

Human and Artificial Intelligence

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Opinion

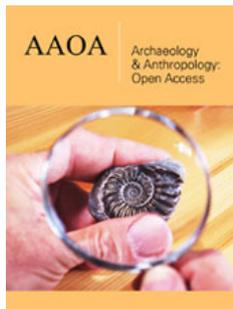
A recurrent issue for public discussion is artificial intelligence (AI). Entrepreneur Elon Musk, when promoting his frontline industrial endeavors, seldom forgets to refer to alleged threats and shortcomings of concurrent technology. His collaborator, MIT professor Max Tegmark, has pointed out the urgent need for ethical guidelines, elaborated by the AI sector itself. These celebrities as well as other intervening parties may be genuinely concerned with the future of mankind. Concern is not, however, enough. Historical awareness may deepen the picture.

The history of human intelligence is a case in point. True, differentiating people according to smartness and capability is at least as old as the history of mankind, being part of the evolutionary process. We know little of how, and on what grounds, judgements were made, but natural selection would operate anyway. Allegedly the first to create a test, in 1905, was Frenchman Alfred Binet (1857-1911) together with Théodore Simon (1873-1961). Binet considered intelligence a mixture of mental faculties, emerging in changing conditions and controlled by practical judgement. He did not view intelligence as a fixed capacity. Intelligence could not be measured, only classified. The test categorized the “mental age” of children and was a way to assess the mental adequacy of the tested at any time, compared to an available average for persons of the same age.

In USA, eugenicist Henry H. Goddard (1866-1957) got acquainted to the Binet-Simon Scale, and saw it to detect feeble-minded people for compulsory sterilization, matching the view of intelligence as genetically inherited. In 1916, Lewis Terman (1877-1956) issued the Stanford-Binet Intelligence Scale, sticking to the view of intelligence as inherited and unchangeable. The pioneer of American behaviorism Edward Thorndike (1874-1949) conceived intelligence to have developed from lower life forms, connecting stimulus and response, causing development of neural connections. Consequently, intelligence could be defined in terms of the capability to form neural bonds based on genetic factors as well as experience. A further break with traditional views was professed by J.P. Guilford (1897-1987) who maintained that standard IQ tests imply a simple answer, that is “convergent” thinking. Creativity on the other hand implies per definition more than one answer to any problem, or “divergent” thinking. Creativity would be measurable by the fact that various threads of thought could be counted and analyzed. In 1967, Guilford issued the Alternative Uses Test. Results were evaluated based on originality, fluency, flexibility, and elaboration. Guilford disputed the existence of a general factor of intelligence and advanced three types of activities. Firstly, “operations” or six types of intellectual processes are employed (such as memory, cognition, evaluation, etc.). Secondly, five “contents” are included (visual, auditory, etc.). Thirdly, the “products” are six in number and result from applying operations to content, including classes, relations, etc. By combination, we end up in 180 different types of intelligence, which of course for practical reasons limits the use of this method.

In Britten, Charles Spearman (1863-1945) claimed in 1904 that disparate cognitive test scores reflect a single general intelligence factor, the g factor, and assumed that the psychological g factor would correspond to a biological g factor. Godfrey Thomson (1881-1955) among others objected to the idea of the existence of a g factor. Raymond Cattell (1905-1998) developed Spearman’s ideas, naming two components of the g factor. “Fluid intelligence” refers to the ability to reason abstractly and perceive relations without previous practice or instructions. “Crystallized intelligence” generates from experience, learning

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and accumulated judgement skills. As standard tests would tend to assess a combination of the two parts of the g factor, Cattell elaborated a test to assess fluid intelligence by making it culture-fair (nonverbal, multiple choice questions), which required no learning or cultural skills. His promotion of eugenics has, however, been a cause of critique.

This brief review of how the concept of intelligence has been operationalized may indicate the assumption that human intelligence is still a controversial matter, and very much embedded in those culture-specific societies from where the theories emerge. Anglo-Saxon empiricism seems to have a longstanding association with biologism and structurally implemented segregation and racism as made evident by eugenics. No wonder, artificial intelligence is hard to grasp when human intelligence seems to escape us as well! Maybe the question to ask we is not how artificial intelligence can be humanized, but rather how human life, including social control as well as ethics and aesthetics, has been reduced to forms that can be optimized by AI. To illuminate this point, we may need to make another historical excursion.

The emerging early Modern Age of the 15th and 16th centuries was characterized by the advent of capitalism. In economic terms, surplus resources gradually ceased to be instantly consumed, or simply destroyed, but invested for the sake of further surplus. As a result, exponential economic growth tardily emerged. This switch actualized the need for rational conduct instead of previous ways where honor and revenge played a significant role. A rational conduct means optimizing benefits within given resources, or vice versa, optimizing resources when pursuing defined benefits. Either way, optimization requires a fixed time plan. Rational action then turns out to be a chain of procedures where previous goals become means for reaching new goals. This overall network of optimizations related to ventures or projects cannot, however, be optimized, because the speed of “progress” cannot be assessed beforehand, only afterwards based on experienced results. In an evolutionary perspective, previous rational actions may concurrently appear totally irrational.

As rational conduct became the standard, it had a broad social and cultural impact. Even morality got reshaped. The antique virtues (temperance, prudence, fortitude, justice) had during the Middle Ages been reserved for the higher estates while the plebe had to stick to Christian virtues (faith, hope, love). Only a clergyman could reform all this. Bishop George Berkeley (1685-1753) formalized the idea of utilitarianism. Accordingly, the moral standard for successful conduct was placed in the future of this world, not in the afterworld, and it was judged according to beneficial results, not according to the character of conduct as such. Utilitarianism was an ingenious solution as it matches the overall idea of rational conduct and optimization. It crystallizes

the ethos of merchandise and capitalism, turning the attention away from moral actions, the unfair distribution of benefits as well as harmful economic externalities. When discussing human and artificial intelligence, the focus seems always to be on rational conducts. Even the recent invention of emotional intelligence (EI) is phrased according to utilitarian guidelines, meaning the capability to recognize emotions, detect and label various feelings, use emotional information to guide thinking and behavior as well as managing emotions to achieve one’s goals.

Along with capitalism, and the advent of industrialism in the 18th and 19th centuries, new forms of societal control emerged. Hitherto, regardless political organization, the relationship between rulers and subjects, controllers and controlled, had always been reciprocal. Jeremy Bentham (1747-1832) introduced a novel way of control, the panopticon. It was a model for public institutions where the inmates were controlled in a way that they were aware of but could not specify. The historical novelty lies in the fact that control became unidirectional. The controlled may realize they are exposed to surveillance, but do not know when and how. This fosters a kind of disciplined self-conduct that emerges from fear of repercussions despite the lack of immediate corrections. Maybe religious believes generate similar sentiments, but there is a crucial difference. The world of Panopticon is real while the doings of an Omnipotent is a matter of belief. The global social media platforms of today apply the principle of Panopticon, eloquently expressed by Shoshana Zuboff in her recent book on surveillance capitalism. Now, literally billions of people produce information about themselves, free of charge, to be sold by the gigantic operators to other corporations and public authorities. It is surveillance of a magnitude that used to be unimaginable. Here, the essence of AI is exposed. It may provide benefits and joy for the billions while enriching global corporations, tightening the straitjackets of ordinary citizens, and providing the database for individualized control as well as manipulation of consumer choices and political commodities.

Artificial intelligence does not directly threaten the supremacy of the human species, but indeed it reflects a world broken down into millions of short-term projects, each one applying short term optimization. The management of the chaotic whole is executed according to the same logic as the single projects and aims at limitless economic growth. In 1759, Adam Smith claimed there is an overall order in the chaos. He thought that the totality of self-interested actions would eventually cause unintended social benefits. A prudent reader may however know that the “invisible hand” was not all that invisible. Smith worked for the East India Company. In comparison, AI may appear chaotic as well. The prospects are scary as the only directing hand at reach seems to be that of unilateral control. For centuries, banking and finance have propagated the idea of ethical self-regulation. Till now we have seen no results. Why would the AI sector operate differently?

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