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SUMARIO

Digital Technology, Work, Finance and Crises: Do We Now Live in Lash and Urry's Capitalism of Mobilities or in Ernest Mandel's Late Capitalism?

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Abstract: The single and combined work of Scott Lash and John Urry have become extremely significant in the social sciences in the UK and beyond. In particular, one of their principal ideas that dominant capitalist countries have made a transition to a «disorganized» and «mobile» era founded on digital networks, global flows of people, objects, images and texts, decentralized and flexible work practices, declining industrialized social classes, and a loss of power for the nation-state to regulate flows of finance, has influenced many researchers. Their work has even helped to establish of a new «mobilities» paradigm in the social sciences. Ernest Mandel has also explored the impact of digital technology on capitalist restructuring. Indeed, he claims that from 1945 onwards, a «late capitalist» wave emerged predicated on the rise of factors like automation, the service sector, and new class identities. Unlike Lash and Urry, however, Mandel applies Marxist theory to investigate these changes. The aim of this paper is to draw on Mandel's ideas to examine critically the account put forward by Lash and Urry. Five areas in particular will be discussed: theoretical differences between Lash and Urry and Mandel; the transition between different phases in capitalism; the changing composition of social class; whether the workplace is now dominated by decentralized and flexible networks; and the relationship between finance, the state and digital technology.

Keywords: Crises; Digital Technology; Ernest Mandel; Finance; John Urry; Mobilities; Scott Lash.

Tecnología digital, trabajo, finanzas y crisis: ¿Vivimos en la era del capitalismo de las movilidades de Lash y Urry o en la del capitalismo tardío de Ernest Mandel?

Resumen: Los trabajos individuales y combinados de Scott Lash y John Urry han adquirido una gran relevancia en las ciencias sociales del Reino Unido y de otros países. En particular, una de sus ideas principales y la más influyente se fundamenta en que los países capitalistas dominantes han realizado una transición hacia una era

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«desorganizada» y «móvil» basada en las redes digitales, flujos globales de personas, objetos, imágenes y textos, prácticas laborales descentralizadas y flexibles, el declive de las clases sociales industrializadas y la pérdida de poder del Estado-nación para regular los flujos financieros. Su trabajo, sin duda, ha contribuido a establecer un nuevo paradigma de «movilidades» en las ciencias sociales. También Ernest Mandel ha estudiado el impacto de la tecnología digital en la reestructuración capitalista. En efecto, Mandel afirma que a partir de 1945 surgió una oleada de «capitalismo tardío» basada en el auge de factores como la automatización, el sector servicios y las nuevas identidades de clase. Sin embargo, a diferencia de Lash y Urry, Mandel aplica la teoría marxista para investigar estos cambios. A través de las ideas marxistas de Mandel, el objetivo de este artículo es examinar críticamente el relato presentado por Lash y Urry. Se discuten cinco áreas en particular: las diferencias teóricas entre los autores; la transición entre las diferentes fases del capitalismo; la composición cambiante de la clase social; si el lugar de trabajo está ahora dominado por redes descentralizadas y flexibles; y por último la relación entre las finanzas, el Estado y la tecnología digital.

Palabras clave: Crisis; Tecnología Digital; Ernest Mandel; Finanzas; John Urry; Movilidades; Scott Lash.

Introduction

Decades ago, it was fashionable to claim we had entered a «post-industrial» age based in an increasing service sector, computer technology, information and knowledge, and post-socialist politics associated with new social movements (see Bell, 1999; Gorz, 1987; Inglehart, 1971; Touraine, 1974). These themes were taken up by later critical scholars to make sense of the impact of emerging digital networks and social media upon society. During the 1990s, Manuel Castells argued that a new «informational» era was coming into being that was different to the «post-industrial» thesis. The latter was still wedded to an industrial manufacturing structure which, for Castells, had in fact become obsolete and outdated (Castells 2000: 219). Organizing production systems, «around the principles of maximizing knowledge-based productivity through the development and diffusion of information technologies» (Castells, 2000: 219-220; 2009: 25), which operate through digital networks, were now a key driver for economic success. Digital technology, as Michel Callon observes, also today has the added advantage of empowering business to harness consumers» personalized cognitive systems of reflection when they purchase goods (Callon et al. 2005: 40).

> With information renewed on the screen, with links and cross-references, and with scroll menus that multiply options from which users can and

> must choose, the Internet is a machinery that is *entirely* oriented towards the singularization of products (Callon et al. 2005: 42; emphasis added).

A similar set of ideas have been developed since the 1980s by the UK sociologists, Scott Lash and John Urry. Indeed, such has been their influence in the UK and beyond that a new paradigm in the social sciences, known as the mobilities paradigm, has been shaped in part by their work. According to Urry (2007), mobilities not only refer to being socially mobile across social classes, but also point towards people, objects, images and texts being capable of movement and «on the move'. Physical movement of consumer objects through multiple networks is one illustration, but can also refer to the mobile home, people migrating from one country to another country, prostheses that enable the immobile some mobility, communication and images that move through social media, and so on. According to Mimi Sheller, studies of mobilities are thus «especially able to highlight the relation between local and global «power-geometries», thereby bringing into view the political projects inherent in the power relations informing processes of globalization (and associated claims to globality, fluidity, or opening)» (Sheller, 2011: 3; see also Bastos, Novoa and Salazar, 2021: 155).

The grounding of the mobilities paradigm can be found in Lash and Urry's earlier work. In, *The End of Organized Capitalism* (1987), Lash and Urry had already noted that in their opinion technological developments, such as the arrival of microelectronics, changes in tastes embodied in a rejection of mass-produced goods in favour of individualised goods, and finally and increase in global competition precipitated by the cheap production of goods from developing countries, all help to push forward the transformation towards a new mobile and networked world. Such changes, they tell us, have precipitated a move from «organized» capitalism to «disorganized» capitalism.

While the terms, organized capitalism and disorganized capitalism, are used by Lash and Urry throughout their work (see Urry, 2014: 175), it is with the publication, *Economies of Signs and Space* (1994), that they elaborate upon these terms. They note that many major firms start to engage in a process of «reflexive accumulation'. Operating along horizontal lines in the chain of production between suppliers and subcontractors, which encourage decentralized quality control at different levels of production, new work practices were coming into being based on «teamworking, multifunctionality and collective responsibility» and reflexivity (Lash and Urry 1994: 75). Importantly, for Lash and Urry, concrete objects are increasingly assembled together in complex ways through complex global networks. «(T)he flows of capital, money, commodities, labour, information and images across time and space are only comprehensible if «networks» are taken into account because it is through networks that these subjects and objects are able to gain mobility» (Lash and Urry, 1994: 24).

Marxists have also been critical voices in putting forward alternative explanations as to why we have experienced changes and upheavals in capitalist societies (see Bilić, et al. 2021; Dyer-Witheford, 2015; Foster, 2022; Harvey, 2014; McNally 2011; McChesney 2011; Panitch and Gindin 2012; Sum and Jessop, 2015). There has been one Marxist voice however that has been somewhat lost in these recent debates. Ernest Mandel wrote a large volume of work both explaining Marx's main ideas and applying and developing Marxist theory to analyse and explore the transformations and turmoil in capitalism from the 1960s to 1990s. Key to understanding Mandel's work is his idea that capitalism entered a «late» phase beginning first in the USA in 1940 and then generalised to other dominant countries after 1945. Late capitalism is «characterized by the generalized control of machines by means of *electronic apparatuses* (as well as by the gradual introduction of nuclear energy). This is the long wave of the third technological revolution» (Mandel, 1975: 121). In the first technological revolution, roughly from 1847 to the 1890s, industry was powered by the machine-made steam engine, while in the second technological revolution, from the 1890s to 1939, there was a qualitative transition to the generalized application of electric and combustion engines. Automation, continuous flow production, computer technology and the emergence of new occupations, especially in an expanding service sector, starts to motor the third technological revolution.

Nowadays, there is a debate as to whether we are now in a fourth industrial wave, or so-called Industry 4.0, personified by smart connected machines and systems (for a positive account of Industry 4.0, see Schwab 2016). In turn, this has coalesced into a discussion among some academics and policy-makers as to whether Industry 4.0 is now complemented by Industry 5.0. Here, we arrive at a society, «in which advanced IT technologies, Internet of Things, robots, artificial intelligence and augmented reality are actively used in everyday life, industry, healthcare and other spheres of activity, not primarily for economic advantage but for the benefit and convenience of each citizen» (Breque et al., 2021: 9). That is to say, Industry 5.0 takes the insights from Industry 4.0 and seeks to apply them to enhance and foster the well-being of workers, society more generally beyond economic matters and the planet.

In some respects, it might be thought that the work of authors such Lash and Urry correspond more with debates about the fourth industrial revolution than is the case with Mandel's work. However, there are good reasons to think that in fact Mandel's work carries as much, if not more, relevance to explaining and understanding contemporary digital societies. This paper therefore seeks to «reclaim» the relevance of Mandel's ideas by comparing them to the influential ideas of Lash and Urry. The paper will argue that while there is much that Lash and Urry get right, they also ultimately underestimate the contradictory processes of capitalism, which, in turn, weakens many of their arguments. These claims are made by drawing on Mandel's theory and his empirical work to present an alternative picture of the so-called digital capitalism of mobilities. In particular, the paper with explore critically different theoretical frameworks employed by Lash and Urry and Mandel, how they investigate transitions between different conjunctural phases in capitalism, how they examine social class, how they respectively consider and understand changes to the workplace, and how they analyse the relationship between finance, the state and digital technology. We start, though, by first exploring some theoretical differences between their respective approaches, which will then provide a basis to make comparisons between both in subsequent sections.

Theoretical Issues

In their later work, Lash and Urry contend that capitalism has now morphed into complex, nonlinear and unpredictable systems. To make this claim, they draw on complexity theory to make sense of the contemporary global world. Broadly speaking, complexity theorists see both natural and social systems as emerging through self-organisation. Out of self-organisation, unpredictable dynamics often result, which in turn create further complex patterns of behaviour within a system. According to Castells, complexity can thus «focus on…the emergence of self-organising structures that create complexity out of simplicity and superior order out of chaos, through several orders of interactivity between the basic elements at the origin of the process» (Castells, 2000: 74). Complexity theory is therefore useful because it seeks to rid social science of untenable dualisms. For example, social entities are not only internal to a system, but also interact «externally» with a whole host of other entities. The capacity to act is certainly part of the characteristics of a social entity, although they cannot be reduced to these characteristics because they are themselves reliant on other social entities (DeLanda, 2006: 11; see also Walby, 2009: 74).

Complexity theorists believe that specific systems are always relatively unstable, unpredictable and open to disequilibrium at points in time. Disequilibrium transpires when small and often unpredictable disturbances arise in a system. Once this happens, a system can move to one of turbulence, bifurcation and crisis. Feedback loops mean that a small event causing disequilibrium in one part of a system can pass to other parts in a system ensuring that «the last «feeds back» the effect into the first element of the cycle» (Capra, 1996: 56). Once this happens, then positive feedback loops start to make a system more open to change. Capra gives the example of the microelectronic revolution of the 1970s. Information-processing chips to become smaller so that they could now in theory be placed in more machines. This small event then led the way to a technological revolution, which included widespread use of satellite technology and new ways to organize financial trading (Capra, 2002: 119).

For Lash and Urry, complexity theory opens up opportunities to visualize capitalism today as being «less an organized capitalism or a disorganized and fragmented capitalism than self-organized far-from-equilibrium forms of life» (Lash and Urry, 2013: 545). Lash, for example, says that new technology ensures that social life is now stretched out through nonlinear networks that enable information to travel through various «ports» (e.g. airports, mobile phone ports, modem ports, Internet portals). «To move from port to port is to move, not in a straight line but to hop about, to move discontinuously» (Lash, 2002: 20). Simple direct linear relationships therefore no longer exist between «micro» interactions and «macro» patterns. In their place, we live in an age of multiple systems, «which evolve, adapt and self-organize» (Urry, 2016: 59). Interestingly, Urry goes as far as to argue that Marx is an implicit complexity theorist. Indeed, for Urry, Marx presents «the best example of complexity analysis within the social sciences» (Urry, 2005: 249). According to Marx, for example, the exploitation of workers by giving them low wages means that «the emergent level of demand for commodities is sub-optimal', which in turn leads to «the under-employment of capitalist resources» (Urry, 2005: 241).

While both draw on Marx, Mandel's theoretical framework is as one would expect very different to that of Lash and Urry's. Mandel agrees that each concrete object of analysis is highly complex as it is determined by «many different circumstances» (Mandel, 1980: 178). Nevertheless, Mandel still believes that these «circumstances» are expressions of the «reproduction of capital» and the *unity of the processes of production and circulation*, as Marx explained in great detail …» (Mandel, 1980: 179). Unlike Lash and Urry, therefore, Mandel places great emphasis in outlining the most abstract socio-historical and contradictory relations of capitalist production and circulation.

Following Marx, Mandel argues that these relations can be discovered in the «cell-form» of the commodity. A commodity, Mandel stresses, is created with by a private individual with a use-value, but the value of a commodity can only be recognised once it enters an exchange-relation with a buyer. A buyer will use his or her money to purchase the commodity if they believe it has a usefulness for them. Exchange-value thus assumes an external social relation in the guise of money. Money is therefore the great social mediator of exchange relations in capitalism, and it is money that acts as judge and jury as to whether private labour will indeed be deemed as useful by another and thus be transformed into social labour. So, while exchange might successfully take place, it can also be the case that a person will not be able to sell his or her commodity at a particular price. Within these very abstract social relations, then, one discovers the most simple contradiction of capitalism as being between the production and exchange of commodities and «the initial possibility of over-production and crises» (Mandel, 1980: 167).

But Mandel is also clear in arguing it is still necessary to dissect the «motor» of capitalism as a whole. For example, we need to ascertain how profits are generated by the production and circulation of commodities throughout the capitalist system whole with the class relations that underpin this process. Mandel claims that answers can be located in Marx's theory of surplus value (Mandel, 1980: 166). Surplus value is accumulated by capitalists when they own and control the means of production and so can pay a wage to labour to work for them for a specified period of time to produce commodities, which can then be sold for a price higher than the cost of wages to labour. Labour is thus exploited by capital because capitalists retain the surplus produced by labour. At the core of this basic relationship is subsequently a class relation premised on labour being separated from the means of production. Workers «*must* therefore sell their labour-power to the owners of the machines and of agribusiness» (Mandel, 1980: 190). Concrete struggles and resistance by labour in and against capital will affect and shape the rate of surplus value and capital's attempts to increase this rate (Mandel, 1975: 40).

Class relations in capitalism also engender peculiar crisis-tendencies which are not, as complexity theorists argue, based on chance events and positive feedback loops, but rooted in historically-specific contradictions. According to Mandel, capitalism is ultimately structured by the crisis of overproduction. There is a «drive to constantly expand capital accumulation, to constantly increase surplus value realization…» (Mandel, 1995: 52). This drive is expressed by capital in the constant need to revolutionize technology, to reduce production costs than competitors, to accomplish higher surplus-profits through better technology and the absolute and relative exploitation of labour, which it is hoped will increase the rate of surplus value (Mandel, 1975: 27). Individual capitals must therefore try to reduce the value of individual commodities by the relentless increase in commodity production (Mandel, 1975: 392). Individual capitals embark on this journey without reflecting fully on the limits of the market or on people's needs for goods or their capability to pay for commodities produced (Mandel 1980: 179). When circulating, for example, the price of commodities can rise due to intensified competition. Suddenly, a capitalist cannot realize the exchange-value of his or her commodities (Mandel, 1968: 344). Whereas a pre-capitalist crisis comes about due to the under-production of use-values – let us say for example through famine – a capitalist crisis happens because *too much* is produced but cannot be exchanged for money (Mandel, 1968: 343).

Uneven consequences are attached to these crisis-tendencies, with some capitals being able to reconstitute themselves from a downturn, new capitalist sources for surplus value arise, while other capitals never recover. Uneven development likewise occurs between countries. Dominant imperialist nations can make great leaps forward in terms of production over and above so-called «developing countries', while uneven development also ensues within countries when some regions develop at faster rates than others (Mandel, 1975: 47-60). Disequilibrium and uneven development are subsequently for Mandel the «essence» of capitalism (Mandel, 1975: 27). Naturally, there are mechanisms that attempt to regulate crisis-tendencies of capitalism. Arguably, one of the most potent mechanisms is that of credit, which can be distributed to businesses and consumers through government money, private banks or financial speculators (Mandel, 1980: 12). Greater supplies of credit and money, however, lead eventually to further dilemmas and problems. Notably, there can be a build-up of debt by businesses and households, which also exacerbates inflationary tendencies in the economy.

Mandel argues that as well as credit and finance, two further mechanisms arise in capitalism in order to expand and regulate the crisis-tendencies of global capitalism. First, the uneven development of capitalism opens up opportunities for some capitals to buy up other businesses and to concentrate and centralise branches of production and chains of production at a national and global level. This transpired first by companies in dominant capitalist countries centralizing production by driving out weaker competition. Early monopolies, such as the Rockefeller group in the US oil industry, did seek to control strategic overseas production sites, but apart from a few exceptions like Royal Dutch Shell and Unilever, monopolies did not at this stage control overseas markets. In other words, there was not at this point in time the general international interpenetration of capital across countries (Mandel, 1975: 314-15). It is only from the 1960s onwards that the international interpenetration of capital gets underway. We say more about this shortly.

Second, capital is reliant upon the state to regulate and stabilize its contradictory form. According to Mandel, the historically-specific form of the capitalist state is founded on the separation of «private» and «public» spheres from one another. «Private» capitalist competition is complimented by the «autonomous» and «public» body of the state, which, unlike other modes of production such as feudalism, now stands externally to the economy. The capitalist state can seek to provide «order» of sorts to capitalist competition through a number of means at its disposal. Some of the more notable include:

> the maintenance of universally valid legal relations, the issue of fiduciary currency, the expansion of a market of more than local or regional size, and the creation of an instrument of defence of the specific competitive interests of indigenous capital against foreign capitalists – in other words, the establishment of a national law, currency, market, army and customs system (Mandel, 1975: 480).

During socio-historical conjunctures, the capitalist state introduces a number of specific policies through state projects that redistribute surplus is particular directions, whether these are military dictatorships of some description or Keynesian or neoliberal monetarist projects (Mandel, 1980). As such, the capitalist state will pass policies during these periods that cater for some capitalist interests, for example, industrial capital interests or financial capital interests, over and above others (Mandel, 1975: 480-1).

One of the main arguments in this paper is that Lash and Urry's and Mandel's respective theoretical frameworks lead to different ways in which they examine changes across and within «phases» and/or «waves» of capitalism. This will become readily apparent in the next section. We start to focus on how Lash and Urry describe the transition from so-called organized capitalism to disorganized capitalism. Given their penchant for employing nonlinear complexity theory to understand contemporary societies, we will see, somewhat ironically, Lash and Urry in fact view the transition between organized capitalism to disorganized capitalism in a somewhat linear manner.

From Organized to Disorganized Capitalism?

Lash and Urry suggest that a number of «factors» coalesced around the 1970s that then saw the demise of «organized» capitalism to be eventually supplanted by «disorganized» capitalism. Some of the most important for them include: the breakup of «old empires', such as the British Empire, by the 1950s and 1960s, which once used a nation state to control and influence production routes and protect certain cartels; development of new computer systems of information and satellite systems opened up opportunities for global corporations to relocated their operating systems in different parts of the world; failing profit rates in manufacturing which then pushed them to restructure; rising influence of new financial markets; mobility of capital no longer tied to nation states; reduced ability of nation states to control interest and exchange rates (Lash and Urry, 1987: 198).

As expected, then, there is much that is true in Lash and Urry's depiction of the transition from organized to disorganized capitalism. But there are also missing or neglected elements in their account. In particular, it is not entirely clear from their work how the transition actually occurs. One some occasions, for example, it seems that Lash and Urry offer an underconsumption theory to explain the transition as when they claim, «changes in taste, particularly through the widespread rejection of mass-consumption patterns and a heightened «postmodernist» demand for individually distinct…products» (Lash and Urry, 1987: 199), impacted on manufacturers in the 1970s onwards. Disorganized capitalism develops and enhances these consumption-led changes. The Internet and social media commodifies people's «affects', such as attention, anger, care, likes, loves, dislikes, and so forth, in order to personalize consumer habits to greater degrees (Lash, 2010: 115-116).

One problem with an underconsumption theory is the belief that a crisis is caused by insufficient purchasing power of ordinary people to buy manufactured goods at a particular point in time. Using Marxist language, this theory thus suggests, «surplus value has been produced all right, but it remains crystallised in unsaleable commodities» (Mandel 1968: 361). For Mandel, one of the main problems with this theory is that it relates the crisis of capitalism to the inability of workers to use their wages to «successfully» consume goods. It follows that a crisis can be avoided if workers are paid more in wages. In reply, Mandel argues that capitalists are not interested in merely selling commodities, but in selling commodities to gain sufficient profits. If wages are simply increased to bolster consumption, a threshold is reached in which profit rates start to be negatively impact and start to decline. For Mandel, then, the «deeper *cause*» of crisis is that of overproduction (Mandel, 1980: 167-9).

After the Second World War, the US state alongside western European allies «reconstructed» global capitalism through global international intervention, including huge financial investments by the powers and international aid. Banks extended their credit and overdraft facilities to businesses and households, which did bring about «additional means for realizing surplus value and accumulating capital» (Mandel, 1975: 417). As a result, there was unsurprisingly a rise in production in the advanced capitalist countries. Mandel (1980:19) notes that between 1963 to 1972 industrial production grew by 62%, while exports rose even higher at 82%. The figures for the years between 1963 to 1972 were 65% and 111% respectively. At the same time, wages of different social classes increased, which empowered labour, while a credit boom for both manufacturers and consumers led the way for a huge expansion in goods both for home markets and overseas markets. For example, the postwar credit explosion accounted for a large portion of outputs in automobiles and housing for the US economy (Mandel 1995: 61). Problematically, though, credit inflation empowered businesses, «to expand over and above the amounts of surplus value they… appropriated (i.e., to expand by getting deeper and deeper into debt)» (Mandel, 1995: 61; see also Brenner 1998; Clarke 2001; Rupert and Solomon 2006). By the early 1970s the double-whammy of high inflation plus stagnation –the so-called phenomenon of «stagflation'– had hit the major capitalist economies (Mandel, 1980: 28).

Certainly, as Lash and Urry note, capital started to become more mobile in the 1970s, but this change reflected, Mandel (1980: 187) observes, the tendency towards the capitalization and internationalization of capital in the search for new profits. It is the incessant drive to accumulate surplus value in order to reinvest it in new areas of capital – the so-called «capitalization» of society – which since the late 1970s pushed corporate capital increasingly infiltrating spheres of production and circulation across the globe.

> Big companies take over the distribution units (hotels dominated by breweries, petrol stations by oil trusts, and so on) or take large-scale initiatives in the sphere of department stores or transport systems (airline companies, shipping companies, the holiday business). The conglomerates indiscriminately combine steel production, airlines, margarine production, electric machine construction, insurance companies, land speculation and large department stores, in order to secure the average rate of profit for the largest possible volume of capital, to minimize the risks of specialised investment, and even, by exploiting the growing possibilities of rationalised administration and marginal speculation, to bag surplus profits for the whole of this conglomerated capital (Mandel, 1975: 389).

Through these developments, commodities were more and more determined by international production and world prices rather than by national prices (Mandel, 1980: 187).

The increasing mobility of capital from the mid-1970s to early-1980s was and is today accompanied by the concentration of capital in ways quite different to Lash and Urry's analysis. According to Lash and Urry, while «organized capitalism» was characterized by the concentration of capital in large firms (Lash and Urry 1987: 72-3), «disorganized capitalism» sees the breaking down of the concentration of capital. Large corporations can no longer control mass demand for products within national economies, and corporations will now experience heightened competition in all global markets (Lash and Urry, 1987: 196-7). But, as Mandel explains, there are in fact a number of different forms of the concentration of capital. Firstly, dominant corporate firms in one country, say, the USA, can penetrate the economies of «weaker» economies and overtake capitalist firms therein. There is, however, another scenario in which only some sectors in an economy in one country are taken under the control of dominant foreign capital from another country. Another type of concentration is also apparent when companies in one country are absorbed by a variety of capitals from different nations without any one of these capitals being hegemonic. Here, «we are no longer confronted with one imperialist power dominating one or many national economies, but with a new phenomenon: the international interpenetration of capital» (Mandel, 2009: 23). Finally, concentration of capital occurs in the older «classical» form when multinational corporations dominate their home country. Mandel believes that while the first form of concentration is less likely in contemporary global capitalism, the three other forms do operate in the world.

While we cannot explore in detail concrete illustrations of each form here, it can be noted that the third type – the international interpenetration of capital – became more pronounced during the mid-1970s. Arguably, it is this form of concentration that Lash and Urry and a whole host of similarly-minded social theorists from the 1980s up until today have used to suggest we live in new global times. Mandel agrees that international production prices are now hugely important in determining an equalization of profit; the latter of which is important in shaping the value for a number of commodities and businesses (Mandel, 1980: 187). Amazon is a classic case today. As a global company, Amazon maintains different roles that often clash with one another. It sets the rules for, and monitors the activity of, market transactions on its platform, but it also competes with sellers on its platform, while providing a service for sellers. Amazon has used this monopoly in gain dominance in markets across the world. To give just one illustration, in Europe, Amazon has been able to triple sellers» fees between 2017-2022 from €7.6 billion to €23.5 billion (Silva 2023: 4). But the other modes of concentration are evident. Think of the leading tech giants – Google, Amazon, Facebook, Apple, and Microsoft. They have all embarked on large-scale acquisitions of smaller companies in a variety of sectors within their home countries and in other countries that include energy, food, education, non-profit, robotics, IT and security, advertising, e-commerce, creative industries, gaming, entertainment and streaming, social media, and consumer electronics (for specific data, see Tactical Technology Collective, 2023).

Lash and Urry also make a further number of assertions about the changing nature of social class in disorganized capitalism. They claim that civil societies are no longer simply structured «by divisions based on the conflict of labour and capital'. Other social divisions in society – between the «people» and the «state', between ethnicities, between gender, between sexualities, between different ages, to name but a few – have become just as important causes for structuring social inequalities (Lash and Urry, 1987: 311). We now explore these points.

Class Analysis

In, *Economies of Signs and Space*, Lash and Urry identify a number of «class fractions» in disorganized capitalism. These include «the new wealthy» who work as professionals and managers in «advanced services» in the likes of software, health, personal finance and education. There is also another group of employees who work in occupations such as data equipment operators, computer systems analysts, and data repair units. Then there are various other middle class jobs, such as clerical work in the service sector. Next, Lash and Urry identify a group of «service workers» who gain employment in occupations like fast food restaurants and hotels. Another «class fraction» are «non-standard» employees. While Lash and Urry do not give this «fraction» a precise definition, we might infer that they mean employees who take-up temporary work. The reason for making this assumption is that Lash and Urry (1994: 162) suggest this group often finds itself in periods of unemployment. A manufacturing class of workers can also be identified, but this varies in size depending on the country in question (Lash and Urry, 1994: 319). Finally, there is a class of public sector employees.

Lash and Urry thus map out different social classes for contemporary societies. In so doing, however, they articulate a number of theoretical problems and questions. To begin with, they conflate the structural contradiction of capitalism – the class relationship between labour and capital – with actual empirical class categories and occupations. «Labour» is therefore used interchangeably by them with «working class» occupations, especially the «manual» and «manufacturing» working class. Correspondingly, the «middle class» is associated with classically middle class empirical occupations, especially those related with service sector jobs. This is not unique to Lash and Urry and is in fact a common trope in much social science writing and research.

Alloul (2021), who draws in part on Urry as well as other notable social theorists like Pierre Bourdieu, explores how middle class second-generation migrants from Belgium and the Netherlands gained extra «western cultural capital» when they became mobile and travelled to Dubai in search of new employment opportunities. Problematically, however, Alloul defines social class through a set of generalized characteristics based in «similar positions in social space…subject to similar conditions of existence and conditioning factors…» (Alloul, 2021: 181). Alloul (2021: 183) also states that extra cultural capital respondents gained in Dubai rested to a large degree on how respondents symbolized their own class identity rather than any clear definition of class. In both Lash and Urry's and Alloul's respective analysis, then, analytical attention is thus taken away from exploring capitalism as mediated through the constant separation of labour from ownership and control of the means of production. Moreover, the «working class» is explored as being personifications of those who are employed in manufacturing sectors of society, while middle class identities are defined, in part, through descriptive workplace identities and through often subjective experiences.

Mandel presents us with an alternative class perspective. To be «working class» is to be separated from ownership *and* control of the means of production. Under this definition, a number of occupations can be rendered as «working class'. Naturally, there is an industrial manufacturing working class (Mandel, 1975: 586), but there are also working class occupations located in in commercial capital (e.g. retail), financial capital (e.g. banks) and the state (e.g. public sector hospitals). Working class occupations can also be located in a whole raft of service sector occupations, in different types of office and call centre work, in the IT industry, and so forth. For instance, the 2021 census for England and Wales tells us that 11.3% and 13.1% of the working age population in England and Wales respectively were employed in «semi-routine occupations', such as shop assistants, call centre workers and care assistants. For routine occupations – those jobs such as bus drivers and waitresses – the figures are 12% and 13.2%. «Intermediate occupations', which comprise the likes of airline cabin crew and secretaries, stood at 11.4% and 11.6% for England and Wales (ONS, 2021). Many of these are working class jobs because the people employed in them are separated by degrees from the ownership and control of the means of production. Lash and Urry hold a significantly different view of the working class. They argue there has been both a decline in the absolute and relative size of working class in general, and in the core working class located in manual and manufacturing sectors in particular (Lash and Urry, 1987: 5-11). But now we can understand that Lash and Urry confuse the abstract category of «labour» with «working in manufacturing jobs'. Clearly, however, the working class is constituted by more than manufacturing. Indeed, late capitalism expands the category and number of working class service jobs and also increasingly commodifies services in the public sector too (Mandel 1995: 85; Roberts 2022: chapter 9).

Mandel also explores middle class management occupations through degrees of separation of ownership and control. Some high-level managers can act almost as if they are capitalists –they are renumerated for example through shares and dividends of the company they manage– even if they do not ultimately own the corporation or company they manage (see Mandel, 1975: 232; see also Schutz, 2022). CEOs of top companies personify this type of manager. Some owners of capitalist enterprises who are «crushed by competition» and suffer a takeover by a bigger capitalist organization might still nevertheless be retained as a manager of the enterprise they once owned or might be employed elsewhere as a «normal» worker (Mandel, 1968: 164). Middle-managers have less powers of control although their superior position in supervising extraction of surplus value and surplus labour will often move them ideologically closer to capitalists (Mandel, 1975: 264-5), while lower managers often occupy only slightly higher levels of controls than ordinary workers in an organization.

Mandel's point, like other Marxist analysts (see Carchedi, 1991; Wright, 1978), is to suggest that managers occupy a position somewhere between labour and capital (Mandel 1968: 164-5). «They perform a mediating function between these two poles of economic activity» (Mandel, 1992a: 172). Importantly, according to Mandel, is a tendency within late capitalism for the concentration of capital into large multinational and transnational orgaizations to result in the growing bureaucratization of the capitalist firm. «The managerial functions are divided among different branches and sub-services, each with its own hierarchy, and their coordination requires further instruments for the exchange of information…(and) demands large staffs with their own hierarchy» (Mandel, 1992a: 171). As a result, power is delegated throughout large-scale firm and a whole host of new «white collar» jobs are generated through these processes (Mandel, 1992a: 171). As we will also see momentarily, the division between ownership and control and the rise of bureaucratic management layers is a tendency of late and contemporary capitalism rather than a qualitatively distinct moment of «disorganized» capitalism.

Marxists, including Mandel, have also long recognised that service sector occupations can comprise both «productive» *and* «unproductive» working class and middle class occupations, as well as, of course, middle class occupations. Marx argues that productive labour is labour that not only produces a commodity, but which also adds value to the commodity in question and also increases the mass of surplus value for capital (Marx, 1988: 644; 1992: 134-6; see also Mandel, 1992b: 42; Rotta, 2018: 1369). Unproductive labour is labour that does not produce surplus value. Any surplus generated by unproductive workers represent surplus profits, but not surplus value (Carchedi, 1991). A smartphone, for example, is manufactured both by productive and unproductive labour. The price of a smartphone will cover the costs of the productive labour that made the physical component parts of it, while another part of the price will renumerate patented designs and copyrighted software. This is the unproductive part of a smartphone (Rotta and Teixeira, 2018: 10). In other words, some services are reliant on productive labour, but others will rely on unproductive labour. Some service industries can therefore add to the total mass of surplus value and thereby be counted as being productive, while other areas in the service sector are unproductive (Mandel, 1992b: 45; see also Tregenna, 2011; Wilkie, 2011).

One added advantage of this position is that it cautions us against viewing the rise of the service sector as being illustrative of a new «disorganized', or «network', or «digital» capitalism. Mandel demonstrates that the expansion of the service sector can be accounted for in one crucial respect by the tendencies evident in the late capitalist wave; tendencies which still exist today. For Mandel, overproduction of commodities through «industrial» capitalism can no longer be valorised and be converting into exchange-value. Under these conditions, capital starts to penetrate spheres of circulation and services to increase surplus value by capitalizing some services into commodities and surplus value to thereby increase profit margins. New areas of consumption are created with new jobs attached to them. Occupations around the likes of branding and advertising grow too (Mandel, 1975: 401). Many of these areas are initially unproductive, but capital will seek to make them productive. Still, this is a contradictory phenomenon. For example, a mass of surplus value has to be shared out among a larger mass of social capital (Mandel, 1975: 388).

In his later work, Urry (2014) interestingly returns to using more Marxist terminology. He claims that a «class war» have been waged by the «rich class» of «high net worth individuals and families, the owners/managers of major corporations and professional service companies, many thinktanks, and leading policy-makers» (Urry, 2014: 1). This highly elite group, although in no way being unified, nonetheless have engaged in «class struggle» against the rest of us (Urry, 2014: 174). Problematically, however, Urry visualises class struggle in a one-sided manner. Elite interests are given agency, while the majority appear rather passive in his analyses. After all, Urry does not present types of «resistance» to this elite from ordinary people or groups of workers. Elsewhere, Lash and Urry do discuss working class struggles, but this is done primarily at an institutional level by looking at how trade unions came under attack from neoliberal government during the 1970s and especially the 1980s (Lash and Urry, 1987: chapter 8; 1994: 163). While useful, this account still nevertheless understates the different forms that class struggle assumes. As Mandel reminds us, capital is forged through both objective and subjective class forces. Objectively, class struggles are mediated through underlying «essences', such as the labour and capital relation, but also through institutions like trade unions. Even so, class struggles can also appear through novel and less formal institutions and operate through degrees of subjective consciousness across different working class groups and other social movements (Mandel, 1975: 243; 266; 1995: 36-7; for contemporary examples, see della Porta, et al 2007; Roberts and Ibrahim, 2023). That is to say, subjective factors of workers» struggles are important in any analysis of the possibilities of class struggle. Yet, how do these processes impact on the workplace? We now move to consider this issue.

Technology and Changes to the Workplace

Lash and Urry (1987) argue that large manufacturing plants based in single countries are now less important to the overall fortunes of economies, being increasingly eclipsed by the likes of service sector jobs, sub-contracted out firms, and transnational corporations operating between and across borders. Vertical disintegration and flexible specialisation are key prerequisites for production. Lash and Urry further argue that «reflexive accumulation» has gained ascendancy. This is a type of accumulation in which «knowledge and information are central to contemporary economies» (Lash and Urry, 1994: 61). A «post-organized capitalist economic growth» has emerged that is based, in part, on a sort of «democratization of reflexivity', in which a «heightened self-monitoring» is now apparent in organization along with the devolvement of «decision-making, planning, responsibility-taking, risk-taking, information-processing, control and monitoring …» (Lash and Urry, 1994: 63; see also Giddens, 1990: 64-5). Employees and workers are also often encouraged by management to take control of their work. This is a shift from «modern objective space, rigidly fixed by hierarchies, to the more subjective, flexible space» of contemporary workplaces (Lash and Urry, 1994: 56).

Cutting-edge informational companies trade in innovation, ideas, research, design and research (Lash and Urry, 1994: 96). High-tech districts will aim to foster links with non-economic organizations like universities, the cultural industries, and maybe even organizations like the military, in order to develop creative networks of innovation (Lash and Urry, 1994: 100-4). Furthermore, they imply that all areas of the economy are now infused with information and culture, which drive profits. Mass production, at least in dominant capitalist countries, is now more knowledge-based (Lash and Urry, 1994: 98), while cultural industries and the service sector are today dominated through aesthetic objects like brands and logos (Lash and Urry, 1994: 134; Lash 2011).

This picture painted of the workplace today, however, requires clarification. Think momentarily of notion of «capitalization'. This occurs in more sectors of society in conjunction with complex international division of labour and the concentration and centralization of capital in the form of monopoly capital. As Mandel (1992b: 17) notes, capitalization refers to the process by which surplus value is transformed into additional constant capital – for example, investing in new machines, raw materials, and buildings –and into additional variable capital – for example, hiring new workers, investing in training and skills)– in order to expand reproduction and accumulate more surplus value. As we have already observed, the real drive for capital is thus a drive to accumulate surplus value, and this compels capital to find new technological ways to reduce costs. The tendency for capital is therefore to move beyond the industrial factory and to penetrate other spheres of society, to find new avenues to reduce costs, and to enlarge the size and range of productive operations. This is a competitive pressure imposed on each capitalist.

Soon, capitalization, rationalization and standardization develop in the service sector and, indeed, leads to the objective socialization of services. «Electronic calculating and accounting machines replace a multitude of office workers, clerks and book-keepers in banks and insurance companies. Self-service shops and automatic dispensing machines take the place of salesmen and shop-girls. The independent general medical practitioner is replaced by a polyclinic with affiliated specialists or by works doctors in big companies» (Mandel, 1975: 385). As monopolies grow in stature, they employ the latest technology not so much to produce and enhance a decentralized networked society, but instead to «industrialize» ever greater areas to acquire new profitable ventures through «mechanization, standardization, over-specialization and parcellization of labour» (Mandel, 1975: 387).

Usefully, Mandel provides a critical way to think about a *dialectical* peculiarity of our digital times. While digital technology has been employed in the workplace to foster new types of «flexible» working practices, it has also created new kinds of industrialised and standardized working practices in a whole range of occupations. Examples are legion. One of the most obvious illustrations is that of platform work. As numerous studies testify, much platform work and gig work are subject to modes of centralized surveillance known as «algorithmic management'. While somebody gains work to complete a task for a customer via a digital platform, the person undertaking the paid task is subject to continuous monitoring by the platform itself, the results of which are relayed to a manager located in a different space. The platform can track a worker's performance, make automated decisions about a worker's performance, can give feedback to a worker, but only enable limited feedback from the worker to the platform. All of which remove a significant amount of workplace negotiation about job quality in a face-to-face discussion with a supervisor (see Rosenblat and Stark, 2016; Stefano and Doellgast, 2023).

Evidence further suggests that even occupations in the banking sector have been subject to this process of digitized centralization. In their study of UK bank workers across five banks, Laaser and Bolton (2017) show how worker performance, comprised by data from Electronic Performance Management (EPM), and which includes information on when employees log on and off, how long they spend with a customer and how many products they sell, was often used by managers in these banks as quantitative targets to then mark down bank employees. Such case studies move Boes, et al. to observe of this type of «middle-class» work: «If Taylorisation means detailed observation and measuring of work performance, refinement and a scientific approach to optimise work processes, the digital transformation might be interpreted as paving the way for a «Taylorism 2.0'» (Boes, et al. 2017: 165).

But Lash and Urry similarly note the coming together between finance and digital technology under «disorganized capitalism'. But there are also differences on this subject-matter to the views of Mandel, which we now examine.

Finance, Technology and the State

Lash and Urry argue that during the mid-1960s to mid-1980s there was a large increase in the mobility of foreign exchange dealing dominated by large financial corporations. Yet, by the 1980s new financial institutions and financial mechanisms had emerged based on short-term deals, deregulation, more competition, and a huge increase in financial transactions enabled through new communication networks, which meant that financial power shifted from financial corporations to global urban cities such as London, New York and Tokyo (Lash and Urry, 1994: 288-90). Global finance has thus now grown as a separate circuit to that of industrial capital to the extent that it has generated its own concrete financial networks, which have enabled it to transport financial material or «traffic» across the globe (Lash and Urry, 1987: 2007-8;

1994: 24) and has become «a kind of free-floating signifier detached from the real processes to which it once referred» (Lash and Urry, 1994: 292; see also Castells, 2000: 102-6). Under these circumstances, nation states of the kind evident during Keynesian postwar era have lost their powers to regulate as they once did the current «global freedom to move monies, income, wealth, people waste and loyalties from pillar to post» (Urry, 2014: 174).

Mandel agrees that the internationalization of capital enacts a pressure on governments to ensure that «national borders…be «held open» to inflows and outflows of capital as well as commodities» (Mandel, 1980: 190). However, Mandel once more places this dynamic within continuities of underlying capitalist dynamics and the conjunctural form of late capitalism. In the first instance, it has always been the case that capitalism is structured through a peculiar contradiction based on capital operating at a global level while trying to gain advantages and construct its operation as national capital (Mandel, 1995: 130). This contradiction is thus reproduced into nation states competing with one another to attract capital into its own borders, while «the very survival of capitalism (is) increasingly dependent on direct state intervention» (Mandel, 2009: 57; see also Bonefeld, et al. 1995).

Despite what Lash and Urry argue, this contradiction is as apparent today as it was during the postwar era or during nineteenth-century imperialism. Mandel notes, for example, that by the mid-1970s, the US was pumping in millions of dollars of extra liquidity into international circuits of capital. At the same time, soaring oil prices encouraged oil exporters to be paid in dollars since this was the hegemonic currency. Large volumes of so-called «petrodollars» were deposited in banks, which was one reason why banks suddenly had an influx of money to lend as credit and why banks now gradually more engaged in international activities (Mandel 1980: 111-14). This example is illustrative of how paper currencies of a bourgeois hegemonic state will thus play the role of world currency (Mandel, 1995: 52). Today, America is still the hegemonic state that provides a mode of regulation for global capital. The dollar still remains the main currency in the world, and this enable the US to act as a regulatory institution of sorts for financialised global investments (Panitch and Gindin 2013), while the American state, along with other dominant states, intervened to prop up capital during 2008 financial crash and then during the covid pandemic (Roberts, 2009; 2022).

Lash and Urry suggest that a further qualitative moment of disorganized capitalism is the proclivity for corporations to not only gain profits through financialization, by enriching shareholders and increasing their stock share price, but also though marketing different brands and intellectual property

(Urry, 2014: 111-117). Neoliberal finance similarly gains much of its power not through «real» property, but through intellectual property, ideas, inventions, copyright, patents, and trademarks (Lash, 2011: 127). For Mandel, however, there are two reasons why this is not a particularly novel development.

In the first instance, finance and automated computerized technology have been bedfellows at least since the days of «organized» capitalism. When he was completing his book, *Late Capitalism*, Mandel observed: «computers calculate the «ideal» share-package for the private capitalist rentier and the «ideal» location for the large company's new plant» (Mandel, 1975: 387). So-called «disorganized» financial technology is therefore an extension of processes set in motion under «late capitalism» rather than a clean break with this period. This is true even for some of the more up-to-date pieces of financial technology. Take high-frequency trading (HFT). A finance-trading platform, HFT is programmed through algorithms to make huge numbers of automated financial transactions across the world. But, as Lange, et al., argue: «HFT is not an entirely new phenomenon: rather, it is the culmination of decades of technological innovation and regulatory developments that have encouraged financial automation» (Lange, et al. 2016: 153). In turn, speculative finance will make investments in new technology and, in so doing, give the impression that the technology sector of the day is continually expanding (for concrete examples, see Mansell and Javary, 2004; Perez, 2009). Credit inflation here merely acts to «postpone the moment of reckoning in which the contradictions would explode in a sharp crisis of profitability and in a sharp crisis of overproduction» (Mandel, 1995: 63-4).

In the second instance, Mandel was more than aware of the revolutionary potential of automation and computerized technology, branding and intellectual property in late capitalism. He bundles these innovations and developments into the umbrella term of «technological rents'. When a large corporation gains a monopoly over technological discoveries, innovations and patents during an upswing in the rate of profit, then they will be able to use their monopoly in this field to increase their surplus profits (Mandel, 1975: 103). Technological rents are, however, derived in the final instance from the constant pressure on competing capitals to accelerate technological innovation in order to lower the cost-price of commodities (Mandel, 1975: 192). Technological surplus-profits have thus become hugely important in «late capitalism» and our current social media era (cf. Mandel, 1995: 66-7), but they also create their own conflicts and tensions. Large sums of capital have to be invested in research and development, yet this is a risk because there is no guarantee that these outlays will reap rewards and realize exchange-value. To cut costs, a corporation will often contract out their technological production to sub-firms located around the world. This though then contributes and reinforces the proliferation of highly complex global value chains, which can be difficult to monitor and regulate (Mandel 1975: 318-19; see also Moody 2007; 2017). Certainly, innovations such as AI, biotechnology and the electric car are forging new innovative areas for technological rents to grow within. At the same time, they are mediated through the contradictory processes outlined above. Robots, for example, have not yet taken over most jobs. And there is no guarantee that introducing robots in a workplace will lead to higher profits. They can in fact lead to lower profits. Sometimes robots will be applied to just a limited aspect of a production process in order to reduce costs, but this can then bring about over-capacity and a decline in profits (Chen, et al. 2023; see also Mandel 1995: 136 who makes a similar point but from a Marxist viewpoint).

Conclusion

The article has compared Lash and Urry's insights on the issues above with those put forward by Mandel. While one can accept gaps in Mandel's work – for example, he does not adequately examine the cultural significance of new modes of consumption (see Husson, 2000) – the article has nevertheless argued that there is much in his writings that can be fruitfully drawn up to make sense of contemporary capitalism. In summary, three principles advantages stand out. First, Mandel's explicit aim throughout his work was to explore critically the emergence of the likes of semi-automation and computer systems in society, «in terms of the basic laws of motion of capitalism discovered by Marx in *Capital*. In other words, it attempts to demonstrate that the «abstract» laws of motion of this mode of production remain operative and verifiable in and through the unfolding «concrete» history of contemporary capitalism» (Mandel, 1975: 11).

Second, Mandel therefore situates technological advancements through key contradictory dynamics of capitalism, such as the incessant pressure for capitals to accumulate surplus value, class struggles in and around the accumulation of surplus value, the need for credit and finance to be pumped into the capitalist system to maintain accumulation and technological advancements at least for a period of time, and the inevitable crisis-tendencies that result from these processes (Mandel, 1975: 178-179). By working in this manner, Mandel is able to explore both continuities *and* qualitative transformations in accumulation and technological strategies across distinctive «waves» in development, crisis and depression in capitalist history.

Third, Mandel can show how what are considered to be «new» social formations in contemporary capitalism –for example, the idea that the most advanced ways of working these days are through decentralised digital networks, flattened-out hierarchies, and «reflexive accumulation'– are still in fact often mediated through «older» capitalist forms of industrialisation and standardisation. Or, that current fashionable debates about the impact of automation or intellectual property on society frequently miss vital insights of the sort set out by Mandel about how these concrete issues were already part and parcel of the third technological revolution, but also how Mandel's insights can help us think more critically about their impact in the here and now and in the future.

These advantages in Mandel's work have been elaborated upon by comparing his insights to those of Lash and Urry. For Lash and Urry, the generic dominance of global digital technological networks brings with it a quickening up of life where instantaneous processes grow in importance. Twenty-four-hour trading for instance becomes the norm in an era where digital technology explodes time-space constraints across the world (see Lash and Urry, 1994: 245-6). But such ontological changes, suggests Urry, imply the need for a new set of metaphors to describe this new order. Conventional terms such as «society» describe an older era predicated on stable entities like nation-states. Transformations in the global world imply the need to craft new metaphors like «flows', mobilities» and «networks» (Urry, 2000: 1-18). Globalisation is thus comprised by concrete information and signs that are both «de-centred» and come to us through global «flows» based on «ideas, images, technologies and capital» (Lash and Urry, 1994: 321). Global flows, fluids, and network formations have now eclipsed the «organized» industrial world. Life is now said to be less predictable and more contingent than in the industrial past because of these developments (Büscher and Urry, 2009). Politically, then, «mobility justice» is pursued in the world by investigating how concrete networks of organisations, buildings, public spaces, roads, objects, images, texts, and so forth, impede or enhance people's local inclusion to these networks. It thus seeks to overturn marginalization and disadvantages that oppressed groups might experience in the daily mobilities they encounter with concrete networks. Radical inclusion of such groups in real deliberative decision-making about the form and content of networks should therefore become common practice (Sheller, 2018: 30-5). Problematically, however, mobility theorists here essentially become advocates for a liberal type of political deliberation that eschew the underlying exchange-value of mobile networks and how these contradict with their everyday use-value (see Lefebvre, 2003; Roberts, 2023). The article has therefore stressed the need to analyse these processes within a historical materialist framework.

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