

# Propositional Logic, Truth Tables, and Epicurus' Objection to "Dialectic"

Post by "Cassius" of September 21, 2021 at 9:15 AM

Here's an article from the Internet Encyclopedia of Philosophy on "Propositional Logic" which appears to be becoming the term of choice to refer to what Epicurus questioned. Since many of the texts use "dialectic" however we probably still need to correlate those terms

[Propositional Logic | Internet Encyclopedia of Philosophy](#)

## Propositional Logic

*Propositional logic*, also known as *sentential logic* and *statement logic*, is the branch of logic that studies ways of joining and/or modifying entire propositions, statements or sentences to form more complicated propositions, statements or sentences, as well as the logical relationships and properties that are derived from these methods of combining or altering statements. In propositional logic, the simplest statements are considered as indivisible units, and hence, propositional logic does not study those logical properties and relations that depend upon parts of statements that are not themselves statements on their own, such as the subject and predicate of a statement. The most thoroughly researched branch of propositional logic is classical truth-functional propositional logic, which studies logical operators and connectives that are used to produce complex statements whose truth-value depends entirely on the truth-values of the simpler statements making them up, and in which it is assumed that every statement is either true or false and not both. However, there are other forms of propositional logic in which other truth-values are considered, or in which there is consideration of connectives that are used to produce statements whose truth-values depend not simply on the truth-values of the parts, but additional things such as their necessity, possibility or relatedness to one another.

Or is it possible that we need to consider "Dialogical Logic"

[Dialogical Logic | Internet Encyclopedia of Philosophy](#)

## Dialogical Logic

<https://www.epicureanfriends.com/thread/2179-propositional-logic-truth-tables-and-epicurus-objection-to-dialectic/?postID=13982#post13982>

Dialogical logic is an approach to logic in which the meaning of the logical constants (connectives and quantifiers) and the notion of validity are explained in game-theoretic terms. The meaning of each logical constant (such as “and”, “or”, “implies”, “not”, “every”, and so forth) is given in terms of how assertions containing these logical constants can be attacked and defended in an adversarial dialogue. Dialogues are described as two-player games between a proponent and an opponent. A dialogue starts with an assertion made by the proponent. This assertion can then be attacked according to its logical form by the opponent. Depending upon the kind of attack, the proponent can now either defend against, or attack, the opponent’s move. The two players alternate until one player is unable to make another move. In this case, the dialogue is won by the other player who made the last move. An assertion made in the initial move by the proponent is said to be valid, if the proponent has a winning strategy for it, that is, if the proponent can win every dialogue for each possible move made by the opponent. The dialogical approach was initially worked out for intuitionistic logic and for classical logic; it has been extended to other logics, among them [modal logic](#) and linear logic.

-----

I see there does not appear to be an entry on "Dialectic"

[Dialectic - Wikipedia](#)

## Dialectic

From Wikipedia, the free encyclopedia

[Jump to navigation](#)[Jump to search](#)For varieties of language, see [Dialect](#). For electrical insulators, see [Dielectric](#).

**Dialectic** or **dialectics** ([Greek](#): διαλεκτική, *dialektikḗ*; related to [dialogue](#); [German](#): *Dialektik*), also known as the **dialectical method**, is a [discourse](#) between two or more people holding different [points of view](#) about a subject but wishing to establish the [truth](#) through [reasoned argumentation](#). Dialectic resembles [debate](#), but the concept excludes [subjective](#) elements such as [emotional appeal](#) and the modern [pejorative](#) sense of [rhetoric](#).<sup>[1][2]</sup> Dialectic may thus be contrasted with both the [eristic](#), which refers to [argument](#) that aims to successfully dispute another's argument (rather than searching for truth), and the [didactic method](#), wherein one side of the conversation teaches the other. Dialectic is alternatively known as *minor logic*, as opposed to *major logic* or [critique](#).

Within [Hegelianism](#), the word *dialectic* has the specialised meaning of a [contradiction](#) between ideas that serves as the determining factor in their relationship. [Dialectical materialism](#), a theory or set of theories produced mainly by [Karl Marx](#) and [Friedrich Engels](#), adapted the Hegelian dialectic into arguments regarding traditional [materialism](#). The dialectics of Hegel and Marx were criticized in the twentieth century by the philosophers [Karl Popper](#) and [Mario Bunge](#).

Dialectic tends to imply a *process* of evolution and so does not naturally fit within [classical logics](#), but was given some [formalism](#) in the twentieth century. The emphasis on process is particularly marked in Hegelian dialectic, and even more so in Marxist [dialectical logic](#), which tried to account for the evolution of ideas over longer time periods in the real world.

of course THIS, referencing Popper, who is an author Martin has discussed reading:

## Criticisms[[edit](#)]

[Karl Popper](#) has attacked the dialectic repeatedly. In 1937, he wrote and delivered a paper entitled "What Is Dialectic?" in which he attacked the dialectical method for its willingness "to put up with contradictions".<sup>[62]</sup> Popper concluded the essay with these words: "The whole development of dialectic should be a warning against the dangers inherent in philosophical system-building. It should remind us that [philosophy](#) should not be made a basis for any sort of scientific system and that philosophers should be much more modest in their claims. One task which they can fulfill quite usefully is the study of the critical [methods of science](#)" (Ibid., p. 335).

In chapter 12 of volume 2 of [The Open Society and Its Enemies](#) (1944; 5th rev. ed., 1966), Popper unleashed a famous attack on Hegelian dialectics in which he held that Hegel's thought (unjustly in the view of some philosophers, such as [Walter Kaufmann](#))<sup>[63]</sup> was to some degree responsible for facilitating the rise of [fascism](#) in Europe by encouraging and justifying irrationalism. In section 17 of his 1961 "addenda" to *The Open Society*, entitled "Facts, Standards and Truth: A Further Criticism of Relativism", Popper refused to moderate his criticism of the Hegelian dialectic, arguing that it "played a major role in the downfall of [the liberal movement in Germany](#) [...] by contributing to [historicism](#) and to an identification of might and right, encouraged [totalitarian](#) modes of thought. [...] [And] undermined and eventually lowered the traditional standards of intellectual responsibility and honesty".<sup>[64]</sup>

The philosopher of science and physicist [Mario Bunge](#) repeatedly criticized Hegelian and Marxian dialectics, calling them "fuzzy and remote from science"<sup>[65]</sup> and a "disastrous legacy".<sup>[66]</sup> He concluded: "The so-called laws of dialectics, such as formulated by Engels (1940, 1954) and Lenin (1947, 1981), are false insofar as they are intelligible."<sup>[66]</sup>

-----

That last line is a good one: **"False insofar as they are intelligible!"** 😊