

Plato's 'nuptial' number and the decline of Kallipolis

Handout

Pl., *Resp.* VIII, 545c-547a

Introduction (cf. T 1)	[545c7-d7] Problem to be tackled: how does the aristocracy's degeneration take place? [545d7-546a1] Invocation of the Muses and preliminary characterization of their speech.
Explaining political degeneration (cf. T 2)	[546a1-3] First explanation: "everything that comes into being must decay". [546a3-b4] Second explanation: periods of fruitfulness and barrenness.
Mathematical section (cf. T 3)	[546b4-5] Mention of the perfect and geometric numbers, which pertain to the divine and human sphere respectively. [546b5-c2] Conditions to be fulfilled so as to establish a rational, commensurable <i>ratio</i> . [546c2-c7] Instructions for calculating the two harmonies.
Numbers' nuptial role (cf. T 4)	[546c7-d3] Role of the geometric number with respect to marriages and births. [546d3-547a6] Intermixing of gold and bronze, silver and iron (cf. Hesiod's myth).
Conclusion (cf. T 1)	[547a7-8] Glaucon's reaction to the Muses' speech and Socrates' closing reply.

- Q 1** Do the Muses intend to deceive us, or should we take them seriously? [cf. T 1]
- Q 2** What explains the fatal miscalculation of the geometric number by the rulers? [cf. T 2, T 6, T 7]
- Q 3** Does the calculation of the geometric number admit a solution? If yes, which is the most convincing? [cf. T 3; diagrams on pp. 4-5 of the handout]
- Q 4** How does the so-called nuptial number impact the timing of marriages and births and thus the eventual collapse of Kallipolis? [cf. T 4, T 10, T 11, T 12]

T 1 Pl., *Resp.* VIII, 545c7-546a1; 547a7-8 (ed. Slings)

Φέρε τοίνυν, ἦν δ' ἐγώ, πειρώμεθα λέγειν τίνα τρόπον τιμοκρατία γένοιτ' ἂν ἐξ ἀριστοκρατίας. ἡ τόδε μὲν ἀπλοῦν, ὅτι πᾶσα πολιτεία μεταβάλλει ἐξ αὐτοῦ τοῦ ἔχοντος τὰς ἀρχάς, ὅταν ἐν αὐτῷ τούτῳ στάσις ἐγγένηται· ὁμοιοῦντος δέ, κἂν πάνυ ὀλίγον ἦ, ἀδύνατον κινηθῆναι; Ἔστι γὰρ οὕτω. Πῶς οὖν δὴ, εἶπον, ὦ Γλαύκων, ἡ πόλις ἡμῖν κινηθήσεται, καὶ πῆ στασιάσουσιν οἱ ἐπίκουροι καὶ οἱ ἄρχοντες πρὸς ἀλλήλους τε καὶ πρὸς ἑαυτούς; ἡ βούλει, ὡς περ Ὀμηρος, εὐχόμεθα ταῖς Μούσαις εἰπεῖν ἡμῖν <ὅπως δὴ πρῶτον> στάσις <ἔμπεσε>, καὶ φῶμεν αὐτὰς τραγικῶς ὡς πρὸς παῖδας ἡμᾶς παιζούσας καὶ ἐρεσηλούσας, ὡς δὴ σπουδῆ λεγούσας, ὑψηλολογουμένας λέγειν; Πῶς; Ὡδέ πως. [...] Καὶ ὀρθῶς γ', εἶφη, αὐτὰς ἀποκρίνεσθαι φήσομεν. Καὶ γάρ, ἦν δ' ἐγώ, ἀνάγκη Μούσας γε οὔσας.

Well, then, let's try to explain how timocracy emerges from aristocracy. Or is it a simple principle that the cause of change in any constitution is civil war breaking out within the ruling group itself, but that if this group – however small it is – remains of one mind, the constitution cannot be changed? – Yes, that's right. – How, then, Glaucon, will our city be changed? How will civil war arise, either between the auxiliaries and the rulers or within either group? Or do you want us to be like Homer and pray to the Muses to tell us 'how civil war first broke out?'¹ And shall we say that they speak to us in tragic tones and sublime style, as if they were in earnest, playing and jesting with us as if we were children? – What will they say? – Something like this [...]. And we'll declare that what the Muses say is right. – It must be, since they're Muses. (Transl. by G.M.A. Grube, rev. C.D.C. Reeve modified).

¹ Hom., *Il.* 16.112-113 (adaptation).

T 2 Pl., *Resp.* VIII, 546a1-b4 (ed. Slings)

χαλεπὸν μὲν κινηθῆναι πόλιν οὕτω συστάσαν· ἀλλ' ἐπεὶ γενομένῳ παντὶ φθορὰ ἐστίν, οὐδ' ἡ τοιαύτη σύστασις τὸν ἅπαντα μενεῖ χρόνον, ἀλλὰ λυθήσεται. λύσις δὲ ἦδε· οὐ μόνον φυτοῖς ἐγγείοις, ἀλλὰ καὶ ἐν ἐπιγείοις ζῴοις φορὰ καὶ ἀφορία ψυχῆς τε καὶ σωμάτων γίνονται, ὅταν περιτροπαὶ ἐκάστοις κύκλων περιφορὰς συνάπτωσι, βραχυβίοις μὲν βραχυπόρους, ἐναντίοις δὲ ἐναντίας. γένους δὲ ὑμετέρου εὐγονίας τε καὶ ἀφορίας, καίπερ ὄντες σοφοί, οὐς ἡγεμόνας πόλεως ἐπαιδεύσασθε, οὐδὲν μᾶλλον λογισμῷ μετ' αἰσθήσεως τεύζονται, ἀλλὰ πάρεισιν αὐτοὺς καὶ γεννήσουσι παῖδάς ποτε οὐ δέον.

“It is hard for a city composed in this way to change, but everything that comes into being must decay. Not even a constitution such as this will last forever. It, too, must face dissolution. And this is how it will be dissolved. All plants that grow in the earth, and also all animals that grow upon it, have periods of fruitfulness and barrenness of both soul and body as often as the revolutions complete the circumferences of their circles. These circumferences are short for the short-lived, and the opposite for their opposites. Now, the people you have educated to be leaders in your city, even though they are wise, still won't, through calculation together with sense perception, hit upon the fertility and barrenness of the human species, but it will escape them, and so they will at some time beget children when they ought not to do so”. (Transl. by G.M.A. Grube, rev. C.D.C. Reeve).

T 3 Pl., *Resp.* VIII, 546b4-c7 (ed. Slings)

ἔστι δὲ θεῖῳ μὲν γεννητῷ περίοδος ἣν ἀριθμὸς περιλαμβάνει τέλειος, ἀνθρωπεῖῳ δὲ ἐν ᾧ πρῶτῳ αὐξήσεις δυνάμεναι τε καὶ δυναστευόμεναι, τρεῖς ἀποστάσεις, τέτταρας δὲ ὄρους λαβοῦσαι ὁμοιούντων τε καὶ ἀνομοιούντων καὶ αὐξόντων καὶ φθινόντων, πάντα προσήγορα καὶ ῥητὰ πρὸς ἄλληλα ἀπέφηναν· ὧν ἐπίτριτος πυθμὴν πεμπάδι συζυγεῖς δύο ἁρμονίας παρέχεται τρεῖς αὐξηθεῖς, τὴν μὲν ἴσην ἰσάκις, ἑκατὸν τοσαυτάκις, τὴν δὲ ἰσομήκη μὲν τῇ, προμήκη δέ, ἑκατὸν μὲν ἀριθμῶν ἀπὸ διαμέτρων ῥητῶν πεμπάδος, δεομένων ἐνὸς ἐκάστων, ἀρρήτων δὲ δυοῖν, ἑκατὸν δὲ κύβων τριάδος.

“For a divine creature, there is a cycle comprehended by a perfect number. For a human being, it is the first number in which are found root and square increases, comprehending three intervals and four terms, made of similar and dissimilar numbers, waxing and waning numbers, that render all things mutually agreeable and rational in their relations to one another. Their basic *ratio* of four and three, married with five, give two harmonies when thrice increased. One of them is a square, so many times a hundred. The other is of equal length one way but oblong. One of its sides is one hundred squares of the rational diagonal of five diminished by one each or one hundred squares of the irrational diagonal diminished by two each. The other side is a hundred cubes of three”. (Transl. by G.M.A. Grube, rev. C.D.C. Reeve modified).

T 4 Pl., *Resp.* VIII, 546c7-547a6 (ed. Slings)

σύμπας δὲ οὗτος ἀριθμὸς γεωμετρικός, τοιοῦτου κύριος, ἀμεινόνων τε καὶ χειρόνων γενέσεων, ἃς ὅταν ἀγνοήσαντες ὑμῖν οἱ φύλακες συνοικίζωσιν νύμφας νυμφίοις παρὰ καιρὸν, οὐκ εὐφρεῖς οὐδ' εὐτυχεῖς παῖδες ἔσονται· ὧν καταστήσουσι μὲν τοὺς ἀρίστους οἱ πρότεροι, ὅμως δὲ ὄντες ἀνάξιοι, εἰς τὰς τῶν πατέρων αὐτῶν δυνάμεις ἐλθόντες, ἡμῶν πρῶτον ἄρξονται ἀμελεῖν φύλακες ὄντες, παρ' ἔλαττον τοῦ δέοντος ἡγησάμενοι τὰ μουσικῆς, δεύτερον δὲ τὰ γυμναστικῆς, ὅθεν ἀμεινότεροι γενήσονται ὑμῖν οἱ νέοι. ἐκ δὲ τούτων ἄρχοντες οὐ πάνυ φυλακτικοὶ καταστήσονται πρὸς τὸ δοκιμάζειν τὰ Ἡσιόδου τε καὶ τὰ παρ' ὑμῖν γένη, χρυσοῦν τε καὶ ἀργυροῦν καὶ χαλκοῦν καὶ σιδηροῦν· ὁμοῦ δὲ μιγέντος σιδηροῦ ἀργυροῦ καὶ χαλκοῦ χρυσοῦ ἀνομοιότης ἐγγενήσεται καὶ ἀνωμαλία ἀνάρμοστος, ἃ γενόμενα, οὗ ἂν ἐγγένηται, αἰεὶ τίκει πόλεμον καὶ ἔχθραν. <ταύτης τοι γενεῆς> χρὴ φάναι εἶναι στάσιν, ὅπου ἂν γίγηται αἰεὶ.

“This whole geometric number controls better and worse births. And when your rulers, through ignorance of these births, join brides and grooms at the wrong time, the children will be neither good natured nor fortunate. The older generation will choose the best of these children but they are unworthy nevertheless, and when they acquire their fathers' powers, they will begin, as guardians, to neglect us Muses. First, they will have less consideration for music and poetry than they ought, then they will neglect physical training, so that your young people will become less well educated in music and poetry. Hence, rulers chosen from among them won't be able to guard well the testing of the golden, silver, bronze, and iron races, which are Hesiod's and your own². The intermixing of iron with silver and bronze with gold that results will engender lack of likeness and unharmonious inequality, and these always breed war and hostility wherever they arise. Civil war, we declare, is always and everywhere 'of this lineage'³. (Transl. by G.M.A. Grube, rev. C.D.C. Reeve).

² Cf. Hes., *Op.* 106-201.

³ Hom., *Il.* 6.211 and 20.241.

T 5 Pl., *Tim.* 27d5-28a4 (cf. also *Tim.* 32b8-c4; 38b6-7)

Ἔστιν οὖν δι᾽ ἡμῶν δόξαν πρῶτον διαιρετέον τάδε· τί τὸ ὄν ἀεί, γένησιν δὲ οὐκ ἔχον, καὶ τί τὸ γιγνόμενον μὲν ἀεί, ὄν δὲ οὐδέποτε; τὸ μὲν δι᾽ ἡμῶν νοήσει μετὰ λόγου περιληπτόν, ἀεί κατὰ ταῦτά ὄν, τὸ δ' αὖ δόξῃ μετ' αἰσθήσεως ἀλόγου δοξαστόν, γιγνόμενον καὶ ἀπολλύμενον, ὄντως δὲ οὐδέποτε ὄν.

As I see it, then, we must begin by making the following distinction: What is that which always is and has no becoming, and what is that which becomes but never is? The former is grasped by understanding, which involves a reasoned account. It is unchanging. The latter is grasped by opinion, which involves unreasoning sense perception. It comes to be and passes away, but never really is. (Transl. by D.J. Zeyl).

T 6 Procl., *in Remp.* II, 6.22-28; 79.13-17 (ed. Kroll) (cf. also 70.26-71.3)

ἦν ἀπὸ τῆς αἰσθήσεως ἐφελκυσάμενοι, πραγματείας πολλῆς δεομένης καὶ ἀγαθῆς τύχης εἰς τὸ μὴ πολλὰ τοιαῦτα πταίειν καὶ <μόλις δι' ἀμυδρῶν ὀργάνων> τάληθες ἐλεῖν ἰσχυρούσης, τὸν μὲν λογισμόν ἐξάντη τῆς ἐπικλωσθησομένης ἔξουσι τῆ πολιτεία λύσεως, τὴν δὲ αἴσθησιν ταῖς ἑαυτῆς παροράσεσιν αἰτίαν τῶν ἐν τοῖς λογισμοῖς παρὰ τοῖς μετ' αὐτοὺς ἄρχουσιν ἀμαρτημάτων ἀποφαίνουσιν [...]. ταύτην δὲ ἡ τῶν σοφῶν ἀρχόντων τοῦ καιροῦ τοῦ δέοντος εἰς τοὺς γάμους παρόρασις, οὐ πάνυ γεννήσασα φυλακικοὺς ἀνδρας, λογισμῶ μὲν χρωμένων ἐκείνων μετ' αἰσθήσεως, τῆς δὲ αἰσθήσεως ἐν τῇ θεωρίᾳ τοῦ καιροῦ τὸ ἀπαραλόγιστον μὴ ἐχούσης.

Since they had deduced the appropriate time from sense perception – and it requires much diligence and good fortune to avoid many such errors and [it requires] strength to detect the truth “with difficulty through dull organs” – they will hold that the calculation will have no role in the fated dissolution of the constitution but they show that sense perception by its own inadequacy is the cause of the errors in the calculations by the rulers that come after them. [...]. And it was the false vision that the wise rulers had of the appropriate time necessary for marriages that caused this, when [their false vision] engendered men who were not entirely up to the standard of being Guardians. This was because those [wise rulers] used reasoning together with perception, but perception does not possess the infallibility that lies in the intellectual contemplation of the appropriate time. (Transl. by D. Baltzly, J. Finamore, and G. Miles, forthcoming).

T 7 Pl., *Theaet.* 195c6-d3; 195e8-b3; 196c4-6

{ΣΩ.} Οὐ δυσχεραίνω μόνον ἀλλὰ καὶ δέδοικα ὅτι ἀποκρινοῦμαι ἂν τις ἔρηταί με· “ὦ Σώκρατες, ἤρηκας δι᾽ ἡμῶν δόξαν, ὅτι οὐτε ἐν ταῖς αἰσθήσεσιν ἐστὶ πρὸς ἀλλήλας οὐτ' ἐν ταῖς διανοοῖαις ἀλλ' ἐν τῇ συνάψει αἰσθήσεως πρὸς διάνοιαν;” φήσω δὲ ἐγὼ οἶμαι καλλωπιζόμενος ὡς τι ἠύρηκότες ἡμῶν καλόν [...]. {ΣΩ.} Τί οὖν; οἶμαι τινὰ πώποτε αὐτὸν ἐν αὐτῷ πέντε καὶ ἑπτὰ, λέγω δὲ μὴ ἀνθρώπους ἑπτὰ καὶ πέντε προθέμενον σκοπεῖν μηδ' ἄλλο τοιοῦτον, ἀλλ' αὐτὰ πέντε καὶ ἑπτὰ, ἃ φαμεν ἐκεῖ μνημεῖα ἐν τῷ ἐκμαγεῖω εἶναι καὶ ψευδῆ ἐν αὐτοῖς οὐκ εἶναι δοξάσαι, ταῦτα αὐτὰ εἴ τις ἀνθρώπων ἤδη πώποτε ἐσκέψατο λέγων πρὸς αὐτὸν καὶ ἐρωτῶν πόσα ποτ' ἐστίν, καὶ ὁ μὲν τις εἶπεν οἰηθεὶς ἕνδεκα αὐτὰ εἶναι, ὁ δὲ δώδεκα, ἢ πάντες λέγουσί τε καὶ οἴονται δώδεκα αὐτὰ εἶναι; {ΘΕΑΙ.} Οὐ μὰ τὸν Δία, ἀλλὰ πολλοὶ δι᾽ ἡμῶν καὶ ἕνδεκα· ἐὰν δὲ γε ἐν πλείονι ἀριθμῷ τις σκοπῆται, μᾶλλον σφάλεται. οἶμαι γὰρ σε περὶ παντὸς [μᾶλλον] ἀριθμοῦ λέγειν [...]. {ΣΩ.} Οὐκοῦν ἀλλ' ὅτι οὐδὲν δεῖ ἀποφαίνειν τὸ τὰ ψευδῆ δοξάζειν ἢ διανοίας πρὸς αἴσθησιν παραλλαγῆν. εἰ γὰρ τοῦτ' ἦν, οὐκ ἂν ποτε ἐν αὐτοῖς τοῖς διανοήμασιν ἐψευδόμεθα.

SOCRATES: I am not only annoyed; I am alarmed. I am afraid of what I may say if someone asks me: ‘So, Socrates, you’ve discovered false judgment, have you? You have found that it arises not in the relation of perceptions to one another, or of thoughts to one another, but in the connecting of perception with thought?’ I believe I am very likely to say ‘Yes’, with an air of flattering myself upon our having made some beautiful discovery [...]. SOCRATES: Well, now, take the case where a man is considering five and seven within himself – I don’t mean seven men and five men, or anything of that sort, but five and seven themselves; the records, as we allege, in that waxen block, things among which it is not possible that there should be false judgment. Suppose he is talking to himself about them, and asking himself how many they are. Do you think that in such a case it has ever happened that one man thought they were eleven and said so, while another thought and said that they were twelve? Or do all men say and all men think that they are twelve? THEAETETUS: Oh, good Heavens, no; lots of people would make them eleven. And with larger numbers they go wrong still more often – for I suppose what you say is intended to apply to all numbers [...]. SOCRATES: Then we shall have to say that false judgment is something other than a misapplication of thought to perception; because if this were so, we could never be in error so long as we remained within our thoughts themselves. (Transl. by M.J. Levett, rev. M. Burnyeat).

Reckoning the two harmonies...

- a) 1st harmony $36^2 \times 100 = 12.960.000$
 2nd harmony $4.800 \times 2.700 = 12.960.000$
- b) 1st harmony $100 \times (36 + 64) = 3.600 + 6.400 = 10.000$
 2nd harmony $100 \times (27 + 48) = 2.700 + 4.800 = 7.500$

Plato, <i>Resp.</i> 546b-c (ed. Slings)	Proclus, <i>in Remp.</i> II, Essay 13, see esp. § 35, cf. also §§ 23, 27
546b5-6: ἐν ᾧ πρώτῳ αὐξήσεις δυνάμεναι τε καὶ δυναστεύομεναι	δυνάμεναι τε καὶ δυναστεύομεναι: “roots” and “squares”
546b6-7: τρεῖς ἀποστάσεις, τέτταρας δὲ ὄρους λαβοῦσαι	*** (36.7-9) [presumably: “three intervals” and “four terms”, cf. 36.21-23; 37.14]
546b7-c1: ὁμοιούντων τε καὶ ἀνομοιούντων καὶ αὐξόντων καὶ φθινόντων	ὁμοιούντων: “similar” numbers (e.g. x^2 or x^3) ἀνομοιούντων: “dissimilar” numbers (e.g. xy , x^2y or xy^2) αὐξόντων: “waxing” numbers (x^2y , where $y > x$) [“planks”] φθινόντων: “waning” numbers (y^2x , where $y > x$) [“bricks”]
546c1-2: πάντα προσήγορα καὶ ῥητὰ πρὸς ἄλληλα ἀπέφηναν·	Roots and squares, similar and dissimilar numbers are arranged in a proportion with “four terms” and “three intervals”: $x^3 : x^2y : y^2x : y^3$
546c2-3: ὧν ἐπίτριτος πυθμὴν πεμπάδι συζυγεῖς	4 : 3 (“married” with 5)
546c3: δύο ἀρμονίας παρέχεται τρις αὐξηθεῖς	$y : x = 4 : 3 \rightarrow$ τρις αὐξηθεῖς: “threefold increased” ($x \rightarrow x^2 \rightarrow x^3$) $4^3 : 3^3$ (or: $3 \times 3 \times 3 : 4 \times 4 \times 4$) $(3 \times 3 \times 3) = 27$ (“similar”) $(4 \times 4 \times 4) = 64$ (“similar”) $(3 \times 3 \times 4) = 36$ (dissimilar, “waxing”) $(4 \times 4 \times 3) = 48$ (dissimilar, “waning”) Four-terms proportion: $3^3 : 3^2x4 : 4^2x3 : 4^3 = 27 : 36 : 48 : 64$ $36 + 64 = 100 ; 27 + 48 = 75$
546c3-5: τὴν μὲν ἴσην ἰσάκις, ἑκατὸν τοσαυτάκις, τὴν δὲ ἰσομήκη μὲν τῆ, προμήκη δὲ	τὴν μὲν ... τοσαυτάκις: $100 \times 100 = 10.000$ (1 st harmony – “square”) $[100 = 36 + 64 = (3 \times 3 \times 4) + 4^3 = 6^2 + 4^3]$ τὴν δὲ ... προμήκη δέ: $75 \times 100 = 7.500$ (2 nd harmony – “oblong”) $[75 = 27 + 48 = 3^3 + (4 \times 4 \times 3)]$
546c5-6: ἑκατὸν μὲν ἀριθμῶν ἀπὸ διαμέτρων ῥητῶν πεμπάδος, δεομένων ἑνὸς ἐκάστων, ἀρρήτων δὲ δυοῖν	πεμπάδος: a square having sides whose length is 5, whose irrational diagonal D (διάμετρος ἄρρητος) is $\sqrt{50}$ rational diagonal D^* (διάμετρος ῥητός) is $\sqrt{49} = 7$ cf. §23 and §27 to find D^* with side- and diagonal-numbers (“elegant theorem”), starting by $[L : D^*] = [1 : 1]$ $L = d + l \quad D^* = d + 2l$ $1 + 1 = 2 \quad 1 + (2 \times 1) = 3$ $3 + 2 = 5 \quad 3 + (2 \times 2) = 7$ ἀριθμῶν ἀπὸ: $\sqrt{50^2} = 50; \sqrt{49^2} = 49$ [$D^{*2} - D^2 = \pm 1$, i.e. $50 - 49 = 1$] διαμέτρων ῥητῶν, δεομένων ἑνὸς: $49 - 1 = 48$; <διαμέτρων> ἀρρήτων, <δεομένων> δυοῖν: $50 - 2 = 48$ ἑκατὸν: $100 \rightarrow 48 \times 100 = 4.800$
546c6-7: ἑκατὸν δὲ κύβων τριάδος	$100 \times 3^3 = 100 \times 27 = 2.700$ $(4.800 + 2.700 = 7.500, \text{ i.e. } 2^{\text{nd}} \text{ harmony})$

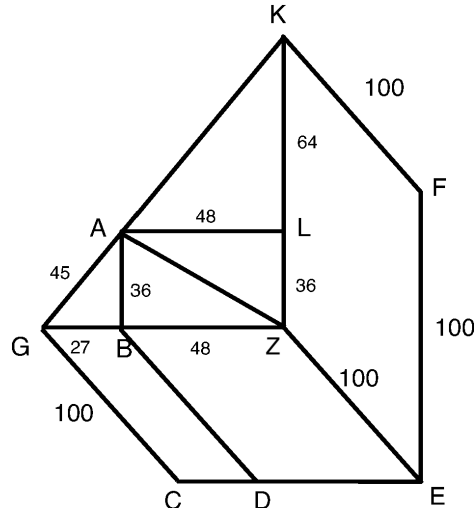
How to represent the geometrical number?

The two harmonies:

ZKFE = 1st harmony
 GZEC = 2nd harmony

Resp. 546c5-6 (4.800) → BZED
 Resp. 546c6-7 (2.700) → GBDC

Cf. McNamee-Jacovides (2003: 49)



T 8 Ar., Pol. 1316a1-20

ἐν δὲ τῇ Πολιτείᾳ λέγεται μὲν περὶ τῶν μεταβολῶν ὑπὸ τοῦ Σωκράτους, οὐ μὲντοι λέγεται καλῶς. τῆς τε γὰρ ἀρίστης πολιτείας καὶ πρώτης οὐσίας οὐ λέγει τὴν μεταβολὴν ἰδίως. φησὶ γὰρ αἴτιον εἶναι τὸ μὴ μένειν μηθὲν ἀλλ' ἐν τινι περιόδῳ μεταβάλλειν, ἀρχὴν δ' εἶναι τούτων “ὡν ἐπίτριτος πυθμὴν πεμπάδι συζυγεῖς δύο ἁρμονίας παρέχεται”, λέγων ὅταν ὁ τοῦ διαγράμματος ἀριθμὸς τούτου γένηται στερεός, ὡς τῆς φύσεώς ποτε φουούσης φαύλους καὶ κρείττους τῆς παιδείας, τοῦτο μὲν οὖν αὐτὸ λέγων ἴσως οὐ κακῶς (ἐνδέχεται γὰρ εἶναι τινὰς οὓς παιδευθῆναι καὶ γενέσθαι σπουδαίους ἀνδρας ἀδύνατον), ἀλλ' αὕτη τί ἂν ἴδιος εἴη μεταβολὴ τῆς ὑπ' ἐκείνου λεγομένης ἀρίστης πολιτείας μᾶλλον ἢ τῶν ἄλλων πασῶν καὶ τῶν γιγνομένων πάντων; καὶ διὰ γε τὸν χρόνον, δι' ὃν λέγει πάντα μεταβάλλειν, καὶ τὰ μὴ ἅμα ἀρξάμενα γίγνεσθαι ἅμα μεταβάλλει, οἷον εἰ τῇ προτέρᾳ ἡμέρᾳ ἐγένετο τῆς τροπῆς, ἅμα ἄρα μεταβάλλει; πρὸς δὲ τούτοις διὰ τίν' αἰτίαν ἐκ ταύτης εἰς τὴν Λακωνικὴν μεταβάλλει; πλεονάκις γὰρ εἰς τὴν ἐναντίαν μεταβάλλουσι πᾶσαι αἱ πολιτεῖαι ἢ τὴν σύνεγγυς.

In the *Republic* of Plato, Socrates treats of revolutions, but not well, for he mentions no cause of change which peculiarly affects the first or perfect state. He only says that the cause is that nothing is abiding, but all things change in a certain cycle; and that the origin of the change consists in those numbers “of which 4 and 3, married with 5, furnish two harmonies” (he means when the number of this figure becomes solid); he conceives that nature at certain times produces bad men who will not submit to education; in which latter particular he may very likely be not far wrong, for there may well be some men who cannot be educated and made virtuous. But why is such a cause of change peculiar to his ideal state, and not rather common to all states, or indeed, to everything which comes into being at all? And is it by the agency of time, which, as he declares, makes all things change, that things which did not begin together, change together? For example, if something has come into being the day before the completion of the cycle, will it change with things that came into being before? Further, why should the perfect state change into the Spartan? For governments more often take an opposite form than one akin to them. (Transl. by J. Barnes).

T 9 Plut., De Is. et Os. 373F-374A

Αἰγυπτίους δ' ἂν τις εἰκάσειε τῶν τριγῶνων τὸ κάλλιστον <τιμᾶν> μάλιστα τούτῳ τὴν τοῦ παντὸς φύσιν ὁμοιοῦντας, ὡς καὶ Πλάτων ἐν τῇ πολιτείᾳ (546b) δοκεῖ τούτῳ προσκεκρησθαι τὸ γαμήλιον διάγραμμα συντάττων. ἔχει δ' ἐκεῖνο τὸ τρίγωνον τριῶν τὴν πρὸς ὀρθίαν καὶ τεττάρων τὴν βάσιν καὶ πέντε τὴν ὑποτείνουσαν ἴσον ταῖς περιεχούσαις δυναμένην. εἰκαστέον οὖν τὴν μὲν πρὸς ὀρθίαν ἄρρην, τὴν δὲ βάσιν θηλείαν, τὴν δ' ὑποτείνουσαν ἀμφοῖν ἐγγόνῳ· καὶ τὸν μὲν Ὅσιριν ὡς ἀρχὴν, τὴν δ' Ἴσιν ὡς ὑποδοχὴν, τὸν δ' Ὄρον ὡς ἀποτέλεσμα. τὰ μὲν γὰρ τρία πρώτος περισσός ἐστι καὶ τέλειος· τὰ δὲ τέτταρα τετράγωνος ἀπὸ πλευρᾶς ἀρτίου τῆς δυάδος· τὰ δὲ πέντε πῆ μὲν τῷ πατρὶ πῆ δὲ τῇ μητρὶ προσέοικεν ἐκ τριάδος συγκεῖμενα καὶ δυάδος.

One might conjecture that the Egyptians hold in high honour the most beautiful of the triangles, since they liken the nature of the Universe most closely to it, as Plato in the *Republic* seems to have made use of it in formulating his figure of marriage. This triangle has its upright of three units, its base of four, and its hypotenuse of five, whose power is equal to that of the other two sides. The upright, therefore, may be likened to the male, the base to the female, and the hypotenuse to the child of both, and so Osiris may be regarded as the origin, Isis as the recipient, and Horus as perfected result. Three is the first perfect odd number: four is a square whose side is the even number two; but five is in some ways like to its father, and in some ways like to its mother, being made up of three and two. (Transl. by F.C. Babbitt).

T 10 Pl., *Resp.* III, 415b3-7; 415c5-7 (ed. Slings)

τοῖς οὖν ἄρχουσι καὶ πρῶτον καὶ μάλιστα παραγγέλλει ὁ θεός, ὅπως μηδενὸς οὕτω φύλακες ἀγαθοὶ ἔσονται μηδ' οὕτω σφόδρα φυλάξουσι μηδὲν ὡς τοὺς ἐκγόνους, ὅτι αὐτοῖς τούτων ἐν ταῖς ψυχαῖς παραμέμικται [...], ὡς χρησιμοῦ ὄντος τότε τὴν πόλιν διαφθαρήναι, ὅταν αὐτὴν ὁ σιδηροῦς φύλαξ ἢ ὁ χαλκοῦς φυλάξῃ.

“So the first and most important command from the god to the rulers is that there is nothing that they must guard better or watch more carefully than the mixture of metals in the souls of the next generation [...], for there is an oracle which says that the city will be ruined if it ever has an iron or a bronze guardian”. (Transl. by G.M.A. Grube, rev. C.D.C. Reeve).

T 11 Pl., *Resp.* V, 459c9-d6; 459e1-5; 460a8-10 (ed. Slings)

συχνῶ τῷ ψεύδει καὶ τῇ ἀπάτῃ κινδυνεύει ἡμῖν δεήσειν χρῆσθαι τοὺς ἄρχοντας ἐπ' ὠφελία τῶν ἀρχομένων. ἔφαμεν δὲ π οὐ ἐν φαρμάκου εἶδει πάντα τὰ τοιαῦτα χρήσιμα εἶναι. Καὶ ὀρθῶς γε, ἔφη. Ἐν τοῖς γάμοις τοίνυν καὶ παιδοποιίας ἔοικε τὸ ὀρθὸν τοῦτο γίγνεσθαι οὐκ ἐλάχιστον [...]. καὶ ταῦτα πάντα γινόμενα λανθάνειν πλὴν αὐτοὺς τοὺς ἄρχοντας, εἰ αὖ ἡ ἀγγέλι τῶν φυλάκων ὅτι μάλιστα ἀστασίαστος ἔσται. Ὀρθότατα, ἔφη [...]. Κληῖροι δὴ τινες οἶμαι ποιητέοι κομποῖ, ὥστε τὸν φαῦλον ἐκεῖνον αἰτιάσθαι ἐφ' ἐκάστης συνέρξεως τύχην ἀλλὰ μὴ τοὺς ἄρχοντας.

It looks as though our rulers will have to make considerable use of falsehood and deception for the benefit of those they rule. And we said that all such falsehoods are useful as a form of drug. – And we were right. – Well, it seems we were right, especially where marriages and the producing of children are concerned [...]. And this must all be brought about without being noticed by anyone except the rulers, so that our herd of guardians remains as free from dissension as possible. – That’s absolutely right [...]. Then there’ll have to be some sophisticated lotteries introduced, so that at each marriage the inferior people we mentioned will blame luck rather than the rulers when they aren’t chosen. – There will. (Transl. by G.M.A. Grube, rev. C.D.C. Reeve).

Harmonies & Cycles ⁴	1 st cycle	2 nd cycle	3 rd cycle
Men → 1 st harmony = 10000 days = ca. 27,5 years	0 – 10.000 days = ca. 0 – 27,5 years	10.000 – 20.000 days = ca. 27,5 – 55 years	20.000 – 30.000 days = ca. 55 – 82,5 years
Women → 2 nd harmony = 7500 days = ca. 20,5 years	0 – 7.500 days = ca. 0 – 20,5 years	7.500 – 15.000 days = ca. 20,5 – 41 years	15.000 – 22.500 days = ca. 41 – 61,5 years

T 12 Pl., *Resp.* V, 460e1-461a2 (ed. Slings) (cf. *Resp.* V, 459b1-3 and *Leg.* VI, 772d-e; 785b)

Ἄρ' οὖν σοι συνδοκεῖ μέτριος χρόνος ἀκμῆς τὰ εἴκοσι ἔτη γυναικί, ἀνδρὶ δὲ τὰ τριάκοντα; Τὰ ποῖα αὐτῶν; ἔφη. Γυναικὶ μὲν, ἣν δ' ἐγώ, ἀρξαμένη ἀπὸ εικοσιετίδος μέχρι τετρακακονταετίδος τίκτειν τῇ πόλει· ἀνδρὶ δὲ, ἐπειδὴν τὴν ὀξυτάτην δρόμου ἀκμὴν παρῆ, τὸ ἀπὸ τούτου γεννᾶν τῇ πόλει μέχρι πεντεκακαιεντηκονταέτους. Ἀμφοτέρων γοῦν, ἔφη, αὕτη ἀκμὴ σώματός τε καὶ φρονήσεως.

Do you share the view that a woman’s prime lasts about twenty years e and a man’s about thirty? – Which years are those? – A woman is to bear children for the city from the age of twenty to the age of forty, a man from the time that he passes his peak as a runner until he reaches fifty-five. – At any rate, that’s the physical and mental prime for both. (Transl. by G.M.A. Grube, rev. C.D.C. Reeve).

T 13 Pl., *Leg.* VI, 775b6-c4

οὖν δὴ περὶ γάμους ἐσπουδακότα, ἐν οἷς ἔμφρονα μάλιστα εἶναι πρέπει νόμφην καὶ νυμφίον μεταβολὴν οὐ σμικρὰν βίου μεταλλάττοντας, ἅμα δὲ καὶ τὸ γεννώμενον ὅπως ὅτι μάλιστα ἐξ ἔμφρόνων ἀεὶ γίγνηται· σχεδὸν γὰρ ἄδηλον ὅποια νύξ ἢ φῶς αὐτὸ γεννήσει μετὰ θεοῦ.

On the day of their wedding particularly, when they are at a turning-point in their lives, bride and groom ought to show restraint, so as to make as sure as they can (it being practically impossible to tell the day or night in which by the favor of God conception will take place) that any child they may have should have parents who were sober when they conceived him. (Transl. by T.J. Saunders).⁵

⁴ Cfr. Gaiser (1998 [1974]: 108).

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