

A Brief Report on the Logic

“The science or art of reasoning as applied to some particular department of knowledge or investigation.” [The Oxford English Dictionary, 2nd Edition]

It is the most convincing definition of logic for me. With this statement, we can easily confirm that logic is not only a kind of science, but also a kind of art. On the one hand, logic is the rigorous inference from the valid premises to the conclusions, abiding by the formal principles. And for any scientific process, it cannot get rid of rational and strict reasoning, so this makes it clear that logic is science. On the other hand, logic is not unreachable and too abstract for normal people to enjoy its benefits. On the contrary, logic is always in practice and developing in people's daily life so that logic is a tool to help people to understand the objective world where they live. When we are using logic to demonstrate, even though we are not aware that logic is being utilized, we need to choose a better way to think about how the argument develops and how to convince the audience. This is a significant side of logic as an art. At the same time, logic not fully includes all aspects of knowledge but just focuses on the process of deducing, so logic is “applied to some particular department of knowledge or investigation.”

“Logic is ever-present: when you use AI software, when you turn on your computer, when you develop an argument. Logic is a contemporary universal. Yet despite being surrounded by logic, we remain quite unaware of its ubiquity. We often apply logic without knowing that we are doing so.” [Message from Ms Audrey Azoulay, Director-General of UNESCO, on the occasion of World Logic Day 14 January 20]

As a principle of reasoning, logic has been explored by many civilizations in history. Ever since the earliest logical expressions appeared, logic has played an important role in the development of philosophy and science and has been undeniably related to the development of knowledge, science and technology. As a wellspring of innovation, logic has always been a veritable catalyst for change. Therefore, logic is the foundation of all the disciplines of science and technology.

As human beings, we all live with intelligence and reason in a particular way instead of just intuition like other animals. The particular way, in other words, is the more logical way of doing things. Although logic is important and complex, it is not an unfathomable and abstruse knowledge out of life, over the left, it usually accompanies each of our lives. During our lives, logic is an essential part of our cognition to acquaint ourselves with the rules of the world, which works as a guide to lead us to behave in a reasonable way by raising the level of thinking, refuting the fallacies while exploring new knowledge and demonstrating ideas accurately.

Logic is the cornerstone of reasoning. Only by understanding the methods and theories of logic, which can be the knowledge of concept, judgment, reasoning, hypothesis, argumentation and logical laws, can we use them consciously to better guide our thinking, thus greatly improving the agility of thinking. The stronger the logical thinking ability of a person, the more thorough his understanding ability of knowledge, and the more stable he grasps.

As well as raising the level of thinking, logic can help us refute the fallacies while

exploring new knowledge. When we are faced with wrong reasoning, logic will protect us from misdirection by helping us to identify and refute misrepresentation and sophistry, since most erroneous statements are untenable in logic. When we get a deeper understanding of correct reasoning in learning logic, we can improve our ability to understand objective things correctly and acquire new knowledge smoothly, and thus make us more determined to follow the right path on the reasoning road.

From another point of view, logic is beneficial for us to express our ideas accurately and carry out rigorous arguments. If one spoke incoherently, other people would find it hard to understand what he really wants to express. After logic training, people will understand the corresponding logic rules and master the corresponding theory and skills so that people will be very accurate and rigorous in the expression and demonstration of ideas.

By learning logic, we can distinguish the best choice among the different options. For example, “when making a study schedule, if I think my math grade is not so good enough and want to improve it, I need to put more time on learning and reviewing math rather than less time.” This is a typical inference that we apply logic to our daily lives and this inference can lead us to plan more rationally. Looking from another way, when we are making out long sentences

For some disciplines such as computer science, mathematics, linguistics and so on, logic also has a momentous effect on researches and studies. Considering computer science, both software and hardware of computers are tightly related to logic. Computer hardware is composed of many logic circuits, and the logic circuits are based on the propositional logic of Boolean algebra, so the logical operations of propositions can be turned into the calculus of Boolean algebra. Once the operation on the circuits or Boolean algebra lost its logic, the computer would no longer function properly.

Therefore, logic is extensive and profound. Not only human thinking, but also the application and research of many disciplines cannot be separated from logic.

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