. The added value created by the exploitation of labor can only be realized if the wares that embody the added value are actually sold, and this is true equally for Marx’s capitalist and for Polanyi’s merchant. The conditions of both steps—exploitation of value and realization of value, as emphasized by Marx—are “not identical” and “diverge not only in place and time but also logically.” While the production of value is “only limited by the productive power of society,” the realization of value is in the end determined “by the proportional relation of the various branches of production and the consumer power of society” (Marx [1894] 2010, 243). For Marx, the relations of distribution come into play at this point, and these determine how much (or how little) the masses of society are allowed to consume. When Marx speaks here of “distribution,” he means above all the distributive relations (between profits and wages) of realized added value. In contrast, my concept of “distributive forces,” introduced below, focuses on the quantitative increase (and the increased qualitative significance) of the cost of realizing value, which in the course of digitalization has acquired a society-changing and in this sense transformative character.⁶

How close, complementary and also quite different Polanyi and Marx think and argue is also shown by the concepts of fictitious commodities on the one hand and commodity fetishism on the other. For Polanyi, conceptualizing labor, land, and money as

commodities is a fiction because: “None of them is produced for sale. The commodity description of labor, land, and money is entirely fictitious. Nevertheless, it is with the help of this fiction that the actual markets for labor, land, and money are organized” (Polanyi 2001, 76). In a footnote on the same page, Polanyi explicitly distances himself from Marx’s notion of commodity fetishism, albeit, in a somewhat highly abbreviated to twisted definition of Marx’s concept: “Marx’s assertion of the fetish character of the value of commodities refers to the exchange value of genuine commodities and has nothing in common with the fictitious commodities mentioned in the text” (76). In fact, both use similar terms here and approach—again, however, from different perspectives—similar and in the essence of the capitalist economy founded distortions of the, if you will, objective, essential (or in Polanyi’s words: substantial). One could say: Polanyi speaks of fiction, as soon as something is seen as commodity that was not produced as such. Marx, on the other hand, speaks of fetish, because products are produced as commodities—and they therefore no longer appear to the producer as the fruit of his labor. Marx’s core idea is that to producers the commodities they produce seem like a fetish, even though they are only objectifications of their applied labor: “This I call the Fetishism which attaches itself to the products of labour, so soon as they are produced as commodities, and which is therefore inseparable from the production of commodities” (Marx [1887] 2010, 83). How exciting it would be to listen to the two of them in a surely constructive dispute talk about this difference!

From the Great to the Greater Transformation: Digitalization as a Giant Leap in the Development of Distributive Forces

Ever since the initial emergence of the capitalist merchant, the productive “waiting period” discussed by Polanyi has undergone dramatic changes. It is now characterized by ceaseless improvements in manufacturing processes and technologically ever more sophisticated efforts to replace human labor. The activities of the “waiting period” are supported by a multitude of social trends and political measures that effectively reduce the price of human labor. Polanyi never shone an analytical spotlight on the inner processes that occur during this waiting period. For Marx, however, this is the point at which many very different actions for increasing absolute and relative added value are consummated. Herein lies the motor of permanent change in *productive forces*, which he understands to be an interconnected economic and societal arrangement.

Digitalization is without question an increasingly dominant part of current developments in productive forces. What makes it new (also in contrast to the precursor phase of “informatization”) is the promise that purchasing (i.e., the acquisition of raw materials and labor), production (i.e., the “waiting period” when value is generated), and sales⁷ (i.e., the realization of value) all become possible without interruption and without having to take local, personal, or material realities into account. It is the promise of maximum flexibility and exact calculability. This uncoupling from the constraints of material reality had begun already in Polanyi’s commercial society, but with the new possibilities of digitalization it is taking a giant leap forward.

Changes in the importance of sales to the production process come with a significant economic impact and impart to all sales activities a newly transformative potential. With constantly increasing productivity globally, pressure grows to guarantee the realization of

value immediately after production in a crowded and competitive field of suppliers. For analyzing these dynamics and their implications, I use the concept of *distributive forces*, by which I mean all technological and organizational strategies and activities designed to effect (and guarantee) the realization of value.

In the developed capitalism of our days, the central problem is the realization of created values on markets. Strategies of market expansion and consumption are becoming the more relevant field for competition. In addition to the productive forces directed toward the generation of value, those directed toward the realization of value are gaining dominance. This has economic reasons that lie in the logic of our economic system, and is not a consequence of digitization. In order to be able to shed more light on this shift in meaning analytically and empirically, these special productive forces are given their own name here: distributive forces. They include, first, all technological and organizational measures and activities associated with the realization of value, the intention of which is, second, to extend this realization of value as guaranteed as possible, to secure it in the long term and to do so with the lowest possible circulation costs. This is precisely where digitization and digital business models prove to be particularly promising.

One cannot speak of capitalism—be it digital or not—without briefly addressing its immanent susceptibility to crisis. Also Michel Betancourt (2015, 215–225) and Dan Schiller (2014, 43–57) as critical analysts of digital capitalism, both emphasize the significance of crises. However, in doing so, they do not address immanent causes of crises that are inextricably linked to the economic logic of (national as well as global) capitalism and as they are elaborated in particular in the third volume of *Capital* (Marx [1894] 2010). In their nevertheless important and inspiring references between digitalization and the financial market (and thus its most recent and ongoing crisis of 2007/2008), they remain at the level of phenomena.⁸ Both authors do not address central mechanisms of the susceptibility of the capitalist economy to crisis, such as the law of the tendency of the rate of profit to fall (Marx [1894] 2010, 209–265) or the distribution relations (Marx [1894] 2010, 863–870). Since the latter is of particular importance for my consideration of distributive forces, I will concentrate here only on this aspect. In this short chapter (whose original manuscript by Marx, according to Engels, breaks off in the middle), distribution relations are defined as the distribution of labor wages, entrepreneurial wages, and pensions, and thus as an expression of production relations. Distribution relations are above all a disproportion of consumption power and (over-)produced values based on capitalist production relations. Thus, there is always and clearly more produced than can be bought. In today's developed global capitalism, this disproportion has taken on an extent that causes ever greater problems for the producing enterprises to be able to realize their goods and values on the market. It is precisely here that the distributive forces of digital capitalism make a seductive offer to the capitalism producing goods and services: they promise unimagined market expansion in space and time and a significantly reduced risk for a successful realization of value (the fact that they can only keep this promise sporadically is another matter and is again explained by the unbroken crisis mechanisms of capitalism).

David Harvey, in his lucid remarks on capitalist crisis dynamics, also emphasizes the increased importance of the eye of the needle of value realization:

The final potential barrier to perpetual accumulation exists at the point where the new commodity enters the market either as a thing or as a service of some kind to be exchanged for the original money plus a profit. The particularity of the commodity has to be converted into the universality of money, which is much more problematic than going from money (the universal representation of value) to commodities. Somebody must need, want or desire the particular commodity for a sale to be possible. If no one wants it then it is useless and has no value. But those who need, want or desire the commodity must also have that money to buy it. (...) If no one wants it or can afford to buy them there is no sale and no profit is realised and the initial capital is lost. (Harvey 2011b, 106)

Harvey also stresses that “immense amount of effort, including the formation of a vast advertising industry has been put into influencing and manipulating wants, needs and desires of human populations to ensure a potential market” (Harvey 2011b, 106), and how “technologies and politics of new need creation” today become “fulcrum upon which the survival of capitalism depends” (107). It is precisely at this dilemma of developed capitalism that I start and define distributive forces as that part of the productive forces which are directed against this problem (of course and again without the potential to really cure this crisis mechanism of capitalism).

Without wishing to downplay the dramatic changes in purchasing and value generation made possible by digitalization, in the following analysis I concentrate on the *newly transformative power of sales and the significant economic and social changes it is causing*.⁹ Far-reaching changes related to the optimization of value realization were observable in the area of sales long before the advent of current forms of digitalization. These include the expansion of consumer credit, franchise systems, leasing models, and the “system catering” typical of fast-food restaurants. The development of distributive forces encompasses a bundle of market-oriented and political measures implemented both within firms and outside the corporate environment. These include:

1. increasing the efficiency and effectiveness of individual sales processes;
2. shortening the time between value generation and value realization;
3. increasing the efficiency and effectiveness of logistical processes on the sales side;
4. the expansion of points of sale and sales opportunities (in order to reach more buyers earlier and in more places);
5. measures to illicit and maintain consumption (planned obsolescence, marketing, advertising).
6. measures to promote and maintain overall consumption capacity despite falling real earnings (including for example subsidies of energy consumption to lower transportation costs for the purpose of exploiting global wage differentials more effectively);
7. in the public discourse, judging innovations based on their market success rather than on their contribution to social betterment;
8. the differentiation, specialization, and professionalization of professions and fields of knowledge related to value realization and their incorporation of the methods and institutions of science; and
9. the emergence of new forms of value realization (e.g., search-engine result optimization), of new sales-related professions (e.g., within marketing), and of new business models (e.g., data services for tracing the “customer’s experience” across the internet).

Also relevant for distributive forces is the entirety of the institutionalized processes of sales and sales promotion that make sense only in connection with forms of production for which realizing added value very quickly on an open, highly competitive market is a matter of life and death. In addition to competition among producers for lowering production costs, these producers face competition for the pole position in an increasingly fast and crowded sales market.

The concept of distributive forces is tied to what are essentially economic processes. Thus, the effect of digitalization within these forces should not be written off as a mere chimera of the popular discourse or as a purely derivative phenomenon. Current advances in digitalization indeed possess significant new qualities, for they make possible the accumulation and convergence of different technologies that only recently—after decades of incremental innovation—have achieved significant levels of maturity (even if they often fail to live up to the fantastic expectations propagated by their proponents). Just as steam power was not the sole cause of the great transformation in the nineteenth century, digitalization is not the sole cause of the increasing significance of distributive forces. Nonetheless, digitalization multiplies and accelerates the possibilities for realizing value quicker and more reliably, and it opens up new sources for wealth accumulation and marketing. In this way, digitalization functions much like the transmission belts of the first industrial revolution. They spread the influence of distributive forces so widely that they reach a society-transforming quality and thus make it necessary to differentiate between productive and distributive forces to understand what is going on.

The ceaseless upheaval of productive forces since the great transformation forces societies to constantly adapt themselves (and deal with the collateral damage of the commercial revolution). However, the newly attained significance of distributive forces turns the original great transformation into a kind of greater transformation. Not because the next transformation is bigger than the first, but because it latches on to the still on-going first great transformation and augments it.

Recent developments within distributive forces began in the 1980s, with accelerating globalization and “informatization,” and slowly began then to take on its early society-changing forms, appearing at first to be limited to the economic sphere. Especially relevant were and are activities that:

1. make the distribution of physical wares so cheap that low wages abroad translate to low prices for domestic consumers, thus also making the permanent stagnation of domestic real wages possible without endangering the realization of value due to sinking domestic purchasing power; and
2. make the distribution of physical wares additionally so fast that even individually configurable purchases are possible over very great distances, which in turn makes the realization of added value a lot less dependent on previously institutionalized and complex supply chains.

Through the 1990s as these innovations began to function better and better, informatization broke out of high-tech niches and made broad inroads into labor markets, production processes, and logistics. This was the decade in which the Internet was instrumentalized for commercial use, and with exponential growth in the number of users in the last half of the decade it began to unfold its massive and dynamic influence.

This influence continued to spread in the new economy of the early 2000s. Some of the dominant phenomena of this phase of development in distributive forces were:

1. the securing of value-realization through the creation and repeated use of technical path dependencies such as long-term license models for the distribution of wares (both abstract and material);
2. the establishment of the first digital marketplaces like Amazon that link sellers and buyers independently of time and space;
3. the systematic reduction of the costs of value realization once made necessary by the upkeep of offline resources like retail space and personnel as sales go increasingly online; and
4. using data on consumer behavior to target advertising.

Although these developments certainly magnified the significance of the ways in which added value is realized, they had not yet acquired the kind of society-transforming force that we have seen for about ten years now and expect in the future. Toward the end of the first decade of the twenty-first century, digital technologies began to be ever more systematically employed for value realization. At this point, the new transformative effect of distributive forces became more obvious, and they also became more significant for those parts of society not directly tied to the functioning of markets. Among the most important developments were:

1. the shift in the mode of value realization from the acquisition of permanent private property by consumers to the acquisition of temporary rights of use (streaming services, “software as a service,” etc.);¹⁰
2. the establishment of online platforms as indispensable distribution infrastructure, which not only exponentially increases the opportunities for global trade but also simultaneously secures (via proprietary technology and/or venture-capital) the monopolization of the means of realizing added value (app stores and, again, Amazon);
3. the stimulation of new consumer demands and the manipulation of purchasing behavior using social media (through influencers, viral marketing, etc.); and
4. securing sales in advance through incorporating future potential consumers in the phases of product design and finance (crowdfunding, open innovation, etc.).

Since 2015, autonomous technologies (artificial intelligence and machine learning) have further contributed to these trends. Businesses continue to demand that society make itself even more compatible with digitalization, and they push governments to improve the infrastructure of digitalization (broadband, 5G) and eliminate regulations that restrict the transformative development of distributive forces. The particularly relevant trends are:

1. the application of machine-learning to data on individual or collective consumer behavior for prognosticating sales and deciding when and to whom products and services should be offered;
2. the commodification by third parties of data on consumer behavior and algorithm-based advertising and personalization of customer relations (e.g., psychographics);
3. the transformation of how added value is realized through manipulating the act of consumption, for example by styling it as a special event or by “smoothly” integrating

- purchases into routine daily activities (e.g., with Amazon's "dash buttons" or voice-activated networked technology like Alexa);
4. attempts at digital control of the entire process of value creation and realization using block chain technology; and
 5. the use of artificial intelligence for adjusting prices to specific situations and individual consumers.

The function and purpose of these digitalization-based changes in distributive forces, here just briefly outlined, is to systematically lower risk in the process of value realization. In the competition for a central position in the distributive economy, the goal of minimizing risk in value realization is pursued in reckless ignorance (or in willing acceptance) of the dangers it poses to the environment, to society, and to human individuals as employees, consumers, and citizens. This, too, is nothing new, but it is currently taking on a previously unknown speed and force. Connected to this is a significant increase of risk for those market actors whose business models are still dependent on local ties, material production inputs, or personal services and for those who simply lack the capital for entering the fray over distributional markets. These businesses become increasingly dependent on other companies' proprietary business models for distributing their products. The decline of local retailers, already clearly evident in the United States, and the bankruptcy of non-digital market actors serves only to strengthen the hand of capital investors pushing for changes in distributive forces. The negative consequences and risks created by these developments are felt mostly in local or regional economies and labor markets. Human beings are increasingly addressed only as dispensable, volatile labor capacity and as consumers: on top of the exploitation of individual labor capacity comes the exploitation of individual consumption capacity. It is above all through these forms of work and consumption that the transformative effect of distributive forces enters people's life-sphere and thus into society generally. Even small-scale forms of risk-reduction undertaken by social collectivities such as sharing, lending, or gifting consumer goods or repairing something for free are in the crosshairs of the new core actors of distributive forces, who seek to criminalize such acts or make them technically impossible. Finally, the accelerated development of distributive forces is accompanied by an exponentially increasing use of finite natural resources through a further increase in overproduction and overconsumption and through increased use of transport logistics.

Although the great transformation was destructive enough to society, individuals, and nature, its underlying logic of exploitation was still directly dependent on the material world. The merchant in commercial society as described by Polanyi had to acquire not only raw materials and labor but also the means of production, and also had to bring them all together in the form of coordinated, heavy industry. Similarly, Marx's relations of distribution take as their point of departure the tension between ownership and non-ownership of the material means of production. These modern productive forces and relations of distribution, which emerged as a result of the great transformation, were essential preconditions for today's developments in distributive forces. Without these precursors, the expenditure of, in some cases, irrational amounts of capital for digital start-ups would have been unthinkable, for example. It is in this sense that the great transformation will not be superseded. Rather, it sparked a development of productive forces that generated (and continues to generate) the basis for a digitally driven leap

in the significance of distributive forces. This is why the great transformation is becoming a greater transformation.

Limits on the Society' Regulative Influence

The kernel of the great transformation for Polanyi is ultimately the transformation of “the natural and human substance of society into commodities” (Polanyi 2001, 44). However, he is interested not in the process of commodification alone but in the destructiveness of this process for human beings, the environment, and society. Marx and Engels predicted that the development of productive forces will reach a stage “when productive forces and means of intercourse are brought into being which, under the existing relations, only cause mischief, and are no longer productive but destructive forces (machinery and money)” (Marx and Engels [1846] 2010, 52). To Marx’s work is often ascribed the view that the progression of developmental stages in productive forces is essentially automatic and only ever goes “upwards”; but this view is nowhere explicitly inscribed in his writings. This is an inadmissible reduction that overlooks how complex Marx’s philosophy of progress is and how strongly it sees historical development as a contradictory process that takes place through the action of negative as well positive forces (cf. Sayers 2020). Indeed, Marx was convinced that under certain economic premises production always also means destruction (cf. Jäger and Pfeiffer 1996). This is a guiding thought also in Polanyi’s work. Marx and Polanyi agree that the essentially destructive character of a commercialized mode of production consists in turning even that which thereby loses its substance into a commodity: human beings, community, and nature. This is not so much about “commodification” as it is about the fundamental rupture that occurs when things are commodified for which a market logic is not appropriate. Polanyi and Marx would probably agree that if the logic of commodification, which grew to dominance during the great transformation, is magnified into an all-pervading force, it will certainly lead to the catastrophic destruction of the reproductive power of the natural environment and society. Although it was possible to transform people and communities within a few decades so thoroughly that it is now hardly possible to distinguish between society and market, nature requires much more time for securing its own reproduction than is granted by a thoroughly commercialized and digitally accelerated market society. It is now ten years since Brie and Klein (2011) in view of the reproduction crises of capitalist societies called for a second great transformation, but with the goal of a society based on solidarity. Today, we seem further away from this goal than we were then.

This article argued that, from Polanyi’s perspective, the digital transformation is not a second great transformation but instead changes the significance of distributive forces, putting them on an equal footing with productive forces in terms of their transformative power. In this sense, the great transformation has become an even “greater” transformation, and its destructive potential is now so great that a catastrophic end of game—a “tilt”—is a real possibility.¹¹ This destructive power is increased for two reasons. First, the causal origin of the great transformation—treating the substance of human beings, nature, and society as a commodity—enters a new stage with the development of distributive forces, at which point any attempt at containment comes at the cost of introducing new sources of potential destruction. Second, and more importantly, the underlying human and natural substance that commodification feeds on is finite and will eventually be completely used up.

Not only does digitalization connect globally the individual production sites of the “satanic mill” to each another, it also connects them to their laborers “on demand” and to their consumers “as a service.” In this way, it accelerates further the substance-transforming logic of the self-regulating market. Ever more individuals, ever more nature, and ever more society get “ground up” in the mill. The self-regulating market is thus per se incompatible with the vision of a post-growth society: the former is characterized by the over-use of the essential substance of nature and society, the latter by their conservation. Polanyi showed that efforts at containment are themselves ultimately destructive, too. Thus, there are only two alternatives to a “tilt.” One currently rather unrealistic option is a full exit from market society. The second option is a major deceleration, as Polanyi had already pointed out. His plea to governments was clear. The “belief in spontaneous progress” should not make us “blind to the role of government in economic life,” a role which “consists often in altering the rate of change” (Polanyi 2001, 39). Because states are embracing the principles of market liberalism and moving farther and farther away from the principles of political liberalism, it is not surprising that politicians are reacting to the digital transformation with a push for even greater acceleration.¹² Polanyi, in contrast, shows with an example from Tudor England of how the politically powerful of the time pushed through a deceleration of enclosures and expropriation and thus made it possible that the persons affected by them could at least “adjust themselves to changed conditions without fatally damaging their substance, human and economic, physical and moral,” and find “new employment” and “new sources of sustenance” (39).

Whether global economic processes, which have been greatly accelerated by digitalized distributive forces, can be decelerated at all by geographically bound social and political processes is uncertain. Even more uncertain is whether technological, economic, and commercial development can be decelerated to a speed slow enough for humankind and nature to adapt successfully. But what else can one do now other than promote deceleration without completely losing sight of the option of exiting market society altogether?

Notes

1. Digitalization is an often discussed but vaguely defined concept that has long since evolved beyond its original technical meaning—the conversion of analog information to a digital format. In current debates it is most often used to address two separate subjects: first, information technology artefacts and innovations (everything from artificial intelligence, machine learning, and the “internet of things” to new approaches in robotics), and, second, the economic and social changes that are expected to accompany their use. The word “capitalism” reminds us of what many seem to have lost sight of: that economy and capitalism are not synonymous, although capitalism currently seems to be “Capitalism, Alone” (Milanović 2019). The term is currently receiving new attention, e.g., as “digital capitalism” (Schiller 1999; Betancourt 2015) or “surveillance capitalism” (Zuboff 2019)—even often without a thorough Marxist analysis. We will see in the further course of the argument that digital capitalism is more than just a capitalism based on digital (production) means.
2. For a more detailed theoretical analysis of the concept of distributive forces and its empirical application to recent phenomena of digital capitalism, see Pfeiffer (2021).
3. The import of Polanyi’s “waiting” period reveals itself only by contrasting merchants’ new functions with what they did before. By remaining silent about what happens while they are “waiting,” Polanyi refrains from commenting on the core of Marx’s analysis.

4. Polanyi avoids Marxist jargon even when he speaks of the same phenomena and draws the same conclusions. Thus, Polanyi's merchants in commercial society are in fact the same thing as Marx's capitalists in capitalist society in their significance and function. Polanyi also never mentions that while there is no substantial difference between purchasing raw materials and purchasing finished products, there is indeed a major difference between purchasing material goods and purchasing labor capacity.
5. This clearly normative dictum is found not only in Polanyi's work (in fact much of his argumentation is based on it) but also in Marx's insofar as one treats his early work as background to his critique of capitalism rather than, as do some, as "the sins of youth" with no relevance for the later economic analysis (regarding debates over the relevance of the early works; cf. Pfeiffer 2014).
6. The presentations of the highly complex considerations of Karl Polanyi and Karl Marx can only be summarized here in their brevity. In addition, the considerations of David Harvey should be mentioned, who takes up the connection of space, time and value realization more systematically than the two historical authors (although these dimensions also play a role in their work—and this also already with a global perspective). For Harvey the "intersecting command of money, time, and space forms a substantial nexus of social power that we cannot afford to ignore" (2011a, 226). In later reflections, space becomes a "key word" for Harvey, whose understanding is not exhausted in philosophical considerations, but is closely connected to human social practices. For example, property relations create something like "absolute spaces" in which "monopoly control can operate" (126).
7. For the Moment, I deliberately follow the terminology of Polanyi, who speaks of "sales" and not, like Marx, of the realization of values on the market. In my view, however, the latter is the more analytically precise and, for my argumentation, also more appropriate form of expression. However, as I argue close to Polanyi's text, I deliberately stay close to Polanyi's way of expression.
8. This does not mean that the analysis of current crisis phenomena is not also of great importance; the importance of an in-depth analysis on the basis of concrete historical situations is currently demonstrated by the first studies on the COVID 19 crisis (cf. Mavroudeas 2020).
9. In a world in which economy and society can hardly be distinguished anymore because of the ubiquitous influence of consumption (cf. Bauman 2007; Trentmann 2016; Logemann 2019) and in which even the borders between consumption and production are blurry (cf. O'Neil and Frayssé 2015; Lund and Zukerfeld 2020), it becomes increasingly irrelevant whether this transformative power is economic or social. Any transformation worth its name is both.
10. Business models that favor permanent continuous payment over a one-time purchase often focus exclusively on digital artifacts like e-books, software, music and video streaming, and computer games. However, these models are applicable to an ever-broader variety of physical wares via the Internet of Things. Examples include build-operate-transfer models in production facilities but also include practices such as software-based limitations on the number of times devices can be recharged and the blocking of repairs by non-authorized persons.
11. To "tilt" in poker means to get so rattled by a string of bad luck that one begins to get frustrated and use a suboptimal strategy, resulting in a catastrophic downward spiral. In pinball, a "tilt" occurs when sensors trigger an end-of-game in reaction to a player bumping or lifting the machine. The concept is used here metaphorically.
12. Heightened acceleration becomes government policy for example when politicians criticize small businesses for their digital backwardness. In the digitalization discourse, moreover, the argument that digitalization develops exponentially is often repeated. The futurist Ray Kurzweil (2005) paints a picture of how all this could end in his religious-sounding thesis of "singularity" as the point at which digital technology becomes self-aware and human technology supersedes human beings on the evolution timeline.

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