Original Article

The End of Information Age Society 5.0 and the L[e]ast Man

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Abstract
Through an epistemological lens, this article asserts that the dawn of the internet of data (IoD) era marks a profound shift in our understanding of human existence, one that challenges the notion of modern man as a singular and distinct entity. Delving deeper, the analysis presents an ontological exploration of the transition from a human-centric approach of the 19th and 20th centuries to the added-value man of the 21st century, examining the ideological underpinnings of concepts such as the Information Society and Society 5.0 respectively as representatives of the above two insights. In particular, the article meticulously dissects the stance of each approach towards humanity, highlighting the paradigm shift in our perception of the human experience. This piece offers an insightful commentary on the evolution of our understanding of human nature, encouraging us to rethink our place in the rapidly changing digital landscape.

Keywords: algorithmic personalization, individualism, internet of data (IoD), Society 5.0.

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Introduction

This manuscript argues that while the information age's advent demanded an ideological-ontological assumption regarding man's nature as an individual entity, but conversely, breaking away from the information age and its associated concepts like information technologies and information society is premised on a view of man as a depersonalized and deindividualized entity. During its development, this later approach has experienced generic readings of humans, including what is claimed in "the big five personality traits" initially proposed by Norman and Goldberg (1966) and later by McCrae and Costa (1985). But as far as the actual functioning of these systems is concerned, these types of technologies have gone beyond the generic approach and have an absolutely holistic, depersonalized reading of humans. As a later example, despite attempts to make "Society 5.0" more appealing (Nakanishi, 2019; Deguchi et al., 2020a; Holroyd, 2022), the promise of "it will liberate us" (Nakanishi, 2019) would be fulfilled from nothing but "free will" (Skinner, 1948[2005]: 279) in the achieved utopia of his *Walden Two*.

This new approach to humans as a type without individuality is the product of many decades of continuous invasion of computer science into human cognitive and behavioral domains and continuous efforts to impose functional models on it. In fact, this new approach is a dialectical product that emerged as an idea at the time of the emergence of the first digital technologies but failed to become mainstream for many decades. But the digital revolution of 2007 and the transfer from the internet of information to the internet of data realized the hidden ideal of de-individualization in a chain of discoveries affecting the field of digital technology respectively including "Randomly Transitional Phenomena" (Winnicott, 1969), "Computational Complexity Theory" (Karp, 1972), "Quark Theory" (Gell-Mann, 1976), "the next web" (Berners-Lee, 2009), and finally uncertainty of Priming Theory (Kahneman in Yong, 2012).

However, the jargon of digitization has always emphasized the pretense of the importance of individualism, and while its survival depends on the popular false belief about pretentious individualism, it has always tried to legitimize itself on what it calls the expansion of individualism.

There is a contradictory here. On the one hand, the survival and inclusiveness of digitalization processes are dependent on the progressive disregard of individualism, and on the other hand, the jargon of digitalization continuously emphasizes the increasing effect of digital technologies and procedures in the development of individualism. So,

the question is, how can this contradiction be explained? How can one explain, for example, the increasing development of the application of personalized advertising based on big data from online platforms like Meat, while at the same time the de-individualization resulting from the transfer to the internet of data, essentially made the Individuality-oriented reading of data impossible and ineffective.

In an effort to find answers to the above questions, I will first focus on the concept of the end of the information age and show why and how concepts such as the information age have become outdated and that by leaving it out of in mainstream academic thought, the concept has become a blatant tool to justify or cover up control and surveillance mechanisms or business speculations. Then, I will show that the ideological individualism has been a delusional and unrealistic reading in its nature, and has had functions other than what exists in the liberal belief in man. Through the lines of analysis, I will resolve the contradictory of the above view and I will show that most of what is exposed as the individuality based systems, is actually nothing but a dialectical process with a predetermined economic and political function.

Method

The reasoning is founded upon an epistemological approach (Killam, 2013; Iacob, 2015; Al-Ababneh, 2020), which employs a comparative analysis between the classic literature concerning the information society and information age, and its succeeding criticism. This approach serves as a means of reflecting on the novel, functional facets of digital technology. The epistemological approach utilized in this work is an expression that compares two ontologies: human-centeric of the 19th to 20th centuries and added-value man of the 21st century. Information society and society 5.0 have been analyzed as representatives of these two ontologies, respectively.

The central argument goes on this line that the shifts from information to data, from voluntarism to conditionality, and from individualism to deindividuation, as catalyzed by the paradigm shift in the late 2000s, has radically transformed the positions of digital technologies. Such transformations provide the context for an epistemological critique of the fallacious ontological claim that all recent technological practices include perception management, artificial intelligence, and machine learning are inherently individualistic.

By adopting an epistemological methodology, this study can effectively refute the unfounded claim of individualism in the primary processes of

developing digital technologies. More significantly, it also elucidates the reasons why these processes insist on posturing as individualistic and resorting to conspiracy theories to falsify reality.

The end of information age

In the early days of the Internet, we were captivated by the promise of the "Information Age," a time when knowledge and ideas would flow freely and easily around the world. This was the era of the Internet of Information (IoI), when websites and search engines dominated the digital landscape, and we were all connected by an endless stream of information. This era was believed to have revolutionized the way we interact with each other, conduct business, and access knowledge. However, with the transition from the Internet of Information to the Internet of Data (IoD) in the late 2000s, the age of information came to an end. This transition was not merely a technological shift, but rather a paradigmatic transformation that marked a new phase in our evolution as a society.

There are still some who cling to the idea that we live in an information age or society (for example see Roetzel, 2019), where knowledge is the key to success and information technologies are the driving force behind our progress. They assert that information technologies have transformed our world into a knowledge-based economy and have fostered new forms of communication, knowledge-sharing, and creativity. In their view, we continue to live in the age of information, albeit in a different guise (for example see Castells, 2020).

However, this view is increasingly outdated, and it fails to recognize the profound changes that have taken place in the digital landscape over the past decade. The transition from the Internet of Information to the Internet of Data has transformed our understanding of what constitutes knowledge, communication, and innovation. The proliferation of data-driven technologies such as Big Data, Artificial Intelligence (AI), and the Internet of Things (IoT) has radically altered the way we generate, process, and disseminate knowledge.

One of the key implications of this transition is the emergence of data as the new currency of the digital age. As Humby (2006) note, "Data is the new oil" (Humby, 2006: 1), and it has become the most valuable resource in the digital age. This has led to a focus on data-driven innovation, where insights and value are derived from the analysis of massive amounts of data.

This shift has brought about a change in the way we think about information. In the age of information, knowledge was seen as a commodity

that could be easily accessed and shared. But in the age of data, information is not enough. It is only when information is transformed into insights, predictions, and recommendations that it becomes truly valuable (Brynjolfsson & McAfee, 2014). This has led to the rise of new technologies, such as machine learning and artificial intelligence, which are designed to extract meaning from data and generate insights that can drive innovation and growth.

Another implication of this shift is the blurring of the boundaries between the digital and physical worlds. The Internet of Data has made it possible to capture and analyze data from virtually every aspect of our lives, from our social interactions to our physical movements. This has led to the emergence of new forms of data-driven innovation, such as smart cities, wearable technologies, and personalized medicine, which have the potential to transform every aspect of our lives.

Moreover, the Internet of Data has created new challenges and opportunities for individuals, organizations, and society as a whole. On the one hand, it has enabled new forms of surveillance, exploitation, and control, as data is collected and analyzed on an unprecedented scale. On the other hand, it has also facilitated greater access, improved communication and collaboration, and empowered individuals and groups to participate in decision-making processes that affect their lives.

One of the key challenges posed by the Internet of Data is the need to balance the benefits of data sharing and analysis with the need to protect individual privacy and security. As more and more personal data is collected and analyzed, there is a risk that this information could be misused or abused by malicious actors. In addition, the sheer volume and complexity of data generated by the Internet of Data has made it difficult to ensure that data is accurate, complete, and reliable.

The age of information is over, and we have entered a new era where data is king. This transformation has fundamentally altered the way we generate, use, and interact, and it has given rise to new forms of innovation and growth. While there are still those who cling to the idea of an information society, the evidence suggests that this view is increasingly outdated.

The ideology of Information age

It is claimed that the emergence of new technologies has given rise to new forms of communication, thus transformed us into "information age." The concept has been widely used in academic literature and popular discourse since the 1960s. However, as we move into the 21st

century, the concept have become outdated and is no longer useful in understanding contemporary situation. This phenomenon can be attributed to two primary factors. The first lies in the intrinsic crisis of concept that failed to align with the ever-evolving the reality. The second factor involves their inadequacy in explicating the multifarious and dynamic nature of technological advancements.

The concept of the information age emerged in the 1960s as a response to the increasing role of information and communication technologies (ICTs) in society. Daniel Bell, in his influential book *The Coming of Post-Industrial Society* (1976), argued that advanced capitalist societies were shifting from industrial production to a knowledge-based economy. Bell suggested that in this new era, knowledge and information would replace capital and labor as the main sources of wealth, power, and social organization. Similarly, Manuel Castells in his trilogy *The Information Age: Economy, Society, and Culture* (1996-1998) posited that the rise of ICTs was transforming societies into "informational societies," where information and knowledge became the main sources of value creation, social organization, and power.

However, over the past few decades, the idea of the Information age has become increasingly outdated and has been left out of the mainstream of academic thinking. In their critique of the concept, Frank Webster and Kevin Robins argue the theory of the information age is built on a set of interrelated assumptions about the nature of technology, social change, and the future that are questionable, if not untenable (Webster & Robins, 1986). Webster and Robins (1986) suggest that the concept of the information age is rooted in a particular view of technology as a neutral force that shapes society. This view ignores the social and political dimensions of technology and how it is shaped by existing power relations. They also argue that the concept assumes a linear and deterministic view of progress, where technological advances inevitably lead to social progress and prosperity. Technology alone cannot bring about social change and a wide range of social, political, and economic factors shapes the impact of technology on society.

Moreover, the idea of the information age was rooted in the assumption that digital technologies would bring about a more democratic and egalitarian society. However, this view has been challenged by the growing realization that digital technologies are not neutral tools but are shaped by the social and economic structures in which they are embedded (Williams and Edge, 1996). For example, the dominance of large technology companies such as Google and Facebook (former name for Meta) has raised concerns about the concentration

of power and the potential for these companies to shape the flow of information and influence public opinion (Zuboff, 2019).

In addition, the concept of the information age has been criticized for its narrow focus on the use of digital technologies in developed countries, which has led to a neglect of the social and economic implications of digital technologies in developing countries (Graham & Anwar, 2019). This has resulted in a lack of attention to issues such as digital inequality and the digital divide, which continue to be major challenges in many parts of the world.

In his critique of the concept, David Lyon (1994) argues that the increasing use of the term in the late 1980s and early 1990s was clearly part of a fad, and one that has now passed. Lyon suggests that the concept has been replaced by new concepts which reflect the dynamic and complex nature of contemporary social structures and the ways in which they are shaped by technological change.

The concept of the information age has been widely used in the context of control and surveillance mechanisms. The term "surveillance society" has been used to describe societies in which individuals are subjected to continuous monitoring and tracking through the use of ICTs. This monitoring can take various forms, including CCTV cameras, biometric identification systems, and social media tracking. The justification for this monitoring often revolves around the need to ensure public safety and security. However, as Lyon (1994) points out in his book *The Electronic Eye: The Rise of Surveillance Society*, this surveillance can also be used to control and regulate the behavior of individuals, and can be a means of exercising power and authority over them.

Furthermore, the concept has also been used to justify commercial speculations. The growth of the internet and the digital economy has led to the rise of new business models, such as data-driven advertising and e-commerce. These models rely on the collection and analysis of large amounts of personal data, which is then used to target individuals with specific products and services. This collection of data often takes place without individuals' consent or knowledge, and can be used to create profiles of individuals for commercial purposes. This type of commercial speculation raises serious concerns about privacy and autonomy, as individuals are increasingly subjected to targeted advertising and influence without their consent or knowledge.

Moreover, the concept has also had serious implications for democracy and social justice. The use of surveillance mechanisms and commercial speculation has undermined democratic values such as privacy, autonomy, and transparency. As Helen Nissenbaum (2010)

argues in her book *Privacy in Context: Technology, Policy, and the Integrity of Social Life*, the protection of privacy is essential for the functioning of democracy, as it allows individuals to engage in political activities without fear of retribution or control. Similarly, it has reinforced existing social and economic inequalities, as those with more resources are better able to use these tools to promote their interests.

As a result of these and other criticisms, the concept of the information age has become increasingly outdated and has been left out of the mainstream of academic thinking. Instead, scholars have begun to adopt more nuanced and critical approaches to understanding the role of digital technologies in society. For example, the concept of the platform society has emerged as a way of describing the growing dominance of large digital platforms and the challenges that this poses for democracy and social justice (van Dijck, 2018). Similarly, the concept of digital capitalism (Fuchs, 2018) has been developed as a way of understanding the ways in which digital technologies are transforming the global economy and creating new forms of exploitation and inequality. The concept has become an outrageous tool to justify or cover up control and surveillance mechanisms or commercial speculations. Theorizing around this concept raises serious concerns about the ways in which it is being used to undermine privacy, autonomy, and democratic values.

Regardless of the ideological characteristics of the information age, the ineffectiveness of this concept is also related to the recent changes in digital technology itself. The concept has long been associated with the era in which we live, characterized by the rapid growth and spread of information technologies such as the internet. However, the emergence of the Internet of Data in the late 2000s has challenged the traditional use of this concept. As a result, the use of the concept of the information age is not entirely applicable to the current period.

Putting data instead of information solved two trials of the CT: data does not contain semantic mode, and it can be unified. However, this shift raises concerns about individuals' duty to the public good, given the transfer of private data and the accumulation of public data on the servers of digital giants like Google or Facebook to control human behavior.

Moreover, the use of the term information age can be misleading, as it suggests a static and homogenous era, rather than the dynamic and evolving landscape of digital technologies that we currently inhabit. Therefore, it may be more appropriate to adopt a broader term, such as the digital age (Toffler, 1980), to reflect the multidimensional nature of our digital lives.

Dialectic of information age

Despite the temporary characteristics of the information age, this ideological concept gained its legitimacy and idealistic prominence primarily through its claim to be rooted in individualism. The jargon of this ideology not only relies on aspirational rhetoric such as the emancipation of humanity and a fascination with the "renaissance of individualism" (McLuhan, 1965: 335), but it also asserts that the processes of information age technologies are inherently individualistic. In essence, the ontological foundation of the information age is individualism, an idea that is itself strongly ideological in construction "to disclaimer of political systems, and to cultivate the dream of human selectivity" (Mohseni Ahooei, 2022: 27).

As we delve into the evolution of the information age, we find a recurring pattern of attempts to comprehend human existence and behavior that transcend individuality. Despite positioning itself as a champion of individualism, the information age has spawned a series of endeavors that seek to understand human beings as a collective entity. These endeavors have predominantly relied on digital technologies and their capabilities. In essence, the information age's ostensible emphasis on individualism masks a more profound reality. The age has enabled the propagation and consolidation of a holistic, de-individualized approach to humanity through the very technologies that underpin it. As such, the information age has ushered in a paradoxical era in which the claimed pursuit of individuality coexists with the imposition of a collective perspective on the human experience.

Although the ideological nature of individualism has been widely criticized, the concept's practical functions were not questioned until the early 1970s. Scholars' recognition of individualism's social construction in the modern era has suggested its persuasive effectiveness. However, this belief began to fade in the 1970s.

In response to the advent of relatively high-speed processors in the early 1970s, scientists attempted to discover a universal pattern of human behavior, including everything's general pattern. Their results yielded the concept of "randomly transitional phenomena" (Sprott, 2003: 89) as a logical explanation for the Chaos Theory (CT). However, while the CT implies the impossibility of designing universal patterns, the theory is a product of such a dream itself. Attempts within the CT scope to find such a pattern were reversed, leading to the theorized idea that although a model can explain human behavior, the number of variables and their interactions must be taken into account.

In fact, the early 1970s saw an explosion in computing technology, leading to a surge of interest in the study of complex systems. This gave rise to the field of Chaos Theory (CT), which seeks to explain the behavior of complex systems that are highly sensitive to initial conditions. The study of such systems is relevant not only across a range of disciplines, including mathematics, physics, engineering, biology (Cambel, 1993; Bau & Shachmurove, 2002), but also in the field of humanities and behavioral sciences, including economics (Brock, 1990) and psychology (Goldberger et al., 1990).

CT seeks to understand how seemingly random patterns can emerge from complex systems. For example, weather patterns are influenced by a multitude of variables that interact in complex ways, making it difficult to predict long-term weather patterns. However, CT has revealed that even seemingly chaotic systems exhibit some degree of order and can be modeled mathematically. One of the key contributions of CT has been the development of "fractal geometry" (Barton, 1990), which is used to describe the complex and often self-similar patterns found in nature. Fractal geometry has found applications in fields such as computer graphics, medicine, and finance.

The CT also has important implications for decision-making in complex systems, where small changes in initial conditions can lead to vastly different outcomes. The theory underscores the importance of taking a holistic approach to complex systems, considering not only the individual components but also their interactions and the ways in which they influence one another.

However, the reality turned out to be far more complex than anticipated. The chaos theory, which posits that complex systems can exhibit unpredictable behavior despite being governed by deterministic laws, challenged the notion that there could be any such thing as a universal pattern in human behavior. Instead, it suggested that human behavior is shaped by a wide range of factors, many of which are highly idiosyncratic and difficult to predict.

The Computational Complexity Theory (CCT) (Karp, 1972) dominated in the late of 1970s and was a reaction to the chaos theory. In fact, to overcome the limitations of the chaos theory, researchers turned to the Computational Complexity Theory (CCT), which sought to harness the power of computers to detect patterns in human behavior. Thanks to the advent of increasingly powerful computers, researchers turned to computational methods in pursuit of the idea of uncovering the fundamental patterns underlying human behavior. The hope was that these machines would be able to detect universal patterns in human

behavior, which could then be used to predict and explain a wide range of phenomena.

It proposed entrusting the computer with discovering a general pattern between information units as a practical alternative. However, there were two problems here: defining a specific "unit" for information proved impossible and information has semantics element inside which makes it difficult for machines to grasp the full meaning of the information they are processing.

As a result, the CCT failed as the first practical step in machine learning. The barriers to unification and semantics of information proved to be too high, and the quest for a universal pattern in human behavior remained elusive. Despite these challenges, however, researchers continued to explore new methods and techniques for understanding the complex patterns that underlie human behavior.

The controversies continued until the Quark Theory (QT) opened a new door into computing science in 2007. According to the QT, every entity consists of a set of micro components called quarks, the smallest unit of a phenomenon that cannot be broken down further (Griffiths, 1987). This subatomic particle applies to any entity, dead or alive, and is not arbitrary but a general rule repeated on a larger scale. In the field of information technology, the QT led to a major revolution: shifting from the Internet of information to the Internet of data. This revolution took place around 2007 and transformed all internet processes, technologies, and platforms. With the rise of big data and machine learning, the ability to collect, analyze, and interpret vast amounts of information has become a critical component of modern computing science.

More importantly, it was thought that the QT has also had a profound impact on the way we think about the world around us. By revealing the underlying structure of all matter, it has helped to illuminate the mysteries of the universe and provided a new lens through which to view our place in it.

The next defining event occurred in 2012 when Daniel Kahneman, the Nobel Prize winner in Economics, wrote an open letter to the American Psychological Association claiming that the Priming Theory (PT) is ineffective (Yong, 2012). The PT claims that the desired behavioral outputs can be obtained by projecting specific information into each individual's mind in a personalized way. However, Kahneman's re-experimentations showed the theory's ineffectiveness, and he also exposed fraudulent social psychologists who used priming techniques in their work. Kahneman's re-experimentation showed that the theory's claims could not be replicated, casting doubt on its validity and raising

questions about the credibility of those who had promoted it (ibid.).

Despite the setback for the PT, the field continues to evolve. New developments in psychology are shaped by advances in technology and data analysis. With the rise of artificial intelligence and machine learning, there is a growing interest in using these tools to better understand the complexities of human behavior and cognition.

I approached the internal contradiction of the information age through a dialectical lens. Despite individualism being its purported aim, the technologies that define this epoch have chiefly facilitated the construction of holistic models of human behavior. Over time, as these models became more sophisticated, they ultimately spelled the end of the information age. Individualism has been a central theme around which the internal dialectic of the information age has revolved, spanning from the 1960s to the 2000s. While the era ostensibly sought to usher in a renaissance of individualism, its development processes yielded the opposite: the de-individualization of processes and the consolidation and deepening of a holistic approach to human behavior. This paradigm shift finally took root in the late 2000s, marked by the transition from information technology to data technology.

Society 5.0 and the matter of Man

At best, "man" is only temporarily determined by the ever-changing historical circumstances, and our societies are bound by implicit regulations derived from these conditions, which dictate the nature of man. Therefore, with the discovery of new truth or when, as Michel Foucault puts it, "certain modality of the production of truth" (Foucault, 2006: 238) changes, man will disappear.

> *"As the archaeology of our thought easily shows, man is an invention of recent date. And one perhaps nearing its end. If those arrangements were to disappear as they appeared, if some event of which we can at the moment do no more than sense the possibility – without knowing either what its form will be or what it promises – were to cause them to crumble, as the ground of classical thought did, at the end of the eighteenth century, then one can certainly wager that man would be erased, like a face drawn in sand at the edge of the sea."*
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> (Foucault, 1966: 422)

As the latest insight from the IoD era, Society 5.0 is not just an alternative name for the information society, but a decisive decision to change the

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process of discovering the truth. This is a change in looking at all crises such as economic growth and environmental problems as continuous nightmares of late capitalism that the constructions of the information age and information society could not overcome. It is a futuristic concept that envisions the integration of cutting-edge technologies such as artificial intelligence, the Internet of Things, and big data with social systems to create "a human-centered society" (Deguchi et al., 2020b: xii). It aims to address social issues and improve quality of life by leveraging advanced technologies to facilitate economic growth, solve environmental problems, and promote sustainable development.

At its core, it is assumed that Society 5.0 represents a shift from a production-centered society to a human-centered one (Kravets et al., 2022) which seeks to bring together diverse stakeholders from industry, government, academia, and civil society to co-create solutions that benefit all members of society.

One of the very features of Society 5.0 is its emphasis on inclusivity and diversity (Sekhar et al., 2022). Unlike earlier iterations of society, which were often characterized by hierarchical structures and rigid social norms, Society 5.0 encourages participation and collaboration across a range of social, economic, and cultural boundaries. This means that people from all walks of life, regardless of age, gender, or background, are given the opportunity to contribute to the development of the society.

Another key aspect of Society 5.0 is its focus on innovation and creativity (Carraz & Harayama, 2018). By leveraging emerging technologies, such as artificial intelligence and the Internet of Things, Society 5.0 aims to unlock new solutions to some of the most pressing challenges facing humanity. This includes addressing climate change, improving healthcare, and advancing sustainable development.

In order to achieve these goals, Society 5.0 encourages the development of a wide range of skills and competencies, including technical expertise, problem-solving skills, and creativity (ibid.). It also emphasizes the importance of lifelong learning and continuous development, as individuals and organizations must be able to adapt to changing circumstances and evolving technologies in order to remain competitive and relevant.

Perhaps one of the most exciting features of Society 5.0 is its potential to transform the way we work and live (Goede, 2020). By leveraging advanced technologies, such as telepresence robots and virtual reality, Society 5.0 enables individuals to work and collaborate in new and innovative ways. This has the potential to improve work-life balance, reduce commuting times, and increase productivity.

Another aspect of Society 5.0 that is likely to be of interest to experts is its focus on the creation of new business models and ecosystems (Fukuda, 2020). As emerging technologies continue to disrupt traditional industries, Society 5.0 encourages the development of new models that leverage the latest innovations to create value for both businesses and society as a whole. This includes the development of platforms and marketplaces that connect individuals and organizations, as well as the creation of new products and services that address emerging societal challenges.

The Society 5.0 literature contains a wealth of pleasant assumptions and claims. These promises, of course, are not a new phenomenon, and throughout history, whenever there was a possibility of guessing about a significant development in technology, such literature appeared. However, let's compare the promises of Society 5.0, especially its ability to develop a human-centered society, opportunity to contribute, innovation and creativity, work-life balance, and value for society as a whole, with the real trends of IoD.

As is evident from its features, or rather its promises, Society 5.0 is largely based on the same processes that have been consolidated during the evolution of the IoD. It is especially emphasized that Society 5.0 is "A People-centric Society" (Deguchi et al., 2020b: 2), and its ideal is "humanity" (ibid.: xii). However, the IoD's attitude towards humans is no longer as an entity with unique characteristics, but it understands humans as a controllable reactive structure alongside things and processes. So, what do the concepts of People-centric and humanity-based mean in the literature? To answer this question, we must refer to the new meaning of man that has brought through such systems. The intended man of Society 5.0, and in general, the ideal man of the IoD, is a man whose characteristics are determined and defined by very digital systems and processes, including algorithms. The subtitle "Measuring Happiness: From the Internet of Things to the Internet of Humans" (Shibasaki et al., 2020: 77) refers to this in an ironic way because while the IoT wants to separate things from people, Society 5.0 does not consider such a separation necessary since according to the basis of IoD, man is not something distinct from objects.

Likewise, all other wonderful promises of Society 5.0, especially those associated with words related to the individualistic approach to human, including innovation, creativity, contribution, and value, are all based on a new definition of these concepts.

Therefore, emphasis on the concepts like "human capitalism" (Deguchi et al., 2020b: 138) to focus on creating "human [added] value"

instead of labor and consumption fosters the insight that man has now become a being with the same characteristics. The ultimate value for humanity is the transformation of humans themselves, and Socity 5.0 aims to separate human value from property-based imagination, which means that man himself has become the object of ownership. The future of IoD will prioritize creating man added value not the fate of his life and death.

Discussion

We are experiencing a paradoxical situation. On one hand, the shift from the information age to the age of data and internet has rendered individualistic approaches ineffective and impractical. Data, in its essence, is universal and lacks individualistic qualities. Moreover, a large volume of integrated data is necessary to efficiently discover and manage human behavioral patterns, instead of isolated data. A single data point is meaningless without the context of other data points. This is especially true when it comes to human behavior patterns, which are often too complex to be captured by isolated data points. Therefore, the efficiency of discovering and managing human behavior patterns lies in the mass volume of integrated accumulated data, rather than isolated data. Consequently, the output of mass data analysis is holistic in nature, and it is based on a comprehensive view of humans as entities that respond to their environment.

The widespread use of sensors and other data-gathering devices has created an unprecedented amount of Knowledge about human behavior, preferences, and interactions. This data is then processed and analyzed using sophisticated algorithms, which can provide insights into patterns and trends that might not be visible through traditional means. This approach has revolutionized fields such as marketing, healthcare, and finance, allowing organizations to tailor their products and services to the specific needs of individual consumers.

This process leads to a reduction of human experience to a series of data points. When humans are viewed primarily as sources of data, their individuality and unique experiences can be overlooked or ignored. This can lead to a sense of dehumanization and alienation, as individuals feel reduced to a set of statistics rather than valued for their personal qualities.

The use of algorithms to analyze and process data can create a sense of determinism, in which individuals feel that their actions and choices are predetermined by the data that has been collected about them. This leads to a loss of agency and a sense of being trapped by one's own data.

For example, individuals may be recommended certain products or services based on their past behavior, without consideration for their evolving preferences or changing circumstances. This means that the ways in which humans are represented and understood is shaped by the technology itself, as well as the broader social and cultural forces that surround it. For example, the algorithms used to process data are developed by human beings and are therefore shaped by their biases and assumptions about the world.

The de-individualized approach to humans is not simply a result of technological progress, but rather reflects broader social and economic forces that prioritize efficiency and productivity over individuality and human experience. For example, the use of data to optimize business operations is driven by a desire to maximize profits, rather than a concern for the well-being of individual consumers.

On the other hand, the atomization of society into human units has become a fundamental requirement of the internet of data processes. Each data unit represents a human quality that has become measurable and controllable through the process of becoming data. This atomization has allowed for the efficient collection and analysis of data. In the age of data, the identity of each data unit and its connection with the person who issued the data is a fundamental requirement. This is because these models are based on the relationships between different types of data related to each person, and eventually reach holistic patterns.

At the heart of this process lies the concept of individualism, which is the driving force behind the participation of people in providing various types of personality, attitude, and behavior aspects in the form of data to the system. Each data unit is tied to its creator, and the ability to provide various types of personal information has become a driving force in the use of these technologies. This is due to the fact that the digital landscape is built around the collection, analysis, and use of data. Personal data, including personality, attitudes, and behavior, is a valuable resource for digital technologies.

This individualism, however, is a formal one that is designed to recruit people to provide their data. Companies and platforms incentivize users to share their personal data by offering them personalized experiences, such as tailored content or customized services. The output of the system is the production of an algorithmic personalization that is carefully characterized and consolidated. In fact, people only find the possibility of their identity within this process of identification.

The term algorithmic personalization refers to a type of personalization that is based on algorithms and behavioral patterns

that are deeply ingrained in the digital infrastructure. Unlike traditional approaches to personalization that rely on fixed and preconceived notions of identity, algorithmic personalization is characterized by a dynamic and adaptive process that continually adjusts to the user's preferences, habits, and actions. This means that the user's identity is not predetermined but rather shaped by the system's capabilities and the user's interactions with it.

One of the key features of algorithmic personalization is the use of algorithms to analyze user data and generate personalized recommendations. This is evident in various online platforms that use algorithms to suggest products, services, or content based on the user's past behavior and preferences. For example, e-commerce platforms use collaborative filtering algorithms to recommend products that are similar to those the user has previously purchased or viewed. Similarly, social media platforms use content-based filtering algorithms to display posts that are relevant to the user's interests and preferences.

Another feature of algorithmic personalization is the use of behavioral patterns to infer user preferences and interests. This is evident in the use of tracking technologies such as cookies, beacons, and fingerprinting to collect data on user behavior, such as the websites they visit, the links they click, and the content they consume. This data is then used to create user profiles that capture the user's preferences and interests. These profiles are then used to personalize the user's experience by showing them relevant content, ads, or recommendations.

Furthermore, algorithmic personalization also affects the way humans perceive their identity and agency in the digital age. In traditional approaches to personalization, the user's identity is seen as a fixed and stable construct that is based on their innate traits, such as personality, values, and beliefs. However, in algorithmic personalization, the user's identity is seen as a dynamic and fluid construct that is shaped by their interactions with the system. This means that the users' sense of agency and autonomy would be compromised by the algorithm's influence on their behavior and preferences.

Get rid of all the above effects, the promises of Society 5.0 as the latest insight from the IoD era, include developing a human-centered society, fostering innovation and creativity, promoting work-life balance, and creating value for society. However, Society 5.0 is largely based on the same processes as IoD, which sees man as controllable reactive structures alongside things and processes. The concept of a people-centric and humanity-based society in Society 5.0 means that man's characteristics are determined and defined by digital algorithms.

Society 5.0 aims to create man added value instead of focusing on labor and consumption, as man has become the object of ownership. Then, the future of IoD will prioritize creating man added value not human value.

Conclusion

The digital revolution has led us to an age of data, where information is no longer just a tool for decision-making but a new currency. This shift has given rise to a new era of possibilities, where data can be leveraged to achieve unprecedented insights into human behavior patterns. However, However, it has also given rise to a contradiction: the age of data is marked by both the atomization of human and the need for a holistic approach to humans as entities that react to the environment.

The contradiction can be resolved by understanding that the IoD and its related technologies operate based on specific algorithms and behavioral patterns. These patterns are rooted in the algorithmic personalization, which differs significantly from the traditional approach of viewing humans as unique entities. In this new approach, personal identity is determined solely by the capabilities that the system provides.

The concept of algorithmic personalization offers a new perspective on how personalization works in the era of IoD. Algorithmic personalization is characterized by a dynamic and adaptive process that continually adjusts to the user's preferences, habits, and actions, rather than relying on fixed and preconceived notions of identity.

The promises and assumptions of Society 5.0, such as developing a human-centered society, fostering innovation and creativity, promoting work-life balance, and adding value to society, are based on the same processes that have evolved during the IoD. Although Society 5.0 emphasizes a people-centric society and humanity-based ideals, it sees humans as a controllable reactive structure alongside things and processes. The new definition of man in Society 5.0 is one that is determined and defined by digital algorithms, and the focus is on creating human-added value instead of labor and consumption. This insight transforms man into an object of ownership. The future of IoD will prioritize creating man added value rather than the fate of his life and death.

Ethical considerations

The author has completely considered ethical issues, including informed consent, plagiarism, data fabrication, misconduct, and/or falsification, double publication and/or redundancy, submission, etc.

Conflicts of interests
The author declares that there is no conflict of interests.

Data availability
The dataset generated and analyzed during the current study is available from the corresponding author on reasonable request.

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