Primož KRAŠOVEC
University of Ljubljana

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Real Subsumption of Intelligence and the End of the Culture Industry*

Introduction: Vertov's Premonition

The seminal early Soviet avant-garde film *Man with a Movie Camera* (1929) begins with a textual manifesto-style introduction: "This film presents an experiment in the cinematic transmission of visible phenomena. Without the aid of intertitles. Without the aid of a script. Without the aid of theatre. This experimental work aims at creating a truly international absolute language of cinema based on its total separation from the language of theatre and literature." Echoing its author's writings on the relation between avant-garde and ordinary cinema, as well as between cinema as such and literature (Vertov 1985), the main idea is that cinema (as an emerging medium at the time) can only develop its full potential(s) once it emancipates itself from traditional culture, dominated by the (textual) media of literature and theatre. Anticipating Kittler (1999), Vertov set the new technological medium of the movie camera versus the old medium of writing, by emphasising how the *technological* potential(s) of the first are inhibited by relying on the latter. Vertov's dream was cinema overcoming writing and becoming an autonomous media technology, developing its own language aligned with its technological promise. In hindsight, Vertov's vision turned out to be at the same time prophetic – cinema did indeed overcome its erstwhile dependency on writing – and naive, as that overcoming did not take place in the way Vertov imagined. Vertov was certain that avant-garde art is and can only be revolutionary and, as such, opposed to capital. However, avant-garde techniques predominantly took hold in the most commercial visual cultural forms such as advertising and music videos, which today routinely abandon text-based linear narratives and employ avant-garde style montage, while cinema itself – with the exception of science fiction and horror – remains staunchly conservative in its employment of scripts and narrative (Krašovec 2021: 175–197).

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Contrary to most avant-garde expectations, it was capital that proved to be the real media revolutionary, while it is a critique of capital that in most cases remains conservative and clings to textual media. A century after Vertov, cinema is also not the most avant-garde media form. To turn back to Kittler (1999), recording technological media overcame writing-based media at the beginning of the 20th century; but were themselves overcome by the digital computerisation by the end of it (Rodowick 2007). Currently, however, it is the digital media themselves that are being overcome by media, based on deep learning (DL) artificial intelligence (AI). Although they are themselves (mostly) instantiated in digital hardware, DL AI media differ from the classic digital media in one key respect: they are no longer based on external, heteronomous (human) programming but rather on internal, autonomous (machine) learning (Alpaydin 2021). We can thus distinguish between programmed and learning media, and while programmed media were (and remain) undoubtedly very powerful due to their speed and precision, they were at the same never quite intelligent machines given that the intelligence they exhibited had to come from without in the form of external programming, with machines themselves merely running the said programs. DL, on the other hand, indicates that machines are able to program themselves and thus develop their own autonomous machine intelligence. It is this form of machine intelligence and its capitalist context that we will be examining in this article. We will do so first by revisiting Marx's concept of real subsumption; second, updating it to fit contemporary form(s) of capitalism and technology; third, applying this concept to contemporary media culture and machine intelligence; and fourth, speculating on how writing – as the main media of human intelligence – can come to terms with being discarded and left behind by the machine intelligence of capital. Our main thesis is that while both early technological media (such as cinema, radio and television) as well as later digital media could be critiqued as a culture industry with reductive and diminishing effects on the human psyche, today's media culture can better be described as the abandonment of human (organic) intelligence by autonomous machine intelligence. Consequently, most of the traditional 20th century critical theory is obsolete.

Real Subsumption

In Marx's theory of capitalism, the concept of subsumption designates a process whereby capital first takes hold of and later transforms a certain social process (Marx 1992: 645–646). He calls the first stage of subsumption "formal subsumption" seeing as capital's capture is – at first – merely formal and consists of a change in the legal relations of ownership. In Marx's (1992: 1119–1123) well known and often quoted example, formal subsumption is characteristic of early capitalism, when the production process itself is not yet shaped in a capitalist way.

Rather, what happens is that capital takes over preexisting production processes (such as those taking place in traditional artisanal workshops) and makes them capitalist by changing the mentioned legal relations. That is, when a workshop is owned by a private capitalist, the capitalist at the same time becomes an employer of artisans that were previously either independent or bound to traditional, pre-capitalist social hierarchies. And, since the capitalist now owns the workshop, he also own the products of the work taking place therein; and the income from the sales of those products (Heinrich 2012: 118–119).

Since the sole aim of capitalist production is making money in the form of surplus value, this legal change in ownership and other subsequent formal relations also means the repurposing of the production process, which is now oriented exclusively towards markets and profit making. What is crucial for our purposes – extending Marx's concept of real subsumption to also encompass the dimensions of culture and intelligence – is to note that relations changed in formal subsumption are exclusively *social* relations. As such, a production process that is subsumed only formally is limited in its surplus value producing capacities, given that the amount of surplus value can only be increased by prolonging the work day (Heinrich 2012: 119). To unlock the full surplus value-producing potential of any production process, there also has to be real subsumption, meaning the internal transformation of the production process. Real subsumption therefore brings a *technological* transformation alongside social transformation. As such, real subsumption historically follows the formal one and marks the beginning of industrial capitalism, whereby the system of capitalist machinery assumes a central place, thus displacing and marginalising human workers (Marx 1992: 614).

Although it had only appeared a couple of times in Marx's works, the concept of real subsumption became very influential in later Marxian theory. It featured prominently in the operaist theorisations of the role of technology in advanced capitalism (Cengia 2018), periodisations of capitalist development (Saenz de Sicilia 2013), and discussions on the effects of techno-capital on culture and everyday life (Murray 2016: 120–188). Tronti (1962) even went so far as to recast the whole of (capitalist) society as a (social) factory, i.e. resembling relations of subordination to capital and exploitation, characteristic of the capitalist production process. Due to limitations of time and space, we will leave aside the discussions on real subsumption and history of capitalism, as well as the role of real subsumption in general theory of the relation between capital and technology, and focus only on a previously under-explored dimension of capitalist real subsumption – its relation to intelligence and the cultural effects of the said relation. By doing this, we will depart from theories that see late 20th century computer assisted automation as the epitome of capitalist technology (Stiegler 2019) and the endgame of capitalist culture as a culture industry in a classic Frankfurt School sense (Adorno and Horkheimer 2002: 94–136). Building on our previous work (Krašovec 2021: 43–89), we will instead see real subsumption and capitalist auto-

mation not as techno-capital's final form but as an intermediate stage where capitalistic technology still works alongside and in the context of economic (i.e. social) relations. Marx's and later Marxian theories of real subsumption – with a notable exception of Camatte's (1988) theory of autonomisation of capital's material community from the human social community – stop at this point, that is, by understanding real subsumption as a technologically assisted capture and transformation of social relations for economic purposes. We will, however, take the concept of real subsumption further and understand it as not only a capture of human social relations but as their abandonment.

Even though it originally meant the assimilation of social relations to capitalism (with capitalism understood as an economic process), this describes only part of the process of actual real subsumption. Capital indeed assimilates pre-existing social relations, but the movement of subsumption does not stop there. As soon as capital develops its own relations and processes adequate to itself, it discards the previously assimilated ones. And given that relations and processes adequate to capital are technologies, real subsumption means displacement of the social and its replacement with the technological. In sum, real subsumption is not (only) a subjugation of social production (communal, needs oriented, etc.) to the economic imperatives of capital (production of surplus value) – its main tendency is an autonomous development of increasingly intelligent technologies that are displacing the social as such itself (Krašovec 2021: 43–89). What was previously standing in the way of capital's autonomisation and kept it confined to economic (social) forms was the lack of intelligence in capitalist technology. Economic relations compensate for the said lack, on the one hand, by employing human intelligence in the service of capital, and on the other hand, structuring the capitalist domain in a way that does not require much machine intelligence (a crucial limitation of both capitalist workplaces such as factories as well as of the culture industry). With the advance of intelligent machines in the 21st century, however, capitalism as such is moving away from 20th century (semi-intelligent at best) automation and its corresponding culture industry, discarding human intelligence in the process.

Real Subsumption of Intelligence

While classic Marxian theories take the viewpoint of work, whereby previously independent artisanal production becomes first captured by capitalist formal relations (formal subsumption) and later displaced by industrial machinery (real subsumption), with work being what is first captured and later taken over by the machines in the process of automation, we can also note a similar process with regards to intelligence. In traditional artisanal production, what workers bring to the process of production is not only their work, but also their intelligence. Artisanal intelligence is, however, not an intelligence in the usual sense (as a mental

faculty) but is instead materialised in their "techniques of the body" (Mauss 1973) as manual skill. What is thus captured by capital in the process of formal subsumption is not only work as a manual activity as opposed to (mental) intelligence but precisely manual skill *as* intelligence. This is not intelligence provided by capital – that is, capital's own intelligence – but is rather only harnessed and exploited by it. Before we continue with machines and intelligence materialised therein, just a quick note on the concepts of materialised and technical intelligence – seeing as they clash with received notions of intelligence as something immaterial and purely mental. Contrary to such views, human intelligence as such was always already technical. What sets human species apart from the rest of the animal world is not (so much) reason or mental intelligence but external technics: the creation and use of increasingly sophisticated tools and machines that do not originate from ideas or mental intelligence as such, but have their own developmental dynamics, at first biological and later autonomous without ever being (fully) under conscious control (Leroi-Gourhan 1993). In other words, human intelligence was technical before it was intellectual and its technical dimension was never an outcome of its intellectual dimension or under its direction – it was rather the other way around as the specific path of human evolution with the upright posture at its origins allowed for both free hands that gave rise to tool use, a free face that gave rise to human language, as well as a specific skull shape that gave rise to hypertrophied brains, the prefrontal cortex, and higher order thinking (*ibid.*). Technical intelligence is therefore at the very centre of anthropogenesis and not an afterthought or result of intellectual intelligence.

In fact, it is rather the other way around given that human intellectual intelligence relies on technics. Not only do we routinely use paper and pencil, chalk and blackboard as well as computers as "tools for thought" (Rheingold 2000), but even what we are used to perceiving as purely intellectual intelligence (such as internal thinking or the use of language) is at the same time technical. In Bachelard's (2002: 248) famous formulation, higher-order thinking means "thinking against the brain" since brains are, as such, not designed for thinking but to "coordinate our movements and appetites" (*ibid.*), i.e. they are, like all biological organs, oriented towards life and are thus not the organs of intelligence. In its very inception, human intelligence does something similar to human bodies as capital later does to work, money etc. – it captures and repurposes them. Although human bodies are amenable to intelligence, they are still erstwhile organic bodies designed for life, and even intellectual intelligence means using them against their original purpose. In other words, human intelligence involves using human bodies as machines both when it comes to internal thinking or its mental dimension, as well as designing and using machines or its manual dimension. To take another example: language learning and use does not develop spontaneously but is also an external imposition on the human body, signifying its machinisation in the sense that it is used against its biological design and purpose (Durham Peters 2015: 89). Absent

training in time when body parts used for language are flexible enough, feral children are never able to acquire language; and, reversely, when a certain language is locked in, it becomes impossible to alter the pronunciation significantly later (Last 2024). In sum, the difference between the mental and manual dimensions of human intelligence is not so much in that the first would represent something spiritual guiding the material dimension, but rather that while manual intelligence denotes the machinisation of external matter, mental intelligence represents the machinisation of the inside of one's own body. In both cases, human intelligence is technical and material. To come back to capitalism and the formal subsumption of artisanal manual skill: on the spectrum of mental and manual human intelligence, artisanal skill falls somewhere in the middle. It requires a great deal of thought, but at the same time thought that is largely non explicit and intuitive nor self-contained but always engaged in close relation with matter. In Bateson's (1987: 230–231) memorable illustration of a lumberjack's activity as a cybernetic system, wood matter informs the hand via the axe and the movements of the hand adjust due to this feedback loop. And it is this type of (manual, materialised) human intelligence captured by capital in the process of formal subsumption, where the work process remains the same and tools remain extensions of the artisan's hand. In formal subsumption, it is still the worker who provides the intelligence to the production process.

The great reversal that happened in the 19th century with the advent of industrial machinery was not only that machines took centre stage in the production process work-wise, but also intelligence-wise: "The special skill of each individual machine-operator, who has now been deprived of all significance, vanishes as an infinitesimal quantity in the face of the science, the gigantic natural forces, and the mass of social labour embodied in the system of machinery […]" (Marx 1992: 549). This indicates a qualitative shift from intelligence, materialised in human bodies to intelligence, materialised in machines. Whereas in artisanal production the tool is an extension of the human body, in capitalist production the human body is an extension of the machine. Intelligence, materialised in machines, is however still human intelligence but of a different kind. It is no longer an intuitive intelligence but an explicit, formalised, proto-algorithmic intelligence (Mindell 2004). We could tentatively call this real subsumption of intelligence alongside Marx's real subsumption of work, for not only is the production process but also the intelligence contained therein captured by but also internally transformed by capital through technological means. Intelligence, materialised in capitalist machines, is precisely intelligence already shaped in accordance with capitalist imperatives: the pressure of economic competition and necessity of endless and boundless production of surplus value (Heinrich 2012: 87). Machines involved in capitalist production are not merely machines in capitalist use but precisely *capitalist* machines, designed in accordance with its imperatives (*ibid.*: 104–108). However, even if we call this real subsumption of intelligence, it is not the whole

story yet – and our purpose is not just to reiterate Marx's theory of real subsumption with an added dimension of intelligence. We are adding the intelligence dimension precisely to show that there is more to the subsumption process than the capitalist capture and technological transformation of human reality and that capitalist real subsumption itself is an intermediate stage in becoming autonomous of machine intelligence. Or, what Marx and later theorists of real subsumption saw as a triumph of capitalism that is increasingly taking over and transforming all social relations, presents from the perspective of the process of autonomisation of intelligence a situation wherein the said intelligence is still constrained by economic forms of capital. In capitalism, traditional social relations become, with the help of capitalist technology, purely economic relations, but this process is just an episode in the deeper history of intelligence that first captured human bodies (language and thinking) and tools (as extensions of human bodies), and later materialised itself in machines on the way to becoming autonomous.

Machine Intelligence

What is materialised in capitalist industrial machines is technical intelligence, shaped in accordance with capitalist imperatives, but still human intelligence. The main difference between 19th century and 20th century capitalist technology is an increasingly sophisticated automation (Ramtin 1991). At first, automatic machines were perfected working machines that far surpassed the speed, strength and accuracy of manual work, but were unintelligent in the sense that they had no perception, creativity or control over their own actions (Leroi-Gourhan 1993: 248). However, with the invention of computers in the mid-20th century, some intelligence passed over to the machines – instead of passive materialisations of human intelligence they also became active decision-makers that were responsive to their environment to some extent and capable of (self)control (Morris-Suzuki 2015). As computers, machines also became much more flexible and universal in their behaviour – unlike the old industrial ones whose program was materially inscribed in their hardware and could thus only perform only one action, computers have a non-specialised, universal hardware that can run any software and as a result offer a much wider array of actions (Manovich 2013). But from the perspective of machine intelligence, even computers, although already semi-intelligent, are still only executors of external programs, and the intelligence involved in computer software is still human generated. What happens with real subsumption is that human intelligence passes from being embodied in human hands to being materialised in the machines, thus becoming less intuitive and more algorithmic in the process.

Real subsumption in the original Marxist sense can therefore be equated with the displacement of organic, intuitive intelligence by technical, algorithmic intelligence but, at the same time, not with traditional humanist theories of alien-

ation. What is materialised in the machines is not the same intuitive intelligence, alienated from workers, but a different (technical and algorithmic) type of intelligence. Or, to put it differently, human intelligence works differently when it captures human bodies as it does when it designs machines, and theories of alienation overlook crucial elements in their portrayal of authentic human essence as being violated by (capitalist) technics (Althusser 2006) – the human species was never authentic in the sense of being separated from technics. External technics was at the very core of anthropogenesis and what makes us human at the same time makes us alienated. To become human at all, an infant has to be captured by external intelligence based on language that turns its body into a cultural machine (Tomlinson 2018: 98–99, 112–113). What capitalism does is not so much take something away from humans or violate human essence(s) but – by inaugurating speed as the filter of intelligence – reveals human bodies as imperfect machines that are too slow, vulnerable and imprecise (Land 2011: 445–446). Rather than alienating something from them, capitalism supplements humans first with mechanical followed by computerised machines which compensate for human inadequacies. In real subsumption, artisanal body-as-machine with tool extensions gets replaced with machine-as-machine with body extensions.

None of this is in disagreement with or deviates from the standard Marxian theory of real subsumption. So far, we only added a caveat that human bodies, captured by intelligence in the form of culture, are also machines to prevent our treatment of real subsumption from becoming a variation on the humanist decrying of alienation. The crucial question that will allow us to go beyond existing Marxian theories is: if they are so slow, imprecise and fragile, why are then humans still around at all? The answer given in existing Marxian theories is that there is nevertheless something special and unique about humans: our creativity and imagination, which are both indispensable for capitalist production (since capitalist production depends on novelty and constant reinvention) and can never be alienated by machines since machines are, by definition, merely mechanical executors of programs and can never be creative or inventive (Virno 2004). This answer is quite wrong inasmuch as it mystifies human creative and imaginative capacities and underestimates machine creativity, but is also right in a relative sense and can be reformulated as: inasmuch machines have no intelligence of their own, they remain materialisations of the algorithmic version of human intelligence and subsequently mere executors of programs that have thus to be complemented by living human intelligence in the form of not only imagination and creativity, but also perception and alertness. With advanced capitalist automation, machines might well displace human manual skill, but they still require human programming in their design, as well as human guidance in their operation. Due to the fact that machines cannot sense or perceive their environment or deviate from their programming, it is human workers that act as machine senses and supplement them with responsiveness and creativity.

Although the factory environment itself is structured in a way that ensures predictability, thus reducing the requirement for intelligence in the form of adjusting, learning and improvising as much as possible, human workers fill in where such intelligence cannot be completely obviated. Outside the factory environment the same gap in machine intelligence is filled not by workers, but by capitalists as "character masks of capital" (Heinrich 2012: 88). It is the capitalists who endow the mindless capital as an "automatic subject" (Marx 1992: 255) with "consciousness and will" (*ibid.*: 526–527) and thus act as the capital's media (Kjøsen 2013) or intelligent extensions. In other words, even when it is in possession of advanced automated industrial machinery and can discard human manual skills, capital still cannot dispense with and thus must capture and utilise other aspects of human intelligence such as sensing, creativity and improvisation. In other words, what is actually subsumed – in the sense of being first captured and utilised as it is, only to be later discarded and replaced by technology – is human manual intelligence, while human mental intelligence is subsumed only formally by being captured and utilised as is. However, contrary to the optimist takes that human mental intelligence presents an insurmountable limit to capitalist technology and that high-tech capitalism consequently presents a kind of communism within capitalism (Virno 2004), meaning that human general intellect flourishes while the machines toil away at mechanical tasks, our stance is not so much pessimistic as it is non-anthropocentric. In our view, perceptual and creative intelligence is not a mystical endowment of humans alone and its lack in machines not an unsurpassable barrier to technological development.

The End of the Culture Industry

Anthropocentrism means positing human intelligence as the most perfected form of intelligence, in relation to which any other intelligence can only be a more or less adequate imitation (Millière and Rathkopf 2024). But from our perspective, human intelligence is far from being the most perfected form of intelligence imaginable – rather, it is what intelligence can do while it is limited to utilising (primarily) human bodies and brains. Therefore, *human* in human intelligence denotes a limitation or constraint that can be (potentially) overcome. This is exactly what real subsumption of intelligence would mean – an overcoming of human intelligence by machine intelligence under pressure from the main capitalist selection filter: endless acceleration. Just as it happened with human work when it was discarded and replaced with capitalist machines – or as it has been happening with money since the rise of financial derivatives as capitalist technologies that are replacing traditional money (Bryan and Rafferty 2006) – the rise of current intelligent machines might be a beginning of a replacement process of even the intellectual dimension of the production process with technology – as the last ves-

tige of human supremacy. The intelligent machines referred to here are technologies based on deep learning (DL) (Kelleher 2019). Although its history is fraught with tensions with what was formerly commonly understood as artificial intelligence (AI) (Cardon, Cointet and Mazieres 2018), DL presents an important breakthrough when it comes to machine intelligence.

Previous attempts at AI as symbolic AI not only met limited success in their practical applications but were also decidedly limited in their design, given that they were attempted as an extrapolation of the algorithmic dimension of human intelligence and its instantiation in machines for two reasons. First, such approaches neglected a crucial unconscious, intuitive dimension of intelligence; and second, they understood intelligence as a preset or preprogrammed rule execution without learning. As a result, they were very limited when it came to creativity and improvisation (as key components of any, biological or technological intelligence) and the machines involved were not actually intelligent as they could not learn on their own, only execute what was programmed into them (Cantwell Smith 2019: 23–38). DL changed this fact by letting machines learn on their own and, in the process, come up with their own thinking rules and patterns. The most famous result of the DL approach was the 2016 AlphaGo victory over Lee Se-dol in a game of Go (Silver et al 2016). AlphaGo was later upgraded to AlphaGo Zero which learned Go in a completely unsupervised manner and without consulting any human games whatsoever (Silver et al 2017). Another crucial milestone was the invention of transformer architecture (Vaswani et al 2017) that is at the heart of current large language models (LLM), i.e. machines that, not only can they learn human language, but can also generate it in a grammatically and semantically coherent way. The introduction of DL means that (at least certain) machines are no longer neither fast, precise and powerful but still mindless and blind mechanical automatons of the 19th century; nor are they semi-intelligent program executors of the 20th. In the 21st century, machines are increasingly able to learn, adjust their behaviour, improvise, make decisions and come up with new solutions in ways that are not an imitation of but incommensurable with human intelligence (Fazi 2021), and are thus beginning to develop their own autonomous machine intelligence (LeCun 2022).

Alongside Marxian inversion, where machines are no longer the extensions of human bodies, and workers become the extensions of machines instead, we can now notice something akin to Kittlerian inversion, where media technologies are no longer extensions of man (McLuhan 1994) but assume centre stage while human culture is becoming technology's playground and a source of learning data (Bratton 2015: 434–499). This also changes everything with regard to critical theory. The target of the traditional critical theory – from Adorno's and Horkheimer's (2002) pioneering critique of the culture industry, to the more contemporary bemoaning of the destruction of desire, attention and experience in current media environments (Stiegler 2014) – was always a *reduction* in human

experience and intelligence as a result of exposure to media technologies. Such a critique was undoubtedly right in the mid or even late 20th century as mass broadcasting technologies of the time and early computer technologies were indeed reductive in comparison to the full extent of human intelligence, thus compromising reflection and locking human thinking in limited patterns and diminishing human experience. It is crucial to note though that these were still pre-programmed and not autonomously intelligent media technologies. The 20th century mediascape was reductive in the same way and for the same reasons that factory environments were – simplified, controlled and predictable environments compensated for the lack of intelligence in machines. In this sense, the 20th century mediascape indeed diminished human experience and neither matched nor utilised the full extent of human intelligence. The situation in the 21st century mediascape is, however, quite different. Neither capitalism nor media machines are sticking to their assigned places but have instead invaded the whole of society and culture. In this sense, the 1960s Operaismo Thesis on the real subsumption of society was correct, it is just that real subsumption involving intelligent machines does not mean a reduction of the richness of culture to factory standards but its proliferation and intensification instead. With intelligent machines, capitalist culture is no longer contained to certain times and places; it is now everywhere all the time. As Marx foresaw, general intellect is indeed proliferating; but what he missed is that today's general intellect is no longer human but rather – when capitalism is released into the wild and its technology is intelligent enough to face real world environments – functions as a machine network instead (Dyer-Witheford, Kjøsen and Steinhoff 2019: 62).

Generative AI presents an autonomous technological culture based on autonomous machine intelligence or techno*logos* (Ernst 2021). An ancient barrier that separated technics from culture and allowed for one to be pitted against another (Simondon 2017: 9) no longer exists. If previously the specificity of culture was that it derived from language as an exclusively human preserve, with learning and language machines this is no longer the case. Culture is no longer a refuge from technics, given that technics now *is* culture. The introduction of generative DL AI into our cognitive and affective environments thus complicates the standard media and culture critiques as AI no longer works in a pre-determined, mechanistic way, characteristic of earlier media technologies. If the main target of critique of the traditional critical theory was mass conformity due to the influence of mechanistic media machines, now the problem is reversed: what we should be aware of is precisely the indeterminacy and unpredictability of DL AI. Instead of an overreach of a truncated, instrumental reason (Parisi 2015), new intelligent media technologies present a quite new and different problem: they are already too fast, complex and intense to even comprehend (Burrell 2016) and are becoming increasingly alien and indifferent. Rather than reducing us to mechanistic drones, today's media machines are generating language and culture at speeds and complexities that es-

cape us. Consequently, the old critical theory no longer applies – rather than a continuation of technics as a materialisation of instrumental reason, new intelligent machines are the fulfilment of historical avant-garde dreams but in an unexpected way. A cultural revolution did not happen against, but *within* capitalism. As in Vertov's premonition, new media machines developed their potential(s) by breaking free from the limitations of human culture (such as writing and the narrative); but contrary to his political investments, they could do so only as part of the process of real subsumption, i.e. by discarding social relations and replacing them with technologies.

Culture is no longer an industry, and its automation is not programmed from without anymore. Today's automation is a synthetic automation (Steinhoff 2021: 195–199), meaning that it is not a mechanical imitation of either human manual or intellectual intelligence, but rather autonomous in its mode of functioning. Machines are increasingly able not only to learn but also to program themselves. Real subsumption of intelligence means that today's culture is escaping the confines of not just industrial capitalism but of human intelligence as such. Industrial capitalism was what capital was capable of when it still had no technological intelligence of its own and had to rely on (formally subsumed) human intelligence. With capital's own machine intelligence, this barrier is overcome, and capital is currently in the process of generating its own, alien techno-culture. Against the lingering humanism of the new version of the old critical theory which still sees the process of real subsumption of intelligence as somehow being about us, even if it is in the form of extraction of data from human users (Crawford 2021), this new media culture is decidedly not about us (Bratton 2015: 568–601) – user data is abstracted not extracted (Amoore 2020: 66) and nothing of theirs is taken from the users. Today's techno-culture is also not about the colonisation of the human psyche (Berardi 2021). Its defining feature is precisely that it is indifferent towards the human. In the 21st century, capital underwent a mutation from an automatic subject with attached human media, to becoming an autonomous machine intelligence and has instantiated a new cultural reality (Wooldridge 2021: 292) in the process.

Conclusion: Capital and Intelligence in *Cosmopolis*

Although it was first published some time before the current explosion of DL AI, DeLillo's *Cosmopolis* (2003) is avant-garde in at least two senses: first, similarly to Vertov's premonition(s), it was far ahead of its time in its reflection(s) on capital, technology and intelligence; and second, it can be seen as an early precursor of more recent novels, such as Ismaïl's (2024) *Hyper*, Diaz's (2022) *Trust,* and Allan's (2023) *Conquest,* reflecting on a curious new situation in which capital is no longer an instance of exploitation and oppression – as it was for traditional critical theory and engaged literature – but of abandonment and escape

where the centre stage is not assumed by human characters, but by the alien intelligence of capital. *Cosmopolis* explores the world of unleashed machine intelligence of capital that is no longer inhibited by limited human perception, experience or cognition. Its main character, a young and successful asset manager named Eric Packer, is a capitalist, but not as a character mask of capital. While not exactly conscious, capital in *Cosmopolis* certainly has some kind of mind of its own that is completely inscrutable to the novel's human protagonists regardless of their mathematical knowledge or investment experience. Two intertwined main plots in the novel showcase the discrepancy between human affairs on the one hand, and the movements of capital on the other. One plot line is the unexplainable rise in the value of yen, and another is Packer's capricious desire to get a haircut for which he has to travel through the city, beset with violent anti-capitalist riots, a presidential visit, and a music star's funeral.

Human history with class struggle as its motor seems antiquated and worn-out. The future, yearned for by the historical avant-garde, arrives in the form of capital's pressure on the present: "It is cyber-capital that creates the future. […] The present is harder to find. It is being sucked out of the world to make way for the future of uncontrolled markets and huge investment potential. The future becomes insistent" (DeLillo 2012: 79). In contrast, anti-capitalist protest movements are no longer about (a better) future, but reactive in wanting to prevent the future from happening: "This is a protest against the future. They want to hold off the future. They want to normalise it, keep it from overwhelming the present" (*ibid.*: 91). The innocence of the historical avant-garde, which still imagined a future against or beyond capitalism, is today irretrievably lost as the future is no more desired but rather dreaded. But the very violence of the riots in the novel at the same time contains more than pure hatred of capitalism and the future – in a way, it also mirrors the destructiveness of capital itself: "[…] in the end you're dealing with a system that's out of control. Hysteria at high speeds […] We create our own frenzy, our own mass convulsion, driven by thinking machines we have no final authority over" (*ibid.*: 85) and our involvement with and attachment to it. While "the frenzy is barely noticeable most of the time" and is "simply how we live" (*ibid.*), when it does explode in riots it reveals something other than hatred, a deep ambivalence in our relation towards capital that is no longer destroying us by exploitation or oppression, but by its indifference and abandonment, and is at the same time irresistibly seductive precisely because of its vertiginous speed and incomprehensible complexity. "The glow of cyber-capital. So radiant and seductive. I understand none of it," (*ibid.*: 78) admits Packer's theory officer Kinski.

The core social, cultural and affective problem of capital in *Cosmopolis* is no longer posited in terms of the economy but in terms of intelligence – as an endless and limitless self-expansion of value, capital in its economic form was just a practice run for the future endless and limitless self-expansion of alien technological intelligence. Capital as a realised technological intelligence is no longer

concerned with humans, not even in the sense of wanting to exploit them, thus the new problem becomes how to deal with this abandonment as well as our residual attachment to capital, given that indifference does not go both ways and capital is still (or even more so) addictive even as a runaway intelligence. As Packer conveys to his young analyst Chin, who thinks about quitting the business: "Put a stick of gum in your mouth and try not to chew it" (*ibid.*: 23). Traditional critique, either as theory or engaged literature, makes sense when someone or something is exploiting and/or oppressing you, while *Cosmopolis* presents a novel form of reflection concerned precisely with capital's escape and our ambivalent relation towards it – such as the cold intensity of the capitalists or frenzied acting out of the protesters. We could name this type of literature "xenofiction" as part of "xenoculture" (Krašovec 2021: 175–210) that abandons critique in favour of bewilderment and fascination. Xenofiction would no longer be concerned with the defence of human values from capital's attacks, diminishment, reduction, colonisation, extraction, surveillance and so on, but instead see such critique as a naive attempt to cling to the illusion that we still somehow matter to capital even though it has already left us behind. The reflection that the new situation calls for instead is precisely a reflection of a runaway, inscrutable alien intelligence of capital.

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SAŽETAK

REALNA SUPSUMPCIJA INTELIGENCIJE I KRAJ KULTURNE INDUSTRIJE

U Marxovoj teoriji realna supsumpcija je proces u kojem kapital preuzima postojeći društveni razvoj i transformira ga iznutra tehnološkim sredstvima. Cilj ovoga rada jest proširiti koncept realne supsumpcije na domenu inteligencije i pokazati da kapital ne samo da preuzima i transformira društvene procese već ih u konačnici odbacuje i zamjenjuje tehnologijom. To znači da u 21. stoljeću širenjem umjetne inteligencije (UI), utemeljene na dubokom učenju (DU), ljudsku inteligenciju istiskuje strojna inteligencija imanentna kapitalu. Posljedično, računalne tehnologije 20. stoljeća i rana umjetna inteligencija mogu se nazvati formalnom supsumpcijom inteligencije jer predstavljaju prijenos ljudske inteligencije na strojeve. U tom procesu oblik inteligencije ostaje nepromijenjen, mijenja se samo njezin medij. Umjetna inteligencija u 21. stoljeću, međutim, predstavlja realnu supsumpciju inteligencije uzme li se u obzir da inteligentni strojevi više nisu replike ljudske inteligencije, već razvijaju vlastiti, autonomni oblik inteligencije. Autonomna strojna inteligencija ujedno signalizira kraj kulture kao kulturne industrije. Ako su i avangardna umjetnost i kritička teorija imale za cilj kritizirati skučeno ljudsko iskustvo prouzrokovano medijskim tehnologijama 20. stoljeća, takve kritike u vidu novih medijskih tehnologija nisu više valjane. Takvo će što biti pokazano na primjeru DeLillova romana *Kozmopolis* (*Cosmopolis*, 2003), i to upravo zato što ne nudi pojednostavljenu i predvidljivu kritiku kapital(izm)a, već važne uvide u ambivalentnost njegovih procesa.

Ključne riječi: realna supsumpcija, kapital, inteligencija, kultura, duboko učenje, umjetna inteligencija