Dataism: The rise of a data-driven world?
A Guide for Data-Oriented Policy and Management

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ABSTRACT: This study examines the growing impact of data in contemporary society and the consequences for management and policy. It looks at the emergence of the dataism paradigm, which prioritizes data-based decision-making, and evaluates how it has affected different sectors and industries. The manuscript offers a thorough road map for managers and policymakers to comprehend and successfully navigate the data-driven environment. It clarifies the advantages and drawbacks of dataism and presents methods for utilizing data to promote growth, boost effectiveness, and assure ethical use. This manual is a crucial tool for anyone trying to comprehend how dataism affects management and policy.

KEYWORDS: Dataism, society, ethics, privacy, artificial intelligence, big data, data activism

1. INTRODUCTION

The twenty-first century marks the beginning of a new era in human history. The data-driven information technology revolution aspires to empower the human community to make decisions that will contribute to its prosperity.

Besides, data are everywhere, and it is expanding at an unprecedented rate. In 2011, the world generated 1.8 zettabytes of data. It is expected to reach 175 zettabytes by 2025 [1]. They pervade our lives, shape how we interact with the digital world, and are the lifeblood of today's technology-driven economy. Particularly in the area of Big Data, where organizations can leverage massive amounts of data to gain insights into stakeholder trends and behavior.

Algorithms power everything from online search and social media to weather forecasting and self-driving cars are powered by data [2]. They can originate in a variety of places, including our bodies, social media, and the Internet of Things. Many researchers regard data as the new oil, currency, and gold. They can transform economies and societies while also creating social and economic value.

As a consequence, the next decade will be even more valuable than the current one. The reason is straightforward: the world is becoming increasingly digital, and data is the foundation of the digital world. Initially, data were primarily used for research and development, however, it is now being used to develop new products and services as well as improve existing ones [3]. As it has become more prevalent and important, it has also become more complex and difficult to manage [4].

2. BACKGROUND & PREREQUISITES

Dataism is a relatively new belief system, and there is no universal agreement on how the term should be interpreted. In his book "Homo Deus: A Brief History of Humankind," historian and philosopher Yuval Noah Harari attempted a detailed analysis of the term dataism. He claims that the rise of dataism is the result of the convergence of two scientific disciplines, biology, and computer science, and that it is one of the most significant developments in human history. According to one of the fundamental theories of dataism, the universe is made up of data streams, and the value of each phenomenon and entity is determined by their contribution to processing them [5].

Dataists believe that data are the most important thing in the world because powerful computer systems processing them can lead to better decisions due to the human brain's inability to process large amounts of data [6]. This idea is based on the fact that data analysis can assist in identifying patterns and trends that would otherwise go unnoticed. Dataists also contend that data should be used to make all decisions, regardless of their nature. This could range from what products to buy and sell to what policies to put in place.

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Many researchers, however, are skeptical of these theses, believing that data should be used to supplement human decision-making rather than being the sole factor in decision-making. They claim that data is not always accurate and can be used to back up false claims. Data, they argue, can also be used to justify discrimination and oppression. As a result, one of the emerging challenges is determining whether we, as a society, should rely solely on data results or entirely on their interpretation. The former could result in decisions that are not in the best interests of people, whereas the latter could result in data misinterpretation issues. Furthermore, many decisions must be made based on factors other than data, such as ethics and personal preferences.

Several studies approach the concept of dataism from various angles. Brooks has interpreted the concept as an emerging philosophy since the beginning of the last decade and predicts that the ability to collect data will help humanity do remarkable things like predict the future [7].

In his book "Dataism: The Revolution Transforming Decision Making, Consumer Behavior, and Almost Everything Else," Lohr describes how dataism is revolutionizing various sectors of society, from how we make decisions to how we interact with one another [8].

Others approach the concept from a theological and metaphysical standpoint [9] or a socio-political standpoint, referring to the sharing and analysis of biomedical data. They observe that while the integration of unprecedentedly rich data has a significant impact on basic research and patient healthcare, it also poses significant challenges for analysis practices, data sharing, and results evaluation [10].

Barabasi indicates that data imprints the universe in our collective consciousness. In this era of collective migration into digital and virtual realms, data has become our new reality in a very tangible sense [11].

Furthermore, some scholars focus on the ethical issue of using data for citizen surveillance and the security issues that arise from their use, emphasizing that the issue here is not only an embrace of dataism as a technique of knowing social action - human behavior being measured, analyzed, and predicted based on large sets of metadata - but also faith in high-tech companies and government agencies intended to protect user data from exploitation [12].

Extending on the preceding thought, Harari believes that Big Data algorithms will soon know people better than they know themselves [13]. As a result, perceptions of the data issue encompass the entirety of people's social, economic, and political lives.

Furthermore, while data is critical to the success of the technological world, it is also a source of great pressure and stress. For example, the digital world has recently faced data privacy crises with the Cambridge Analytica and Equifax breaches [14]. These incidents have exposed the dark side of data collection and use, demonstrating that it may not be as safe as we believe, as it can be used to manipulate and control people. In other words, they have the potential to invade our privacy and limit our freedoms. As a result, we must exercise extreme caution and refrain from allowing it to be used to monitor our daily lives.

Finally, various works in the humanities and social sciences have pointed out that internet companies' and platforms' monopolistic political positions have negative and unintended consequences for workers, consumers, and citizens [15].

2.1 Technology industry

The rise in data breaches and cyber-attacks has made security a top priority for both individuals and businesses [16]. Faced with these challenges, the technology industry has reached a tipping point, and it is time to reconsider its relationship with data.

After all, it is self-evident that the technology industry relies on data to achieve innovation and the development of new technologies to ensure society's future well-being and economic growth [17]. However, the technology industry should recognize that data is a valuable asset that aids in the development of new technologies, but with the primary goal of protecting individuals from misuse or theft. The General Data Protection Regulation is an important step in this direction, as it is necessary not only to strengthen individuals' fundamental rights in the digital age but also to facilitate business activity by clarifying the rules for businesses and public bodies in the single digital market.

Just as the industry has regulated itself in areas such as spam and malware [18], it must now do so in areas such as privacy and data security. This will necessitate companies being more transparent about how they collect and use data, as well as giving users more control over it.

2.2 Society

Unlike the technology industry, which appears to have an inextricably linked relationship with data, society appears to have an ambiguous relationship with it. On the one hand, relies on data for a variety of purposes, ranging from navigation and weather forecasting to scientific research. However, there is growing concern about data privacy and how companies and governments collect and use it. There is also debate about who should control them and how the procedures should be regulated.

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To address these issues, society must become more aware of and educated about how data is used. It must be ensured that it is used for good rather than evil. To accomplish this, stakeholders should collaborate to build infrastructure and institutions that can control the stages of collection and effectively use them.

It is our responsibility to humanity to establish a new global digital culture founded on the principles of transparency, trust, accountability, and security. A world in which data is used to empower rather than control people. We must all work together to provide them with a safe and secure environment. We must respect each other's data and keep it safe from unauthorized use. Finally, we should also be transparent about our data practices, ensuring that they are used responsibly and accessible to those seeking to benefit people, communities, and society [19].

3. GUIDING PRINCIPLES

3.1 Data as a tool

Data are an effective tool, but we must use them responsibly. They must be used to create a better world for everyone, not just a select few. They should be put to use to build a society that is more just, egalitarian, affluent, and secure.

As was previously indicated, digital technologies are being employed to monitor and address problems in agriculture, health, and the environment as well as to carry out routine chores like navigating traffic or paying bills. Additionally, it was underlined that although they may be utilized to protect and exercise human rights, they can also be violated since governments and corporations have more access to technologies for data mining and exploitation for financial and other goals [20]. Hence:

- Data should be utilized to answer problems, not to generate them.
- Data must be accessible to everyone so that we may make educated decisions about our surroundings. We can assist raise public understanding of issues affecting the public by making knowledge more accessible.
- Data should be utilized to improve the quality of life for all people, not to distort it.
- Data should be safeguarded so that it can be used for the good of mankind.
- Data should be open and available to everybody so that we may all benefit from its potential.
- Data should be utilized to assist people and society make better decisions.

3.2 Data ethics

It is easy to see from the above that the new way of thinking about the digital world should highlight the importance of data in all aspects of human existence. However, it must be assured that they are utilized properly, that they are factual and fair, and that they are not exploited to benefit or harm specific groups of individuals.

Furthermore, when gathering and exploiting data, several ethical difficulties arise. The fundamental ethical problem is the risk of invading individuals' privacy and this can happen if data is acquired without guaranteeing that individuals can stay anonymous. Also, privacy concerns emerge when data is gathered covertly, such as through surveillance, or when it is collected from public sources without the persons' consent.

Another ethical problem is the possibility of skewed data. This occurs whenever data is collected and evaluated and can be caused by a variety of reasons, including the selection of data sources, the methods used to collect and analyze data, and the personal biases of people participating in the collection and analysis process.

Other ethical problems include who will have access to the data, who will be able to see it, and if they will be able to use it. Also, whether or if the data will be used to make judgments regarding people's prosperity, and whether or not those decisions will be fair.

Investment in data ethical research and development is regarded as critical for addressing the aforementioned concerns. Data ethics is a young discipline, but it is already yielding ground-breaking research on themes like algorithmic bias [21] and the influence of data-driven decision-making. Supporting such principles and activities can assist to guarantee that data is utilized in fair, and responsible ways. Summarizing the preceding thoughts, below are four essential concepts that should serve as the foundation for further discussion:

First, data should be acquired and used in a way that protects individuals' privacy and autonomy. This implies that data should not be gathered without the agreement of those concerned, and it should only be used for the reason for which it was obtained.

Second, data must be correct and comprehensive. This implies that they should not be faked on purpose and that every effort should be taken to ensure that they are as thorough and accurate as possible.

Third, data should be handled with caution. This implies that they should not be used to discriminate against people or to favor some people over others.

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The fourth concern is security. Data collected must be securely secured to avoid unwanted access. This is necessary to preserve the privacy of the persons concerned and to avoid data exploitation.

These are the fundamental ethical standards that should govern data gathering and usage. More explicit and nuanced concepts will emerge as the topic of data ethics develops.

3.3 Data Education

To properly educate society on these principles, concerted work is required so that the global digital community knows the necessity of data protection. Collaborations with data-focused groups or enterprises can assist raise awareness of dataism and its possible consequences. As a result, all persons and organizations must:

- Promote the importance of data protection.
- Work together to keep data safe.
- Establish a community of trust and cooperation.
- Respect the rights of individuals and organizations regarding data protection.
- Support and adopt measures to ensure the security of data.
- Encourage organizations to make sure that the information that they are collecting is secure.
- Making data ethics a required part of the curriculum in schools.
- Encourage public discussion and debate about data.
- Create awareness campaigns to educate people about data.
- Provide resources and support for people who want to learn more about data.

A data-educated society is one in which individuals can access, comprehend, and apply data to make sound decisions. This sort of civilization is distinguished by a high degree of data literacy, which enables individuals to successfully use data in their daily lives. People in a data-educated society may utilize data to enhance their personal lives, jobs, and communities.

4. SOCIAL PHENOMENA

4.1 Data activism

It is obvious that this is the first time in human history that so much personal and private data has been made available to individuals we do not know. The action of utilizing data to effect social change is known as data activism. Data activists utilize technology to gather and share information [22], hold organizations and people responsible for their activities, advocate for social and political change, and empower communities to take ownership of their data [23]. They are also worried about how governments, businesses, and other groups retain and use information. They aim to increase openness and accountability in data collecting, storage, and usage, as well as to preserve individuals' privacy and security.

Data activism includes mapping police violence, tracking the spread of disease [24], exposing environmental contamination, and holding businesses responsible for their environmental effect. They frequently collaborate with attorneys, journalists, researchers, and engineers to discover innovative methods to use data to effect change. Some examples of their actions include:

- Campaigning for firms to be more open about how they gather and utilize data.
- Working to guarantee that people have the right to know what data is being collected about them and to decide how that data is used.
- Advocating for stricter rules and regulations to safeguard people's privacy and security.
- Creating and deploying technologies to collect and disseminate information on data practices.
- Investigating and exposing data misuse by governments, businesses, and other entities.

4.2 Data elitism

Aside from data activism, there is also the phenomenon of data elitism. There is little question that this is a significant problem for both the technology business and society [25]. This type of elitism emerges because only a tiny percentage of the population is capable of mining and evaluating massive amounts of data. Furthermore, dataism frequently leads to the creation of new technology and procedures that only a tiny percentage of the population understands and employs. This results in a situation in which a small number of people have enormous influence and control throughout data-driven civilizations.

Data elitism may be prevented by democratizing data, which assures that information is available to everyone, independent of technological expertise [26]. To accommodate varied learning backgrounds, simple, easy-to-understand data visualizations and clear and short explanations of datasets and conclusions can be used. To avoid data elitism, the following broad concepts may be useful:

- Inform yourself and others about the significance of data literacy and digital inclusion.

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- • Work to improve everyone's access to data and data-related resources.
- • Advocating for data inclusion and equitable policies and practices.
- • Putting preconceptions and prejudices about who can and should utilize data to the test.

5. CONCLUSION

In conclusion, the term "dataism" is becoming increasingly prevalent within the corporate, political, and academic spheres. The concept refers to a range of methodologies for data-driven decision-making, including Big Data analytics, which is driving the growth of the Internet of Things and the data-driven economy.

We need to be cautious about how information is used and shared as our reliance on data increases. This is especially crucial given the contradictory effects that data has on society—benefits like better productivity and efficiency, but also drawbacks like privacy invasion and heightened surveillance.

Furthermore, depending on the goal for which the data is gathered, different ethical considerations apply. For instance, some people worry about sensitive personal information being gathered without their knowledge or consent. Given these problems, it is crucial to be open and honest about the purposes behind data collecting and to make sure that everyone involved is aware of them. This will make it easier to clarify how the data should be used as it's critical to make sure that information is acquired fairly, and objectively by the people involved. Verifying the data's accuracy is also essential, as is preventing unauthorized access.

Finally, dataism is affecting our perception of our identities and relationships. As more information about our personal lives is collected, we increasingly view ourselves as data points that can be analyzed and understood. While this may offer some advantages in terms of self-awareness and understanding of our surroundings, it also raises fundamental questions about privacy and control. Future research should be directed toward these questions to clarify them and provide solutions that promote transparency and openness in society.

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