



# On the Two Abstractions of Social Information and Plato's Theory of the Separation of Particulars and Universals <sup>†</sup>

Wei Yan, Xia Wang and Zongrong Li \*

Huaguang Academy of Information Science at Wuhan, Wuhan 430074, China

\* Correspondence: zrli@hubu.edu.cn; Tel.: +86-13407127575

<sup>†</sup> Presented at the 2023 Summit of the International Society for the Study of Information (IS4SI 2023), Beijing, China, 14–16 August 2023.

**Abstract:** The authors propose that the theoretical framework of Western philosophy is supported by metaphysical ontology through the differentiation and analysis of two different kinds of “particulars-universals” in Plato’s “world visible to the naked eye” and “world known to the soul” in the solar metaphor and line metaphor. In today’s society, where big data, the Internet, and artificial intelligence are prevalent, we should say goodbye to Aristotle’s “physicalism”, return to Plato’s theory of ideas, and use theoretical information science to reinterpret the theory of ideas, change from the scientific paradigm of physicalism to the scientific paradigm of “informatics”, and consciously use the world view, scientific outlook, and methodology of information science to guide our study, life, and work.

**Keywords:** social information; particulars; universals; solar metaphor; line metaphor

## 1. Introduction

The theory of ideas discussed by Plato in “solar metaphor” and “line metaphor” effectively resisted and criticized the prevailing “relativism” and “skepticism” of the Wise School about knowledge at that time. The proposition of idealism makes scientific knowledge possible because scientists can “ignore” individual or special things (special aspects, particulars), but deal with essential things or universal things (common aspects), that is, deal with the “laws”.

However, the European School, which really inherits Plato’s idealism, has been “marginalized” by the Anglo-American School. The “ontology” of the whole of Western philosophy is Aristotle’s critique of Plato’s idealism in the “Category” and “Metaphysics”; this determines the basic frame of “epistemology” and “axiology”. Therefore, since Aristotle’s return to Athens in 335 BC, the trend of the whole of Western philosophy is the physicalism advocated by Aristotle, not the idealism advocated by Plato.

The purpose of this paper is to question the theoretical framework of Western philosophy supported by metaphysical ontology. We believe that it is time for us to say goodbye to Aristotle’s “physicalism” and return to Plato’s theory of ideas. If we change our physics paradigm to the informatics paradigm, then the worldview and methodology of information science will guide our study, life, and work.

## 2. The First Abstraction of Natural Information: Particulars and Universals in the Light of the “Sun”

The dichotomy of existence also is known as the opposition of “particular” and “universal”. This dichotomy is intelligent and beneficial in the sense of ontology and epistemology. “Particular” means that individuals in the world have their own “particularity”. These individuals can be classified according to their species or attributes, and can abstract some “commonality” (nature or attribute), that is, “universals”. Therefore, the names and concepts of individual things and abstract things are produced [1,2]. Plato called it “idea” and Aristotle called it “form”. They both believe that the names of material (physical) things



**Citation:** Yan, W.; Wang, X.; Li, Z. On the Two Abstractions of Social Information and Plato’s Theory of the Separation of Particulars and Universals. *Comput. Sci. Math. Forum* **2023**, *8*, 63. <https://doi.org/10.3390/cmsf2023008063>

Academic Editors: Zhongzhi Shi and Wolfgang Hofkirchner

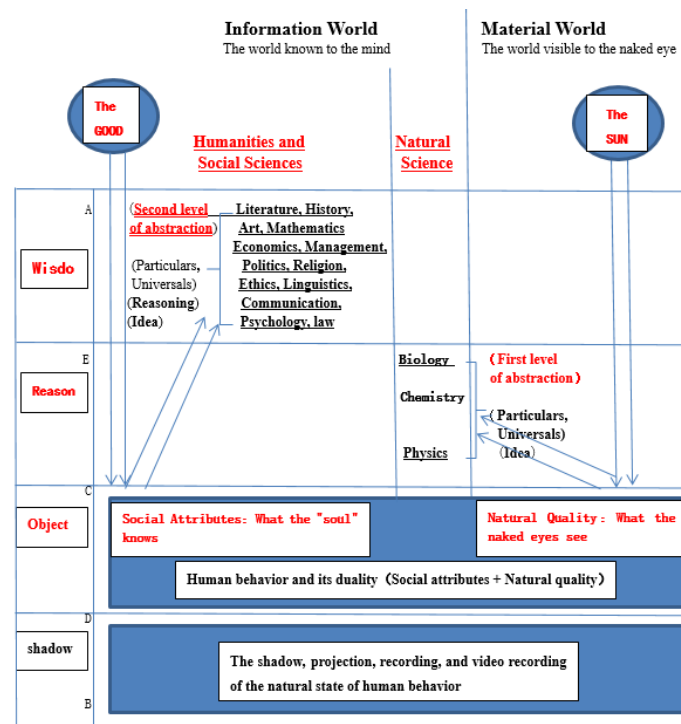
Published: 28 August 2023



**Copyright:** © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

are real, not “nihilistic”. The difference between their views is that Plato believes that the “ideal world” is independent of the material (physical) world [3], and Aristotle criticizes this “separation theory”, and believes that any “universals” must rely on and cannot exist without the “particulars” [4]. Although Aristotle learned from Plato for 20 years, he did not enter the “world known to the soul”, but was confined to the “world visible to the naked eye”; Aristotle’s “Physics” and “Metaphysics” are his representative works based on the abstraction of the material world. Since Plato and Aristotle, the debate about the nature and status of universals has run through the whole history of philosophy [5,6].

We believe that the “particulars” and “universals” in Natural Sciences, and Humanities and Social Sciences have different situations [7], as shown in Figure 1. We combine Plato’s “solar metaphor” and “line metaphor” of ideas to explain that the abstraction of Natural Science is “based on sensibility” and belongs to the “first level”. The abstraction of Humanities and Social Sciences is “based on rationality” and belongs to the “second level”. In short, the abstraction of Natural Science is essentially the abstraction of “Nature” or artificial “material products”, which takes “physical objects” as the model for abstraction. However, the “abstraction” of Humanities and Social Sciences is essentially the abstraction of artificial “information products” based on “abstract things” or “logical things”. These artificial information products (spiritual products) are invisible to the naked eye in the light of the “sun”. Only under the light of the “good” can the people’s “mind” see it. For example, we know the particulars of various “rights” and “obligations”, and universals of the “rights” and “obligations”. Relying on the light of the sun, we cannot see them in nature with our naked eyes. But, relying on the light of “good”, in the competition between “good” and “evil”, we can use “mind” to see their “particulars” and “universals” of human social behavior. Aristotle’s theory of “Four Causes” has zero explanatory power in human and social phenomena because the essence of human social phenomena is the information process rather than the material process, and according to the requirements of the “Four Causes”, there is no “material”, or “form” of the “material”; the “material” is neither “quantitative” nor “formulaic”; and, moreover, the “material” has no physical “track”, “chemical characteristics”, or “biological process”!



**Figure 1.** Plato’s “solar metaphor” and “line metaphor”: the particulars” and “universals” of human behavior.

### 3. The Second Abstraction of Social Information: Particulars and Universals of Social Phenomena in the Light of "Good"

"Killing" means, in the sense of Physics, that with a small area and great pressure, a blade can easily penetrate the skin's protection; in the sense of Chemistry, human blood flows out and is oxidized by oxygen, and blackens in the air; in a biological sense, massive loss of blood causes shock and death. Thus, a soldier "kills the enemy bravely" on the battlefield, a policeman takes "justifiable defense" when catching an escaped criminal, and a lawbreaker "intentionally harms" others; these three killing situations are no different in the professional eyes of natural scientists. However, under the guidance of the idea of good, the three situations must be distinguished by the Constitution and the laws in the legal texts, lawyers in the thinking of their jobs, and judges and prosecutors in the trial of court of justice. Otherwise, there will be no order of human life and social stability. Therefore, the science of law is not an abstraction of the physical, chemical, and biological meaning of "killing" behavior, nor an abstraction of any physical "object" and its process. It takes the idea of "good" as the "light" (yardstick), distinguishes the "good" and "evil" (bad) of people's behavior, and distinguishes "good people" and "bad people", so as to encourage good people, and to punish bad people, and make society much better. With the standards of law and good, we can re-abtract "abstract things" in the field of law, such as "heroic killing", "legitimate defense", "intentional injury", etc. This is the second abstraction and a high-level abstraction. In the professional eyes of natural scientists, the physical, chemical, and biological processes of "killing" are the same. However, in the professional eyes of jurists, law-abiding is good and law-breaking is evil.

If physicists have also studied the "information" of "particular" and "universals", then they have only used the concepts and principles of Physics to study and deal with "material objects" that are "visible to the naked eye", instead of using the concepts and principles of information science to study and deal with "information objects" that are "visible to the soul". For example, they argued in political science that "quantitative method" is the only authentic scientific method. But, we know that the purpose of quantification, through mathematical models and formulas, is to describe the procedure of motion of material objects, such as the sun and moon, the orbit of artificial satellites, and so on. But can "quantitative economists" predict the economic crisis in 2008 or some year after? Can the "quantitative political scientists" use mathematical formulas to calculate when and where the fight between Putin and Zelensky ends? The "misleading" of physicalism in the Humanities and Social Sciences can no longer continue! We should rightfully criticize the limitations of physicalism in the study of social phenomena, and carry forward the "Informatism" of the spirit of the times.

In Figure 1, "solar metaphor" means that "light of the sun" is the intermediary between human vision and visible objects. Without light, we cannot see anything. With light, we can see the "real object" and its "shadow". Of course, we can also see the natural attributes of human behavior, that is, our "body movements", such as "killing" and "being killed", and then explain them in Physics, Chemistry, and Biology. In *The Republic*, Plato regarded the "Sun" as "the son of the good which is very similar to the good"; he said: "Obviously, the relationship between the sun and the vision and visible things is the same as that between the good itself and the intelligent and the reasonable things in the world that can be understood"; "Good is the source of knowledge and truth". If there is only the explanation of Natural Science for "killing" in our society, and there is no explanation of human and social science for "killing", human society will become an "animal world".

In other words, the "first level of abstraction" in Figure 1 is the abstraction of the "natural attribute" of human behavior, that is, the abstraction of the "physical object", and the abstraction of the "meaning" of physics, chemistry, and biology, which is the abstraction of physicalism." For example, in human society, there are all kinds of special freedom and equality, but there are also freedom and equality in a general sense. The particulars and universals of "freedom" and "equality" are the "spiritual product" or information product created by human beings, which do not exist in the nature. The second level of

abstraction refers to the “social attribute” of human behavior, that is, the abstraction of the “meaning” of the humanities and Social Sciences of physical objects, the abstraction of “abstraction”, or the abstraction of informationism. The second level of abstraction is the re-abstraction of “abstract concepts” that are not in nature but created by human beings, that is, the abstraction of humanities and Social Sciences.

The idea of “good” is an abstraction of the ethical and moral behavior of “benefiting others and society” in human social behavior, which belongs to the “second level of abstraction”. There is no distinction between “good” and “evil” in non-human animals, plants, microorganisms, and inorganic substances. There is only the first level of abstraction, that is, the abstraction of Physics, Chemistry, and Biology. It is because of its absolute “value neutrality”, in fact, that it can be used by all mankind. On the contrary, the secondary abstraction must be “value related”. Therefore, the discussion of “particulars” and “universals” in Natural Sciences, and Humanities and Social Sciences, is not conducted at the same level; compared with Natural Sciences, Humanities and Social Sciences have great particularity and complexity. In contemporary terms, we believe that in the human vision of the design and implementation of the “Republic”, the experts of the “idea” of Natural Science are “men of science and technology”, while the standard-bearer of the “idea” of Humanities and Social Sciences is “politicians”.

#### 4. Why Can Aristotle Not Understand Plato’s Theory of Separation between Particular and Universal?

As mentioned earlier, what Plato called “idea” is called the “form” by Aristotle. They all acknowledge the existence of particulars and universals. But, their different views are as follows: Plato believes that the “ideal world” is separated from the material (physical) world; Aristotle criticized this “separation theory” and believed that any “universals” must rely on and cannot exist without “particulars”. Although Aristotle learned from Plato for 20 years, he was limited to the first level of abstraction in the “world visible to the naked eye”, and did not understand the second level of abstraction in the “world visible to the soul”.

After distinguishing the “first level abstract” and “second level abstract” about “particulars” and “universals”, we can discuss whether the “particulars” and “universals” of things can be “separated”, that is, the fundamental conflict between Aristotle and Plato. In the first level of abstraction, universals are usually the abstraction of some real objects. If there is no specific “apple”, where does the general concept of “apple” come from? However, in the world of artificial material products, there are no planes, ships, or cars, but there are their “abstract ideas” first, and then their “physical objects”. Therefore, in the first level of abstraction, that is, the abstraction of the inherent information in nature, the particulars and the universals cannot be separated, and Aristotle is right. But, in the world of artificial products, the particulars and the universals can really be separated, and Aristotle is wrong. People have the general concept of aircraft first, and then try to design and manufacture the physical aircraft.

In the second level of abstraction, the “universal” of “good” is “natural”, that is, just like the universal of human values of “freedom, equality, democracy, and human rights”, which are “natural” in our minds. Then, we use the general idea of good or bad (or evil) to analyze a specific human behavior at present, and understand the particulars of “good”. At this time, there can be particular first and then universal. Moreover, both “particular” and “universal” can “keep pace with the times”. The standards and behaviors of “good” in different times are different. For example, the discussion on “fairness and justice” has developed continuously. Rawls’ *A Theory of Justice* has reached a new level of human understanding of “social justice”. However, he is discussing in the “universal” rather than in the “particular” perspective. In today’s world, is there a corresponding “particular” of Rawls’ *A Theory of Justice*? Rawls ignored it!

It is precisely because of the separation between the particular and universal in the social information phenomenon that Plato wrote *The Republic* on the level of universal, which

is not an induction and abstraction of the particular of all of *The Republic*, but a discussion in the general sense. Therefore, the particulars and the universals can be “separate”, exist separately, and evolve and develop separately. In this way, Plato is completely correct in the secondary abstraction and in the abstraction of “social information”. Therefore, in fact, Aristotle’s understanding of “abstraction” has not entered the level of Humanities and Social Sciences; he only paid attention to the inherent characteristics of natural material objects, and even did not take into account the world of artificial material products.

In today’s society where big data, the Internet, and artificial intelligence are prevalent, we believe that the scholars in Humanities and Social Sciences should not ascribe to Aristotle’s criticism of Plato’s theory of the separation of particulars and universals, reverse the things that have been reversed for thousands of years, say goodbye to Aristotle’s “physicalism”, return to Plato’s theory of ideas, and confirm the nature and special status of “universals”. Furthermore, these scholars should employ theoretical information science to reinterpret the theory of ideas; realize the transformation from the paradigm of “physicalism” to the paradigm of “informationism”; apply consciously the world view, scientific outlook, and methodology of information science in the second abstraction of social information phenomena; and build the Humanities and Social Sciences with the characteristics of the information age.

**Author Contributions:** Conceptualization, writing—original draft preparation, writing—review and editing, Z.L.; Discussion, W.Y., X.W. and Z.L. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** Not applicable.

**Acknowledgments:** The authors would like to acknowledge Lin Xia for reviewing the paper.

**Conflicts of Interest:** The author declares no conflict of interest.

## References

1. Bunnin, N.; Yu, J. *Dictionary of Western Philosophy: English-Chinese*; People’s Publishing House: Beijing, China, 2001; pp. 726–727.
2. Audi, R. *The Cambridge Dictionary of Philosophy*; Cambridge University Press: New York, NY, USA, 1999; pp. 489–491.
3. Plato. *The Republic*; Huang, Y., Translator; The Chinese Overseas Publishing House: Beijing, China, 2012; pp. 189–192.
4. Aristotle. *Metaphysica*; Wu, S.P., Translator; Commercial Publishing House: Beijing, China, 2018; pp. 52–54.
5. Tarnas, R. *The Passion of the Western Mind—Understanding the Ideas That Have Shaped Our World View*; Wu, X.Y., Translator; Shanghai Academy of Social Sciences Press: Shanghai, China, 2007; pp. 4–11.
6. Stumpf, S.E.; Fieser, J. *Socrates to Satre and Beyond. A History of Philosophy*; Ding, S.D., Translator; Zhong Hua Book Company: Beijing, China, 2006; pp. 67–81.
7. Li, Z.R. The particulars and universals of Plato’s solar metaphor and line metaphor—Aristotle’s categories and the attributes of contemporary theoretical information science. *Times Fig.* **2021**, *26*, 1–5.

**Disclaimer/Publisher’s Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.