## TEMPO E SPAZIO NELLA LETTERATURA ITALIANA ...

## TIME AND SPACE IN DANTE'S COMEDY

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It has been said that cosmology is the most important defining factor in a culture, and in this respect classical and medieval views of the world — the *cosmos* or *mundus* — differed from our own in one fundamental principle. From Aristotle and Ptolemy, the Bible and Christian writers, Dante and his contemporaries had inherited a vision of the universe as closed, with the earth motionless at the centre, surrounded by eight visible revolving spheres — the Moon, Mercury, Venus, the Sun, Mars, Jupiter, Saturn, and the Fixed Stars — with a further sphere beyond: the Primum Mobile, the source of the motion of all the others, revolving with extreme speed within the infinite Empyrean Heaven, the abode of the blessed enjoying the eternal vision and love of God.

In this enclosed world — eventually discarded through the work of Copernicus, Kepler, Galileo, and Newton — there was no concept of space as we understand it, as an immense 'emptiness', scattered with millions of galaxies over almost inconceivable distances, measured in 'time' (the fourth dimension) by means of light years so that, when looking at distant stars, we see them as they once were, not as they are 'now' in earthly time. Medieval philosophy generally rejected the

concept of such a void or 'vacuum' except in so far as it could be defined by means of the rather more specific concept of place. So, commenting on the doctrines of Aristotle, both St Albert and his pupil St Thomas Aquinas described the 'vacuum' or empty space as a place in which there is no body, though a body could exist there or move through it when travelling from one place to another. In other words, space was a potential place or series of potential places. In Dante's works, the word 'spazio' usually means 'distance' or 'interval', frequently of time; it is therefore measurable, and indeed he ends his *Purgatorio* by referring to the limited 'spazio' that remains for this *cantica* because he is bridled by the requirements of his own 'arte' — poetry (*Purg*. XXXIII, 136).

In some ways perhaps, place is a more interesting concept than space — except to producers and consumers in the science fiction industry. Aristotle regarded place as problematical: after all, what is 'place'? Though it has three dimensions (length, breadth, and depth), it is not a body, for then, if a body exists in a place, two bodies would coincide, which is impossible. It is neither matter nor form nor space but an alicubi, a 'somewhere', the boundary, surface, or 'container' of a body, which may be moving or at rest; Aristotle compares it to a vessel or 'vase', which may be fixed in one place or moved with its contents from one place to another. From the Moon upwards, the heavenly spheres have their places too, through which they move in their circles, whilst down here on earth, beneath the sphere of the Moon, place refers to the location of material bodies composed of the four elements and their mixtures, including living things — plants, animals, and human bodies (but not the human soul, created directly by God, independently of the influence of the heavenly spheres). St Albert relates place both to the paths of the planets and stars and to the surface of the earth, our globe, with its five climatic zones and its three continents (Asia, Europe, and Africa), with their various divisions. Since place can be defined in terms only of material bodies, the heavens above and the

earth below, there can be no place beyond the heavenly spheres, that is, in the Empyrean Heaven.

The concept of time was, if anything, even more problematical than that of place. In a sense, it does not even exist, because the past no longer exists, the future does not yet exist, and the 'now' is not part of a whole since time does not add up to a definable sum of 'nows'. What it is, according to Aristotle, is the measure of motion according to a before and an after, a continuum that includes also the measure of quiescence; what is neither in motion nor quiescent is outside time. Time can also be defined as the motion of the sphere — what St Thomas calls the first body of the world, that is, the ninth Heaven beyond the Stars, the Primum Mobile, that imparts motion down to all the other spheres. As the source of motion, the Primum Mobile was the source of all change on earth, beneath the sphere of the Moon, and thus the source of time itself, the measurement of motion. Time, down here on earth, is measured by the motion of the heavens, which divide it into years, months, days, and so on, and which govern all change, all the natural generation and corruption of the elements, plants, animals, and human bodies. A work on time attributed to St Thomas even indicates its negative aspect: 'everything that exists in time suffers under time, as we often say that time makes everything that exists decay and become corrupted and that oblivion is caused by time' (*De tempore*).

Dante's attitude to these two philosophical and cosmological concepts of place and time differs in each case. In the *Comedy* he virtually ignores the theoretical nature of place in the abstract, whilst presenting an extremely concrete sense of places, actual and imagined. Time, on the other hand, is a fundamental and complex theme that recurs throughout his poem and could even be said to underpin its narrative, much of its imagery, and its moral lessons to its readers.

As regards place, Dante takes over the entire medieval image of the world as the setting — one might even say the 'theatrical space' — for the three realms of his afterlife: the *Inferno*, the place of the *inferi* beneath the surface of the earth, with Lucifer at its exact centre; the

Purgatorio, the immensely tall mountain set in the southern Ocean at the antipodes of Jerusalem, the centre of the northern hemisphere; and the Paradiso where Dante, as he ascends, sees the souls distributed through the the heavenly spheres so that he can understand the degrees of blessedness in the Empyrean Heaven, where they all reside eternally. Within these major structures of place, he creates others that correspond to the moral structures of the three realms: the ever-descending circles for the different categories of the damned in Hell; the division of Purgatory into Antepurgatory, the seven cornici, and the earthly Paradise; and, in the Paradiso, the grades of bliss in the seven planetary Heavens and his succeeding visions and experiences in the remaining three Heavens (the Stars, the Primum Mobile, and the Empyrean).

This structure of real places that express, in visible forms, the underlying moral themes of the poem is, of course, reinforced by the realistic topography that Dante invents for the narrative of his otherworldly journey — the landscapes of Hell and Purgatory and the visible patterns of movement, light, and music in Paradise, which also often express some symbolic underlying meaning. His journey begins in a strongly imagined (though not specified) place, with the 'selva', the 'colle', the 'piaggia diversa'; Hell has a system of rivers; lower Hell is a city, the city of Dis, and the eighth circle has its own name, Malebolge, as if it were a disreputable quarter of a medieval city. Purgatory too has its own expressive topography: the lower slopes of the mountain, where the souls merely wait, wandering around during the day, with no 'loco certo'; the flowered valley of the Princes; the door of Purgatory proper that, like city gates, opens to admit Dante to the seven cornices on which the souls suffer penances for their sins; and finally the earthly Paradise, the Garden of Eden, the 'place' chosen by God as the human race's first dwelling-place on earth and thus the image of that perfect earthly happiness that Adam and Eve lost by their sin. In Paradise too, each soul has his or her proper 'place', corresponding to the degree of blessedness earned during life, but the limiting concept of earthly space begins to be superseded when Dante enters the sphere of the Moon

where, by a miracle, two bodies — the Moon's and his own — are in the same place, and he does allude to place in the more abstract sense as an *ubi*, a 'somewhere', when he realizes that 'ogni dove / in cielo è paradiso' (III, 88-89). When he reaches the Primum Mobile, he finds it so uniform that it has no distinguishable place outside God's mind: 'questo cielo non ha altro dove / che la mente divina' (Par. XXVII, 109-10). While he is in this Heaven, he sees God as not infinitely extensive but as an infinitesimal point of light, encircled by the nine angelic orders corresponding in reverse to the nine heavens; and he resorts to the Latin of the philosophers to describe how this is the eternal centre who holds the universe together in place and time: the 'punto fisso che li tiene a li ubi, / e terrà sempre, ne' qua' sempre fuoro' (Par. XXVIII, 95-96), '... là 've s'appunta ogne ubi e ogne quando' (Par. XXIX, 11-12). Finally, in the Empyrean Heaven beyond, every part is where it has always been, 'perché non è in loco e non s'impola' (Par. XXII, 65-67); it is beyond the laws of nature, having no distance or direction ('Presso e lontan, lì, né pon né leva' — Par. XXX, 121), and where nothing has 'place' merely by chance: 'Dentro a l'ampiezza di questo regno / casual punto non puote aver sito' (Par. XXXII, 52-53). Dante's final reference to place as a 'somewhere' in the Comedy occurs in his final vision of the human form existing in the same place as the circle of the Trinity; in his struggle to understand the ultimate, incomprehensible mystery of Christ as God and man, he actually invents the verb indovarsi: 'come si convenne / l'imago al cerchio e come vi s'indova' (Par. XXXIII, 137-38).

Whilst Dante's invented afterlife has its own complex arrangement, topographical and moral, his sense of place has another striking aspect in his innumerable references to real places, especially in northern Italy: cities such as Francesca's Ravenna, situated at the delta of the river Po ('Siede la terra dove nata fui / su la marina dove '1 Po discende / per aver pace co' seguaci sui' — *Inf.* V, 97-99); rivers such as those defining the territory of Bologna, 'tra Sàvena e Reno' (*Inf.* XVIII, 61), or the course of the Mincio, where Mantua was built (*Inf.* XX, 61-93);

wild places, steep mountains, and so on. Sometimes these geographically defined descriptions too have a moral purpose, as, notably, that of the course of the Arno as it flows down to the sea past various cities, populated by beasts: pigs in the Casentino, snapping dogs in Arezzo, wolves in Florence, and foxes in Pisa (*Purg.* XIV, 43-54).

Of all these allusions to real places on the surface of our globe, those to Florence are particularly significant, especially with regard to one of the most personal themes in the *Comedy* — the theme of exile, that is, of exclusion from a place. One of the reasons for studying the nature and differences of place, according to St Albert, was that all bodies move to their proper places as to the source of their generation and conservation; plants, animals, and humans belong to the place which was the source of their being and where they are best conserved, and they become corrupted when distant from it. Dante too believed that everything in this material world loves its proper place, and, like plants and animals, humans too, in so far as they are corporeal, love and flourish best in the place of their generation, the particular place and time of their birth (*Conv.* III. iii. 6). The damned in Hell, on the other hand, having lost everything, curse even these:

Bestemmiavano Dio e lor parenti, l'umana spezie e 'l loco e 'l tempo e 'l seme di lor semenza e di lor nascimenti.

(Inf. III, 103-05)

Dante himself was born in Florence when the sun was in Gemini, and this gave him not only his mother language but also his natural predisposition to study and poetry:

> O glorïose stelle, o lume pregno di gran virtù, dal quale io riconosco tutto, qual che si sia, il mio ingegno, con voi nasceva e s'ascondeva vosco

quelli ch'è padre d'ogne mortal vita, quand' io senti' di prima l'aere tosco [...] (Par. XXII, 112-17)

For all his condemnations of the moral and civic corruption in his native city in the *Comedy*, he continued to feel 'la carità del natio loco' (*Inf.* XIV, 1), and although he was unjustly exiled from his 'loco [...] più caro' (*Par.* XVII, 110), this allowed him to flourish elsewhere away from the corruption, 'ché tra li lazzi sorbi / si disconvien fruttare al dolce fico [...] ma lungi fia dal becco l'erba' (*Inf.* XV, 65-66, 72). It was because he was driven out and into exile that he was able to explore Italy and its regional *volgari* in his quest for the *volgare illustre* and so, ultimately, to write his great reforming poem. Exclusion from place formed an essential aspect of Dante's later dedication to study, poetry, and his desire for lasting fame.

Place and time are, of course, inseparably linked, as can be seen in Dante's discussions of the Primum Mobile in Convivio II. xiv and of this terrestrial globe in *Convivio III*. v. In the former passage, he argues that without the initial motion imparted to the other heavenly spheres by the Primum Mobile they would have very differents paths, and 'non sarebbe qua giù generazione né vita d'animale o di piante: notte non sarebbe né die, né settimana, né mese né anno, ma tutto l'universo sarebbe disordinato, e lo movimento de li altri sarebbe indarno' (*Conv.* II. xiv. 17). In the latter passage, he invents two cities to illustrate his arguments: Maria, directly beneath the northern celestial pole, and Lucia, directly beneath the southern, at the antipodes of Jerusalem. The two hemispheres are separated by the equator where day and night are equal twice a year because the Sun's plane of revolution is inclined at roughly 23½° as it moves between the tropics of Cancer and Capricorn. As a result, between the two imaginary cities, each with a six-month winter and a six-month summer, the zones of the world have their seasons of differing lengths, and the universe is not disordered but 'per lo divino provedimento lo mondo è sì ordinato che, volta la spera del sole e tornata a uno punto, questa palla dove noi siamo in ciascuna parte

di sé riceve tanto tempo di luce quanto di tenebre. O ineffabile sapienza che così ordinasti, quanto è povera la nostra mente a te comprendere! E voi a cui utilitade e diletto io scrivo, in quanta cechitade vivete, non levando li occhi suso a queste cose, tenendoli fissi nel fango de la vostra stoltezza!' (*Conv.* III. v. 21-22). In the *Paradiso* too, before entering the Heaven of the Sun, Dante addresses his reader:

Leva dunque, lettore, a l'alte rote meco la vista, dritto a quella parte dove l'un moto e l'altro si percuote; e lì comincia a vagheggiar ne l'arte di quel maestro che dentro a sé l'ama, tanto che mai da lei l'occhio non parte.

Vedi come da indi si dirama l'oblico cerchio che i pianeti porta, per sodisfare al mondo che li chiama.

Che se la strada lor non fosse torta, molta virtù nel ciel sarebbe in vano, e quasi ogne potenza qua giù morta; e se dal dritto più o men lontano

e se dal dritto più o men lontano fosse 'l partire, assai sarebbe manco e giù e sù de l'ordine mondano.

(Par. X, 7-21)

So the extraordinary fact of the inclination of the ecliptic relative to the equator that produces life on earth is given as the supreme example of the order of the universe, designed by God in love and providence.

A (literally) pivotal moment in the *Comedy* occurs in *Inferno* XXXIV where Virgil, telling Dante that night is approaching, carries him down Lucifer's shaggy side as far as the hip and then begins to struggle upwards until Dante sees Lucifer upside down and Virgil tells him that it is already morning. Dante has passed through the centre of the earth, the point towards which, in the Aristotelian explanation of gravity, all heavy bodies are drawn as to their proper place. When the two travellers emerge from Hell, they are on the shore of Purgatory, at

the centre of the southern hemisphere, where Dante, with his real, living body and his shadow, becomes literally an antipodean, moving his feet in the opposite direction to northerners, as is explained in *Purgatorio* IV where he is puzzled by the fact that, although he is facing east, the sun is shining on him from the left.

In the *Inferno*, there is no day or night, and Dante emphasizes rather the eternity of the torments in 'quell'aura sanza tempo tinta' (Inf. III, 20). The *Purgatorio*, however, is in a special way the *cantica* of time. Dante enters just before dawn, and on several occasions during his ascent of the mountain he contrasts the time in the two hemispheres: as night spreads in the corrupted north, day breaks in the south, and vice versa. The sun takes on a moral function, as the guiding light for Dante and Virgil, ascent being possible for the souls too only during the day. Time is, moreover, an essential element in the process of purgation: in Antepurgatory, 'dove tempo per tempo si ristora' (XXIII, 84), the souls can do nothing but wait for a number of years associated with their earthly lives; and those on the seven cornices of Purgatory proper may have to undergo the penances for their besetting sins for several centuries until their wills are purified and they can move up the mountain to the next cornice. Since time here depends upon the effects that sin has had internally upon the will, it is essentially a moral time and so is different from ordinary earthly time, divided into months and years by the external factor of the revolution of the heavens (Purg. XVI, 26-27). As moral time, delaying the soul's renewal in love and journey to heaven, time in Purgatory is particularly precious and must not be wasted:

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... ché 'l tempo è caro
in questo regno ...
(Purg. XXIV, 91-92; see also
XVIII, 103-05)
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Dante spends three days and three nights on the mountain, and on the fourth morning he enters the earthly Paradise where the breeze is

caused by the revolution of the sphere of the Moon, the trees and flowers grow without seeds, and the water of the two rivers flows constantly and unchangingly in accordance with God's will. As a result, it is a place that is already partly beyond earthly time, for it has no seasons but is a garden of eternal spring — 'qui primavera sempre e ogne frutto' (XXVIII, 143) — and the prelude to Dante's ascent to the heavenly Paradise.

Although it is the revolution of the heavens that causes earthly time, Dante's journey through them in the *Paradiso* to the 'etterno die' (*Purg.* XXX, 103) of the Empyrean is not marked by time as such. His ascent from sphere to sphere is indeed instantaneous — quicker than an arrow, than the awareness of a thought, than drawing one's finger out of a flame (Par. II, 32-24; V, 91-93; X, 34-39; XXII, 109-10). When he arrives in the Heaven of the Stars, in his own birth-sign of Gemini, he looks back to the terrestrial globe and smiles at its insignificance. From the Stars he can see the other seven spheres, their circular motions, their variations of place ('il varïar che fanno di lor dove'), their size and velocity and relative distances — the celestial part of the great machina mundi that revolves around 'l'aiuola che ci fa tanto feroci' (Par. XXII, 133-53); and before leaving the Stars he looks back once again to our little 'aiuola' and sees that the Sun has moved across it while he has been in this, the outermost of the visible heavens (XXVII, 79-87). Time, with its principal division into day and night, is now beneath him, and the remainder of his journey is to God, 'il punto / a cui tutti li tempi son presenti' (XVII, 17-18). God is the centre of place and time, 'là 've s'appunta ogne ubi e ogne quando', and he created the heavens, the angels, and prime matter 'in sua etternità di tempo fore', where there was no 'before' or 'after' ('né prima né poscia'), in an act of loving creation as instantaneous as a ray of light striking on glass, amber, or crystal (XXIX, 12-27). So were created motion, place, and time, but before one could count to twenty some of the angels had already rebelled because of 'il maladetto / superbir di colui che tu vedesti / da tutti i pesi del mondo costretto' (XXIX, 49-57). Hardly had time itself

begun when the source of all sin was cast down to the bottom-most place in the universe, the centre of the earth.

In the space of this short paper it is clearly impossible to examine all Dante's references to earthly time that mark the stages of his journey 'a l'etterno dal tempo', from time to eternity (Par. XXXI, 38). Although in Paradiso X, 139-48, he uses the technological image of the latest type of clock invented by humans to mark and measure time, the true clock for Dante was essentially the measurement of the movements of the heavens: principally of the Sun (dividing time into hours, days, seasons, and years) but also of the Moon (defining months, as in Inf. XXVI, 120-21) and the twelve constellations of the zodiac through which the Sun passes in the course of the year and its months and seasons. With regard to the hours of the day, Dante uses a beautiful image, personifying them as the handmaidens ('ancelle') in the service of the Sun, as in *Purgatorio* XII, 80-81: 'vedi che torna / dal servigio del dì l'ancella sesta'. He also classifies them according to two systems: what he calls in the *Convivio* (III. vi. 2-3) the unequal or 'temporal' hours which move according to the season of the year; and the 'equal' hours, the division of day and night into 24 hours, however many of each there are in winter or summer. The former are known also as the canonical hours of the Church's prayers, Prime, Terce, Sext, and None, marked in medieval cities by the ringing of bells: 'Fiorenza dentro da la cerchia antica, / ond' ella toglie ancora e terza e nona' — Par. XV, 97-98.

These two systems of dividing the day coincide only at the equinoxes when the day and the night are of equal length, and of particular importance in the poem is the spring equinox. Dante's journey begins at dawn in spring: 'Temp' era dal principio del mattino, / e '1 sol montava 'n sù con quelle stelle / ch'eran con lui quando l'amor divino / mosse di prima quelle cose belle'; both the hour and the season, '1'ora del tempo e la dolce stagione', fill him with the hope that he can escape from the 'selva oscura' and the first of the three attacking beasts (*Inf.* I, 37-43). When he emerges from Hell 'a riveder le stelle'

(*Inf.* XXXIV, 139) and finds himself on the shore of Purgatory, it is again dawn, just before daybreak at Eastertime, and his poetry too must now rise from the dead: 'ma qui la morta poesì resurga' (I, 7). Once again, in Purgatory, the divisions of time, as well as marking the 'real' progress of Dante's journey, take on symbolic spiritual, moral, and even psychological connotations as in his description of his first evening in Purgatory, a time of nostalgia for travellers and sailors:

Era già l'ora che volge il disio ai navicanti e 'ntenerisce il core lo dì c'han detto ai dolci amici addio; e che lo novo peregrin d'amore punge, se ode squilla di lontano che paia il giorno pianger che si more [...]

(Purg. VIII, 1-6)

At other times, the natural beauties of the world in the course of the day become the source of wonderfully observed, even quasi-scientific, similes, as in his description of the appearance of Beatrice to him within a shower of flowers in the earthly Paradise, like the sun rising behind a veil of cloud or mist:

Io vidi già nel cominciar del giorno la parte oriental tutta rosata, e l'altro ciel di bel sereno addorno; e la faccia del sol nascere ombrata, sì che per temperanza di vapori l'occhio la sostenea lunga fiata [...]

(Purg. XXX, 22-27)

On the negative side, however, earthly time, produced by the turning of the heavens, also denoted constant change, often for the worse. In the sublunar world all earthly goods, including wealth and power, are in the control of Fortuna, constantly changing just as the moon makes the tides ebb and flow upon the seashore (*Par.* XVI, 82-84); all things

generated down here on earth as the heavens revolve ('il ciel movendo'), are contingent and subject to change (*Par.* XIII, 63-66); time, with its shears, can reduce a family's pretensions to nobility unless its members practise true nobility, that is, virtue (*Par.* XVI, 1-9); and all human desires and language itself change over the course of time, 'seguendo il ciel' (*Par.* XXVI, 124-29). Particularly vulnerable to time is what Dante desired above all to win through his poem — earthly fame among posterity — even though Oderisi da Gubbio, in his homily on the transience of fame, asks him:

Che voce avrai tu più, se vecchia scindi da te la carne, che se fossi morto anzi che lasciassi il 'pappo' e 'l 'dindi', pria che passin mill' anni? ch'è più corto spazio a l'etterno, ch'un muover di ciglia al cerchio che più tardi in cielo è torto.

(Purg. XI, 103-08)

Whilst aware of fame's subjection to time, however, Dante desired his poem to earn him a long life ('viver') after death among distant posterity, 'tra coloro / che questo tempo chiameranno antico' (*Par.* XVII, 119-20).

At the wider level, time is often associated by Dante with moral, civic, and social decline. Sometimes he sets this within the context of the classical myth of the origins of the human race in the Golden Age, described by Ovid as a time of eternal spring, with gentle breezes and rivers of milk and nectar — the pagan equivalent of humanity's state in Eden before the Fall:

Quelli ch'anticamente poetaro l'età de l'oro e suo stato felice, forse in Parnaso esto loco sognaro. Qui fu innocente l'umana radice; qui primavera sempre e ogne frutto;

## nettare è questo di che ciascun dice. (*Purg*. XXVIII, 139-44)

This age of human innocence, as Dante illustrates also with the image of the Old Man of Crete in Inferno XIV, was succeeded by the ages of silver, bronze, and iron with the coming of falseness, violence, greed, and wars until Justice herself, the virgin Astraea, left the blood-soaked earth altogether. In Dante's scheme of history, however, God worked in parallel through the Jews and the Romans to create the perfect moment in time when the world was at peace under the Emperor Augustus and Christ was born of the Virgin Mary, bringing true Justice back to human society. Since then, though, the world — and particularly, for Dante, Italy and Florence in the thirteenth century — has declined from what he presents as a morally more virtuous society in a 'buon tempo antico', with its feudal virtues of 'cortesia' and 'valor'. This decline has been due to the wars between Guelphs and Ghibellines and, above all, to the cause of that strife — the assumption by the world's spiritual leadership, the Popes, of powers that by God's design belong rightfully to the secular authority, under the Emperor. Thus, by the time that Dante chose for the setting of his journey through the afterlife, around the end of Lent and Eastertime in 1300, he viewed the present state of the world — effectively, Europe — as corrupted above all by greed: commercial greed in his own city of Florence and, at the universal level, the greed of the Church and of Popes such as Boniface VIII for earthly goods and secular power.

There is one final aspect of time that is crucial in understanding the meaning and message of Dante's *Comedy*. Setting his narrative in 1300 at the dawn of the new century, he also looked forward to another stage in time, a future time of religious, moral, and civic reform. In *Inferno* I, Virgil foretells the coming of the 'veltro', saviour of Italy, which will drive the she-wolf of avarice back into Hell; and in *Purgatorio* XXXIII, Beatrice prophesies that the stars are already close to providing the time of punishment and reform — 'a darne tempo già stelle propinque' —

when a heaven-sent deliverer will kill the prostitute and the giant, the agents of Antichrist in the world. The whole imagery of the earthly Paradise in the final cantos of the *Purgatorio* is permeated with references to the ideal past of the world at the time of Christ, its evil present, and its future reform in the new century just beginning. This new world order might be a foretaste — perhaps even the reality — of the millennium prophesied by St John in the Book of Revelation, the thousand years of peace and justice that would precede the Judgement and the end of the world, 'quel punto / che del futuro fia chiusa la porta' (*Inf.* X, 107-08), when time itself would come to an end, to be replaced by the eternal punishments of Hell or the eternal rewards of Paradise.

Within the closed system of the medieval universe and in the *Comedy*, therefore, Dante shows a strongly realistic and naturalistic, rather than theoretical, sense of place, both imagined places and real places on the surface of our globe. But it is time — and especially the present and the future — that more clearly preoccupied him as he composed his reforming poem. When, in *Paradiso* XXVII, he ascends to the Primum Mobile, the swiftest of the heavenly spheres, he finds that it has no distingishable place for its 'dove' is entirely in God's mind. Nor can its motion be measured — that is, by time — because it is this Heaven which measures the motion of all the lower spheres and is therefore the source of time itself, as Beatrice tells him, using the naturalistic simile of a plant-pot: the Primum Mobile contains the fixed roots of time that produce the changing foliage of the lower visible spheres:

e come il tempo tegna in cotal testo le sue radici e ne li altri le fronde, omai a te può esser manifesto. (lines 118-20)

Down on earth, however, she continues, greed swiftly corrupts the human race just as continual rain turns good plums into bad; little children lose their innocence by the time they become adults; and the human race goes astray for lack of good government by Church and Empire. However, the time is approaching, she predicts, when reform will come; and the canto concludes with an extraordinary 'scientific' image which shows that Dante was aware of a serious flaw in the human calculation of earthly time and the calendar — a flaw that was not to be corrected until the Gregorian calendar was introduced nearly three centuries later. Indeed the ignored 'centesma' to which Dante refers was corrected only six months ago when the new centenary year was also a leap-year. But when his Beatrice talks of a time several thousand years into the future, when January would become the month of the spring equinox, she really means that the heavenly spheres ('questi cerchi superni') are already nearing the time when the human race will be entirely redirected towards good, and that the reform of the world will be 'very soon':

Ma prima che gennaio tutto si sverni per la centesma ch'è là giù negletta, raggeran sì questi cerchi superni, che la fortuna che tanto s'aspetta, le poppe volgerà u' son le prore, sì che la classe correrà diretta; e vero frutto verrà dopo 'l fiore. (lines 142-48)

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16