Artificial Intelligence’s Turn of Philosophy

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Abstract. Artificial Intelligence’s turn of philosophy emerges because of the new crisis in philosophy. Philosophy should attach importance to technical thinking to supplement the deficiency of philosophical thinking. Philosophy's "language turn" and "AI turn" are based on language. The paradigm shift is also that we can define "intelligence", "consciousness" and "subjectivity" in the way of conventionalism. With the rapid development of AI technology, we also need to guide the development of technology with “Aesthetic reason” and promote the harmony between science and technology and art, human and nature.

1. Introduction
The development and breakthrough of Artificial Intelligence (AI) technology have already set off a new wave in the scientific and technological fields. L. Floridi thinks that this is the "Fourth Revolution" after the industrial revolution. J. Kurzweil, an expert in AI, said in his book The Singularity Is Near that the exponential development of AI and other technologies has brought the universe into a new era of human-machine integration [1]. Physicist M. Tegmark believes that human beings are about to enter the era of life 3.0, the software and hardware of life are no longer dependent on evolution but are designed [2]. AI has also attracted great attention in philosophy, and has given birth to many interdisciplinary research directions such as AI Logic, AI Ethics, AI Aesthetics and AI Literary theory [3]. So, is it possible for philosophy to produce a new research paradigm or even an "AI turn" in the face of this emerging technology?

2. the Crisis of Philosophy
I believe that the "AI turn" of philosophy is possible. This turn is not only influenced by technology, but also due to the crisis of philosophy itself. Philosophy has been from all-encompassing wisdom to the current knowledge based on criticism and reflection. It has experienced many crises like ontological crisis, epistemological crisis and expressionist crisis, and results in the "epistemological turn", "linguistic turn" and etc. Today, the research field of philosophy is more and more narrow, and the conclusions drawn by professional philosophers are becoming more and more personalized and decentralized, which makes philosophy lack of universal standards and values. As a result, the existence of philosophy itself has become issue. For another, scientists and technologists such as R. Penrose, A. Turing, M. Minsky and J. Kurzweil all reflect on human consciousness, intention, mind and ethical issues through technology. As they have mastered more professional scientific and technological knowledge, they can better grasp the current new progress in science and technology. They have also held a lot of discussions on basic philosophical issues such as Philosophy of AI,
Quantum philosophy and human consciousness. However, most contemporary philosophers are confined to texts. They used to search for sentences from books of former people as proofs, and finally they can only become literature experts or even become language players.

The functionality of modern philosophy is getting less and less, leaving only criticism and reflection of thinking. There is no denying that criticism and reflection are still the most important thinking ways of human beings. But if there are only these ways without construction, practice, operation, society is difficult to make real progress. In addition, criticism and reflection are also based on in-depth understanding of phenomena. However, most philosophers do not understand new scientific and technological knowledge and even do not want to know either. How can they really criticize them? For example, there are great differences between technologists and philosophers on the issue of the threat of AI. Some philosophers did not understand the development and technical characteristics of AI, so they blindly criticized it. They seem to criticize science fiction literature rather than AI.

Therefore, I believe that the emerging technologies such as AI, network, information, automation, virtual reality and big data, bring new challenges and opportunities to philosophy. These new technologies are changing the relationship between human and nature, raising new issues such as the relationships between artifact with human, intelligence with wisdom, ethics with utility. Philosophers should take the initiative to understand and master new knowledges, or cooperate with scientific and technological experts, in order to grasp the problem of philosophical turn under new technology.

3. Technical Thinking
Since the age of Enlightenment, many philosophers have criticized technology. M. Horkheimer and T. Adorno pointed out in Dialect of Enlightenment that instrumental rationality and computational thinking identify and control everything and action through precise calculations. While human beings repress the others like nature and even regard themselves as tools, human beings are materialized. M. Heidegger believes that technology forces nature, at the meantime, human beings are controlled by technology. Therefore, authentic language has become the medium of signals and the technical language. "Language machines make language work and thus control human beings." [4]

Admittedly, unrestricted technology does bring disaster to mankind. However, technology is also benefiting mankind. Instrumental rationality is still important. Adorno believes that we can correct the suppression and control of the subject to the object in instrumental rationality through mimesis element in art. Many technologists, starting from specific technical examples, tried to find the law of Human mind and understanding. For example, M. Minsky, the father of AI, in his book The Society of Mind, tries to explain the real meaning of human’s "purpose" and "intention" through the analysis of "difference-engines" [5].

The fundamental difference between technological thinking and philosophical thinking is reflected in the article "Computing Machinery and Intelligence" by technologist Turing and the tit-for-tat article "Can computer think" by philosopher J. Searle. At first glance, the two articles focus on the same question of "can machines think?" But in fact, the two articles are fundamentally different in terms of problem raising, mode of thinking and solutions. Turing's "machine can think" refers to whether machine can think like a human in behaviour and appearance. "Turing Test" has become a superficial imitation of human intelligence in language and even a deception. Searle, on the other hand, believes that machine cannot essentially generate mind intentionality and language intentionality, so it cannot really understand semantics and thus generate intelligence [6]. Turing's technical thinking is an "outside-to-inside" way of thinking. From technical practice to principle, as long as the behaviour conforms to the purpose, it can be regarded as intelligent. Searle, on the other hand, adopted a philosophical approach "inside-to-outside ", which requires some apriori principle such as intentionality. However, this philosophical starting point cannot be verified scientifically.

4. Paradigm Shift
The "linguistic turn" of philosophy wants to solve the problem of how to express the world with language, while technological thinking attempts to express the object and the world with logic, calculation and algorithm. Philosopher W. Leibniz once tried to establish arithmetic relations among concepts and put forward the idea of "constructed language". G. Frege represented sentences as functions, which laid the ideological foundation for later AI. "Turing Machine" can use two numbers 0 and 1 as basic operators to write all calculation instructions. Shannon's conception of logic gate laid the foundation for Turing machine to become an electronic computer. Neural networks, the basis of deep learning, is also based on binary operation. According to Frege's assumption, language can be represented by arithmetic, while electronic computers can represent language by logical operations to some extent. Turing Test indicates that as long as computers can show intelligence in language tests, computers can think. Therefore, language is still the foundation of machines and intelligence, because machines can only show their intelligence in communication with people. This is also why natural language processing (NLP) technology is the core technology and the biggest problem of AI. Thus, I believe that the "linguistic turn" in philosophy to the "AI turn" is not unrelated, and the link between the two turns is "language".

However, philosophers such as H. Dreyfus believe that AI cannot understand human language because it cannot understand the context in which language is used. [7]

How does AI solve this problem? Early AI structuralist experts once imagined whether we can imitate real context by setting grammar and procedures. Later they found it too difficult because the changes of context are endless. The emergence of deep learning and big data enables people to list different contexts through data collection and statistical methods. We can say that structuralism is a top-down approach, the latter is a bottom-up approach of functionalism. In fact, the two factions can be said to be the embodiment of philosophical rationalism and empiricism in the field of AI. AI expert H. Levesque believes that the two approaches can be combined. In other words, to realize true intelligence, machines still need to have innate knowledge and language framework, plus acquired experience and learning.

The paradigm shift also lies in the fact that we can define "intelligence", "consciousness" and "subjectivity" in conventionalism way. The fundamental reason why Turing and Searle hold different opinions is that they have different understandings of "consciousness". Turing insists on behaviourism and believes that the so-called "consciousness" must be combined with behaviour to judge, otherwise, they can only fall into the mire of solipsism. [8] Searle, on the other hand, understood consciousness from the standpoint of "intentionality". They seemed completely unable to talk. However, ethicist J. Kaplan proposed a new possibility. He analyzed the meaning of " Corporation ", whose Latin root "Corpus" means "body", believing that since a corporation can be the subject of limited liability, inanimate AI can also be the subject of moral liability. [9] Just as Kant borrowed "legitimacy" and "laws" from law to build the philosophical foundation, we can also extend this moral and legal subjectivity to the "subjectivity" of the whole epistemology and existentialism, which requires us to jump out of the shackles of "Human-centrism" and "Bio-centrism" and agree and understand from a broader subjectivity.

It is the emergence of AI that makes people have to go beyond their own limitations to reflect on the relationship between life, human beings and intelligence. Long before AI appeared, people were thinking about animals' feelings, morality and Speciesism. P. Singer, author of Animal Liberation, believes that as long as life can feel pain, we should face up to its affection and right. As a non-living, AI forces us to consider such problems: Whether a machine without pains or feelings also has moral rights and the right to life? When the right to life of machines conflicts with human rights, do we have the right to sacrifice them to save human beings? These problems pose new challenges to our ethics.

5. Aesthetic Reason
Technical thinking focuses on behavior, results, effectiveness and truth. Artistic thinking is about connection between images, obtaining the highest "beauty" through illusion which seeks truth through
falsehood. Philosophical thinking lies in reflection. Dialectics are commonly used. Truth and falsehood are dialectical relations, in the end they also lead to truth.

Only stressing technical thinking and the effectiveness of results, everything becomes calculable. "Reason([G]Vernunft) itself has become an auxiliary tool of the universal economic machine"[10]. Reason has become instrumental rationality, and people have finally been alienated into tools. AI, big-data, gene editing and other technologies may develop excessively while ignoring equality and harmony, such as unemployment, discrimination, privacy and wealth distribution caused by AI technology. Therefore, when we develop AI, we should pay attention to making AI benefit human beings instead of making people become AI’s tools. This requires us to attach importance to the regulation and restriction of rationality. We need to combine philosophy, technology and art. The combination of these lies in the realization of "Aesthetic reason". Adorno has presented the concept of “Aesthetic Rationality”, [11] which is the rationality in authentic art and the rescue and compensation of instrumental rationality. I developed and extend the meaning of this concept and make it as “Aesthetic Reason”.

Aesthetic Reason here contains the meaning of beauty, moderation, equality and harmony, and is the beauty of unity of truth, good and beauty. Aesthetic reason can have multiple meanings. First, aesthetic and sensible things also have elements of rationality, that is, rationality in art and emotion. Can beauty and art be calculated or represented with algorithm? Some philosophers, such as Plato and Kant, attribute art to mysterious inspiration or genius. Wittgenstein believes that art and beauty cannot be expressed and explained with language. On the contrary, AI experts try to analyze and calculate beauty and emotion. For example, AI agent calculates or statistically sums up artistic forms through deep learning and other methods in order to generate AI artworks. "Affective Computing" attempts to imitate human emotions by matching quantifiable forms with emotions. From some examples like Microsoft Xiaobing's poems and paintings by CAN (Creative Adversary Networks), we seem to be able to see the computability of some art elements.

However, Aesthetic reason is not only to calculate and analyse beauty, but also should realize "true" beauty, which is what Adorno called "Truth content" ([G]Wahrheitgehalt). That is to say, what I feel is not the beauty on the surface, but the beauty of unity of truth, good and beauty. Creativity, imagination and emotion are guided by reason. This is what AI cannot achieve and is the real beauty of human beings.

Another important meaning of Aesthetic reason is that "rationality" is beautiful. Adorno and Horkheimer revealed the path of development and degeneration of reason in Dialectic of Enlightenment: due to social division of labor, science and technology and art, rationality and imitation, language expression and communication are gradually separated. Reason lost its imitability and became instrumental rationality. The relationship between subject and object, human and nature became dominant and dominated. Therefore, Adorno believes that mimesis preserves the opportunity of equality and reconciliation in art, so rationality should reabsorb the mimesis elements in art so as to return to real rationality. H. Marcuse, another Frankfurt school philosopher, also believes that we should attach importance to life instinct of human and have new sensibility in order to get rid of the bondage of instrumental rationality. Hence, I insist that reason should also be beautiful and equal, free and harmonious. Rationality should be limited when science and technology is highly developing. It is necessary to voluntarily give up some technologies that will threaten the development of mankind and earth like nuclear technology, reproductive Gene Editing and Super AI technology. T. Walsh solicited signatures in 2015 and proposed to abandon the research and development of autonomous weapons [12]. J. Kurzweil said that "Fine-Grained Relinquishment" is possible, that is, abandon those technologies that will cause irreversible and great danger to human beings. [13] For some relatively safe technologies, we also need ethical guidance.

Therefore, the Aesthetic reason not only requires us to explore the true meaning of beauty, but also requires us to develop equal, harmonious and beautiful human reason and realize the harmony between human and nature, science and technology and art, rationality and sensibility. It requires the cooperation of philosophers, technologists and artists. In the process of AI generating artworks and
expressing art and beauty with algorithms, it needs the guidance and suggestions of artists. However, we must point out that the purpose of AI painting is to improve the visual technology of AI, and AI literature serves emotional computation and natural language processing. At present, the purpose and foundation of AI art are technology rather than art, and hence it has not realized autonomy. This kind of reflection and criticism on the relationship between technology and art requires the participation of philosophers. Philosophy also needs to rethink the rational problem when facing the problems brought by the new technology of AI, which is why philosophy needs to "turn to AI".

The AI revolution in technology has arrived, and in philosophy a new paradigm shift is coming. We need to reflect on the crisis of philosophical thinking caused by new relationship between science-technology and human being. We might reexamine technological thinking and combine different thinking modes. Kant once made a good example which he reconciled empiricism with rationalism. Can we also unify “from inside out” of philosophy with “from outside in” of technology, structuralism from the top down and functionalism from the bottom up? Technology needs rational guidance, while rationality needs "beauty" to guide. We pursue the harmony and unity of emotion and technology, sensibility and rationality, and human and nature. Only in this way can we know how to make technology benefit mankind, not alienate mankind.

The "AI turn" of philosophy requires the full cooperation of philosophers, technologists and artists. It also requires the crossing and integration of philosophy, science and technology. We need to break down the barriers of disciplines and find the connection between different thinking, so that philosophy can be revitalized in the new technological era.

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