



# The Objective Validity of Engels' Dialectic Theory as a Method of Reasoning

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**ABSTRACT:** What gives validity to Engels' dialectical theory? Is it the process of nature's own functioning that provides validity to the dialectic, or is it the logical order of the concepts? The orthodox Marxists, who take Engels' dialectic as the "dialectic of nature," are in favour of the former. The proponents of the latter seem to reject the dialectic of nature by associating the dialectic with Hegel's logical operations. The former reduces thinking to the object, while the latter reduces the object to thinking. For these two grounds of validity, Engels provides sufficient explanation in *Anti-Dühring* and the *Dialectics of Nature*. Along with these, in this article it is assumed that what ensures the validity of Engels's dialectical theory is the potentiality that the logical order of thought in the reasoning process can accompany the internal relations of the object. Based on this assumption, the article argues that dialectics is a method of thinking. Based on this assumption, the article assumes that different names, such as the dialectic of nature, society, and consciousness originate from the object of the dialectic, and therefore rejects the plurality of names of dialectics.

**KEYWORDS:** Engels, Marx, philosophy, dialectics, dialectic of nature, dialectic of thought, natural sciences, materialism, ontology.

## Introduction

If we look from the viewpoint of the debates to define or refute Engels's theory of the dialectic of nature, it seems that the question of what provides the validity and justification of Engels' dialectic has not seemed to attract attention. However, even those who reject Engels's dialectical theory seem as convinced as those who defend the theory that Engels linked dialectics with nature. By opposing these two contradictory interpretations of Engels (and thus some of Engels' assumptions) at the same time, it seems difficult to argue that Engels' dialectical theory is not a law of nature

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but a way of thinking about nature based on “natural sciences.”<sup>1</sup> Above all, both sides base their assumptions on the words of Engels. Making the third comment by looking at the same sentences may seem like forcing the conditions. However, this article will attempt to justify the validity of the method as the subject’s act of establishing himself in the practice of the object (that is, the dialectic of consciousness as the object bond).

The term “Dialectics of Nature” is a symbolic representation of Engels in Marxist philosophy. However, when Dialectics of Nature is discussed, this representation also connotes the assumption that is both majestic and controversial. This relative paradox keeps the discussions about the exact intentions of Engels dynamic. On the other hand, within the discussions as to whether or not a dialectics exist in nature, it seems like whether Engels’ dialectics is associated with “nature” or “natural sciences” still stays uncertain. Is the dialectic that Engels has developed a “dialectics of nature” or is it the dialectics of thought as processing the information about nature?

The question depends on the doubt with regard to whether or not the relation established between the nature and the dialectics was brought up on the right ground. Although Engels was not a naturalist, the fact that he seemed to be investigating natural phenomena when correlating the data of the natural sciences<sup>2</sup> gives rise to the appearance that he grounded the dialectic as a law of nature. Evaluation of Engels’ dialectics theory is based on the assumption that his dialectics is “dialectics of nature”. Although Engels associated dialectics with “nature”, “law” or “science”, there are more reasons to assume that he has built dialectics merely as a method of thought. Even the term “the dialectics in nature” (Engels 2010b, 486) is about the thinking style that associates data. Even the “dialectics laws”

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1. The terms “nature”, “natural science” or “science” used in the article are those of Engels. With the word “nature”, Engels emphasizes the “external world” and the empirical reality that fills it. By “natural sciences,” Engels means the individual disciplines that study the elements of “nature.” Epistemological discussions on “science” and “sciences” are also avoided in this article. However, efforts have been made not to consider “natural sciences” as a type of research and “science” as a type of knowledge.

2. It seems like this situation has confused Eduard Bernstein as well. Bernstein asked Albert Einstein for his opinion as to whether this manuscript should be printed. Einstein replied this with the content is of no special interest, either from the point of view of modern physics or even for the history of physics (30 June 1924) (Einstein 2015, 414). Both the question and the answer were created in terms of whether the *Dialectics of Nature* was a “natural science.”

that state how the objects exist” (Ibid., 356) act as a principle that determines how the phenomenon should be thought. When the assumption that the thought form that accompanies “the dialectical character of natural processes” is also a dialectics (Engels 2010a, 13) is considered, the characteristic of the *object of thinking* combines with the characteristic of the method that thinks it. Although dialectics seems like it was considered as the development law of the concrete existent that is called the “nature”, it was filled as the method of explaining the development of the object (and in that sense, as thinking).

Explanations that are scattered within the polemics of Engels and that have no systematics constantly change the ground of the explanations with regard to the definition and function of dialectics. Nevertheless, an uninterrupted path that passes throughout the explanations leads to the assumption that dialectics is a thinking method. The thinking style that Engels has applied in his studies confirms this as well.

### The Problem of “Dialectics of Nature”<sup>3</sup>

In Marxist discussions, while nature and social phenomena are associated, despite the frequent usage of determinations that are applied like methodic as “dialectics in nature” or “dialectical law”; ontological as “dialectical materialism” and philosophical as “historical materialism”, arguments about all the notions haven’t completed yet.

Neither Marx nor Engels used the term “dialectical materialism”; however, the generation that followed them filled the works of Engels under the title of “dialectical materialism”. Direct impacts of Georgi Plekhanov and Karl Kautsky can be seen in this occurrence. Although Marxist literature assumes that Georgi Plekhanov was the first to use the term “dialectical materialism”, this content is clearly stated in the writings of Josef Dietzgen until 1887<sup>4</sup>. In *Ludwig Feuerbach and End of Classical German Philos-*

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3. The explanations that follow this title are based on the explanations in the “Troubled relationship of Orthodox and Western Marxism to the ‘dialectic of nature’” sub-title of my article *Engels’in Diyalektik Teorisi: ‘Doğanın Diyalektiği mi? Düşüncenin Diyalektiği mi?’* [Engels’ Dialectic Theory: “Dialectic of Nature” or Dialectic of Thought] (Delice, 2022).

4. Joseph Dietzgen bases his work *The Nature of Human Brain Work* (1869) on materialist philosophy with the dialectical method, which explains being as a dialectically functioning structure. He says in *Letters on Logic* (14th Letter) (1870s), “The art of dialectics or logic which teaches that the universe, or the whole world, is one being, is the science of absolute evolution”. He uses the phrase “the system of democratic (dialectic) materialism” in his

ophy, Engels (1886) does not hide his surprise to the fact that Josef Dietzgen has met with “materialist dialectic” works: “And this materialist dialectic, which for years was our best means of labour and our sharpest weapon, was, remarkably enough, rediscovered not only by us but also, independently of us and even of Hegel, by a German worker, Joseph Dietzgen” (Engels 2010c, 384). “Dialectical method” and dialectical materialism” terms take place in the study of Plekhanov (1974, 421–26) titled *For the Sixtieth Anniversary of Hegel’s Death* [1891]. Kautsky uses the term “dialectical materialism” (Kautsky 1899, 5) in order to state the positions of Marx and Engels against dialectics. In *Materialism and Empirio-Criticism*, V.I. Lenin (1977a, 40) makes his “dialectical materialism” analysis focused on epistemology rather than focusing on materialist ontology and determines what the methodology of the “orthodox Marxism” actually is. According to this, “The philosophy of Marxism is materialism”, “The main achievement was dialectics” and natural sciences have confirmed “Marx’s dialectical materialism” (Lenin, 1977b, 24).

The theoreticians of the Second International highlight the “science” approach, which was expressed together with Marx’s *German Ideology*, but which was mostly included in Engels’ *Anti-Dühring*.

Discussions about “dialectical materialism” e.g. Deborin’s discussions about “dialectics”—especially his discussions with mechanics based on Engels (Ahlberg 1962, 131)—and Bukharin’s about “materialism” (1921, Chapter 3), in the 1920s were sealed in the Stalin era by the phrase “Diamant.” As Perry Anderson (1976, 59) has noted, In the debates that started to emerge from the 1920s and were coded as “Western Marxism”, especially in the criticisms that started with Georg Lukács, Karl Korsch or Antonio Gramsci, it is stated that there cannot be a natural dialectic of the kind assumed by Engels. Based on their reading of the hitherto unpublished early works of Marx, Lukács and Korsch’s writings pave the way for new philosophical tendencies (for example, the desire to link Marx more to Hegel) rather than the claim of “dialectical materialism.”<sup>5</sup>

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fifth speech in *The Religion of Social-Democracy* (1870s), and the phrase “us dialectic-materialists” in his *Social-democratic Philosophy* (1876). He distinguishes in *The limits of Cognition’ da* (1877) “dialectic-materialists” from idealists; in *Excursions of a Socialist into the Domain of Epistemology* (1887), he explicitly uses the phrase “dialectical materialism.”

5. Lukács (1957), in *My Road to Marx –Addition* describes the philosophical debates in 1929–30 as an effort to save these relations from Plekhanov’s orthodoxy and to open “new horizons” in philosophical research by explaining the relations between Hegel and Marx.

In the tradition of Western Marxism, it is accepted that the source of the negative attitude towards Engels' "dialectic of nature" hypothesis is the criticisms of Georg Lukács. Lukács in *History and Class Consciousness* says that "the misunderstandings that arise from Engels' account of dialectics can in the main be put down to the fact that Engels following Hegel's mistaken lead extended the method to apply also to nature" (Lukács 1971, 24). Thus, while Lukács lays the groundwork for the assumption that the dialectical method will not be applied to nature, he also limits the method to the "fields of history and society" (Ibid.).

From this we deduce the necessity of separating the merely objective dialectics of nature from those of society. For in the dialectics of society the subject is included in the reciprocal relationship in which theory and practice become dialectical with reference to one another. (Lukács 1971, 207)

According to Lukács, Engels' dialectic makes no mention of "the dialectical relation between subject and object in the historical process" (Ibid., 203). However, it should be noted that although Lukács seems to criticize Engels' explanations of dialectics, he is only making a distinction. He does not say that his theory of the dialectics of nature is obviously false (otherwise he would contradict Hegel, to whom he refers on dialectics). However, Lukács does not reject the subject of "objective dialectics," but he, based on Hegel's assumption that the dialectical process is related to the subject,<sup>6</sup> wishes to exclude Engels' theory of the dialectic of nature from Marxist dialectical theory. "For in the dialectics of society the subject is included in the reciprocal relation in which theory and practice become dialectical with reference to one another." (Lukács, 1972, 207).

Whatever the content of Lukács' critique of Engels, these critiques seem to have turned into a negative bibliography against Engels' dialectic within Western Marxism, giving rise to the spectre of a camp. To begin with the date of publication of *History and Class Consciousness* (1923), "over

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<sup>6</sup> "Nevertheless, Hegel does perceive clearly at times that the dialectics of nature can never become anything more exalted than a dialectics of movement witnessed by the detached observer, as the subject cannot be integrated into the dialectical process, at least not at the stage reached hitherto. Thus he emphasises that Zeno's antinomies reached the same level as those of Kant, with the implication that it is not possible to go any higher. From this, we deduce the necessity of separating the merely objective dialectics of nature from those of society. For in the dialectics of society the subject is included in the reciprocal relation in which theory and practice become dialectical with reference to one another. (It goes without saying that the growth of knowledge about nature is a social phenomenon and therefore to be included in the second dialectical type.)" (Lukács, 1972, 207).

the course of the twentieth century, a growing number of commentators have claimed that Engels fundamentally distorted Marx's thought, and that 'Marxism' and especially Stalinism emerged out of this one-sided caricature of Marx's ideas." When take the beginning the date of publication of *History and Class Consciousness* (1923) "over the course of the twentieth century, a growing number of commentators have claimed that Engels fundamentally distorted Marx's thought, and that 'Marxism' and especially Stalinism emerged out of this one-sided caricature of Marx's ideas" (Blackledge 2019, 1). This correlation and negation are what has been the discourse of Western Marxism. In his book *Soviet Marxism*, Herbert Marcuse ([1958]1969), while negating Soviet philosophy, describes it as a continuation of Engels' dialectical thought and he says for those principles of dialectics "in terms of Hegel's and Marx's dialectic, they are neither true nor false—they are empty shells" (Marcuse 1969, 143). A follower of this analysis, Alfred Schmidt (1971), in his work *The Concept of Nature in Marx*, relates Engels to Soviet philosophy, where the way dialectic deals with nature and historical materialism with society led to the "rigid and dogmatic distinction." Schmidt assumes that where Engels went beyond "Marx's conception of the relation between nature and social history", he transformed his thought into a "dogmatic metaphysics" "by introducing dialectics into the natural sciences he was inventing a philosophy of nature" (Schmidt 1971, 51). According to Schmidt "whereas in Marx nature and history are indissolubly interwoven, Engels saw two different 'areas of application' of the method of the materialist dialectic." Without separating nature and history as two separate fields, "Engels failed to appreciate that there can only be a 'dialectic of facts'" (Ibid., 56). It is assumed that Engels did not separate the field of nature and history for the sake of "objective dialectics."

Engels's attempt to interpret the area of pre- and extra-human nature in the sense of a purely objective dialectic must in fact lead to that incompatibility between the dialectic and materialism which has been repeatedly emphasized by a number of critics. (Ibid., 60)

Because the world looks collectively without separating phenomena such as history and society, "the dialectic becomes a *Weltanschauung* [world view], a positive principle for explaining the World" (Ibid., 57). It seems that Hegel, although he applied the dialectic to nature, was not criticized as much as Engels was. The observation of the disagreements about the dialectic of nature in the Marxist philosophy environment can be extended

further. However, considering the ongoing discussions, it is clear that positive or negative evaluations of the theory are not convincing for everyone. However, “therefore, the relation between dialectics and nature, and contributions of Engels in this respect, have been left untouched. Consequently, the core of the problem, resulting a ‘Marxism without Engels’, remained unsolved” (Gedik, 2022, xxxii)<sup>7</sup>. This gives us the opportunity to review the theory each time.

Is Engels' dialectical theory, as Engels himself tried to show, a “law of nature” or just a method of thinking? The question in this article, will attempt to answer with a relatively more problematic one: What validates the existence of Engels' dialectical theory? What does Engels say for validity where Aristotle calls “endoxa” (Aristotle 1991f, 24a 20–24b 15), Kant calls “metaphysics as a natural predisposition” (Kant 1998, 147; B21-22), Hegel's “the Notion that comprehends itself” (Hegel, § 1815; 1998, 842)? The condition that ensures the validity of the dialectic will be a basis for answering the question of whether it is a law of thought or a law of nature.

### **The Developments of Definition and Content of Dialectics in Engels' Explanations**

Engels begins his letter to Marx (30 May 1873) (Engels 2010f, 500) by saying “This morning in bed the following dialectical points about the natural sciences came into my head.” It can be understood from the following sentences that Engels' basic interest and the assumption are clear from the very beginning: No matter how the direction of the reasoning is established, the object of interest is “motion”, the area where the movement appears is “bodies”; “natural science obtains knowledge about bodies”. The body is in motion; what an object is grasped in motion. “Hence natural science obtains knowledge about bodies by examining them in their relationship to each other, in motion.” Because “Cognition of the various forms of motion is cognition of bodies.” Thus, the main object of natural sciences is “forms of motion” and “changes in the internal structure of bodies”. This short letter shows that Engels' original orientation was not “nature” itself, or the relationships of the bodies that compose it, but the

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7. “Marxism without Engels” refers to the practice to “exclude Engels from Marxism or make him invisible.” However, the practice causes a main problem: “For whatever reason, once Engels is gone, what remains of Marxism are separate Marxist approaches such as history, philosophy, economics, politics and sociology within isolated disciplines” (Gedik 2015, 99).

correlation of the data of the natural sciences. This assumption is supported by a note considered to have been written on the same day as the letter. Engels here uses the expression “Dialectics of natural science”; its subject is the knowledge of the manifestations of “matter in motion” (the development from mechanical motion to the corporeal and organic world) (Engels 2010b, 527). Of course, Hegel was the last to make such an observation.

In his discussions throughout Engels’s *Anti-Dühring* and *Dialectics of Nature*, his explanations of the definition of dialectics, its function or the object to which it is applied seem to have caused theoretical problems; nevertheless, it can be assumed that the theoretical identity of the dialectic as a method of thinking has been strengthened.<sup>8</sup>

The first designation for dialectic in *Anti-Dühring* is that it is a form of reasoning. Engels begins by assuming that German philosophy takes “dialectics as the highest form of reasoning”; He observes that dialectic is a form of reasoning from the Greeks to the French philosophy (Engels 2010a, 22). It determines what kind of way of thinking dialectic is: “Dialectics, on the other hand, comprehends things and their representations, ideas, in their essential connection, concatenation, motion, origin, and ending” (Ibid., 23). Engels then tends to associate dialectics with nature by saying, “nature works dialectically and not metaphysically.” However, it can be understood from the complaint that “the naturalists who have learned to think dialectically are few” (Ibid., 24), that Engels sees dialectics as a kind of research method as well as a method of thinking. Since the universe is a moving field of existence, dialectics is a method of thinking and research that accompanies this movement.

An exact representation of the universe, of its evolution, of the development of mankind, and of the reflection of this evolution in the minds of men, can therefore only be obtained by the methods of dialectics with its constant regard to the innumerable actions and reactions of life and death, of progressive or retrogressive changes. And in this spirit the new German philosophy has worked. (Engels 2010a, 24)

Accordingly, Engels associates the quality of his object (movement, transformation) with the style of thinking. From an epistemological point of

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8. While the chapters in *Anti-Dühring* on philosophy, nature and dialectics attempt to justify the existence of real contradictions in nature and society, the gist of *Dialectics of Nature*, especially its late stages, is about universal structures and the history of motion in nature (Kangal 2019, 224).



view, exact systems of knowledge cannot be established for the object in change. This is why Engels says that a precise system of knowledge of nature and history is a “contradiction to the fundamental laws of dialectic reasoning”, because the principles of dialectics express the movement of reasoning. From this point of view, Engels characterizes the dialectic as a kind of reasoning law. The logical principles of reasoning confirm this assumption. This “dialectic method of thinking and the conception” is what remains of Hegel (Engels 2010d, 594). “That which still survives, independently, of all earlier philosophy is the science of thought and its laws—formal logic and dialectics” (Engels, 2010a, 25). “Logic and dialectics” are “the sciences which investigate the laws of human thought” (Ibid., 84). Contradiction has been the basic principle of dialectics since the Greeks (Ibid., 110). “Negation of negation” is the principle of overcoming contradiction (Ibid., 120). Engels, “What role does the negation of negation play in Marx?” (Ibid., 123) answers the question by referring to *Capital* (Marx, 2010a, 751). “But capitalist production begets, with the inexorability of a law of Nature, its own negation. It is the negation of negation.” The principle is the logical foundation on which explanations about the functioning of economic and historical phenomena are based. “The process is a historical one, and if it is at the same time a dialectical process” (Engels, 2010a, 124). According to Engels, Marx describes the capitalist mode of production “as a process which develops in accordance with a definite dialectical law” (Ibid.). This principle applies from geological structures to organic structures “a very simple process which is taking place everywhere and every day” (Ibid., 125). So, Engels takes dialectics out of a subjective understanding and extends it to the entire field of objective existence. He has a tendency to see dialectics as a method of objective operation, particularly based on Marx’s application of the principle of the negation of negation to his economic and historical phenomena. However, there seems to be a tendency to assign an ontological function to the dialectic, since Engels also treats the negation principle as a general principle of being, albeit ambiguously. “When I say that all these processes are a negation of the negation, I bring them all together under this one law of motion, and for this very reason I leave out of account the specific peculiarities of each individual process” (Engels, 2010a, 131). With the principle of the negation of the negation, Engels tries to comprehend the whole process of becoming—the bond of presence of existents—under a single law of motion. However, while Engels’ excessive interest in sciences covered the relationship between dialectics and ontology, his tendency to ground dialectics as science

comes to the fore. “Dialectics, however, is nothing more than the science of the general laws of motion and development of nature, human society and thought” (Ibid., 131). (It also informs scientists of the task of learning dialectics as science [Engels 2010a, 24, 131]). Accordingly, dialectics is the “science of laws”; but the expression “general” here refers to the “law of motion and development” of what kind of object? It implies that dialectic is a way of thinking based on an ontological assumption (the coexistence of nature, society and moments of thought).

In the present work [*Anti-Dühring*] dialectics is conceived as the science of the most general laws of all motion. This implies that its laws must be valid just as much for motion in nature and human history as for the motion of thought. (Engels, 2010b, 545)

This ontological design provides the opportunity to talk about things despite the change of things. “A system of natural and historical knowledge, embracing everything, and final for all time, is a contradiction to the fundamental laws of dialectic reasoning” (Engels, 2010a, 25). However, Engels says that the law of dialectical reasoning “by no means excludes, but, on the contrary, includes the idea that the systematic knowledge of the external universe” (Ibid.). In this case “not only philosophy but all sciences were now required to discover the laws of motion of this constant process of transformation, each in its particular domain” (Engels 2010d, 594).

Engels both applies and continues to characterize dialectics as a method of thinking in the *Dialectics of Nature*, in order to relate the knowledge gained from these discoveries of the sciences and form “general” knowledge. Here, however, Engels relates the dialectic more to nature and the natural sciences; characterizes the dialectic as the law of nature and, moreover, recognizes it as “science.” Critics have interpreted these characterizations as an independent theory of the “dialectic of nature” (and there are numerous passages to corroborate these interpretations).

In his work plan for *Dialectics of Nature* (1878, late August-early September), Engels writes a title for dialectics as “science”: “Dialectics as the science of universal inter-connection” (Engels 2010b, 313). However, the expression “the science of universal inter-connection” and “Aperçus<sup>9</sup> on the separate sciences and their dialectical content” (Ibid.) that Engels reported in the plan informs the most basic theoretical aim of *Dialectics of Nature*. This aim emphasizes that dialectic is basically a method of thinking—a

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9. Thoughts, comments.

method of thinking and explanation that establishes a dialectical link between the data of sciences. Because “the general nature of dialectics to be developed as the science of interconnections, in contrast to metaphysics” (Ibid., 356).

But it is precisely dialectics that constitutes the most important form of thinking for present-day natural science, for it alone offers the analogue for, and thereby the method of explaining, the evolutionary processes occurring in nature, inter-connections in general, and transitions from one field of investigation to another. (Engels 2010b, 339)

Engels relates more the similarities between dialectics and the way of thinking in the natural sciences and says, “Only dialectics could be of assistance to natural science in negotiating the mountain of theory” (Ibid., 340). For this reason, Engels maintains that natural scientists should learn dialectics (Ibid., 341). These determinations strengthen the assumption that dialectics is a method of thinking. However, Engels' dialectic as thinking is not as a method of persuasion by reasoning like Plato or establishing speculative connections like Hegel. Rather, it is a method of logical reasoning that proceeds by relating the data of the natural sciences (or by following the object relations) in the dialectical style that Aristotle explains in *Topics* (One of the important differences between them is in the degree of truth of the premises. According to Aristotle, the dialectic method can take also ambiguous propositions as premises; whereas Engels's dialectical theory requires that definite propositions confirmed by the natural sciences be taken as premises. This means that the object-link is the condition for dialectical reasoning. Engels' dialectical theory is close to Hegel in terms of content logic.).

The standard way of seeing gives a style of reasoning the quality of “method.” It is the principles that provide the way of seeing the method and fulfil the function of the rule. Engels calls the rules of dialectical logic (the principles that determine the way of seeing) “laws.” While outlining his general plan of work for the *Dialectics of Nature*, Engels provides the definition of dialectics as “science” and the working “laws” of this science:

Dialectics as the science of universal inter-connection. Main laws: [1] transformation of quantity and quality [2]—mutual penetration of polar opposites and transformation into each other when carried to extremes—development through contradiction or negation of the negation—spiral form of development. (Engels 2010b, 313)

Engels clearly defines these “laws”, of which he speaks in his plan, as the laws of dialectics. “The law of the transformation of quantity into quality and vice versa; the law of the interpenetration of opposites; the law of the negation of the negation” (Ibid., 356).<sup>10</sup> Basically, each of them is a necessary principle of subjective thought, but by explaining these principles as laws operating in the field of natural existence, Engels objectifies the principle. “It is, therefore, from the history of nature and human society that the laws of dialectics are abstracted. For they are nothing but the most general laws of these two stages of historical development, as well as of thought itself” (Ibid.). Engels objectifies the logical principles of thought by extending them to every field of existence; it takes this objectification out of being a logical operation and at the same time explains it as an empirical law of nature. “We are not concerned here with writing a handbook of dialectics, but only with showing that the dialectical laws are real laws of development of nature, and therefore are valid also for theoretical natural science” (Ibid., 357). Engels’ polemic containing dialectics as a method eventually turns into the argument that dialectic is the “law of development of nature.” In the excitement of associating the dialectic with the natural sciences, Engels finally identifies the dialectic with the law of nature and establishes the hypothesis of the dialectic of nature, reaching a more specific determination here: The law of development of the “theoretical natural sciences” is also dialectical. This means that Engels continues to give content to dialectics as a method of thinking. More importantly, the Engels’ dialectic has come to the brink of saying that it is a method of thinking in the context of the natural sciences; however, he seems to have delayed explaining it here. “Hence we cannot go into the inner inter-connection of these laws with one another” (Engels 2010b, 357). Although Engels did not explain it, the most specific statement throughout the book that explains exactly what the dialectic does lies beyond this sentence. Dialectical reasoning (theory or, as Engels put it, “science”) is a method that explains the knowledge of the inner relations (or *object practice*) of the existing by establishing the relationship between the laws of nature. This is exactly what Engels said, although he did not elaborate further on his specific determination. Critics focusing on the “dialectics of nature” assumption in *Dialectics of Nature* they did not see how the relation of dialectic with nature and natural sciences was limited. It is a fact that also the reason for

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10. Can there be an underlying pattern which repeats itself in the workings, not only of society and thought, but of nature itself? Woods and Grant argue “that such patterns do indeed exist” (Woods & Grant 2003, 53).

this is Engels' polemical statements. Above all, even though Engels sees nature as a field of polar oppositions and push-pull balance (Ibid., 364–65), that is, as a dialectical nature, based on the results of his experience with nature, here still “dialectical thinking”, “at least as far as mathematical calculation” (Ibid., 378) is effective. Therefore, nature is only a field of oppositions; It is the method of explanation of thinking that dialectically establishes the internal relations in it. As in the example of physicists (P. G. Tait & G. Kirchhoff), who explain rest as a form of motion of potential energy, nature can be thought of as dialectically as well as calculable (Engels 2010b, 388). However, Engels assumes that natural scientists are unable to relate their results to a holistic understanding. (In another sense, this means that natural scientists do not think of the particular in relation to the universal because they do not have a dialectical ontology.)<sup>11</sup>

Where he expresses this assumption, he uses the expression “the dialectics in nature” (Ibid., 486) for the first time. “Nevertheless, the bulk of natural scientists are still held fast in the old metaphysical categories and helpless when these modern facts, which so to say prove the dialectics in nature, have to be rationally explained and brought into relation with one another” (Ibid.). Although Engels used the phrase “dialectic in nature”, the operation he assumed in nature is still the subject of the dialectics of thought: “And here thinking is necessary: atoms and molecules, etc., cannot be observed under the microscope, but only by the process of thought” (Ibid.). It is clear that Engels sees the dialectic in nature when he acts from the nature's category of being (contradiction), and when he acts from his principles, he sees the dialectic in thinking. This assumption can be confirmed by the distinction between “subjective dialectics” and “objective dialectics” (Ibid., 492) in incomplete passages in *Dialectics of Nature*.

Although the phrase “the dialectic of nature” is branded with Engels' name, as the brief summary above can show, the assumption that Engels' dialectic has a different content than this standard setting awakens: (1) Dialectics is defined as the knowledge of internal relations (object practice—that is, practice as movement and work). (2) Dialectical reasoning is determined as method which has a content (thought accompanies the movement of the object with the movement of concepts). (3) Dialectics is the thinking (or object intention of consciousness) method of materialist ontology. For this reason, “modern materialism is essentially dialectic, and

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<sup>11</sup> “Everything affects and is affected by every other thing, and it is mostly because this manifold motion and interaction is forgotten that our natural scientists are prevented from gaining a clear insight into the simplest things.” (Engels, 2010b, 459)

no longer needs any philosophy standing above the other sciences” (Engels 2010a, 26). Expressions such as “internal relations”, “objectivity”, and “materialistic” indicate the fixed content of Engels’ dialectical method. However, what remains unclear here is whether the dialectical method is established only from the object or from the thought? What remains unclear, however, is the question of whether the dialectical method is constructed solely from the object or from the thought.

### **Dialectics: From Nature to Consciousness or Vice Versa**

It looks like one question had not attracted much attention in the discussions made in the context of Engels’ determination of “dialectic in nature”: Is dialectic the reflection of nature’s workings in the mind, or is it a set of concepts dictated by the mind to nature? The question is about whether the dialectical operation (or, in general terms, “dialectical laws”) is in nature or in thought. It can be a starting point for an answer to look at whether the language (methodology) that explains nature is established by the logical system of pure thought or by empirical abstractions.

Engels places the “laws of thought”, which Hegel says he developed, at the centre of his theory, calling them “laws of dialectics.” As mentioned above, these are “[1] the law of the transformation of quantity into quality and vice versa; [2] the law of the interpenetration of opposites; [3] the law of the negation of the negation” (Engels 2010b, 356). These “laws” are fixed principles of becoming that traverse Hegel’s system; they are the condition of the moment of existing in the actual realm of being. These three principles constitute the motion mechanism of the ontological system (of Idea in the fields of Logic, Nature, Spirit) in Hegel’s (1991, 42; §18) *The Encyclopaedia Logic*.

(1) Since “negation” functions as a transition mechanism between categories in Hegel’s dialectic, it pervades the whole of Logic. “The dialectic has a positive result”; because it contains “the negation of certain determinations” (Hegel 1991, 131; §82). However, “the negation of the negation is not a neutralisation” (Ibid., 151; §95). It means that something comes out of itself, passes into the other, and becomes someone else. “In this way being is re-established, but as negation of the negation.”

(2) “The transition quantity into quality” is a determination about the limit of quality. “Measure is qualitative quantum”; “measure is a quantum, with which a being-there or a quality is bound up” (Hegel 1991, 170; §107 A). “Quantum is the way that quantity is there” (Ibid., 161161; §101).

Therefore, everything that exists is a qualitative measure; because qualities can exist in a measure. "The measureless occurs initially when a measure, in virtue of its quantitative nature, goes beyond its qualitative determinacy." "Both of these transitions, from quality to quantity and vice versa" are "infinite progress" (Ibid., 172; §109). We find this first "in nature, in a variety of forms" (Ibid., Addition). The notion of the necessity of measure brings to the thought of the limit of being and its inner nature. Thus, "the dialectical movement of quantity" in nature becomes "quality" (Ibid., 169; §106 A).

(3) "Contradiction" reveals the nature of being. "Distinction in its own self is the essential [distinction], the positive and the negative" (Hegel 1991, 184; §119). "Distinction of the essence" is "its own other facing it" (Ibid., 185; §119). It has its own opposite (Ibid., 206; §136). Contradiction is the antithesis of identity (Ibid., 185; §119). "The notion of polarity, which is so generally current in physics, contains within itself a more correct determination of opposition" (Ibid., 186; §119). For this reason, "it is contradiction that moves the world, and it is ridiculous to say that contradiction cannot be thought" (Ibid., 187; §119, Addition 2). According to this, negation and opposition are immanent to everything, as well as the determining principle of change and development. Therefore, "there is in fact nothing, either in heaven or on earth, either in the spiritual or the natural world that exhibits the abstract "either-or" as it is maintained by the understanding" (Ibid.).

With these explanations, Hegel wants to give the firsts an objective quality by showing evidence in the functioning of being, but these explanations do not remove them from being a principle of thought. The work of objectifying the concept first appears in Aristotle. The basic concepts of the theory of being (e.g., "substance") developed by Aristotle (1991a) in *Metaphysics* are based on his discussion of the "kategoría" (predicate) (*Categories*, 1b 25–2a 4) that can be said about the subject in *Categories* (1991b). The problem of consistency in reasoning is basically based on the validity relationship that the predicate establishes with the object. In this respect, categoría' in *Topics* (1991c) are the basic elements on which the topics of conversation in dialectical discussions are based (*Topics*, 103b 30–104a 2). Aristotle analyses the problem of disagreements or misinformation in dialectical debates in the context of this term. Aristotle tries to overcome the problems in this context by associating thought-language (or logic) and object link theory with knowledge of first causes (*Metaphysics*, 983a 2; 996b 12). The problem of first causes is associated with the search for the first

causes of “being as being” (*Metaphysics*, 1003a 22–33). Thus, although the knowledge of being and its essence is based on the explanation of a reality independent of human consciousness, all fiction is made with the rules of language and the principles of thought. Once the principles are formed, they become the starting point for all kinds of reasoning.

Aristotle speaks of the role of “common items” (*Posterior Analytics*, 76b 1–25; 1991, 14) on which reasoning is based when confirming or rejecting a predicate about the subject in *Posterior Analytics* (1991d). Axioms are the most influential principles in the knowledge process. “Axiom” as the proposition constituting “Demonstration” is the basis of world knowledge. “What necessarily is the case because of itself and necessarily seems to be the case is not a supposition or a postulate” (*Posterior Analytics*, 76b 24; 1991, 15). For example, since the principle of contradiction, which is an axiom, is necessary for the knowledge of existence, it is a knowledge that takes place at the beginning when knowledge of something is established. (*Metaphysic*, 1005b 10–19); subsequent demonstrations must be made according to this principle (*Metaphysic*, 1005b 25–35). In *Metaphysics* (IV, 3–8) Aristotle sets out the principles of “contradiction” and “impossibility of the third case” as the basis on which every argument rests (*Metaphysic*, 1011 b 23–1012a 28).

In this case, the *basic knowledge* that turns into the “principle” level works like the “axiom” of the next argument.

While Aristotle treats categories as a feature of both language-thought and being, Kant develops Aristotle’s categories only as a feature of thought. Kant ([1781]1998) in “Introduction” to the second edition of the *Critique of Pure Reason* connects experience and categories (pure concepts of understanding) by calling “although all our cognition commences with experience, yet it does not on that account all arise from experience” (1998, 136; B1). Categories are pure concepts of understanding and constitute the a priori condition of sensory data (1998, 212; A79/ B105). Accordingly, categories express a mechanism in the formation process of knowledge, prior to experience and determining experience. It is only through categories that the understanding can think, understand, and say something about the objects of intuition (Kant 1998, 213; A80/ B106). Categories are about predicates that can be said about objects; because “the faculty for judging (which is the same as the faculty for thinking)” (Ibid., A81). But categories cannot remain merely the a priori condition of knowledge; it also determines the perception of nature. “What reason would not be able to know of itself and has to learn from nature, it has to seek in the latter (though



not merely ascribe to it) in accordance with what reason itself puts into nature" (Ibid., 109; Bxiv). This means that in the process of knowledge formation, the categories of understanding precede experience and they determine every possible experiential knowledge. "For where would experience itself get its certainty if all rules in accordance with which it proceeds were themselves in turn always empirical, thus contingent?" (Ibid., 138; B5). The categories, then, should be explained "the possibility of as it were prescribing the law to nature and even making the latter possible, is to be explained" (Ibid., 261; B160). For example, "cause" is a conceptual regulative principle imposed on nature. "Categories are concepts that prescribe laws a priori to appearances, thus to nature as the sum total of all appearances" (Ibid., 263; B163). In this respect, "space and time" is the form of perception, of knowing why. The categories impose themselves on nature by providing the conditions for the "certainty of experience", and thus for knowledge, and they say exactly what happens to nature.

After determining the function of categories in the structure of knowledge in his *Critique of Pure Reason* Kant pass on to examine the structure of dialectical reasoning (or how it falls into the illusion) in the chapter "Transcendental Dialectic". Kant, who keeps the boundaries of the knowledge within the boundaries of "possible experience", grounds dialectical reasoning as "logic of illusion" that creates knowledge about the unconditional by going out of the experience (Kant 1998, 384; B86 / A62; A293 / B249). By showing the error of dialectical reasoning, Kant imposes logical conditions on the mind so that it does not exceed the limits of experience.

However, also Hegel invents his own philosophy by going beyond these limits. Hegel not only places what Kant calls "logic of illusion" at the centre of his system, but he also transforms it into a method both for explaining the object of thought and for the becoming of being. The task of examining the being with the categories the number of that Aristotle determined as ten (Aristotle, 1991b, 1a 25), the task of examining the process of knowing with the categories of the understanding the number of that Kant increased to twelve (Kant 1998, 212; A80), are fulfilled in Hegel's system by the three principles mentioned above. Hegel thinks about the formation process of his object through these principles. Thus, just as Kant dictates his concepts to nature, Hegel also transforms his thought principle into the principle of being by explicating his object in thought. At last, nature reveals itself in the mind of the philosopher.

As the natural philosophies of F. Schelling and G.W.F Hegel will confirm, a mysterious metaphysical development process from nature to consciousness is the characteristic feature of the nineteenth century natural philosophies. This could mean that Engels matured in a philosophical culture that was prone to bring principles from nature. Schelling's philosophy of nature explains how subjectivity emerges from nature. Schelling's approach lies at the centre of the transition between Hegel's *Science of Logic* and *Philosophy of Nature*. Liberated Idea at the end of *Logic* to realized nature in *Philosophy of Nature*, transcending the organic field here and transforming into true liberated consciousness in the *Philosophy of Mind*.

From the notes, Engels took while listening to the Schelling lectures: "This is the mobile nature of thinking, according to which it cannot stop at mere thinking but must constantly pass over into being" (Engels 2010e, 202).

Hegel's explanation in *Philosophy of Nature* through the relationship he established between logic and nature provides an important example of an approach for Engels. Nevertheless, the ontological structure contained in Engels' "modern materialism" is irrelevant to the Hegelian system. By relating the data of natural sciences dialectically, Engels creates a "dialectical understanding of nature" (Engels 2010a, 26) of his own "modern materialism" (Ibid., 25). "Modern materialism is essentially dialectic" (Ibid., 26). The basic content expressed by the "materialist dialectic" (Engels 2010c, 383) is the ontological knowledge of the movement of matter and its manifestations. "The motion of matter is not merely crude mechanical motion, a mere change of place, it is heat and light, electric and magnetic tension, chemical combination and dissociation, life and, finally, consciousness" (Engels 2010b, 332). Accordingly, what Engels means by "Dialectics of natural science" is clearly the knowledge of "matter in motion." This knowledge is provided through the "Classification of the sciences", which begins with Mechanics and ends with Organics (Engels, 2010b, 527-28). What is meant by the classification of sciences is to create a system of knowledge of the dialectics of movement by relating forms at different moments. The fact that one movement originates from another makes transitions and relations between sciences necessary.

If I term first of all physics the mechanics of molecules, chemistry the physics of atoms, and furthermore biology the chemistry of proteins, I wish thereby to express the passing of each of these sciences into another, hence both the connection, the continuity, and the distinction, the discrete separation, between the two of them. (Engels, 2010b, 531)

According to Engels, “since the general evolutionary connection in nature has now been demonstrated,” one can no longer resort to “Hegel's artificially constructed dialectical transitions” (Engels, 2010b, 529).

However, while Engels generalizes the dialectic to the whole of beings, he may emulate the movement of the dialectic that goes through Hegel's ontological system in this regard. Hegel says, “It is in general the principle of all motion, of all life and of all activation in the actual world” (Hegel 1991, 128; § 81, A. 1). It is clear that Hegel sees the dialectic as about the revelation of things. Considering that Hegel's *Logic* expresses the formal structure of reality, then nature appears to be an embodiment of the dialectical structure. While Engels (2010b, 337) says, “The dialectical laws are real laws of development of nature.” He accepts dialectic as the determining principle of all processes in nature, like Hegel. However, the nature of which Engels speaks is not the same as the nature of which Hegel speaks. While Hegel's *Logic* explains becoming in the concept, Engels' *Dialectics of Nature* explains becoming in time.

Hegel does not research nature in the *Philosophy of Nature*; does not construct nature design through natural sciences; he simply takes some explanations from the current natural theories of his time and systematizes them based on the categories of his *Logic*. Hegel, the question “What is Nature?” answers the by saying, “We propose to answer this general question by reference to the knowledge of Nature and the *Philosophy of Nature*” (Hegel 2004, 3; [“Introduction”, Zusatz]). Hegel explains the question of “What is Natural Philosophy” by opposing it with “natural sciences”, which he sees as the “opposite.” “We find the *Philosophy of Nature* in a peculiar relationship to natural science in general, to physics, natural history, and physiology; it is itself physics, but rational physics” (Ibid., 2; [“Introduction”, Zusatz]).

The fact that the first part of the *Encyclopaedia of Philosophical Sciences* is “Logic” and the second part “Philosophy of Nature” is not just a sequence related to the plan of the book; at the same time, it follows an expansion suitable for the ontological system (The third chapter, “Philosophy of Mind”, completes the dialectical development). In this ontological design, when nature forms are taken back, the concepts of logic; when the concepts of logic are advanced, the forms of nature are reached. This is a dual reasoning that leads to “Absolute Mind” in both conditions. The double reasoning of the “Circle” theory (Hegel 1991, 39; §15) shows both how categories can be understood by taking Spirit as a target, and how logic can be an expression of nature when nature is taken as a starting point. As Hegel

(1998, 841; §1812) puts it in the *Logic of Science*, “the retrogressive grounding of the beginning, and the progressive further determining of it.” In this ontology, nature begins with the logical Idea and is completed with its aim, Spirit.<sup>12</sup> According to Engels, “This way of thinking turned everything upside down, and completely reversed the actual connection of things in the world” (Engels 2010a, 25). They study to negate the logic of this inversion of Marx in the field of society, Engels in the field of natural sciences.

Statements designated as “laws”, then, are principles-based explanations of logical observations of facts. Despite all ontological content, these laws determine *how thought should see its object*. The effect of Kant’s categories on perception or the effect of Hegel’s dialectical principles on the construction of the concept determines the knowledge of the object of thought, albeit in different ways. Therefore, the reality notion emerges with the effect of the concept. Returning to the above question; when the reasoning is constructed not by abstraction from the material (empirical or factual) structure, but by only the pure logical system of thought, dialectics will always imply the metaphysical.

### **The Problem of the Validity of Dialectical Reasoning**

Like Hegel, also Engels proves the validity of his argument through the quality of the object of thought. Hegel constructs the ontological foundations of their theory through the dialectical nature of being, and Engels through the dialectical attribution of being. While Hegel finds its grounds in logic, Engels finds it in the natural sciences. However, if dialectics removes from both their conception of nature, Engels’ dialectical reasoning may continue, while Hegel’s system of thought remains incomplete. Because Engels uses the dialectical method not to demonstrate the thought in nature, but to relate the data of the natural sciences. Then, it is not nature but the way of thinking about nature, that provides the validity of Engels’ dialectical theory. In this case, the question arises whether the source of the dialectic is the object or the subject. It seems that answerable by the determination of the object’s position of consciousness in dialectical reasoning.

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12. Everything consists of cells. The cell is Hegelian ‘being in itself and its development follows the Hegelian process step by step right up to the final emergence of the ‘idea’—i.e., each completed organism (Engels, 2010l, 326).

Considering the decisive influence of the concept on the object in Kant's epistemology or Hegel's rational ontology, the object position of the dialectic in Engels' materialist ontology should become clear. Is dialectic the reflection of the object order (the functioning of nature) in the understanding or is it a logic system dictated to nature? The question is indirectly related to the problem of the source of the "dialectical law." In Engels' explanations, the position of his principles seems observable in terms of (1) "reason", (2) "nature" and (3) "the unity of mind and nature."

(1) The first source that gives validity to the existence of dialectical principles is the potentiality of the subject itself.

How does Engels position the dialectic against the object when he says (Engels 2010a, 11) that "it was almost only me and Marx who saved the conscious dialectic from the German idealist philosophy and applied it to the materialist understanding of nature and history"? It can be deduced from Engels' statement that fixed determinations are imposed to a nature whose structure is contradictory "by our reflective minds" (Ibid., 14), that Engels assumes that the concepts of the subject are determinative in his design of nature.

Does Engels give priority to the logical system (method) over the object, just as Kant dictates concepts to nature and Hegel prioritizes the concept? The method is a conceptual model of analysis that the reasoning applies to the object. While grounding dialectics as a method, Plato explains it as the path on which the mind walks for precise knowledge between the layers of existence (*Republic*, VII) and Aristotle between propositions (*Topics*, I). Engels also applies the dialectical method as a methodical intention to the object outside of consciousness. However, it is inevitable that the approach based on the principles determined as "law" interferes with its object. The law, which determines what the object is, turns into the position of the "example" (paradigma) that corresponds to the "epagôgê" (induction) in the dialectic in Aristotle's expression (*Rhetoric*, 1356b 1–5). The example plays the role of induction, and the reasoning always draws conclusions that justify itself. If so, nature is "forced into the old Procrustean bed of metaphysics" (Engels 2010b, 341) by Engels' dialectic.

Engels and Marx often accuse Hegel of reducing reality to the concept. According to Engels, Dühring also makes such a metaphysical imposition on nature. Following Hegel, Dühring gives principle priority to thought and concept and forces the world to comply with this thought. Dühring applies "formal tenets derived from thought" to "nature and the human sphere", transforming them into rules that "nature and the realm of man"

(Engels 2010a, 33). “Herr Dühring’s contrary conception is idealistic, makes things stand completely on their heads, and fashions the real world out of ideas, out of schemata, schemes or categories existing somewhere before the world, from eternity—just like a Hegel” (Ibid., 34). “The object is then to conform to the concept, not the concept to the object” (Ibid., 89). Dühring, then, “shifting the basis of all reality from the real world to the world of thought” (Ibid., 35).

Looking at Engels’ critique of Dühring, it can be assumed that; Engels does not reduce the object to concepts. When he says that method applies to history and society, he is not suggesting that principles (method) precede reality. Above all, “forms of being, of the external world” “can never be created and derived by thought out of itself, but only from the external world” (Engels 2010a, 34). Similarly, principles are not purely logical concepts in the mind. On the contrary, in accordance with the materialist conception, concepts exist because of the relations that would cause it. Referring to Hegel’s “what he said on the French Revolution” (Engels 2010a, 630-31) Engels says that “the human head, and the principles arrived at by its though, claimed to be the basis of all human action and association” must be “be turned upside down” (Ibid., 16). “If pure reason and justice have not, hitherto, ruled the world, this has been the case only because men have not rightly understood them” (Ibid., 20). So Engels’ dialectic does not force its object to enter the “Procrustean bed”; because “it is not nature and the realm of man which conform to these principles, but the principles are only valid in so far as they are in conformity with nature and history” (Ibid., 34). Then although the dialectical method is the subject’s way of reasoning in the object’s intention, the object is not its pure conceptual construct. Because dialectical reasoning does not take place in the concept alone. The assumption that pure thought or logical categories have priority over the object means both that the dialectical method dictates its principles to nature and that nature is reduced to concepts. This case, the validity of the dialectic as a method cannot be explained only by the potential of the mind (by possibilities such as analysis, abstraction, principle determination, conceptual inference, and synthesis). What is necessary is the object-conditional of dialectical reasoning.

(2) The second source that gives validity to the existence of dialectical principles is nature’s mode of being.

It is Engels’ grounding of the dialectic in nature that makes the “dialectic in nature” thesis appear as an independent dialectical genre. When Engels said that “the dialectical character of natural processes” imposes itself

on the mind (Engels 2010b, 340), it is clear that he sees the source of dialectical principles as the external world (nature). When Engels said that “the dialectical laws are real laws of development of nature” (Ibid., 357), he determined that the process of existence of the external world is dialectical.

When we consider and reflect upon nature at large or the history of mankind or our own intellectual activity, at first, we see the picture of an endless entanglement of relations and reactions in which nothing remains what, where and as it was, but everything moves, changes, comes into being and passes away. (Engels 2010a, 22)

If existing is in the dialectical character of natural processes (Ibid., 13), the nature of the object is dialectical in itself. What is the role of the subject in this object dialectic? Since it operates as a reality outside of consciousness Engels states that “the dialectical character of natural processes irresistibly forced itself upon the mind” (Engels 2010b, 340). According to these explanations, the nature of the object is dialectical and imposes itself on consciousness. So “dialectical philosophy itself is nothing more than the mere reflection of this process in the thinking brain” (Engels 2010c, 360).

The dialectic nature of the natural process is explained by three basic “dialectical laws.” As mentioned above, these laws are the principle of quantity-quality, contradiction and negation (Engels 2010b, 356). While Engels makes specific reference to three principles, he actually talks about more. “Identity and difference—necessity and chance—cause and effect—the two main opposites which, treated separately, become transformed into one another” (Ibid., 497). Although, as in *Ludwig Feuerbach* (Engels 2010c, 384), since they are relative, “the antitheses, insuperable for the still common old metaphysics, between true and false, good and bad, identical and different, necessary and accidental” seem to have removed from being philosophical contradictions, the concept pairs of “essence-form”, “part-whole”, “simple-compound”, “action-reaction”, “positive and negative”, “attraction and repulsion” spread throughout *Dialectics of Nature* are also included in the explanations as principles. The number of principles may increase or decrease<sup>13</sup>; but the important thing is whether a basic knowledge about the existing is a logical abstraction. Principles are logical

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13. I consider these principles not as given finalized laws to be followed or applied, but as the principles of a theoretical and a methodological framework to be researched and developed in every single branch of science, as a never-ending process, with the aim of unifying them (Gedik 2022, xxxv).

inferences from the empirical being-found. Presence is not a fixity, but existence in flux. Accordingly, the quality of presence of the existent is being in the state of becoming. Since empirical becoming expresses a movement from the identity of the object to its contradiction, *contradiction* is the basic *principle of being* in the ontological nature notion. In this ontology conception, principles such as “quantitative relation”, “opposite relation” and “negation relation” express the object practice, which is the inner relation of the process of becoming.

In this case, it is clear that the subject re-associates the practical relations that occur in natural events dialectically in the conceptual system. However, the assumption that the structure of material reality is the sole determinant in thought neutralizes the potential of thinking, renders meaningless the logical inferences that bind abstractions together. Such a determinism renders the role of the subject and historical accumulation ineffective in the knowledge process. Therefore, the source of the dialectic cannot be the logical system of the subject alone, nor is it the quality of existence of the elements of nature alone. Considering that dialectical reasoning is a style of reasoning based on overcoming the subject-object tension, it turns out that the only condition that ensures the validity of the dialectical method is the necessity for both effects to work together.

(3) The third and decisive source that gives validity to the existence of dialectical principles is the unity of the dialectical existence of the object and the logical nature of the arguments.

It can be assumed that Engels gave validity to dialectical thinking by basing the objects of thought and nature on the same laws. “The fact that our subjective thought and the objective world are subject to the same laws, and hence, too, that in the final analysis they cannot contradict each other in their results, but must coincide, governs absolutely our whole theoretical thought” (Engels, 2010b, 544). However, unless the condition of this “coincide —or the limit of the connection between language and the world- for an empirical knowledge of the world, is determined, the thesis that subjective thought and the objective world have the same law may lead to the conclusion that every explanation of nature must necessarily be valid. This means the same thing as what Kant calls “the natural dialectic of human reason” (Kant, 1998, 605; A669/B697)—, which makes the objectivity of the Marxist dialectic questionable. From the point of view of the empirical view of nature, then, neither the in itself-contradictory existence of the object nor the logic of in itself-contradiction of thought is sufficient to justify the assumption that the object and thought have identical



laws. (Only from the point of view of ontological design can identity be introduced, which Hegel does this by transforming thought and the object thought into the legitimacy of each other. If “dialectical materialism” is taken as a design of ontology, this identity may be possible on the basis of the law of development of the movement.)

However, Engels' determination of the unity of subject and object in a dialectical process of knowing is valid. Above all, it is the way in which object consciousness is constituted that distinguishes dialectical knowing from any other ordinary kind of knowing. Since consciousness is the realisation of the internal connections of something, the object is the condition of knowledge and the object connection is the condition of consciousness. In a dialectical process of knowing, knowledge is not a bond established in the concept (judgement based on the concept), but a movement that unfolds itself in consciousness. From the point of view of an ontological design, the quality of existence of the object (contradiction) and the principles of thought that can accompany this quality (the logic of contradiction), moreover their ability to work in harmony, make the objective validity of the dialectical method possible.

The validity of the existence of the dialectic is at the closest point between the subject and the object; It is based on the relationship between the *being quality of the object* and the *basic possibility of understanding*. The thought is revealed in the connection between the existential quality of the object and the act of knowing the subject that turns to it, is the field of the revelation of the dialectic.

Engels made the most basic explanation of the dialect when he said that it should not be “building the laws of dialectics into nature, but of discovering them in it and evolving them from it” (Engels 2010a, 12). Saying not building “into nature” indicates the quality of nature, saying “discovering them in it” indicates the function of the mind (sciences), and “evolving them from it” indicates the role of reasoning.

However, what is discovered? From the point of view of the logic of discovery, is it evidence of nature or proof of thought that is discovered? If the question is applied to the dialectic: What is discovered in the context of dialectics in nature—is it the principles of nature in itself or is it the process by which reason confirms itself in natural processes? The answer may be sought in the context of “the dialectical character of natural processes” (Engels 2010b, 340) imposing itself on the mind. Engels assumes that the dialectic of nature is accompanied by the dialectical progress of reasoning. “It is, therefore, from the history of nature and human society

that the laws of dialectics are abstracted. For they are nothing but the most general laws of these two stages of historical development, as well as of thought itself” (Ibid., 356). That a principle is historical means that it is neither the pure concept of reason alone nor the necessary law of nature alone; on the contrary, it means that it is acquired through the accumulation of human actions.

The development of a concept, or of a conceptual relation (positive and negative, cause and effect, substance and accident) in the history of thought, is related to its development in the mind of the individual dialectician, just as the development of an organism in palaeontology is related to its development in embryology (or rather in history and in the single embryo) (Engels, 2010b, 502).

So, the influence of the subject in the development of the concept together with the structure of the object—or the social history of thought—determines the dialectic as an objective method of reasoning. “Natural science, like philosophy, has hitherto entirely neglected the influence of men’s activity on their thought; both know only nature on the one hand and thought on the other” (Engels 2010b, 510). Whereas,

It is precisely the *alteration of nature by men*, not solely nature as such, which is the most essential and immediate basis of human thought, and it is in the measure that man has learned to change nature that his intelligence has increased. (Engels 2010b, 511)

For example, at the end of historical experiences, “by the activity of *human beings*, the idea of *causality* becomes established, the idea that one motion is the *cause* of another” (Ibid., 510). Such generalizations turn into effective principles in every act of knowing. In the case, “the principles are not the starting-point of the investigation, but its final result; they are not applied to nature and human history, but abstracted from them; it is not nature and the realm of man which conform to these principles.” (Engels 2010a, 34). Since principles are conceptual abstractions of the internal relationship of the existent or the practice of the object, the dialectical law is not something applied to nature. This is a consciousness about the bond of being of the existent.

While knowledge of the outer world, that is, laws of nature, is reapplied to the world as knowledge of technology, there is no similar application area for dialectical laws. Only the basic knowledge of the bonds of existence (that is, the principle) can be the axiom for any knowledge to be established thereafter; for example, the axiom of unity of contradictions does

not affect sensory perception, but the mind will act under the influence of consciousness in the act of understanding this perception.<sup>14</sup> If the nature of the object is dialectical, although the epistemological reflection theory explains the question of how the subject perceives this movement and transforms it into the language of knowledge<sup>15</sup>, Marx's analyses in *Capital* are extremely important.

Marx's explanation of "use value" by associating it with "amount of labour" is a grounding based on the quality-quantity relationship of the dialectic.

A use value, or useful article, therefore, has value only because human labour in the abstract has been embodied or materialised in it. How, then, is the magnitude of this value to be measured? Plainly, by the quantity of the value-creating substance, the labour, contained in the article. The quantity of labour, however, is measured by its duration, and labour time in its turn finds its standard in weeks, days, and hours. (Marx 2010a, 48)

"Labour contained in a commodity" is an attribute in terms of "use value"; It is quantity in terms of "value" (Marx 2010a, 55). Because it does not look from these principles, classical political economy does not make a distinction "between labour, as it appears in the value of a product and the same labour, as it appears in the use value of that product" (Ibid., 91; n1). In Marx's ontology of "commodities", dialectical reasoning provides the possibility of both explaining the internal relation of the economic object (object practice) in the context of the socio-historical one, and grounding the categories through principles. "The first negation of individual private property" "produces capitalist private property." "But capitalist production begets, with the inexorability of a law of Nature, its own negation. It is the negation of negation"; that is, "co-operation and the possession in common of the land and of the means of production" (Ibid., 751). Obviously, the principles do not apply to the object of thought (here, social history); on the contrary, as the phenomenon is unwrapped, the internal relations

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14. Dialectics is a method of thinking and interpreting the world of both nature and society.

It is a way of looking at the universe, which sets out from the axiom that everything is in a constant state of change and flux. But not only that. Dialectics explains that change and motion involve contradiction and can only take place through contradictions [. . .] Dialectics is the logic of contradiction (Woods & Grant 2003, 39–40).

15. Just as man's knowledge reflects nature (i.e., developing matter), which exists independently of him, so man's social knowledge (i.e., his various views and doctrines—philosophical, religious, political and so forth) reflects the economic system of society (Lenin, 1977b 25).

(object practice) it contains are transformed into concepts of thought. In this respect, Dühring's proposition that "Marx has no other way [. . .] except by citing the Hegelian negation of the negation" (Engels 2010a, 120) is wrong. Because Marx does not define principles as reflections of autonomous operations. On the contrary, he explains on the basis of these principles the interaction of the numerous relations he discovers in his object. While these principles ensure the consistency of the historical explanation, the "dialectically reached" conclusions are supported by "historical evidence" (Engels 2010h, 381).

While explaining the "the kernel of the dialectical conception of nature", Engels points out the tension between the contradictory being of nature ("antagonisms and distinctions") and the faculty of thinking that fixes its structure, saying that "their imagined rigidity and absolute validity have been introduced into nature only by our reflective minds" (Engels 2010a, 14). Concepts are abstractions of fact relations. Dialectical reasoning makes this abstraction through the observation of the internal relations of the object. Engels' dialectic makes this observation not directly on the elements of nature, but through the data of natural sciences. Therefore, while reasoning establishes the knowledge of the internal relations of the object, what it does is associate the knowledge of the object with the dialectical laws. Dialectical reasoning is realized "If we deduce world schematise not from our minds, but only through our minds from the real world, if we deduce principles of being from what is" (Ibid., 35). The fact that the act of knowing acquires the knowledge of the internal relations of the object (that is, object practice) by turning to the object outside itself also means the establishment of object consciousness (or, of the thesis that the relations of the object are dialectical). Thus, reaching object consciousness through the dialectical method means (i.e., reaching the stage of grasping the knowledge of the object's internal relations in the context of its existence relation) that as consciousness unwraps its object, it enswathes itself by that wraps of the object. From this point of view, objective consciousness means not constructing consciousness in the object, but transforming consciousness itself through object bonds. This means that dialectical reasoning means bringing the essence (structural relation) of the existent to rational form. The "rational kernel" of the dialectic and the "standing on its head" issue in Marx's *Capital* is the most symbolic equivalent of this subject.

Engels(1859), his article *Karl Marx, A Contribution to the Critique of Political Economy*, after saying that Hegel's "conception of history was the direct

theoretical precondition of the new materialist Outlook” (Engels 2010g, 474), he explains Marx's intervention in Hegel:<sup>16</sup>

Marx was and is the only one who could undertake the work of extracting from the Hegelian logic the kernel containing Hegel's real discoveries in this field, and of establishing the dialectical method, divested of its idealist wrappings, in the simple form in which it becomes the only correct mode of the development of thought. (Engels 2010g, 474)

Marx in *Capital I* (1867) “Afterword to the Second German Edition” (1873) he repeats Engels' assessment, simplifying it.<sup>17</sup> Due to “the mystification which dialectic suffers in Hegel's hands” dialectic “with him it is standing on its head. It must be turned right side up again, if you would discover the rational kernel within the mystical shell” (Marx 2010a, 18). Here, the issue of “rational kernel” and “standing on its head” represents what kind of thinking method dialectic actually is, as well as the way Marx intervenes in Hegel. Clearly, the determination to purge the dialectic of its Hegelian mystical character and to emphasize the “rational essence” in it is a statement developed together by Engels and Marx. According to this, the subject who reaches the knowledge of the object bond (“rational kernel”) with the dialectical method while the gives objective content to his own consciousness, he rationalizes the general consciousness through historical contribution. “Marx reduces the common content shared by things and circumstances to the most general conceptual expression; hence his abstraction merely reproduces in conceptual form the content already inherent in things” (Engels 2010k, 193).

The structure of the existent and the faculty of reasoning to accompany the relationship contained in this structure is the ontological basis of the

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16. But in presenting Marx's results or ‘outlook’ Engels also likened his work substantively to Hegel's, saying that the great philosopher's epoch-making conception of history was the direct theoretical precondition of the new materialist outlook. Thus, he made Marx and his ‘new materialism’ the successor to Hegel's monumental achievements (Carver 2019, 237).

17. Marx clearly adopted Engels' determination. What should be seen, however, is the introduction to Marx's book, published under the same title, by Engels's article *Karl Marx, A Contribution to the Critique of Political Economy* (1859); it was written before *Capital I* (1867). However, Marx already has this assessment of Hegel. In the *Contribution to the Critique of Hegel's Philosophy of Law* (1844), Marx, in his book, referring to paragraph §272 of Hegel's *Philosophy of Right*, says that he mystifies the “Concept” and turns it into the rational essence of the State. “The state has to differentiate and define its activity not in accordance with its specific nature, but in accordance with the nature of the concept, which is the mystified movement of abstract thought” (Marx 2010b, 19).

subject-object relationship (of consciousness). But this ontology is realized by historical human actions, not by a hierarchy of concepts. The historical development of the human mind also confirms this: The immediate basis of human thought is the “*alteration of nature by men*” interaction with nature has increased their mental skills (Engels 2010b, 511).

The conscious historical relationship of subject-object always follows this premise. If this assumption is valid, Lukács (1971, 3) judges Engels unfairly: “But he does not even mention the most vital interaction, namely the dialectical relation between subject and object in the historical process, let alone give it the prominence it deserves.” Reading the dialectic in the context of Hegel’s explanations, Lukács attributes Hegel’s shortcomings to Engels. However, Althusser sees this deficiency as necessary for Marxism to be a “historical science.” According to Althusser (2001, 122) “Lukacs who are almost ashamed of the Dialectics of Nature”, thinks wrongly; “the dialectic is by no means peculiar to History.” Althusser who sees in *Lenin and Philosophy* Marx’s *Capital* as “a process without a subject”, like Hegel’s Logic (2001, 121) says that:

[. . .] the Marxist tradition was quite correct to return to the thesis of the Dialectics of Nature, which has the polemical meaning that history is a process without a subject, that the dialectic at work in history is not the work of any Subject whatsoever.

However, like *Capital*, *Dialectics of Nature* takes the relationship with nature as the existential basis of man: “man also reacts on nature, changing it and creating new conditions of existence for himself” (Engels 2010b, 511). Just as there can be no consciousness without an object, there can be no history without a subject. Engels’ dialectical theory is based on the abstraction of the relation of consciousness—the subject in the act of knowing—to its object, that is, the historical process that started with the first movement of the hand reaching out to transform nature. Therefore, thought always begins with facts; the dialectical method is the conceptual observation of transitions between phenomena.

The inversion of Hegel’s dialectics is based on the assumption that it is the ‘self-development of the idea’ of which, therefore, the dialectic of facts is only the image, while the dialectic in our minds is but the reflection of the actual development taking place in the natural world and human history in obedience to dialectical forms. (Engels 2010i, 287)

In Engels’ theory, dialectical reasoning is not directly about things but is an argument based on the data of the sciences about things.

If we deduce world schematise not from our minds, but only through our minds from the real world, if we deduce principles of being from what is, we need no philosophy for this purpose, but positive knowledge of the world and of what happens in it; and what this yield is also not philosophy, but positive science. (Engels 2010a, 35)

Engels justifies his dialectical theory by correlating the data of the natural sciences. The need to theoretically relate the mass of “purely empirical discoveries” in the natural sciences requires a method of thinking in line with the “the dialectical character of natural processes” (Ibid., 13). The judgment that the phenomenon is dialectical is an inference that can only be reached with dialectical thinking.

It is possible to arrive at this recognition because the accumulating facts of natural science compel us to do so; but one arrives at it more easily if one approaches the dialectical character of these facts equipped with an understanding of the laws of dialectical thought. (Engels 2010a, 14)

From this point of view, the statement that “only dialectics could be of assistance to natural science” because of the intensity of theoretical problems, Engels calls dialectics a “science” separate from natural sciences. Accordingly, dialectic, as the subject’s object intention and the object’s transformation into consciousness, is finally defined as a type of knowledge. “Thus dialectics reduced itself to the science of the general laws of motion, both of the external world and of human thinking.” The definition of “science” here should be limited to the theoretical knowledge system.

While the natural sciences explain the operation procedure of things, the argument that the existent is dialectical belongs not to the natural sciences, but to a philosophical reasoning that proceeds with logical abstractions of their relations. This is what Hegel (1991, 93; § 48) calls “the dialectical movement of thinking;” understanding is “the dialectical movement of the concept” namely “the progressive determination of consciousness” (Hegel 2010, 144). But Hegel “By this dialectical movement, the universal representation reaches the point where it no longer needs the content of the image for its proof, but is proved in and for its own self, is, therefore, immediately valid” (Hegel 2010, 193; §415 Zusatz). The dialectic is a conceptual observation that grasps the internal relations of the object in the context of being (the particular with the universal), but in Engels’ dialectic, as Hegel assumed, the concepts never exceed their ties and context. Engels’ dialectical reasoning does not transcend the realm of the

senses, as Kant determined, but depends not on the concept, as he determined, but on the internal relations of its object. For this reason, Engels' dialectic is a method of philosophical reasoning that brings the boundaries of objects to the conceptual stage. The being knowledge of the object is not completed at the boundary of the object's own existence, but in its connections. The knowledge of being is not the knowledge of the natural sciences, but of philosophy—of dialectical materialist ontology in terms of materialist philosophy. From this point of view, Engels' suggestion of eliminating philosophy by teaching dialectics to scientists (Engels 2010a, 35) seems unacceptable, as it would technicalize the subject-object relationship as well as the essence of dialectical reasoning being a philosophical orientation. "Dialectical philosophy" is a "reflection of this process in the thinking brain" (Engels 2010c, 360). The fact that scientists learn dialectics does not make philosophy superfluous. Moreover, the dialectical method is not a procedure applied by the researcher in an object search. Dialectical reasoning is a philosophical process of knowing that advances knowledge about the object of science from internal relations, which are the data of sciences, to the context of existence. Conceptual observation, which takes precise knowledge as a premise, confirms that dialectic is a philosophical knowledge since Plato and Aristotle.

### **Subjective-Objective Dialectic: Dialectical Distinction or Object Distinction?**

There is a paragraph in Engels' *Dialectics of Nature* that includes the dialectical distinction between the paragraphs that remain unprocessed.

Dialectics, so-called *objective* dialectics, prevails throughout nature, and so-called subjective dialectics, dialectical thought, is only the reflection of the motion through opposites which asserts itself everywhere in nature, and which by the continual conflict of the opposites and their final passage into one another, or into higher forms, determines the life of nature. (Engels 2010b, 492)

This distinction has an assumption that can falsify my suggestion that there is only one dialectic, which I am trying to ground in this article is inaccurate. Still, if we see from the standpoint of the totality of explanations in the *Dialectic of Nature*, it is assumed that this distinction is not related to dialectics, but to the object of dialectical reasoning. "Objective dialectic" refers to the form the dialectic takes when applied to the objects of nature, and "subjective dialectic" refers to the form the dialectic takes when applied to the concepts and problems of thought. When dialectics is



defined because of the object to which it is applied, it appears as if there are types of dialectic (for example, the dialectic of nature, the dialectic of history, etc.).

“Subjective dialectic” is the mode of reasoning that takes place in the object intention of the act of thinking. This is the method of reasoning with concepts and problems of thinking. The most basic feature of this orientation is the realization of the conceptual movement of reasoning that accompanies the internal relations of the object. For this reason,

[. . .] dialectical logic, in contrast to the old, merely formal logic, is not, like the latter, content with enumerating the forms of motion of thought, i.e., the various forms of judgment and conclusion, and placing them side by side without any connection. On the contrary, it derives these forms out of one another, it makes one subordinate to another instead of putting them on an equal level, it develops the higher forms out of the lower. (Engels 2010b, 503)

The principles of reasoning and its explanations are based on the principle of the existence of its object and its law of motion, although the principles on which the explanations are based seem to belong to pure logic. The succession of concepts is a derivation from the principle of ontological interdependence—the latter derives from the former; the former cannot resist the conditions that will derive the latter; takes its explanation from the latter. It is what is summarized as “necessity” in dialectical thought discovered by Hegel (Ibid., 502). It represents the interdependence of relations and the derivation of concepts from each other. Therefore, “On the other hand, dialectical thought—precisely because it presupposes investigation of the nature of concepts themselves—is only possible for man...” (Ibid., 503). However, this does not mean that the reasoning starts from the concept; the dialectic of Engels as well as of Marx is based on his data on the phenomenon. Thus, although there are intersections with Hegel in Engels's dialectical theory, Engels' dialectical reasoning is clearly related to the “only with the dialectical method used by Marx” (Engels 2010a, 114).

The dialectical form of thinking is not just an argumentation operating on its own with logical principles; it is a method of thinking that reveals the internal relations of the object in the context of existence. Since there is no consciousness without an object, there cannot be an analysis of consciousness without an object. Moreover, the path that reasoning draws for itself (conceptual movement) follows the traces of the object's own internal relations. Conceptual exposition in thought about the object is the *ob-*

*ject relation* abstracted (or the *practice of the object* transformed into a concept). For, as a method of thinking, “Dialectics, on the other hand, comprehends things and their representations, ideas, in their essential connection, concatenation, motion, origin, and ending” (Engels 2010a, 23). Nature, but logical abstractions based on it. So, dialectical reasoning grasps what is there with what is in itself. If “the motion itself is a contradiction” (Ibid., 111); existing is in contradiction and unity (Ibid., 23) and the apprehension of things in opposition is “the kernel of the dialectical conception of nature” (Ibid., 14). Repeating Hegel’s assumption that there is nothing in the universe that exhibits “abstract ‘either-or’” (Hegel 1991, 187; §119 Addition 2), Engels says that the as “method of thought” dialectics does this. “Dialectics, [. . .] besides ‘either-or’ recognises also in the right place ‘both this-and that’ and reconciles the opposites” (Engels 2010b, 493).

Accordingly, the act of reasoning, which reflects the knowledge of the internal relations of the object or the practice of the object in conceptual connections, is the method of the subject. What makes this method objective is the nature of its object-oriented style. The most general steps of this orientation are: (1) the object (knowledge of the practical fact or conceptual problem) is returned from its form to its own inner being (the rational core that governs relations). (2) The knowledge of internal relations (object practice or concept content) is gradually removed to the context of being that gives the object the reality of existence. (3) In reasoning, the unity of context and content is established as abstract conceptual knowledge. In this orientation, while the object is freed from its wrappings, the wrappings hold onto the language of consciousness. Accordingly, the subjective act of knowing becomes objectified as it follows the object bonds. What then does Engels call objective dialectics?

It is clear that the term “dialectic” refers to a process operating in nature, such as “dialectic of nature” referred to Engels’ theory, “dialectic in nature” expressed by Engels himself, “dialectical understanding of nature” or “dialectical law”. “Dialectics, so-called objective dialectics, prevails throughout nature” (Engels 2010b, 492). Even though the explanations strengthen the assumption that “objective dialectics” is a genre, they are not convincing enough. It is only the special quality of the object (its existence beyond consciousness) of dialectical reasoning that is emphasized by “objective dialectic”. The fact that the object of knowledge to which the method is applied is nature does not make it a dialectic of nature. What makes the reasoning towards the empirical object dialectical is its faculty

to accompany movement and transformation and explain the transitions between phenomena based on its own principles. The faculty to accompany the object in the act of thinking seems to have led to the assumption that the object of thinking is like the logic of thought. Thus, the so-called “objective dialectic” is nothing more than the appearance of the dialectic that emerges in the process of cognition of objects outside of consciousness.<sup>18</sup> In this reasoning, consciousness reaches its object by going out of itself; grasps its object as a being outside and alien to itself. The object consciousness formed at the end of the reasoning is the expression of the being structure of the object. However, even if the evidence is external, the principles that organize the evidence are the mind's own concepts. Therefore, dialectics is still a method of thinking

The dialectical practice called “objective dialectic” emerges when reasoning is directed towards movement and its transformations. The subject of “dialectics of natural science” is “matter in motion.” “The different forms and varieties of matter itself can likewise only be known through motion, only in this are the properties of bodies exhibited” (Engels 2010b, 527). Knowledge about “matter” and its “movement” is not a speculative assumption; originates from the natural sciences. What Engels called “dialectic in nature” is based on the association of the data of natural sciences with a dialectical understanding, not elements of nature. The process of gaining the appearance of the movement can only be revealed with “dialectical laws of motion” (Engels 2010a, 11). According to Engels' assumption, the facts collected by the natural sciences are already dialectical; because nature already works according to “dialectical laws” (principles such as contradiction, negation, and unity of opposites). In this case, “objective dialectic” refers to the “dialectic of phenomena”, that is, the “the dialectical character of natural processes” (Ibid., 13) in which objects belonging to the natural sciences are involved. For this reason, it should be achieved by “building the laws of dialectics into nature, but of discovering them in it and evolving them from it” (Ibid., 12). The expression “exploring in na-

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18. “There is a match between the so-called dialectic of nature and that of thinking because thought has no-dependent existence from human beings who act, cognize, perceive, and think. These two dialectics coincide because human thinking is a particular mode of human action; human action is tool in meaning that it conforms to forms mediated and object-oriented of objectivity within which human activity is actualized while all objects, even if they are not objects of immediate bodily action (say, galaxies that are hundreds of thousands of light year afar), bear the mark of human activity.” (Azeri, 2022, 93)

ture” clearly indicates the intention of thought, which is a mental act, towards nature. In this case, the expressions “objective dialectic” or “dialectic in nature” should limit the practice of the object to the act of knowing that transforms it into consciousness by basing it on the data of sciences. In this case, the assumption of “dialectical law” does not replace the law of nature; because it becomes clear that the principles of the explanation, not the functioning of the elements of nature, are.

If this interpretation is valid, Engels’s dialectical theory goes beyond Hegel’s dialectical theory, both in content and in operation.

Nature is the proof of dialectics, and it must be said for modern science that it has furnished this proof with very rich materials increasing daily, and thus has shown that, in the last resort, nature works dialectically and not metaphysically. (Engels 2010a, 23–24)

However, natural scientists make explanations based on “used metaphysical categories.” However, “In nature nothing takes place in isolation.” “Everything affects and is affected by every other thing”; since natural scientists do not take into account “this manifold motion and interaction”, they have a poor understanding of nature. (Engels 2010b, 459). What needs to be done is to associate and abstract the data of the sciences and conceptualize the knowledge as the knowledge of the wholistic (ontological where movement takes place, from atomic relations to history and consciousness) structure at a higher level. The dialectical concept in materialist ontology is the mind’s transformation of its own order into the order of its object.

## Conclusion

Although Engels seems to be observing the empirical external world, his interest is in the natural sciences’ data on the elements of the external world. While grounding his world design by associating the data of natural sciences, he uses dialectic as a method of reasoning. Whether the object of thinking is nature or history does not determine the type of dialectic. Elements of nature as the external world are explained by empirical laws, which are the discoveries of natural sciences. The “dialectic of nature” (its principles), which is not an empirical law of nature, is not a procedure for the study of the external world. This approach does not remove the “dialectic of nature” claim, but changes its location it. Above all, the concept of “nature” is an ontological concept, not an empirical one. For this reason,

“nature’s dialectic” can only have a counterpart when it explains the motion of nature as a moment of an ontological system. However, this name does not lead to another dialectic autonomous from the dialectic as a method of reasoning, but only emphasizes the structure of the object that is independent of consciousness.

This article takes as the application of dialectical reasoning the act of thinking that moves from the knowledge of the inner connections of the object of consciousness—or the knowledge of its inner relations as object practice—to the context of being. From this point of view, Engels’s expression of exploring the dialectic in nature and evolving the relation (principle as basic knowledge) in nature should not be seen as reducing nature to consciousness, but as raising consciousness to object connections. While thought (or the conceptual expression of object practice) as the subject’s relationship with the object expands through the object, the object opens in thought and justifies it. The expansion of knowledge, then, means that thought expands the conceptual abstractions of object practice (its internal relations). Dialectical explains the object of reasoning in a developmental process from its internal relations to its external interactions. Thus, to grasp dialectically means that consciousness transforms its own order of knowledge into the order of the existence of its object. To understand dialectically, on the other hand, is based on grasping the thing in terms of existence with its oppositions, starting from its internal connections. Contrary to arguments that reduce appearance to consciousness, dialectical argumentation raises the inferences of thought from the inner workings of the object to its context. Thus, Engels’ problem of “dialectics in nature” is fundamentally concerned with the problem of how to relate knowledge about the objects of the natural sciences—or, how to advance knowledge dialectically. From this point of view, what is emphasized with the phrase “dialectic in nature” is not the formation processes of empirical natural phenomena (because this is the work of the relevant natural sciences), but the explanation on the functioning of the natural order in materialist ontology, which is the abstraction of the correlate of the data of natural sciences. This means that in the ontological design, dialectics assumes the explanatory function of the law of nature in the physical world. This determination is based on the dialectical method determination in Marx’s Preface to *Capital* (2010a, 19) as the “inquiry” of the “internal relations” of the object and the “presentation” of knowledge. The transitivity of the moments in the materialist ontology can only be achieved through a method

of thinking in terms of intention to internal connections. The most critical point in this process is to solve the transitivity problem.

## REFERENCES

- Ahlberg, Renee. 1962. "The Forgotten Philosopher: Abraham Deborin." In *Revisionism: Essays in the History of Marxist Ideas*, edited by Leopold Labedz. New York: Praeger.
- Althusser, Louis. 2001. *Lenin and Philosophy and other Essays*. Translated By Ben Brewster. New York: Monthly Review Press.
- Anderson, Perry. 1976. *Considerations on Western Marxism*. London: NLB.
- Aristotle. 1991a. "Metaphysic." In *Complete Works (Aristotle)* Vol II, translated by W. D. Ross, edited by Jonathan Barnes. Princeton: Princeton University Press.
- . 1991b. "Categories." In *Complete Works (Aristotle)*, Vol. I, translated by J. L. Ackrill, edited by Jonathan Barnes. Princeton: Princeton University Press.
- . 1991c. "Topics." In *Complete Works (Aristotle)*, Vol. I, translated by J. L. Ackrill, edited by Jonathan Barnes. Princeton: Princeton University Press.
- . 1991d. "Posterior Analytics." In *Complete Works (Aristotle)*, Vol. I, translated by J. L. Ackrill, edited by Jonathan Barnes. Princeton: Princeton University Press.
- . 1991e. "Rhetoric." In *Complete Works (Aristotle)* Vol II, translated by W. D. Ross, edited by Jonathan Barnes. Princeton: Princeton University Press.
- . 1991f. "Prior Analytics." In *Complete Works (Aristotle)* Vol II, translated by A. J. Jenkinson, edited by Jonathan Barnes. Princeton: Princeton University Press.
- Azeri, Siyaveş. 2022. "Engels' Dialectics of—Human Activity in—Nature." *Marxism & Sciences* 1(1): 69–97.
- Blackledge, Paul. 2019. *Frederick Engels and Modern Social and Political Theory*. Albany: Suny Press.
- Bukharin, Nikolay. 1921. "Historical Materialism: A System of Sociology (Chapter 3: "Dialectical Materialism)." *Marxist Internet Archive*.  
[www.marxists.org/archive/bukharin](http://www.marxists.org/archive/bukharin)
- Carver, Terrell. 1990. *Friedrich Engels His Life and Thought*. New York: Palgrave Macmillan
- Delice, Engin. 2022. "Engels'in Diyalektik Teorisi: 'Doğann Diyalektiği' mi, Düşüncenin Diyalektiği mi?" *Praksis* 54: 253–298.
- Einstein, Albert. 2015. "Opinion on Engels' "Dialectics of Nature." In *The Collected Papers of Albert Einstein*, vol 14. Princeton University Press.  
<https://einsteinpapers.press.princeton.edu/vol14-trans/295>
- Engels, Frederick. 2010a. "Anti-Dühring: Herr Eugen Dühring's Revolution in Science." In *Marx & Engels Collected Works* vol 25, translated by E. Burns. London: Lawrence & Wishart.
- . 2010b. "Dialectics of Nature." In *Marx & Engels Collected Works*, vol 25. translated by Clemens Dutt. London: Lawrence & Wishart.
- . 2010c. "Ludwig Feuerbach and the End of Classical German Philosophy." In *Marx & Engels Collected Works*, vol 26. London: Lawrence & Wishart.
- . 2010d. "From Engels' Preparatory Writings for *Anti-Dühring*." In *Marx & Engels Collected Works*, vol 25, translated by Emile Burns. London: Lawrence & Wishart.,
- . 2010e. "Schelling and Revelation." In *Marx & Engels Collected Works*, vol 2, translated by B. Ruhemann. London: Lawrence & Wishart.
- . 2010f. "Engels to Marx. 30 May 1873." In *Marx & Engels Collected Works*, vol 44, translated by R. Livingstone. London: Lawrence & Wishart.

- . 2010g. “Karl Marx, A Contribution to the Critique of Political Economy.” In *Marx & Engels, Collected Works*, vol 16, translated by S. Ryazanskaya. London: Lawrence & Wishart.
- . 2010h. “Engels to Marx. Manchester, 16 June 1867.” In *Marx & Engels Collected Works*, vol 42, translated by Christopher Upward. London: Lawrence & Wishart.
- . 2010i. “Engels to Conrad Schmidt. London. 1 November.” In *Marx & Engels, Collected Works*, vol 49, translated by Peter and Betty Ross. London: Lawrence & Wishart.
- . 2010k. “Engels to Kautsky. London, 20 September 1884.” In *Marx & Engels, Collected Works*, vol 47, translated by Peter and Betty Ross. London: Lawrence & Wishart.
- Gedik, Ali C. 2015. “Engel(s)iz Marksizm veya Marksizmde “İki Kültür” Problemine Dair Bir Müzik Bilimcinin Düşünceleri [Marxism without Engels and a Musicologist’s Reflections on the Problem of ‘Two Cultures’ in Marxism].” *Bilim Üzerine Marksist Tartışmalar Marksizm ve İki Kültür*, 95–138, edited by A.C. Gedik. İstanbul: Bilim ve Gelecek.
- . 2022. “Back to Engels: A Long Century of the First Fiddle without the Second.” *Marxism & Science* 1(1): xiii–xxxix.
- Hegel G.F.W. 1991. *The Encyclopaedia Logic*. Translated by T.F. Geraets, W.A. Suchting, H.S. Harris. Cambridge: Hackett Publishing Company.
- . 1998. *Hegel’s Science of Logic*. Translated by A.V. Miller. New York: Humanity Books.
- . 2004. *Philosophy of Nature*. Translated by A.V. Miller. Oxford: Oxford University Press
- . 2010. *Hegel’s Philosophy of Mind*. Translated by A.V. Miller. Oxford: Oxford University Press.
- Kangal, Kaan. 2019. “Engels’ Intentions in Dialectics of Nature.” *Science & Society* 83(2): 215–243.
- Kant, Immanuel. 1998. *Critique of Pure Reason*. Translated by Paul Guyer. Cambridge: Cambridge University Press.
- Kautsky, Karl. 1899. *Frederick Engels His Life, His Work and His Writings*. Translated by M. V. Simons. Chicago: Charles H. Kerr & Company.
- Lenin, Vladimir Ilyich. (1909) 1977a. “Materialism and Empirio-criticism.” In *Collected Works*, vol 14, translated by A. Fineberg. Moscow: Progress Publishers.
- . (1913) 1977b. “The Three Sources and Three Component Parts of Marxism.” In *Collected Works*, vol 19. Moscow: Progress Publishers.
- Lukács, Georg. 1971. *History and Class Consciousness Studies in Marxist Dialectics*. Translated by R. Livinstone. Cambridge: The Mit Press.
- Marcuse, Herbert. 1969. *Soviet Marxism a Critical Analysis*. New York: Columbia University Press.
- Marx, Karl. 2010a. “Capital I.” In *Marx & Engels Collected Works*, vol 35, translated by S. Moore & E. Aveling. London: Lawrence & Wishart.
- . 2010b. “Contribution to the Critique of Hegel’s Philosophy of Law.” In *Marx & Engels Collected Works*, vol 3, translated by M. Miligan, B. Ruhemann. London: Lawrence & Wishart.
- Plekhanov, G.V. 1974. “For the Sixtieth Anniversary of Hegel’s Death.” In *Selected Philosophical Works*, vol 1, translated by V. Yeryomin. Moscow: Progress Publishers.
- Schmidt, Alfred. (1962) 1971. *The Concept of Nature in Marx*. Translated by Ben Fowkes. London: NLB.
- Woods, Alan & Ted Grant. 2003. *Reason in Revolt Dialectical Philosophy and Modern Science*, vol I. New York: Algora Publishing.