GST-02 Critical Realism

Formal Description

Critical Realism is a philosophical approach which holds that:

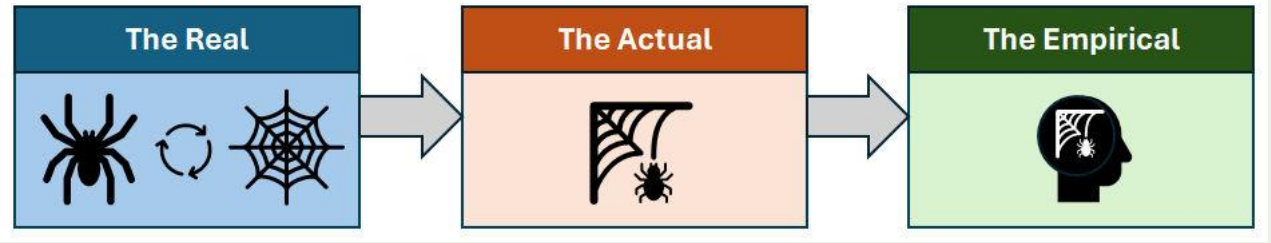
1. reality exists independently of human perception or thought; and
2. knowledge of reality is always mediated by social, cultural, and conceptual frameworks.

Critical Realism distinguishes three domains:

- **the real** – underlying structures and causal mechanisms (or structured processes) with causal powers
- **the actual** – events arising from the operation or interaction of those mechanisms, whether observed or not
- **the empirical** – events as they are observed or experienced (a subset of the actual)

Plain English Explanation

Critical Realism means that the world exists whether or not we observe it.
It also suggests that reality operates at different levels.
At the deepest level, there are underlying structures and processes, such as gravity, that have the power to produce effects. This is called the real domain.
When these structures and processes operate, they give rise to events, such as objects falling or planets moving. This is the actual domain. These events occur whether or not anyone observes them.
The empirical domain consists of the events that we actually observe or measure. For example, seeing an object fall or recording data about its motion.
This means that science does not create reality. It seeks to understand the underlying processes that generate the events we observe. However, our understanding is always filtered through language, culture, and models, and so it continues to develop over time.



The real domain consists of structured, ongoing processes with causal powers. These generate events in the actual domain, which are only partially accessed through observation in the empirical domain.

Example 1 – Gravity

Gravity existed long before Isaac Newton described it.
The real domain consists of the underlying gravitational structure and its causal power to attract masses.
The actual domain includes events such as objects falling or planets moving under gravitational influence, whether or not anyone observes them.

The empirical domain consists of the observations and measurements of these events, such as seeing an apple fall or recording planetary motion.
Newton's theory did not create gravity. It provided a model of the underlying processes that generate these events.

Example 2 – Ecosystems

Ecological systems operate through complex relationships among organisms, such as predation, competition, and nutrient cycling.
The real domain consists of these underlying biological structures and processes, which have the power to influence how ecosystems function.
The actual domain includes events such as changes in population size, predator–prey interactions, or the spread of disease, whether or not they are observed.
The empirical domain consists of what scientists observe or measure, such as field data on species populations or environmental conditions.
Scientific study aims to understand the underlying processes that generate the observed patterns.

Provenance and Links

Critical Realism originates in the work of Roy Bhaskar, particularly in *A Realist Theory of Science* (1975) and *The Possibility of Naturalism* (1979), and has been further developed by scholars in philosophy and the social sciences.
The framework emphasises:

- the existence of a mind-independent reality
- the distinction between underlying structures, events, and observations
- the role of theory in explaining causal mechanisms

Related concepts:

- Scientific realism
- Causal explanation
- Systems thinking
- Cognitive Physicalism

Practical Exercise

Identify a natural process that existed before humans understood it.
Describe:

1. the real mechanism
2. the observable events it produces
3. how scientists eventually discovered it