

# Critical realism, a new approach to science

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**Abstract:** Critical realism is a contemporary and new approach in philosophy of science and philosophy of social sciences which was founded by Roy Bhaskar. This approach was formed in the philosophy of science in contract to the empirical realism of the positivists and Kant's transcendental idealism, according to which there is an objective reality outside the mind contrary to Kant's view, and this reality is not limited to observable and experiential level contrary to the positivists' view. In the philosophy of social sciences, this approach was created in contract to empirical realism and interpretiveness, according to which social realities, although different from natural realities due to the purposefulness of human being, but it can be considered principles and methods of critical realism in those two due to the existence of causal mechanisms in both. In this research, which is conducted in a library method and presented in a descriptive-analytical method, we intend to explain the principles of critical realism thinking in the philosophy of science and social sciences and show its place among rival schools.

**Keywords:** Critical Realism, Bhaskar, Philosophy of Science, Philosophy of Social Sciences.

## Introduction

Critical realism is an approach in the philosophy of the empirical sciences and the philosophy of the social sciences that was founded by the English Roy Bhaskar. Bhaskar was born in 1944 in Teddington, England, and died in 2014 at the age of 70 in Leeds. His father was an Indian physician and his mother was an English woman working in industrial management. After completing his elementary education at St. Paul's School, he began a combined course in "Philosophy, Politics and Economics" (PPE) at Oxford University's Balliol College and graduated with honors in 1988. In 1975, after collaborating for some time with the famous English philosopher, Harre, on the philosophy of the natural sciences, he published a landmark work called *The Realist Theory of Science*, which is in fact the manifesto of the school of "critical realism." He called his philosophy of science "transcendental realism" and his philosophy of social sciences "critical naturalism." Late in life, Roy Bhaskar was director of the International Center of Critical Realism at the University of London.

The critical realism approach is founded in contract with two approaches of empirical realism or naive positivist realism and Kant's transcendental idealism in the natural sciences and empirical realism or crude positivist realism and interpretation in the social sciences. Bhaskar presents his philosophical foundations of the natural sciences in the book *"Realist Theory of Science (1975)"* and his philosophical foundations of the social sciences in the book *"Possibility of Naturalism (1979)"*.

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The philosophy of social science of critical realism is based on its philosophy of science, and as a result, its understanding stops at the philosophy of science of critical realism. The most important thinkers of critical realism are: Harre, Andrew Sayer, Mervin Hartwig, Margaret Archer, Peter Manicas, Andrew Collier, Tony Lawson, Alan Norrie, Ted Benton, Ian Craib, Justin Cruickshank, Keat, Urry and Outhwate. The importance of this school is that it is a new and innovative school and breaks the common barriers of the philosophy of science and social sciences, and while it is realistic, it does not accept the meanness of the positivist view.

### **Research Methods**

This article explains the school of critical realism in a descriptive-analytical way, and since the philosophy of social sciences of this school is based on its philosophy of science, it is necessary to first explain the philosophy of science of this school and then to explain its philosophy of social sciences.

### **1. Philosophy of Critical Realism**

As it has been said, the philosophy of critical realism was formed in contrast to naive positivist realism- or, in its own interpretation, empirical realism -and Kant's transcendental idealism. Realism is generally a view that accepts the existence of a world independent of the subject and believes that knowledge of it is possible; therefore, from the perspective of realism, knowledge is a picture of the real world. Naive positivist realism considers the ultimate property of knowledge to be atomic phenomena, i.e the constructive components of structures.

This means that in order to study a natural structure such as water or a social structure, it must decompose that structure into its constituent components i.e, hydrogen and oxygen, for example water or individuals in social structures, and study those components. Naive realism believes that we can only know observable material phenomena and their sequences. This school claims that the material world is exactly as we know it; In other words, our knowledge corresponds exactly to reality and it is a reflection of the outside world, so the subject mind has no involvement in science. On the other hand, Kant's transcendental idealism claims that knowledge is entirely dependent on the subject. Kant believes that our minds have forms and categories through which understanding takes place. According to Kant, the mind is not passive in the process of perception but it is active, in that the raw materials of perception come from outside and are placed in mental forms, then understanding occurs; So we do not have access to phenomena, but our science is phenomena of objects (Bhaskar, 2008, pp. 14-15). Critical realism opposes both views and offers an alternative view, which we will discuss below.

#### **1/1. Ontological foundations**

The ontological foundations of the philosophy of science of critical realism school are:

##### **1/1/1. Separation of ontology from epistemology**

This principle is the most important principle of the school of critical realism and other principles are based on it. Bhaskar believes that the most important problem of the philosophy of contemporary science, both positivism and idealism, is the elimination of ontological issues and its reduction to epistemological issues. The philosophy of

positivist science has undergone a fundamental crisis due to Hume's adherence in the elimination of ontological issues and the acceptance of his particular view about causality (Sayer, 2009, pp. 206-207; Bhaskar, opcit, p. 1, 26-31). According to Hume, the only valid sciences are mathematics and sensory sciences. Mathematics because it expresses the relationships between mental ideas and sensory sciences because they are observable, anything other than these two is illusion and sophistry (Copleston 2009, vol. 5, p. 332). Accordingly, even the causality and necessity of causality cannot be proved because they are invisible. We only see the sequence of phenomena; So what really exists is sequence, and causality means our habit of expecting to see another phenomenon after a particular phenomenon (Other, former, pp. 295-305).

Bhaskar believes that no scientific work and theorizing are possible without assuming ontological foundations, so ontology takes precedence over epistemology. According to Bhaskar, even beyond positivist thought, a certain philosophy and worldview is hidden (Bhaskar, opcit, pp. 18-19). Explaining that from the point of view of empiricism, it creates the experience and sense of science. For this process to be valid, we must assume that there is a material world beyond our perception, whether we perceive it or not. Bhaskar calls the non-separation of ontology from epistemology an epistemic fallacy. According to him, there is an epistemic fallacy in both transcendental idealism and positivism, both of which do not consider anything that is not empirical to exist (I bid, p. 26).

Of course, unlike rationalist philosophers such as Leibniz, Bhaskar believes that the subject of philosophy and ontology is not the world beyond the physical world, but the physical world because metaphysics is not recognizable (I bid). In short, the separation of existence from knowledge and consequently ontology from epistemology and the precedence of ontology over epistemology is one of the most important principles of the philosophy of critical realism.

**2/1/1. Existence levels**

In the ontology of critical realism, reality has three levels and domains:  
A) Domain of empirical that includes our experiences. This is the level emphasized by the positivists.

B) Domain of actual which includes current events that may or may not be observed, and is therefore distinct from the empirical level.

C) Domain of real which includes the causal relationships or productive mechanisms that produce events. The mechanism refers to the way of operating causal forces. (I bid, p 47). The difference between critical realism and transcendental idealism and empirical realism is that, neither like transcendental idealism, it makes reality subjective, nor like empirical realism, it limit reality in one level, the empirical level. Bhaskar believes that there are productive mechanisms although they do not actually operate or their performance is not observed.

———	Domain of real	Domain of actual	Domain of empirical
Mechanisms	*		
Events	*	*	
Experiences	*	*	*

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According to Bhaskar, the real level includes experiences and events in addition to causal mechanisms. The actual level also includes both experiences and events. Causal forces may not be actualized due to intervention with other forces or the absence of numerical conditions, i.e their effect may not be actualized or actualized but may not be observed due to the intervention of other causal forces in the open system; For example, there is an explosive causal force in gunpowder, but its activation is conditional on numerical conditions, or there is a gravitational force and it is active, although its effect is not observed when the aircraft takes off. Therefore, the relationship between causal force and its effect is an external and probable relationship (Sayer, previous, pp. 123-125).

### 3/1/1. The principle of causality

Positivists, based on Hume's philosophical basis, consider causality to be an external matter but to mean the sequence of two phenomena; therefore, they cannot distinguish between necessary and random phenomena (Ibid., Pp. 206-207). Transcendental idealism also considers causality as a mental concept that does not exist outside. Both the school of positivism and the school of transcendental idealism have suffered from epistemological fallacies. According to Bhaskar, causality is external and non-sequential. There is a distinction between causality and sequence. Causality indicates an external necessity, although we only see sequences. There are causal laws, whether we know it or not; Thus there is a difference between logical necessity and possibility and natural necessity or possibility. Necessity or logical possibility is the description of knowledge, while natural necessity or possibility is the description of nature and the outside world. (Other, previous, pp. 185-187; Bhaskar, opcit, pp. 28-31) This analysis is about causation resulting from the separation of ontology from epistemology. Also, the rationality of laboratory activity requires the acceptance of causality externally, because in the laboratory, we seek to find the causes of objects. (Bhaskar, opcit, P 25). From a realist point of view, causality refers to causal forces and the relationship between subjects and their causal forces. The relationship between the nature of an issue and its causal forces is an internal and necessary relation. If the nature of an issue changes, its causal forces will naturally change as well, a relationship between bird anatomy and flight is essential (Sayer, former, pp. 123-120). The internal and necessary relationship is the relationship between the additions, that is, there are two things that one cannot exist without the other, such as the relationship between the landlord and the tenant and the teacher and the learner; And the external, probabilistic and conditional relationship is a relationship in which the realization of one party without the other is possible, such as the relationship between me and a mass of soil or the relationship between causal forces and events that is conditional on the existence of numerical conditions (ibid., Pp. 101-102).

He describes the other structure of causal explanation as follows:  
Objects -----Causal forces ----- Numerical conditions----- Events  
In this drawing, the continuous line indicates the internal and necessary relationship and the distance line indicates the external and conditional relations (Ibid., P. 127).

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**2/1. Epistemological foundations****1/2/1. The transitive dimension and intransitive dimension of science**

In critical realism, science has two transitive and intransitive dimensions. Existence independent of man and subject is called the intransitive dimension of science. This dimension is not man-made and not depends on him and his perception. This existence, when it comes to human perception, is called the transitive dimension of science. In other words, the intransitive belonging of knowledge means "intermediary transitive" or "what exists" and the transitive belonging to knowledge means "non-intermediary transitive" or "what we know". The transitive and intransitive dimension of science indicates the intransitive dimension of knowledge. The outside world is much wider than our knowledge and its denial leads to an epistemological fallacy. According to critical realism, the task of philosophy of science is to examine both dimensions.

Positivists have neglected both the transitive dimension, because they do not explain the quality of the process of understanding, and the intransitive dimension, because they equate existence with observational and experimental existence and transcendental idealists have neglected the intransitive dimension. Positivists accepted only reality that was empirical, and transcendental idealists subjected reality. Consideration of the intransitive dimension gives ontology a place in the philosophy of science (Bhaskar, opcit, P 11, 14).

**2/2/1. Belonging to science**

From the point of view of empiricist realists, knowledge belonging is their phenomena and sequences (Hume's causality) and from the point of view of transcendental idealists, they are subjective matters. Critical realism believes that the goal of science is to understand the structures and mechanisms that produce phenomena, not the phenomena. Causal mechanisms are things that exist independently of the human mind (I bid, P 15). Productive mechanisms are real; although they are not actually or empirically observed by humans. The mechanisms that make up the real level are intransitive belongings of scientific theories that are not unknowable.

Therefore, the belonging of science based on critical realism is the production of science to causal mechanisms or the same as causal explanation. These mechanisms intervene in the open system and the outside world, so we need a closed system [laboratory] to identify a mechanism that eliminates the involvement of other mechanisms and recognizes a system and how it works. According to the intervention of different mechanisms in the open system, the effect of a mechanism may not be actualized, so generalization and prediction in science is impossible, and it cannot be said that if "A" occurs, "B" also occurs. Therefore, in critical realism, unlike positivist realism, generalization and prediction do not interfere with the law of the law (Sayer, former, pp. 141-145, 150-160).

In critical realism, the law is a claim about the activity of causal mechanisms and not about the conditions of their action and, of course, the results of their activity (ibid., P. 145).

**3/2/1. Knowledge of social products**

Critical realism believes that knowledge, or the transitive dimension of science, is a social product for which the four Aristotelian causes can be considered by analogy and permissible:

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Material cause: existing knowledge and theories and phenomena considered by scientists.

Subject cause: A scientist who acquires new knowledge with the help of technical and mental tools such as methodological paradigms or productive models and theories.

Formal cause: new knowledge, theories and phenomena.

Ultimate cause: the acquisition of knowledge to the true mechanisms of nature. Therefore, both the material cause and the actual cause are the product of social processes. (Bhaskar, opcit, p 11, 14 - 15).

#### **4/2/1. Practical adequacy replacing truth and falsehood**

The question now is what is the criterion for the truth of knowledge in the philosophy of critical realism? How can distinguish between true and false knowledge? Critical realism believes that since there is a reality independent of our knowledge and the correspondence of knowledge with reality is not provable, instead of interpreting truth and false, the concept of practical adequacy should be introduced, i.e valid knowledge is knowledge that is practically sufficient. It means that in addition to being subjectively understandable, it meets our expectations about the universe and that those expectations are truly met. Practical adequacy is similar but different from instrumentalism. Instrumentalism interprets truth as practical utility, but critical realism ties practical sufficiency to the subjects of knowledge itself, for example, the proposition "it cannot walk on water" is more sufficient than the proposition "it can walk on water" because It is due to the nature of water and as we expect. The criterion of instrumentalism is the practical usefulness of knowledge.

Instrumentalists are only concerned with the outputs [usually predictions] of their theory, not the inputs [assumptions, categories], while critical realism seeks, in addition to the output, to find inputs for its theory that are more adequate in practice and in other contexts also respond and are also compatible with other knowledge (Other, former, pp. 75-82).

#### **5/2/1. Reintroduction method [process deduction]**

Critical realism considers the method of induction and considers analogy to be ineffective in discovering reality (ibid., Pp. 177-200) and instead proposes the method of reintroduction. Inductiveists consider the starting point of science to be mere observation without the intervention of any theory, while from the point of view of critical realism, observers are from theory and the researcher refer to observation with hypotheses (Bleiki, 2012, p. 205).

Philosophers consider four research strategies, deductive research strategy, inductive research strategy, reintroduction strategy and interrogative strategy (Bleiki, 2005, p. 138). The reintroduction strategy, which is the approach of Bhaskar and Harre, is close to the deductive strategy, except that in the reintroduction strategy to explain a natural or social phenomenon, a hypothetical model is first presented and then that model is tested with observations (ibid., 144– 152). The model has different meanings, but what is meant here is a conceptual or theoretical framework that represents an explanatory and causal mechanism and may be obtained using analogy or allegory. For example, Spencer's evolutionary theory about social change is derived from Darwin's model in the natural sciences (ibid., P. 225). The reintroduction strategy can be explained as follows:

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A. Scientists must try to discover causal structures and mechanisms to explain the observed phenomena and orders.

B) Theory is not possible without conceptualization and abstraction, for example, it must first have an understanding about the concept of color and yellow to research the color yellow. In any research, its scope is limited by accepting specific concepts of the subject; Conceptualization begins with abstraction because external phenomena are concrete in the sense that they have different aspects. (Other, former, pp. 98-110).

C) Since causal structures and mechanisms are usually not observable, we must first construct a hypothetical model from them; thus, contrary to those who believe in inductive strategy, science does not begin with mere observation. The discovery of the virus, the structure of the atom [based on the analogy of the planets moving around the sun] and the gene were the same, that is, after it was seen that some diseases could not be explained by microbial agents, viruses were considered as a hypothetical model for explanation. It took many years for the virus, atom, and gene to be observed (Bleiki, supra, p. 119); therefore, science does not begin with observation, but it is guided by questions, conjectures, and hypotheses. Popper has accepted the same thing as a collector [not a judge] and Cohen has even accepted it as a judge. Bhaskar believes that theory without experience is empty and experience without theory is blind (Bhaskar, opcit, p. 182).

D) Then we test the model. The scientist begins the results of the experiments to the point of modifying and completing the model, and resumes the theorizing process by adding them to the information. This is the dialectical process of observation and theory. Critical realism in this section considers both quantitative and qualitative methods (Sayer, former, p. 114). To explain causality, it should never act like the positivists in the atomic natural sciences, i.e break down structures into their components. The effect of the components may be different from the effect of the structure, for example, although oxygen and hydrogen ignite the fire, the water composed of them extinguishes it. Also, in the social sciences, structures cannot be reduced to individuals, such as the rent structure. One cannot pay rent for oneself. This is the concept of the layered world like the onion, which is believed by critical realism; That is, the components are on one layer and surface, and the structure made of these components is on another level and higher. Again, the same structure, along with other structures, may have created a larger structure, which is also located at a higher level and layer. Each of these levels is distinct; therefore, we do not have to examine all the layers in order to understand the issues in each layer (Ibid., Pp. 138-139).

E) If these tests are performed successfully, we have a good reason to believe in the existence of these structures and mechanisms (Bleiki, 2010, p. 116).

After the discovery of a mechanism, the mechanism itself is considered as a phenomenon, and in order to discover the causal mechanisms of that mechanism, a reintroduction method is used to the layers of reality to be continuously discovered. Bhaskar likens this process to plucking onion layers (Bleiki, 2012, p. 300).

Osvit summarizes Bhaskar's realism in these five principles:

A) There is a distinction between the transitive and the non-transitive dimension of science. The transitive dimension is the concepts, theories, and models that are developed to understand and explain some aspects of reality, and the non-transitive dimension is the real existences and the relationships between them that build the natural and social world.

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B) Reality is stratified on three levels or domains: the empirical domain, the actual domain, and the real domain.

C) Causal relationships are considered as the power or tendencies of objects that interact with other tendencies, so that any tangible event may occur, may not occur, and may or may not be observed. Laws do not have to be universal; they just have to show recognizable tendencies. This view is in conflict with the positivist view that causal laws are regarded as universal relations between events.

D) In the real realm, the definition of concepts is considered as real or intrinsic definitions, that is, statements about the basic nature of some existences or structures. These definitions are neither a summary of observations nor an agreement on how a word is used.

E) Explanatory mechanisms in the real field are hypothetically constructed and the task of research is to try to show their existence (Bleiki, 2005, pp. 145-146).

## 2. Philosophy of social sciences of critical realism

From the beginning of the formation of social sciences as a special class of science, questions have always been considered by thinkers. 1. What is social science? 2. What are the topics, issues and methods of social sciences? 3. Is the subject and method in the social sciences the same as the subject and method in the natural sciences or not? Two events have had a great impact on the social sciences: 1. The advancement of the natural sciences, which began with Galileo's discoveries. 2. The principle of Cartesian duality or his distinction between soul and body. The first agent led to the thought that the social sciences should follow the natural sciences in order to progress. The second agent caused some to consider the subject and method of social sciences different from natural sciences and to consider one about material and the other about spirit (Freund, 1993, pp. 8-9). It was almost from the beginning of the twentieth century that the idea of the independence of the humanities was introduced and spread with a different subject and method compared to the natural sciences (Sharifi, 2014, p. 32).

Methods in the humanities and social sciences in general and in chronological order of origin can be classified into three general approaches:

1. Explanatory or naturalistic approach: This approach, founded by August Kent, does not differentiate between the method of natural and experimental sciences and believes that the humanities place in the realm of science if its problems are inferred with the same method of natural sciences, i.e, the experimental method. The social sciences grew in the natural sciences at birth and were linked to empirical methods (Bleiki, 2012, p. 19). Naturalism is used in the social sciences in two senses: 1. Social phenomena are like natural phenomena, so to discover them; it must use the method of natural sciences, i.e explanation. 2. Social phenomena, although due to the existence of elements such as belief, desire, selection, etc. are not the same as natural science phenomena, but the rules and criteria of methodology are the same in both (Khosropanah, 2015, pp. 86-87). The method of explanation is also divided into two types, severe and mild: 1. The only way to recognize social phenomena is the method of explanation 2. One of the ways to identify social phenomena is explanation (Daniel Little, 1991, p. 223).

2. Interpretive approach: The interpretive paradigm that emerges from the hermeneutic tradition and phenomenology (Bleiki, 2012, p. 104) and defenders such as Deltai, Winch, Schutz, Weber, etc. believes that both the subject and the method in the social sciences are different from the humanities. The subject of the humanities is human



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action and its method is interpretation or understanding. In interpretation, it should look for the meaning of human action and not its cause, and this is because man is an autonomous and intelligent being (Daniel Little, *opcit*, pp. 113-114). 3. Critical approach: This paradigm is influenced by the philosophical thoughts of Hegel and Marx (Benton and Craib, 2005, p. 203) and is taken from the thoughts of Frankfurt school philosophers, Horkheimer, Adorno, Marcuse, Fromm, Walter Benjamin and now the contemporary philosopher, Jürgen. Habermas, is representative of this school. The critical paradigm, on the other hand, considers the positivist and positive method in understanding facts to be false and believes that the subject and method in the social sciences are different from the natural sciences, and therefore, it tends to the interpretive method in the social sciences (Khosropanah, the former, p. 235). The other side, he believes that interpretation should be combined with criticism (Hassani, 2006, p. 95).

Bhaskar's main question in the philosophy of social sciences is whether the critical realism approach can be applied to the social sciences as well. We have seen that in the philosophy of science, critical realism believed in a kind of critical and non-positivist naturalism; So the previous question actually goes back to the question of whether naturalism is possible in the social sciences as well. According to Bhaskar, this is the most fundamental issue in the philosophy of social sciences (Bhaskar, 1998, p. 1).

There are two general answers to the possibility of naturalism in the social sciences: one is yes and the other is no. The first answer belongs to naturalists and the second answer belongs to anti-naturalists. The first is the positivist approach and the second is the interpretive approach. (I bid) According to Bhaskar, both groups have accepted Hume's views on ontological and causal issues. That is, they both have the same views on the natural sciences and their differences are on the social sciences (I bid, p 2).

Bhaskar believes that although the subject of social sciences is different from natural sciences due to the meaning-oriented and purposeful nature of human beings, the two are not opposed to each other and it is possible to have a social science in the same sense of natural science. Bhaskar believes that if we accept the foundations of critical realism instead of the Hume foundations in the natural sciences which belong to the science of causal mechanisms and not to experienced events and causal laws expressing the tendencies of real objects and not the sequence of events, we will see that these two sciences have no contrast with each other because social structures and mechanisms, like natural mechanisms, have a causal effect; Thus Bhaskar in the social sciences, like the natural sciences, believes in anti-positivist naturalism. The value dimension is very prominent in critical realism. According to this school, social science is a practical intervention in social life and logically requires value judgments (Bleiki, 2012, p. 143). In short, according to Bhaskar, the subject of natural and social sciences are different and because of this, their methods are not exactly the same, but the method of critical realism can be applied in general and with differences in both (Bleiki, 2010, p. 191; Benton and Craib, former, p.243)

The principles of the philosophy of the social sciences of critical realism are as follows:

### **1/2. Similarities and differences between natural existence and social existence**

From Bhaskar's point of view, social activity is like natural events, so there must be something like natural causal mechanisms here; but there are differences between the two. Social structures, unlike natural mechanisms, are the product of social activity; so

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they are relative and changeable. Social structures have three main differences with natural structures:

1. They are dependent on the activity of the human agent, i.e, they are reproduced by them.
2. They are dependent on meaning and concept because concept and meaning are the center of human activity.
3. They are dependent on place and time, so they may be different and variable, for example, the structure of marriage may be different in different places and times (I bid, p 41 - 42)

## **2/2. The relationship between the individual and society and the subject of social sciences**

there are three perspectives on whether the individual is the subject of the social sciences or society: a group like Durkheim focuses on society, and a group like Weber focuses on the individual. A group like Peter Berger sees both as a combination of social science. Bhaskar believes that the common defect of all these views is that they have not correctly identified the nature and characteristics of the individual and society. According to Bhaskar, the individual and society are two distinct identities and cannot be reduced to one another, yet the two have an effect on each other. The individual does not build society because there are social structures such as the structure of marriage and language before the individual. Social structures are a necessary condition for human actions, and if they are not, individuals are not able to perform any purposeful actions, but these structures do not determine human action. Bhaskar, like the interpreters and unlike the positivists, believes that individuals are not subject to the determinism of society, and that science and authority causes this characteristic. For example, although we are in the structure of a language from birth, what we say is optional.

The effect of the individual on society is that the individual reproduces or changes society, for example, we can refer to the structure of marriage. People cannot get married unless there is a society with a structure of marriage, at the same time, the continuation of the structure of marriage is the marriage of individuals; thus, social structures are both the material cause of social activity and its product (I bid, p. 34-41). Bhaskar calls this model of social activities a transformational model. (I bid, p 37); Human action is both work (conscious activity) and the reproduction of social structures, which, of course, are often not conscious, that is, people do not marry to reproduce the nuclear family (Other, former, p. 110). In fact, society cannot be reduced to individual actions; therefore, the subject of social sciences is a different reality from individuals. Bhaskar so far agrees with the naturalists. But he believes that social mechanisms are fundamentally different from natural mechanisms, so he distances himself from positivists. The result is that the social world, like the natural world, is layered; Human actions exist in one layer and social structures in another layer, and the connection between these two layers is achieved through social roles. From the perspective of critical realism, all social actions require communicative interaction. Communication interaction is any kind of interaction between individuals that involves the transformation of meaning through language or the like (ibid., Pp. 21-22). For example, although we are in the structure of a language from birth, what we say is optional.

The effect of the individual on society is also that the individual reproduces or changes society, for example, we can refer to the structure of marriage. People cannot get

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married unless there is a society with a structure of marriage, at the same time the continuation of the structure of marriage is the marriage of individuals; thus, social structures are both the material cause of social activity and its product (I bid, p. 34-41). Baskar calls this model of social activities a conversion model. (I bid, p 37); Human action, then, is both work (conscious activity) and the reproduction of social structures, which, of course, are often not conscious, that is, people do not marry to reproduce the nuclear family (Other, supra, p. 110). In fact, society cannot be reduced to individual actions; therefore, the subject of social sciences is a different reality from individuals. Baskar so far agrees with the naturalists. But he believes that social mechanisms are fundamentally different from natural mechanisms, so he distances himself from positivists. The result is that the social world, like the natural world, is layered; Human actions exist in one layer and social structures in another layer, and the connection between these two layers is achieved through social roles. From the perspective of critical realism, all social actions require communicative interaction. Communication interaction is any kind of interaction between individuals that involves the transformation of meaning through language or the like (ibid., Pp. 21-22).

According to Bhaskar's distinctions and relationships between the individual and society, he argues that social science belongings are structures that do not exist independently of the human agent - that is, they are reproduced by the human agent, not the creature of the human agent. Therefore, they depend on meaning and concept, while belonging to natural sciences is not so that. The task of the social sciences is to discover the causal mechanisms of these structures, which, although they not seen as magnetic field, but they are recognizable by their effects (I bid, p. 49). For this reason, critical realists, along with interpreters, do not equate the subject of the social sciences with the natural sciences. Of course, they disagree with the interpreters because the interpreters do not believe in the existence of social structures independent of its purposeful and meaning-oriented agents, while Bhaskar, while believing in the existence of social structures in addition to human agents, emphasizes the existence of a transitive dimension in the social sciences; Therefore, the separation of ontology from epistemology, or in other words, the separation of the transitive from the intransitive, is a fundamental issue in the philosophy of social realism, such as the philosophy of science, whose neglect leads to epistemic fallacy.

In short, from the point of view of critical realism, society consists of two distinct and dependent elements, one is society and the other is individuals. Society is not the creation of individuals, but human beings and human agents who are meaning and concept-oriented in their activities reproduce or change it; Therefore, its durability is related to the purposeful activity of individuals. The subject of the social sciences is generative structures that produce apparent phenomena (purposeful behavior of individuals] (Benton and Craib, former, pp. 245-247).

### **3/2. Cause and reason in human actions**

According to Bhaskar, reason includes cognitive components (belief) and non-cognitive components (desire and motivation). The reason is the difference between social and non-social activities because the former is purposeful as opposed to the latter. Reasons are also causes and there is no way to distinguish between the two. In fact, the cause is including reason; therefore, they cannot be considered non-causal due to the meaningful nature of the reasons. (I bid, p 99 - 106).

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Sayer says:

Although the reasons are definitely different from the physical causes, it cannot be concluded from this difference that the reasons cannot be the causes of the events... Why should one bother to argue that the reasons cannot be the causes, while with such arguments, it can never change people's minds. (Sayer, former, p. 126).

#### 4/2. The role of experience in the social sciences

Society and its structures as belonging to scientific knowledge is an invisible identity that is known only through its works. But this does not cause a problem; because, as it was mentioned, from the point of view of critical realism, reality is visible from the surface; In addition, many natural identities are invisible, such as magnetic fields and tendencies, which of course, we have to create a closed system in the laboratory to exactly recognize them and their performance. But a great problem that surrounds naturalism in the social sciences and threatens its possibility is that, first, quantitative measurement is impossible in the social sciences because social phenomena cannot be quantifiable because they are meaning-oriented; Second, social structures exist only in the open system and not in the closed system. The possibility of establishing a closed system brings two blessings to the natural sciences: 1. the definitive test position of theories 2. The flexibility of productive structures and their access and control. This problem caused Collier not to consider the social sciences to be fundamentally scientific (Benton and Craib, former, pp. 243; 251).

The interpreters abandoned naturalism because of these issues and problems. But Bhaskar considers these two problems to be solvable based on the foundations of critical realism. Critical realism by validating the qualitative method (Bleiki, 2005, p. 355) believes that meaning, although it is not measurable quantitatively, but it is understandable. Hypotheses about meaning are understood in the language of expression and in dialogues. Language for the social sciences plays the role of geometry for physics. Bhaskar argues that the posterior arbiter for the social sciences should be explicit rather than accurate. According to critical realism, the shortcoming of the impossibility of a closed world in the social sciences can be overcome by talking to the perpetrators and knowing the reasons of action. In fact, in the natural sciences, test is an instrument of understanding reality, but in the social sciences, language is a means of understanding facts because man is a purposeful being (Ibid, pp. 50-51).

**Discussion and Conclusion:** Critical realism is a new school in the natural and social sciences that is the middle limit between Kant's positivism and transcendental idealism in the natural sciences and positivism and interpretation in the social sciences. Critical realism has sought to avoid criticism of these schools. In fact, this school has tried to abandon the negative aspects of these schools and combine their positive aspects in a novel way and add innovations to them. In the social sciences, this school tends to interpretation. Separation of epistemology from ontology, attention to different levels of existence and general knowledge of existence from the existence of observable things and attention to the transitive dimension of science in natural sciences as well as the relationship between individual and society and attention to the difference between nature and society in social sciences are the most important positive feature of this idea. But in addition to that, limiting the levels of existence to material matters and ignoring abstract and non-material matters and misinterpreting causality and truth and not having

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a comprehensive theory in explaining social phenomena and such matters are serious problems of this school that should be written in an independent article.

But on the other hand, because this school is a new school in the philosophy of natural and social sciences, it needs more explanation from the fans and response to criticism. This school, in addition to answering the above problems and negative points philosophically, must present a comprehensive and complete plan for explaining social phenomena; Therefore, it is suggested that in addition to a comparative discussion between issues such as causality and truth, as well as a critique of the theory of school of critical realism in this regard, a comprehensive plan should be founded to explain social phenomena and human actions.

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