

# Psychology and Philosophy of Mind

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The relationship between psychology and philosophy is a long-standing one. Although psychology today looks different from pre-1879 psychology, it still has much in common. One of these commonalities is the concept of mind. A group of psychologists like Freud and Maslow have studied the serious role of the mind in guiding our lives. Inspired by the philosophy and theory of subjectivist philosophers, Freud was able to give structure and function to the human mind. Therefore, the philosophy of mind and its relationship to psychology need to be studied. Today, artificial intelligence, cognitive psychology, and information processing are among the most widely used sciences that have given meaning and meaning to human life, all of which operate in the realm of the human mind. Cognitive scientists have proven that the mind, especially in today's world, in addition to being, as always, a place of knowledge, thought, and problem solving, it has become a place for war and the victory of governments and states. In a way, colonial governments exploit the poor and developing societies by controlling the minds and nervous systems of the poor. In this article, an attempt has been made to study the concept of mind and its relationship with psychology and philosophy. The problem of body and mind, Gestalt psychology, cognitive psychology, artificial intelligence, and information processing are among the items that have been studied descriptively.

*Keywords:* mind, psychology, philosophy, artificial intelligence, cognition, information processing

## Introduction

What are questions like mind? Do we have an immaterial population? Isn't thought nothing more than a form of matter, a by-product of nerves stimulated in the brain? How can we be sure that others are not just complex robots? How can we say that they really have consciousness? These questions all fall into the category of philosophy of mind.

However, what is the mind? The most important question for philosophers is the mind, and despite the efforts of some of the greatest thinkers in the fields of philosophy and science, it remains a mysterious issue. Philosophy of mind is one of the most popular branches of philosophy, which has received the most interesting recent developments. Therefore, the effort to understand the mind has led philosophers to many research paths. This path includes puzzles such as the nature of consciousness and the relationship between consciousness and the material world. One of the areas of interest in this philosophy is "about being something" or "being intentional". How can thought deal with things outside the mind? What gives this mind the power to represent something else? "Perception" is also of interest to philosophers of the mind; What is perception? Is our

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awareness of the world mediated or mediated by mental phenomena? To what extent does the mind share in our experiences? (Lawe, 2014).

In the philosophy of mind, the nature of personality and personal identity are also addressed by asking questions: What is a person? When we look at our photo album, we see our photos at different stages of life, what makes these people a single person? Memory is also important; What is memory inherently? And how does it relate to our online identity?

### **Philosophy of Mind**

Philosophy of mind is a field of philosophy that seeks to provide a systematic and comprehensive understanding of the mind. The attempt of this kind of philosophy is to know the nature of the mind, its function and to discover its secret. One of the issues that has long been the focus of many philosophers and scientists in the natural sciences and the field of anthropology, has been the nature of the mind, its function, and how it relates to the body (Graham & Levin, 2015).

Thus, the philosophy of mind discusses mental states and their relationship to physical affairs, and presupposes two propositions: (1) The mind exists; (2) Mental states are related to physical affairs.

The most important issue in the philosophy of mind is to clarify the structure of the mind, and solving this problem requires explaining the states of the mind and the relationship of these states to each other and to physical matters.

The method of philosophy of mind today is an analysis that is mainly done with one of these three approaches (Rahimian, 2018):

(A) Logical analysis that deals with conceptual and propositional studies using the possibilities of mathematical logic.

(B) The nominalist who dismisses the discussion of the nature of things has, as a result, since the beginning dismissed the essence of the mind.

(C) Physicist that therefore the approach of mental properties arises based on physical properties and each property of the mind in an object depends on and is determined by the physical properties of that object.

Common schools in the analytic philosophy of mind are: (1) Behaviorism, (2) Homogeneity theory, (3) Functionalism. All three schools of thought have rejected the Cartesian principle of duality of mind and body.

As we said in the previous chapter, from a behaviorist perspective, only data from the observable behavior of an organism are acceptable data. According to a narration, every statement and sentence has a meaning if it can be translated into a sentence about observable physical or behavioral phenomena (logical behaviorism) or if the state of mind is nothing but the same behavior it has, For example, pain is nothing but the same behavior of pain, that is, complaining (ontological behaviorism).

In terms of similarity views (this identity), for every type of mental event that occurs in an organism, there is a brain state so that the assumed mental state occurs at a specific time for that organism. If and only if that state of the brain (nerve background) occurs at the same time for that organism, then pain is nothing but activity of type c nerve fibers.

According to functionalist views, mental states are equivalent to a distinct set of functional relationships and lineages and their role in specific sets. Therefore, in the example of pain, what is important is not the c nerve fibers themselves, but the function of these fibers.

Functionalism itself is divided into two versions of machine functionalism and theoretical-practical functionalism. According to the first version, the mind is similar to a computer, and the processes of the mind are ultimately machine-like, like computer processes, and different physical and biological structures can carry out similar mental processes. The famous example of the Turing machine was given to support this narration, and the famous refutation entitled “Chinese box” is presented in the critique of this narration, which we will discuss in the continuation of this chapter. The second narrative raises the possibility of the multiple realization of mental properties—unlike typical physicalism—according to which physical systems can also realize mental properties (Abdolmalaki, 2021).

### **The Mind-Body Issue**

In philosophy, the full range of all possible connections between mind and body has been explored. At one end of the spectrum, it is believed that only the body and its activities are real. Materialism and behaviorism represent this idea. At the other end of the spectrum is the rare notion that everything is essentially subjective (subjectivism). Most philosophers believe that the body and mind have separate but interdependent activities. Such philosophers are called dualistic.

A materialist tries to explain everything in terms of the physical basis of objects and tends to deny the reality of all things that cannot be reduced to matter. Thus, from a materialist point of view, the mind or “self” is nothing more than a way of describing the physical body and its functions, which also includes the activity of the brain. When we experience things like thoughts or emotions, they are in fact nothing but electrical currents in the brain or chemical reactions in other parts of the body.

The opposite of materialism is subjectivism. Accordingly, reality is subjective, not physical. What we see about our bodies or others are sensory experiences. And finally, there are just the effects they leave on our minds. In Chapter One we see how Descartes, realizing that it is always possible for his senses to err, made the starting point of his philosophy “I think, then I am”. Thinking was the only fact he could be sure of. Descartes based this fact on his dualistic view and did not deny the fact of the existence of the body. Whereas from the point of view of a purely subjectivist, only the mind is real.

A dualist is someone who is not convinced by any of the materialist and subjectivist positions on mind and body, and the relationship between them. As a result, it seeks its answer in the form of dualism. According to the duality of mind and body, two things are completely separate and very different from each other. Each is part of the “self”, part of which we call a person. Dualism itself is divided into three types: (1) Transcendentalism. This view holds that the brain and nervous system are so complex that they create the impression of individuality and freedom of choice. That is, despite the complete domination of the laws of physics over us, we “imagine” that we have an independent mind. This dualistic view is very close to the materialist view. The main point of this view is that the mind does not affect the body, but is merely the product of the complexity of the bodily system. (2) Interactionism. In most forms of dualism, the mind and body are believed to be separate, but one affects the other. For example, if you have a decayed tooth (a phenomenon related to the body), it will lead to pain (a mental experience). That is, the body affects the mind. And (3) The theory is the same as described below.

### **The Theory of This Identity**

In short, according to this theory of identity, the mind is the brain. More precisely, this theory claims that

mental states are the same as physical states of the brain (Ravenscraft, 2013, quoted from Bonje and Ardila, 2015). For example, when you see something or experience pain, these mental states trigger brain activity. According to the theory of identity, it is not that these states are something beyond brain activity and are only associated with those activities, but that these mental states are exactly the same as brain states.

The philosophy underlying biological research is a material philosophy according to which all objects are real, material, or objective. A summary of this philosophy can be found in the Hypothesis/Theory of Identity. Hypothesis/theory of this identity is presented at both strong and weak levels. Based on poor level reading or equality, mental phenomena are exactly the same as physical-chemical events. Based on strong or incidental level readings, mental phenomena are specific neural events that exist in the subsets of the mind that cannot be explained by physico-chemical resources alone. Hence, strong reading includes weak reading; "Psychological phenomena" are those "biological phenomena" in which there are physical and chemical changes, but they are not the only ones and they have "something extra" and that is their "biological dimension". In other words, psychological processes are the same biological processes that can be analyzed in physical and chemical components, but these processes have properties that are not studied in physics or in chemistry or even in general biology (Bonje & Ardila, 2015).

Psychology, by avoiding dualism, seeks to discover the nervous systems that perform exactly the same psychological or behavioral activities. The meaning of this identity and objectivity is exactly the same meaning of equality. Thinking is a brain process, not its equivalent; Perception is the activity of the brain, not its visualization, and imagination is exactly the activity of the nervous system.

### **Functionalism**

Functionalism, like analytic behaviorism, denies the concept of the mind as an object, that is, the rational essence, but considers the mind to be functional. The function of an object is basically what that object does. The function usually involves taking an input and converting it to output. The door opener is a very simple example to operate. The inlet of the door opener is a bottle with a lid and the outlet is a bottle without a lid. The function of the door opener is to open the door, but as everyone knows, the door opener has different shapes and sizes, from the door opener to the service door, which makes it easy to open the door by pressing the lever on the edge of the bottle. The most advanced tools that can be seen in stores today is that stick to the bottle. In this tool, a screw is inserted into the door with a blow and is separated in a thin one with an easy movement with the help of a lever. It does not matter what the design of the openers is, it is important that they work properly and are durable. It is clear that there are limitations to the material of the opener in order for it to function as an opener. For example, an opener made of chocolate would be as much fun as a chocolate teapot. In short, we can distinguish between two things: (1) The function of the object, that is, the work it does and the nature of the input that converts it to output; (2) The set of actual arrangements that accomplish the function, which is sometimes described as the causal role holder and makes the function doable (Maslin, 2015).

Functionalism is an emerging approach to solving the mind/body problem. The focus of this theory is on the functional role of mental states. This practically means focusing on the inputs, the outputs, and the ratio between internal states. Functionalists define each mental state in terms of its typical relationship to other mental states and its effects on behavior. Functions take advantage of some behavioral insights, such as that mental activity is usually closely related to behavioral tendencies, while acknowledging that mental events can actually be the cause of behavior (Warburton, 2016).

By comparing functionalism with the relationship between the computer and its program, it is easier to understand this theory. When it comes to computers, it makes a difference between hardware and software. Computer hardware is what a computer is actually made of: transistors, circuits, silicon chips, screens, keyboards, and the like. In contrast, software is the program, the system of operations that the hardware performs. Usually the software can be adapted for use in different systems. Software is usually a complex set of instructions for computer hardware, instructions that may be physically executed in different ways, but all come to the same result. However, functionalism as a theory of the mind deals with software, not its hardware. In this respect it is similar to behaviorism. Physicalism, on the other hand, is concerned with revealing the relationship between pieces of hardware—the human brain—and a particular software package—the human mind. Functionalism is by no means a theory of hardware, although it can certainly be adapted to various forms of physicalism. Functionalism, however, does not matter what kind of physical systems mental programs operate in. The main task of functionalism is to accurately define the relationships established between different types of thought and behavior.

### **Philosophy of Mind and Psychology**

Although philosophy of mind and psychology are closely related, a distinction must be made between the two. Psychology is the scientific study of human behavior and thought. Psychology is based on the observation of individuals, often in experimental and laboratory conditions. In contrast, the philosophy of mind is not in the category of experimental disciplines. The philosophy of mind does not require scientific observations in the real world. Philosophy is concerned with the analysis of our concepts and ideas. The philosophers of the mind are preoccupied with the conceptual issues that arise when we think about the mind. A psychologist researches, for example, personality disorders such as schizophrenia, and does so by observing and examining patients, performing tests on them, and so on. In contrast, the philosopher poses conceptual questions, such as: What is the mind? Or, what do we mean by mental illness? These questions cannot be answered by examining the facts alone. We need to analyze the meaning of the terms in which these questions are expressed. Consider another example to clarify the matter. A neuropsychologist who studies the human mind may make observations about patterns of nerve stimulation in the brain. The philosopher of the mind proposes a more fundamental concept of whether the activity of these nerves is the same as thought, or whether there is a facet in our conception of thought which implies that thought cannot be reduced to a material event. Or, in a more traditional sense, do we have a mind separate from our body? (Abdolmalaki, 2021).

Based on what we have said in previous chapters on philosophical psychology, topics such as the philosophy of mind and mental processes in the field of philosophical psychology can be studied. Hence, the philosophy of mind can be considered synonymous with philosophical psychology, which has made an ambiguous attempt to analyze bodies, minds, and persons, and by dissecting and trying to revive them, the goal is to understand the nature of intelligent life.

The functionalist view of the mind can also be examined in light of the development of psychology as a science. Early structuralists sought to analyze all experiences on the basis of their sensory components. In the 1870s, Wundt and others asked experimenters to reflect on their experiences and observations in order to discover the activities of the mind. In this way, they provided an accurate model for analyzing the experience. At the time, it was thought that accurate reports were the only way to reach the mind. William James, a professor of psychology at Harvard University, authored two books: *Principles of Psychology* and *A Brief*

*Course in Psychology*, in 1890 and 1892, respectively. In these two books, he discusses the role of emotions and how they are expressed physically. According to him, the expression of emotions can be done by attributing appropriate physical states to them. For example, if you look at the world with a good eye, you will feel good. According to James, the opposite is also true. This means that if you do not give physical feeling to that feeling, that feeling will disappear. This view implicitly has two important implications in the philosophy of mind: (1) It is not just the mind that has control over the body; Rather, it is a process of constant interaction between mind and body; (2) A mental activity such as the expression of feelings or emotions can be evaluated through the way it is expressed, that is, through the physical action that leads to its arousal.

Freud also made in-depth studies on the effect of the subconscious mind on the moods and behaviors of psychotic patients. According to the philosophy of mind, the (unconscious) mind has a profound effect on a person's health, without the person being able to identify the root cause of the problem in a state of illness.

Thus, one of the common features of different approaches to psychology was that they all dealt with how the mind functions in one's life. For example, how will a childhood trauma affect a person's psyche in adulthood? Or what is the role of the mind in learning mice to perform simple actions to reach food? This approach was in line with the functionalists' views on the mind, which emerged as a result of the study of artificial intelligence, which we will discuss later.

### **Gestalt Psychology and the Concept of Mind**

In 1912, the same year when Watson gave lectures at Columbia University that sparked the behaviorist movement, Max Wertheimer published a series of experiments on apparent motion in Germany. These experiments formed the basis of a completely new psychology that contrasted with the existing psychologies of the time and those that were to emerge in parallel. This new school took the name "Gestalt". In his book *The Psychology of Gestalt*, Kohler points out that the term is used in two different ways in Germany. The first case refers to a shape or pattern as a feature of perceived objects. The second case refers to the more specific shape of an object, such as a triangle. So in the first case, we can refer to the property of being a triangle, and in the second case, we can refer to the triangle itself. The basic services of Gestalt psychology were in the field of perception, especially visual perception, although auditory perception was not overlooked. Later, Gestalt psychology extended its principles to the fields of learning, thinking, and memory, so that in the mid-1930s it was a completely formal system (Landin, 1999).

Gestalt, considering the assumption of an interactive-neutral nature about human beings, emphasizes the study of the perceptual unit to express how humans and the environment interact and how they relate. This meaning was previously proposed by the German philosopher Emmanuel Kant. He insisted on perceptual unity, saying that when we perceive objects, we are confronted with a particular state of mind composed of several parts (the same sensory elements that empiricists and associators speak of). These elements are significantly organized into pre-organized collections. This organization is not provided in the natural course of the act of association, but the mind forms or creates an empirical unit in the process of perception. Kant does not consider perception as a passive expression and representation and combination of elements, but as an active organization that appears in a single and related experience and the mind gives perception, form, and organization to the raw materials (Kohler, 1954, quoted from Abdolmalaki, 2021).

Gestalt psychology became interested in this issue, that is, paying attention to the perceptual unit, which is one of the most fundamental issues raised by Kant, and used it in formulating its theory. Such a position was

considered contrary to the principle of the theory of association. For Kant, some of the forms, such as place, time, and causality that the mind imposes on experience, are innate. Place, time, and causation are not the result of experience, but exist primarily as a form prior to perception in the mind. According to Kant, understanding these titles is possible only through intuition (Shokrkan et al., 2020).

Attention to the dynamics and totality of the work of the mind, which entered psychology as a result of Gestalt theory, gradually spread to medicine and was accepted in this science, so that due to this theory, a medicine called “mind and body” medicine founded a quarter of a century ago in the United States, it has expanded. This type of medicine is in fact the logical result of research in various fields, namely Powell’s reflexology and psychoanalysis, psychiatry and neurology, and endocrine recognition. Leaving aside the school of mind and body in the specific sense of the word in medicine, unlike ancient medicine in which specialization was considered a prerequisite for science, today the types of balance and general imbalance of the individual in all his mental and physical elements are undeniable. Attention is paid (Müller, 1989, quoted from Abdolmalaki, 2021). Therefore, the idea of Gestalt psycho-body’s parallelism can be examined from four aspects: (1) having exploratory power; (2) having the ability to predict; (3) having the power of explanation; and (4) compatibility with biology and scientific worldview (Bonje & Ardilla, 2015).

### **Cognitive Revolution**

In the late 1990s, behaviorism declined and cognitive psychology became increasingly popular. The work of Noam Chomsky and Donald Bradbent founded what later became known as the “Cognitive Revolution”. Rejecting the ideas put forward in behaviorism, cognitive scientists began to study artificial intelligence and computer systems to understand human mental talents. These activities led to the formation of a new field of knowledge called “cognitive science”. Cognitive science refers to an interdisciplinary field that specifically includes the six disciplines of anthropology, psychology, neuroscience, linguistics, artificial intelligence, and philosophy of mind. The common goal that these six distinct disciplines call cognitive sciences is the study of the mind and cognition. Mind and cognition in this definition can be used in both limited and broad meanings. The meaning of mind and cognition in a limited sense is mind and cognition in human beings and therefore, some experts believe that the study of human cognitive system is the main priority of cognitive sciences (Gardner, 1985; quoted by Hatami, 2020). But a review of the work of cognitive scientists suggests otherwise. Their field of study is not only the human mind and cognition. What is studied in the cognitive sciences is: The mind is cognition and intelligence in humans and other mental objects or phenomena. Thoughtful objects are an all-encompassing title that includes any creature that can think, calculate, feel, decide, and behave intelligently. Thus animals and machines or robots can also fall into this broad definition (Lowe, 2010).

### **Cognitive Psychology**

Cognitive psychology, or in other words, pure cognitive psychology, was influenced by computational and relational models and was formed in parallel in the field of psychology. Among the cognitive scientists, a group of those whose field of study was in the field of psychology specifically studied mental representations or representations that occur in the human mind. The approach presented by these cognitive psychologists is called the cognitive approach. Cognitive psychologists believe that the mind actively represents the outside world, and that behavior is the result of the operations performed on these mental representations. Therefore,

the subject of cognitive psychology is not behavior; rather, they are mental representations (Eysenck & Keane, 2000, quoted by Karami Nouri, 2020).

In other words, the two basic concepts of cognition, namely representation and calculation (information processing) by cognitive psychologists entered the realm of psychology, and cognitive psychologists made extensive efforts to describe the nature of mental representations, determine the structure of the mind and its governing system. They began a special study of the types of operations, processing, or calculations that the Russians perform on these mental representations. Among these three axes of study of cognitive psychologists, the first issue, namely the description of the nature of mental representation, may be more important in introducing the cognitive approach.

There are different views on the nature of mental representation, but with a little leeway, most of these views can be divided into two general categories: a group that emphasizes the existence of two types of codes or allegorical and symbolic mental representations in the mind (Paivio, 1986) and a group that believes in the representation of reality in the mind in the form of abstract propositions (Anderson & Bower, 1973; Pylyshyn, 1984).

After the 1960s, a large group of cognitive psychologists began extensive studies to study mental structures and processes. In designing and directing their research, these psychologists used both theoretical and conceptual frameworks common among scientists in various fields of cognitive sciences, as well as some research traditions inherited from experimental psychologists and psychophysical researchers. The field of study of this group was diverse and different; But the following areas (Strenberg, 2006; quoted by Hatami, 2020) can be considered the main areas of cognitive psychology:

- \* Sensory perception;
- \* Pattern recognition;
- \* Attention;
- \* Memory and learning;
- \* Language;
- \* Imagination;
- \* Problem solving, intelligence and creativity;
- \* Decision making and reasoning.

Hayes (quoted by Landin, 2008) defines cognitive psychology as follows:

Cognitive psychology is a new approach to studying the processes by which people know their world. Processes such as memory, learning, language comprehension, problem solving and creativity. Cognitive psychology has been influenced by advances in language, computer science, and, of course, previous studies in philosophy and psychology (Hayes, 1978).

What lies in this definition is the concept that cognitive psychology emphasizes the study of “higher processes of the mind”. As Lichtenstein (1980, quoted by Hatami, 2020) points out, one of the fascinating features of cognitive psychology is the fact that it fits in well with the common sense psychology of the average person. According to Neisser (1967)—one of the leading researchers in cognitive psychology—cognitive psychology refers to all the processes by which sensory input is transformed, reduced, expanded, stored, improved, accepted, and used.



Thus, cognitive psychology includes topics such as memory, concept formation, attention, reasoning, problem solving, mental imagery, judgment, and language. Cognitive psychology is apparently very popular in modern psychology. However, in the long history of psychology, there has almost always been an emphasis on some form of cognition. Exceptions were the materialist philosophies or psychologies of Democritus, Hobbes, Gassendi, Lametri, Watson, and Skinner, who denied the existence of mental events. Philosophers who had a great influence on the formation of psychology as a science (for example, John Stuart Mill) all tried to explain human cognition (Wilson, 1990, quoted by Herganhan, 2010).

### **Artificial Intelligence**

Fetzer (1991, quoted from Herganhan, 2010) defines artificial intelligence as “a special branch of computer science that investigates the extent to which human mental powers can be understood by machines”. In 1950, the eminent mathematician Alan M. Turing (1954-1912) in an article entitled “Computing Machines and Intelligence” in which the question was asked: Can machines think? Establishing the field of artificial intelligence. Because the term thinking is very vague, Turing offered an objective way to answer his question (Herganhan, 2010).

The idea of artificial intelligence arises when we think of thought as a computational device that receives and processes data through the senses. This theory is not new and was first proposed by Thomas Hobbes, who in his book *Leviathan* in 1651 claimed that “thought is a kind of calculation”. By imagining thought as the processor of the received data, many problems related to the duality of mind and body will be solved on their own. In this approach, thought is not a mysterious and incomprehensible phenomenon, but an operation performed on sensory data. Hobbes saw mental activity as nothing more than a material process. But this attitude was not noticed at that time, but at the end of the twentieth century, at the same time with the advent of computers that were able to mechanically perform operations similar to the process of thinking in humans. Before the advent of artificial intelligence, another important step, called the theory of logic, was taken by George Bull (1815-1864). Bull considered thinking and logic to be the product of the manipulation of symbols, and believed that any compound identifier or process could be decomposed into its constituent parts. Complex truths can be delivered to the values of binary truth, and in the final analysis, everything ends in yes/no or on/off. This implies that complex concepts and arguments are made up of a large number of basic binary options (Thompson, 2016).

A computer is a device that performs a set of logical operations by manipulating data based on certain commands. In fact, the computer is equipped with an input unit to feed the input data, a processor that determines what action should be taken on each part of the input data. In any computer, depending on the type of operation, the existence of appropriate output units is also essential.

The main question in the field of artificial intelligence is “Can a computer think?” As we have said before, Turing first raised the issue. He believed that an independent subroutine should be defined for the computer, so that the computer could answer the questions in such a way that it could not be identified whether they were the answers of a computer or a human. Simply put, computer responses must be intelligent. To do this, he designed an experiment, which is described below.

### **Turing Test**

Turing invented a game he called the “game of imitation”. Philosophers have changed the mind of the

game, now called the Turing Test, to test the computers' ability to think. The updated version of this test is as follows: Suppose you are chatting with two people on the Internet. You have never seen them before. Your conversation with them is two completely separate conversations. You are told that one of the two is a person, but the other is a computer; this computer is programmed to deceive you into thinking you are a person. In response to questions, your human audience will come up with answers that come to mind. He tries to help you. The computer is programmed to provide possible human responses. If at the end of the conversation you cannot tell which one is human and which one is computer, it indicates that the computer has a mind. So far, no programmed computer has been able to prove in this test that it has a mind. To do this, the computer must function in accordance with both of Descartes' criteria. It must be flexible and adaptable, must be able to answer selected questions on a variety of topics that seem real, whether they are true or not. Otherwise it is easy to guess that the other side is just a car.

### **Weak AI vs. Strong**

What does it mean when a computer passes the Turing test for human cognitive function? For example, if the interrogator fails to distinguish between humans and computers in terms of thinking, reasoning, and problem solving, does that mean that computers, like humans, are accepted in these mental characteristics? Proponents of poor AI claim that computers can only mimic human mental features at best, say no. Proponents of strong artificial intelligence claim that computers are not just a tool for studying the mind, they say yes. A well-programmed computer is actually a mind that is able to understand and have mental states. According to the strong artificial intelligence, the human mind is a computer program, and therefore there is no reason why non-biological computer programs cannot copy it. For proponents of strong artificial intelligence, computers do not simulate human cognitive processes, but copy them.

### **John Searle Chinese Room**

John Searle (1980, 1990) describes how his famous "Chinese room" rejects fans of strong artificial intelligence. According to strong artificial intelligence, thinking is manipulating symbols according to rules, and because computer programs manipulate symbols according to rules, they think. According to strong artificial intelligence, "the mind is the brain, just as the program is the hardware" (Searle, 1990). To refute this claim, Searle asks you to consider a language you do not understand, such as Chinese. Now suppose you are in a room with baskets full of Chinese symbols, accompanied by a book of rules written in English that explains how to match certain Chinese symbols with other Chinese symbols. "These rules teach you how to match symbols by their shape, and you do not have to understand the meaning of these symbols." "And put it next to the crooked line sign of basket number two." Now imagine that there are people outside this room who know Chinese and throw a set of symbols into your room and then manipulate them according to the rules book. You will return the results to this room later. Searle likens the rules to a computer program. The people who write the rules book are the "programmers" and you are the "computer". Baskets full of symbols are "databases", small sets of symbols that are thrown into the room are "questions", and small sets of modified symbols that you return out of the room are "answers".

Now imagine that your rule book is written in such a way that the "answers" you produce are indistinguishable from the Chinese answers of the native languages. In other words, symbols that you do not know and are thrown into your room may be a question like where is the French capital? And your answer,

which you will not know again, is Paris. After a few questions and answers like this, even though you do not know Chinese at all, you pass the Turing test to understand this language. In addition, in your situation, there is no way you can understand Chinese at all, because you could not learn the meaning of any of the symbols. You manipulated the symbols like a computer, but you did not give them any meaning. Therefore, Searle concludes that: (1) If you do not understand a language based solely on using a computer program to understand Chinese, then no other digital computer will understand it on that basis alone. Digital computers simply manipulate the visual symbols according to the rules in the program. (2) What applies to the Chinese language also applies to other forms of cognition. Manipulation of symbols alone is not enough to know, perceive, understand, think, and so on. And since computers are tools for manipulating symbols, it is not enough to just run a computer program to ensure recognition.

### **Information Processing Psychology**

The concept of information processing was used by cognitive psychologists in the 1960s with the influence of information theory on the physical system of communication, and meant that the human organism operates on its internal and mental visualizations in a computerized way. Information is actively coded, transformed, and organized from the moment it is presented to the senses in the input stage to the behavioral responses in the output stage. In this case, the behavior is not a direct result of stimuli, but is derived from mental mediation processes.

The idea that man is like a machine dates back to a few centuries ago to Descartes, who considered animals to be machines and believed that the human body operated primarily by machine. A century later, Delamatri took a similar view of his materialism, calling it a machine in the name of man. He believed that the mind was in the brain and functioned as a purely machine. With the advent of the computer, psychologists had new tools with which to study mental processes: information processing patterns. Before creating these patterns, behavioral psychologists thought only of stimulus-response (Landin, 1999).

Although people like George Miller and Donald Broadbent have previously used computer metaphor to study human cognition, they generally agree that the 1985 article by Alan Newell, J. C. Shaw, and Herbert Simon were the indicators of the transition between artificial intelligence and information processing psychology. In their article, the authors claim that the computer programs they created solved problems the same way humans did. That is, they claimed that the human mind and computer programs were tools for solving public problems.

This claim was very effective, and a growing number of psychologists noticed the similarities between humans and computers. And they came to the conclusion that they both receive input, process that input, have memory, and produce output. For information processing psychologists, the term input replaces the term stimulus, and the term output replaces the terms response and behavior, and terms such as storage, encryption, processing, capacity, retrieval, conditional decisions, and programs describe information processing events. They occur between inputs and outputs. Most of these terms are adapted from computer technology. The information processing psychologist usually focuses his research on normal and logical thinking and behavior and considers human beings as active seekers and consumers (Horganhan, 2010).

The information processing pattern can be summarized as follows:

Stimulus input ... Memory archive ... Short-term storage that is subject to rapid destruction ... Long-term storage ... Behavior output

According to Lachman and Butterfield (1979, quoted from Abdolmalaki, 2021), the information processing approach provides psychologists with a fundamentally new way of thinking about humans and looking at humans as active seekers and users of information.

### Discussion and Conclusion

The most important question for philosophers of the mind and psychologists is: What is the mind? The answer to this question, despite the efforts of some of the greatest thinkers in the fields of philosophy and science, still remains a mystery. Philosophy of mind is one of the most popular branches of philosophy, which has received the most interesting recent developments. Therefore, the effort to understand the mind has led philosophers and psychologists to many research pathways. It is important for psychologists to know how the mind stabilizes or destabilizes the human personality. Philosophy of mind also studies the nature of human personality and personal identity and the higher processes of the mind such as memory, thinking, perception, reasoning, problem solving, and decision making, which are commonalities between philosophy and psychology.

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