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# Giordano Bruno

Philosopher of the Renaissance

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ASHGATE

*London*

# Giordano Bruno and Astrology

*Leen Spruit*

Bruno's attitude towards astrology was multifaceted. In his early as well as in his later works, he levelled various attacks against astrology.<sup>1</sup> Yet one of his first works, the lost *De segni de' tempi*, was probably an astrological treatise.<sup>2</sup> Moreover, in *Spaccio de la bestia trionfante* and other works, he endorsed the horoscope of religions,<sup>3</sup> and in *Libri Aristotelis physicorum explanati*, composed in the late 1580s, he explained generation and corruption drawing on clearly astrological concepts.<sup>4</sup> Also in his magical works he endorsed astrological concepts. And at the very moment of his arrest in Venice, he was in possession of a manuscript entitled *De sigillis Hermetis, Ptolomaei et aliorum*, copied in Padua by his pupil Besler.<sup>5</sup> These apparently conflicting attitudes are to be understood in the light of the specific cultural context of Bruno's intellectual formation and activity.

Between 1300 and 1700 astrology was deemed to be neither obscure nor implausible. It was an integrated part of European life and culture. Astrological ideas and practices were vitally involved in philosophy, the arts and sciences. Astrology's appeal lay in the fact that it offered allegedly useful information, sometimes inaccessible by any other means, while it looked and operated like a science. It was accepted by outstanding scientists and philosophers, such as Ptolemy, Thomas Aquinas, Cardano and Johannes Kepler. During the Renaissance it was even taught in many universities as an academic discipline. It was not an uncontroversial discipline, however. Since its introduction in the western world it had been attacked by a host of opponents, including Cicero, Sextus Empiricus, Avicenna, Nicole Oresme and Giovanni Pico della Mirandola. It was condemned by various Catholic councils and, during

<sup>1</sup> Cf. *Infinito*, BDI, p. 429; *De rerum princ.*, BOL III, pp. 539–41.

<sup>2</sup> *Giordano Bruno. Gli anni napoletani e la 'perigrinatio' europea*, ed. E. Canone, 1992, Cassino: Università degli Studi, p. 83; cf. Ricci, S. (2000), *Giordano Bruno nell'Europa del Cinquecento*, Rome: Salerno Editrice, pp. 115–18.

<sup>3</sup> This view is discussed by Ingegno, A. (1967), 'Ermetismo e oroscopo delle religioni nello Spaccio bruniano', in *Rinascimento*, 18, pp. 157–74.

<sup>4</sup> Cf. *Libri Phys. Aristot.*, BOL III, pp. 366–8.

<sup>5</sup> Firpo, *Processo*, pp. 166, 187, 193 and 286–87; see also pp. 22, 32, and 60–61.

the Renaissance, by Protestant theologians, including Luther and Calvin.<sup>6</sup> By contrast, Melanchthon defended astrology,<sup>7</sup> and exponents of the Roman Catholic hierarchy, including several popes, had their personal astrologers.<sup>8</sup> Moreover, many early modern scientists and philosophers dissociated themselves from astrological ideas, while covertly courting them. It was only in about 1700 that astrology lost its footing in elite and educated European culture.

The very term 'astrology', like science or religion, conceals a challenging multiplicity of ideas and activities. 'Astronomy' and 'astrology' were often used interchangeably.<sup>9</sup> Moreover, Ptolemaic technical horoscopic astrology is not to be confused with Arabic astrology, dominated by the conception of the great conjunctions. And the use of astrology in medicine, agriculture and navigation is essentially different from the astrological background of the various forms of divination during the Middle Ages and the Renaissance. Therefore, a brief survey of the development of astrology and of arguments pro and contra is surely helpful to assess Bruno's views on astrology. Critical studies on Bruno, taking into account the impact of astrology, have dwelt on the use of astrological images in his mnemotechnical works or else on the specific cultural context of his cosmology and its political and ethical implications.<sup>10</sup> This chapter proposes a more encompassing classification of Bruno's most significant texts on astrology, and an analysis of the possible relationships between astrology and Bruno's

<sup>6</sup> Calvin, J. (1985), *Advertissement contre l'astrologie judiciaire*, ed. O. Millet, Genève: Droz.

<sup>7</sup> See Caroti, S. (1986), 'Melanchthon's astrology', in *Astrologi hallucinati. Stars and the End of the World in Luther's Time*, ed. P. Zambelli, Berlin and New York: Walter de Gruyter editori, pp. 109–121; and Bellucci, D. (1988), 'Mélanchthon et la défense de l'astrologie', in *Bibliothèque d'Humanisme et de la Renaissance*, 50, pp. 587–622.

<sup>8</sup> Caroti, S. (1983), *L'astrologia in Italia. Profezie, oroscopi e segreti celesti, dagli zodiaci romani alla tradizione islamica, dalle corti rinascimentali alle scuole moderne: storia, documenti, personaggi*, Rome: Newton Compton editori, pp. 231–46.

<sup>9</sup> Cf. Cassiodorus, *Institutiones*, II.iii, 6; Isidore of Seville, *Etymologiae*, II.27; Hugo of Saint-Victor, *Didascalion*, II.10. For discussion, see Lejbowicz, M. (1988), 'Le choc des traductions arabo-latines du XIIe siècle et ses conséquences dans la spécialisation sémantique d'astrologia et d'astronomia: Dominic Gundissalinus et la *sciencia iudicandi*', in *Transfert de vocabulaire dans les sciences*, eds. M. Groult, P. Louis and J. Roger, Paris: CNRS, pp. 213–76.

<sup>10</sup> Cf. Ingegno, A. (1978), 'Ermetismo e oroscopo delle religioni nello Spaccio bruniano', cit., and *idem*, *Cosmologia e filosofia nel pensiero di Giordano Bruno*, Florence: La Nuova Italia editrice, ch. 1–2; Garin, E. (1982), *Lo zodiaco della vita. La polemica sull'astrologia dal Trecento al Cinquecento*, Rome-Bari: Laterza, (first edition: 1976), p. 124f; and recently Pompeo Faracovi, O., (1966), *Scritto negli astri. L'astrologia nella cultura dell'Occidente*, Venezia: Marsilio, pp. 255–9. See also M.A. Granada's introduction to *Furori*, BOeuC VII, pp. xviii–xxxix.

MAR SILLII  
**FICINI FLO-**  
**RENTINI MEDICI,**

ATQVE PHILO-  
 sphi celeberrimi,

DE VITA LIBRI TRES:

QVORVM

- I. *De Studioforum sanitate tuenda.*
- II. *De Vita producenda.*
- III. *De Vita cœlitus comparanda.*

CVM Indice rerum memorabilium  
 copiosissimo.



LVGDVNI,  
 APVD GVLIEL. ROVIL.  
 SVB SCVTO VENETO.

1567.

10.1 Frontispiece of Ficino's *De vita libri tres*, containing *De vita coelitus comparanda*, [1489], 1576.

broader philosophical views, taking into account also such views as the animation of celestial bodies and celestial influence on the terrestrial world in general.

### **Astrology: A Historical Survey**

Greece became acquainted with Babylonian astrology in the early third century BC. The Greeks did not simply take over Babylonian astrology. Mesopotamic divination had mostly concerned public welfare and the life of rulers. By contrast, the Greeks were interested in the individual horoscope, which was developed in the second century BC with the aid of theoretical astronomy. Although the idea of celestial influence was widely accepted in the ancient world, most philosophical schools were hostile to astrology, especially the Epicureans and the Sceptics.<sup>11</sup> Yet, complex interrelations developed between Platonic and Stoic philosophy, and in virtue of the assumption of causal links between celestial bodies and metals, plants, stones and parts of the (human) body also with contemporary scientific disciplines, most notably mineralogy, botanics, alchemy, zoology, physiology and medicine.

The Stoic conceptions of universal sympathy and determinism became important axioms in Greek and Roman astrology.<sup>12</sup> Later astrological theories were also underpinned by Platonic astral theology. Most ancient astrologers did not reflect upon the philosophical assumptions and implications of their discipline, however. An important exception is Ptolomaeus, who regarded astrology as a rational technique with its own logic, grounded on astronomical observations and on views derived from Stoic and Aristotelian philosophy. According to Ptolomaeus, the ether emanates a power which causes changes in the sublunar world. According to their position and specific powers, the effluences of moon, sun and planets have their own effects. The task of astrology is to calculate these effects. His synthesis, which postulated

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<sup>11</sup> It should be remembered that the Epicureans were among the targets of Melanchthon's condemnation of the critics of astrology; cf. Caroti, 'Melanchthon's astrology', *op. cit.*, p. 116.

<sup>12</sup> The influence of astrology upon Stoicism is difficult to assess. Astrology was at most a subordinate feature of the earlier Stoic interest in divination and also in later authors, such as, Panetius, there is no interest for 'hard' astrology. See Long, A. (1982), 'Astrology: arguments pro and contra', in J. Barnes and J. Brunschwig (eds), *Science and Speculation. Studies in Hellenistic Theory and Practice*, Cambridge: Cambridge University Press, pp. 165-92, on pp. 167-71. Cf. also Ioppolo, A.M. (1984), 'L'astrologia nello stoicismo antico', in G. Giannantoni and M. Vegetti (eds), *La scienza ellenistica*, Naples: Bibliopolis, pp. 73-91, on pp. 89-90.

that the celestial and terrestrial orders are correlated but not to be identified, was crucial for many later developments. Ptolomaeus endorsed Aristotelian philosophy, but as an astrologer he could not entertain a physical theory which undermines the unity of the cosmos. Indeed, in his *Tetrabiblos*, which was centred around the idea that heavenly influences were entirely physical, he attributed earthly qualities to the planets. Thus, he demythologized astrology and related diurnal and seasonal changes to the elemental effects of sun, moon and planets.<sup>13</sup> He held that celestial causes of general effects are always more powerful than those which affect individuals in isolation, and therefore horoscopic astrology was not a science, but should rather be seen as a conjectural technique.<sup>14</sup>

The ancient polemics against astrology started with Cicero. His arguments (different fates of twins, astronomical distances and relativity of earthly locations<sup>15</sup>) were accepted also by later critics of astrology, such as Geminus and Plotinus. At the time of Sextus Empiricus and Plotinus, astrology was too powerful to be dismissed as 'unconceivable madness', however.<sup>16</sup> Indeed, Sextus attempted to demolish astrology by attacking its methodological principles, thus acknowledging astrology as a form of knowledge. He avoided rhetorical arguments and formulated precise objections, such as the difficulty of determining the precise moment of birth and the need for a vast casuistry.<sup>17</sup> Plotinus' attitude towards astrology is more complex. As a Platonist, he defended the organic unity of the physical universe and was quite willing to grant the celestial bodies causal influence on human affairs.<sup>18</sup> He was a strong

<sup>13</sup> Subsequently, medieval schoolmen discussed the thorny question of how planets, though being eternal and unchangeable, could possess elemental properties. Albert the Great, for example, formulated the following solution: planets have properties, not inasmuch as they are fashioned by them, but inasmuch as they produce them in matter which is susceptible to contrariety. This allows planets to 'have' qualities and yet remain themselves made of quintessence. See Barker Price, B. (1980), 'The physical astronomy and astrology of Albertus Magnus', in J.A. Weisheipl (ed.), *Albertus Magnus and the Sciences*, Toronto: Toronto University Press, pp. 155-185, on p. 176.

<sup>14</sup> See Long, 'Astrology: arguments pro and contra', op. cit., pp. 178-83; Faracovi, *Scritto negli astri*, op. cit., pp. 107-41.

<sup>15</sup> Cicero, *De divinatione*, ed. W. Armistead Falconer, London: Heinemann; Cambridge, MA: Harvard University Press, 1996 (1st edn 1923), II.88-99, pp. 470-82.

<sup>16</sup> *De divinatione*, II.89, op. cit., p. 472. For a critical discussion of Cicero's arguments, see Faracovi, *Scritto negli astri*, op. cit., pp. 53-79.

<sup>17</sup> Sextus Empiricus, *Adversus mathematicos*, ed. R.G. Bury, London: Heinemann; Cambridge, MA: Harvard University Press, 1987 (1st edn 1949), V; for discussion, see Faracovi, *Scritto negli astri*, op. cit., pp. 150-53.

<sup>18</sup> *Enneads*, II.3.2. For discussion of the concept of celestial influence, see: North, J.D. (1986), 'Celestial influence. The major premiss of astrology', in Zambelli, *Astrologi*

opponent of orthodox claims, however, and he seemed to sympathize with a 'soft' version of astrology: astral influence is restricted to the body.<sup>19</sup>

Neoplatonic philosophy provided an overall theory for the effects of a wide range of phenomena due to the mutual sympathy between the various realms of reality. Therefore, later Neoplatonists associated astrology with prayer, magic and theurgy.<sup>20</sup> In their view, the human soul was split up in a garden variety of distinct faculties and modes of being. Celestial influence was presumed to touch only the inferior soul, or at most the pneumatic body of the soul.<sup>21</sup> They stuck to their view that the stars are only signs, not causes. Finally, in Hermetic philosophy, the planets mediated between the One and the sublunar world. The heavenly bodies are animated with a rational soul and responsible for the variety of terrestrial life.<sup>22</sup>

The hostility of the Church and the decay of learning account for the decline of astrology after the downfall of the western Roman empire. After the rise of Islam, however, it became rapidly an integrated element of the Arabic culture. The Arabs collected Greek, Persian, Syrian and Indian materials, and integrated astrology in an elaborate universal philosophy of emanation. Thus, new conceptions developed, such as the theory of the great conjunctions. Arabic physicians made ample use of astrology for the benefit of therapy. Noticeably, astrology was recognized as a science, while medicine, because of its missing link to philosophy, was held as an art.<sup>23</sup> Through Arab mediation and the flood of Greek and Arabic translations, astrology found its way into Latin Europe. The symbolic interpretation of astrological references in the texts of Macrobius and Calcidius was crucial in the revival of twelfth-century natural philosophy,<sup>24</sup> and soon astrology conquered not only the

*hallucinati*, pp. 45–100; Grant, E. (1987), 'Medieval and Renaissance scholastic conceptions of the influence of the celestial region on the terrestrial', *Journal of Medieval and Renaissance Studies*, 17, pp. 1–23.

<sup>19</sup> *Enneads*, III.1.5–6; cf. Long, 'Astrology: arguments pro and contra', op. cit., n. 19; Gandillac, M. (1960), 'Astres, anges et génies chez Marsile Ficin', in E. Castelli (ed.), *Umanesimo et esoterismo*, Padua: CEDAM, pp. 85–109, on pp. 90–91.

<sup>20</sup> Astrological techniques as 'interrogationes' and 'electiones' were developed in this cultural milieu. For discussion, see Faracovi, *Scritto negli astri*, op. cit., p. 81f.

<sup>21</sup> For this conception in the Renaissance, see Walker, D.P. (1958), 'The astral body in Renaissance medicine', *Journal of the Warburg and Courtauld Institutes*, 21, pp. 119–33.

<sup>22</sup> North, J. (1987), 'Medieval aspects of celestial influence. A survey', in P. Curry (ed.), *Astrology, Science and Society*, Woolbridge and Wolfeboro: The Boydell Press, pp. 5–17.

<sup>23</sup> Klein-Franke, F. (1984), *Iatromathematics in Islam. A Study on Yuhanna Ibn as-Sat's Book on Astrological Medicine*, Zurich: Hildesheim and New York: Georg Olms, pp. 1–8.

<sup>24</sup> Gregory, T. (1975), 'La nouvelle idée de nature et de savoir au XIIIe siècle', in R. S.

universities,<sup>25</sup> but also the imperial court of Frederick II.<sup>26</sup> The resurgence of medical astrology led to therapeutic applications of the mathematical arts of the quadrivium. These made necessary careful planetary observation and time measurement, which in turn was a stimulus for instrument design.<sup>27</sup>

During the Middle Ages, the existence of celestial influence was widely accepted. In general, it was seen as fit and proper that what is more noble and more perfect should influence and guide what is less noble and less perfect. Yet, the issue was not uncontroversial. While Thomas Aquinas, John of Jandun and Robert Anglicus endorsed a total dominance over terrestrial bodies, Hervaeus Natalis, Richard of Middleton, and Nicole Oresme, thought that if the heavens were at rest, change and growth would still exist.<sup>28</sup>

After the thirteenth century, the astrologizing reading of Aristotelian natural philosophy became a topos of scholastic commentary and teaching. Albert the Great and Thomas Aquinas referred to Aristotelian texts on the causality of the celestial bodies within the sublunar world as a philosophical basis for astrology.<sup>29</sup> Albert regarded astrology as a valid and useful science.<sup>30</sup> Yet, although he was convinced that celestial influence was an important cause of change in the sublunar world, he held that it was a concause. In his view, the soul undergoes 'per accidens' the powers imprinted on the body by the motion of the heavens, that is,

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Cohen and M.W. Wartofsky (eds), *The Cultural Context of Medieval Learning*, Dordrecht: Kluwer Academic Publishers, pp. 193–218; see also *idem* (1988), 'Forme di conoscenza e ideali di sapere nella cultura medievale', *Giornale critico della filosofia italiana*, 67, pp. 1–62.

<sup>25</sup> See R. Lemay, 'The true place of astrology in medieval science and philosophy: towards a definition', in *Astrology, Science and Society*, op. cit., pp. 57–73.

<sup>26</sup> Michael Scotus regarded astrology as the most important science after theology; cf. Caroti, S. (1994), 'L'astrologia', in *Federico II e le scienze*, Palermo, pp. 138–51, on pp. 139, 142; cf. *idem* (1994), 'L'astrologia nell'età di Federico II', in *Le scienze alla corte di Federico II*, Brepols.

<sup>27</sup> See White, L. (1975), 'Medical astrologers and late medieval technology', *Viator*, 6, pp. 295–308.

<sup>28</sup> For discussion, see Grant, E. (1987), 'Medieval and Renaissance scholastic conceptions of the influence of the celestial region on the terrestrial', *Journal of Medieval and Renaissance Studies*, 17, pp. 1–23.

<sup>29</sup> Aristotelian exegesis current in the thirteenth century compiled the doctrines of *De caelo*, *Meteorology* and *De generatione et corruptione* together with astrological themes. A crucial text is *On Generation and Corruption*, II.10; cfr. also: *De caelo*, I.2–3, *Meteorology*, I.2, 339a21–3, II.2, 354b24–33; *Physics*, II.2, 194b13–14, VII.1, 242a13f, VIII.9, 265b35f.

<sup>30</sup> For discussion, see *Speculum astronomiae*, ed. Zambelli, P. and S. Caroti, Pisa: Domus Galileana, 1977; and Zambelli, P. (ed.), *The Speculum astronomiae and its Enigma*, Dordrecht: Kluwer Academic Publishers, 1992.



only inasmuch as it is 'actus corporis'.<sup>31</sup> Crucial in Thomas Aquinas's defence was the view that the stars 'inclined' but did not 'necessitate'. As celestial influence regarded only the body, it did not represent a serious menace for the intellectual soul, free will or divine providence.<sup>32</sup> Thomas's solution became the standard defence of astrology in the later Middle Ages. That the stars had only an indirect influence on human behaviour answered charges of astrological determinism as well as the criticism that astrological predictions were often inaccurate. Moreover, granting the stars power over bodies rescued astrological medicine. Other scholastics went much further: Pierre d'Ailly regarded astrology as the highest science, capable of assisting theology, and proposed astrological interpretations of biblical miracles.

On the whole, the relationships between astrology and Christianity were rather intricate. Ecclesiastical condemnations were generally inspired by theological and ethical motives, rather than being justified by epistemological and scientific reasons. Many Fathers attacked astrology for its demonic origin and associated it with idolatry and magic.<sup>33</sup> In late Antiquity, however, Isidore of Seville drew a distinction between a natural and a superstitious part of astrology.<sup>34</sup> And after the twelfth century, astrology became an integrated part of western science and philosophy. A certain amount of clerical opposition remained also during the Middle Ages.<sup>35</sup> And in the fourteenth century, Nicole Oresme stressed the high degree of vagueness and uncertainty characterizing astrology.<sup>36</sup> However, ecclesiastical condemnations and various scholarly attacks did not eliminate astrology from cultural life.<sup>37</sup>

<sup>31</sup> P. Zambelli, *The Speculum astronomiae and its Enigma*, op. cit., p. 69.

<sup>32</sup> Litt, T. (1963), *Les corps célestes dans l'univers de saint Thomas d'Aquin*, Louvain: Publications Universitaires Paris: Beatrice-Nauwelaerts discovered over 130 passages in Thomas's writings devoted to celestial influence and astrology.

<sup>33</sup> Baldini, U. (2001), 'The Roman Inquisition's condemnation of astrology: antecedents, reasons and consequences', G. Fragnito (ed.), *Church, Censorship and Culture in Early Modern Italy*, Cambridge: Cambridge University Press, pp. 79–110.

<sup>34</sup> Ackermann Smoller, L. (1994), *History, Prophecy, and the Stars. The Christian Astrology of Pierre d'Ailly, 1350–1420*, Princeton, NJ: Princeton University Press, p. 27. See also the studies by Lejbowitz mentioned above.

<sup>35</sup> See S. Caroti, *L'astrologia in Italia*, op. cit., pp. 171–3, for a discussion of the articles of the 1277 condemnation regarding astrology.

<sup>36</sup> See Nicole Oresme, (1977), *Quaestio contra divinatores horoscopios*, ed. S. Caroti, in *Archives d'histoire doctrinale et littéraire du Moyen Age*, 43, pp. 201–310. Among the opponents also Gilles of Rome and Henry of Langenstein are to be mentioned. See Ackermann Smoller, *History, Prophecy, and the Stars*, pp. 32–6.

<sup>37</sup> The condemnations of Pietro D'Abano and Cecco D'Ascoli were not reducible to their astrological interests alone. See G. Federici Vescovini, 'Peter of Abano and astrology', in *Astrology, Science, and Society*, op.cit., pp. 19–39.

During the Renaissance astrology developed according to different strands, without being universally accepted. By the early fifteenth century, a tradition of secular Aristotelianism had established in the northern Italian universities a pattern of education in which astrology had a prominent place in natural philosophy. Marsilio Ficino attacked judicial astrology in his *Disputatio contra iudicium astrologorum* (1477), while in *De vita* (1489) he endorsed fundamental issues of horoscopic astrology in order to sustain his quite peculiar idea of a medicine of body and soul.<sup>38</sup> The rediscovery of Ptolemaeus' *Tetrabiblos* marked a return to technical horoscopic astrology as 'ars conjecturalis' in Cardano.<sup>39</sup> In Pietro Pomponazzi, by contrast, celestial influence was interpreted in deterministic, fatalistic wordings. The more the astrological system became refined, the more sagacity and intellectual effort were required for its refutation. Indeed, Pico's well argued attack in *Disputationes*, did not succeed in displacing astrology from the university curricula. After Pico, astrology was defended by professional astrologers, including Bellanti, Pontano, Gaurico and Giuntini, and by humanist scholars, such as Melanchthon, who never doubted its scientific accuracy.<sup>40</sup> Also contemporary professional astronomers, among whom were Regiomontanus, Peurbach and Bianchini, continued to practise astrology. And once the Copernican scheme was shown to be astronomically practicable, it became inevitable that it should be adapted to astrological needs. Thus, Copernican astronomy did not constitute an obstacle, but rather a stimulus for Schöner, Gemma Frisius and Rheinhold to develop a more precise astrology.<sup>41</sup> At the turn of the century, Kepler attempted seriously to reform astrology on

<sup>38</sup> Pompeo Faracovi, O. (1999), 'Introduzione', in Marsilio Ficino, *Scritti sull'astrologia*, Milan: Biblioteca Universale Rizzoli, 1999, pp. 5–36, rightly argued that Ficino's apparently changing attitude towards astrology should not be accounted for by biographical or psychological explanations, but rather by his clearly distinct appraisal of fatalistic and conjectural strands of this discipline. See also Walker, D.P. (1986), 'Ficino and astrology', in G.C. Garfagnini (ed.), *Marsilio Ficino e il ritorno di Platone*, Florence: L.S. Olschki, vol. II, pp. 341–9; Kaske, C.V. (1986), 'Ficino's shifting attitude towards astrology', in *ibid.*, vol. II, pp. 371–81.

<sup>39</sup> See Grafton A. (1999), *Cardano's Cosmos. The Worlds and Works of a Renaissance Astrologer*, Cambridge, MA: Harvard University Press; Pompeo Faracovi, *Scritto negli astri*, op. cit., p. 240f. Also other Renaissance authors, including Melanchthon, thought of Arabic astrology as almost worthless in comparison with Ptolemy's.

<sup>40</sup> See Garin, *Lo zodiaco della vita*, op. cit., pp. 95–106.

<sup>41</sup> See North, J.D. (1989), 'The reluctant revolutionaries: astronomy after Copernicus', in *The Universal Frame. Historical Essays in Astronomy, Natural Philosophy and Scientific Method*, London: Hambledon Press, pp. 17–32.

a renewed basis.<sup>42</sup> And even Galileo reflected on and practised astrology.<sup>43</sup>

### Bruno on Astrology

Although Bruno did not have a profound knowledge of astrology in its various aspects,<sup>44</sup> he was acquainted with its basic ideas<sup>45</sup> and techniques,<sup>46</sup> and with some astrological treatises.<sup>47</sup> His use and view of astrology depended upon the specific topic under discussion, and changed according to the various astrological theories and practices he took into account. It has become a commonplace to mention that on several occasions he referred to the theory of the great conjunctions. Similarly, in his mnemotechnical treatises, he used astrological images<sup>48</sup>

<sup>42</sup> See Kepler, J. (1941), *De fundamentis astrologiae certioribus*, in *Gesammelte Werke*, vol. IV, ed. M. Caspar and F. Hamme, München: C.H. Beck'sche Verlagsbuchhandlung. For discussion, see Simon, G. (1975), 'Kepler's astrology: the direction of a reform', in A. Beer and P. Beer (eds), *Kepler. Four Hundred Years*, Oxford: Pergamon Press, pp. 439–48; Field, J.V. 'Astrology in Kepler's cosmology', in *Astrology, Science, and Society*, op. cit., pp. 143–70.

<sup>43</sup> During his stay in Padua, Galileo was denounced to the Inquisition for casting horoscopes; see the document published in Poppi, A. (1993), *Cremonini, Galilei e gli inquisitori del Santo a Padova*, Padua: Centro Studi Antoniani, pp. 51–4. For discussion of Galilei's *Astrologica nomulla*, preserved in the National Library in Florence, see Faracovi, *Scritto negli astri*, op. cit., pp. 250–52.

<sup>44</sup> Notice that Bruno's references to astrological views and practices are quite vague and do not permit us to establish precise sources for either the views he accepted or the targets of his polemics and scorn.

<sup>45</sup> Cf. Tocco, F. (1892), 'Le fonti più recenti della filosofia del Bruno', in *Rendiconti della Reale Accademia dei Lincei*, Classe di scienze morali, storiche e filologiche, serie V, vol. I, pp. 503–38, 585–622, cap. VII; Sturlese, R. (1985), 'Su Bruno e Tycho Brahe', *Rinascimento*, 25, pp. 309–33; Ingegno, 'Ermetismo e oroscopo delle religioni nello Spaccio bruniano', op. cit.; *idem*, *Cosmologia e filosofia nel pensiero di Giordano Bruno*, op. cit., cap. I–II; Faracovi, *Scritto negli astri*, pp. 255–9; Granada, 'Introduction', in *Furori*, BOeuC VII, pp. xvii–xxxix.

<sup>46</sup> *De monade*, BOL I.2, pp. 400–401. See also *De imag. comp.*, BOL II.3, p. 103: 'Accedunt caelestium effectus potentissimi considerandi, qui in cardinalibus orientis, occidentis et meridiei virtutem, principium et perfectionem concipere censentur. Hinc ea quae de solstitialibus, aequinoctialibus, mediae diei mediaeque noctis punctis, in quibus se circuli maiores intersecant, astrologi et omnis generis divini summopere commendant.'

<sup>47</sup> For example, R. Sturlese has shown that Bruno read Olaus Cimper, *Diarium astrologicum et meteorologicum* (1586); see her 'Bruno & Brahe', op. cit., on pp. 324–25. Cf. also *Magia math.*, BOL III, pp. 501–3.

<sup>48</sup> Notably, those by Teucer the Babylonian in *De umbris*, BUI, p. 35; cf. *Explicatio*, in BOL II.2, p. 123. In *Spaccio de la bestia trionfante*, Bruno used images drawn from Hyginus, *Poetica astronomica*, to represent the expulsion of the vices and their replacement by the virtues. For discussion, see Clucas, S. (1999), 'Amorem, artem,

and reflected on the position and role of the heavens in earthly matters. In his cosmological works, by contrast, he attacked mathematical astrology and astrological interpretations of extraordinary celestial phenomena, such as comets and *novae*. Now, while astrological views were endorsed in his expositions of Aristotle's physics and in his magical works, astrology was also severely attacked in the latter, most noticeably in *De rerum principiis*. Finally, when arrested Bruno was in possession of an astrological treatise, and during his trial he openly defended astrology as a useful science.<sup>49</sup> It is quite natural, in the light of these various positions and attitudes, to classify Bruno's reflections on astrology according to distinct categories.

### Astrology and Astronomy

Like many predecessors and contemporary authors, Bruno did not clearly distinguish between astrology and technical astronomy. Sometimes, he used both terms interchangeably,<sup>50</sup> while in his expositions of Aristotle's physics, he took 'astrology' as a synonym for 'astronomy'.<sup>51</sup> Thus, his well-known polemics with (mathematical) astronomy explains the fierce attack against astrology in *De l'infinito*:

But he believed that no other corporeal entities existed beyond the eighth sphere, above which the astrologers of his time did not

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*magiam, mathesim*. Brunian images and the domestication of the soul', *Zeitsprünge. Forschungen zur Frühen Neuzeit*, 3, pp. 5–24, who cites on p. 11: Catana, L. (1997), 'Narrative structure and imagery in Giordano Bruno's *Lo spaccio de la bestia trionfante*', Warburg Institute, MA dissertation, esp. pp. 21–7; *idem* (2000), 'Bruno's *Spaccio* and Hyginus *Poetica astronomica*', in *Bruniana & Campanelliana*, 6, pp. 57–77.

<sup>49</sup> L. Firpo, *Processo*, pp. 187, 193 and 287.

<sup>50</sup> *Camoe. acrot.*, BOL I.1, p. 106.

<sup>51</sup> *Figuratio*, BOL I.4, p. 156: 'Mathematicus autem ... qui non purus est, determinat quidem formam ad materiam, sed non ad sensibilem, quatenus essenziale rei constitutum principium existit, ut patet in perspectiva, musica et astrologia ...'; *Libri Phys. Aristot.*, BOL III, p. 321: 'Inter has est etiam astrologia, quae propius accedit ad physicam, non tamen est physica, quia etsi de globis et circulis caelestibus considerat, non accipit haec sub ratione naturae, sed sub ordine fati vel fortunae seu signorum.' The background is in Aristotle, *Physica*, II, textus 20, in BOL *cum Averrois commentariis*, 11 vols, Venetiis 1562–74, vol. IV, f. 55va: 'Demonstrant autem & quae ex Mathematicis magis Physica sunt, ut Perspectiva, & Harmonica, & Astrologia.' Cf. *De monade*, BOL I.2, pp. 389–90: 'Quid est eclipsis praeter umbram? Multarum tamen rerum illam causam atque impedimentum esse comprehendunt Physici et Astrologi'; *De immenso*, III.7, BOL I.1, p. 370: 'Naturam errare putatis Astrologi; grave corpus enim e medio esse remotum efficitis vel suspensum contro Stagyraei invictos canones, sapiens quibus ille putavit undique librato circumlabi aethera tractu.' See also *De rerum princ.*, BOL III, p. 538, where Bruno used the term 'astronomi' for astrologers.

conceive another heaven ... Astrological suppositions and phantasies already reject this doctrine, which is the more so condemned by those who develop more penetrating insights ... because the reason for their equidistance depends only on the utterly false supposition of an immobile earth, against which all nature protests, and every reason has come to claim and every orderly and well-informed intellect asserts.<sup>52</sup>

Neither astrology nor its basic idea, that is, celestial influence, are condemned here: Ptolemaic astronomy and, by consequence, Aristotelian cosmology are Bruno's targets. Bruno argued for the unification of terrestrial and celestial physics. In his view, this unification entailed that the motions of the celestial bodies are not perfectly regular, and thus cannot be captured by mathematical astronomy. By consequence, astrological forecasting lacks a theoretical foundation, and therefore is essentially uncertain. For the same reason, Bruno rejected in *De immenso* the Platonic view of the 'great year'.<sup>53</sup>

### Great Conjunctions

From the ninth century onwards, Jewish and Arab astrologers, notably Abu Ma'shar and Mesha'allah, had constructed the technique of the Great Conjunctions. This view, which is not to be found in Ptolemy, involved structuring time according to the aspects between the slower-moving planets – Saturn, Jupiter and Mars – through the zodiacal signs. This provided a chronological framework on a scale appropriate to the history of religions and nations. A similar use of astrology in a political and religious context became quite common also among Renaissance authors. Pomponazzi and Cardano endorsed the horoscope of religions and provided astrological explanations for miracles.<sup>54</sup> Jean Bodin formulated a sort of political astrology: nature moved according to mathematical laws and planetary circles. He believed that if these fundamental principles were recognized, especially by ruling

<sup>52</sup> *Infinito*, BDI, p. 429: 'e però lui, si fermò a non credere altro corpo, che l'ottava sfera, oltre la quale gli astrologi di suoi tempi non aveano compreso altro cielo ... In tanto che le astrologiche supposizioni e fantasie condannano questa sentenza, viene assai più condannata da quei che meglio intendono ... perché la ragione della loro equidistanza dipende solo dal falsissimo supposito della fission de la terra; contra il quale crida tutta la natura, e proclama ogni ragione, e sentenza ogni regolato e ben informato intelletto al fine.'

<sup>53</sup> *De immenso*, III.7, BOL. I.1, pp. 367–72. Recall that Bruno only apparently accepted this doctrine in *Spaccio*, BDI, pp. 577–8.

<sup>54</sup> Pomponazzi Pietro (1567), *De incantationibus*, Basilea, pp. 286–7.

politicians, the latter would be in a position to maintain political stability.<sup>55</sup>

In *Spaccio de la bestia trionfante* and other works, Bruno referred explicitly to the horoscope of religions,<sup>56</sup> and in later mnemotechnical works he presented astrological explanations for religious phenomena, such as the biblical story of Moses and the copper serpent.<sup>57</sup> Notice, however, that in *Spaccio* Bruno made a purely instrumental use of traditional astrological motives and views, such as the horoscope of religions, without endorsing the cosmological connotations of traditional astrology.<sup>58</sup> Indeed, unlike contemporary authors, such as Tycho Brahe, Röslin and Cornelius Gemma,<sup>59</sup> Bruno attempted to detach the explanation of extraordinary cosmic events, such as comets and *novae*, or new stars, from their traditional astrological context.<sup>60</sup> In *Spaccio* and other works, he argued for the immanence of divinity and rejected the hierarchical view of reality, underlying most traditional astrology. Indeed, the physical homogeneity of the universe ruled out the view of the sublunar world as just a reflection of the divine world and dominated by planets.

<sup>55</sup> Cf. Campion, N. (1994), *The Great Year. Astrology, Millenarianism and History in the Western Tradition*, London: Arkana Penguin Books, p. 396.

<sup>56</sup> See BDI, pp. 577–8; *De monade*, BOL I.2, pp. 400–401; *De magia math.*, BOL III, p. 501; *De rerum princ.*, pp. 540–41. For discussion see Ingegno, 'Ermetismo e oroscopo delle religioni nello *Spaccio* bruniano', op. cit.

<sup>57</sup> *De imag. comp.*, BOL II.3, p. 102: 'Unum tamen in memoria revocari volo, quod planetae similes facies in rebus subiectis et informandis Magorum consilio atque ipsa praxi exquirere videntur. Idem Cabalistarum doctrina confirmat et exemplum Mosis, qui interdum, veluti necessitate quadam coactus, ad Cereris atque Iovis favorem comparandum, vitellum aureum erexit, ad Martis item temperandum simul atque Saturni violentiam, aëneum serpentem adorandum obiecit; et multa alia videre est, quae occulta atque velata in eius tum operibus tum dictis esse perhibentur ... propter nescio quam superiorum formarum cum inferiori materia compertam expertam simul atque occultam analogiam; unde imaginibus et similitudinibus quibusdam veluti illecta descendunt seseque communicant.'

<sup>58</sup> *Spaccio*, BDI, p. 560: 'Questo mondo, tolto secondo l'imaginazione de stolti matematici, ed accettato da non più saggi fisici, tra quali gli Peripaterici son più vani, non senza frutto presente: prima diviso come in tante sfere, e poi distinto in circa quarant'otto imagini (nelle quali intendono primamente partito un cielo ottavo, stellifero, detto da' volgari firmamento), viene ad essere principio e soggetto del nostro lavoro.'

<sup>59</sup> Tycho Brahe, (1573), *De nova et nullius aevi memoria prius visa Stella, iam pridem Anno a nato Christo 1572. Mense Novembri primum conspecta*, Hauniae, in *Opera omnia*, vol. I, ed. I.L.E. Dreyer, Hauniae, 1913, pp. 1–72; C. Gemma, *De prodigiosa specie, naturae cometarum, qui nobis effulsit altior lunae sedibus*, Antverpiae, 1578.

<sup>60</sup> *De immenso*, BOL I.2, p. 28: comets are parts of the natural course of events; cf. *idem*, IV.13, BOL I.2, p. 70. On 'novae', see: *idem*, IV.9, BOL I.2, p. 51; *idem*, VI.20, BOL I.2, pp. 223, 227–8. For discussion, see Ingegno, 'Ermetismo e oroscopo delle religioni nello *Spaccio* bruniano', op. cit.

*Ideas and the Celestial World*

The use of Teucer's astrological images in Bruno's mnemotechnics is well known and has been extensively discussed.<sup>61</sup> More interesting for present purposes are Bruno's views on the heavens in these works:

The forms of things are in the ideas, they are in a certain way in themselves; they are in heaven, in the period of heaven, in the seminal and efficient causes; they are singularly in the effect, they are in the light, in the external and internal senses in their own ways.<sup>62</sup>

The ideas pervade reality at all levels, thus laying the groundwork for various types of perception, cognition and, in Bruno's later works, action. Bruno integrated the heavens and its *periodum* in the dynamics of the formal structure of reality. As in traditional philosophy, the heavens mediate between the realm of ideas and the material world. In another passage, Bruno confirmed that the heavens contain the forms of the terrestrial world on a superior level, distinguishing between the celestial world and the intellectual heavens.<sup>63</sup> Thus, Bruno's mnemotechnical works reveal that the heavens represent the 'corpus idearum' on a precise level of the *schala naturae*, in between the physical and the intelligible world.

*The Heavens and the Sublunar World*

It was probably not before the end of the 1580s that Bruno started to develop a more precise and explicit interest in astrology. His later works contain numerous references to the issue of celestial influence and the

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<sup>61</sup> See, for example, *De umbris*, BUI, pp. 34–5, with a reference to Manilius, *Astronomica*, II.227, and *De umbris*, p. 150; *Spaccio*, BDI, p. 560. For discussion, see Garin, E. (1960), 'Le "elezioni" e il problema dell'astrologia', in Castelli, *Umanesimo e esoterismo*, op. cit., pp. 17–37, on p. 37; Rossi, P. (1960), *Clavis universalis. Arti della memoria e logica combinatoria da Lullo a Leibniz*, Milano and Napoli: Riccardo Ricciardi Editore, cap. IV; Yates, F. (1964), *Giordano Bruno and the Hermetic Tradition*, London: Routledge and Kegan Paul, ch. XI; *idem* (1978), *The Art of Memory*, London: Penguin Books, (1st edn 1966), pp. 197ff; Faracovi *Scritto negli astri*, op. cit., pp. 174–5, 255.

<sup>62</sup> *De umbris*, BUI, pp. 49–50: 'Rerum formae sunt in ideis, sunt quodammodo in se ipsis; sunt in coelo; sunt in periodo caeli, sunt in causis proximis seminalibus; sunt in causis proximis efficientibus, sunt in individualiter in effectu, sunt in lumine, sunt in extrinseco sensu, sunt in intrinseco, modo suo.'

<sup>63</sup> *De umbris*, BUI, p. 54: 'Cum deveneris ad rationem qua conformabere coelo corpori, quod animalium inferiorum etiam vilium ratione non vili formas continet, pedem ne figito, sed nitaris ad intellectualis caeli conformitatem, quod totius mundi formas praestantiori modo possidet, quam coelesti.'

impact of the heavenly bodies on terrestrial events, most notably their role in grounding magical operations. This specific interest is demonstrated by the fact that at the moment of his arrest he possessed the manuscript *De sigillis Hermetis, Ptolomaei et aliorum* and confirmed by his defence of astrology during the trial.<sup>64</sup>

Dwelling on the issue 'Quomodo generatio et corruptio perpetuentur', in his exposition of the fourth book of Aristotle's *Meteorology*, Bruno acknowledged that celestial motions exerted a real influence on natural processes.<sup>65</sup> Also in his magical works, Bruno showed an interest in astrology, attributing to the heavens a central position in the line of universal *influxus*,<sup>66</sup> and associating psychological phenomena, such as fury and melancholy, with distinct planets.<sup>67</sup>

For an adequate comprehension of Bruno's later views on astrology an analysis of his *De rerum principiis* is crucial. First, it is undoubtedly Bruno's most 'astrological' work, since the theoretical assumptions underlying this treatise are inspired by the fundamental correspondence between celestial and terrestrial realms and vicissitudes, mediated by a universal spirit, serving as a channel for the transmission of celestial influence. Second, Bruno formulated here more explicit objections against (some forms of) astrology than in earlier works, rejecting the possibility of astrological forecasting. In Bruno's view, there are infinitely many possible combinations of astral motions. And this conviction fuelled his harsh polemics against the deterministic strands of (horoscopic) astrology.

In *De rerum principiis* Bruno distinguished three types of correspondence between celestial motion and terrestrial events. The first category regards circumstances and fortunes, that is, events which develop during a relatively long period. The second and third types concern the seasonal changes of generation and corruption, and the daily changes, respectively. Discussing the dominion of the planets, Bruno referred to the traditional principles ruling the distinctions between the zodiacal signs, and between the various celestial qualities and virtues. Consequently, he endorsed the view that celestial influence is transmitted according to astrological principles developed and generally accepted since the Chaldeans.<sup>68</sup> Then a historical survey

<sup>64</sup> See 'Medicine' section below.

<sup>65</sup> See the astrological excursus in his comment on *De generatione & corruptione*, II, te. 56, in *Libri Phys. Aristot.*, BOL III, pp. 366–8. See already *Spaccio*, BDI, p. 781.

<sup>66</sup> *Thes. de magia*, BOL III, p. 457: the 'ordo influxus' includes 'Deus, astra, daemones, elementa, mixta'; cf. *De magia math.*, BOL III, p. 493.

<sup>67</sup> *De magia*, BOL III, p. 478.

<sup>68</sup> *De rerum princ.*, BOL III, p. 540: 'de quorum effectibus et potestatibus cognoscendis



follows regarding various opinions on the dominion of the planets, among which those of the Greeks, Pietro d'Abano and Trithemius. The order of planetary influence is obvious to all of them, so Bruno affirmed, at least in so far as its effects are considered. As regards its cause, however, this order is known to the wise only, who are capable of calculating astral motions. Denomination and order of the seven planets is not only '*valde rei et rationi consona*' (undoubtedly consonant with the things and with reason) but also confirmed by observation.<sup>69</sup>

Quite surprisingly, while accepting the view that human daily life depends upon planetary influences and acknowledging its ancient origin, Bruno apparently rejected in its entirety any technical astrology based on observation and calculation of celestial aspects and configurations of the planets, since they '*neque aliquid causant, neque significant*' (are neither things which cause nor which signify).<sup>70</sup> As on other occasions, Bruno's polemic against (technical) astrology flows from his rejection of mathematical approaches in astronomy and in natural philosophy in general.<sup>71</sup> Indeed, he did not reject astrology as such, but more precisely what he called the 'superstitious manipulations' of astrological techniques.<sup>72</sup> Astrological treatises contain 'fragments of truth', even though 'mingled with numerous vanities'.<sup>73</sup> Bruno did not specify explicitly what these fragments consisted of, but the context of

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remitto te ad astrologos principes, penes quos haec pars intemerata videtur et ea in integritate vel prope illam integritatem consistens, ut virtutes septem principum a Chaldaeis olim fuerunt annotatae.<sup>7</sup>

<sup>69</sup> *De rerum princ.*, BOL III, p. 542.

<sup>70</sup> *De rerum princ.*, BOL III, p. 544: 'Quod attinet autem ad theoriam et considerationem planetarum et dispositionem eorundem in illis orbibus cum illis aspectuum variis differentiis et facierum, omnino videntur et sunt inutilis considerationis; ipsae enim stellae, quod ad particularia attinet, neque aliquid causant neque significant, et isti planetae, de quibus nunc dicimus, cum istis nihil habent commune nisi nomen; quae communio forte fuit evertendae scientiae causa et deviniendi ad illas fictiones, ut quod dictum fuit et intellectum ab antiquis in annis istis diurnis et circuitibus, fortasse ad confundendum et occultandum verum data opera et ad multiplicandum studia inutilia et vana fuit relatum ab aliquo deceptore ad ordines illorum planetarum, hoc est stellarum; qua persuasione semel ab uno recepta facile fuit hanc ignorantiam usque adeo propagare quo propagata est.'

<sup>71</sup> *Cena de le Ceneri*, ed. G. Aquilecchia, Torino, 1955, p. 148: 'Senza cognizione il saper computare ... è un passatempo da pazzi'; *Camoer. Acrot.*, BOL I.1, p. 155: physical bodies are not to be identified with 'vanae mathematicorum species'. Cf. the attack on idle sophist algebra and computation in *Sig. sigill.*, BOL II.2, p. 214. For the contrast between mathematical and physical approaches in science and philosophy, see also *De la causa, principio e uno*, ed. G. Aquilecchia, Torino, 1973, p. 19, *Infinito*, BDI, p. 479, and *De immenso*, III.3, BOL I.1, p. 340; *idem*, V.5, BOL I.2, p. 138.

<sup>72</sup> *De rerum princ.*, BOL III, p. 546.

<sup>73</sup> *De rerum princ.*, BOL III, p. 549.

his reasoning reveals that the broader conception of celestial influence is involved.<sup>74</sup> Indeed, magical operations presuppose correspondence and interaction between various realms of reality, and thus also between the heavens and the sublunar world.

### *Medicine*

Ever since late Antiquity, astrology had been condemned and prohibited frequently by the Catholic Church. However, ecclesiastical censures were not aimed at astrology as such, but rather at astrological conceptions presenting a real threat to Christian faith and theology, in particular those doctrines regarding individual free will and events of sacred or universal history. Large sections of (natural) astrology were tolerated, and by the beginning of the sixteenth century astrology had penetrated the courts of popes and cardinals. The delicate balance between prohibition and tolerance was seriously perturbed by Sixtus V's restrictive bull *Coeli et terrae* (1586). This bull was far from being universally accepted, and during the years 1590 various distinguished members of the Roman Catholic clergy argued for less restrictive measures against astrology.<sup>75</sup> Considering this context, it should not come as a surprise that both the Venetian and the Roman inquisitors dwelt on Bruno's possessing a work of judicial astrology. To his Venetian judges, who asked for elucidations about *De sigillis Hermetis, Ptolomei et aliorum*, Bruno answered that the book was not written by him, but copied from a manuscript by his student Besler.<sup>76</sup> And in later interrogations, Bruno motivated his interest in this work with scientific curiosity,<sup>77</sup> and by reference to Albert the Great's positive comments on it.<sup>78</sup> The interrogations reported in the summary of Bruno's trial furnish other information on his specific interest in this work:

And [astrology] could be well handled by a God-fearing man, who is able to judge from which principles proceed the right and forbidden effects, and in which guise they are implemented by virtue of the forces of the celestial dispositions and the efficacy of images

<sup>74</sup> See also *De rerum princ.*, BOL III, pp. 552–3.

<sup>75</sup> See U. Baldini, 'Inquisizione romana e astrologia nel secolo XVI: antecedenti, ragioni e conseguenze di una condanna', forthcoming.

<sup>76</sup> Firpo, *Processo*, p. 166: 'non è mia dottrina; ma io l'ho fatto trascrivere da un altro libro scritto a mano'. To the best of my knowledge, this work has not been traced yet. It consisted probably of a compilation comparable to *De magia mathematica*.

<sup>77</sup> Firpo, *Processo*, p. 187: 'quella che è dalla astrologia giudiziaria, ho detto et havuto ancora proposito di studiarla per vedere se haveva verità o conformità alcuna.'

<sup>78</sup> Firpo, *Processo*, p. 193: 'perché Alberto Magno nel suo libro *De mineralibus* ne fa mentione, et lo loda nel loco dove tratta *De imaginibus lapidum* ...'

and characters, and to judge whether they are executed by wise men or by demons, who do not differ as to the effecting of marvellous works by respecting signs and hours and treating the inferior matter with ceremony, that is, works that either damage or benefit mankind. I never had any intention of propagating that science, since I did not like that practice, except for that part pertaining to medicine, which this science greatly contributes to, as claimed on several occasions by Hippocrates and Galenus.<sup>79</sup>

The belief in causal links between celestial bodies and metals, plants, stones and parts of the (human) body had given rise, since Antiquity, to complex interrelations between astrology and medicine. As a consequence, Arabic and Western physicians made ample use of astrology for the purpose of medical diagnosis and therapy. The remarks quoted above, although probably expressed under pressure, mark once more Bruno's changing attitude towards astrology during the last active years of his philosophical career, emphasizing its practical use in medicine. Also in his 'medical' treatise, the *Medicina lulliana*, he argued for the usefulness of specific astrological notions, most notably the positions and aspects of the heavenly bodies<sup>80</sup> in the analysis and cure of diseases.<sup>81</sup> In this same work, Bruno even provided an astrological diagram for physicians without an astrological background.<sup>82</sup>

### Celestial Influence: Planets and Souls

Astrological culture was an ensemble of theories and practices that developed and evolved together, including attacks and defences of all sorts. Renaissance astrology was not a sharply defined body of

<sup>79</sup> Firpo, *Processo*, p. 287: 'e potrebbe stare ben in mano d'un huomo timorato di Dio, e ch'ha da giudicare gl'effetti leciti et illeciti da che principi procedono, e con che forma si mettono in essecutione con la virtù delle celesti dispositioni et opere dell'imagini e caratteri, o si faccino da huomini sapienti o da demonii, quali tutti convengono in questo, che con l'osservanza dei segni e dei tempi e trattar cereminiosamente la materia inferiore, effettuano cose maravigliose in danno et in utilità degl'huomini. Non ho mai havuto intentione di propagare detta scientia ... perché la prattica mai mi piacque, eccetto secondo quella parte ch'appartiene alla medicina, alla quale potissimamente conferisce questa scientia, come Ipcrate e Galeno più volte gridano.' As regards Galen arguing for astrology as indispensable for medicine, see Ficino, M. (1576), *De vita*, III.10, in *Opera omnia*. Basileae: Bottega di Erasmo (reprint Torino, 1983), p. 542.

<sup>80</sup> In *Med. lull.*, BOL III, p. 592-93, Bruno refers explicitly to his astrological operation in *De rerum principis*. See also *Med. lull.*, BOL III, pp. 580-81, and p. 593 for 'causarios domorum, aspectuum, planetarum, signorum'.

<sup>81</sup> *Med. lull.*, BOL III, pp. 574-5.

<sup>82</sup> *Med. lull.*, BOL III, p. 578: 'Medicus etsi in astrologia non sit peritus, habebit ex astrologia causarum, mediorum et effectuum propositi.'

conceptions and techniques. Its philosophical assumptions consisted of an instable mixture of Aristotelian, Stoic and Neoplatonic ideas, regarding, respectively, the order of celestial bodies, determinism and the view of universal sympathy and antipathy. Some views, such as that of celestial influence, were universally accepted, while others, such as those inherited from the Arabs, were not. Some techniques, such as horoscopic astrology, required a mathematical preparation not mastered by all practitioners.

Between his early and later works, Bruno's view of astrology developed from instrumental use and ironic scorn to a critical appraisal. In general, he deplored the credulity of his time and criticized the arbitrary nature of prediction and divination. His criticism of astrology was also inspired by his rejection of Aristotelian cosmology as well as of mathematical approaches in natural philosophy. By contrast, Bruno's subsequent interest in astrology was connected to the more operational strand of his research during the last years of his activity. Also in his later works, however, he remained critical of specific sections of astrology. He refused to attribute particular significance to eclipses and comets, and held that the celestial bodies qua bodies can at most be signs of terrestrial events.<sup>83</sup>

Bruno's criticisms can be traced in some of his 'predecessors'. Nicole Oresme, for example, thought that man was unable to know with precision the motions of celestial bodies. Therefore, he regarded astrology as vague and inherently uncertain, and astrological forecasting as utterly impossible. In his *Disputationes adversus astrologiam divinatricem*, Pico argued that admitting a general celestial influence on terrestrial phenomena did not entail that this influence can be resolved into discernible relations between particular heavenly causes and corresponding earthly effects. Also Bruno held that the causal relationships between the celestial and terrestrial worlds cannot be exactly traced, since the motions of the celestial bodies are not perfectly regular, and therefore are not to be captured by systematic mathematical relations. Thus, lacking a theoretical foundation, astrological forecasting is essentially uncertain.

In his later works, Bruno could not bring himself to condemn astrology completely and radically as a total error. Undoubtedly his cosmology removed one of the bases of medical astrology, namely belief in the superiority of the heavens over the sublunar regions. Yet, he took it for certain that heavenly bodies exercised influences and determined tendencies, regarding both meteorological phenomena as well as the

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<sup>83</sup> *De immenso*, BOL I.2, pp. 264–5.

temper and disposition of bodies. Thus, he granted the efficiency of celestial bodies in meteorology, magic and medicine. Notice, however, that Bruno did not endorse any strong version of astral determinism. First, man's soul is not subjected to the motion of the celestial bodies,<sup>84</sup> and second, there exist infinite possibilities for the individuation of favourable or unfavourable moments to undertake a determinate action.<sup>85</sup>

Bruno's interest in astrology concerned two issues, namely (1) the correspondence between public welfare and celestial events, and (2) its possible application in magic and medicine. His rejection of horoscopic astrology, together with his acceptance of the theory of the great conjunctions, and a possible use of astrology in operational disciplines must be interpreted from the broader perspectives afforded by his philosophy. Bruno endorsed two views, namely, the animation of the celestial bodies and the fundamental unity of natural reality, which constitute an ideal frame for astrology. However, while he took the basic fact of astrology – the existence of celestial influence – for granted, Bruno attempted to explain it on a different theoretical basis.

Things in the universe are ordered in such a way that they make up a co-ordination, and through a certain continuous flow they admit a progression from all things to all things. Accordingly, the celestial divinities by concession of things and in virtue of some indivisible media, that is by their influences, subdue the inferior and lowest things.<sup>86</sup>

Bruno's ontology is inspired by the idea of a 'schala naturae' which entails that the ontological, cognitive and operational orders are intimately linked<sup>87</sup> and hierarchically structured.<sup>88</sup> Indeed, the physical

<sup>84</sup> Cf. *De vinculis*, BOL III, p. 644: 'Coeli astra, viridia prata, cantus etc. movent, alliciunt, inclinant, non rapiunt.'

<sup>85</sup> *De rerum princ.*, BOL III, p. 565.

<sup>86</sup> *De vinculis*, BOL III, pp. 691–2: 'Res in universo ita sunt ordinatae, ut in una quadam coordinatione consistant, ita ut continuo quodam quasi fluxu ab omnibus progressio fieri possit ad omnia ... Itaque numina, per rerum elargitionem et mediorum quorundam impertibilium favorem, inferiora et infima tandem sibi devinciunt influendo.'

<sup>87</sup> *De la causa*, op. cit., p. 151: 'Prima dumque voglio che notiate essere una e medesima scala, per la quale la natura descende alla produzzion del le cose, e l'intelletto ascende alla cognizion di quelle; e che l'uno e l'altra da unita procede all'unita, passando per la moltitudine di mezzi.' Cf. *Summa term. met.*, BOL I.4, p. 115: 'quibus eadem serie res cognoscuntur qua et constituuntur et configurantur'; *idem*, p. 116: 'Hoc ordine res et fiunt et cognosci existimantur a caussis superioribus, nobis vero, qui a sensibilibus ascendimus ad intelligibilia, contrario ordine atque serie accipitur prius atque posterius'.

<sup>88</sup> See *De umbris*, BUI, pp. 34–5; *De la causa*, op. cit., pp. 125 and 131; *De magia*, pp. 401–2, 435; *Thes. de magia*, BOL III, p. 457; *De magia math.*, BOL III, p. 493. For discussion on the cognitive faculties, representations and objects, see also *Cantus*, in BOL II.1, pp. 219 and 235; *Summa term. met.*, BOL I.4, p. 118.

homogeneity of the universe and the existence of all types of connection, correspondence and interrelation between the various levels and realms of reality did not rule out a relative superiority of the heavens<sup>89</sup> and a hierarchy of superior intellects.<sup>90</sup> Now, in Bruno's ontology, efficient causality was attributed to soul or intellect, and not to (moving) bodies. Thus, he did not have a purely physical view of the workings of the planets.<sup>91</sup> Their activity and influence are grounded in their soul.<sup>92</sup> And since their souls may be superior to human souls, they are granted influence on terrestrial and human affairs. Consequently, celestial influence is not to be calculated, but captured and manipulated in other fashions, as is suggested in Bruno's magical works, especially by his theory of 'vinculi'.<sup>93</sup> In Bruno's view, magic, and in general all human action, is based on the doctrine of matter and its infinite vitality, rather than on the doctrine of analogy between heavens and Earth. The latter is seen as an aspect of the more global phenomenon of universal interaction between all levels of reality.

<sup>89</sup> *De vinculis*, BOL III, p. 676: 'astra et magna mundi animalia seu numina, quibus defatigatio <non> accidit, et in quibus effluxio et influxio substantialis aequalis est et eadem ...'.

<sup>90</sup> See, among others, *De umbris*, BUI, p. 31; *De la causa*, op. cit., p. 154. Recall that in *De gli eroici furori*, the ascent of the soul was grounded in a progressive assimilation to the mode of cognition of the superior intellects; cf. *Furori*, BDI, p. 998; cf. *Lampas trig. stat.*, BOL III, p. 150, and *Libri Phys. Aristot.*, pp. 261–2.

<sup>91</sup> Recall that Bruno did not accept the influence of the moon on the tides in *Cena de le Ceneri*, op. cit., p. 209 and that he rejected the efficiency of astral rays in *De magia math.*, BOL III, p. 503.

<sup>92</sup> For the animation of the celestial bodies, see *Cena*, op. cit., pp. 75, 99–100, 150, 169 and 208 (principle of life inherent in all worlds); *De la causa*, op. cit., pp. 74–5 (universal vitalism); *Infinito*, BDI, pp. 389–90; *Orat. valed.*, BOL I.1, pp. 19–20; *Lampas trig. stat.*, BOL III, pp. 51–3; *De immenso*, III.8, BOL I.1, 376–7: 'Ad quas tanquam ad cognata astra justos et heroes advolare ex hoc mundo nostri majores (ut ex relatis in de Somnio Scipionis habemus) crediderunt. Astra hujusmodi intelligentia sensuque praedita contestantur etiam Chaldaei et Rabini sapientiores, qui ubi Jobi verba sunt: Unde ergo sapientia venit?'

<sup>93</sup> *De vinculis*, BOL III, pp. 683, 691–6; *De magia*, BOL III, pp. 428–53, in particular, p. 436: 'Vinculum sunt animae astrorum et principes locorum, ventorum, elementorum.'