COSMIC HARMONY ACCORDING TO PROCLUS

Due to its ambiguity, Plato's cosmology[1] early enough incited the commentators to compare cosmic reality with some current conceptions of music, in spite of the complicated computations these comparisons required in order to look justified. Cosmic harmony has even been presented as a transcendent music or as the very transcendence of music. The Platonic demiurge is, according to Proclus, capable of modelling the cosmic matter by conferring to it forms guaranteed by the unique harmony of the universe[2]. Divine providence asserts itself in spite of the momentary failures and the apparent changes that ignorant people take for inherent to the condition of the cosmos[3]. This is the reason why such modifications do not concern but the renewal of the divisible parts of cosmic reality and affect by no means its unique structure and its continuity[4]. In the same order of ideas, the world is governed through a universal harmony, since it reflects the Good where it proceeds from through its creator and father[5]. The unity of the world derives from the continuity which dominates it[6] and which qualifies the participative continuity dominating Proclus' ontological universe[7].

The dialectic between the perfect and the imperfect, the instable and the immutable, haunts Proclus' thought. He admits, in principle, that what is defectful and weak transmits its being at its own cost, whereas it simultaneously suffers inflection and alteration[8]. As a mathematician and astronomer who does not contest Ptolemy's doctrine[9], Proclus insists on the apparent character of the anomalies observed in the movement of the celestial bodies by admitting its fundamental rectitude. Accordingly, he considers that the Sun and the planets move on apparently non concentric orbits as compared to those of the firmament[10], without however giving any explanation of this phenomenon. He nevertheless indicates some methods of measuring the differences between appearance and supposed reality[11]. From an epistemological viewpoint, it is convenient to «save the phe-

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1. Particularly exposed in *Republic, X;* 616 b - 617 d; *Politicus,* 269 d - 270 d; 272 d - 273 e and *Timaeus,* 35 a-37a.

2. Cf. *in Tim.*, I, 143, 2-7 Diehl; PLAT., *Theaet.*, 156 a.

3. Cf. *in Tim.*, I, 126, 24-31 D.

4. Cf. *ibid.*, I, 90, 9-12 D.

5. The same occurs as far as the Henads are concerned. Cf. *Elements of theology,* § 151, p. 134, 3-5 Dodds; *ibid;* § 165, p. 142, 32-144, 2 D.

6. Cf. *ibid.*, § 166, p. 144, 15-21 D.

7. Cf. *ibid.*, § 165, p. 142, 28-31 D.

8. Cf. *ibid.*, § 27, p. 142, 29-31 D.

9. Cf. *Hypot. Astr.*, ed. C. Manitius, Leipzig, Teubner, 1909, p. 136, 14-17.

10. Cf. *ibid.*, 54, 13-19 M.

11. Cf. *ibid.*, 84, 19-25 M.

nomena»[12] by supposing the existence of an excentric orbit parallelly to an epicyclic one[13]. One should not neglect to take into consideration the epicyclic or helicoidal movement of the inferior entities in orbit around the superior ones in Proclus' ontology[14]. There certainly exists an obvious parallelism between the ontological and the astronomical sectors of Proclus' philosophy, but it manifestly stops here. The Diadochus applies the astronomical movement to that of the divine dancers[15]. He however desperately seeks a correct and exact solution to the problem of the Sun's motion, and confines himself to stretching the difference between the rotation of heaven and the nychthemeral rhythm[16]. He only accepts a thorough analysis of the various curves of the celestial bodies according to the plane surfaces they describe[17].

The question is about not a single curve, but several ones. Indeed, the problem raised by the apparent movements, as opposed to the real ones overlaps by far the case of the Sun and concerns the planets[18], the Moon[19] and the stars in general[20] as well. All of them follow elliptical curves which allow them to mark apogees and perigees. Such a kind of motion entails specific behaviours as far as the speeds of the celestial bodies are concerned[21]. It is in this perspective that the apparent movement of the Sun along the cycle of the zodiac may also be considered[22], since this movement presupposes the ecliptic[23]. Proclus remarks that when the Sun is located at the Twins, it covers the same distance less rapidly than when it is located at the Sagittary[24]. A similar conception is applied to all celestial bodies; it takes into consideration the excentric and epicyclic orbits[25]. Proportionally[26], these views equally apply to the apparent, though more complicated, movement of the Moon[27].

The anomalies eventually observed in the travelling of celestial bodies are but the result of the conjunction of several movements. They consequently are purely apparent[28]. Nevertheless, astronomers constantly look for the reasons which will allow them to explain

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12. Cf. PLUTARCH, *De facie in orbe lunae*, 5, 3, 923 A (=*S.V. F.*, fr 500 Arnim, I, 112, 10-15, about Aristarchus). Cf. E. MOUTSOPOULOS, Sur l'origine philosophique possible du modele de l'univers aristarchéen, *Diotima*, 12, 1987, pp. 175-177.

13. Cf. PROCLUS, *Hypot. astr.*, 34, 19-23 ; 38, 4-9; 11-16; 58, 27-60, 23 M.

14. Cf. *in Tim.*, I, 332, 26-29; 369, 25-29; 403, 2-4; III, 23-24 D; *Hypot. astr.*, 64, 17-18; 176, 7-8 M.; *in Eucl.*, 137, 13-18 Friedlein.

15. Cf. E. MOUTSOPOULOS, The gods' cyclic dance in Proclus, *Proceedings of the Academy of Athens*, 78, 2003, pp. 171-178.

16. Cf. *Hypot. astr.*, 124, 21-23 M.

17. Cf. *ibid.*, 44, 14-19 M.

18. Cf. *ibid.*, 8, 5-18; 23-25; 166, 13-15; 222, 7-11 M.

19. Cf. *ibid.*, 10, 20-23 M.

20. Cf. *ibid.*, 10, 24 – 12, 1 M.

21. Cf. *ibid.*, 26, 8-12 M.

22. Cf. *ibid.*, 60, 1-4 M.

23. Cf. *ibid.*, 40, 19-26; 54, 11-12; 124, 19-21 M.

24. Cf. *ibid.*, 52, 16-23; 84, 19-25; 112, 1-4; 156, 7-9 M.

25. Cf. *ibid.*, 26, 7-8; 30, 22-27; 54, 13-19; 170, 20-23 M.

26. Cf. *ibid.*, 110, 24-26; 158, 5-11 M.

27. Cf. *ibid.*, 96, 4-13; 116, 8-10 M.

28. Cf. *ibid.*, 146, 5-7; 8-10; 156, 13-15 M.

these anomalies observed not only in the movements of the Sun and the Moon[29], but also in those of all the stars of the flrmament[30]. This is why, in most cases, it is necessary to find out a numerical ratio existing between two centres: the one relating to the concentric revolutions; the other to the epicyclic ones[31]. Such a ratio can not be measured unless according to the positions of the stars that accompany the Sun[32], as well as in all other cases where this is indicated conformingly to the apogees and the perigees[33].

Such detailed references only confirm Proclus' thesis on the substantial unity of the universe, which nonetheless is compound[34], and on the laws that govern it. These laws derive from the providential attitude of the demiurge, an attitude which guarantees the unity of his creation. After Plato, Proclus invokes to this purpose some extremely subtle arguments[35]. Unique and unitary, though compound, the universe remains ordered according to a harmonious order which is sealed thanks to the undestructible link of analogy[36]. Besides, analogy manifests itself even in the details that characterize the functioning of the universe at an astronomical level[37]. Since the demiurge has created the world after a perfect paradigme he has structured it not as an aggregate, but as a functioning organism, starting with its soul and having recourse, to this effect, to numbers and to harmonies of numbers[38]. Had the world to be compact, the demiurge would have not intended to render it harmonious. However, it is precisely due to its mixed constitution that he managed to assure its unity thanks to the principle of harmony which had been suggested to him by the model which the world should be assimilated to[39].

Shaped after a perfect model, the world is, then, perfect itself by virtue of its harmonic and «analogical» constitution[40]. Dominated by constant laws which forecast all the eventual exceptions[41], so that its functioning be not disturbed, it exists perpetually within time which is the moving image of eternity[42]. If the world has some affinity with music, this is due to the fact that, just as music, it obeys the laws which derive from the principle of harmony. It is only on this condition that one may conceive of comparing it to music. Music, as far as it is concerned in itself, remains the privilege of mankind which has the duty of practicing it and, hence, of indefinitely promoting it.

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29. Cf. *ibid.*, 14, 5-10; 16, 9-12 M.

30. Cf. *ibid.*, 4, 25 - 6, 5 M.

31. Cf. *ibid.*, 64, 17-19 M.

32. Cf. *ibid.*, 146, 2-7; 156, 13-15; 166, 5-8; 176, 20-22; 214, 17-18 M.

33. Cf. *ibid.;* 20, 14-20; 222, 8-9; 224, 13-16 M. One may proceed in the same way through a comparison of the apparent diameters of the Sun and the Moon in order to face the various aspects of their eclipses by referring to their real diameters. Cf. *ibid.*, 130, 27-29 M.

34. Cf. *In Tim.* I, 297, 14-21 D. (concerning the universe); 288, 24-27 D. (concerning the demiurge).

35. Cf. *ibid.*, II, 59, 2-60, 2 D.

36. Cf. *ibid.*, II, 41, 3-9 D.

37. Cf. *Hypot. astr.*, 112, 20-24; 176, 2-12; 182, 20-29; 214, 15-21; 224, 6-13 M.

38. Cf. PLATO, *Rep.*, X, 616 d; cf. *Plat. theol.*, V, 4, 255 Portus <p. 19,5-11 Saffrey-Westerink>; 255 P. <p. 19, 13-18 S.-W>; *in Tim.*, 11, 268, 10-14 D.

39. Cf. *ibid.*, II, 112, 33-113, 9; 234, 7-20; 236, 5-12 D.

40. Cf. *Plat. theol.*, V, 20, 288-289 P. < pp. 73, 10-14 and 73, 24-74, 4 S.-W.>; *ibid,* V, 26, 303 P. < p. 97, 11-25 S.-W.>

41. Cf. *ibid.*, V, 24, 298 P.< p. 89, 14-22 S.-W.>

42. Cf. PLATO, *Tim.*, 38 c.