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Time and its categories in Classical Greek: Language and thought

Richard FAURE^{*1}, Emmanuel GOLFIN², Elsa GRASSO³

¹ Université Côte d'Azur, CNRS, BCL, France

² Université Toulouse - Jean Jaurès, PLH, France

³ Université Côte d'Azur, CRHI, France

*Correspondance : richard.faure@univ-cotedazur.fr

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Abstract

The conceptions of time are manifold (cyclic, linear, subjective/objective etc.). This is also true of Ancient Greece (Lloyd 1976). However, in Classical Greece certain human sciences arise and evolve at the same time, including History (Herodotus, Thucydides) and Philosophy (Plato, Aristotle), which may share a common notion of time. We explore the idea that these developments are related to what we observe in the language in the same period, namely that the marking of aspect and mood steps back and gives way to a more precise marking of time in the verbal system. This may be due to mutual influences of the categories of language and thought, as already observed in Benveniste (1958).

Keywords

time; history; philosophy; linguistics; tense; aspect; mood

I INTRODUCTION

Classical Greece (500-400 BCE) was a period of scientific activity (although the term may seem anachronistic), so much so that speaking of “second Greek miracle¹” would not be an exaggeration. Indeed, it gave rise to, or radically changed, medicine, history, philosophy... The changes were particularly important in the domain of social science. The radical nature and the importance of this period are even more marked since they happened at such a quick pace. As we will see, during this period categories of thought could evolve in one or two generations.

¹ The expression “Greek Miracle”, coined by Ernest Renan, designates the moment of the rise of rational thinking in Ancient Greece (7th-6th Centuries BCE, Vernant 1962). One of the major changes between the two periods is found in the passage from reflections concerning nature to reflections concerning man (Vernant 1985: 19-85).

Furthermore, the link between the changes is not coincidental. The circumstances – notably political – which were favorable to this innovation were identified.

Still, certain common developments remain unexplained. This is the case of the conception of time. Indeed, during this period it developed both in the domain of history as well as philosophy. In this article, we would like to make a double hypothesis. First these developments influenced each other to such an extent that the idea that “there is no Greek conception of time” (Lloyd 1975: 205-14) is not tenable if we consider a given time period. More generally, our study contributes to the way in which time is conceptualized by human beings in different registers of thought.

Second, we would like to make a connection between these changes of the conception of time and linguistic evolution, and explore the idea that there may be mutual, unconscious influence on the two modes of categorization, in the line of Benveniste (1958).² In fact, it can be shown that grammatical treatment of time in the verbal system changed rapidly during this period.³

After introducing the methodological difficulties, we first provide an analysis of the conception of time in philosophy and history. Then we will compare the results and attempt to see if they are reducible to a shared notion of time, even while keeping in mind that categories of thought in different disciplines are not always readily translated. Finally, we will examine the changes in linguistic treatment of time before comparing the results with those obtained from the comparison of philosophy and history.

II METHODOLOGICAL DIFFICULTIES

Several difficulties should be mentioned before treating our question. The first lies in the multiple concepts used for explaining time: continuous/discontinuous, cyclic/linear, deterministic, teleological, constant, eternal, subjective/objective, physical/human, psychological,⁴ etc. We see in particular that the different pairs of antonyms are not reducible one to the other. Thus, the cyclic or linear aspect of time seems to be independent from its continuous or discontinuous aspect, and we can *a priori* envisage concepts derived from the combination of those different elements.

Another difficulty is that of the sources of our study; in particular we lack lengthy texts before the Classical period, which prevents us from easily determining a *terminus post quem*, that is to say the birth of a concept. We will limit ourselves to determining *termini ante quem*.

Finally, chronology is also an obstacle for our hypothesis, as can be shown on the basis of Table 1.

Century	History	Philosophy
Fifth (1)	Herodotus	Presocratics
Fifth (2)	Thucydides	
Fourth (1)	Xenophon	Plato
Fourth (2)		Aristotle
Third		Stoics,

² Since the Sapir-Whorf hypothesis (Whorf 1956), the study of the relation between language and the conception of the world has changed. It progressively moved from the domain of lexical categories to that of grammatical categories. Benveniste (1958) showed how Aristotle’s categorization depends on the categories of the Greek language.

³ Linguists consider that a rapid modification of a given parameter occurs over the course of three or four generations (Labov 2010: 389).

⁴ This category seems particularly anachronistic for Ancient Greece.

		Hellenistic schools
Second	Polybus	

Table 1. Chronology of the different studied authors

As can be seen, the authors considered for each discipline are not exactly contemporaneous. We will also see that the changes cannot be situated at the same moment in time from a discipline to another. In addition, we only have one or two authors per concept and per period. It is thus only globally that a change in the conception of time can be observed, with successive or indirect influences. With these caveats, we can move onto the study discipline by discipline.

III PHILOSOPHY

3.1 The Presocratics

Among the first rank of thinkers known as “Presocratics” is Anaximander, as suggested by Heidegger in the text titled “Anaximander's Saying” (1950). His texts are among some of the first “philosophical” writings in prose.⁵ He treated the definition of “the principle of things which are”:

“Anaximander said that the principle and element of beings is the unlimited. (...) And the things out of which birth comes about for beings, into these too their destruction happens, according to obligation: for they pay the penalty and retribution to each other for their injustice **according to the order of time.**” (D6 Laks-Most = Fr.1,⁶ Ἀναξίμανδρος ἀρχὴν τε καὶ στοιχεῖον εἶρηκε τῶν ὄντων τὸ ἄπειρον. (...) ἐξ ὧν δὲ ἡ γένεσις ἐστὶ τοῖς οὕσι, καὶ τὴν φθορὰν εἰς ταῦτα γίνεσθαι κατὰ τὸ χρεῶν. διδόναι γὰρ αὐτὰ δίκην καὶ τίσιν ἀλλήλοις τῆς ἀδικίας **κατὰ τὴν τοῦ χρόνου τάξιν**)

The Milesians recognize universal change, but not without order: Anaximander, in the view of Favorinus, came to Sparta to build or adjust gnomons. A way of measuring time by shadow, gnomons or sundials places the periodic taking of time into the nascent philosophy, a cosmic rhythm of shadow and light where the alternation of periodic time is a part of a potentially unchanging repetition.

The cyclic periodicity that punctuates the world is at the heart of the thinking of Empedocles, and related to the well-known principled duality of love and hate (cf. Fr. 16, Fr. 17):

“For these are all equal and identical in age, but each one presides over a different honor, each one has its own character, and by turns they dominate while the time revolves. And besides these, nothing at all is added nor is lacking.” (D73, v. 36-38 = Fr.17, ταῦτα γὰρ ἴσα τε πάντα καὶ ἥλικα γένναν ἔασι, τιμῆς δ’ ἄλλης ἄλλο μέδει, πάρα δ’ ἦθος ἐκάστωι, ἐν δὲ μέρει κρατέουσι περιπλομένοιο χρόνιοι. καὶ πρὸς τοῖς οὕτ’ ἄρ τι ἐπιγίνεται οὐδ’ ἀπολήγει)

As for the Pythagoreans, they did not completely renounce the cyclic dimension, which took on aspects of the astronomical Great Year, and the conclusion of which the stars return to their initial position.

⁵ According to the account of Themistius (*Orations*, 36, 317): Anaximander lived between 610 and 546 BCE.

⁶ All translations in this Section are taken from André Laks’ and Glenn Most’s edition (*Early Greek Philosophy*, Nine volumes, In collaboration with Gérard Journée and assisted by Leopoldo Irizarren and David LévyStone, Cambridge, Massachusetts: Harvard University Press, 2016). Numbering of the fragments as in this edition, followed by the concordance with the former reference edition (Diels-Kranz).

It was Parmenides, the “father” of all discourse on being according to Plato’s *Sophist*, for whom in time could be found rather more of a representation than a principle of order. Plato described the Eleatics as positing an immutable being, entirely homogeneous, with no difference in itself, and from which movement, change and time are necessarily excluded. Change and time are, with birth and becoming, reintroduced into Parmenides’ Poem as objects of opinion, which gives us something like physics:

“In this way, according to opinion, these things have been born and now they are, and later, having grown strong, starting from that point they will come to their end. For these things, humans have established a name that designates each one.” (D62 = Fr.19, οὕτω τοι κατὰ δόξαν ἔφθ τάδε καὶ νυν ἕασι καὶ μετέπειτ’ ἀπὸ τοῦδε τελευτήσουσι τραφέντα· τοῖς δ’ ὄνομ’ ἀνθρώποι κατέθεντ’ ἐπίσημον ἐκάστωι)

As far as Heraclitus is concerned, Plato and Aristotle contributed to give an expression of his ideas in direct opposition to those of Parmenides. But he cannot be reduced to notions of flow or pure fate except for quite distantly. He is said to have taught that the world is a place of transformations (D86 = Fr. 31). However, the idea of One – or of All – “unbegotten”, “immortal”, and that of “eternity” are not unfamiliar to him (D46 = Fr. 50). It should be understood that “Changing, it remains at rest” (D58 = Fr. 84, μεταβάλλον ἀναπαύεται). Time, a place of conflict, of opposition, presides over the game of opposites: “A lifetime is a child playing, playing checkers: the kingship belongs to a child” (D76 = Fr. 52, αἰὼν παῖς ἐστὶ παίζων, πεσσεύων· παιδὸς ἢ βασιληΐης). And the eternity of One or All is not limited to Parmenides’ thinking: in Heraclitus the idea of an eternal world can be seen. However, this comes with time understood as a cyclic process, an ordered succession of phrases or periods. Thus, fragment D85 (= Fr. 30):

“This world order, the same for all, none of the gods or humans made it, but it always was and is and will be: fire ever-living, kindled in measures and extinguished in measures.” (κόσμον τόνδε, τὸν αὐτὸν ἀπάντων, οὔτε τις θεῶν οὔτε ἀνθρώπων ἐποίησεν, ἀλλ’ ἦν αἰεὶ καὶ ἔστιν καὶ ἔσται πῦρ ἀείζωον, ἀπτόμενον μέτρα καὶ ἀποσβεννύμενον μέτρα).

The cyclic character of Becoming, which reigns by games or by opposition, characterizes time:

“There is the same within, what is living and what is dead, what is awake and what is sleeping, and what is young and what is old. For these, changing, are those, and those, changing in turn, are these.” (D68 = Fr. 88, τεθνηκὸς καὶ [τὸ] ἐγρηγορὸς καὶ καθεῦδον καὶ νέον καὶ γηραιόν· τάδε γὰρ μεταπεσόντα ἐκεῖνά ἐστι κάκεῖνα πάλιν μεταπεσόντα ταῦτα)

This cyclic temporal character can be understood as specific to the soul or the cosmos. In each, combat, and measuring, give time its cyclic and periodic character.

Beyond their differences, and despite the doubt due to the fragmentary nature of our sources, the Presocratic notion of time is based on cycles and eternity. These categories are rethought and reoriented by Plato and Aristotle, in particular with greater attention to change.

3.2 Plato

Scholarly interest has especially focused on Plato’s conception of astronomical time as related to eternity, as it is central to his thought. But Karel Thein (2000, 2001) has shown that there is also a notion of political and human time. We will examine each of these two kinds of time.

One passage is central in the platonic conception of astronomical time, although its interpretation is difficult. That is *Timaeus* 37d-38b :

“And when the Father that engendered it perceived it in motion and alive, a thing of joy to the eternal gods, He too rejoiced: and being well-pleased He designed to make it resemble its

Model still more closely. Accordingly, seeing that that Model is an eternal Living Creature, He set about making this Universe, so far as He could, of a like kind. But inasmuch as the nature of the Living Creature was eternal, this quality it was impossible to attach in its entirety to what is generated; wherefore He planned to make a movable image of Eternity, and, **as He set in order the Heaven, of that Eternity which abides in unity He made an eternal image, moving according to number, even that which we have named Time.** For simultaneously with the construction of the Heaven He contrived the production of days and nights and months and years, which existed not before the Heaven came into being. And these are all portions of Time; even as “Was” and “Shall be” are generated forms of Time, although we apply them wrongly, without noticing, to Eternal Being. For we say that it “is” or “was” or “will be,” whereas, in truth of speech, “is” alone is the appropriate term; “was” and “will be,” on the other hand, are terms properly applicable to the Becoming which proceeds in Time, since both of these are motions; but it belongs not to that which is ever changeless in its uniformity to become either older or younger through time, nor ever to have become so, nor to be so now, nor to be about to be so hereafter, nor in general to be subject to any of the conditions which Becoming has attached to the things which move in the world of Sense, these being generated forms of Time, which imitates Eternity and circles round according to number. And besides these we make use of the following expressions, – that what is become *is* become, and what is becoming *is* becoming, and what is about to become *is* about to become, and what is non-existent *is* non-existent; but none of these expressions is accurate. But the present is not, perhaps, a fitting occasion for an exact discussion of these matters.” (tr. R. G. Bury⁷)

Ὡς δὲ κινηθὲν αὐτὸ καὶ ζῶν ἐνόησεν τῶν αἰδίων θεῶν γεγονὸς ἄγαλμα ὁ γεννήσας πατήρ, ἠγάσθη τε καὶ εὐφρανθεὶς ἔτι δὴ μᾶλλον ὅμοιον πρὸς τὸ παράδειγμα ἐπενόησεν (d) ἀπεργάσασθαι. Καθάπερ οὖν αὐτὸ τυγχάνει ζῶον αἰδίων ὄν, καὶ τότε τὸ πᾶν οὕτως εἰς δύναμιν ἐπεχείρησε τοιοῦτον ἀποτελεῖν. Ἡ μὲν οὖν τοῦ ζῴου φύσις ἐτύγχανεν οὕσα αἰώνιος, καὶ τοῦτο μὲν δὴ τῷ γεννητῷ παντελῶς προσάπτειν οὐκ ἦν δυνατόν· εἰκὼ δ’ ἐπενόει κινητὸν τινα αἰῶνος ποιῆσαι, καὶ διακοσμῶν ἅμα οὐρανὸν ποιεῖ μένοντος αἰῶνος ἐν ἐνὶ κατ’ ἀριθμὸν ἰοῦσαν αἰώνιον εἰκόνα, τοῦτον ὄν δὴ χρόνον ὠνομάκαμεν. (e) ἡμέρας γὰρ καὶ νύκτας καὶ μῆνας καὶ ἐνιαυτούς, οὐκ ὄντας πρὶν οὐρανὸν γενέσθαι, τότε ἅμα ἐκείνῳ συνισταμένῳ τὴν γένεσιν αὐτῶν μηχανάται· ταῦτα δὲ πάντα μέρη χρόνου, καὶ τό τ’ ἦν τό τ’ ἔσται χρόνου γεγονότα εἶδη, ἃ δὴ φέροντες λανθάνομεν ἐπὶ τὴν αἰδίων οὐσίαν οὐκ ὀρθῶς. Λέγομεν γὰρ δὴ ὡς ἦν ἔστιν τε καὶ ἔσται, τῇ δὲ τὸ ἔστιν μόνον κατὰ τὸν 38. (a) ἀληθῆ λόγον προσήκει, τὸ δὲ ἦν τό τ’ ἔσται περὶ τὴν ἐν χρόνῳ γένεσιν ἰοῦσαν πρέπει λέγεσθαι—κινήσεις γὰρ ἔστων, τὸ δὲ αἰεὶ κατὰ ταῦτα ἔχον ἀκινήτως οὔτε πρεσβύτερον οὔτε νεώτερον προσήκει γίνεσθαι διὰ χρόνου οὐδὲ γενέσθαι ποτὲ οὐδὲ γεγονέναι νῦν οὐδ’ εἰς αὔθις ἔσεσθαι, τὸ παράπαν τε οὐδὲν ὅσα γένεσις τοῖς ἐν αἰσθήσει φερομένοις προσῆγεν, ἀλλὰ χρόνου ταῦτα αἰῶνα μιμουμένου καὶ κατ’ ἀριθμὸν κυκλουμένου γέγονεν εἶδη—καὶ πρὸς τούτοις ἔτι τὰ τοιάδε, (b) τό τε γεγονὸς εἶναι γεγονὸς καὶ τὸ γιγνόμενον εἶναι γιγνόμενον, ἔτι τε τὸ γενησόμενον εἶναι γενησόμενον καὶ τὸ μὴ ὄν μὴ ὄν εἶναι, ὧν οὐδὲν ἀκριβὲς λέγομεν. Περὶ μὲν οὖν τούτων τάχ’ ἂν οὐκ εἴη καιρὸς πρέπων ἐν τῷ παρόντι διακριβόλογεῖσθαι.

In this crucial text, Plato forms a relation between the heavens (and the divine) and a world in movement which includes the stars and the human and terrestrial world. The heavens are eternal (αἰών, αἰεὶ, αἰδίων, ἀώνιον) and not subject to change. The terrestrial world, on the other hand, is subject to modification, which is made clear in the text by the word-play of the terms with the root γεν- ‘to be born, to become’ (birth, death, change, etc.). Change is intrinsically tied to time. The former domain thus escapes corruption (change and degradation), but the latter does not. Another characteristic tied to the temporal nature of the world “born/become”

⁷ Plato in Twelve Volumes: Vol. 9. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1929.

is its possibility of moving, its mobility (radical κινέ-).⁸ Thus the stars can serve as intermediaries since they share the longevity of the heavens and the mobile character of the Earth. Finally, change and mobility have the property of being measurable (κατ' ἀριθμὸν).

The perceptible world (τοῖς ἐν αἰσθήσει φερομένοις) then is deprived of the perfection of the immutable eternal (μένοντος αἰῶνος). Nevertheless, to a certain extent it participates in eternity through the intermediary of time, in that there exists an image of eternity, εἰκὼ αἰῶνος, that is time itself.⁹ Indeed, the phenomena which permit time to be measured and the perception of change (“days, nights, months, years,” ἡμέρας καὶ νύκτας καὶ μῆνας καὶ ἐνιαυτούς) are celestial phenomena. Yet the vault of the heavens is the location of eternity. Celestial phenomena are thus an image of eternity, since they are an image of the heavens. And the time that they manifest can thus be seen as a mobile and measurable image of the eternal. In this way, if time is corrupting, it is also a way of acceding to eternity, to the divine and to Ideas, which cannot be directly perceived. In particular since, as argues Lloyd (1975), “Endless time is as close as perceptible things can get to eternity”.

This analysis should not mask the fact that time is also the cause of corruption.¹⁰ However, it leads us to reevaluate the idea that the platonic approach to time is only negative, in particular since time, being measurable and thus subject to number, is also order (διακοσμῶν, in particular see the analyses of Brague 1982). In addition, mankind's life – that is to say the soul's stay in the body – which is brief and is thus essentially nothing when faced with eternity or the long term, can participate in long periods or rather total time (πᾶς χρόνος) thanks to the city, which lasts over the long term even if political regimes change; and thanks to the immortal soul, which comes out of Thein's (2001) analysis of the *Republic*.

This conception of time evolves with Aristotle and Hellenistic thought. In particular, the views on change are modified.

3.3 Aristotle

Let us take as our starting point the following passage from *Physics*:

“Accordingly, when we perceive a ‘now’ in isolation, that is to say not as one of the two, an initial and a final one in the motion, nor yet as being a final ‘now’ of one period and at the same time the initial ‘now’ of a succeeding period, then no time seems to have elapsed, for neither has there been any corresponding motion. But when we perceive a distinct before and after, then we speak of time: for this is just what time is, the calculable measure or dimension of motion with respect to before-and-afterness.” (*Physique*, IV, 11, 219a-b, tr. P. H. Wicksteed and F. M. Cornford¹¹, “Ὅταν μὲν οὖν ὡς ἐν τῷ νῦν αἰσθανώμεθα, καὶ μὴ ἦτοι ὡς πρότερον καὶ ὕστερον ἐν τῇ κινήσει ἢ ὡς τὸ αὐτὸ μὲν προτέρου δὲ καὶ ὕστερου τινός, οὐ δοκεῖ χρόνος γεγενῆσθαι οὐθεις, ὅτι οὐδὲ κινήσεις. Ὅταν δὲ τὸ πρότερον καὶ ὕστερον, τότε λέγομεν χρόνον· τοῦτο γὰρ ἐστὶν ὁ χρόνος, ἀριθμὸς κινήσεως κατὰ τὸ πρότερον καὶ ὕστερον)

⁸ The relation between movement and temporality can in reality be considered to be more complex. Brague (1982: 54) in particular argues for the idea that “[the perceptible] is totally outside the domain within which the difference between time and eternity is relevant. As such, it shows rather pure separation, from the “place” (*chôra*) which is not yet specified in spatial or temporal terms.” The study of this idea of “pure separation” would carry us too far of course and we leave it for future work.

⁹ A somewhat different interpretation in Thein (2017), for whom the image of eternity is constituted of the stars/planets, which move following the numbers of time. This interesting equation (time=numbers) is nevertheless unexpected when the passage χρόνου κατ' ἀριθμὸν κυκλομένου, is considered; where time circulates conforming to numbers and not as numbers.

¹⁰ Notably in the political domain, see Thein (2000).

¹¹ Aristotle in 23 Volumes: Vol. 4. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1929.

Here, Aristotle uses the same ingredients as Plato: perceptible character (αἰσθανώμεθα), movement (κίνησις), number (ἀριθμός). But he reverses things. Time is no longer itself mobility. For sure, it is “something of movement”, but it no longer dissolves in a purely qualitative and irrational change, a flux that eludes measurement. Time is “numbered number”, which movement allows to be measured, as well as an objective way for the soul to perceive change according to what came before and comes after. Aristotle adds: time is “that by which movement has a number”. Further, movement is a sign (σημεῖον) which permits the identification and measurement of time. When Aristotle questions the nature of the reality of time in things, or in the soul, his response has two parts (*Physics* IV, 11, 219 b 1-3): there is certainly time in things, but as in potency; this time is not determined when it is felt by an act of the soul which distinguishes “now” in accordance with the before and the after.

What is more, time is tied to change (before-after, πρότερον καὶ ὕστερον). But change does not have the same status for Aristotle as for Plato. While Plato links change and corruption (see the preceding section), for Aristotle, change is seen as the deployment of actual properties and of properties present in potency in an object. Time is thus the condition of implementation and it is an indispensable aspect of causality. Causal relations, by allowing us to explain facts, themselves call back to the reality of time; that which is not yet can in part be, if not predicted (*Posterior Analytics*, II, 12), at least anticipated: We can know by inference a past event from a more recent event, and we can anticipate on one hand what is the result of necessary relations of cause and effect, and on the other hand that which is produced “the most often”, by general rule (ὡς ἐπὶ τὸ πολὺ, cf. *Physics* IV, 10-14, but also part 4 [but embedded reference] on historians). The reality of time is no more inherent – as it was for Plato – in a radically inferior degree of reality; but rather is articulated, currently, in the reality of the possible, or even in the power which is made real according to a relation of the before to the after. Time is thus not a sign of lesser being, but on the contrary, an implementation of the possible, an actualization of form and intelligibility.

3.4 Summary

Conceptions of time in philosophy evolved from a notion of cyclic time for some of the Presocratics, in particular Heraclitus, to a more complex notion in Plato and Aristotle, who consider both a long enduring, cosmic time related to eternity, and a more human or terrestrial time, tied to change. Historians, on their side, by the very nature of the object of their study, focus more on human time, even if elements of conception of divine time can be read from between the lines.

IV HISTORY¹²

In this section, we examine Herodotus and Thucydides in turn.

4.1 Herodotus

Herodotus’ aim was to write a history of the relation between the East and the West over a long period of time. His *Histories*, while meeting this objective, also contain digressions which allow the reader to travel and compare different civilizations around the Mediterranean, while at the same time alluding to conceptions of time which he does not necessarily take into account.

According to him, man is essentially the subject of time and vicissitudes which come along with it (Solon says πᾶσά ἐστι ἄνθρωπος συμφορῆ, “man is but unhappiness”, in I, 32). He does not have access to eternity, at least in the timeless platonic sense. Still, he can have an

¹² The bulk of the material in this section is based on Golfin (1999, 2000, 2003). See also Momigliano (1966).

idea of it thanks to the long term. It should be noted here that for Herodotus this seems to be associated with ethical conduct, perhaps because it is close to the time of the gods.¹³ This long term can stay purely human, for example in matters of the attainment of glory, or of maintaining customs, two concepts that have meaning for following generations. Thus in VI, 109, Miltiades uses the argument of glory to convince Callimachus “(to) leave such a memorial for all posterity as was left not even by Harmodius and Aristogiton” (tr. A. D. Godley,¹⁴ *μνημόσυνον λιπέσθαι ἐς τὸν ἅπαντα ἀνθρώπων βίον οἷον οὐδὲ Ἀρμόδιός τε καὶ Ἀριστογείτων*).

But true permanence is found in meteorological and astronomical phenomena. This is the case of Egypt in particular, where the absence of change goes along with health:

“Even without this, the Egyptians are the healthiest of all men, next to the Libyans; the reason of which to my thinking is that the climate in all seasons is the same.” (II, 77, tr. A. D. Godley, *op. cit.*, *Εἰσὶ μὲν γὰρ καὶ ἄλλως Αἰγύπτιοι μετὰ Λίβυας ὑγιερέστατοι πάντων ἀνθρώπων τῶν ὠρέων ἐμοὶ δοκέειν εἶνεκεν, ὅτι οὐ μεταλλάσσονται αἱ ὥραι*)

Men also lean on duration/astronomical timelessness to give weight to their actions, in particular to their oaths:

“As long as the sun holds the course whereby he now goes, we will make no agreement with Xerxes.” (VIII, 143, tr. A. D. Godley, *op. cit.*, *Ἔστ’ ἂν ὁ ἥλιος τὴν αὐτὴν ὁδὸν ἢ τῇ περ καὶ νῦν ἔρχεται, μῆκοτε ὁμολογήσειν ἡμέας Ξέρξῃ*)

The long term, and even more when tied to natural phenomena, is a guarantee or a remedy against change and the damage that time can do to men. Herodotus made a distinction between time-destruction/eternity-continuity. Still, this eternity is not out of time, it is not immobile. It lasts infinitely long, a procession of similar moments, translated by the expression (*ἐς τὸν ἅπαντα χρόνον*, “lit. for the whole time = forever.”)¹⁵

Is there, then, a place for supernatural and intemporal eternity? Herodotus says nothing about this, other than recounting the beliefs of certain peoples as a kind of metempsychosis. Thus the Egyptians think that the human soul, being immortal, after the death of the body runs a circuit (*περιήλυσιν*) and passes into all other living beings before entering once again into a human body (II, 123). In the same way, the historian finds it remarkable that the Getae “believe themselves immortal” (*Ἀθανατίζουσι*) in the sense that their dead join the divine incarnate in Zalmoxis (IV, 93-96).

Further, although he writes a chronologically ordered history that explains the manner in which the Greeks were led to confrontation with the Persians, Herodotus also develops time with cyclic aspects since it is built on repetition. Following other critics, K. Wesselmann (2011; 2016: 205-14) shows that Herodotean accounts obey a limited number of models or explanatory archetypes that can be categorized (kidnapping of women, exposing of children with exceptional destinies, predictions, acts of pride. . .). In this way, the accounts are like myths and it can be concluded that History as written by Herodotus is atemporal.

Nevertheless, the importance given by the historian to the long term and to the origin of things prevents us from saying that historical time, the free will of men, happenstance, are

¹³ Still the historian does not pretend to deal with it, aside from quite occasionally, because it is too distant, and thus unknowable, which demonstrates both religious deference and heuristic prudence. See Darbo-Peschanski (1987: 25-38) for a history of the question.

¹⁴ Herodotus in Four Volumes. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1920-1925.

¹⁵ See for example II, 13, where Herodotus uses *τὸν πάντα χρόνον τὸν ἐπίλοιπον* to describe what the consequences of stopping the flooding of the Nile would be “for the rest of time”.

removed from his study. Not everything is predetermined. The victory of the Greeks at Salamis was certainly not anticipated by Xerxes' Persians. Even more, we have to put Greece at the beginning of the 5th Century BCE into context, being characterized by the development of rationalism, and consider that myth participates in history, since Herodotus' intention is to explore the depths of the past. Myth here is thus indispensable to knowledge of this ancient past. Thucydides himself – a historian who passes for the model of rationalism – sometimes has recourse to myth.¹⁶

4.2 Thucydides

The history written by Thucydides is rather different from that of Herodotus, since it is concerned with explaining why and how the war between Athens and Sparta touched the entirety of the Greek world. In contrast to Herodotus, we are dealing with a history which covers a relatively brief period (431-404) and is exclusively centered on the Hellenic world. Yet, Thucydides also adopts the long term in that he writes in book I, in Archaeology, a synthesis of Greek history since its beginning up to the Greco-Persian wars. The synthesis consists in showing that, from the beginning and up to the 5th century, the Greek cities and regions developed by growing their power through exchange, wars, and technical innovation (Romilly 1956).

Some scholars have also suggested a notion of eternity for Thucydides. But it is quite different from that of Herodotus. As we saw, Herodotus believed in an eternity which was in reality rather a continuity or a stability. The traces of eternity in Thucydides were instead more like return and repeating cycles. This is the position argued for by M. Finley in his essay on the author (1942). Thus, in VIII, 5, 1, Thucydides makes the following observation:

“While both sides were carrying out these measures and busily equipping themselves for the war precisely as if they were just beginning it, ...” (tr. C. F. Smith,¹⁷ Πρασσόντων δὲ ταῦτα ἀμφοτέρων καὶ ὄντων οὐδὲν ἄλλο ἢ ὡσπερ ἀρχομένων ἐν κατασκευῇ τοῦ πολέμου)

Still, the traces of cyclicity that can be found in Thucydides are not the proof that he had a notion of eternity like that of the “eternal return”, as we have tried to show (Golfin 2003). The connections that he observed are due to his rationalizing, and demonstrate sometimes more of a literary construction than a return to the same. Rather, it is the steadiness of laws, in particular in the domain of human behavior, which gives the impression of the return of a cyclic eternity. For Thucydides there exists human nature and laws that govern the relation between cities – founded on a relation of force – which make, even if time does not repeat itself, an analogy between the past, the present, and the future exists. From whence the possibility of good government or good strategy to predict the future (Romilly 1990). In a nutshell,

“Thucydides never makes the mistake of reducing different developments or processes or decline to fixed courses of evolution. Certainly, there are similarities between the situations but each one is unique. (...) The repetition of history is of a politico-philosophical nature, that is to say, power games, which is the basis of Thucydides' analysis, but not of the course of time, every event being original.”¹⁸ (Golfin 2003: 20)

¹⁶ For example in the history of Sicily, VI, 1 and 2 especially.

¹⁷ Thucydides in Four Volumes. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1919-1923.

¹⁸ “Jamais Thucydide ne tombe dans l'erreur de réduire les divers processus de développement ou de déclin à un schéma d'évolution plaqué. Certes, il y a des ressemblances entre les situations, mais chacune est particulière. (...) La ‘répétition’ de l'histoire est de l'ordre de la philosophie politique, c'est-à-dire des jeux de pouvoirs, dont Thucydide fait le principe de son analyse, mais non du cours du temps, chaque événement ayant son originalité.”

If we adopt another point of view on the matters of time and history, we can see the past takes on a significance and cannot be reconstructed except in function of what happened next. It is known and judged in light of the present, that is to say the writer's present – where it is finished and where it can be put into perspective. Thucydides does not judge the importance of the Peloponnesian War in relation to wars from the past until it is well underway, or even until it is over. Thus the past is tied to the present and to the future (Marcaccini 2017).

Even if there is a power imbalance that leads cities to make war either for increasing their power or for countering the power of another dominating neighbor,¹⁹ the role of the unexpected is central to Thucydides. History is not deterministic. It is particularly clear in the episode of the plague of 430-426, recounted in book II where Pericles expresses himself thus:

“Now that a great reverse has come upon you without any warning, you are too dejected in mind to persevere in your former resolutions. For the spirit is cowed by that which is sudden and unexpected and happens contrary to all calculation; and this is precisely the experience that you have had, not only in other matters, but especially as regards the plague.” (II, 61, 2-3, tr. C. F. Smith, op. cit., Καὶ μεταβολῆς μεγάλης, καὶ ταύτης ἐξ ὀλίγου, ἐμπροσθένος ταπεινῆ ὑμῶν ἢ διάνοια ἐγκαρτερεῖν ἃ ἔγνωτε. Δουλοῖ γὰρ φρόνημα τὸ αἰφνίδιον καὶ ἀπροσδόκητον καὶ τὸ πλείστῳ παραλόγῳ ξυμβαῖνον· ὃ ὑμῖν πρὸς τοῖς ἄλλοις οὐχ ἥκιστα καὶ κατὰ τὴν νόσον γεγένηται)

Pericles and Thucydides insist here on the surprise of the change (τὸ αἰφνίδιον καὶ ἀπροσδόκητον καὶ τὸ πλείστῳ παραλόγῳ ξυμβαῖνον). It is not the negligence of men which prevents them from preparing, but the unpredictability of certain events, like of this disease. If time were circular, they could have seen the plague coming. Τύχη, “fate, fortune”, thus plays an essential role. The quality of a good leader consists in incorporating the unpredictable into his plans (Romilly 1966, 1990; Hunter 1973).

We have thus in Thucydides the idea of time which follows a progression, even if it is chaotic, more so than that of a return or a repetition (Romilly 1966).

4.3 Summary

As different as they are, in both Herodotus and Thucydides can be found the notion of a long term and eternal time to which are opposed the time of men subject to change. Repetition or rather resemblance do not prevent progress, and it would be an error to attribute a notion of cyclic time to these authors.

V SYNTHESIS: TIME IN THE HISTORY OF IDEAS

To conclude this first part of our analysis, we have a unified picture of the conceptions of time in philosophy and in history from the epoch of Classical Greece. We are thus in a position to compare them and see if they share a common evolution in terms of the preceding period.

5.1 Comparison between history and philosophy

Historians seek to describe events in which men are involved. They are thus by nature interested more in contingency than are philosophers, whose goals are broader. Still, it is possible to compare their thinking, as shown by Vidal-Naquet (19912: chap. 1) or Thein (2001: 174-78). In particular, we have seen that they agree on the observation that man is caught up in

¹⁹ This is the argument by which the Athenians, in V, 105, justify their desire to conquer the island of Melos: “Of the gods we hold the belief, and of men we know, that by a necessity of their nature wherever they have power they always rule. And so in our case since we neither enacted this law nor when it was enacted were the first to use it, but found it in existence and expect to leave it in existence for all time, so we make use of it, well aware that both you and others, if clothed with the same power as we are, would do the same thing.” (tr. C. F. Smith, op. cit.)

the flow of time and that there exists another temporality, longer lasting, in which he cannot participate, except indirectly.

Let us pause for a moment and consider the latter, which can sometimes take the form of eternity. We may consider it as existing in two forms. The first escapes man, or at least he does not have access to it, except for by myth or speculation. This is cosmic or divine time. In a lesser way it is the time of immemorial or natural phenomena. In these terms, several authors have noted the particular status of Egypt, in Herodotus as well as in Plato. Indeed, while being located on Earth, Egypt does not seem to be subject to the effects of time. We highlighted the notation of Herodotus concerning the permanence of seasons in 4.1. This is also the case for *Timaeus*, in the dialogue of Solon, notably in 22e4-23a1, which is interesting in many ways and requires an extensive citation:

“That story, as it is told, has the fashion of a legend, but the truth of it lies in the occurrence of a shifting of the bodies in the heavens which move round the earth, and a destruction of the things on the earth by fierce fire, which recurs at long intervals. At such times all they that dwell on the mountains and in high and dry places suffer destruction more than those who dwell near to rivers or the sea; and in our case the Nile, our Saviour in other ways, saves us also at such times from this calamity by rising high. And when, on the other hand, the Gods purge the earth with a flood of waters, all the herdsmen and shepherds that are in the mountains are saved, but those in the cities of your land are swept into the sea by the streams; whereas in our country neither then nor at any other time does the water pour down over our fields from above, on the contrary it all tends naturally to well up from below. Hence it is, for these reasons, that what is here preserved is reckoned to be most ancient; the truth being that in every place where there is no excessive heat or cold to prevent it there always exists some human stock, now more, now less in number.” (tr. R. G. Bury, op. cit.)

Τοῦτο μύθου μὲν σχῆμα ἔχον λέγεται, τὸ δὲ (d) ἀληθές ἐστι τῶν περὶ γῆν κατ’ οὐρανὸν ἰόντων παράλλαξις καὶ διὰ μακρῶν χρόνων γιγνομένη τῶν ἐπὶ γῆς πυρὶ πολλῷ φθορά. τότε οὖν ὅσοι κατ’ ὄρη καὶ ἐν ὑψηλοῖς τόποις καὶ ἐν ξηροῖς οἰκοῦσιν μᾶλλον διόλλυνται τῶν ποταμοῖς καὶ θαλάττῃ προσοικούντων· ἡμῖν δὲ ὁ Νεῖλος εἰς τε τᾶλλα σωτήρ καὶ τότε ἐκ ταύτης τῆς ἀπορίας σώζει λυόμενος. ὅταν δ’ αὖ θεοὶ τὴν γῆν ὕδασι καθαίροντες κατακλύζωσιν, οἱ μὲν ἐν τοῖς ὄρεσιν διασφύζονται βουκόλοι νομῆς τε, οἱ δ’ ἐν ταῖς (e) παρ’ ὑμῖν πόλεσιν εἰς τὴν θάλατταν ὑπὸ τῶν ποταμῶν φέρονται· κατὰ δὲ τήνδε χώραν οὔτε τότε οὔτε ἄλλοτε ἄνωθεν ἐπὶ τὰς ἀρούρας ὕδωρ ἐπιρρεῖ, τὸ δ’ ἐναντίον κάτωθεν πᾶν ἐπανιέναι πέφυκεν. ὅθεν καὶ δι’ ἅς αἰτίας τάνθάδε σωζόμενα λέγεται παλαιότατα· τὸ δὲ ἀληθές, ἐν πᾶσιν τοῖς τόποις ὅπου μὴ χειμῶν ἐξαισῖος ἢ καῦμα ἀπειργεῖ, πλέον, 23.(a) τοτὲ δὲ ἔλαττον ἀεὶ γένος ἐστὶν ἀνθρώπων. (*Timaeus*, 22c9-23a1)

Solon explains that Greece regularly experiences destruction through the will of the gods, destruction which Egypt is spared thanks to the Nile (22d5-6). Exceptionally, this permanence wins over men by affecting their traditions (τάνθάδε σωζόμενα). Bodies, which undergo slow degradation after death, seem to be indestructible in Egypt as a result of mummification, as shown in in *Phaedo*, 80c7-d1 : ὅλον μένει ἀμήχανον ὅσον χρόνον: “[bodies] stay whole for an incalculable time” (passage cited by Thein, 2001: 163). The very long term, conservation beyond the succession of generational cycles, which surpasses the individual scale or the life of the City, recalls the character of the mobile image of eternity which *Timaeus*, in the physical and metaphysical order, also attached to time (see 3.2). Nothing in the history of men or of cities, no more than in the perceptible and perishable order of fate, can be identified as ἀεὶ, from the always and the immutable, a dimension reserved for νοητόν, to the intelligible. But the perennial aspect of fate constitutes a reflection of the eternal in this pure immutability, and a reflection which has a definite value, through its virtue of indicating an eternal world.

If permanence – in principle reserved for gods and the heavens – exceptionally touches the Egyptians, for men there exist other ways of reaching a long or eternal term, to wit: procreation and the succession of generations, on one hand, and glory, κλέος, on the other. Procreation is explicitly given as a way of perpetuation in *Symposium*, 208a7-b4:

“Every mortal thing is preserved in this way; not by keeping it exactly the same for ever, like the divine, but by replacing what goes off or is antiquated with something fresh, in the semblance of the original. Through this device, Socrates, a mortal thing partakes of immortality, both in its body and in all other respects.” (tr. W. R. M. Lamb,²⁰ Τούτω γὰρ τῷ τρόπῳ πᾶν τὸ θνητὸν σφύζεται, οὐ τῷ παντάπασιν τὸ αὐτὸ ἀεὶ εἶναι ὥσπερ τὸ (b) θεῖον, ἀλλὰ τῷ τὸ ἀπὸν καὶ παλαιούμενον ἕτερον νέον ἐγκαταλείπειν οἷον αὐτὸ ἦν. ταύτη τῇ μηχανῇ, ᾧ Σώκρατες, ἔφη, θνητὸν ἀθανασίας μετέχει, καὶ σῶμα καὶ τᾶλλα πάντα.)

As the soul is immortal, but subject to being forgotten (see *Respublics*, X), it is paradoxically through the body that procreation gives man the means of perpetuating himself.

The other way is also a substitute for perpetuation and also lays in others: This is immortal glory or κλέος. It may be literary, when one thinks of the famous κτῆμα ἐς ἀεὶ “acquired forever” which represents the work of Thucydides.²¹ But it is prototypically the exploit of the hero and actions of the warrior or politician. Whether we compare the verses cited in *Symposium* (208c5-6) κλέος ἐς τὸν ἀεὶ χρόνον ἀθάνατον καταθέσθαι: “[men desire] to give themselves an immortal glory for all time”, with the introduction to Herodotus’ *Histories*, which were written, among others, so that

“Great and marvelous deeds done by Greeks and foreigners (...) may not lack renown.” (tr. A. D. Godley, op. cit., μήτε ἔργα μεγάλα τε καὶ θωμαστά, τὰ μὲν Ἑλλησι, τὰ δὲ βαρβάρουσι ἀποδεχθέντα, ἀκλεᾶ γένηται)

Historians and philosophers agree on the facts that men cannot access eternity, or even the long term, except through the possibility of indirect participation.

5.2 A progressive evolution

This commonality in the perception of different times to which men are subject is probably indicative of a notion common to the time, which differentiates it from that of earlier thinkers, for whom the cycle was the preeminent mode of understanding time²² (see 3.1).

Certain hints show that this cyclic conception of time endures at least in part in the work of the classical authors, in particular when Herodotus suggests that cities were large, and became small, while others went from being small to being large (I, 5), which implies that the reverse path is possible for everything, although this remains implicit and Herodotus seems to describe an unending mobility rather than anything else. In the text from Plato’s *Timaeus* seen in 3.2, objects subject to change and fate are “generated forms of Time, which imitates Eternity and circles round according to number” (χρόνου ταῦτα αἰῶνα μιμουμένου καὶ κατ’ ἀριθμὸν κυκλουμένου γέγονεν εἶδη).

However we saw that the cycle, while present in Herodotus and Plato, does not predominate and its role is reduced in Thucydides and Aristotle. The metaphor of the circle is

²⁰ Plato in Twelve Volumes: Vol. 3. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1925.

²¹ See Raaflaub (2013) among a number of others. The theme is important in Herodotus as well (see Da Costa Guterres 2017).

²² The distinction between cyclic/linear is somewhat of an outline. Later, we attempt to make the linear temporal determination more precise. For a history of notions of time founded on this distinction, but with all necessary nuances, see Pomian (1984).

present in the work of many authors, it is a means of describing cyclic phenomena (ὁ κύκλος τῶν ὥρέων, “the circle of seasons”, Herodotus, II, 4, 4, τὸν ἐνιαύσιον κύκλον, “the circle of the year”, Euripides, *The Phoenician Women*, 544), but “that which comes back is the spring, or the dawn, not the whole of circumstances, of emotions, of events, which marked the past spring or yesterday’s dawn. The cycle sings of human lives, but does not determine their course”²³ (Romilly 1975: 142). Thucydides is taken by the idea if not of progress, at least of progression (Romilly 1966).

In particular, there is no “return” or new-beginning, as we might expect in a cyclic conception of time, so much so that the role of the unexpected is important (see 4.2). Thus the political cycle evoked by Herodotus is present as well in Plato for whom cities undergo a predictable evolution from one regime to another.²⁴ But this evolution is linear and above all unidirectional. For Plato, it does not involve a return to an earlier condition of the city (tyranny or something else). For Herodotus, that a large city might become small and that it might become once again large is never mentioned. In reality, there is confusion between the return of phenomena and time itself. “The periodic eruptions of waters and of fire seriously affect human time, but they cannot be considered to constitute it. (. . .) Human time continues despite cataclysms”²⁵ (Thein 2001: 160-61, voir aussi 56-57). In a final stage of this evolution, we saw in 3.3 that Aristotle distinguishes between cycles which measure time and time itself. So much so that the cyclic conception of time is, depending on the authors, secondary or absent in the classical period, as noted by several scholars (see Romilly 1975; Thein 2001; Golfin 2003; Vidal-Naquet 1991², among others).

Employing the observation that cities may decline and lose their power or greatness and grow as a justification for his historical work in his *Prooimion*, Herodotus means to imply that they are subject to change. It is because everything changes and nothing stays the same that the historian is needed so that which moves and would soon be forgotten is fixed by his written work. A correlate is the consideration of the long term, that is to say the consciousness that men and lands have existed for a very long time, which allows the conception of an “open” time, in which seems rather to dominate the reign of τύχη and of happenstance, of the unpredictable, which is limited to a linear conception of time. The long term, measured in thousands of years, no doubt explains why Herodotus welcomes into his history – which is in principle rational – mythic accounts which are ahistorical or pure legend.²⁶ This explains why he says, which at first is surprising coming from a historian: “Anything can happen over the long course of time.” γένοιτο δ’ ἂν πᾶν ἐν τῷ μακρῷ χρόνῳ, (regarding the Sigynnae, who live beyond Thrace, and who are said to have a Median origin, V, 9).

We will now see that during the same period, there was change in linguistic categories used to mark time differently.

VI LANGUAGE

In this section, we will show that the verbal system of Classical Greek underwent major evolution, which gives us an indication of how the Greeks of the period conceived of time.

²³ “Ce qui revient est le printemps, ou l’aube, non pas l’ensemble des circonstances, des émotions, des événements, qui ont marqué le printemps passé ou l’aube d’hier. Le cycle scande la vie humaine, mais n’en détermine pas le cours.”

²⁴ See also the famous ἀνακύκλωσις of political regimes in Polybus (VI, 9, 10).

²⁵ “Les irruptions périodiques des eaux et du feu affectent gravement le temps humain, mais elles ne sauraient être identifiées avec ce qui le constitue. (...) Le temps humain continue justement malgré les cataclysmes.”

²⁶ It is in this way that he brings the gods into the midst of men, in a remote period of history (Darbo-Peschanski 1987; Vidal-Naquet 1991²).

Ultimately, we will put these results into relation with what we described above regarding the history of ideas.

The Greek language of the 5th and 4th centuries saw a change through important innovations affecting the verbal system and the expression of time. Recall first that the verbal system of Ancient Greek is above all founded on aspectual distinctions. In other words, internal progress in this language is always expressed through verbal themes:²⁷ the present (duration), the aorist (punctual), the perfect (stative-resultative). This crude description does not do justice to recent works, which have made the system more precise or amended (notably by using the perfective/imperfective categories).²⁸ Still, the remark regarding the importance of aspect is not controversial.

But if we look closely at the classical period, we realize that the situation evolved. The marking of aspects and modes being less precise, time²⁹ stepped into the bridge. We will examine both by using an example of the perfect and of the optative.

6.1 The Greek perfect in the classical period

Indeed, as early as 1927, Pierre Chantraine argued that the perfect and the aorist merged during this period as markers of the past/anteriority. The Indo-European perfect, or rather the forms that gave rise to it, probably had a stative meaning.³⁰ This sense is still very present for Homer³¹ as can be seen in the following example. The atmospheric conditions give rise to a state of joy in a shepherd:

Οὐρανόθεν δ' ἄρ' ὑπερράγη ἄσπετος αἰθήρ, / πάντα δὲ εἶδεται ἄστρον, **γέγηθε** δέ τε φρένα ποιμήν. “From heaven breaketh open the infinite air, and all stars are seen, and the shepherd **joyeth** in his heart,” (Hom. *Iliad*, 8.557-9, tr. A. T. Murray³²)

From this stative sense, the perfect evolves to have a resultative sense, and from this resultative sense towards a sense of the simple past, as shown in this passage from Plato, cited by P. Chantraine:

Εἰ ἄρα τὸ ἐν μηδαμῇ μηδενὸς μετέχει χρόνου, οὔτε ποτὲ **γέγονεν** οὔτ' ἐγένετο οὔτ' ἦν ποτέ, οὔτε νῦν **γέγονεν** οὔτε γίγνεται οὔτε ἔστιν, οὔτ' ἔπειτα γενήσεται οὔτε γενηθήσεται οὔτε ἔσται. “If the one has no participation in time whatsoever, it neither **has become** nor became nor was in the past, it **has** neither **become** nor is it becoming nor is it in the present, and it will either become nor be made to become nor will it be in the future.” (Platon, *Parmenides*, 141e5-7, tr. H. N. Fowler³³)

In this text, the philosopher wonders about the permanence of being and unity. In order to explain that it is outside of time, he denies its creation and its existence in the three times he considers: the past, the present, and the future. It is worth noting that he uses the same form of

²⁷ According to Comrie (1976: 1-6) aspect is concerned with “the different ways of viewing the internal temporal constituency of a situation”.

²⁸ Jacquino et al. (2000) and Bary (2009) are particularly important in this domain.

²⁹ In linguistics, time is considered to be a characterization outside of process, the process described being on a temporal axis that is either absolute (that is to say, past, present, future), or relative (anterior, simultaneous, posterior), absolute time can be considered as a time relative to the moment of expression, (cf. Reichenbach 1947; Comrie 1985; Vikner 1985).

³⁰ There is a consensus on this ancient idea, (see Wackernagel 1904 for example), although the details are treated in very different ways, in particular the role played by reduplication (Jasanoff 2003; Willi 2018: chap. 5 and references).

³¹ There is a complete study on aspect in Homer found in Napoli (2006).

³² Homer. *The Iliad* in two volumes. Cambridge, MA., Harvard University Press; London, William Heinemann, Ltd. 1924.

³³ Plato in Twelve Volumes: Vol. 4. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1926.

the perfect, γέγονεν, both in the past and in the present (as shown by the verbs with which it is associated and the adverbs joined to them ποτε ‘in the past’ and νῦν ‘today’). This text from Parmenides shows us a pivotal relation whereby the perfect expresses the result (here, ‘to be created’ > ‘to exist’) and the past/the cause of this result (‘to have created’): “the perfect evokes more and more the notion of the past”³⁴ (Chantraine 1927: 161).

Chantraine describes this evolution in his conclusion:

“the perfect had its definite place in the economy of the Indo-European verb: it expressed the acquired state; – in Greek conjugation, as soon as it took on a resultative value, this resultative value had the affect of being a mere accessory next to the present/aorist opposition firmly established in conjugation. By the fact that the perfect had received the construction of the present/aorist it was just short of being a double use of the aorist. Thus was its downfall. The language eliminated superfluous elements. (...) It disappeared because it could not adapt: thus is explained its different history from that of the aorist. **Entering into conjugation it was pulled between the system of the present and that of the past; it tended here to take on desinences of the present, there those of the past: it provides thus a good example of a conflict between aspect and tense.**”³⁵

The aspectual system of Greek then became poorer because the accent was no longer on aspect but rather on the tense in this verb form.

6.2 The oblique optative as temporal marker

The same kind of change can be seen by observing the oblique optative. It concerns the use of the mode known as ‘optative’ limited to subordinate and past contexts. The genesis of this use is probably modal: it indicates the taking of a position relative to some reported propos, in particular in the 5th Century (Basset 1984, 1986; Bary à paraître). But little by little its use extended to all kinds of subordinates. It became obligatory in subordinates in the contexts in which the event described clearly precedes the description itself (Faure 2010, 2014): it is thus grammaticalized as a mark of the past. Thus in the following example:

Ἀπεκρίνω ὅτι τὸ στράτευμα διαδήσοιτο εἰς Βυζάντιον. “You answered that the army **was going to cross over** to Byzantium” (Xenophon, *Anabasis*, 7.2.27, tr. C. L. Brownson³⁶)

Διαδήσοιτο ‘(it) was crossing’ is in the future optative since the action of crossing happened in the future relative to the response (ἀπεκρίνω ‘you responded’), but in the past relative to the moment of expression. The indicative is used if the future action relative to the past moment happens during the moment of expression:

Ἐλέγομέν που καὶ τότε ὅτι ῥᾶστα οἴσει τῶν ἄλλων. “We said, I believe, then too, that he **will bear** it more easily than the other sort.” (Plato *Republica*, 603e5, tr. P. Shorey³⁷)

³⁴ “Le parfait évoque de plus en plus la notion de passé”: This trajectory is similar to the process which gave rise to the “compound past” in the progression from Latin to the Romance languages (e.g., the French “passé composé”).

³⁵ “Le parfait avait sa place définie dans l’économie du verbe indo-européen : il exprimait l’état acquis ; - dans la conjugaison grecque, dès qu’il a pris la valeur résultative, cet aspect résultatif faisait l’effet d’un simple accessoire en face de l’opposition présent/aoriste fermement établie dans la conjugaison. Par le fait que le parfait avait reçu la construction du présent/aoriste il se trouvait à une nuance près faire double emploi avec l’aoriste. De là sa ruine. La langue a éliminé les éléments superflus. (...) Il a disparu parce qu’il ne pouvait pas s’adapter : ainsi s’explique qu’il n’ait pas eu la même histoire que l’aoriste. En entrant dans la conjugaison il s’est trouvé tirailé entre le système du présent et celui du passé ; il a tendu à prendre tantôt les désinences du présent, tantôt celles du passé : il offre ainsi un bon exemple du conflit de l’aspect et du temps.” (p. 254)

³⁶ Xenophon in Seven Volumes. Vol. 3. Harvard University Press, Cambridge, MA; William Heinemann, Ltd., London. 1922.

In this example from Plato, the action of support expressed by οἴσει was formulated in the past, but is still operative at the time of expression. In the classical period, the oblique optative goes thus from an exclusively modal value to a more temporal value.

6.3 Summary

The perfect and the optative provide examples of changes from an aspectual value to a temporal value and a modal value to a temporal value. The convergence of these changes and their simultaneity seem to indicate that the verbal system of Classical Greek³⁸ underwent a reorientation based on the marking of absolute and relative time³⁹ at the expense of the internal functioning of process and mode, which remained marked, but less precisely (the passage from a system with three aspects and three modes to one with two aspects and two modes). We still need to give an answer to the question of the influence of these changes on categories of thought.

VII CONCLUSION: CO-EVOLUTION OF LANGUAGE AND THOUGHT?

This study has shown that there seems to be a “Classical Greek conception of time”, to use the terms from our introduction, and that Greek thinkers of the classical period clearly distinguished between an eternal time, a long term and a human time, the latter of which could be measured by the second, and which could also be used by man to attain or have an image of the former. Though they were conscious of repetition, in particular of natural phenomena, they nevertheless do not conceive of time in a cyclic fashion. Rather, man is caught up in a linear progress, even a teleological one. One need only think of Aristotle and the development of that which is in potency in an object, development conditioned by time.

Furthermore, the language began to use a more precise marking of time, with a new nuance marked by the perfect, and a sequence of tenses marked by the oblique optative (a change completed only in the 4th Century). As for aspect, although it survived, it was less precise, since the perfect disappeared.

Finally, all that remains to evaluate is the hypothesis that we put forward in the introduction. There we brought up the works of Benveniste on the influence of categories of language on categories of thought. More recently, works such as those of Boroditsky (2001) suggest a similar influence. In this article, the author shows experimentally that speakers of Mandarin have a vertical conception of time and those of English a horizontal conception.

For the period that interests us, we note a concomitant linguistic marking of absolute and relative time and the development of a linear notion of time, conceived of as a unidirectional conveyor of events. This can be explained in the following way: Taking time into consideration at the expense of aspect and of mode allows a clearer and more solid grasp of chronology. Thus, the progression of events in the past is now more precisely marked: We can distinguish a past in the past, a future in the past, a past which lasts right up until the present moment (the moment of expression), in opposition to an “absolute” past. The linearity of the flow of time becomes clearer. Indeed, aspect allows an event to be considered as a whole and to nuance the stages of internal progression of the process: It does not favor a linear or a chronological approach.

³⁷ Plato in Twelve Volumes: Vol. 6. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1935.

³⁸ The truth is that this change may be older and have its roots in the Homeric epoch (8th Century), where a better accounting of external chronology is considered (bearings relative to the present moment) with the establishment of a future and several morphologically marked pasts (Chantraine 1961² [1945¹]).

³⁹ The history of grammar gives independent motivation for this argument, see Berrettoni (1992).

The construction of time in historical narration follows a similar path. Indeed, in the *Histories* by Herodotus, the account is not characterized by linear composition, but rather an annular one (Immerwahr 1966; Beck 1971; Wood 1972; Golfin 1999: 146-155). Instead of advancing through linked series of events, it progresses through gaps or successive retrospective returns, from the most recent to the most ancient, according to what could be called “symmetrical way-points” (following a structure of the type A – B – C – B – A). The historian is left to make “chronological connections” for clarity of the passing of events in the account. Yet it can be seen that the further one advances in the work, that is to say the closer one gets to the historian's present (the years 480-479), the more this construction of the account by “regressive composition” and “symmetrical way-points” becomes rare. For Thucydides, the chronological construction of narration is most important. The account has a linear progression, even if the regressive method is also represented, if only with the Pentecontaetia of book I (Golfin 1999).

Such hypotheses regarding a concomitant evolution of language and the conception of time remain to be confirmed by the observation of other languages and civilizations. As we saw, human time should be the priority in this research, since taking astronomical, cosmic, or seasonal time into consideration biases perception, transferring into human time properties of the phenomena by which it is measured. Grammatically, it is clear that English or Romance languages have a very clear marking of chronology and that the dominant thinking concerning time for contemporary speakers of these languages is linear. On the other hand, despite the observations of Whorf (1956) on the Hopi language, linguistic typology has shown that no language in the world grammaticalizes a way of expressing, in its verbal system, temporal cyclicity (Comrie 1985), that is to say, has a verbal form for saying “this happened and is happening again”, to crudely gloss such a hypothetical verbal form. It seems thus promising to look at aspect, and to try to show the corollary of our hypothesis on chronology and verbal time, to wit that languages based on aspect tend to prefer a cyclic notion of time, as in certain Native American or Aboriginal languages.

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