

Heidegger's reading of the concept of *time* in *Physics IV*

La lectura heideggeriana del concepto de *tiempo* en *Física IV*

DOI: 10.32870/sincronia.v30.n89.e0312

Andrés Budeguer

National University of Tucumán.

(PERU)

CE: andresbudeguer96@gmail.com <https://orcid.org/0009-0006-6047-8809>This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0](https://creativecommons.org/licenses/by-nc/4.0/) International Licence.

Received: 14/08/2025 Reviewed: 23/10/2025 Approved: 24/10/2025

How to cite this article (APA):**In paragraph:**

(Budeguer, 2026, p. _).

In reference list:Budeguer, A. (2026). The Heideggerian reading of the concept of *time* in *Physics IV*. *Sincronía Journal*. 30(89). 68-91

DOI: 10.32870/sincronia.v30.n89.e0312

Abstract.

The aim of this paper is to examine how Heidegger interprets and critiques the Aristotelian concept of time as set out in *Physics IV*, and to ask in what sense this reading transforms, extends or surpasses the conception of time as 'the number of movement according to what is before and after' (219b 1–2). The intention is to clarify how the temporality of Dasein is linked to the Aristotelian definition and to the philosophical tradition it inaugurates. The work is divided into three sections: 1) We reconstruct the essential points of *Physics IV* relating to the nature of time; 2) we analyse Heidegger's reinterpretation of Aristotelian time in *Being and Time*, where he introduces the distinction between original temporality and the vulgar concept of time; 3) We examine the *Natorp Report* in order to show that Heidegger's reflection on Aristotle does not arise *ex nihilo*, but is part of a process of maturation. We propose that, despite his criticism of the 'vulgar' conception of time, Heidegger retains fundamental elements of the Aristotelian definition, reinterpreting them in the existential key of the temporality of Dasein.

Keywords: Aristotle. Heidegger. Time. Dasein.**Resumen:**

El presente trabajo tiene por objetivo examinar de qué manera Heidegger interpreta y critica el concepto aristotélico de tiempo expuesto en *Física IV*, y preguntarse en qué sentido esta lectura transforma, prolonga o supera la concepción del tiempo como “número del movimiento según lo anterior y lo posterior” (219b 1 – 2). La

intención es aclarar cómo la temporalidad del Dasein se vincula con la definición aristotélica y con la tradición filosófica que ella inaugura. El trabajo se desarrolla en tres secciones: 1) Reconstruimos los puntos esenciales de *Física IV* relativos a la naturaleza del tiempo; 2) analizamos la relectura heideggeriana del tiempo aristotélico en *Ser y tiempo*, donde se introduce la distinción entre temporalidad originaria y concepto vulgar de tiempo; 3) examinamos el *Informe Natorp* a fin de mostrar que la reflexión heideggeriana sobre Aristóteles no surge *ex nihilo*, sino que forma parte de un proceso de maduración. Proponemos que, a pesar de la crítica a la concepción “vulgar” del tiempo, Heidegger conserva elementos fundamentales de la definición aristotélica, reinterpretándolos en la clave existencial de la temporalidad del Dasein.

Palabras clave: Aristóteles. Heidegger. Tiempo. Dasein.

The Aristotelian concept of time in *Physics IV*

Time is one of the major themes in Aristotelian *Physics*¹, along with concepts such as motion, place, infinity, among others². In Book IV (217b 29), Aristotle sets out in advance, as is his custom in his expositions, the issues he will address. Thus, in the inquiry into time, it is necessary to address two distinct issues: the question of its existence, on the one hand, and that of its essence, on the other. The first is addressed in the following section, 217b 32 – 218a 30; the second, in 218a 30 – 218b 9. It is striking among interpreters (*e.g.* Vigo, 2012, p. 233; de Echandía, 2014, p. 138) that Aristotle states that he will refer to the existence of time "by means of non-technical arguments" (διὰ τῶν ἔξωτερικῶν λόγων), as if there were another separate group of *technical* arguments to refer to the subject. For Vigo (2012, p. 233), these are arguments which, without being substantive, fulfil an important propaedeutic and dialectical function in our analysis of time.

From 217b 32 onwards, as we stated, Aristotle addresses the question of the existence of time. The philosopher believes that there are arguments that are sufficiently solid to consider that time does not exist in an absolute way (ὄλως), but only in a very relative and obscure way (μόλις καὶ ἀμυδρῶς). From this strange initial consideration, Aristotle prepares the reader for the presentation of three arguments whose objective will be to cast doubt on the real existence of time. Thus, when asked whether time is real, the Stagirite responds with a set of paradoxes intended to *demonstrate*³

¹ The Greek texts corresponding to Aristotle's *Physics* were extracted, in each case, from the Oxford edition prepared by W.D. Ross (1936). We follow the Spanish version by Vigo (2012).

² In the previous chapters, Aristotle addresses the physical study of place (IV, 1–5) and emptiness (IV, 6–9), devoting the last four chapters of Book IV to the question of time (IV, 10–14).

³ We use the term in a broad sense, not in a strict or logical sense.

that this is not the case. It is worth remembering that the Greek term παράδοξος, a compound adjective formed by the preposition παρά, means, in its etymology, *surprising* (CGL: 1065).

According to Sorabji (1983, p. 7), Aristotelian paradoxes and their variants have stimulated, over the centuries, the invention of novel theories about the nature of time. Indeed, much of the discussion in late antiquity and part of the Middle Ages sought to answer these questions posed by Aristotle (Ferrater, 1999, p. 3496). Let us analyse the three Aristotelian paradoxes. The first is the so-called "Argument from the unreality of the past and future" (Vigo, 2021, p. 234), which comprises passages 217b 33 – 218a 3. Aristotle states the following:

In effect, 1) one of its parts has existed and no longer exists, and the other must exist and does not yet exist. And infinite time, like all limited time that is always taken into consideration, is certainly composed of such parts. But it would seem impossible for that which is composed of non-existent parts [past and future] to participate in existence⁴.

This is an argument whose structure is relatively simple, although it is based on a fundamental ontological assumption among the Greeks, namely: it is not possible, therefore, to predicate 'is' or 'exists' with reference to the realms of the past and the future, but only to the present time. Time is composed of two parts: 1) the past and 2) the future. If neither part of the whole exists, we can hardly claim that the whole – time – exists. In the words of Vidal Arenas: "that which is composed of non-existent parts can hardly be considered as something that participates in being" (2015: 323). The future does not yet exist, and the past has ceased to exist. In view of this situation, which is evident to an ontology such as the Greek one, it would be suspicious, to say the least, to speak of *the existence of time*. The future and the past share the characteristic of *non-existence in the present time* – otherwise, it would not make sense to refer to them, in this context, as past and future.

This first argument is accompanied, in turn, by a supplementary demonstration that Vigo calls "Argument based on the whole-parts relationship" (281a 3–8). The present time or *now* (νῦν) is not, in Aristotle's view, a part of time, but a limit of it. This supplementary argument is dedicated precisely

⁴ The passage has been extensively commented on by Heidegger (*e.g.* Heidegger, 2001), especially in relation to the common Greek understanding of being. Aristotle's argument seems to have distant Eleatic origins, as Parmenides was the first to question the application of *being* to the past and the future. In Plato, this conception is maintained. Aristotle, in short, introduces no originality on this point. Regarding the uses of the verb to be (εἶμι) in the Greek language, the most comprehensive study remains that of C. Kahn (1973).

to highlighting this consideration – a consequence, in turn, of the first paradox already mentioned *above*. We will transcribe the argument *in full*:

Furthermore, 2) of everything that is divisible into parts, if it exists, it is necessary that all the parts or some of them exist when it exists. However, in the case of time, some have existed and others must exist, and therefore none exist, even though it is divisible into parts. For the 'now' is not a part of time, since the part measures the whole, and it is necessary that the whole be composed of parts. Time, on the other hand, does not seem to be composed of 'nows' (218a 3 – 8).

In order to complement the developments of the first argument, Aristotle now explicitly introduces the notions of whole (ὅλον) and part (μέρος). To speak properly of the existence of something divisible into parts, at least two conditions must be met: the first is that all – or at least some – of the parts exist; the second is that these *existing parts* are the measure of the whole. The first condition, for the reasons already given *above*, is not met: past and future do not truly exist⁵. The second, on the other hand, presents serious difficulties. The only thing that truly belongs to time is the present or 'now' (νῦν), and this is not, for Aristotle, a part of the whole.

It is therefore clear from the above that the second condition is not satisfied by time either: the 'now' is not a lapse, but a mere instant in the temporal succession, and therefore cannot be considered a *measure of time*. In the words of Vidal Arenas:

[...] the only thing belonging to time of which we can predicate being is precisely that which we cannot consider as an extension and therefore as a part, namely the present – or in Aristotle's words, the 'now' (2015, p. 324).

Following Vigo's proposed division of these passages, it can be said that the two arguments mentioned above are, in fact, different ways of presenting the same thesis – the idea that the past and future do not truly exist. The third argument, the so-called 'dilemma of the identity and otherness of the now', no longer focuses on time as a totality composed of parts, but rather on the 'now'. The

⁵ This position has been accepted almost without exception in the field of philosophy. The idea that only the present exists is known in contemporary philosophy as *presentism*. The opposite thesis, namely the idea that the past and the future are as real as the present, is called *eternalism*. Recently, Gustavo Romero (2018, 2020) has contributed interesting arguments in favour of the latter position. Aristotle, being a child of his time, could never have taken it.

strategy of this argument is to highlight the difficulties we encounter when trying to characterise the 'now' or account for its *modus essendi*. In 218a 8, Aristotle states the following:

3) it is not easy to know whether the 'now', which clearly establishes the boundary between what has passed and what is to come, a) always remains one and the same, or b) if, [...] it is always a different 'now' (Vigo, 2012, p. 236).

It is worth considering both sides of Aristotle's dilemma carefully⁶, namely:

- I. The 'now' always remains one and the same. Aristotle provides two arguments against the thesis of the identity of the 'now'; i) everything that is divisible always requires more than one limit (*e.g.* a line in space needs *two* limits). Consequently, from the mere divisibility of time follows the impossibility of considering 'nows' to be identical. On the other hand, ii) if there is only one 'now', everything that happens in time would, by definition, be simultaneous. We would not be able to apply temporal relations of anteriority and posteriority in time.
- II. The 'now' is always different. We start, properly speaking, from the hypothesis of a successive multiplicity of 'nows' (218a 11). Since 'nows' do not coexist, we must recognise that they were destroyed at some point in the past, even though they existed *as presents* at another time. However, it is impossible for that 'now' to be destroyed in another or in itself. The central point of this argument is that 'nows' cannot maintain relations of inclusion with each other, so it is not true that they can be different from each other⁷.

The consequences of I are clearly much more radical than those of II. If the 'nows' were identical to each other, "then things that happened ten thousand years ago would exist

⁶ It is worth noting that this is the only argument, of the three discussed by Aristotle, that is later taken up again in the discussion of *Physics*, in IV 11, 219b 9–33. It is precisely for this reason that we have decided to analyse it carefully. On the other hand, the order in which the alternatives are dealt with is reversed, so that II (218a 11 – 21) is analysed first and I (218a 22 – 30) is left to the end.

⁷ Certainly, this argument – and all Aristotelian philosophy – is based on the assumption that time, like space and infinity, is a *continuum*. Between two different magnitudes there are always, in turn, infinite magnitudes – between two 'nows' there are, in turn, infinite 'nows'. We therefore subscribe to the words of A. Vigo (2007, p. 86): 'it can be said, without exaggeration, that Aristotelian physics is, as such, a physics of the continuum [...] Continuity essentially characterises both the processes of natural movement and space and time'. This was a great philosophical and scientific assumption that would not be questioned until the early 20th century with M. Planck and his hypothesis of energy quantisation.

simultaneously with those that are happening today, and nothing would be before or after anything else" (281a 28–30). From 218a 30 onwards, having already considered the difficulties related to the existence of time, Aristotle now turns to consider its nature. The treatment is brief and incomplete, but nevertheless constitutes the first 'history of time' of which we are aware. To this end, Aristotle examines the "traditional conceptions" (ἐκ τε τῶν παραδεδομένων, 218a 32), following a procedure typical of his philosophy – the same can be found, *e.g.*, in *Metaphysics I*).

- I. 'In fact, 1) some claim that time is the movement of the celestial sphere' (218a 34). Aristotle therefore rejects the identification of time with the movement of the sphere. The argument starts from the idea that, if we take only a portion of its movement, we could also speak of time, without this portion being a circumvolution as such. On the other hand, given that time is a continuum, this division could continue *ad infinitum*. Aristotle also introduces another hypothesis: "if there were multiple worlds, time could be, indifferently, the movement of any of them" (218b 3–5)⁸.
- II. "2) others, on the other hand, that it is the sphere itself" (218b 1). Aristotle believes that this position is too naive, so much so that it is not necessary to offer overly convincing arguments to refute or dismiss it as an option. It is a confusion that arises from thinking that, since all things happen *in time*, they all also happen in the sphere of the whole⁹.

The conclusion Aristotle reaches, after examining these arguments, is that time cannot be identified with movement ($T \neq M$); however, it is also true that there can be no time without movement. In Berti's words: "So the conclusion Aristotle reached is this: time is not movement, but there is no time without movement" (Berti, 2010, p. 29). Time is not something absolute, as Plato

⁸ This idea seems to have Pythagorean or Orphic origins. A careful examination of Platonic cosmology can be found in Botteri and Casazza (2015, pp. 55–74). We have already discussed the Platonic conception of time contained in the *Timaeus* in a recent work (*cf.* Budeguer, 2024, pp. 4–6).

⁹ As Ursula Coope (2005, p. 32) has noted, Aristotle's entire argument in *Physics IV*, 10 assumes that there can be only one series of time. If, on the other hand, we were to accept the existence of multiple universes, argument I would be completely invalidated. A similar argument in favour of the idea that there can only be one universe and not multiple ones can be found in *De Caelo I.9*.

thought, but *relative to movement* (Budeguer, 2024, p. 8). Moving on to *Physics* IV, 11, we find the following reasoning by Aristotle:

It is no less true, however, that time does not occur without change. Indeed, when nothing changes in our thinking, or changes without our noticing it, then it does not seem to us that time has passed, as happens to those in the myth who sleep in Sardinia alongside the heroes when they wake up (IV, 11 218b 21–24).

If we do not perceive change, it seems as if time has not passed (Copleston, 2004, p. 277). Although the relationship between time and movement is not one of identification, it is also true that there is *some* connection between the two. Aristotle also refers to a myth about which we know very little. When, in our daily experience, we want to refer to a state of consciousness in which we have fixed all our attention on a single point, we say that *time seems to have stopped*. Aristotle starts from this same intuition to assert, certainly, that time does not exist if we do not notice any change in our thinking. When we sleep for a long period of time, like those who sleep in Sardinia alongside the heroes, this situation occurs. Because of their 'lack of consciousness' (διὰ τὴν ἀναίσθησίαν), those who sleep connect two different 'nows'¹⁰.

It is worth emphasising the point made by Berti (2010, pp. 28–29), namely that when Aristotle refers to movement (κίνησις) and its connection with time, he is not referring to the movement of bodies outside ourselves. Even if we were in darkness, and there was still movement on the psychological or gnoseological plane, this would make us perceive the passage of time. Thus, "it is not necessary to perceive physical or external objects, it is enough to perceive a movement of the soul" (Berti, 2010, p. 29). Try lying down with your eyes closed, and you will see this argument for yourself. The result is that "time is neither movement nor does it occur without movement" (219a 1, ὅτι μὲν οὖν οὔτε κίνησις οὔτ' ἄνευ κινήσεως ὁ χρόνος ἐστὶ, φανερόν).

The section beginning at 219a 10 (Vigo, 2012, p. 245) is certainly one of the most complex in Aristotle's text, and is intended to introduce the fundamental notions of *earlier and later* (πρότερον καὶ ὕστερον), central elements of Aristotle's definition of time. We will develop only its main points.

¹⁰ We know very little about this legend mentioned by Aristotle. According to Ross's commentary (1936, p. 597), the myth refers to some sick individuals who were going to be treated by heroes in Sardinia and slept for five days straight, with no memory of these events. What is clear is that Aristotle treats the story as a legend. Beyond the historical veracity of the story, it illustrates very accurately the point Aristotle seeks to prove.

If time is relative to movement, the thinker continues, since movement is continuous, time is also a continuous quantity (*cf.* Note 7). The basic assumption of all Aristotelian physics is that every quantity is continuous and, consequently, time is also continuous, as it follows quantity. Well, in saying that time is a continuous quantity, Aristotle suggests that we cannot speak, exactly, of *parts of time*.

We perceive time, Aristotle asserts, when we perceive the distance of an interval that separates two instants in time: "Thus, we also have knowledge of time when we determine movement, using the previous and the subsequent as determination" (219a 22–23, ἀλλὰ μὴν καὶ τὸν χρόνον γε γνωρίζομεν ὅταν ὀρίσωμεν τὴν κίνησιν, τῷ πρότερον καὶ ὕστερον ὀρίζοντες·). When a stretch of time is cut by two successive moments, just as a segment is delimited by two points in the spatial plane, then we properly achieve the perception of time. Delimiting a part implies, in turn, measuring or numbering (Berti, 2010, p. 29). This gives rise to Aristotle's famous definition (219b 1–2): "For this is time: the number of movement according to what is before and what is after" ([...] τοῦτο γὰρ ἐστὶν ὁ χρόνος, ἀριθμὸς κινήσεως κατὰ τὸ πρότερον καὶ ὕστερον·). The before and after are, therefore, the two moments that we isolate to limit the interval of time to which we refer.

Now, although *Physics* is primarily a cosmological treatise, as it deals with matters related to φύσις, interpreters have on several occasions pointed out the role of the soul (ψυχή) in Aristotle's definition of time (*e.g.*, Ross, 1936, p. 65 and Vigo, 2012, p. 252). It is not enough, then, to delimit a section of movement to find ourselves, instantly, with time; we need the soul to enumerate two 'nows'¹¹. After presenting his definition, Aristotle states that there are two senses in which the *concept of number* (ἀριθμὸς) can be understood: 1) as 'numbered or countable'; or 2) as 'that by means of which we count'. The Stagirite states that it is the first sense that fits his definition of time. Thus, when we say that time is the *number* of movement, what is numbered is not movement itself, but rather the *magnitude of movement* between 'nows'. What is relevant, then, is not the number by which we count (1, 2, 3, n), but rather that by which the soul numbers the succession.

¹¹ Referring to Aristotle's definition of time, Berti (2010, p. 34) recounts the resonance that Aristotle's developments have had in contemporary philosophy. The analogy between the instant and the point led some modern European thinkers (*e.g.* H. Bergson) to assert that Aristotle had a *spatial* conception of time. Contrary to this perspective, various scholars observed that there was a fundamental difference between the geometric (spatial) point and Aristotle's *vūn*: all spatial magnitudes admit reversible movement; in contrast, there is no reversibility whatsoever in the succession of instants.

What is counted, then, is not the 'nows' themselves, but the intervals between them, which are the only components of time. In 219b 12–33, Aristotle responds to *the dilemma of the identity and otherness of the now* (218a 8–30). Let us look at his response:

For its part, the 'now' is in a certain sense the same, and in a certain sense not. Indeed, when it corresponds to its different states, it is different – and this will be confirmed by its being 'now' –; on the other hand, considered as that which is the 'now' in each case, it is the same¹².

Thus, the 'now' is the same (ὡς τὸ αὐτό) from the point of view of the actuality of the present; however, it is different (ὡς οὐ τὸ αὐτό) when considered in its individuality: one 'now' follows another, and so on, constituting time as a succession of unrepeatable 'nows'. In the second part of IV, 12 (220b 32– 21a 26), Aristotle delves into a notion that is fundamental to later philosophy: *being in time*. In Aristotelian philosophy, all entities of which change can be predicated are, in one way or another, in time. For both movement and other things, *being in time* implies *being measured by time*. Aristotle subsequently distinguishes two uses of *being in time* (221a 9–26), namely: 1) being when time is; and 2) being in number (ἐν ἀριθμῷ ἔστιν). Although further subdivisions are established at this point, these are the essential meanings distinguished by the philosopher in his exposition.

Aristotle then makes an observation that could well be said to give rise to much of the later phenomenological tradition, namely, the idea that time *deteriorates* things. According to Vigo's commentary (2012, p. 267), Aristotle attributes in these passages (221a 30–b7) a certain influence to time over things that *are in time*. Indeed, Aristotle states the following when commenting on this point:

And certainly, what is in time suffers an action by time, in the sense that we usually say that time consumes, and that all things age by the work of time and are forgotten through time, but not that something has been instructed, nor that it has become young or beautiful because of time. For time is itself rather the cause of corruption, since it is the number of

¹² IV, 11 219b 12–15: τὸ δὲ νῦν ἔστι μὲν ὡς τὸ αὐτό, ἔστι δ' ὡς οὐ τὸ αὐτό· ἢ μὲν γὰρ ἐν ἄλλῳ καὶ ἄλλῳ, ἕτερον (but this was the same as it is now, and whatever is now is the same).

movement, and movement takes what exists out of its present condition (221a 31–221b 3)¹³

As Guillermo de Echandía (2014, p. 149) observes, what is truly destructive is not time itself, but movement, for it distances us, sometimes silently, from existence. Aristotle himself traces the thesis according to which time appears as a factor of negativity back to his own conception that movement, as such, involves a factor of negativity (outlined, *e.g.*, in *Physics* VI, 5 235b 8–9), so that the reasoning can be understood, in a sense, as a hypothetical syllogism. By stating that movement removes the existing from its current condition (ἐξίστησιν τὸ ὑπάρχον), this idea is reaffirmed with unexpected force.

It is worth highlighting the following, taking into account Aristotle's examples: it is true that the passage of time brings forgetfulness, but it is no less true that it also brings learning. Those who decide to educate themselves in a particular area of knowledge certainly do so *in time*, the same plane on which, at some point, the forgetting of what has been learned will occur¹⁴. But it is clear that Aristotle seeks to highlight the *ecstatic nature* (from the Greek, ἔκστασις) of time, its *destructive capacity*.

***Being and Time* and Aristotle's interpretation**

Introductory aspects of existential analytics

In this section, we will consider some of the more general points of Heidegger's approach. In *Being and Time* § 8 (2023, pp. 59–60), the plan for carrying out the investigation is outlined:

- a. The interpretation of Dasein through temporality and the explanation of time as the transcendental horizon of the question of being.
 1. Preparatory stage of the fundamental analysis of Dasein.

¹³ IV, 11 221a 31–221b 3: καὶ πάσχει δὴ τι ὑπὸ τοῦ χρόνου, καθάπερ καὶ λέγειν εἰώθαμεν ὅτι κατατῆκε ὁ χρόνος, καὶ γηράσκει πάνθ' ὑπὸ τοῦ χρόνου, and is forgotten because of time, but it has not been learned, nor has it become new or good; for time is more the cause of decay in itself than anything else; for number is motion, and motion is the destruction of what exists. This is, in our opinion, one of the most beautiful passages in all of *Physics*. Its implications for later thought can hardly be exaggerated.

¹⁴ Borges refers to this dual movement of learning and forgetting by drawing on the example of his own life and his learning of Latin in his famous poem "A Reader": My nights are filled with Virgil; / to have known and forgotten Latin / is a possession, because forgetting / is one of the forms of memory, its vague basement / the other secret side of the coin (2011, p. 325).

2. Dasein and temporality.
 3. Time and being.
- b. Fundamental features of a phenomenological destruction of the history of ontology in line with the problem of temporality.
1. The Kantian doctrine of schematism and time, as a preliminary stage of a problem of temporality.
 2. The ontological foundation of Descartes' *cogito sum* and the reception of medieval ontology in the problem of *res cogitans*.
 3. Aristotle's treatise on time as a way of discerning the phenomenological basis and limits of ancient ontology.

A quick glance at the index of Heidegger's work is enough to see that what has actually been written only reached the end of the second section of the first part. Thus, the first section of the work is entitled "Preparatory stage of the fundamental analysis of Dasein" (§ 9–44), while the second is entitled "Dasein and temporality" (§ 45–83). This written part essentially coincides with what is known as *existential analytics*. This is a point that, in the words of Leyte (2015, p. 48), is fundamental to understanding the work: when approaching a text of this magnitude, we must not forget that it is a project that has not been completed.

The starting point for the analysis in the first section can be summarised as follows: things appear existentially, that is, in the light of Dasein. Their mode of being is not that of things – such as this table, or this chair, or the pencil on my desk – because it consists in *existing*. Heidegger wants to emphasise, through this very problematic term (*cf.* Note 17), that the entity that consists of *being open* to things, Dasein, does not have the meaning that belongs to things. For Heidegger, then, 'being-in-the-world' is one of the fundamental specifications of Dasein (2023, p. 81). In an important sense, for Heidegger, *only man exists*, since physical things cannot go beyond their limits – they lack precisely that characteristic "openness" to which we referred. Determining the *existing* character of the human being is, in Heidegger's opinion, a propaedeutic question. The question of existence is not just another metaphysical theme, but, *par excellence*, that which precedes them.

With this, Heidegger breaks with the modern ontological relationship between a subject that knows and an object that is known. For the pre-ontological view established in the first paragraphs

of *Being and Time*, both subject and object are entities with certain characteristics that make them incompatible with being as analysed in these first sections. In this way, Heidegger makes an important distinction between the gnoseological realm—which deals with the cognitive relationship of the subject to its object—and the ontological realm proper, which is devoted to the study of *existence*. The first major result shows that the existence of Dasein is inseparable from the world: Dasein means *being-in-the-world*. The world cannot be understood as an object *confronted* by a subject, but only in an existential way. Heidegger does not appeal, like Kant, to categories, but to *existentials*, descriptions of how Dasein takes place. The result of Heidegger's research in the first part of *Being and Time* (2023, p. 247) reveals the three fundamental ontological characteristics of Dasein, namely:

- a. *Facticity*, insofar as Dasein always finds itself in a given situation.
- b. *Existentiality*, the 'power to be' that opens up before me under certain circumstances.
- c. *Falling*, which refers to my situation thrown into a present that I have not chosen.

With the mention of these minimal elements of Heidegger's analysis, we consider ourselves better equipped to understand his critique of the Aristotelian concept of time. The analysis in the first part describes how Dasein behaves, but does not take into account the r death. This is done in the second part of the text. Being can only be characterised as 'finitude', and the question of death marks a break in the course of analysis that had been followed up to this point. It is within these coordinates that we must understand the introduction to Aristotle's work.

Heidegger's reinterpretation of Aristotelian time

Having highlighted the main and most relevant points of Aristotle's theory of¹⁵ time and considered some of the most important points of the first part of *Being and Time*, let us now turn to Heidegger's reinterpretation of it. Heidegger takes up some of Aristotle's ideas in the second part of his major work, entitled 'Dasein and Temporality'. In the last chapter of the aforementioned work (§ 78–83),

¹⁵ We use the term *theory* in a general sense, and not in a strictly epistemological sense, namely as a set of statements closed under the operation of deduction. Aristotle's theory of time – like, *for example*, Aristotle's theory of infinity in *Physics* III, 4–8 – refers rather to a set of statements intended to characterise what Aristotle understands by *time*.

entitled 'Temporality and Intratemporality as the Origin of the Vulgar Concept of Time'¹⁶, the German thinker confronts his own conception with what he calls, precisely, the *vulgar conception of time*.

Now, it is worth asking the following question: what is Heidegger trying to tell us when he refers to *the vulgar concept* of time? One of the fundamental insights of Heidegger's entire philosophy, already present, as we have seen, in Aristotle's reflections on the subject – especially in *Physics* IV, 12 220b 32–221a 26 – is that man lives embedded in temporality. From this temporal condition, characterised by the temporality of *Dasein*¹⁷, arises what Heidegger has called the *vulgar concept* of time. This is nothing more than the conception of time interpreted in relation to the present. In the analysis we have carried out so far, we have not taken into account the fact that everything that happens occurs 'in time'. When comparing Heidegger's words on this point with Aristotle's statements, it is impossible not to notice the similarities between the two thinkers. In passage IV, 11 221a 1–9, Aristotle states that all entities whose movement is measured must therefore be said to be in time. For Heidegger, *Dasein* is distinguished above all by being determined by intratemporality (Berti, 2010, p. 31). Although *Being and Time* is not exactly a text characterised by abundant references and footnotes, it is particularly striking that the German philosopher completely obliterated these statements by Aristotle – he did not acknowledge, at least explicitly, that they were also found in the Greek philosopher. To complete his analytical existence, it is necessary to consider that every natural and human process is determined, in one way or another, by time. Thus, Heidegger states:

But if it is precisely in its facticity that existential analysis must make *Dasein* ontologically transparent, it is necessary to *explicitly* recognise its right to this factual 'ontic-temporal' interpretation of history. The time 'in which' entities appear demands all the more necessarily a *fundamental* analysis, since, outside of history, the processes of nature are also determined 'by time' (2023, p. 417).

¹⁶ The German term that Rivera translates as *temporeidad* is *Zeitlichkeit*. We have preferred this translation over José Gaos's classic translation (Heidegger, 2018) because it is more intelligible to the Spanish reader.

¹⁷ We have chosen to leave the term untranslated. Gaos's famous translation (Heidegger, 2018) of the term as 'ser-ahí' (being-there) has become widespread among Spanish-speaking readers, although in my opinion this construction does not fully capture the various meanings that Heidegger is trying to convey. As Rivera (2023, p. 452) rightly observes, *Dasein* belongs, in a sense, to those untranslatable philosophical terms (e.g. λόγος, *intention*), precisely because of its very broad semantic range and lexical richness.

Dasein factually accounts for time, without taking into account an existential understanding of it. This is the central starting point of Heidegger's reflection: "Factual Dasein takes time into account without existentially understanding temporality" (Heidegger, 2023, p. 418). This *vulgar conception* is introduced into the conception of time as date (indication of days, months and years) and into man's possibility of using time; Heidegger expresses this by stating that "Everyday Dasein, which takes its time, finds time primarily in what is at hand and in what is there" (2023, p. 418). Now, how does Dasein come to form this concept? It owes its origin to a levelling of original time. This is the concept that Aristotle would express, according to the German author, through his famous definition¹⁸.

Heidegger contrasts the vulgar concept of time with temporality as the being of Dasein and affirms that this constitutes its ecstatic mode (Berti, 2010, p. 24). This is a conception clearly taken from Aristotelian reflection (ἔκστασις). But the fundamental paragraph for us is § 81, entitled "Intratemporality and the Genesis of the Common Concept of Time." The clockmaker, Heidegger states in the aforementioned chapter, shows what Aristotle understood by time. The Aristotelian definition, which Heidegger quotes explicitly, τοῦτο γὰρ ἐστὶν ὁ χρόνος, ἀριθμὸς κινήσεως κατὰ τὸ πρότερον καὶ ὕστερον (219b 1–2), is the one Heidegger seeks to question. However, it is also true that its influence is notable, and we can hardly ignore it when attempting to account for an existential understanding of the temporality of Dasein:

This definition may seem strange at first glance, but it proves to be "obvious" and genuinely successful when the ontological-existential horizon from which Aristotle took it is defined. The origin of time that manifests itself in this way is not a problem for Aristotle. Rather, his interpretation of time moves in the direction of the "natural" way of understanding being [...] only *once* we have solved the problem of being will it be possible to interpret *Aristotle's* analysis of time thematically (Heidegger, 2023, p. 434).

Heidegger's conclusion on this point is clear: being and time are irrevocably linked, and only when the problem of being has been fully resolved – regardless of whether this is possible or not – will we

¹⁸ However, as Berti (2010, p. 24) has correctly observed, Heidegger's reading of Aristotle's text does not seem to be entirely accurate. As we already indicated when analysing *Physics* IV, Aristotle does mention the ecstatic nature of time; he does so, *for example*, in one of the fragments already cited: 'For time is itself rather the cause of corruption, since it is the number of movement, and movement takes what exists out of its present condition' (221b 2–3). Heidegger believes that this ecstatic character belongs to the authentic concept, and not to the vulgar concept of time – supposedly Aristotelian.

be able to make a thorough critique of Aristotle's conception of time (Rivera and Stuvan, 2015, p. 170). Although Heidegger certainly considers that the Aristotelian definition of time is not authentic, but only vulgar, he cannot but recognise that this definition, as we stated at the beginning of this study, has had an influence on philosophical thought that cannot be ignored. This is clearly recognised in *Being and Time*: "After Aristotle, all discussions of the concept of time *fundamentally* adhere to the Aristotelian definition" (Heidegger, 2023, p. 434). If we recognise that the preliminary objective of *Being and Time* is to explain the horizon that makes it possible to understand being (Simesen de Bielke, 2017, p. 291), then it is impossible to ignore Aristotle's contribution to the subject.

Aristotelian time is time measured numerically and is time measured, as we have already suggested, by the hands of the clock: "And in this way, for the common understanding of time, it appears as a series of 'present' moments that are constantly passing and coming to an end" (Heidegger, 2023, p. 434). To this, Heidegger will say, we call *the time of the now* (Jetzt-Zeit) or "ahoric time." At the end of § 81, the German author states that even though the common conception of time refers only to the time of the world (¹⁹), it also indirectly refers to the soul and the spirit (Rivera and Stuvan, 2015, p. 173). In our summary of Aristotle's concept of time, *Physics* IV 14, we have not considered the chapter in which Aristotle deals precisely with the relationship between time and the soul. It is now worth highlighting what the Stagirite says in this regard:

On the other hand, a point worthy of investigation is not only 1) what relationship time has to the soul, but also 2) why time seems to be in everything, both on land and in the sea and in the sky. [...] On the other hand, 1) the question could be raised as to whether or not time would exist if the soul did not exist. For if it is impossible for that which is to be numbered to exist, it will also be impossible for there to be anything that can be numbered, so that there will be no number either, since a number is either that which is numbered or that which can be numbered (223a 16–24)²⁰.

¹⁹ Under this interpretation, Aristotle's reflections on time in *Physics* would be fundamentally cosmological reflections. This point is confirmed by Berti:

According to Heidegger, Aristotle derives this concept of time from the analysis of nature; therefore, it is what we might call cosmic time. The physical cosmos, the universe, the days, the months, the years are the rhythms of the universe. (2010, p. 24–25).

This is an observation that, although accurate, needs to be qualified. Heidegger does not forget this nuance, which is precisely why he introduces these observations into the text.

²⁰ In the paragraphs of *Being and Time* that we have been analysing (2023, p. 440), Heidegger quotes the following Aristotelian fragment (223a 25): "And if nothing else is by nature capable of numbering but the soul and the intellect of the soul, then it is impossible for there to be time if there is no soul" (εἰ δὲ μηδὲν ἄλλο

The connection between time and soul (χρόνος and ψυχή) is clearly one of the most debated points in Aristotelian theory (Vigo, 2012, p. 279; Zachhuber, 2022, p. 16–21). The passage quoted *above* naturally starts from the definition we have already discussed. Taken literally, it would give the impression that if time is *measured*, then someone must carry out the counting; if only our soul can carry out this counting, then it would seem that time depends on the existence of the soul. Without a soul, there is no time. The problem, thus posed, would seem simple: if it is impossible for something to exist that can carry out the counting, then it will also be impossible for something countable to exist (223a 22–23). If there is no number without an agent of counting, then it seems clear that, as we stated, there is no time without a soul in this conception²¹.

Given that, as we said, Aristotle – and his vulgar concept of time – does refer to the connection between time and the soul, Heidegger believes that "the interpretation of Dasein as temporality is not, in principle, outside the horizon of the vulgar concept of time" (2023, p. 440). These observations, derived from the final lines of *Physics* IV, 14, highlight, at least in a certain sense, the superlative value that Heidegger confers on the Aristotelian conception, despite calling it 'common'. In short, in his magnum opus, the German author affirms on several occasions that the Stagirite's conception has inspired all those who came later, from St Augustine to Kant, Hegel and Bergson. In Berti's words, "All the great philosophers who meditated on time were inspired by the Aristotelian conception" (Berti, 2010, p. 25). We cannot but agree with Heidegger when he states that thinking about time is nothing more than thinking about the categories bequeathed to us by old Aristotle. The close connection between Heidegger and Aristotle is demonstrated once again (*cf.* Volpi, 2012, p. 23)²².

The forms of Dasein's expression of intratemporality

πέφυκεν ἀριθμεῖν ἡ ψυχή καὶ ψυχῆς νοῦς, ἀδύνατον εἶναι χρόνον ψυχῆς μὴ οὔσης). Reference is also made to a passage from the *Confessions* (XI. 26) of Augustine of Hippo (*cf.* Augustine, 2021, p. 339).

²¹ This discussion has been presented in extremely precise terms by F. Volpi (1988).

²² Aristotle's categories are once again shown to be useful for thinking about our present. Contrary to some recent empiricist interpretations, from a strictly philosophical and phenomenological point of view, the Stagirite's *Physics* demonstrates its remarkable ability to challenge and surprise us. In short, we do not believe it is legitimate to infer, from the obsolescence of scientific concepts, a parallel discarding of philosophical speculations. On this point, *cf.* Vigo (2001–2002, 2006).

Before concluding this analysis of *Being and Time*, we would like to highlight some important aspects of § 79, a paragraph that I did not consider in detail in the previous pages. It is entitled "The temporality of Dasein and the dealing with time" (2023, pp. 419–424). In it, Heidegger asks about the ways in which Dasein takes time while having to deal with the tasks that arise in its interaction with the surrounding world²³: "Dasein exists as a being to which this very being *belongs* [...] In the project, Dasein reveals itself as thrown. Thrownly abandoned to the 'world', busying itself, it falls into it" (2023, p. 419). What concerns Heidegger in this case is, in our opinion, a semantic or linguistic question: he asks about the ways in which these forms of dealing with the surrounding world are expressed in our everyday language. Dasein expresses itself on a daily basis in a multiplicity of expressions that Heidegger seeks to clarify²⁴.

Heidegger considers three forms of expression, namely: 'then' (*Dann*), 'back then' (*Damals*) and 'now' (*Jetzt*). Let us briefly consider some of Heidegger's observations on these three forms of expression:

1. Regarding 'then', Heidegger states the following: "In 'then', occupation is expressed in a state of waiting [...] underlying it, usually tacitly, is a 'not yet now' that is somehow expressed in the presentation that is waiting and retaining" (2023, p. 419). The 'later' expresses a 'waiting' (*Gewärtigsein*) for something that is to come. When the date is not determined – it is in the future – datability is not lacking, but rather hidden.
2. In relation to 'then', Heidegger will say that this implies a *now that is no longer*. This expression, like 'later', is only understood with a view to a 'now'. This is a specific way of retaining forgetfulness and, according to Heidegger's reconstruction, the horizon of retention expressed in this 'then' is the 'previously',

²³ These observations, on the other hand, appear clearly in the lessons from the summer semester of 1927, already analysed, entitled *The Fundamental Problems of Phenomenology* (Heidegger, 2000). To avoid excessive repetition, we have decided to show only the analysis that appeared in *Being and Time*.

²⁴ I have introduced this section, among other things, because I believe it brings Heidegger closer to many of the concerns of analytical philosophy and to methodologies that are characteristic of thinkers belonging to the so-called 'linguistic turn'. Attempting to resolve philosophical problems – in this case, ontological ones – through the lens of language is, therefore, a typically analytical procedure, although applied here with clarity. This allows us to see the extravagance of the distinction that has been imposed on 20th-century philosophy. On this distinction, I especially recommend the extensive study by Franca D'Agostini (1997).

that is, the past. Here, then, the past is represented – e.g. 'then, at that time when'.

3. Finally, regarding the 'now', one of the main concerns of Heidegger, and also of Aristotle, the German author affirms that only in view of this expression can we understand the previous ones. This is what we call 'presentification' or, *ut supra*, 'ahoric time'. The horizon of presentification expressed in the now is the present time, in short, 'today'.

These three ways of referring to time in everyday existence are based, for the German author, on the *exatic-horizontal* character of one's own temporality (2023, p. 421). This is a conception clearly taken from Aristotle's conception, especially through its echoes of the concept of ἔκστασις. As much as Heidegger tries to distance himself from Aristotle, he ends up, in a sense, making use of his contributions. But beyond this terminological issue, Heidegger's main reason for distancing himself from the traditional conception—from Aristotle to Bergson—is its naturalistic orientation and its inability to grasp the profound structure of Dasein²⁵ (See Table 1).

Table 1.

Expression in discourse	Temporalisation	Temporal horizon
'Then'	'Waiting'	Later (future)
'Then'	Retention and forgetting	Previously (past)
'Now'	Presentification	Today (present)

Source: Own elaboration.

Some comments on the *Natorp Report*

²⁵ In *Metaphysical Principles of Logic* (Heidegger, 2009, p. 231), the last course Heidegger taught in Marburg, the author concludes that there are five fundamental features of the existential, non-naturalistic understanding of time, namely: 1) The essence of time is its ecstatic character; 2) it has a horizon-like character; 3) time does not pass, it does not exist, but rather 'matures'; 4) time is not related to sensitivity, but is more original than it; and, finally, 5) time is not grasped when Dasein is conceived from contemplation, but from a practical methodology. We have not taken these lessons into account, but they can be interpreted as a continuation of the theses of *Being and Time*.

Before concluding this study, we would like to briefly refer to *the so-called Natorp Report* (2002), a document written by Heidegger in 1922. In January of that year, Heidegger had already been working as Husserl's assistant at the University of Freiburg for three years. In the middle of that year, when two extraordinary professor positions were announced—at the universities of Marburg and Göttingen—the young Heidegger considered applying for the positions. However, despite the fact that his prestige had already attracted the attention of the German philosophical scene, the German philosopher did not yet have a substantial number of publications. To compensate for this gap, he wrote a manuscript detailing his research in courses and future interests (Heidegger, 2002, p. 106). Within a few weeks, Heidegger produced a report entitled *Phenomenological Investigations on Aristotle (Indication of the Hermeneutical Situation)*. In November 1922, Göttingen responded to Husserl: Heidegger would occupy second place on the list of candidates, mainly because of his somewhat cryptic style.

Meanwhile, Paul Natorp, a professor at the University of Marburg, quickly wrote to Husserl. He deeply admired the originality of Heidegger's report, so he placed the young thinker at the top of the list to fill the vacancy left by Professor N. Hartmann. Starting in the winter semester of 1923/24, Heidegger began his teaching career at the aforementioned University of Marburg. R. Safranski recounts the episode as follows (2010, p. 154): "Paul Natorp saw in them a brilliant 'sketch', and for Gadamer, who was then doing his doctorate with Natorp and was able to examine the manuscript, it became a true 'inspiration'"²⁶.

In these early investigations into Aristotelian philosophy, Heidegger reads *Physics* as an ontology of natural being characterised, in essence, by the fact of movement (Vigo, 2006, p. 47). A careful reading of the portions of *the Report* devoted to investigating *Physics* highlights this concern. If Aristotle is concerned with examining the opinions of the ancient philosophers of nature in detail (*Physics* I 2, 184b 15), it is because he seeks to demonstrate the extent to which they fail in their attempts to explain movement satisfactorily. For Aristotle, movement is a *fact of experience*, which is why he does not attempt to prove it; he takes it for granted (I 2, 185a 13). The world described in Aristotle's *Physics* (Vigo, 2001–2002) is a world in motion, of things with properties and related to other systems. Heidegger reads Book III of *Physics* in this sense: "For Aristotle, it is decisive to show

²⁶ See also H. Ott's account of this period in the philosopher's life (1988, pp. 131–141).

that, in principle, it is not possible to categorically apprehend the phenomenon of movement with the categories provided up to that point by traditional ontology" (Heidegger, 2002, p. 82). The *traditional ontology* to which Heidegger refers is, of course, the ontology developed by Parmenides and Melissus.

We introduce this brief section on the *Natorp Report* to show that it is only in an apparent sense that Heidegger makes a partial reading of *Physics IV*. Taking into account only the passages already discussed in *Being and Time*, one might well think that Heidegger disconnects Aristotle's reflections on time from the theory of motion, formulated in great detail in *Physics III*. But, as we stated, this lack of connection is only apparent, since Heidegger is fully aware that a reading of Aristotelian philosophy must be systematic if it aspires to be complete. This has been highlighted by the research of F. Volpi, who states:

The publication of the courses Heidegger taught at Marburg from the winter semester of 1923-1924 to the summer semester of 1928 sheds light on the evolution of his thought in the years immediately preceding the publication of *Being and Time*, that is, one of his most intense and fruitful periods (Volpi, 2012, p. 69).

During the summer semester of 1925, while teaching at the University of Marburg, for example, Heidegger focused his attention on the problem of truth, a discussion that has been included in the book *Prolegomena to an History of the Concept of Time* (Heidegger, 2006). Through a careful reading of the fundamental assumptions of the philosophy of Aristotle, Kant, and Husserl, Heidegger gradually developed the ideas that would eventually form part of *Being and Time*.

Final considerations

Comparative analysis allows us to affirm that Heidegger's conception of time cannot be understood without reference to Aristotle. The definition of time as the number of movement according to what precedes and what follows, elaborated in *Physics IV*, constitutes not only a historical milestone but also an inescapable point of support for Heidegger's critique. In response to the central question of our research – in what sense does Heidegger transform or surpass the Aristotelian conception of time? – three main conclusions can be drawn:

1. Conceptual continuity. Heidegger assumes, like Aristotle, that time is not an isolated substance, but depends on human experience: without someone to count, there is no countable time. This Aristotelian intuition paves the way for Heidegger's idea that Dasein 'temporalises' its own being.
2. Ontological reinterpretation. While Aristotle conceives of time as a measure of movement, Heidegger shifts the question: time is not a countable physical phenomenon or *ph*, but the constitutive horizon of human being. Temporality ceases to be a cosmic given and becomes an existential structure.
3. Critique of the 'vulgarity' of the concept. Heidegger considers that the Aristotelian definition reflects a derivative understanding (centred on the successive and measurable 'now') that obscures original temporality. However, his criticism does not invalidate the Aristotelian legacy: it presupposes and radicalises it, showing that even the 'vulgar' conception of time veiledly points to the being of Dasein.

The reference to *the Natorp Report* confirms that Heidegger engaged with Aristotle systematically from an early stage. This document shows that his reflection on time is the result of a prolonged process and not merely a late recourse for *Being and Time*. In short, Heidegger's reading does not eliminate the Aristotelian conception, but rather reinterprets it: it shifts it from physics to fundamental ontology, from cosmology to existential analytics. Hence the enduring relevance of *Physics IV* as a starting point, even for those who, like Martin Heidegger, declare it insufficient.

References

- Augustine of Hippo (2021). *Confessions*. Preliminary study, direct translation and notes by Silvia Magnavacca. Losada.
- Aristotle (2012). *Physics: Books III – IV*. Translation, introduction and commentary by Alejandro G. Vigo. Biblos.
- Aristotle (2014 [1995]). *Physics*. Translation and notes by Guillermo R. de Echandía. Editorial Gredos.
- Berti, E. (2010). *Being and Time in Aristotle*. Translation by Patricio Perkins. Biblos Publishing House (Phenomenological Paideia).
- Borges, J.L. (2011). *Poetic Works*. Sudamericana.
- Botteri, G. and Casazza, R. (2015). *Aristotle's Astronomical System: An Interpretation*. Autonomous City of Buenos Aires, National Library.

- Budeguer, A. (2024). Some aspects of the concept of *time* in Plato and Aristotle. *Sincronía Magazine*, XVIII(86) pp. 3–12. <https://doi.org/10.32870/sincronia.axxviii.n86.1.24b>
- Coope, U. (2005). *Time for Aristotle. Physics IV. 1–14*. Oxford University Press (Oxford Aristotle Studies).
- Copleston, F. (2004). *History of Philosophy I. Greece and Rome*. Translation by Juan Manuel García de la Mora. Ariel Publishing House.
- D'Agostini, F. (1997). *Analytic and Continental, a guide to philosophy over the last thirty years*. Editorial Cátedra.
- Ferrater, J. (1999). *Dictionary of Philosophy*. Ariel Publishing House.
- Heidegger, M. (2000). *The Fundamental Problems of Phenomenology* (GA 24). Translated by Juan José García Norro. Trotta Publishing House.
- Heidegger, M. (2001). *Introduction to Metaphysics*. Translated by Angela Ackermann Pilári. Gedisa Publishing House.
- Heidegger, M. (2002). *Phenomenological Interpretations of Aristotle* [Natorp Report]. Translated and edited by Jesús Adrián Escudero. Trotta Publishing House.
- Heidegger, M. (2006). *Prolegomena to a History of the Concept of Time*. Translated by Jaime Aspiunza. Alianza Editorial.
- Heidegger, M. (2009). *Metaphysical Principles of Logic*. Translated by Juan José García Norro. Editorial Síntesis.
- Heidegger, M. (2018). *Being and Time*. Translation by José Gaos. Fondo de Cultura Económica.
- Heidegger, M. (2023). *Being and Time*. Translation, prologue and notes by Jorge Eduardo Rivera. Editorial Trotta.
- Kahn, C.H. (1973). *The Verb 'Be' In Ancient Greek*. Dordrecht –Reidel Publishing Company.
- Leyte, A. (2015). *Heidegger. The Failure of Being*. Bonalitra Alcompas.
- Ott, H. (1988). *Martin Heidegger. On the Way to His Biography*. Spanish version by Helena Cortés Gabaudan. Alianza Editorial.
- Rivera, J. E. Stuvan, M.T. (2015). *Commentary on Martin Heidegger's Being and Time*. Vol. III. Second Section. Ediciones Universidad Católica de Chile.
- Romero, G.E. (2018). *Scientific Philosophy*. Springer.
- Romero, G.E. (2020). *The Nature of Time*. Laetoli Publishing House.
- Ross, W.D. (1936). *Aristotle's Physics*. Oxford University Press.
- Safranski, R. (2010 [1997]). *A Master from Germany. Martin Heidegger and His Time*. Translated by Raúl Gabás. Tusquets Publishers.
- Simesen de Bielke, M. (2017). Concepts and foundations for a critique of *vulgar time* in Heidegger. *Topics, Journal of Philosophy*. (52) pp. 277–318. <https://doi.org/10.21555/top.v0i52.787>

- Sorabji, R. (1983). *Time, creation and the continuum. Theories in Antiquity and the Early Middle Ages*. Duckworth.
- Vidal, J. (2015). Aristotle's conception of time. *Byzantion Nea Hellás*. (34) pp. 323–340. <http://dx.doi.org/10.4067/S0718-84712015000100014>
- Vigo, A.G. (2001–2002). Ontological Indifferentism and Phenomenology in Aristotle's *Physics*. *Philosophy Seminars*. (14–15) pp. 77–110. <https://revistas-filologicas.unam.mx/nouatellus/index.php/nt/article/view/1091/1663>
- Vigo, A.G. (2006). Is Aristotle's *Physics* obsolete? *Public Studies*. (102) pp. 43–67. <https://www.estudiospublicos.cl/index.php/cep/article/view/564/941>
- Vigo, A.G. (2007). *Aristotle. An Introduction*. Institute for Social Studies (IES Collection).
- Volpi, F. (1988). Chronos und Psyche. Die aristotelische Aporie von Physik IV, 14, 223a 16–29. In: E. Rudolph (ed.), *Zeit, Bewegung, Handlung. Studien zur Zeitabhandlung des Aristoteles*. Stuttgart, pp. 26 – 62.
- Volpi, F. (2012). *Heidegger and Aristotle*. Translation by María Julia De Ruschi. Fondo de Cultura Económica.
- Zachhuber, J. (2022). *Time and Soul. From Aristotle to St. Augustine*. Walter de Gruyter.