# Exploring Whether Objectivity is Constructed by the Mind or Independent of Human Perception

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**Abstract.** This essay explores a long-standing philosophical question: whether objectivity exists independently of human perception or is constructed through subjective processes. Based on the viewpoints of Plato, Kant, and Popper, this study positions objectivity as a multi-level concept that integrates individual cognition, social consensus, and scientific practice. Through a literature-based analysis, it examines two representative cases: traumatic memories in cognitive psychology and the evolving social understanding of autism. The research results indicate that at the individual level, memory and perception are actively reconstructed through cognitive processes; thus, objectivity is flexible and dependent on specific contexts. At the social level, collective negotiation, cultural norms, and institutional practices determine the content regarded as objective knowledge, highlighting the role of social constructivism. In contrast, scientific knowledge exhibits higher stability, achieved through repeatable methods, falsifiability, and mathematical formalization, approaching independence from subjective or cultural influences. The study concludes that objectivity is not a single or fixed category but a continuous range formed through the interaction of psychological, social, and scientific frameworks.

**Keywords:** Objectivity; Cognitive psychology; Social constructivism; Philosophy of science.

## 1. Introduction

One of the fundamental questions in philosophy is: How can humans determine whether the things they perceive truly exist independently of their own consciousness? Since ancient times, thinkers have been debating whether knowledge reflects the objective external reality or is constructed through subjective experiences. In classical philosophy, Plato proposed the existence of eternal and perfect "forms", believing that the material world perceived by humans is only an imperfect reflection of these ideal realities. According to this view, human perception is essentially limited and cannot fully grasp the true essence of the world [1]. In contrast, empiricists such as John Locke emphasized that all knowledge stems from sensory experience. Locke believed that the human brain at birth is "a blank slate", and understanding of reality is generated through interaction with the environment, highlighting the inherent subjective processing in perception [2].

Later, Immanuel Kant attempted to reconcile these opposing viewpoints. He distinguished between phenomena (the world perceived by humans) and noumena (the world independent of perception). Kant's theoretical framework indicates that human cognition necessarily influences our knowledge, meaning objectivity is always achieved through psychological structures and interpretive frameworks [3]. In the field of modern philosophy, Karl Popper proposed the "three-world" theory, where the first world is material reality, the second world encompasses individual consciousness, and the third world includes objective knowledge such as scientific theories. This theory builds a bridge between subjective human experience and independent existing knowledge, providing us with a multi-level understanding of objectivity [4].

This research is original because it does not merely explore the existence of objectivity. Instead, it adopts a cross-disciplinary approach, comparing human memory (cognitive perspective), social understanding (sociological perspective), and scientific practice (philosophy of science). This research method indicates that objectivity is not a single, fixed concept. Its essence and stability vary depending on specific context, thus presenting a multi-level and multi-dimensional understanding of objectivity.

This paper aims to answer the research question: Is objectivity constructed by our minds or independent of human perception? The method involves examining existing literature and conducting a critical discussion of the arguments from both sides.

Research Question: To what extent does human understanding of reality (such as personal memories and social concepts) get shaped by subjective psychological processes? What is the basis for the claimed objectivity of science (especially hard sciences like physics)? How is it different from the objectivity found in everyday human experience?

This study mainly employs the method of literature analysis. It addresses the research questions by studying key theories in cognitive psychology, social constructivism, and philosophy of science. Two representative cases are listed in the text - traumatic memories (from cognitive psychology) and social understanding of autism (from social constructivism) - to demonstrate the differences in objectivity in the individual and social contexts. By comparing these cases with the principles of scientific practice, the study analyzes how objectivity manifests differently at the individual, social, and scientific levels.

This paper aims to provide a clear and accessible overview of a complex topic, which could benefit other students who are learning about the philosophy of science. It also encourages critical thinking about how we define and seek truth in our daily lives and in science.

This introduction reviews numerous core debates surrounding the essence of "objectivity". This article does not presuppose a fixed conclusion; instead, it will explore two viewpoints - namely, whether objectivity is a social construct or independent of human perception - and assess the impact of these two viewpoints on our understanding of knowledge.

## 2. Literature Review

### 2.1. Theoretical Framework

The long-standing debate on objectivity indicates that it is not a single or self-evident concept. Beyond philosophical abstract discussions, this issue also has practical significance: In a world increasingly influenced by rapid information dissemination, "post-truth" narratives, and conflicting interpretations of scientific data, understanding the essence of objectivity has become crucial. Whether evaluating eyewitness testimony, interpreting medical diagnostic results, or assessing scientific claims, society relies on judgments influenced by individual cognition and broader social and methodological structures. This context lays the foundation for examining the concept of objectivity from individual, social, and scientific perspectives, and objectivity is not a single, unchanging attribute but a concept that varies in different individual, social, and scientific contexts.

Based on the aforementioned philosophical background, this study explores the issue of objectivity in different disciplines. Although philosophy provides a theoretical foundation for understanding truth and knowledge, it alone cannot explain the mechanism by which human perception and the social environment shape our understanding of reality. Therefore, this study combines cognitive psychology, social constructivism, and scientific philosophy to provide a more comprehensive analysis. Cognitive psychology reveals that individual perception and memory are distorted or subjectively reconstructed through the active processing by the brain, which has been demonstrated in studies on traumatic memories and false memories [5,6]. On the other hand, social constructivism emphasizes how social interaction, cultural norms, and institutional practices jointly shape the content regarded as objective knowledge, which is reflected in studies on society's understanding of diseases and the continuous changes in disease definitions [7]. Finally, scientific philosophy, especially Popper's theoretical framework, emphasizes that the objectivity of science is achieved through repeatable and falsifiable methods, providing a structured approach to reducing personal and social biases [8]. By integrating these perspectives, this study explores the different manifestations of objectivity at the individual cognitive, social consensus, and scientific practice levels, and why a single disciplinary approach cannot fully encompass its complexity. This multi-level framework naturally leads to the research questions discussed in this paper, enabling a

systematic comparison of subjective, socially constructed, and scientifically verified forms of objectivity.

The current research offers multiple perspectives on the essence of objectivity from various fields, but each discipline often focuses on specific aspects.

Cognitive science perspective: Research in cognitive psychology indicates that human perception and memory are not passive records of reality but are actively shaped by internal cognitive processes. For instance, Loftus' study shows that memory can be changed or even fabricated, suggesting that the "objective" facts perceived by individuals may be influenced by subjective psychological processes. Additionally, studies on cognitive biases (such as confirmation bias and the influence of prior knowledge - schema theory) further illustrate that the human brain actively organizes and sometimes distorts the information received [6]. These findings emphasize that the perception of reality at the individual level is inherently flexible and influenced by psychological factors.

Sociological perspective: Social constructivists believe that knowledge and facts are not merely discovered but are created through social interaction and cultural practices. Berger and Luckmann emphasize that concepts such as disease definitions or social norms are not purely biological or natural truths but are the products of collective negotiation. Similarly, Thomas Kuhn points out that scientific paradigms themselves are shaped by social consensus and historical background [7]. The understanding of conditions such as autism further indicates that social and cultural factors determine which are regarded as objective knowledge standards, suggesting that objectivity is also influenced by the social environment and individual cognition.

In contrast, scientific philosophy, especially Popper's framework, emphasizes that the objectivity of science is achieved through methods of testability, repeatability, and falsifiability [8]. Experimental procedures, repeated observations, and mathematical modeling help ensure that scientific discoveries are less influenced by personal or cultural biases. This objectivity contrasts with the plasticity of memory and social understanding, providing an example of a knowledge model that strives to be independent of human subjectivity.

Despite these insights, most studies remain confined to a single field, either exploring cognitive limitations or defending the objectivity of science. There are a few attempts to systematically compare individual, social, and scientific viewpoints through specific examples. This article fills this gap by analyzing cases such as traumatic memories and social understanding of autism, providing a cross-disciplinary perspective on how objectivity operates at different levels.

In this current world where information spreads rapidly and "post-truth" statements are prevalent, it is particularly important to re-examine the true meaning of "objectivity". Understanding the operational mechanism of objectivity helps us determine the extent to which we can trust scientific knowledge and enables us to better interpret the divisions within society. By examining objectivity in different contexts, such as the individual, society, and science, this study provides insights into how people perceive and evaluate facts in various situations.

### 2.2. The Philosophical Foundation of Objectivity

The concept of objectivity has been discussed since ancient times in philosophy. Plato divided the world into the form world (representing perfect and unchanging reality) and the material world (which is imperfect and subjective). Later, Immanuel Kant proposed the distinction between phenomena (what we perceive) and noumena (the reality itself), suggesting that human perception always influences the things we know [9]. In modern philosophy, Karl Popper proposed the "three-world" theory, where the first world is the material reality, the second world is the individual's inner experience, and the third world is objective knowledge, such as scientific theories [4]. These viewpoints provide a foundation for understanding objectivity as a multi-level concept, which involves both human perception and independent reality.

### 2.3. The Challenge of Objectivity in Cognitive Science

Cognitive psychology indicates that human perception and memory do not merely reflect the external world passively; rather, they are actively shaped by psychological processes. Elizabeth Loftus discovered that memory can be altered or incorrectly formed, suggesting that an individual's cognition influences their perception of objective matters [5]. Other studies have emphasized cognitive biases, such as confirmation bias, as well as schema theory, which explains how prior knowledge organizes and sometimes distorts new information. These findings indicate that the brain actively constructs our experience of reality, challenging the view of purely objective knowledge.

### 2.4. Social Constructivism

Social constructivists believe that knowledge and facts are not independently discovered but are formed through social interaction and cultural practices. Berger and Luckmann emphasized that many "facts", such as the definition of diseases or social norms, are formed through collective consensus [10]. For instance, the definition of certain diseases has changed over time, reflecting social attitudes rather than purely biological facts. Similarly, research on autism indicates that the understanding of this disorder varies across different cultures and communities, suggesting that the social environment shapes what is considered an objective fact.

## 3. Results and Discussion

### 3.1. The Flexibility of Objectivity in Human Experience: Case-Based Analysis

#### 3.1.1. Physiological dimension: memory as a subjective reconstruction

Research in the field of cognitive psychology has consistently shown that human memory is not merely a passive recording device, but rather an active reconfiguration process influenced by both cognitive and emotional factors. Loftus discovered that memory can be altered or even completely fabricated, indicating that the "objective" facts we perceive are often influenced by individual cognition. Particularly, traumatic memories are prone to distortion due to high levels of stress, emotional intensity, or post-event suggestions, highlighting the plasticity of personal perception [11]. Additionally, cognitive biases, such as confirmation bias, and the influence of pre-existing mental frameworks (schema theory) can lead to systematic distortions in recollections [6]. These results suggest that objectivity is essentially flexible and dependent on internal cognitive processes at both the physiological and individual levels. Therefore, relying solely on personal experience cannot guarantee the reliable acquisition of "objective" reality, indicating that human perception is a constructive process rather than a purely reflective one.

#### 3.1.2. Social dimension: constructing reality through autism perception

From a sociological perspective, social cognition significantly influences the formation of the objectively recognized reality that people accept. Research on autism indicates that the public and professional interpretations of this disorder vary across different cultural backgrounds, social norms, and institutional practices. Berger and Luckman emphasize that many "facts", including disease definitions or social classifications, are established through collective negotiation rather than purely natural standards [10]. Moreover, Kuhn points out that even scientific paradigms are influenced by historical and social factors, meaning that the knowledge recognized by society depends on specific circumstances [7]. This shows that objectivity is not only shaped by individual cognition but also determined by collective social processes. Therefore, seemingly stable phenomena, such as diagnostic labels, are actually social constructions, highlighting the variability of objectivity at the social level.

### 3.2. Resilience of Objectivity in Scientific Practice

Unlike the variable objectivity presented in individual memories and social interpretations, scientific objectivity demonstrates extraordinary stability and persistence. Assertions in natural

sciences, especially those in physics, rely on rigorous methodologies, repeatable experiments, and precise measurements, all of which reduce the influence of personal or social biases. For instance, constants like the superconducting critical temperature of mercury can be independently verified by multiple researchers under controlled conditions. Popper emphasized that when knowledge has the characteristics of being testable, falsifiable, and subject to public review, it becomes objective [8]. Moreover, the use of formalized mathematical frameworks and standardized procedures further enhances reliability. This highlights a key distinction: although individual cognition and social norms introduce variables in the perceived facts, scientific methods establish objectivity through systematic and common verification methods. Therefore, scientific objectivity represents a highly independent characteristic from human perception, constituting the upper limit of the range of objectivity explored in this study.

## 4. Conclusion

This study demonstrates that objectivity is a multi-level and dynamic concept, with its manifestations covering various levels ranging from highly subjective to highly independent. In summary, these findings above indicate that objectivity cannot be reduced to a single concept; instead, it is formed by the interaction of individual cognition, social processes, and scientific practice, presenting a continuous state rather than a binary classification form.

Regarding the aforementioned research questions, this study has confirmed that human perception of reality is significantly influenced by subjective psychological processes. Personal memories and social interpretations both indicate that cognition and social environment can alter the perception of "objective" facts. At the same time, the objectivity of science is fundamentally different from daily experience, as it relies on systematic testing, repeatability, and mathematical formalization, providing a reliable method independent of personal or social biases to approximate the acquisition of knowledge. These insights suggest that objectivity is context-dependent: what is considered objective in daily life may differ significantly from the objectivity in scientific practice.

This study mainly relied on literature analysis, thus lacking original empirical data. The selected cases - traumatic memories and social understanding of autism - reflect the diversity of objectivity, but they may not cover the entire range of human or social experiences. Moreover, discussions on scientific objectivity are mainly confined to the field of natural science, and there are many unanswered questions regarding objectivity in the social sciences or mathematics. These limitations indicate that the conclusions should be understood as indicative rather than comprehensive.

Future research can adopt cross-cultural or empirical methods to explore different societies' perspectives on objectivity and further investigate the interactions among cognition, social environment, and scientific methods. Experimental studies can explore how memory, attention, and social norms affect judgments of reality. Moreover, extending the analysis scope to fields such as mathematics, social sciences, and applied sciences can provide a more comprehensive understanding of the construction, verification, and maintenance processes of objectivity in different domains.

## References


[1] Plato. Republic (C. Reeve, Trans.). Hackett Publishing. (Original work ca. 375 BCE), 2003.

[2] Locke, J. An Essay Concerning Human Understanding, ed. Kenneth P. Winkler. Indiana: Hackett Publishing Company, 1996.

[3] Kant, I. Critique of pure reason (Vol. 6). Minerva Heritage Press, 2024.

[4] Popper, K. Objective Knowledge: An Evolutionary Approach. Oxford University Press, 1972.

[5] Loftus, E. F. Memory for Past Events. Lawrence Erlbaum, 1997.

[6] Kahneman, D. Thinking, Fast and Slow. Farrar, Straus and Giroux, 2011.

[7] Kuhn, T. S. The structure of scientific revolutions (Vol. 962). Chicago: University of Chicago Press, 1997.

[8] Popper, K. The Logic of Scientific Discovery. Routledge, 1959.

[9] Kant, I. Critique of pure reason. 1781. Modern Classical Philosophers, Cambridge, MA: Houghton Mifflin, 370-456, 1908.

[10] Berger, P., & Luckmann, T. The social construction of reality. In Social theory re-wired (pp. 110-122). Routledge, 2016.

[11] Loftus, G. R., & Loftus, E. F. Human memory: The processing of information. Psychology Press, 2019.