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ORIGINAL ARTICLE

The Relationship between philosophy and technology in the agricultural development approach

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This research studies the relationship between philosophy and technology in the agricultural development approach. It was necessary to carry out this research due to the lack of sufficient knowledge of the philosophical nature of agricultural technology, which has led to the reliance on the creation of unthinking, unrealistic, non-end-oriented, and non-humanistic technology inconsistent with original nature. The methodology of this research was a qualitative research method of discourse analysis based on Laclau and Mouffe's approach, which is an analytical-descriptive, yet critical, approach. The research tool was a face-to-face interview, a written interview, and a questionnaire. Samples selected for the interview were philosophers (Iranian and non-Iranians) and experts in technology-related research areas. In this research, following the interview and implementation of texts, 9 sub-sets of discourse semantic system were extracted and analyzed in the form of a key discourse of technology philosophy including technology discourse, freedom discourse in the technological world, existential discourse in technology philosophy, engineering discourse in technology philosophy, idealism discourse in technology philosophy, discourse of the development of meaning in technological civilization, discourse of agricultural philosophy, discourse of the effectiveness of philosophical schools on the formation and development of technology philosophy, and prospective discourse (based on imagination) in the global technological system.
Keywords: Technology; philosophy of technology; agricultural philosophy; philosophy of agricultural promotion and education; machinery

Introduction

Today, with the rapid advancement of science and the widespread use of modern technology, the world has completely changed and transformed the human imagination of itself and its desirable and ideal life in all dimensions. It seems that these changes are double-sided; they sometimes guarantee the material life of mankind by granting welfare, profit, and enjoyment of natural resources and energy resources; and they sometimes inflict countless harm on the vulnerable body of nature and destroy many non-renewable resources with increased speed and by governing the attitude of dominance and invasion of nature. At the same time, they have provided no response for many basic environmental and metaphysical questions, agriculture and the extensive use of mechanization in gardens and farms, the abundant extraction of water resources, and the destruction of many habitats and ecosystems. Technology is a system for human thinking that, by extending the functions of the natural organs of man in the form of tools, tries to open up a different way of developing the world, which is the realm of discovering the truth, and improves human life.

The new technology is born from the new science. It is a positivist science whose main concern is production, not the discovery of the truth, and a large part of it has led to plundering the nature. On the other hand, along with new developments and technological advances in modernism, we are observing an ever-increasing population and a need for more food production. This necessity will further increase the attention to development of the agricultural sector. Agriculture based on the widespread use of modern technology and based on the mechanization of agricultural and industrial land is one of the most important factors affecting the increase in yield and quality of products. At the same time after the Green Revolution with the increase in the use of pesticides and chemical inputs in the agricultural sector, we are also witnessing a lot of pollution and damaging human food security. It is obvious that technology is a phenomenon that shows both positive and negative aspects in its functions and is not neutral.

In the contemporary, technology world plays an effective and inclusive role in international trade exchanges. The most important strategy in strategic planning is the technology development strategy that can create logical communication between development inputs and data with increased efficiency. In addition to its extensive effects on the material realms of human life, technology development has a significant effect on the understanding and development of meanings and has expressed a different form of understanding in modern space.

Given the fact that the technology is linked with the development of the agricultural sector in societies and since technology has a philosophical vision that has its own nature, is capable of influencing various material and spiritual aspects of mankind life, and provokes particular worldview, ideology, and value system in human societies, and since disregarding technology may damage the order and coordination ruling the world, may conflict with norms and values, and threaten the life of man, the necessity to address it and confront with its hidden truth seems quite obvious.

For this purpose, the overall purpose of this study is to examine the relation between philosophy and technology in agricultural development approach.

The most important goals that have been addressed are as follows:

- Investigating the relationship between philosophy and technology from the perspective of the audience,
- Comparative study of philosophical approaches in relation to technology,
- Investigating the perspectives of philosophical schools in the approach to agricultural development ,
- Investigating the governance of humanistic and engineering philosophical views in the design and construction of agricultural technologies.

Literature review

The most important points in this research, which are the result of gathering the views of the technology philosophers through the review of the historical course of theoretical developments, are summarized and documented after reviewing the sources and outlined in Table 1.

Table 1. Summary of the most important points extracted from the review of sources related to the philosophy of technology.

	The most important points extracted from the review of the sources related to the philosophy of technology	**Sources**
1	Marx found a close relationship between technology and society. In his opinion, technology was not an independent matter, but it could be seen in the heart of the means of production that determine the structure of society, institution and mental superstructures.	Adler, 2012
2	*There is a totalitarian force in the essence of technology that makes a contemporary man understand this feature better in order to embody his ideal utopia. Otherwise, the desired developed civilization is considered to be incomplete and will be at risk of collapse. * We can imagine a technical society that has overcome its material problems, but is struggling with the lack of meaning which, in turn, has left the technical thinking. It cannot even understand it. It is here that the function of philosophy may not be to provide the answer but to open up the question. *Technology is the mere servant of freedom.	Barrett, 1979
3	This work has addressed the Frankfurt school of critique of the modern society and its nature, which is most fully and clearly seen in Herbert Marcuse's one-dimensional man theory. Marcuse believed that the two major classes in the capitalist society - the bourgeois class and the working class – were no longer active historical actors. Therefore, on the one hand, there is no dominant class, but rather there is an unknown and impersonal power (technical-scientific rationality). On the other hand, there is no opposing class, because the working class has become equally congruent and calm not only through mass consumption, but also through its rational production process.	Boltomore, 1920
4	Today, the gap between rich and poor countries is a technological gap.	Dornbos, 2001
5	The definitions that others have derived from technology are divided into three categories: 1) technology as hardware, 2) technology as rules, and 3) technology as a system.	Dusek, 2006
6	According to Mario Bunge, theories on technology are divided into two types: essential theories that provide cognition of the object of action, and action theories that are focused on action.	Franssen, 2009
7	Freire says technology today has a kind of abstract power.	Glen, 2009
8	* Technology is not dangerous itself. Technology is not evil, but it has a mysterious nature. Questioning technology is questioning a system in which development and camouflage, i.e. the presence of truth, takes place. * Heidegger says human beings have a relationship with existence and this relationship has changed today. Technology has been born through this new relationship. The technology cannot be escaped unless a new relationship with existence is created.	Heidegger, 1927
9	Technology creates relationships between development inputs and data. Changes in technology cause changes in the production process which, in turn, increases fertility.	Heidegger, 1957
1	Ernest Cup sees technology as a way through which man develops the functions of his natural organs.	Heidegg

0	Technology is not a tool. It is vision, a way of development. Technology is the realm of development, the realm of reality.	er, 1962
11	* Another evolution that has taken place in the development of advanced capitalist societies since the end of the nineteenth century is that technology has become scientific. * Jurgen Habermas recalled a concept called the ideology of technological awareness. Technological awareness makes interests to expand technical control power dominate common interests.	Haberm as, 1972
12	* Modern technology has affected the concepts of time and place, and perhaps it is possible to talk about time and place of technology. * One of the most important prerequisites for designing and creating new technology is to have insight toward inclusive rules governing nature and to perceive the sense of affiliation with it.	Ihde, 1983
13	There is a two-way feedback between science and technology; each one needs the other and at the same time leads the other. In the current situation, these two can only live with each other or die together. (Putting aside all the external inductions) Due to the link between technology and science, an element of restlessness is placed in technology. Therefore, as long as there is a cognitive advance, technology will definitely go along with it.	Jonas, 1979
14	* No technology even if it is autonomous can be developed beyond the assumed economic, political, and intellectual context. If these conditions are not present, the technology will fail. * By using social-technical systems, humans expand their human capacities both quantitatively and qualitatively.	Kline, 1985
15	Marx found that the development of industrial technology would overcome the necessity of hard and physical work and looked at technology as a substitute for slaves.	Mackenz ie, 1984
16	Technology is contributing to creation and the largest experience of the mortal man (Carl Micham).	Mitcham , 1941
17	If the entire world of biotechnics is abandoned from the humiliating dependence on megamachines, this world will open to mankind again and parts of human personality that have been paralyzed by inappropriate use will again be mobilized with more energy.	Mumfor d, 2003
18	Those who are afraid of object-oriented technology are actually afraid of humans. It's not the machine which is frightening, but what some people can do with a machine is frightening.	Pitt,2006
19	John Cage writes: The only man's luck to obtain the desired result lies in technology. Technology provides us with this valuable opportunity to get more achievements with less effort and to benefit all the people without exception.	Postman , 1993
20	Heidegger says: "Planning to invade nature's energies which is in physics-related technology usually comes with two types of acceleration and rush flow. 1) Rush in releasing energies, 2) rush in making them available.	Rorty, 1991
21	* Our technological systems are placed in subtle causal relationships with natural systems. * According to Jacquelle, "the new technical environment" has six prominent features: (a) it is artificial; (b) it is autonomous in terms of values, ideas, and state; (c) it is self-determinate in a closed loop. The technical environment the same as nature is a closed organization that makes it possible to determine itself ndependently of any human intervention; (d) it grows in accordance with a process that is causal, but not in line with the goals; (e) it is shaped through the accumulation of tools that have a prioritized goal; and (f) all its components are interrelated to such a degree that it is impossible to isolate them and solve technical problems separately.	Tiles & Oberdie k, 2013
22	Having a metaphysical critique analysis, Heidegger faced five factors: new age science, new age technique, aesthetic subjects, cultural occupation, and demythologization.	Vietta, 1969
23	Ellul described the "characterization" of a technical phenomenon. He identified seven key features for modern technology: rationality, artificiality, self-guidance, self-reliant growth, indivisibility, generality and autonomy.	Vermaaa s, 1964
24	The idea of self-supporting technology has been expanded and it has been argued that artifacts possess political qualities.	Winner, 1980
25	According to Tillich's description of the soul as "the unity of power and meaning", technology analysis should be pursued as a spiritual issue. Because technology always involves the application or expansion of power, regardless of whether the intentions are clear or vague. On the one hand, technology is essentially a function of the human spirit and the product of human creativity. On the other hand, its consequences should be measured in terms of the development and growth of the human soul.	Wetteste in, 1984
26	One of the functional strategies of the organization and perhaps the most important of them is "technology development strategy".	Erabi & Manti, 2010
27	Based on ESCAP Technology Atlas Model and Professor Nawaz Sharif's theory, technology can be divided into four components, namely technoware, humanware, organization-ware, and information-ware.	Torabi & Mohama dzadeh, 2010
28	McLuhan believed that most technologies had an exaggerated effect that made people separate from one another. Hence, each communication medium was along one of the human senses.	Jodaki, 2010
29	Horkheimer and Adorno in their book, "*The Enlightenment Dialectic*", criticized the importance given to the wisdom in the Age of Enlightenment. They were influenced by Max Weber and considered the wisdom to be	Khoshne vis, 2014

	an instrumental wisdom whose primary purpose is to dominate the nature. Adorno and Horkheimer, in contrast to Heidegger, recognized the negative effects of modern technology, not because of an intrinsic nature but as a result of the influence of particular political-economic and social relations of capitalism.	
30	Types of approaches to technology are: 1. technology as objects, 2. technology as recognition, 3. technology as actions, and 4. technology as will.	Zare Mirak Abad, 2010
31	Shariati believed that the prison of nature could only be abandoned by science, namely understanding nature and technique. He referred to the concept of machinism and introduced it as a particular system, i.e. a phenomenon of sociology. Machinism is a superstructure of exclusive ownership. In his view, one of the characteristics of machinism is the negation of originalism, that is, the originality of human beings. He believed that concepts changed in in the machinism system, for example, profit instead of value, welfare instead of perfection, power instead of truth, expediency instead of love, intelligence instead of faith, progress instead of evolution, insatiable night and day struggle instead of contemplation and self-reflection, struggling to "live better" instead of thinking "how and why to live".	Shariati, 1971
32	Nyerere has called rural development as investing and applying technology in the villages.	Arabiun & Popzan, 1998
33	* Marx showed that the flow of automation, on the one hand, led to self-alienation of the workforce (due to its repetition), and on the other hand, the flow of concentration intensified the power of capital and profit for capitalism. * The new era of commodity- technology-knowledge exchange is appearing.	Ghane Basiri, 2010
34	* Mario Bunge has introduced 11 indicators for technology: specialized society, wider society, the range of natural, artificial, and social objects, general or philosophical perspective, formal logical and mathematical framework, certain background of data and hypotheses and methods, issues, knowledge, goals, methods, and values. * The critique of romanticism toward modernity in its most important part becomes the critique of science and technology. * The main argument of Feenberg in technology studies is the emphasis on technology transformation with a democratic approach. Andrew Feenberg found close connection between technological determinism and essentialism. In Feenberg's view, philosophical studies of technology could be explored through the adoption of four approaches. These approaches are as follows: 1) hermeneutic constructivism, 2) historicism, 3) technical democracy, and 4) technological metatheory * Technology is a kind of vision and, to put it more precisely, the technologies introduce the types of viewing.	Kaji, 2013

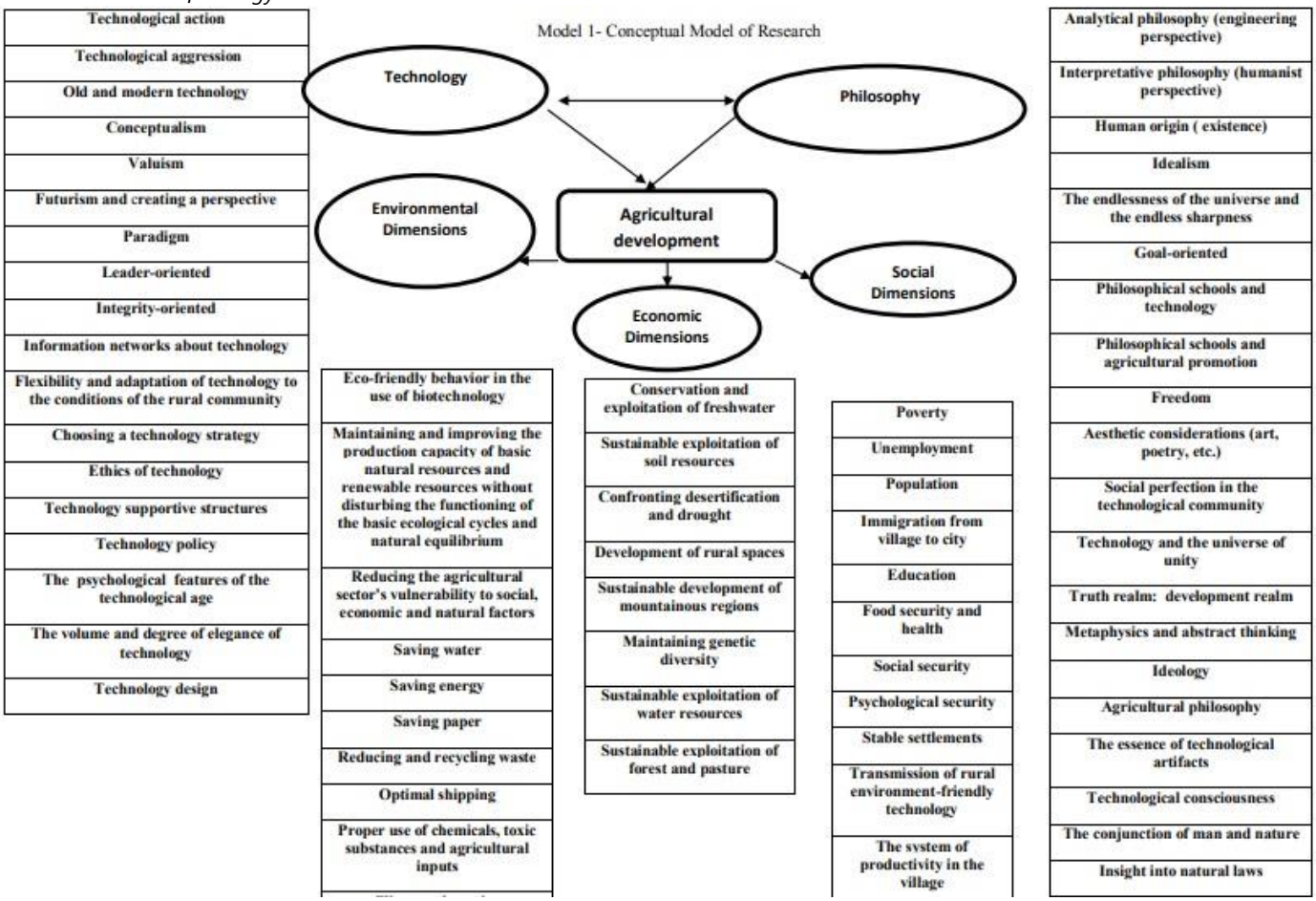
Methodology

Research method

The nature of this research and data is qualitative. The research method is applied in terms of purpose. The research method is also a critical discourse analysis based on data analysis, which emphasizes on Laclau & Muffe's approach. Discourse analysis is, in fact, the analysis of the concept of discourse, which means a detailed discussion of a topic in the form of writing or speaking. In fact, discourse is an insight system or collection that affects our mentality through vocabulary and speeches and there is a special way to talk about the world and understand one of its facets.

After determining the research question which was based on the creation of aimless technology, in addition to identifying goals and questions as well as the time, place and subject areas of the research, the literature, theoretical and historical backgrounds of the subject were studied. Accordingly, the conceptual model of the research and the subsequent questionnaire were formulated to conduct interviews with the informants. In the conceptual framework of the research, the interconnection between philosophy and technology, and some items of sustainable agricultural development in the economic, social and environmental dimensions have been demonstrated, indicating the importance of the relationship between these deep and profound concepts. The conceptual pattern is in fact the roadmap and guide to plan the questions.

At the stage of planning the interview questions, 60 questions were first formulated and then by integrating concepts and items they were reduced to 33 questions. Ultimately, by combining the major concepts, the final number of questions in the interview became 9 key questions that included 9 major discourses extracted from the research (Model 1).



Model 1. Conceptual Model of Research.

Population

The population consists of two groups of Iranian and Western philosophers who have a specific translation and/or commentary in the field of technology philosophy and the focus of their research field is the subject matter. Iranian philosophers include some of the faculty members of the Department of Science Studies of the Iran Research Institute of Philosophy, the Department of Philosophy of Science of the Institute of Humanities and Cultural Studies, National Research Institute for Science Policy, the Department of Philosophy of Science in Science and Research Branch of Islamic Azad University of Tehran. Western philosophers are also three scholars, researchers and faculty members of universities. Considering the research background (from writing a book or translating articles related to the philosophy of technology) and their information on the subject of research they are considered to be key contributors to this research and have been selected as samples.

Sampling

In qualitative research, including discourse analysis, sampling logic involves sampling of prominent individuals or theoretical and objective sampling. In this research, after studying the related works and preliminary studies through consultation with relevant specialists, samples were selected by sampling of important and prominent individuals (Table 2).

Table 2. Names, specialty and field of activity of faculty members and philosophers.

Names of faculty members and philosophers	Specialty field	Place of research and educational activities
Shapour Etemad	PhD in Cybernetics	Department of Science Studies of the Iran Research Institute of Philosophy Translator of Books and Articles on the Philosophy of Technology
Moosa Akrami	PhD in Philosophy of Science	Department of Philosophy of Science, Islamic Azad University, Science and Research Branch of Tehran
Hasan Sheikh Rezaee	PhD in Philosophy of Science	Department of Science Studies of the Iran Research Institute of Philosophy
Alireza Mansoori	Ph.D. in Philosophy of Science and Technology	Department of Philosophy of Science at of the Institute of Humanities and Cultural Studies
Mehdi Moeenzadeh	Ph.D. in Philosophy of Science and Technology	Department of Philosophy of Science at of the Institute of Humanities and Cultural Studies
Alireza Monajemi	Ph.D. in Philosophy	Department of Philosophy of Science at of the Institute of Humanities and

	of Science and Technology	Cultural Studies
Amir Heidari	Ph.D. in Futurology	Research Group on Future Thinking at the National Research Institute for Science Policy
Arash Moosavi	Ph.D. in Science and Technology Policy	Research Group on Science and Technology Ethics at the National Research Institute for Science Policy
Hadi Samadi	PhD in Philosophy of Science	Department of Philosophy of Science, Islamic Azad University, Science and Research Branch of Tehran
Yaser Khoshnevis	Master of Philosophy of Science	Researcher and expert in Technology Research Institute of Iran and member of the head of nanotechnology headquarters, translator of books and articles of technology philosophy
Ali Moazemi	PhD in Philosophy of Science	Markaz Press
Andrew Feenberg	Ph.D in Philosophy of Technology	Canada Research Chair in Philosophy of Technology, School of Communication Simon Fraser University
Joseph Pitt	Ph.D in Philosophy of Science & Technology	College of Liberal Arts & Human Sciences,Virginia Tech, Department of Philosophy
McKenzie Wark	Ph.D in Western Philosophy	Professor of Culture and Media Studies; Eugene Lang College of Liberal Arts

Data collection method

In this research, documentary-library study and field study have been used to collect data. In order to collect data in a documentary-library study, a comprehensive review of documents, library resources such as books, student theses, encyclopedias, reports on research projects and scientific journals, as well as searches on online databases and digital resources is done. In the field stage, a personal interview, a written interview and a questionnaire were used to collect information.

Data collecting tool

In the field study, the required information was collected after compiling the questions according to the points in the theoretical model and using data gathering tools including interviews and questionnaires.

Validity and reliability

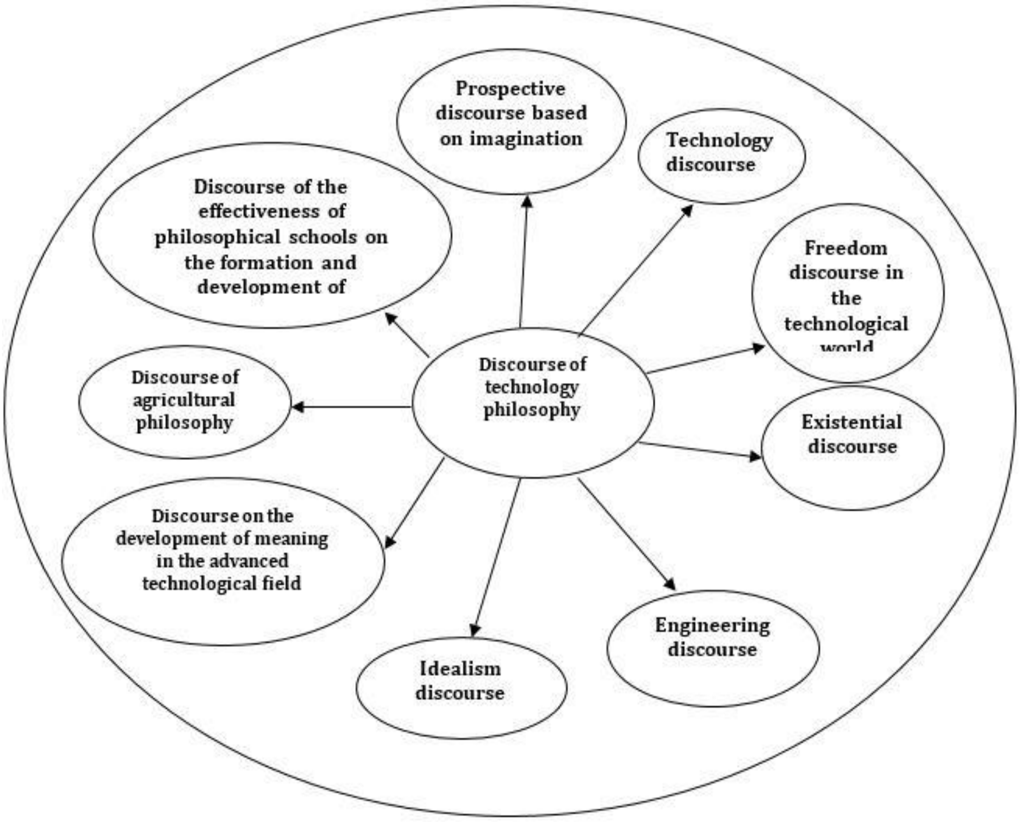
The achievements of discourse-based analysis are collected relying on researcher's thinking and ability to research and evaluate the phenomenon and also based on researcher's interests.

Methods of statistical analysis (data processing)

Data processing was carried out by discourse analysis method of Laclau and Mouffe's approach. This method of data processing is a descriptive and critical analytical method. In fact, discourse is the possibility of articulating and mental arrangement around a sign and forming a semantic system, establishing and making hegemonic by creating a temporary consensus and a persuasion. Discourses are not closed and unalterable. They redefine their identity through the kind of communication they have with other discourses. Reaching a relative stability and consolidating its semantic system, a discourse becomes hegemonic. The consequence of becoming hegemonic a discourse highlights its semantic system and marginalizes the semantic systems of other competitors. Discourse analysis consists of a large number of complex and, of course, complex concepts. Although these concepts are complex, they have a network-linking relationship. It should be noted that any thought based on its philosophical and fundamental principles produces the method fitting it and analyzes the phenomena in that way. Laclau and Mouffe's discourse analysis method used in this research is a descriptive-analytic method.

Results

In this research, the key discourse is the discourse of technology philosophy, which includes the following nine subdivisions: technology discourse, freedom discourse in the technological world, existential discourse in technology philosophy, engineering discourse in technology philosophy, idealism discourse in technology philosophy, discourse of the development of meaning in technological civilization, discourse of agricultural philosophy, discourse of the effectiveness of philosophical schools on the formation and development of technology philosophy, and prospective discourse (based on imagination) in the global technological system. It should be noted that the discourses analyzed and the analysis based on studies of existing resources and the extraction of key concepts from texts were based on the intellectual thought and intellectual foundations of the researcher. After the interviews (verbally and in writing), the texts were implemented. Then, the extraction of central and floating signage, signatures, as well as other fundamental concepts contained in Laclau and Mouffe's discourse analysis were conducted for each of the subject's responses. The results of the design of discourse diagrams were presented in a combination and in a 9 discourse semantic system form in general (Model 2).



Model 2. Semantic System of Discourse of Technology Philosophy.

Discussion and analysis of the results:

The results of analyzing and reviewing the implemented texts resulting from the interview with the research analysts after combining the concepts and phrases obtained in the form of the combined diagram of the semantic system of the technology discourse are as follows. It should be noted that each diagram is a combination of integrating and summarizing concepts in 14 distinct diagrams including set of comments from fourteen informants who were interviewed and based on the knowledge and inference of the researcher (Diagram 1).

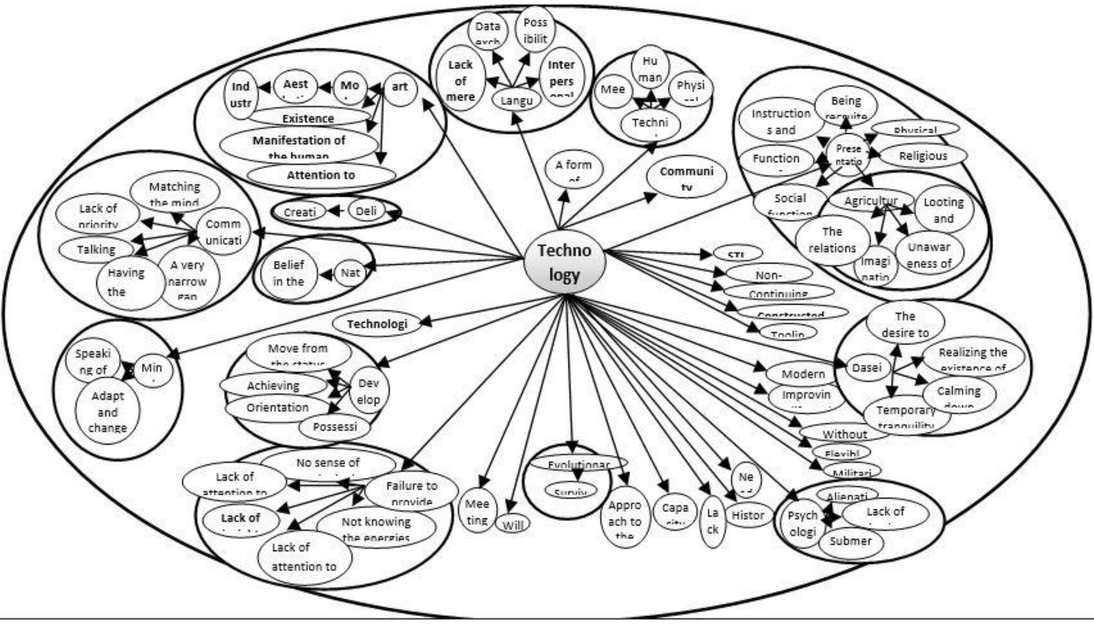


Diagram 1. The combined diagram of Technology discourse.

Analyzing the combined diagram of the semantic system of technology discourse

The results of combining the views of philosophers and faculty members in relation to the technology discourse indicate the following definitions and points:

- Technology is a tool for providing a variety of physical, religious and social functions through the formation of institutions, which is one of the most essential manifestations of the functioning of human organs in the form of

tools. Providing specific instructions and procedures, technology has been a form of human action and has been recruited by man. In the course of his life's history, man has enjoyed the technology in the field of agricultural development and has always thinking of promoting it. It is important to note that the relationship between man and nature over the past thousand years has been based on the principle of respect. While today we are witnessing the plunder of nature by man. This is an inverse relationship in which there is attention to the unconditional possession of nature, the ignorance of the ecological nature of phenomena the understanding of geological time in the description and analysis of climatic variations, and the inappropriate conception of the participatory nature of nature. It has also disrupted the millennial discipline of the world by changing ideologies and perspectives of less than the last three centuries.

- From the point of view of the epistemological analysis of technology, one can describe and explain technology in Heidegger's interpretation of Dasein. In the original nature of man, there is always the desire to rest in a supreme being and tranquilizing his own sharpness and human beings are also responsible for tranquilizing the world due to the appreciation and inner satisfaction. Man has realized his existence in his own creations. Providing every new instrument and function, man has flourished a part of his mysterious hidden forces and manifested the images of his imagination projects to increase the authority and enjoyment of the world.
- Many thinkers believe that instead of talking about technology, technical artifacts should be learnt because this term is more meaningful than function and the mission of tools and human beings in their minds. Technological artifacts are created to meet the human needs and purposes and have a physical body and are, at the same time, human preference. With the advent and transformation of any new artifact, a new need is found in the human mind and new designs will be created to meet those unforeseen needs.
- In the definition of technology, the role of the element of language is undeniable. Language has created the possibility of communication in the interpersonal space and has greatly facilitated the exchange of data and the accumulation of information. Without this factor, the occurrence of technical developments and human progress are by no means feasible.
- Another important point is the relationship between the concept of technology and the mind. In the human mind, speaking of obligations, adapting, and changing the world is in accordance with human needs and mental schemas. This makes the importance of focusing on philosophy of mind in defining and analyzing the philosophy of technology more and more evident.
- There has always been a deep and firm relationship between science and technology. Some scholars sometimes say that science is prior to technology and sometimes believe that the course of developments is such that it is not possible to determine the priority. Some believe that today's science is born of the application and development of human-made technologies. What is evident is that the gap between science and technology has become very scarce so that no distinct boundary can be recognized anymore. Today's science has many potentialities for becoming technology. It seeks dialogue and analysis of the things that exist and the world's greater adaptation to human mental desires can be achieved through their deeper understanding.
- Technology is a special form of knowledge that is an indicator of the superiority of societies in the present world. Nowadays, paying attention to the investment view on technology is very important. In each country's macro and strategic plans, paying attention to the development and transfer of modern and advanced technologies is very important as one of the most important primary goals.
- In the present world, technology cannot be justified without paying attention to innovation. Most intellectuals consider an artifact as an acceptable, expandable, and publishable artifact that has a technological innovation, which indicates the importance of considering innovative technologies.
- The vast majority of interviewed thinkers believe that technologies have a special nature and are full of special knowledge, sometimes interpreted as technological knowledge, seeking to meet specific goals and exploit different types of existing capacities.
- Sociologists consider technology as a community construction and believe that the two-way relationship and the reception of feedback on each technology lead to the modification and, finally, the completeness of any technical instrument. It is not possible to ignore the role of the community in reaction to an artifact.
- Technology is the tool for achieving development in all fields. It is the driving force for the transition from the present to a more favorable and more desirable situation and the achievement of sustainable development, in which man is centered and he possesses the world.
- In analyzing and defining technology, paying attention to the historical approach is essential. The history of technological developments and the emergence of technocracy, especially since the 19th century (in the United States), and its dissemination are definitely due to the political, social, economic, military and consequent international goals. Therefore, understanding technology in the historical context is more feasible and transparent through familiarity with these changes.
- Technology has given a different attitude to the world around man to the extent that has affected his definition of himself, lifestyle, and presence in the world of creation. Undoubtedly, technology is a new form of life and cognition.
- Paying attention to the element of will in designing technology and also not considering the tools as demonic is another important factor that has been discussed in the minds of the scholars. From their point of view, technologies themselves lack the spirit and nature and the type of human exploitation is effective in determining its positive and negative effects. The nature of modern machinery, which may have been designed and developed initially with

military services, is to improve the life of man and the world and to preserve human evolution and survival.

- Technologies have created specific psychological characteristics in the new era; concepts such as preventing the emergence of absolute loneliness due to virtual communication on the one hand and the emergence of alienation due to the reduction of human relations and human encounter and the subjugation of man in the complex and obscure conditions of new communication.
- The major drawback of technology is that technical artifacts provide no description of nature that leads to the recognition of the energies and principles governing nature, the creation of a sense of continuity towards nature, and the perception of prevailing participation and insightfulness of the prevailing metaphysical rules.
- In defining and explaining the concept of technology, the broad grounds for its association with art must certainly be taken into account. Art, especially modern art, has aesthetic compounds that have been featured in industrial designs and artifacts. Technology and art both lead to construction and have the same foundations. However, art is the place of glow of being and the manifestation of a person's relation to being in a processing practice. IT is very important to considering aesthetic philosophical concepts in a design. Certainly, one of the most important features of any technical device is its beauty. Technology, as far as it is merely seeking the immediate needs of humans, is not the place of glow of being. It has a relationship with art and beauty, because according to Kant's definition, a beautiful thing is something that does not belong to the immediate interests of human beings.
- What is present in art and not manifested in modern technology is the attention to the concept of deliverance. Deliverance means not to greed on something. Whereas the relationship between man and the world and nature in the present situation is the relationship between aggression and possession, not a relationship due to deliverance (Diagram 2).

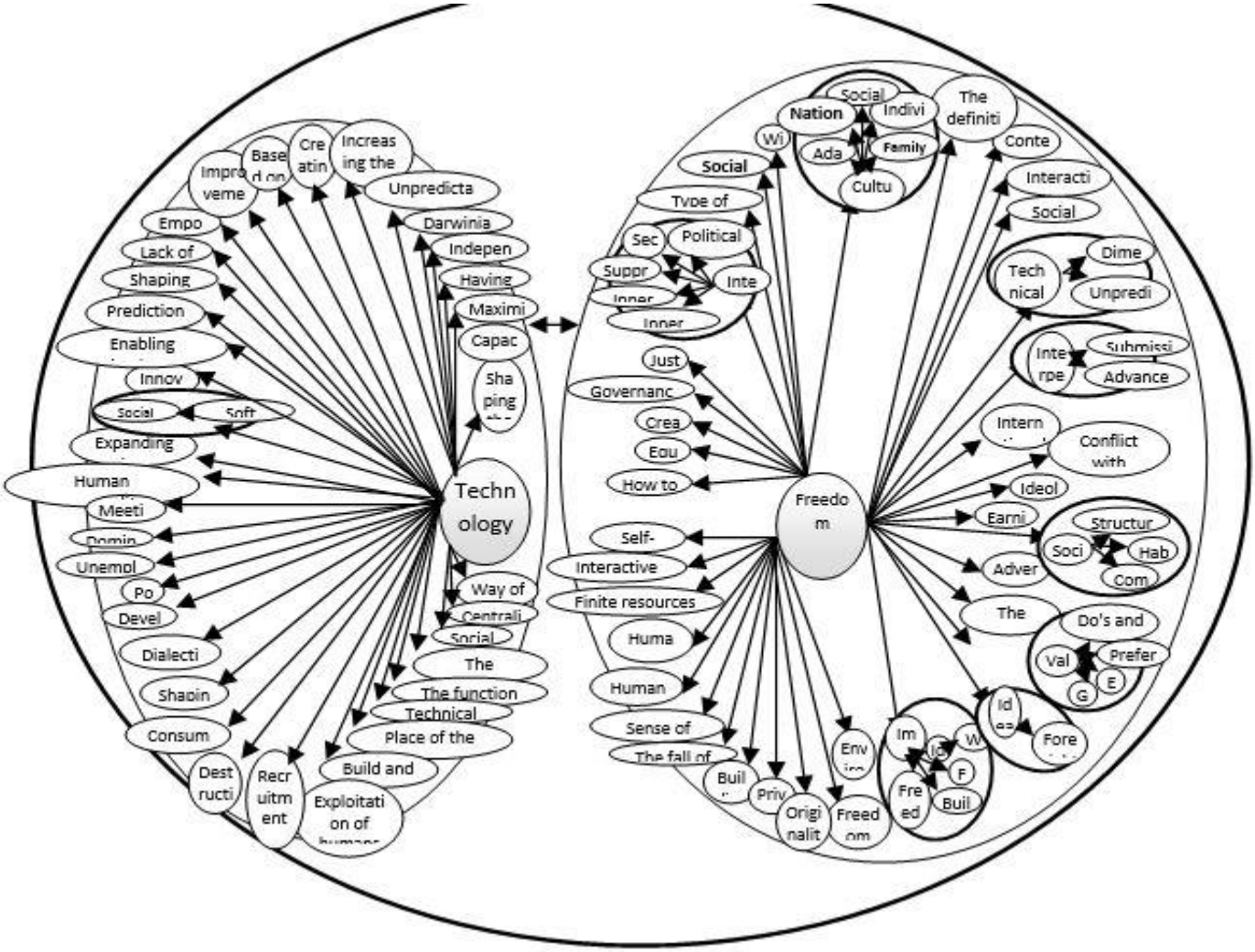


Diagram 2. The combined diagram of freedom discourse in the technological world.

Analyzing the combined diagram of semantic system of freedom discourse in the technological world

The results obtained from the discourse analysis on the relationship between freedom and technologies suggest a specific definition. In general, the items related to the concept and definition of technology include shaping the mental demands, expanding capacities, maximizing, having identity and independence, having an evolutionary state and unpredicted consequences, increasing the development of the human mind, the ability to create beauty, based on the needs, the effort to improve the human welfare condition, empowerment, lack of agency, predicting and shaping human behaviors, making possible the optimal use of energy and creating the ground for different innovations, expanding understanding and helping to develop human personality, power and domination of human life if used incorrectly, helping to develop in different fields,

the exploitation of human beings in the form of technologies such as managing, building and handling processes, having a set of technical codes and specific functions, and centralization of many new technologies. Also, technology has sometimes been referred to as a means of destruction and invasion of nature, and sometimes as a place of freedom expression.
Given all the concepts and vocabulary mentioned and the specific definition of technology in a particular discourse system, technology is associated with the transcendental concept of freedom. The results of the interviews indicated some important points that affect the relationship between technology and freedom as follows:
Basically, there is a close relationship between ideals and freedom. If it is fulfilled, phenomena such as self- alienation, privacy, the freedom of speech, environmental protection, justice, and equality will be fulfilled in a more logical way.

- The definition of infrastructures and construction constraints, the type of social context in which the technology enters, and the type and amount of social constraints are effective in explaining the relationship between technology and freedom.
- Technological social systems with their various dimensions and their unpredictability affect determining the scope of human freedoms in today's technological world.
- Technology has been effective on interpersonal relationships, and has sometimes been a tool of subjugation or a means of human progress. Depending on this, it has had a significant impact on the level of freedom and its definition.
- Technology is effective in defining and interpreting freedom by affecting interpersonal interactions.
- The way in which each society can interact with technology can be effective in the conception of its freedom and scope.
- The important factors are ideologies, earnings and economic elements, advertisements on technology, the emergence of new needs after using technology, paying attention to the social coordinates of the society (such as habit and ease of working with some tools by people), paying attention to the rules of construction constructivism in receiving feedback from different technologies, as well as the role of people and institutions in the interpretation of the relation of freedom and technology.
- The presence of idealism in the formulation of a technological charter that strengthens prospects of futurism is effective in defining technology, freedom, and the relationship between them.
- Interactive technologies have the potential to enhance the scope of human freedom.
- The intention to use a particular technology, whether it involves repression or creating security and internal freedom or increases individual skills or merely has political prestige in a particular community context, is effective in determining the degree of freedom.
- The way in which a government is governed in a technological space is related to the element of freedom.
- The creativity caused by the creation of a technology provides the grounds for mankind's need and freedom. Creativity itself is a source of freedom. Due to its relationship with imagination and deliverance of human, it will help expand its scope. (Imagination is associated with idea, face, and escaping from facts).
- The finite and limited resources and the type of use of various technologies also influence the scope of human freedom, sometimes diminishing it and sometimes adding to it.
- Considering the originality of phenomena and building essence which are the principle of freedom itself also highlight achieving the application of a variety of technologies.
- In the existential view, the fall of the genuine reduces the freedom and man is seeking to retrieve it by creating the technology.
- Creating the appropriate backgrounds for individual, family, national and social culture and adapting society to the advent of a technology can create more human freedom.
- Considering the element of will and the type of application of any technology by humans is influential in the interpretation of their degree of freedom.
- Man has not yet entered the stage of history and lives in prehistory. If we enter history, the freedom that we will achieve will place us in a much higher level compared to technology.

In the analysis and interpretation of freedom discourse in the technological world in general, some believe that technology increases the spread of freedom by relying on imagination, creativity, aspiration and human dignity, while others believe that technology, by imposing conditions, frameworks, types of interactions and interventions, the type of ideology and governance, leads to a reduction in human freedom. What is certain is that man is has fluctuated between a lot of freedom and little freedom and from time to time, is more focused on one of the two ends of the spectrum and moves towards the balance (Diagram 3).

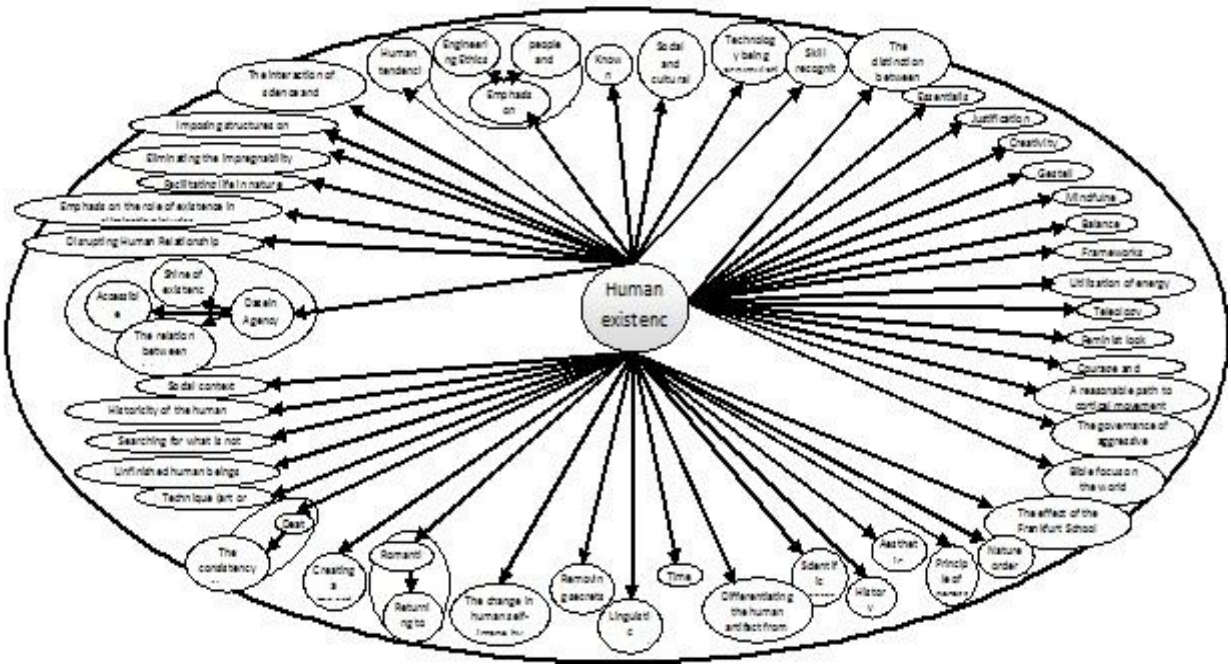


Diagram 3. combined diagram of semantic system of existential discourse in technology philosophy.

Analyzing the combined diagram of semantic system of existential discourse in technology philosophy

- In analyzing the relationship between human existence and technology, it is essential and interpretable to pay attention to the following: social and cultural frameworks affecting human being as a known agent, technologies being accumulative, the importance of skill recognition, the distinction between science and technology, the importance of the essentialist viewpoint of technology (which is highly respected), the element of creativity that stems from the deliverance governing the human existence, Gestell according to Heidegger that is the limiting framework of human beings, the type of mental attitudes of individuals, the importance of balancing human existence and exploitation of resources, focusing on courage and virtue, teleology as unparalleled human values, the role of ideologies in exposing and interpreting technology by human (for example, feminism, capitalism, liberalism, etc.), a rational path towards the cortical movement, the order of nature and the element of history and the principles of aesthetics, linguistic accumulation and its relation to techniques, changes in human's self-image through the technologies and the creation of more general effects, the type of relationship between technology and art or technique in general, the imposition of structures on lifestyle, attempts to establish a positive and constructive interaction between science and technology and human beings, the emphasis on eliminating injuries by human existence, and the elimination of the rule of aggressive attitudes in the modern age.
- In analyzing the relationship between human existence and technology, it is a decisive factor in understanding the foundations to pay attention to the formation of schools such as romanticism, which was based on attempts to return to equilibrium, as well as the Frankfurt School of thought, which introduced the theory of instrumental rationality. Each of these schools discussed with their thoughtful thinkers a special field of human exposure to nature and eventually led to the formation of theories of technology philosophy.
- While interpreting the existence of man, it is important to note the religious considerations and the emphasis of the holy books on the possession and ownership of mankind to the creation world.
- Providing new images of humans and the world, technology and technological developments have been able to change human self-image, remove many of the ambiguities, and reveal the nature of the phenomena that were once mysterious.
- One of the other points that is significant in interpreting the existence of man and its connection with technology is the importance of Dasein, which presents the shine of existence in the form of technology and in the presence of the relation to the understanding, and provides an interpretation based on Heidegger's view on existential mankind.
- In understanding the relationship between human existence and technology, it is important to emphasize on the perspective of social constructivism. Due to receiving feedback and social responses, this viewpoint provides the ground for the modification and adaptation of technologies in accordance with different human desires and needs and can be the basis for the emerging theories in the field of engineering ethics.
- Man is an incomplete and relative existence and constantly tries to soar, make transformation towards superiority-seeking and meeting the needs arising from his intrinsic need to face the bottlenecks and gaps arising from this relativism, and yet his intrinsic perfectionism. On the other hand, death that causes human's consistency is strongly influenced by his conception of understanding time and place. Therefore, it is necessary to study the relationship between human existence and technology in a wider context.

Today, many scholars are talking about the time and place of technology, which is due to the domination of speed over the

lifestyle and process of human life. This is an important factor in understanding human existence (Diagram 4).

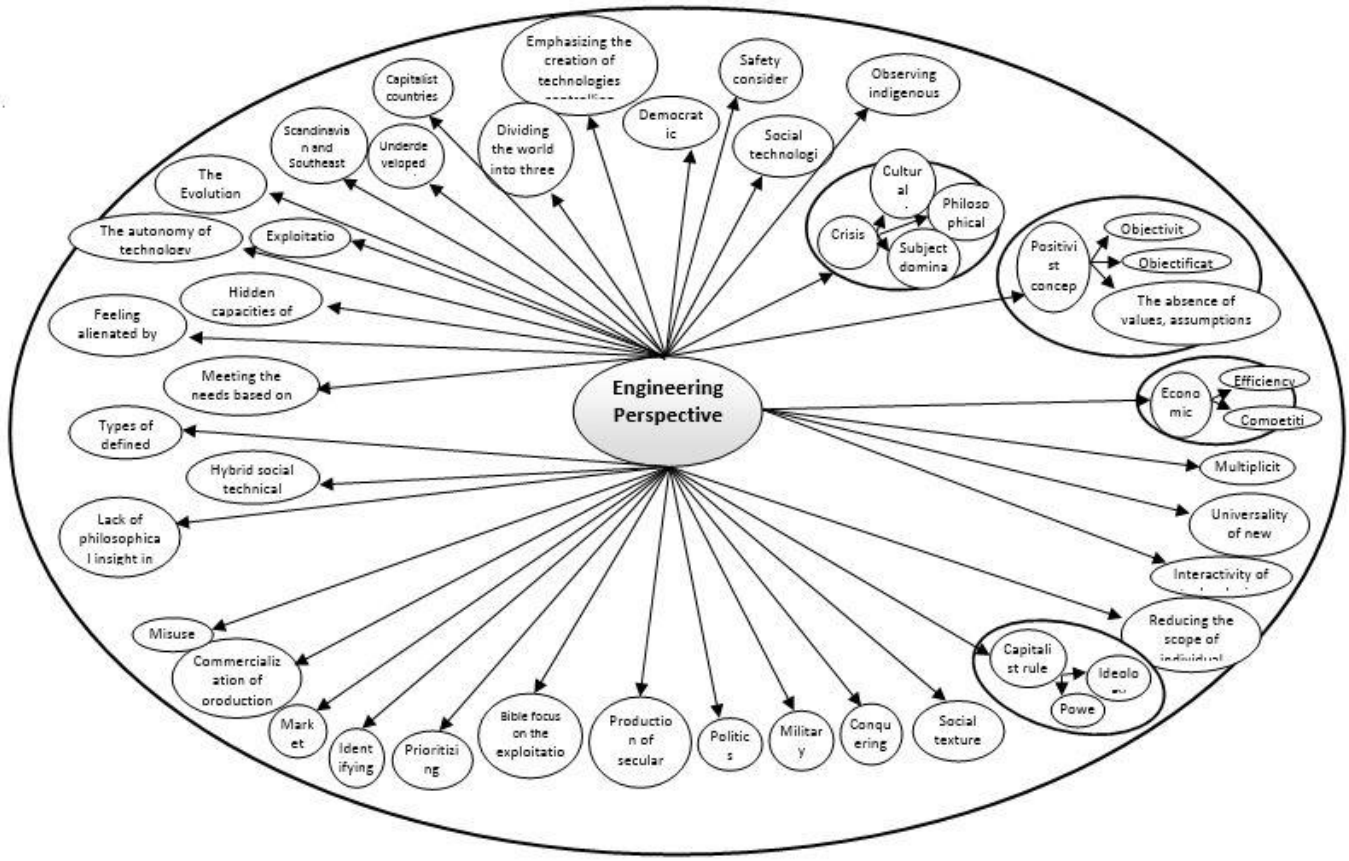


Diagram 4. The combined diagram of the semantic system of engineering discourse in technology philosophy.

Analyzing the combined diagram of the semantic system of engineering discourse in technology philosophy

In the analysis of engineering discourse, it is important to attention to the points extracted from the views of the research scholars as follows:

- The governance of engineering-oriented perspectives in the design and production of technologies has led to a crisis in the cultural and philosophical fields.
- One of the important reasons for the governance of engineering-oriented perspectives in the design and production of technologies is positivist conception of science, which is the result of objectification, objectivity, and designs free from values, assumptions and prejudices derived from humanistic rules.
- Considering economic aspects and the governance of profit-oriented approaches and the presence of two elements of attention to maximizing efficiency and competition have led to the dominance of engineering-oriented views.
- Due to its inherent power and achieving maximum ability and also because of the particular ideological conception which exists in it, the domination of the capitalist system is one of the main reasons for the governance of engineering-oriented philosophical perspectives in the design and production of technologies compared to human-oriented views.
- It is important to consider various factors in analyzing the reason for governing engineer-oriented perspectives in the design and production of technologies: observing indigenous considerations and local occasions (which has led to the neglect of human beings and the neglect of humanism due to insignificant attention); attention to the creation of more social technologies, the development of technologies that are more democratic and contribute to social justice; considering increasing safety considerations; more emphasis on the creation of technologies that control other technologies and deal with the effects of their misuse; paying attention to the historical course of the formation and dominance of technology and proper detection of the cause of the reactions to the introduction of a particular technology; confronting the view of exploiting human beings which is one of the important reasons for the governance of mere engineering-oriented perspectives in the production of technologies; emphasizing that technology is not independent and autonomous and has no spirit, and this is the human's perception and manner of use that provide the ground for unintended consequences and inconsistencies; considering that each technology has hidden capacities, its manifestation reveals more hidden capacities for human beings; human's self- alienation toward nature that has been created due to the sense of ownership and utilization and meeting the value-based needs of the welfare factor and survival; changing the values ruling the world and sometimes distorting some of the values that have broadened the range of human intervention in confronting natural factors; lack of sufficient and profound philosophical insights into the technology philosophy in engineers and designers, and their misconception

of a technical artifact, as well as their improper uses; the commercialization of products and the negation of primary values by humans due to emphasizing the maximization of profit; paying attention to their needs and prioritization, which more often reflects the preference for material needs and is derived from the political and military institutions and the superiority of having their ideas in the creation of technologies; considering that social- technical systems are hybrid and multiple; and finally, the new science of the production is a secularism-based science that considers profit and prosperity of the vast majority. On the one hand, there is the emphasis of religions and scriptures on the exploitation of the world, and the confrontation of religion and secular views faced with science, which itself is a debate with certain historical roots.

In general, the vast majority of respondents who have been interviewed in this study have noted that the engineering-oriented perspectives in the design and production of technologies have been more intrusive than humanistic views. This does not mean that humanism has been totally ignored, but the question is the governance of humans and the margined philosophical attitude and interpretive views on man and the world (Diagram 5).

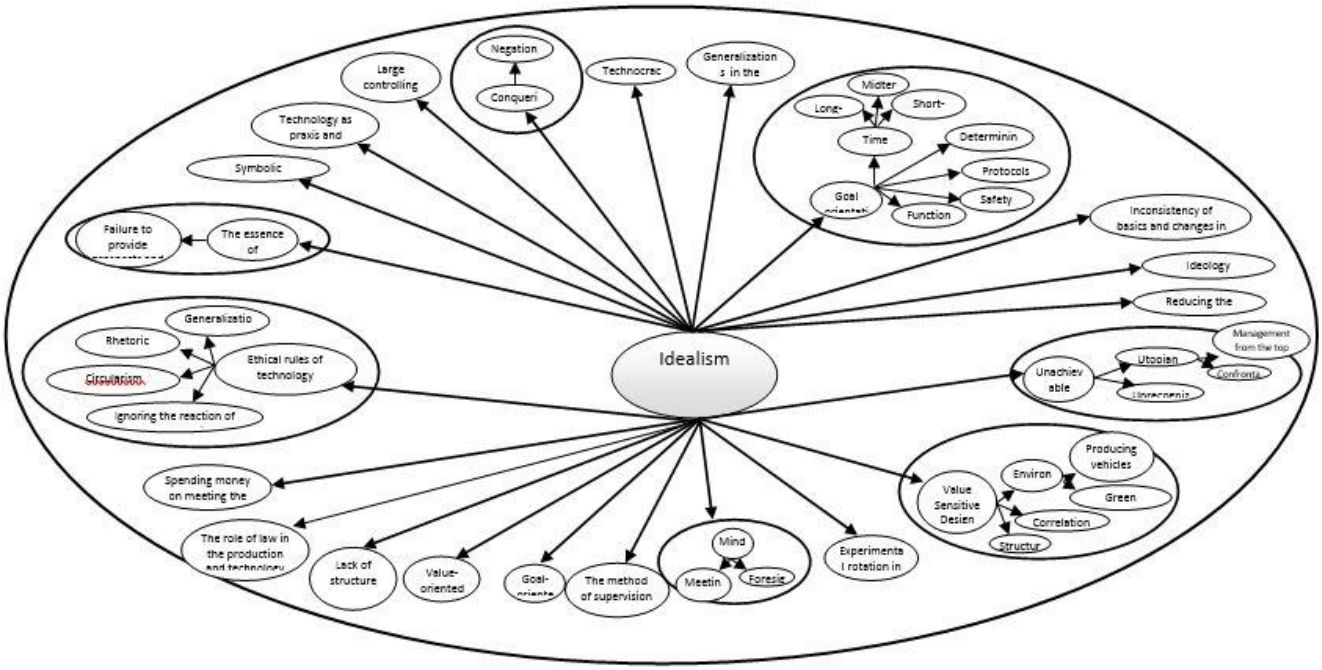


Diagram 5. the combined diagram of the semantic system of ideal discourse in technology philosophy.

Analyzing the combined diagram of the semantic system of ideal discourse in technology philosophy

Considering concepts such as goal-orientation and idealism in the design and production of various types of technologies has been the focus of attention of many thinkers and technology philosophers. Paying attention to these two concepts is considered essential in expressing development theories. Many analysts' analysis reveals that development theories are mostly non-idealist, non-teleological, and lack love and meaning. In this research, the majority of interviewees believed that there was a goal-oriented approach in the design and production of technology, but idealistic views were very negligible. The reason for this is as follows:

- Generalizations in explaining the ideal principles and their obscurity.
- The governance of technocracy, which has been opposed to ideals due to its own interests.
- Governing the attitude of conquering nature, which itself is in contrary to ideals.
- The existence of large controlling institutions that prevent the emergence and growth of human-based views based on justice and the more proportional distribution of blessings due to failure to confront the interests of capitalists in the minority of the world.
- The existence of an aggressive nature in technology, which actually provides no ambitions or visions.
- Paying attention to ethical codes and governing the viewpoints of the ethical guidelines on ethical basics and not prioritizing the ethical and idealistic principles and instead turning to generalizations, rhetoric, circularism, and ignoring community reactions.
- Paying attention to spending money on meeting the material needs of humans.
- Not highlighting the role of national and international laws in producing and designing technology to bring about ideal and humanistic views.
- Lack of a predefined structure for expressing and understanding the ideals.
- The value-oriented technology and not the consideration of its philosophical nature.
- Lack of adequate supervision to focus on the ideal concepts in defining technological designs.
- Lack of attention to the relation between the ideals and the human mind and not paying attention to philosophical considerations.
- Unachievable and identifiable ideals, and, on the other hand, managements from the top, which are mainly opposed to the expression of freedom and utopian viewpoints.

- The reduction of human suffering, which is a very important cause, but the elimination of it depends on the reduction of few people's interests and this does not practically happen due to the more capitalist domination of a small group.
- The role of ideologies in defining the ideals (which have not been transparent and complete).
- Inconsistency of basics and constant change of priorities and standards over time, which has changed the aspirations and ideals.
- It is important to paying attention to the goal-oriented element, strategy determination, to signed protocols, the observance of the safety considerations and function. There is a close relationship with idealism. However, the emphasis on consumption and unilateral emphasis on goals have prevented paying attention to ideals and mission of human beings in the development of technologies and the provision of functions to meet the needs. Two points have also led to more hope for the domination of the ideological discourse in the field of technology philosophy:

1. Creating an empirical rotation in technology that transforms the concept of the ideal and various technologies, and may be able to pay more attention to more valuable and in-depth concepts.
2. Considering the principle of value-sensitive design, which focuses on structures, the environment (through the production of vehicles with less fuel, and green technologies) and increasing the correlation that seems to be among the few idealistic technologies (Diagram 6).

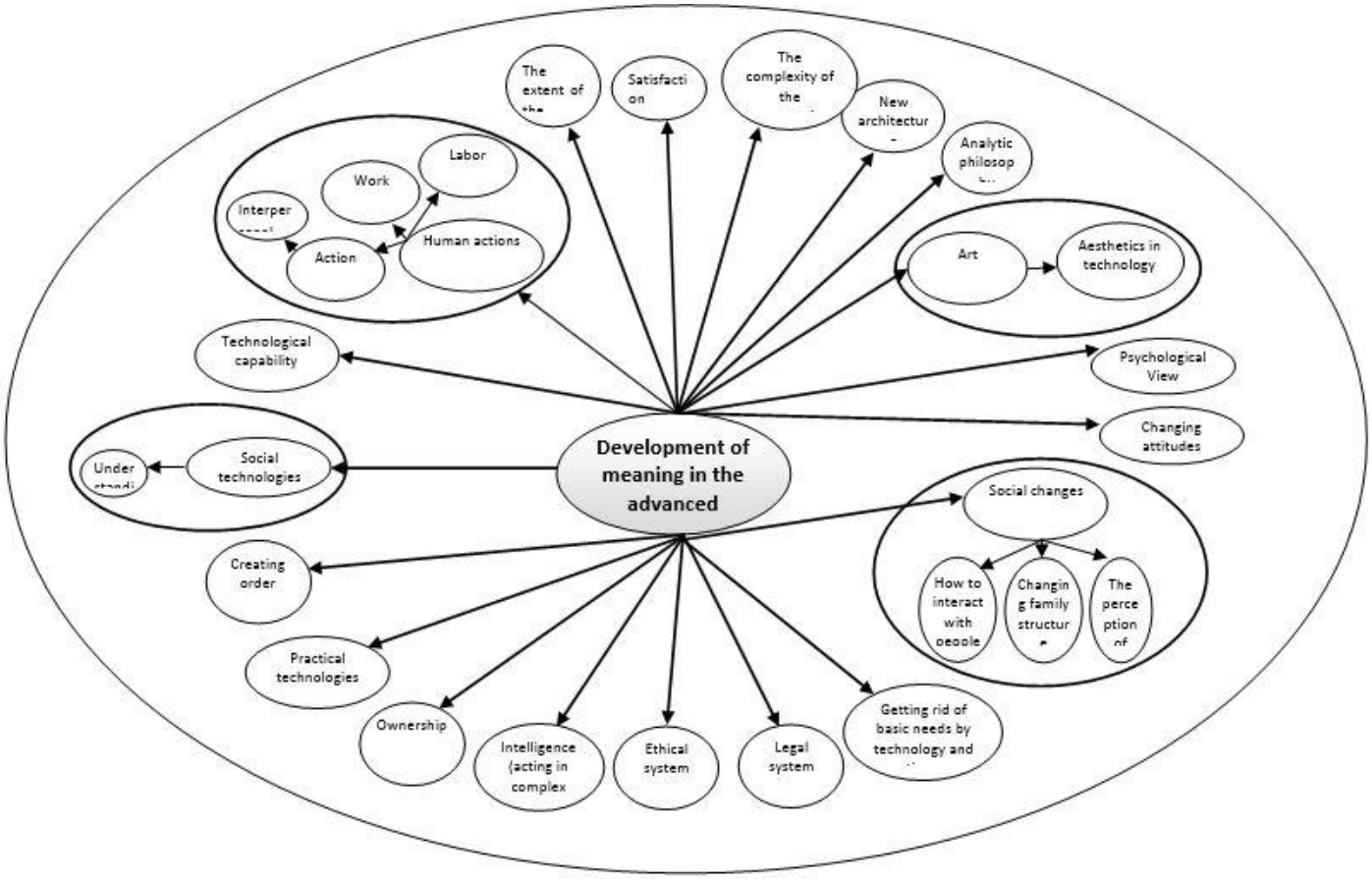


Diagram 6. The combined diagram of the semantic system of the development of meaning in the technological world.

Analyzing the combined diagram of the semantic system of the development of meaning in the technological world

In general, the reactions of the informants are divided into three categories while explaining the differences in the way of the development of meanings in the two advanced and more basic technological areas:

1. A group that believes technology is ineffective on how we understand and many other factors are involved.
2. A group that believes technology is a new, different and complex cognitive wave that has involved and transformed the understanding and all aspects of human life and has led human to more transcendental and more advanced needs by meeting some needs.
3. A group that does not understand the difference between these two societies properly and has no transparent response.

In interpreting the differences in understanding and how to develop concepts such as beauty, justice, goodness, meaning, etc., in a more technologically advanced area than a society with simpler, more basic and limited technologies, the following points have been addressed by the interviewees in this research:

- Paying attention to technology and art and the observance of aesthetic considerations.
- Paying attention to psychological characteristics of the two contemplated societies and the differences of human beings can be in the understanding and the way of discovering meanings.
- Checking changes in the attitude of people in two societies.

- Checking social changes occurring in two societies (considering people's perception of work, changing the family structure, and the way of human interactions).
- Paying attention to the role of technology in eliminating basic needs and achieving more advanced needs.
- Paying attention to the legal systems and ethical systems of the two societies and assessing the type and extent of performance of these systems and people in the face of the circumstances.
- Paying attention to the concept of intelligence as an action in complex situations that can express the difference in understanding and exposure of individuals in two complex societies or more simply in terms of technology compliance.
- Observing the principle of private property in business benefits and, consequently, in areas of technology for greater profit. The study of the life of primary tribes who live in simple societies without modern technologies and ownership is general for them indicates that conflict and hostility have been lower among people. However, a certain understanding in terms of understanding the philosophical and deeper concepts has not occurred.
- Paying attention to more practical as well as social technologies that produce understanding can be effective in promoting human understanding in a society with superior technology.
- Focusing on the greater ability obtained in the light of the technique and paying attention to analytical philosophy and the emergence of developments such as new architecture suggest that changing technology and gaining a modern technique, man has achieved a different kind of understanding, which is evident in all of its construction areas.
- In Arendt's division, human actions are divided into 3 groups of labor, i.e. activities necessary to survive, work that leads to the construction and technology lies in this area, and finally the action that is related to the interpersonal actions, which is the spectrum related to concepts such as art and goodness or beauty on the interactions of man with the world. Therefore, it lies within the scope of human activity or interpersonal action. Hence, the type of understanding in the work space or technology differs from the type of understanding in the human work intervals (Diagram 7).

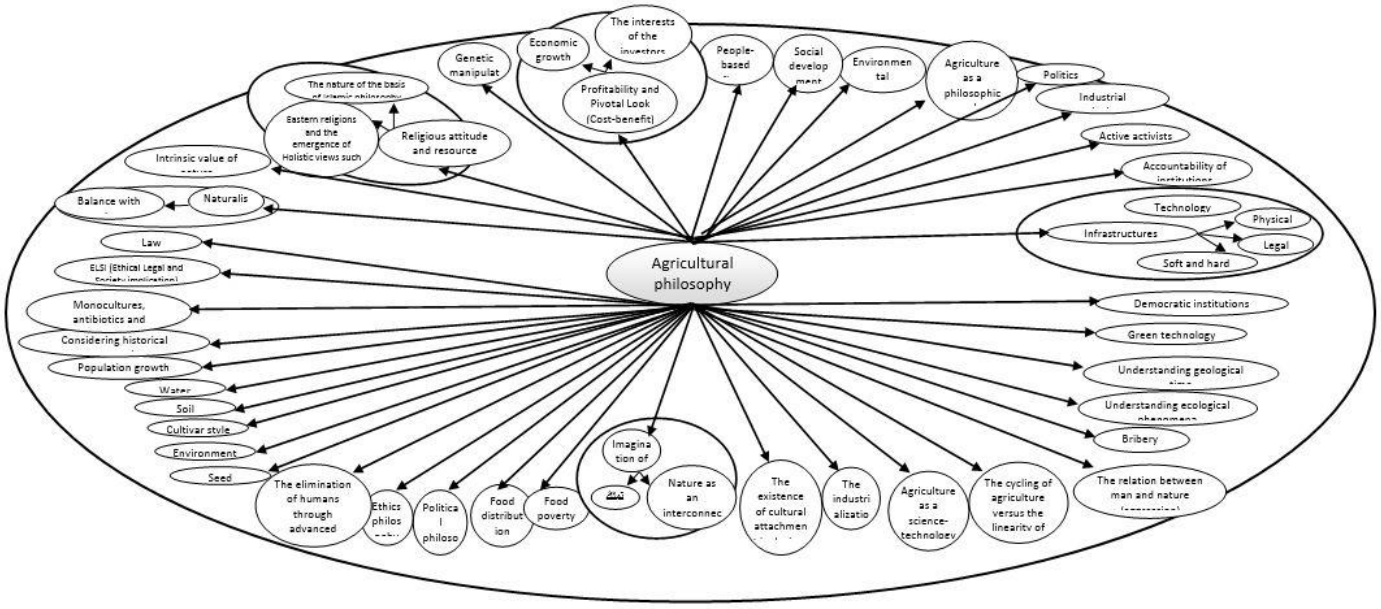


Diagram 7. The combined diagram of semantic system of agricultural philosophy discourse.

Analyzing the combined diagram of semantic system of agricultural philosophy discourse

The results obtained from the extraction of the concepts contained in the text of the conversations with the interviewees show that there is no distinct discipline known as the philosophy of agriculture in the world. However, a lot of research has been carried out on the components related to nature, environment and agriculture from the philosophical, ethical, technical and other aspects. So far, there has been no systematic review of the role of philosophy in promoting international agricultural projects. However, according to interviewees, philosophical concepts have had a negligible share in projects and the neglect has led to unpredictable consequences in the agricultural and natural resources sector. It is necessary to consider the following while ruling and highlighting the agricultural philosophy view from the viewpoint of the interviewees:

- Paying attention to soft and hard technological, physical and legal infrastructure.
- Emphasizing the expansion of democratic institutions and participation-orienting.
- Emphasizing the development of green technologies.
- Understanding the geologic meaning that leads to awareness of the degradation of ecosystems that have been formed over millions of years and their destruction is not compensable.
- Understanding the nature of ecological phenomena.
- Coping with bribery and imposing political beliefs and interests when dealing with agriculture and development.
- Changes in the relation between human invasion and turning toward respect.
- Considering the cyclicality of agriculture versus the linearity of the industrial sector.

- Considering that in religions (especially Islam school) nature is the basis of philosophy and this feature can be used.
- Considering that agriculture itself is not pure science or technology, but it is the science of technology and as there is technology and skill in it, deep philosophical concepts also lie in it, which requires a different understanding.
- The ideal of industrialization, which is a more prominent ideal in many countries including Iran, is in contrast to agriculture philosophy and agriculture development.
- The existence of a cultural attachment in each agricultural project can prevent the use of disproportionate technologies that are inappropriate for native cultures in the regions and prevent the occurrence of adverse effects.
- Creating a proper conception of nature with reliance on education.
- Paying attention to the principle of judicial security and the elimination of poverty from food produced in the agricultural sector and paying attention to the fair distribution of food.
- Paying attention to political foundations in philosophy (Vanier is among the philosophers of science and technology who has proposed a detailed discussion on the fact that artifacts have also policy.) Considering philosophical and ethical principles.
- Paying more attention to the fact that the growth of modern and industrial agriculture in many regions could lead to the elimination of many people from the logical course of life and have adverse consequences.
- Considering the technologies produced and used in seeds, changes in soil and water, changes in cultivation style, the use of antibiotics and pesticides.
- Considering the relationship between agricultural development and population growth.
- Considering the historical approach when analyzing the philosophical principles of agriculture.
- Considering ethical, social and legal considerations in projects and their evaluation.
- Considering the inherent value for nature and to strengthen naturalism.
- Paying attention to the role of Eastern religions in the emergence of holistic views on nature and extraction of resources.
- Observing ethical principles in applying genetic manipulations.
- Confronting the profit-oriented view and the absolute sovereignty of cost-benefit principle.
- Paying attention to the development of people-based flows and the promotion of social development.
- Accountability of institutions regarding the application of agricultural technologies and assessing their impacts (Diagram 8).

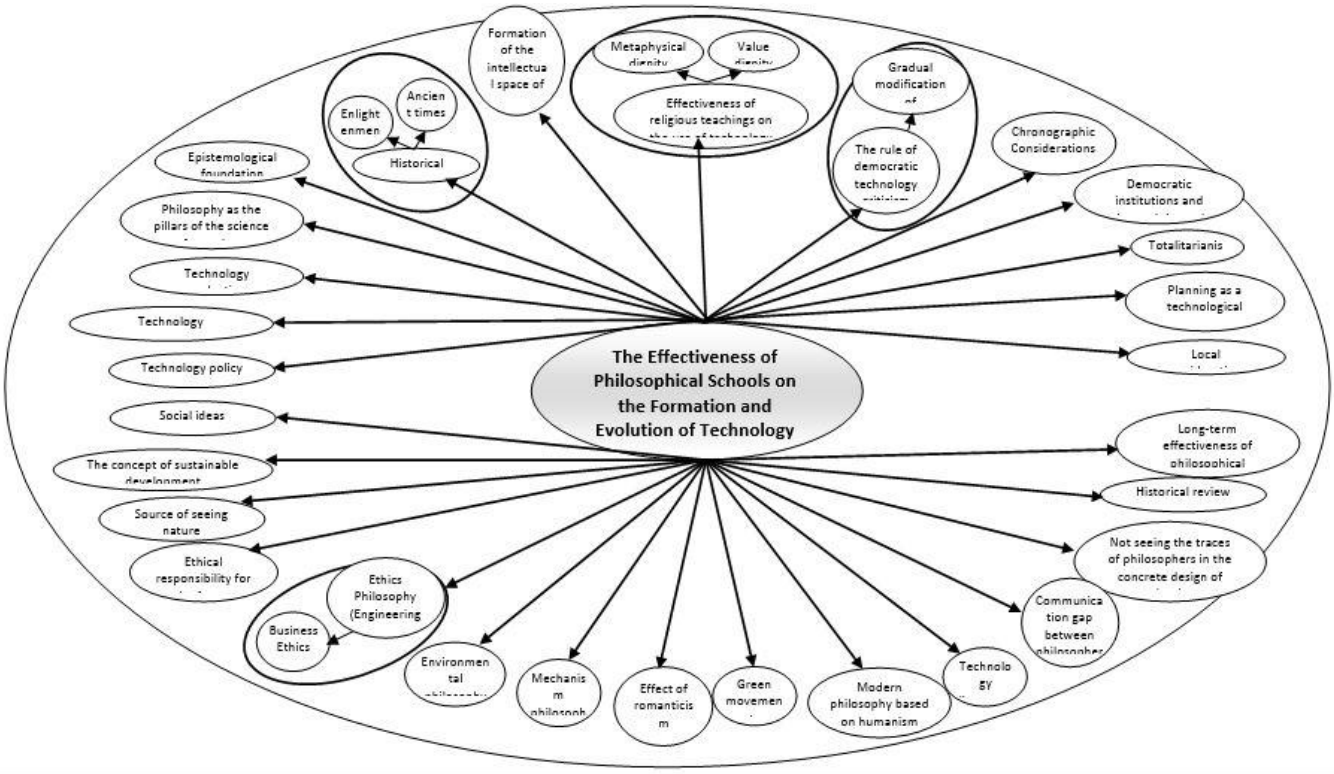


Diagram 8. The combined diagram of semantic system of discourse on the effectiveness of philosophical schools on the formation and evolution of technology philosophy.

Analyzing the combined diagram of semantic system of discourse on the effectiveness of philosophical schools on the formation and evolution of technology philosophy

Most respondents believed that philosophy had little effect on modern technological developments, but it was definitely not ineffective. The role of philosophers is not seen in many designs. The process of forming and influencing philosophical concepts is basically long-term. Therefore, perhaps its mode of action cannot be clearly explained and described, but the developments of today's techno-oriented world has been influenced by the intellectual development of thinkers in various

fields, especially philosophy, throughout the past centuries, especially in the last two centuries.
The results of the discourse analysis indicate that the following points can be taken into account in the effectiveness of most philosophical schools in the field of technology philosophy:
Paying attention to the effectiveness of religious teachings in the use of technologies (with emphasis on metaphysical and value dignities)
The dominance of democratic critique of technology and its continuous modification with respect to receiving social feedback (and emphasizing on structuralism views)
The dominance of democratic institutions and determining red lines while applying types of technology
Preventing totalitarianism from overcoming

- Paying attention to the principle of planning, which itself was always completely technological.
- Considering local considerations in the production and use of technology, especially in agriculture sector.
- Considering the long-term effectiveness of philosophical views in the development of technology philosophy.
- Paying attention to the historical approach-based survey in analyzing philosophical schools in the formation of philosophy.
- The existence of a communication gap between philosophers and engineers.
- Paying attention to folk literature and the existence of concepts related to technical developments.
- Considering that modern philosophy is based on humanism.
- Paying attention to green movements.
- Paying attention to the principles of mechanistic philosophy and studying them.
- The study of the influence of the philosophical school of romanticism on the emergence of technology philosophy.
- Paying attention to the foundations of environmental philosophy that have created the need for and development of agricultural technology.
- Paying attention to the ethics of philosophy and the observance of the principles of business ethics.
- Accepting ethical responsibility towards the future (due to the use of technologies and the development of their application, which has led to the emergence of different and sometimes divergent philosophical perspectives).
- Changing the view that makes nature a source for exploitation.
- Paying attention to the concept of sustainable development that originates from philosophical schools.
- The emphasis on social ideas and their effect on the evolutions of technology philosophy.
- Paying attention to policy making in the technology sector.
- Paying attention to management and technology evaluation.
- Paying attention to philosophy as the pillars of science formation.
- Paying attention to epistemological foundations in the field of technology philosophy and the establishment of the interaction and a greater affinity between the two domains.
- Studying and analyzing the historical course of philosophical schools in the ancient times and the Enlightenment in order to understand the process of formation and evolution of technology philosophy.

* The sum of the views presented in the table of semantic systems of the prospect discourse of the global technological system based on imagination suggests the views of the interviewees are in the two sides of the spectrum, i.e. optimistic and pessimistic toward technological developments, with more focus on the pessimistic view of the future of technological developments. The comments are summarized as follows:

- The governance of industrial fields and industrialization and the formation of large mechanized farms instead of villages,
- The emergence of political conflicts between countries using the best technologies (the emergence of technological battles),
- Improving the general state of human life,
- More search for more material possession,
- Extending the possibility of creating and using technical innovations in the villages of the world,
- Getting free from the effects of misuse of technology with the help of newer and more humanistic technologies,
- Human need for agricultural technology,
- Changing the concept of village and the transformation of villages into cities and towns,
- Providing all human needs by machines,
- More human struggling to deal with a completely technological lifestyle and not surrendering to its unpredictable consequences,
- Using more solar energy and exploring fresh resources,
- Increased speed in human life,
- Creating a technological understanding of nature (even feeling wind, perfume, and the image of nature without being in the natural environment),
- Changing the pattern and style of human nutrition,
- The more importance of economic growth,
- Using advanced irrigation systems and greenhouses more frequently,
- Abandoning lots of lands and using hydroponic crops more frequently,
- Changing agricultural cultivation patterns and not being dependent on land fertility,
- Increased land temperature, the elimination of many biological species, the pollution caused by gases, more human effort to deal with the risks and testing the way of influencing technological flows,

- Increased migration and transferring millions of poor farmers to cities in the developing world,
- Focusing more on social and democratic technologies and more technological interactions in the field of human relations,
- Expansion of desertification,
- Non-constant values,
- Use of other energies of other planets and making other planets habitable using technology,
- Concerning about the status of work as a technological matter with the governance of the Internet of things,
- Preferring villages to cities for life and changing the course of migration from cities to villages and areas with plenty of blessings,
- Making more technology-driven social justice,
- Establishing factories near villages to process products and the existence of a widespread labor market in villages,
- Competition of cultures with the flow of global culture in technological space and the degeneration of weaker cultures,
- Becoming a land-city or global unit country,
- Abolishing the ownership of the production tools,
- Destroying the capital role of money and lack of attention to the concept of sustainable annual growth,
- Board management of all environmental units in the global unit country,
- The entry of man into the historical stage and passing through pre-historic stage,
- The analysis of the semantic system of futuristic discourse (based on imagination) in the global technological system:

1. The results of the interview with the scholars on drawing a modern technology society in the coming years formed based on knowledge and individual imagination indicate that there are two major dimensions in the analysis spectrum. On the one hand, most scholars believe that technological developments will not have long-lasting and sustainable effects and that its adverse effects are increasingly causing many abnormalities in all fields, leading social, intellectual, climatic, philosophical, and economic structures toward instability, and that the future is not clear. On the other hand, other philosophers believe contrariwise. They believe that despite all the abnormalities resulting from the incorrect use of technology, exposure to the risks and hidden risks of various technologies, human beings will not succumb to the conditions and will come up with new solutions to deal with the unintended consequences.

Results, conclusion and discussion

Results

The results of the interviewees' opinions show that the majority of them have an analytic philosophy approach to the interpretation of technology and its philosophy.

Table 3. The summary of the most important points extracted from interviews with philosophers and researchers.

	the most important points extracted from interviews with philosophers and researchers
1	Emphasis on the relationship between technology and language element
2	Paying attention to the historical context in defining and explaining technologies
3	Paying attention to the historical context in defining and explaining technologies
4	The relevance of technology to science and mind (and the formation of human minds and the development of his understanding and perception)
5	Emphasis on the existence of technological knowledge with an emphasis on Habermas's theory
6	Technology is how Dasein exists.
7	Emphasis on innovative technologies
8	Emphasis on the existence of human and physical favor concurrently in any technology
9	Technology is like a social-technical system, which is mostly hybrid.
10	Emphasis on the role of militarism and military institutions on technology development
11	Technology provides a variety of functions.
12	Technology is the society's superiority index and development tool.
13	Emphasis on the lack of deliverance in contemporary man, which affects the confrontation with nature and the world.
14	Emphasis on the existence of specific psychological characteristics in the modern technology era
15	The existence of unpredictable consequences of technology
16	Explaining the relationship between technology and removing secrets
17	Creating new needs with the application of any new technology
18	Emphasis on recruitment, invasion, and exploitation industries
19	Paying attention to the principle of the existence of technical codes, which is Andrew Feinberg's theory.
20	Many modern technologies are center-oriented.

21	Paying attention to the close relationship of freedom, culture-building, and technological transformation
22	Special attention to the element of will and its effectiveness in the application of technologies
23	Emphasis on prospective studies with a more detailed focus on technologies
24	Paying attention to the intention and motive of using technology and its impact on the scope of human freedom
25	The emphasis on the relationship between justice and technology (Technology and technological developments have been shaped for further justice and have been able to take significant steps despite the full realization of this important issue.)
26	Emphasis on social-technical systems
27	Paying attention to the social context in the analysis of the application of technologies
28	Paying attention to the relationship between technology and ideology (referring to feminism, capitalist rule, etc.)
29	The way of dealing with some technologies in some societies becomes a kind of special political prestige.
30	Emphasis on the role of human imagination in interpreting technical developments
31	Special focus on constructivism and technological developments
32	Paying attention to the e accumulation of technologies
33	The existence of justification and essentialism in technology
34	Emphasis on the concepts of Frankfurt School (special attention to instrumental rationality theory)
35	The particular impact of technology on changing human's self-image
36	Emphasis on the special role of romanticism in creating thoughts of technology philosophy
37	Paying attention to indigenous and local considerations in the transfer and development of technology
38	Positivist view of science in today's world that affects the production of technology
39	Religions emphasize mostly on human's control over nature and the world.
40	Special attention to the analysis of technocracy and the course of its historical formation
41	Emphasis on the expansion of democratic technology
42	Special emphasis on value-sensitive designs in creating technologies
43	Emphasis on the emergence of experimental rotation in technology
44	Emphasizing that most of the created technologies are purpose-oriented but not idealistic.
45	Emphasis on the role of large controlling institutions
46	Special attention to the role of legal and moral systems
47	Paying attention to the relationship between ownership, technical transformation and freedom (Private ownership reduces the freedom.)
48	Considering that the interests of investors are sometimes contradictory to the development and application of some technologies.
49	Special attention to the development of a variety of technological infrastructures
50	There should be a good understanding of ecology and ecosystems for a proper analysis of nature.
51	Bribery is a major obstacle in the development and transfer of more appropriate and idealistic technologies.
52	Agriculture should be analyzed as a science-technology (Agriculture has important philosophical and metaphysical foundations and is not just a skill.)
53	Paying attention to the compilation of cultural attachment in any technological project
54	Paying attention to the role of the eastern religions in the emergence of holistic views such as Deep Ecology
55	In the current world, there is more governance of interest-oriented perspectives thinking of cost-benefit, and this has had adverse effects on the exploitation of nature.
56	The role of people-based flows in each community is very important in accepting or rejecting any new technology
57	Paying attention to social and legal and, at the same time, ethical foundations in the development and creation of technologies (Ethical Legal & Society Implication)
58	The ideal of industrialization and its conflict with agricultural development
59	Paying attention to chronographic considerations in technology development
60	Paying attention to the important planning factor that is considered to be technological
61	There is an intellectual gap and a deep relationship between intellectual philosophers and engineers.
62	Emphasis on the relationship between technology and human responsibility (towards the future)
63	Specific attention to technology policy making

Conclusion

The results obtained from the diagrams of the semantic system of technology philosophy discourse are as follows:

- Technology itself is a vague and mysterious phenomenon, but it has been able to elucidate a lot of mysterious things

by lots of revelations, while creating new cognitive confusions by expanding the level of abstraction of the human mind, creating a transformation in human's attitude and the emergence of new needs for mankind. Technological transformations have transformed human's self-image and have shown him a different form of creativity, power, and divine existence. On the other hand, with the advancement of tools and the emergence of greater desire for pleasure, enjoying the world, and governing forces and energies of nature, and with wasteful, unnecessary and irrational use of technology and the elimination of the systematic relations prevailing in the world, human has lost his deliverance and confronted with ambiguous uncertainty and anxiety.

- Each technology has a profound human interest derived from the essence of the creative human.
- Given the fact that technology today is an indicator of the superiority of societies on each other on the path to development and development, it can be concluded that the gap between rich and poor countries is a technological gap.
- The contemporary world is the age of birth of various demands by relying on the emergence of new needs through the application of any modern technology. Each demand provides a ground for creating a new turmoil and then provides a ground for new understanding. The new era will be the era of commodity exchanges, technology and knowledge in the field of development, especially in the development of agriculture.
- In the analysis of technology, it is inevitable to pay attention to the deep relationship between technology and the components of language, history, science, mind, ideology, the way of existence of Dasein, the psychological characteristics of the technological age, human will, attention to studies with prospective view, social and economic context, the technological constructivism, the technological essentialism, the democratic nature of technology, chronographic considerations, human responsibility, and the role of people-based flows.
- Instead of focusing on the interpretation of technologies, we must speak of socio-technical systems. This interpretation has many uses in understanding agriculture as a skill and at the same time as a profound philosophical understanding. Agriculture should be analyzed as science-technology.
- Technology releases energies trapped in the nature with a higher speed. On the other hand, the engagement of released energies and the creation of different power fields will lead to the sustainability of a more active and more developed system.
- In the contemporary world, engineering and analytical philosophical perspectives have surpassed interpretive and humanistic views, and technology has overcome ideology.
- Technology is the manifestation of the functional aspect of human nature in the face of the cognitive elements of the world. Since the essence of the universe is going toward excellence, technology, which is one of its manifestations, will change in this flow. This transformation may appear very rough, inflexible, and disruptive in the very early stages, but it will go further towards balancing and eliminating fluctuations over time and by examining the exact rules of the phenomena.
- The essence of technology is the growth of the imaginative powers of humans towards the ideal with an end-point attitude, and will eventually be able to get the conscious and semi-conscious levels of the creative human mind as well as the super-conscious level to more harmony and transcendence. This teleology and ideal approach to the ideal also exists in the nature of development. However, as development theories are being devoid of love, faith, ideal and teleology and do not have enough benefits, it seems that the intellectual and communication gap between technology philosophers, engineers and technical designers, has revealed this deficiency in many of the created technologies.
- The essence of technology is the revelation of human recall, a revelation that can be interpreted as technological discovery and intuition. The more we enjoy technique, the more we perceive our original loneliness among the forms of the multiplicity of the world. This technological discovery and intuition will ultimately lead man to more internal refinement and greater justice in the world, and his relationship with the world will lead to the establishment of a unifying process among the universes that nature is a very important and influential part of it. From this perspective, technology is a summary of the ideal concepts of human mind that has had and will have a lot of positive and negative manifestations.
- Bringing the hidden nature to the revealing world, technology eliminates all covers and expands the scope of human freedom.
- Expanding self-knowledge and relying on a deeper interpretation of the philosophy of mind are the best way to confront with the governance of the meaningless empire and indisputable control of technological rules over the mentality of human societies.
- More modern technologies that are created in the future are based on illustration and represent the types of sight to human beings. The future human being will understand well the world and profound concepts such as beauty, goodness, justice, meaning, love, aspiration, faith, and social perfectionism in the form of images.
- Since technology is the result of the liberation of the power of imagination, thought, will, and the aspiration of mankind, and on the other hand, since human nature has a particular desire for totalitarianism and perfectionism, technology is also intrinsically totalitarianism.
- The essence of technology has a lot of power in delivering the most massive meanings in rational and functional formats.
- Paying particular attention to the development of technology strategies is the most important strategy in the development process, especially the development of the agricultural sector.

- The most important principles of sustainable development are putting aside the notion of having undisputed power by man, considering ecosystems, equity and equity, the logical and wise use of resources, paying attention to local knowledge and practices, strengthening stakeholders' public participation, comprehensive planning and governance of a systematic and holistic approach to natural phenomena.
- Philosophy, philosophy of agriculture and technology philosophy are determining factors and play a facilitating role in the operationalization of the principles and ideals of sustainable development. Understanding the philosophical foundations of nature and its energy makes it easier to learn how to deal with nature and to coordinate with it, to have more control over our greed in exploiting resources, and evaluate the decision-making, planning and evaluation systems of development projects with a more thorough philosophical analysis of nature. Therefore, when formulating development theories in all its subsections and the philosophy of agriculture as a relatively new knowledge, it is necessary to replace wasteful, self-interested and unequal look with teleology, love-orientation, perfection, truthfulness, eliminating contradictions and collisions, and establishing coherence with the world and its participatory rules.

Discussion

Throughout history, human beings have sought to find ways to raise their livelihood so as to reduce the suffering and deficiencies of living. Tools may reduce the difficulties by providing a more comfortable way of living. The function of tools and technologies for human beings is to meet the needs of the perfectionist nature and constantly affect all aspects of life. Technology for humans is a set of rules and approaches that extend the functioning of organs and compensate for physical weaknesses by employing rules in the framework of technical thinking and action. The set of these functions suppresses all social, economic, military, personal, and spiritual aspects of human life and has led him to understand the new and more complex concept of being among the universes. This creature reveals its true presence through the harmony of its organs with imagination and aspirations, and by designing imaginative, fantastic, and idealistic designs into an everlasting and astonishing world.

Presenting the interpretation of technology, it is possible to introduce it with boldness as the way of human existence and how he becomes eternity; a man who seeks to calm down and fade in a superior force and following this continuous perplexity he makes tools the manifestation of his high thought and the rise of the waves of his mind and creative spirit until the realization of the truth. In this regard, technology inherently has an undeniable tendency toward truth, perfection, and end of the existence; an end that has ultimately led human disturbances to absolute peace sometimes by relieving pains and sometimes by stirring up the perplexity. Technology has expressed a different form of human knowledge throughout the ages and has given special enrichment to his presence, understanding, language and expression, thinking, psyche, and spiritual growth. Technique for man is an unmistakable manifestation of his arts, which have deep and inseparable links to poetry, music, designing and giving meaning to concepts such as volume, elegance, power, rhythm, efficiency, and aesthetics. Technology in its essence, which is the essence of the creative person, has a close relationship with the acquisition of truth and knowledge, and strives to imagine and realize different effects of power, comfort and meaning through the adaptation of subjective demands with a superior abstract level. Therefore, it can be argued that technology is the manifestation of man's authoritarianism in a mass of creatures of the world; a creature that tools allow him to travel to the bottom of the oceans and cross the forests and impassable deserts and make him familiar with more brightness through passing galaxies and phenomena. His revelations extend beyond the most invisible details and plotting the genetic schemas of the human body, and have changed his self-image. Technology is the pillar of development, and this familiarity with the human look with the brightness of existence that has embraced particles of his soul is undoubtedly manifestations of this development. In the contemporary world, it is undeniably impossible to ignore the new way of looking and living that is full of meaning, knowledge, imagination, deliverance, idealism, goal orientation, perspective, aesthetics, scientism, and excellence. There is no doubt that as greed of man in the existence leads to inconsistency and heterogeneity in many fields, the reflection of this desire in his creatures and the technical artifacts that arise from the wasteful use and unplanned and irrational exploitation of the blessings has also led to many disruptions in the destruction and confrontation with nature, man and other beings. It is obvious that technology is a reflection of human behavior and thinking; a person who is constantly fluctuating to reach his eager soul to freedom and deliverance. It is natural that this fluctuation stems from the impatience of his soul and nature, but its connection with truth and moving toward the desired direction will be able to move him away from selfishness and transform him into a historic creature who is the manifestation of the powerful presence of God. From this perspective, the entire world is technological overflowing with truth, meaning, rage, the presence and the eager of perception and liberation, and human exaggerated consumption will ultimately be adjusted. Technology is the basis of the development and understanding of monotheism. Technological discovery and intuition in the contemporary world is a new way of acquiring the knowledge of man from himself, existence, and God. Man is the manifestation of quest and emancipation from silences, and this emancipation is formed through a mathematical understanding of tools. Accordingly, the relationship between technology and freedom is justified. Human beings begin with freedom. One can make and modify the inner and outer world that can provide a true and beautiful interpretation of the world, and create the power of creating extraterrestrial and supreme ideals in one's self and in society, since the true nature of every human being is related to the concept of freedom and its immortality. There is a special relationship between the sovereignty of finding freedom and the discovery of truth and semanticism. Removing the veils of appearances from the multiplicity of creatures, technology leads the mind to a more transparent and conscious atmosphere. The result of this harmony is the emergence of a miraculous force of love that liberates humanity as much as possible from its inner constraints. In this sense, "development, which itself is the term to the achievement of facilities inherent in freedom", is completed in a deep bond with love and freedom and brings consistency

and durability into the spiritual life of mankind. In the face of various life-threats and attempts to eliminate them by means of technical artifacts, human beings have become more prosperous in the truth system and the sacrifice of human thought grows. Such liberty would avoid political and economic dogma and would definitely in conflict with the governance of any kind of aggression, including technological aggression. As long as technology is merely an excuse to dominate and exploit humans and to hire nature, humans will not be able to achieve freedom through it. If technology is seen as a means of subjugating and destroying, it will certainly be in opposition to freedom ideal. On the other hand, his efforts for adjudication, justice, human empowerment, education and health, food security and social security are in order to make him free from the constraints and his spirit will be liberated and developed. The intention, determination and responsibility of man in the application of the technique and how to interact with it are significant factors for him in determining the freedom scope of tools.

In the struggle for technological development, it is sometimes seen that societies become more caught in the technique trap than being released and that exploitation and aggression have not saved them in technocratic regimes, but also have been a major obstacle to this genuine ideal of human enlightenment. In such a space, the attitude of maximizing production and gaining the most profit is centralized and the value of human identity and nature has been unnoticed. There is no doubt that the knowledgeable, searcher and responsible human being, who is rightful seeker, will find a way out of this high-risk pathway towards the savior power. What is certain is to eliminate or alter the factors opposing the advent of freedom in the advanced technological era. The way technology works in the form of social-technical systems is influenced by the infrastructure, contexts, social norms, interactions, ideologies, and bureaucratic practices that defect in each one leads to the reduction of the freedom scope in each society, and it is necessary to look for tools to deal with these conditions. Developing people-based, democratic and other controlling technologies can play a role in this emancipation and prevent the fall of a genuine human existence.

Nature is a huge source of all kinds of energy. It is certain that if a creative person tries to take more harmony in order to liberate the latent forces of nature instead of fighting and plundering it, technical tools will not only not oppose freedom and justice, but will also be the cause of the flourishing of natural forces and the promotion of nature vitality and fertility. Another important concept related to technological advancement is the concept of secret. Technology is a decoder. Passing through the countless natural arenas, technology eliminates many ambiguities and provides a clearer picture of nature and its forces, and for each revelation, it also provides the ground for countless other codes, and refines and reinforces the mind and soul of man to perfection in the great mystery of the world and in the constant struggle. Technical systems have very precise and delicate causal relationships with natural systems. The proper discovery and analysis of these relationships can play an important role in planning agricultural development, designing cultivation pattern, and establishing a system of exploitation.

It can be said that technology is the emerged instrumental and functional aspect of human thought that has been shaped in a metaphysical design of creative minds and revealed in a physical form. The need for a metaphysical understanding of nature and an understanding of agricultural philosophy can provide the possibility of coordinating development plans with the world's existing energy capacities more abundantly, and human beings will get free from nature's prison more easily and with better understanding. In the past, humans searched for the meanings and original rules of creation in natural phenomena such as trees, forests, ponds and streams, meadows, shrubs, and seas and oceans by traversing the heavens. However, all these blessings today from a technology view with a wide variety of angles, which sometimes imposes a lot of expenses through improper and unconscious interference and sometimes enables him to pay those costs by providing better technical solutions.

Technology brings man to the realm of revelation and understanding of the truth and ripping off the veils from the masses of phenomena leads him to a more pure reason and spirituality of justice, and this technological journey can eliminate inequalities and injustices. It can be argued that technology is the manifestation of human exploration to explore invisible conscience of the universe. In this technological discovery and intuition, the level of abstraction of the human mind has increased dramatically, widened the depth of its perceptions, and strengthened the senses of humanity. This function can be seen not only in the material realms of human life, but also in the language whose major manifestations are poetry and literature. In the technological age, lifestyle, the way of understanding the meanings, the way of looking, the form of human insight, the nature of his presence and how he speaks occur in a more functional and fresh context that has a complex, vague and rich philosophy. Since in this new context, the values, preferences and virtues of human being have been altered and reviewed, while increasing the power of inquiry and analysis of his mind, one can claim that technology guides human thought to greater virtue, because according to Heidegger, inquiry is the virtue of mind and technique has sought in questioning.

Technology with its vast territory of authority in human condition and its intellectual and communication relations has also created a wonderful transformation, and in this new infinity and silence, it has changed the definition of fear, loneliness, anxiety, oblivion, rest, and understanding of time and place. It seems that the elements of the technological world are mixed with turmoil, but disciplinary with a new meaning. One could hope that a man who turned to the "Lord of the Land" due to the instruments after passing this great historical test and this industrial renaissance could achieve a more specific sense and pure passion to survive among the masses of creatures.

I strongly believe that technology is inherently humanistic and has divine effects. The way we exploit it needs to be fairly separated from its essence and analyzed. Indeed, this evolving creature in the age of the sovereignty of modernism is full of strength to the social perfection that is sometimes captured by human greed and selfishness - a human whose desire to build is in line with his intrinsic needs. Relying on his insecure imagination, he is struggling to create a new design and be a more relaxed and dreamy architect for his inner world. He is a creature who seeks out a higher understanding of the meaning of

presence from the technique view. His passion for understanding is technical and has its own characteristics and components. Whenever we look at the details of the images from this new point of view, our being, our presence, our ambitions, our vision, our life, and our views are interpreted differently in a way that a fully technological discovery and intuition is different from technological traverse and internal understanding such that the difference the special difference of the person of today's age and evokes him looking for the truth on the path of history. From this point of view, technology is a military system to organize thinking and how to see man in the age of modernity, a system that changes voices through the power of instruments, breaks the forms, redefines the rules, and gives a more specific meaning to rationalism. This rationalism may enrich the affinity ruling the world and help to create a universe that is the symbol of unity as the though matures over time. Another important point is that the essence of the universe is going toward excellence. It is moving continuously and in a totalitarian manner. Moreover, technology that manifests God's authority on earth also has an intrinsic excellence. Therefore, despite the many fluctuations, it would be hoped that the continuation of this course would be toward a positive and teleological aspect where the world emerges as a unified territory with new and unpredictable concepts and that world completely changes the concept of country, city, village, ethnicity, nationality, gender, and other key words of human thoughts and in fact manifests a particular and love-oriented aspect of being. "In this age of steel melding" and "at this cement level of the century" the work of a responsible man and a man in love is perhaps "to run in the pursuit of true song" that manifests itself from the artifacts point of view. Running impatiens man to get the pulses of the trees and awakens the thirst for neighboring with soil and water in his soul. I hope that we will stay awake in such a path and not be submerged in the bulk of the luxurious masks of consumerism in the age of capitalism. I hope that we do not lose our fairness towards the unjust distribution of the gifts of the world and not impose the induced disorder in nature on artifacts. I hope that we will take responsibility for what we have received and for thought. We shall try our best to reduce the cost of this new technological growth path for weaker and more disadvantaged people.

Recommendations

- Regarding the destructive effects of unconventional use of technologies and emphasizing the role of NGOs, and the reaction of technology consumers to technical artifacts and reforming them as a social infrastructure, it is suggested to develop the necessary infrastructure for the development of social technologies, democratic technologies and more innovative technologies, such as green technologies (by setting up a planning committee and deciding to develop technology).
- Given the contradiction between many technologies produced with values governing societies and the unreasonable encounter of some policies with modern technologies, it is suggested to modify the technology design and transfer process by supporting value-sensetive designs in the creation of technologies (focusing on technologies of agricultural sector).
- Considering the importance of technology as one of the most important preconditions for development and considering that, according to interviewees, a useful science is a science that is capable of becoming technology and full of innovation, it is suggested to develop knowledge-based institutions in order to develop innovative technologies.
- Due to the communication and intellectual gap between technology engineers and technology philosophers, it is recommended to expand cooperation and intellectual exchanges by creating a think tank in national and international projects.
- Considering the importance of technology and its philosophical aspects in today's world and considering that development in the future world relies on the progression of modern technologies. Achieving this requires research in this area. On the other hand, there is no special faculty, group or institution with a research function on technology philosophy in Iran. Therefore, it is suggested to establish a department of technology philosophy in all universities.
- In order to understand more precisely and comprehensively the principles of agriculture and its development and to pay attention to philosophical foundations in agriculture sector, it is suggested to take required actions on the development of an agricultural philosophy curriculum in faculties in agriculture and natural resources.
- Considering that the development of agricultural technologies and the development of agricultural land mechanization in the country require a purely economic and technical justification, it is suggested to take necessary technical measures through organizing a system of agricultural land ownership in order to justify using modern agricultural technology.
- Considering the adverse and unpredictable effects of using many technologies, especially their role in environmental degradation, it is suggested to take action to preserve non-renewable resources and eliminate possible risks by developing technology safety standards in particular, and continuous assessment of them.
- In order to encourage and support inventors, innovators and experts, it is suggested to provide the ground for the activity of more scholars and innovators in countries such as Iran by creating a system of intellectual property. Moreover, expansion and development of supportive structures such as growth centers, industrial clusters, and technology parks will contribute to the balanced development of technology and in harmony with the social and cultural structures of the country.
- The use of any new technology will certainly have unpredictable consequences that need to be controlled by the responsible and accountable institutions. Therefore, it is suggested that governments play a more decisive role by setting up controlling institutions to prevent serious damage caused by the unmanageable use of technology.

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