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A PIERCE THROUGH THE ARTIFICIAL INTELLIGENCE FOG OF TOMORROW

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ABSTRACT

Artificial intelligence is a concept with many shadows, roots, and branches. Exploring the concept could involve a wide variety of approaches. Earlier work by the author resorted to system's theory to display a silhouette, trace the building elements of the structure, and identify the flows. Other research was processing oriented proceeding from present day monitoring to tomorrow's mind like analysis and self awareness. Where it all lead to will and what impacts will it have on events and processes remains a "foggy" issue. Attempts are made but they are, in the authors view, vague and adventurous.

The following article is an attempt at developing hypotheses projecting scenes from a future scenario. The article starts by drawing the of AI as we know it today and proceeds to develop seven scenes within what could be an amorphous scenario. These scenes go all the way from productivity processes to human augmentation. Three scenes were identified as likely driving forces among the seven scenes.

Research is qualitative. Hypotheses are drawn from relevant research conducted within recent years. Derived concepts are drawn from conclusions or semi outcomes of that research.

KEYWORDS: Artificial intelligence. Future fog. Scenario scenes. Productivity generation. Human augmentation.

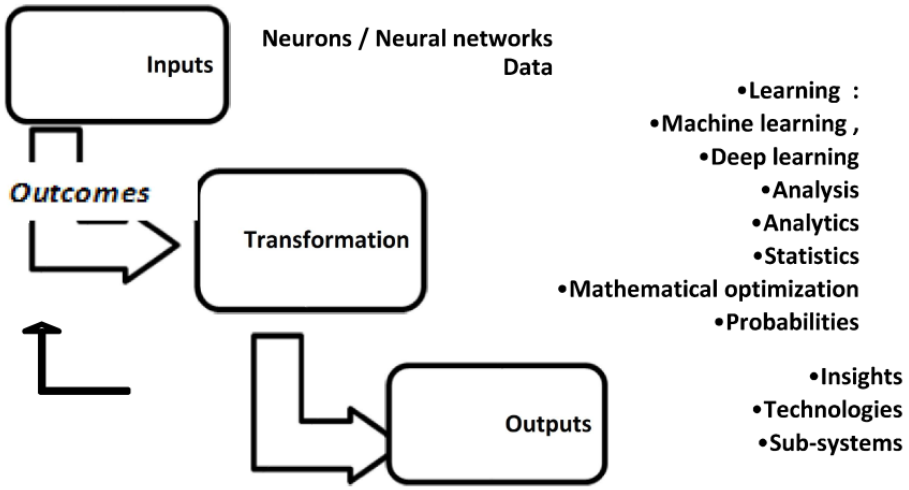
1.0 The essence of artificial intelligence

Artificial intelligence is a concept with many shadows, roots, and branches. Exploring the concept could involve a wide variety of approaches. Earlier work by the author resorted to system's theory to display a silhouette, trace the building elements of the structure, and identify the flows. The

assumption was that the process of artificial intelligence is a consequential flow with several system components starting with inputs and ending with outputs. A transformation process converts the inputs into outputs, and a feedback mechanism would adjust flows to deviations. The flow was. logic and concept elements did lend them to the analysis. Yet this was one way of approaching the concept. Another artificial intelligence concept, the context concept, introduced a progressive flow were symptoms and processes of artificial intelligence. Follow a consequential pattern. The essence is a progression from a basic corrective mode to a limited memory function followed by a theory of mind application and a final phase of self awareness competency.

The flowing figure represents the system framework of artificial intelligence.

Figure: Systems configuration of AI



Source: A Systems Approach to the Artificial Intelligence Concept

M S S El Namaki * Received: 21 Jun. 2019, Revised: 12 Jul. 2019, Accepted: 24 Jul. 2019. Published online: 1 Aug 2019.

2.0 Tomorrow's scenes within the fog

AI as a system or a progressive technology event, is penetrating every aspect of contemporary existence. This is inducing a wide variety of images of the world of tomorrow. Some are mundane while others belong to the realm of science fiction. It is the authors contention that a pierce through that evolving fog could produce a set of scenario scenes, each projecting a silhouette of an aspect of existence.

These scenes are based on current state of the art and provide a set of hypotheses for future research.

One can segment those into seven scenes.

1. The first is the emergence of an era of rapid disruptive technologies, generating new premises to all forms of economic activities performed today. One can label this techno-productivity revolution. This will encompass all patterns of economic endeavours, work, and employment as well as strategic decision making at all levels.

2. The second is a serious shift in roots of sciences as we have known them. This will go all the way from social sciences like economics, politics and psychology to physical sciences like physics, biology, and neurology.
3. The third is radical redefinition of the concepts of enterprise and entrepreneurship. The opportunities, the traits, the achievement parameters, the technologies, and the continuity.
4. The fourth is a redefinition of the concept of education again all the way from core knowledge and cognitive competencies to delivery and fulfillment. And that will apply to all levels from entry to completion.
5. The fifth is a redefinition of the concept of industry. It will go all the way. From the domain, the life cycles, the constructive collaboration, the technology, the investment, the leadership, and the economic model.
6. The sixth is a reinvention of the concept of war, oscillating between the physical and the mental. Mind wars will emerge as dominant concept. Overriding physical war. This will become the new dimension that will. Render traditional war machines and strategies obsolete!
7. The seventh is the introduction of the concert of human augmentation or the alteration of individual cognitive and mental competencies congruent with situational demands.

Those are some of many "scenes" that one can identify within the foggy clouds of tomorrow's artificial intelligence environment. They spell radical change and a strong urge to reconcile.

3.0 Knowns and unknowns: blurred and unblurred scenes.

The seven scenes identified above are all pivotal. They constitute what we may refer to as the known and unknown parameters of future landscape. Yet, three among the seven could provide a sharper image than others. Those include the “techno-productivity evolution,” “Modes of independent aggression” and “Human and brain augmentation.”

- Techno productivity revolution

AI is leading to a techno productivity revolution. It is the authors contention that “Industrial Revolution 4.0” was the beginning, and “Industrial Revolution 5.0” marks the following phase.

“Industrial revolution 4.0” focuses on efficient manufacturing and workforce optimization through new ways of doing things. AI provided the foundation of those new ways of doing things through several modes from ML-based Object detection technology and Natural Language Processing (NLP) to advanced analytics, nanotechnology, quantum computing, and cognitive computing, among others.

“Industry 5.0,” the following chapter in this techno-evolution, blends humans work with advanced AI technology.

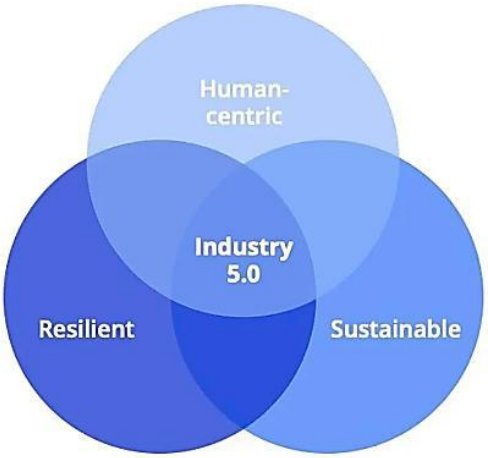
It marks a significant departure from the principles of Industry 4.0, extending beyond manufacturing to encompass all facets of business and strategic thinking. "The two paradigms differ in three crucial areas: people, organizations, and technology." Industrial Revolution 5 prioritizes societal value and wellbeing over mere economic gains. It, as articulated by the European Union, focuses on placing the welfare of workers at the forefront of the production process and leveraging modern technologies to foster prosperity while respecting planetary constraints. "This represents a

fundamental reorientation towards a broader conception of value creation that transcends traditional notions of profit-driven growth ("AI revolutionizing industries worldwide: A comprehensive overview of ...") (Sandip Kunar et al, 2025).

The EU concept of "Industry 5.0 "provides a vision of industry that aims beyond efficiency and productivity as the sole goals, and reinforces the role and the contribution of industry to society." and "It places the wellbeing of the worker at the centre of the production process and uses new technologies to provide prosperity beyond jobs and growth while respecting the production limits of the planet." ("Industry 5.0 – how to make it happen | EESC") It complements the industry 4.0 approaches by "specifically putting research and innovation at the service of the transition to a sustainable, human-centric, and resilient European industry a (Jeroen Kraaijenbrink 2022).

All of that adds up to an AI rooted technology revolution that will shape societal forces for generations to come.

Figure the Three Pillars of Industry 5.0



Source; The Three Pillars of Industry 5.0, Based on the EU publication "Industry 5.0 Human-centric, sustainable and resilient."

- Modes of aggression

Technology is bringing about machines that have the capacity to take human lives without human control. Those are AI rooted. Today is the beginning and tomorrow could witness an onslaught.

AI could make it conducive to conduct battles within a military confrontation context. Autonomous weapons systems (AWS), for example, utilize artificial intelligence to make decisions on the targeting and engagement of an "enemy" without direct human control. These systems can operate independently, using algorithms to identify, select, and eliminate targets based on pre-defined criteria. Put differently these weapons have decision-making capacity to act against a target without intervention from its human operator. There are autonomous weapon systems (AWS) and artificial intelligence-enabled decision support systems (AI-DSS).

The potential of artificial intelligence to revolutionize robotic drone swarms, another example, presents yet another example. Drones on the battlefield can not only conduct surveillance and intelligence tasks but also undertake offensive missions. Low-cost drones could form highly autonomous swarms capable of striking multiple targets simultaneously on a large scale, ("AI and the Dangers of Lethal Autonomous Weapons Systems")

Piercing through the fog of the future one may project situations where these weapons could make it easier for countries to get involved in conflicts; lead to military scientific AI research censorship or co-option and AI-powered autonomous technology used as an instrument to reduce or deflect human responsibility in faulty decision-making within hostile encounters (CARUSO , 2024)

- Human and neuroscience augmentation

Human augmentation refers to AI technologies that could enhance human capabilities, improve performance, health, and quality of life. It represents a fascinating intersection of technology and biology.

AI can induce alterations in human behaviour through physical or chemical "augmentation" that could take place through replication or restoring of lost functions, enhancement of existing human abilities and enhancing of normal human capabilities (https://imaginovation.net/author/michael-georgiou/)

Neuroscience augmentation, on the other hand, refers to technologies and methods used to enhance human brain functions, targeting sensory, motor, and cognitive abilities. Approaches include neurostimulation, pharmacological agents, and brain-computer interfaces that decode brain activity or use implants for stimulation and recording.

AI is actively being used to enhance human cognition. AI-powered brain training programs, adaptive neurofeedback systems, and brain-machine interfaces (BMIs) are making personalized cognitive enhancement techniques a reality. "By continuously monitoring brain activity and adapting to an individual's neural responses, these technologies are optimizing learning speed, focus, and problem-solving abilities." ("AI And Neuroscience: 10 Powerful Ways to Enhance Cognition") Brain-computer interfaces (BCEs) and BMIs are devices that can decode neural signals and use them to control external devices or provide feedback. They can be used to augment motor, sensory, and cognitive functions. Often involve invasive recording methods with electrodes, though non-invasive approaches are also used. (Jangwan, et al 2022).

4.0 Derived conclusions

Those are some of many "scenes" that one can identify within the foggy clouds of tomorrow's artificial intelligence environment. Extensive work is needed to be able to develop a complete picture. What is certain is that they spell radical changes and a strong urge to reconcile.

Where will we go and who will make the choice is a question mark. The answer may lie in the hands of the technology wizards dominating our economic and political environments of today.

5.0 Summary and conclusions

Artificial intelligence is a concept with many shadows, roots, and branches. Exploring the concept could involve a wide variety of approaches. Earlier work by the author resorted to system's theory to display a silhouette, trace the building elements of the structure, and identify the flows. Other research was processing oriented proceeding from present day monitoring to tomorrow's mind like analysis and self awareness. Where will it all lead to and what impact will it have on events and processes remains a "foggy" issue. Attempts are made but they are, in the authors view, vague and adventurous.

This article is an attempt at developing hypotheses projecting scenes from a future scenario. The article starts by drawing an AI system configuration as we know it today and proceeds to develop seven scenes within what could be an amorphous future scenario. These scenes go all the way from productivity processes to human augmentation. Detailed analysis signalled three prime scenes that could feature heavily in this future scenario. Those relate to techno productivity revolution, modes of aggression and human augmentation.

Research is qualitative. Hypotheses are drawn from relevant research conducted within recent years. Derived concepts are drawn from conclusions or semi outcomes of that research.

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