

Catastrophe and cyclical time in Ancient thought

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Introduction

The Greek word 'catastrophe' is composed of two elements: the prefix 'cata-' indicates a downward movement, whereas '-strophe' belongs to a family of words whose fundamental meaning is 'turning'. Hence 'catastrophe' literally means the moment in time when something turns the wrong way and begins to collapse. It is something like 'the beginning of the end'.

In the modern meaning of the word, 'catastrophe' is generally conceived of as a sudden and unforeseen event which violently disrupts the normal order of things and plunges it into chaos. What I would like to argue in this paper is that while this pattern of order turning into disorder is also very usual in Ancient thought, notably among Greek philosophers and historians, there is a difference in the way the catastrophe operates: rather than being a violent and sudden event, the catastrophe is often for the Ancients a more progressive and natural change from order to disorder, and rather than disrupting the normal state of things, it belongs itself to a normal cycle of alternating order and disorder. Whereas modern metaphysics would consider a catastrophe as a purely singular event and a peak of extreme intensity irreducible to normal being, the Ancients would domesticate the catastrophe as a normal phase in a recurring cycle: just as order is created out of disorder, naturally the catastrophe destroys order into disorder, and then the same cycle goes again.

In Greek, the word 'order' is best translated as *kosmos*, which of course also means 'world'. So, the destruction of order in the catastrophe is equivalent to

the end of the world. But as already mentioned, this end is not a real end, since it will turn into the beginning of a new cycle. There is no such thing in Ancient thought as an absolute creation of the world at the beginning of ages, then an absolute destruction of it at the end; on the contrary, the view that the world is eternal is a common tenet of almost all Ancient thinkers, whatever philosophical school they belong to. Even among Platonists, the world creation narrative given in Plato's *Timaeus* was often interpreted allegorically in order to avoid giving the cosmos a real beginning. Such a worldview is a bit difficult to imagine for us, because we are influenced either by the biblical narrative frame of creation by God and final apocalypse or by modern astronomical knowledge about the Big Bang or the birth and death of all cosmic formations, but for the Ancients it was just normal to think that the world we live in had always been there and would always be. For them, the world has not been created and it is not limited in time, although it is limited in space. What allows for both the limited space and the unlimited time is often the same figure of the circle, in Greek *kuklos*, which becomes 'cycle' in English: the world is limited in space because it has a spherical shape, and it is unlimited in time because all processes of creation and destruction are endlessly alternating within a cyclical time.

I . Cosmic cycles

An early example of a cyclical cosmology is Empedocles' system. Empedocles (5th cent. BC) was one of the so-called 'Presocratic' philosophers, and like many of them he presented his system not in a theoretical exposition, but through poems, which makes it often difficult to interpret. Another obstacle is that his philosophical poems are now lost, except for a few fragments and indirect quotations in later authors, most notably Aristotle (4th cent. BC) and Simplicius (6th cent. CE). Although there is much controversy on the details of Empedocles' system, its main features are quite clear: the creation and destruction of the world occur according to the opposition of two cosmic forces named Love and Hate (or Strife). These are not psychological allegories or mythological gods,

but very concrete physical powers: Love is a principle of union, able to dominate diversity and mix different things into something unified; on the contrary, Hate is a principle of division which separates what is one into its different constituents¹. These two cosmic principles dominate each other according to a recurring cycle: at one time Love prevails on Hate and its triumph is called the Sphairos, i.e., a huge motionless sphere in which all things existing are united into one homogeneous mixture²; then Hate begins to gain might and divide this unity, always separating and dissociating things from one another³. It is obvious that in this cycle the world as we know it, i.e., the 'cosmos', cannot coincide with the opposed poles of Love's or Hate's triumph: the universal unity of the Sphairos is sterile, because things lose their constitutive differences inside it; and symmetrically, Hate's hegemony is a time when all four elements are completely dissociated from one another and are separated into four homogeneous layers, preventing anything to be composed from their mixture⁴. The consequence of this is that the world can only exist as an intermediate state between these poles. There is some controversy among scholars about the number of cosmogonies

¹ Empedocles, fr. 17, 16-17: 'At some time all things uniting together according to Love, at some time each one of them being carried apart again because of Hate's enmity' [cited several times by Simplicius, for example *In De caelo*, 141, 1-2, and *In Phys.*, 25, 29-30].

² Empedocles, fr. 27, 16-17: 'a perfectly round Sphere stands still rejoicing in solitary bliss' [Simplicius, *In Phys.*, 1183, 32-1184, 1].

³ Simplicius, *In Phys.*, 1184, 2-4: 'But when Hate begins to prevail again, then motion happens again in the Sphere: "for all the limbs of the god quivered one after another" [= Empedocles, fr. 31]'

⁴ Aristotle, *Metaph.*, A 4, 985a 25-27: 'For when the whole is dispersed into its elements by Hate, then all the fire comes together and the same for each of the elements'; for the organisation of the cosmos in concentric elemental belts under Hate's hegemony, see M. Rashed's comments in Aristote, *De la génération et corruption*, Paris, Les Belles Lettres, 2005, p. 166, n. 1.

in Empedocles: is the world created twice, both under Hate and under Love⁵, or only under Love⁶? But what is clear is that the world belongs to an intermediary phase between their alternate hegemony, because both Love and Hate are at the same time creative and destructive: Love creates by mixing and destroys by uniting too much, Hate creates by separating different things from unity and destroys them by dividing too much⁷. So, the world does not belong to the sterile order of either perfect unity under Love or perfect difference under Hate, but to the transitory and imperfect order of balanced unity and difference, when Love and Hate somehow balance each other.

In Empedocles' system, the world is periodically destroyed, but paradoxically there is no violent catastrophe destroying it; on the contrary, when the world is changed into the Sphairos, it is the unifying action of Love which destroys it. Something closer to our modern conception of catastrophe as destroying the world could be found in Stoicism with the 'conflagration' theory. In Stoic physics, just as for Empedocles, the world is regularly destroyed and recreated to be

⁵ This is strongly suggested by Aristotle, *De gen. et corr.*, II, 6, 334a 6-7: '[Empedocles] says that the world is similar under Hate now and before under Love'. Classic expositions of the double cosmogony interpretation are D. O'Brien, *Empedocles' Cosmic Cycle*, Cambridge, Cambridge University Press, 1969, and M.W. Wright, *Empedocles: The Extant Fragments*, New Haven, Yale University Press, 1981; for the most recent elaboration of this view, see M. Rashed, *La jeune fille et la sphère. Études sur Empédocle*, Paris, Presses de l'université Paris-Sorbonne, 2018.

⁶ More precisely, in this interpretation, the world *as we know it*, including animal life, exists only under Love as the result of a continuous process involving first a cosmogony under Hate, which builds the structure of the cosmos by dissociating the Sphairos into grossly homogeneous elemental belts (earth at the centre, then water, air and fire), second a zoogony under Love, which unites parts of the different elements into animate compounds. This interpretation is given among others by G.S. Kirk, J.E. Raven and M. Schofield, *The Presocratic Philosophers*, 2nd ed., Cambridge, Cambridge University Press, 1983.

⁷ Empedocles, fr. 17, 12-14: 'Double is the birth of mortal things, and double is their death: for one is engendered and destroyed by the reunion of all things, whereas another is nourished and dissipated by their disjunction' [Simplicius, *In Phys.*, 158, 3-5].

again destroyed in a recurring cycle that goes on over and over. The starting point of this cycle is a state of things in which there is only fire. Of course, this primordial fire is not just concrete burning fire as we know it, but it is also a creative principle of the world and as such is called God⁸ (stoicism is a materialistic philosophy, so even God is material⁹). So fire exists both as having a destructive power of burning things, i.e., turning them into itself, and as creative fire, called ‘artful fire’ (*pur technikon*), which on the contrary shapes all things into what they are¹⁰. The world is created when the primordial fire is progressively attenuated and transformed into the other elements of water, air and earth¹¹. Yet this differentiation is only transitory and at some point fire starts again to prevail over the other elements, feeding on them to turn them into fire until the point where everything has become fire again and a new cycle can begin¹². This is this phase of destruction of the world which is called

⁸ Aëtius, I, 7, 33, 305, 14–306, 2: ‘The Stoics proclaim an intelligent God, which is an artful fire methodically proceeding to the creation of the world’ [SVF, II, 1027].

⁹ For a collection of testimonies on God’s corporeity according to the Stoics, see SVF, II, 1028–1048.

¹⁰ Arius Didymus, fr. 33, 2–4: ‘For there are two kinds of fire: one without art and which only changes its aliment into itself, and another which is artful, making things grow and be preserved’ [SVF, I, 120].

¹¹ Diogenes Laërtius, *Vit. phil.*, VII, 142: ‘[According to the Stoics] the world is created when the [primordial fire] substance turns into air, then into liquid, then the thick part of this liquid condensates until it produces earth, while its finer part turns into air; which by becoming still more refined engenders fire; then mixture between them makes plants, animals and all other kinds of things’ [SVF, I, 102 and II, 581].

¹² Aristocles of Messene, *De phil.*, fr. f3, 13–14: ‘[The Stoics say that] at some times determined by fate all the world is turned into fire (*ekpurousthai*), and then the world is recreated again’ [SVF, I, 98]; this Stoic theory is closely similar to that of the Presocratic philosopher Heraclitus (6th–5th cent. BC), as is shown for example by the following testimony in Diogenes Laërtius, *Vit. phil.*, IX, 8, 5–7: ‘[Heraclitus says that] the world is engendered out of fire and is turned into fire (*ekpurousthai*) again alternately according to some cycles for the whole eternity; and this happens according to fate.’

'conflagration' (*ekpurōsis*) in many Ancient testimonies about the Stoics. The image of the whole world turning into fire could easily be labelled a 'catastrophe', but from a Stoic point of view, there is just nothing catastrophic in it, and this for two reasons: first, because the conflagration is the time when God coincides with itself, which is a much more perfect state than the world as we know it¹³; and second, because the destruction of the world is not its end, since this same world will be recreated again and again. The world which is recreated after the conflagration is not, strictly speaking, a new world: it is the same as the next and the previous ones, in an eternal return of the same¹⁴. This fascinating view of eternal return seems very counter-intuitive, especially if one takes it as implying the return of identical individuals in successive worlds¹⁵; but eternal return is better understood once you try to think inside the Stoic system, which is based on strict determinism: God, which is the material fire at the start of each cycle, is also called 'Fate'¹⁶ and everything happens according to it in a chain of necessary effects, so in such a system it seems logical that all successive worlds are the same, because they are all the same set of necessary consequences deriving from

¹³ Plutarch, *De comm. not. adv. Stoic.*, 1067A 2-4: 'When these people [= the Stoics] make the conflagration of the world happen, there remains nothing bad in it and the whole of it is intelligent and wise' [*SVF*, II, 606] .

¹⁴ On eternal return in Stoicism, see the collection of testimonies in A.A. Long and D.N. Sedley, *The Hellenistic Philosophers*, Cambridge, Cambridge University Press, 1987, ch. 52.

¹⁵ This issue seems to have been addressed by the Stoics themselves according to Simplicius, *In Phys.*, 886, 12-16: 'When they say that the same *me* will be born again in the recreation of the world, they are right to inquire if I am one numerically now and then, because I am the same in being, or if I am made different just by my being set in one created world or another' [*SVF*, II, 627] .

¹⁶ Diogenes Laërtius, *Vit. phil.*, VII, 135, 9-10: '[According to the Stoics] God, the intellect, Fate and Zeus are one and the same thing, which is still called with many other denominations' [*SVF*, I, 102].

the same starting point¹⁷.

II. Climatic cycles

This pattern of cyclical creation and destruction works not only for the world as a whole, but also inside the world. Nature is commonly seen by the Ancients as a recurrent cycle of generation and corruption in which all things around us are continually transforming, first being generated, then decaying and changing into something else.

The most systematic elaboration of this view can be found in Aristotle, especially in his treatise *On generation and corruption*: according to Aristotle, the four elements of the world around us, earth, water, air and fire, are able to change into one another; for example, fire can become air just by becoming colder, and earth can change into water when it changes from being dry into being humid¹⁸. This process of elemental change is what Aristotle calls 'generation and corruption' (*genesis kai phthora*) and it is the matrix of all natural phenomena. Even if theoretically any element can change into any of the three others, the most obvious instance of such a transformation is the cycle of water as Aristotle explains it in his treatise entitled *Meteorologica*: the heat of sun turns into vapour the water which is at the surface of Earth in seas, lakes or rivers;

¹⁷ Aristocles of Messene, *De phil.*, fr. f3, 15-19: '[The Stoics say that] the primordial fire is like a kind of semen, containing the developments and causes of all things past, present and future, so that their combination and consecution is the inevitable and ineluctable fate, knowledge, truth and law of beings' [*SVF*, I, 98]. It is therefore not unlikely that eternal return included individuals, at least for some Stoics such as Chrysippus (3rd cent. BC), for whom we have among others the following testimony by Alexander of Aphrodisias, *In Anal. Pr.*, 180, 33-36: 'The Stoics believe that after the conflagration everything will be recreated in the world numerically the same, so that even the individual with its particular characteristics will be born and exist the same in the next world as in the previous one, as Chrysippus says in his books *On the World*' [*SVF*, II, 624].

¹⁸ Aristotle, *De gen. et corr.*, II, 4, especially 331 a12-b4.

this vapour rises into the sky where it can condensate into clouds and give birth to various meteorological phenomena such as rain, snow or hail, thus returning to the ground for a new cycle¹⁹. Aristotle metaphorically describes the cycle of water as a vertical river flowing in circle between water and air²⁰. Although the function of such a cycle is to ensure a dynamic balance between the elements²¹, especially between water and air, there may be some geographical variations in this balance: locally, the cycle may be more or less unbalanced, allowing for excessive rain or conversely excessive drought in some regions. This is how Aristotle interprets the myth of Deucalion, the only man surviving with his wife Pyrrha the deluge sent by Zeus to punish the corrupt mankind of the Bronze Age: for Aristotle, this deluge was just a local phenomenon of excessive rain in Western Greece, which belongs to a very long climatic cycle of alternating dryness and humidity²². Since this climatic cycle is local and does not happen everywhere at the same time, different regions will also belong to different

¹⁹ Aristotle, *Meteor.*, I, 9, 346b 24–31: ‘The liquid around the earth evaporates because of the sunrays and all the other heat coming from above and it rises up in the sky; but when the heat which makes it rise begins to be insufficient, both because it is dispersed in the upper space and because it loses heat when going higher up in the air above the earth, then the vapour cools down and condenses again because of the place and the lack of heat; it changes from air into water and after this change it falls down onto the earth again.’

²⁰ *Ibid.*, 347a 2–3: ‘This should be conceived of as some kind of river flowing in circle upwards and downwards, common to air and water.’

²¹ On the issue of balance between the elements, crucial for Aristotelian meteorology and cosmology, see my short comments in Aristotle, *Météorologiques*, Paris, Flammarion, 2008, pp. 18–19.

²² Aristotle, *Meteor.*, I, 14, 352a 29–35: ‘There happens at some fixed intervals of time, just as winter in the succession of each year’s seasons, a great winter and excess of rain recurring after a long cycle; and this excess of rain does not occur always in the same regions, but in the same way as what is called “Deucalion’s deluge”; for the latter happened mainly in the Greek region, especially in the most ancient part of Greece, i.e., that around Dodona and the Achelous river [in Western Greece].’

stages of the cycle²³. This is why now some regions are too dry while others are too humid; and according to each local climatic cycle dry regions are gradually turning into humid ones and humid ones into deserts. Which means that deserts used to be fertile lands and that conversely fertile lands will someday become deserts, in a horizontal cycle of exchange between fertile and infertile regions. If one remembers that this horizontal cycle is a consequence of local variations in the vertical cycle of air and water's transformations, and that these variations are themselves recurring according to cyclical periods of time, all of Aristotle's meteorology is seen to be organised, both in time and space, by a circular structural pattern.

In Aristotle's system, there is no such thing as the creation or destruction of the world: the world as we know it has always existed and will always exist, with only minor variations within this eternal continuity. But variations that are minor for the whole world can be huge for man and human societies. This is particularly the case for climatic cycles: men cannot live in a region which is at the start of the cycle, because it is too humid and filled with waters; but gradually, sediments accumulate, marshes dry up and the land becomes fertile, allowing men to come and live there to cultivate the land; then, the continuing process of drying up will gradually reduce the fertility of the land, making it more difficult for men to cultivate it; and finally, it comes to the point when the land becomes too dry and sterile to support human needs and people have to leave for other regions which are still in the fertile phase of the cycle²⁴. So, what climatic cycles create and destroy is not the whole world as 'kosmos', but the human world, i.e., the natural environment in which humans can live and build societies. Here we

²³ This is how Aristotle explains the fact that in some regions, which are in the process of drying up, the sea recedes and is replaced by land, whereas the contrary happens in other regions, which are in a more humid phase of the cycle (*Meteor.*, I, 14, 352a 22–25); similarly, rivers and springs tend to disappear in dry regions only to reappear elsewhere in regions with increasing humidity (*ibid.*, 351 a36-b4).

²⁴ Aristotle, *Meteor.*, I, 14, especially 351b 22–352a 17.

find in Aristotle a very modern idea of how human beings and human societies depend on environmental conditions that are fragile and continually changing²⁵. We should not take our own existence for granted, because it actually depends on natural conditions that will not be preserved forever. Yet, for Aristotle, mankind is not really threatened in its own existence and as a biological species it is considered eternal. What allows mankind to survive in spite of the periodical destruction of its world is that, as already mentioned, this destruction does not occur everywhere at the same time: climatic cycles are local, which allows men to move in a region at the fertile phase and to move out when it becomes sterile. This is another very modern idea: the history of mankind is a story of migrations; there is no such thing as autochthons or autochthonous peoples, since any people in any land originates in an inward migration, just as in the end it will have no way to survive but to leave this land in an outward migration²⁶. So, there is a very close connection between the climatic cycles in each region and migration cycles between one region and another; and because local climatic changes are a natural and very gradual process, migrations also extend over very long periods of time which exceed men's memory²⁷. Of course, Aristotle also mentions that a

²⁵ Aristotle gives as an example the contrasted fate of Argos and Mycenae in north-eastern Peloponnese: 'At the time of the Trojan war, the region of Argos could feed only few people because of its being marshy, whereas that of Mycenae was doing well and as a result was held in greater honour; but now it is the contrary because of what we said before: the latter has become sterile and completely dry, whereas in the other the land, which had been sterile because of stagnant water, has now become usable' (*Meteor.*, I, 14, 352a 9-14).

²⁶ Aristotle's vocabulary is remarkably precise: 'migrations' as a generic term translates the Greek *metanastaseis* (*ibid.*, 351b 16), whereas 'inward migration' and 'outward migration' are respectively *katoiskismos* (*ibid.*, 351b 22-23) and '*apoleipsis*' (*ibid.*, 351b 19).

²⁷ This is what allows for myths of autochthony and some peoples' belief in really being 'from this land', whereas in fact they just forgot their foreign origin: 'it should be understood that it also escapes us how each people established itself in the lands that changed from being marshy and filled with waters into dry [i.e., cultivable] ones; for here again the progress takes place gradually over a very long time, so that it cannot be remembered who were the first to come, and when, and how was the country then' (*ibid.*, 351b 22-27).

whole people may be destroyed by violent catastrophes, such as wars, epidemics, and sudden food shortage²⁸; but most of the time, the destruction happens without catastrophe, little by little over a very long time exceeding human memory, by the correlative process of environmental degradation and emigration to fertile lands²⁹.

III. Political cycles

Such a pattern of recurrent collapse and periodical replacement is to be found not only in the external dependency of human communities on their natural environment, but also in their internal, i.e., historical and political, working. Just as any community in any given place is destined to be destroyed and displaced elsewhere because of environmental change, history and politics can also be seen as a cyclical collapse and replacement of one empire by another or of one ruling class by another.

This view of political cycles was made especially influential by the Greek historian Polybius. Living in the 2nd century BC at the time when Rome established an uncontested domination over its rival Carthage and over the city-states of Greece, Polybius explains in the famous preface of his *Histories* that he intends to account for Rome's rise to hegemony³⁰ and sets it in parallel with a series of empires that previously accessed a prominent position, then lost it: the first hegemony was that of the Persians, i.e., the Achaemenid empire on the Middle East in the 6th to 4th centuries BC³¹; in Greece, Athens and Sparta rivalled for hegemony until the latter secured it, but only for a dozen years from the

²⁸ *Ibid.*, 351b 13-14.

²⁹ *Ibid.*, 351b 15-20: '[Food shortage because of the land drying up happens very progressively] so that even the migrations of such people escape us, some leaving their country while others try to remain until the very moment when the country is unable to feed anyone; so it is likely that between the first departure and the last, there is a very long time, so that no one can remember [the whole process].'

³⁰ Polybius, *Hist.*, I, 1, 5.

³¹ *Ibid.*, I, 2, 2.

end of the 5th century BC³²; a much wider hegemony was established in the 4th century BC by the Macedonians under Alexander the Great, who managed to conquer and replace the Achaemenid empire in Asia³³; and now a still more universal empire has been established by the Romans³⁴. This enumeration of hegemonies became a historical topos, especially through another Greek historian of Rome, Dionysius of Halicarnassus (1st cent. BC)³⁵. In Polybius, hegemonies are not exactly cyclical, since some of them are quite local or contemporary with each other, such as the short Greek hegemony of Sparta and the great Asian hegemony of Achaemenid Persia; but Polybius' account suggests nonetheless a pattern of rise and decline which was systematised and popularised by Dionysius of Halicarnassus: the number of hegemonies rises to five (Assyrians, Medes, Persians, Macedonians, Romans³⁶) and local Greek hegemonies are excluded so as to leave only universal empires³⁷, which gives a neat succession of powers replacing each other in a recurrent pattern of rise, conquest, hegemony, rivalry with a new rising power, and eventually replacement by this new power³⁸. In this

³² *Ibid.*, I, 2, 3; strangely, Polybius does *not* mention Athens, but only the fact that Sparta had to fight for a long time to secure hegemony; the reasons for such an omission are investigated by J.-L. Ferrary, 'L'empire de Rome et les hégémonies des cités grecques chez Polybe', *Bulletin de correspondance hellénique*, 100, 1976, pp. 283-289.

³³ *Ibid.*, I, 2, 4-6.

³⁴ *Ibid.*, I, 2, 7.

³⁵ For the elaboration of Polybius' list of hegemonies in Dionysius and later authors such as Aelius Aristides and Appian (both 2nd cent. CE), see G. Kaibel, 'Dionysios von Halikarnassos und die Sophistik', *Hermes*, 20, 1885, pp. 497-513.

³⁶ Dionysius of Halicarnassus, *Ant. Rom.*, I, 2, 2-4 and 3, 3.

³⁷ *Ibid.*, I, 3, 1-2.

³⁸ This pattern is especially clear in Dionysius' account of Macedonia's hegemony: 'The Macedonian power broke down the might of the Persians and in size it exceeded all previous hegemonies, but in time even theirs did not flourish long; on the contrary, after Alexander's death it began to change for the worse, for it was torn apart between many generals right from the time of the Diadochi [Alexander's successors]; and after them it still had might to go on until the second and the third generations, but it had made itself too weak and eventually was destroyed by the Romans' (*ibid.*, I, 2, 3).

view of history, each empire is a political order which attempts to extend itself from a local scale to the whole world, but will eventually collapse to be replaced by another world order.

In this cycle of hegemonies, the end of one empire often takes the form of military catastrophe, i.e., decisive battle and defeat against the next hegemonic power³⁹. Yet Ancient historians also looked for deeper reasons, especially to explain the Romans' rise to hegemony: according to Polybius, Rome's irresistible empire was due to its political institutions⁴⁰ and its peculiar 'mixed' constitution⁴¹. Polybius describes with great detail how all other constitutions naturally tend to collapse after a while in a cyclical manner: monarchy degenerates into

³⁹ Examples could be Alexander's victories against Achaemenid Persia at the battles of the Granicus and Issus (respectively 334 and 333 BC), and at the end of the Macedonian cycle the victory of the Romans against Perseus of Macedon at the battle of Pydna in 168 BC.

⁴⁰ Polybius, *Hist.*, III, 2, 6, 2-10: 'We will give an account of the Roman political constitution, and right after that we will show that the peculiar character of this constitution greatly benefited the Romans not only in order to acquire domination over Italians and Sicilian Greeks, but also to gain power over Iberians and Celts, and at last to conceive of a more universal ambition after submitting Carthage by war' (this programmatic passage in book III announces book VI, which deals with Rome's political institutions and their history).

⁴¹ For Polybius, the model for a mixed constitution was set by Lycurgus' legislation of Sparta, but the Romans had reached the same result through the many troubles of their early history (*ibid.*, VI, 10). The mixed constitution was a blend of monarchy, aristocracy and democracy, and the balance of powers on which it relies was supposed to avoid the pitfalls of each type of constitution. A detailed analysis of this idea in Polybius has been made by K. von Fritz, *The Theory of the mixed constitution in Antiquity. A critical analysis of Polybius' political ideas*, New York, Columbia University Press, 1954; a more general history of 'mixed constitution' theories in Antiquity from Plato to Plutarch and Aelius Aristides is given by G.J.D. Aalders, *Die Theorie der gemischten Verfassung im Altertum*, Amsterdam, Verlag Adolf M. Hakkert, 1968.

tyranny⁴², which transforms into aristocracy⁴³, then aristocracy degenerates into oligarchy⁴⁴, which in turn ends up into democracy⁴⁵, and democracy eventually degenerates into ochlocracy, i.e., the violent power of the mob⁴⁶. This famous theory of a cycle of constitutions, called in Greek *anakuklosis*, is inspired by book VIII of Plato's *Republic*, but the sequence of political regimes is different: Plato starts with aristocracy, i.e., the ideal city-state ruled by philosophers, then aristocracy deteriorates into timocracy⁴⁷, timocracy into oligarchy⁴⁸, oligarchy into democracy⁴⁹ and finally democracy into tyranny⁵⁰. It is not clear in Plato if, and how, the worst regime, tyranny, could bring back to the starting point of the cycle, i.e., the ideal city of philosophers⁵¹; yet there is clearly a linear sequence of constitutions in a logical order⁵² and it is this idea that Polybius takes up and

⁴² Polybius, *Hist.*, VI, 7, 4-8.

⁴³ *Ibid.*, 7, 8-8, 3.

⁴⁴ *Ibid.*, 8, 4-5.

⁴⁵ *Ibid.*, 8, 6-9, 3.

⁴⁶ *Ibid.*, 9, 4-7.

⁴⁷ Plato, *Rep.*, VIII, 545c 8-547c 5.

⁴⁸ *Ibid.*, 550d 3-551b 7.

⁴⁹ *Ibid.*, 555b 3-557a 8.

⁵⁰ *Ibid.*, 562a 4-569c 9.

⁵¹ This omission was criticised by Plato's pupil Aristotle in his *Politics*, V, 12, 1316a 25-34: '[Socrates in Plato's *Republic*] does not say if there will be a change of tyranny or not, by what cause or into what kind of constitution; the reason for this is that it would not have been easy to say it, because this change is not strictly determined: according to him, it should be into the first and best constitution, so that there would be a continuous cycle, whereas in fact tyranny also changes into another tyranny [...], or into oligarchy [...], or into democracy [...], or into aristocracy [...]' (omitting the historical examples given by Aristotle for each kind of change).

⁵² Aristotle also criticises this linearity both because intermediate steps in the sequence can be skipped (*ibid.*, 1316a 18-20: 'all constitutions often change to the opposite rather than the one that is closest') and because the order can be reversed (*ibid.*, 1316a 23-24: 'yet constitutions also change the other way round, for example a democracy into an oligarchy, and this more often than into a monarchy').

makes more systematic. In Polybius, the cycle is divided in three pairs, i.e., two regimes ruled by only one man, two regimes ruled by an elite of a few persons, and two regimes ruled by the whole people; and each pair starts with a good regime at first (monarchy, aristocracy, democracy), which is perverted in a bad constitution (tyranny, oligarchy, ochlocracy). So, the whole cycle has a very simple structure: good and bad rule of one, good and bad rule of a few, good and bad rule of all. It is a real cycle because the last regime, ochlocracy, leads back to the complete anarchy from which the first regime, monarchy, originated. At the start, according to Polybius, monarchy appears when human beings begin to organise socially again after having been destroyed by such catastrophes as floods, epidemics or bad crops: the few human beings surviving the catastrophe are reduced to live like animals, but progressively they multiply and start living together, which naturally leads to choosing a leader and forming monarchies⁵³. At the end of the cycle, the violence of the mob in ochlocracy is such that it completely destroys the social body and returns it to the state of 'savage beasts'⁵⁴, which brings the whole *anakuklosis* to its starting point, as if the political catastrophe resulting from ochlocracy was equivalent to the natural catastrophe from which the cycle of constitutions originated at the start.

Conclusion

In many Ancient worldviews, both time and space are organised by the figure of the circle: men live on a spherical earth at the centre of the universe, which is itself a sphere; but this finite spherical world has always existed and will

⁵³ Polybius, *Hist.*, VI, 5, 5-9. At this stage, socialisation and leadership are not a political but a natural process very similar to what happens in animals through gregarious instinct: the few people surviving the catastrophe 'congregate to those of the same species' (*ibid.*, 5, 7, 3) and 'they come together in the same way as animals, following those among them who have more courage and physical strength' (*ibid.*, 5, 9, 2-3).

⁵⁴ *Ibid.*, VI, 9, 9, 2-4: '[political violence in ochlocracy increases] until the point when the people is brought back to the state of savage beasts and finds again a ruler and a monarch'.

always exist, so that it has to subsist for an infinite time; this means that any catastrophe that could destroy the world has to be compensated by a reverse process of recreation, in an alternating cycle of destruction and creation. In such a cyclical time, the catastrophe is at the junction between one cycle and the next, so that its function is to bring back an ending cycle to the beginning of the next one. Catastrophe, with its etymological meaning of 'turning downwards', is the recurrent moment of return to the starting point, according to a kind of temporal gravity which periodically makes the world fall back to its original state. This view, which we found in Greek historians as well as philosophers and in such different areas as cosmology, meteorology, anthropology, history and politics, is quite different from what we moderns conceive of as catastrophe. First, catastrophe is not necessarily sudden and violent: on the contrary, it can be a very slow process of transformation, as when the world turns back to the perfect unity of the *Sphairos* or when a land becomes gradually infertile and compels the people living in it to emigrate little by little to more fertile countries. Second, the catastrophe is not an unexpected disruption of order into disorder: being part of a cycle, the catastrophe can be predicted by anyone having knowledge of the whole cycle, and it belongs to an ordered pattern of recurring events, so that, for example, even the chaotic state of anarchy can be integrated to the ordered *anakuklosis* of political regimes. Third, the catastrophe is not singular or unprecedented: it recurs periodically and it contains in itself the possibility of the same world repeating itself over and over for an infinite time. For the modern conception of the catastrophe as a singular, unpredictable and violent destruction precluding any return to the former state of things, maybe we should coin another word and call it 'diastrophe', where the prefix 'dia-' expresses a movement of transgression and deviation: in the catastrophe, collapse brings things back on their feet and we stay inside the circle of time, whereas in the sideways move of the 'diastrophe', of which nuclear accidents and climatic change may be the archetypes, we are led outside the circle, moving forward to unprecedented and unpredictable consequences with no hope of turning back.