

# ON THE ORIGIN OF THE ROMAN IDEA OF TOWN: GEOMETRICAL AND ASTRONOMICAL REFERENCES

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## Abstract

Recent ideas about the formation of the Roman tradition of town layout and the associated foundation rituals are briefly reviewed. The example of Cosa is used as a case study to investigate the possible existence of an archaic, tripartite layout, as is mentioned by some authoritative ancient writers.

Key words: ancient town planning - astronomical orientation of towns.

## Introduction

“The remains of Roman towns are still visible, are still part of everyday experience in Western Europe and round the Mediterranean: and the more closely they are examined, the more puzzling they appear.” With these words begins the book by Joseph Rykwert on the Anthropology of the Urban Form in Rome (1999), where the author makes the effort to integrate pieces of information scattered in archaeological remains as well as in many Roman texts. As is well known, Roman historians such as Varro, Plutarcus and Pliny the Elder describe the town’s foundation ritual as following a rule directly inherited from the Etruscans’ sacred books belonging to the haruspices, called *Disciplina*. A fundamental part of the haruspices’ ritual was connected with cosmic order, and consisted of the identification of a terrestrial image of the heavens (*templum*) in which the gods were “ordered” and “oriented”. This is shown by the *Piacenza Liver*, a first-century B.C. bronze model of the liver of a sheep, whose external perimeter is divided into 16 sectors, each devoted to a different god. Once oriented, the liver itself became an image of the cosmos on the earth. By analogy, the same became true of the place from which the auspices had to be taken (the *auguraculum*) and, in fact, of the whole, ritually founded town (Aveni and Romano 1994). Correspondingly, the ideal “centre”, or *mundus*, was an icon of the centre of the world, and so contained a deposit, placed at the time of foundation, containing soil, and/or some of the first crop, from the place of birth of the founders (for a recent complete overview see Briquel 2004). Rykwert concluded that the foundation rituals and the layout of urban space originated in “ceremonies of the religion of the Italic people” back as far as the 8th-9th century B.C., if not before. To investigate this intriguing hypothesis, however, many problems have to be tackled and the research requires a

fully interdisciplinary approach. In particular, the main questions needing to be addressed are:

1. How far back in the archaeological data can we find traces of the foundation ritual and its connection with astronomy?
2. Why do some authoritative ancient authors - both Greek and Roman, such as Plato and Servius - speak about *tripartite*, or even radial, town planning? Are traces of these kinds of layout visible in ancient towns before the orthogonal layout became the rule?
3. How were the foundation ritual and the orthogonal town planning glued together? In particular, was orthogonal town planning imported from Greece or did it develop independently in Italy?
4. Did the final product of this evolution, namely the Roman *castrum* town, have any astronomical connection?

In recent years, advances have been made both from the point of view of the archaeological records and from the point of view of their interpretation. In the present paper the advances in addressing questions 1 and 2 will be briefly reported, including (partly unpublished) recent research that has been carried out by the present author on ancient Italic towns. For further developments, concerning points 3 and 4, the interested reader is referred to Gottarelli (2003) and Magli (2008).

## The Archaeological Records Concerning *Auguracula*

From the Roman period - around the beginning of the first century B.C. - one example of an *auguraculum* survives (Torelli 1966). This find is not very spectacular and, perhaps consequently, it is poorly known; howev-

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er it is fundamental, being the only known example of such a structure in the Roman world (the possible Cosa auguraculum will be discussed later on). The structure was located in the Bantia acropolis and comprised nine stone cylinders that were placed on the ground so as to form three lines of three oriented to the cardinal points. In this way the directions from the centre identified the eight main divisions of the cosmos (a simplified version of the 16 Etruscan divisions). Each cylinder has an inscription on the top: the central one is dedicated to the sun [SOLEI], the eastern one to Jovis [IOVI] and the western one to Flusa [FLUS], a local chthonic deity. The inscriptions on the other cylinders are intended to identify the omens of the birds that might eventually come from the corresponding directions: the north-eastern one reads BIVA (=bene iuvante ave); the south-eastern one SINAV (=sinistra or sinente ave); the south-western one CAEN (=contraria ave enebra); the north-western one CAVAP (=contraria ave augurium pestiferum); and finally the southern and northern inscriptions read RAVE (=r... ave) and TAR (=t... ave r...) respectively (their complete reading is uncertain). The cylinders were disposed in such a way that the spells could be read in the north-south direction, and the haruspex stood in a sort of tribune located at the west of the structure.

Only in relatively recent times has the existence of an early, pre-Roman tradition about *auguracula* been proved as well. First of all, an intact example has been uncovered in the excavations at Meggiaro, near Este, a zone once inhabited by the Italic people called *Veneti*. Here, as in Bantia, a rectangular “sacred space” (measuring 7.5 x 5.0 m, i.e. in the proportion 3:2) was delimited by eight stone blocks. The blocks bear no inscriptions but there is no doubt that this area was ritually “inaugurated”, since a stratigraphic layer containing offerings of various kinds has been found. What is quite astonishing is the *age* of this structure: its construction is securely dated to the end of the 6th century, with a *terminus ante quem* around 480 B.C. (Ruta Serafini 2002). During this period Rome “had very far to come” (the Romans were fighting with the Etruscan city of Veii, 20 km away from the Palatine hill). The orientation of the east-west diagonal of the Meggiaro *auguraculum* is about 11.3° south of east, so that the longest sides align 45° south of east. It is likely that this orientation (which of course corresponds to one of the eight divisions at Bantia) had a symbolic element.

Another example of what is very probably a pre-Roman *auguraculum* has been unearthed at the Lavello (the Roman *Forentum*) acropolis (Tagliente 1999). Here, a rectangular enclosure of 6.0 x 4.0 m (again in the proportion 3:2) - of is delimited by small holes (*bothroi*) disposed symmetrically. The fact that the holes were

filled with offerings demonstrates the ritualistic nature of this enclosure, which is dated to around the middle of the 4th century B.C., again well before the “arrival” of the Romans (the orientation of the enclosure is reported to be north-south, but unfortunately no quantitative data are available).

Of fundamental importance, of course, is the study of Etruscan towns. One of the main difficulties in tracing back the origins of the foundation rituals is the fact that most of these towns were re-planned by the Romans, so that their original urban design is uncertain. However, interesting finds have been made in Tarquinia, where a “sacred complex” has been found dating to the 7th century B.C. and oriented in the cardinal directions (see Bonghi Jovino in Carandini and Cappelli 2000), and in Misa (today’s Marzabotto), which was founded in the 6th century B.C. and is the only Etruscan town to have been destroyed by the Celts before the Romans’ arrival (Mansuelli 1965).

The excavations at Misa have shown that the town plan was based upon an orthogonal grid oriented 2.5° west of north, with the sacred area located upon an “acropolis” - actually a gentle hill - which was itself located *outside* the grid, near the north-western corner of the town (Fig.1). Until a few years ago, most scholars agreed that the orthogonal plan at Misa was inspired, if not simply “copied”, from the contemporary town planning of the Greek colonies, and that no traces of the foundation ritual could be found in the town (Castagnoli 1971). This viewpoint, however, does not explain the cardinal orientation of the grid, something that is barely visible in Greece, nor does it explain an interesting find that was made beneath street level at the very centre of the town. It is a rounded stone with an inscribed *decussis* (cross). This stone was left under the foundation layer of the street, and it is therefore difficult to negate its ritualistic, rather than functional, meaning. Similar rounded stones, although uninscribed, have been found beneath two other street crossings (denoted by “x” in Fig. 1) and others may exist in unexcavated areas. In recent years, taking into account these findings, Gottarelli (2003) has carried out a complete re-evaluation of the symbolic content of the urban layout of Misa. Among the results of this analysis, the one that is of special relevance here is that the *whole* urban layout of Misa may actually have been conceived as a *templum*, in which the eight main street crossings - each allegedly corresponding to a rounded stone (of which three have been found to date) - played the role of the eight stone cylinders of the Bantia *auguraculum*. Accordingly, the so-called “Temple D” of the Acropolis,<sup>1</sup> a cardinally oriented stone podium identified until now

<sup>1</sup> It was unearthed in the 19th century and named thus at that time.

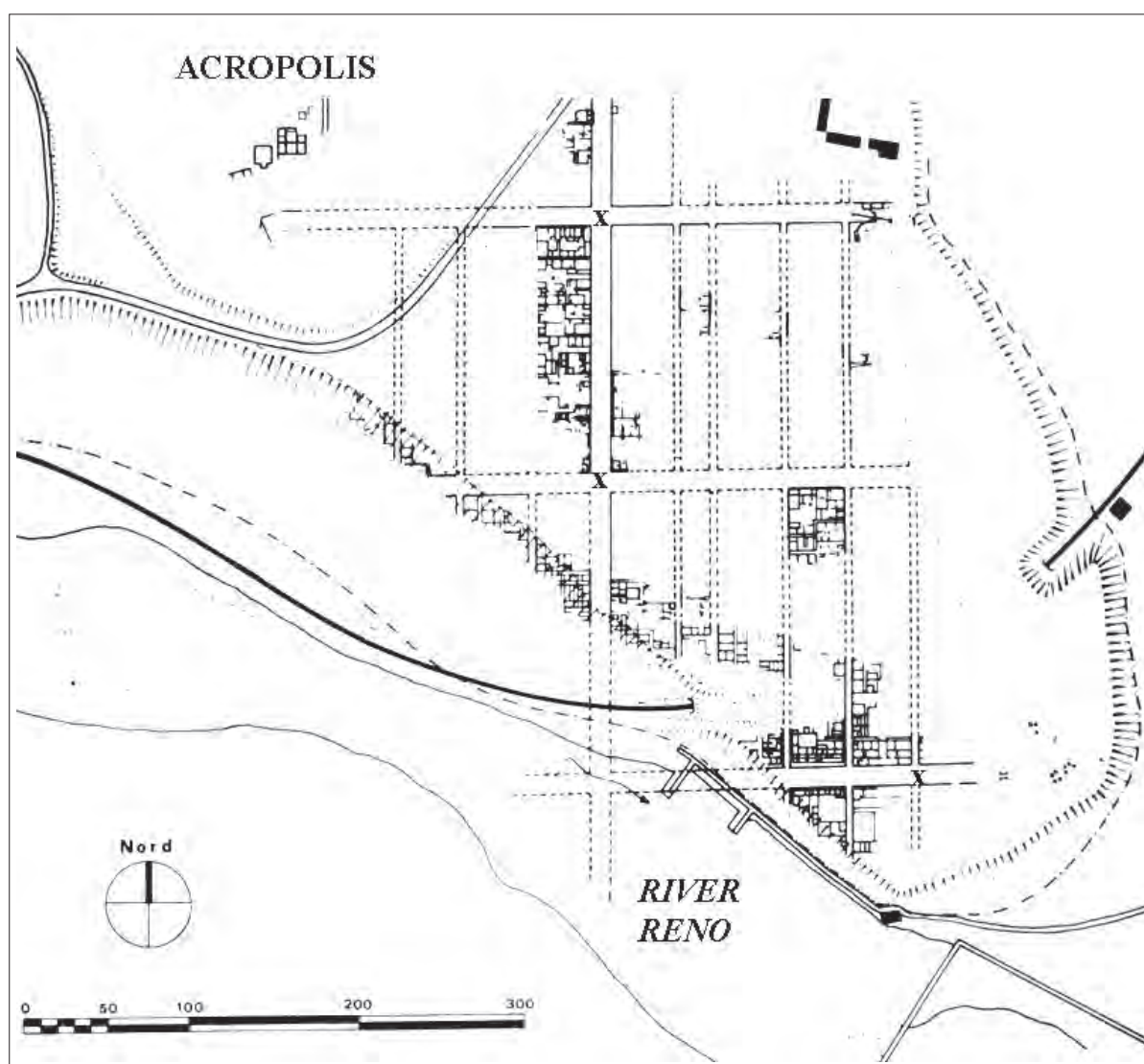


Fig. 1. Plan of Misa.

as some kind of ceremonial platform, might actually be the town's *auguraculum*. A nearby pit might have been the *mundus*. Indeed, many geometrical referents – and particularly the main diagonal of the town – clearly indicate the existence of such structures.

### Cosa

Several ancient towns of west-central Italy are surrounded by megalithic polygonal walls. This impressive technique makes its first appearance during the Bronze Age, although all the polygonal walls in Italy are currently dated by most archaeologists – on the basis of quite scant evidence – to the first centuries of the Roman expansion, between the 5th and the 3rd century B.C. (Recently, the problem of dating the polygonal walls in Italy has been the subject of a comprehensive reassessment by the present author, see Magli 2006, 2007a, 2007b.) Of particular relevance here is the case of one of the most beautifully preserved of these

towns: Cosa, in southern Tuscany (Fig.2). The walls at Cosa are masterpieces of polygonal masonry and are equipped (uniquely in Italy) with several towers. Since the interior urban plan follows a rigid orthogonal grid and the foundation of a colony named Cosa in 273 B.C. is mentioned by some Roman historians, most archaeologists date the town to the first decades of the 3rd century B.C. and consider the walls, towers, and orthogonal grid to be contemporary with the original project (Brown 1951). However, there is no definitive proof of such assertions. Indeed, the towers were probably added to the walls in later times, since there is no visible joint between the blocks of the walls and those of the towers. Added to this, the orthogonal grid might have been superimposed by the Romans upon an existing town: the “*decumanus*” does not directly connect the two “west-east” gates (P1 and P3) and the “*cardus*” does not connect two gates either, since the town actually has only three main gates. We are thus dealing with a town that certainly dates back as far as 273 B.C., but

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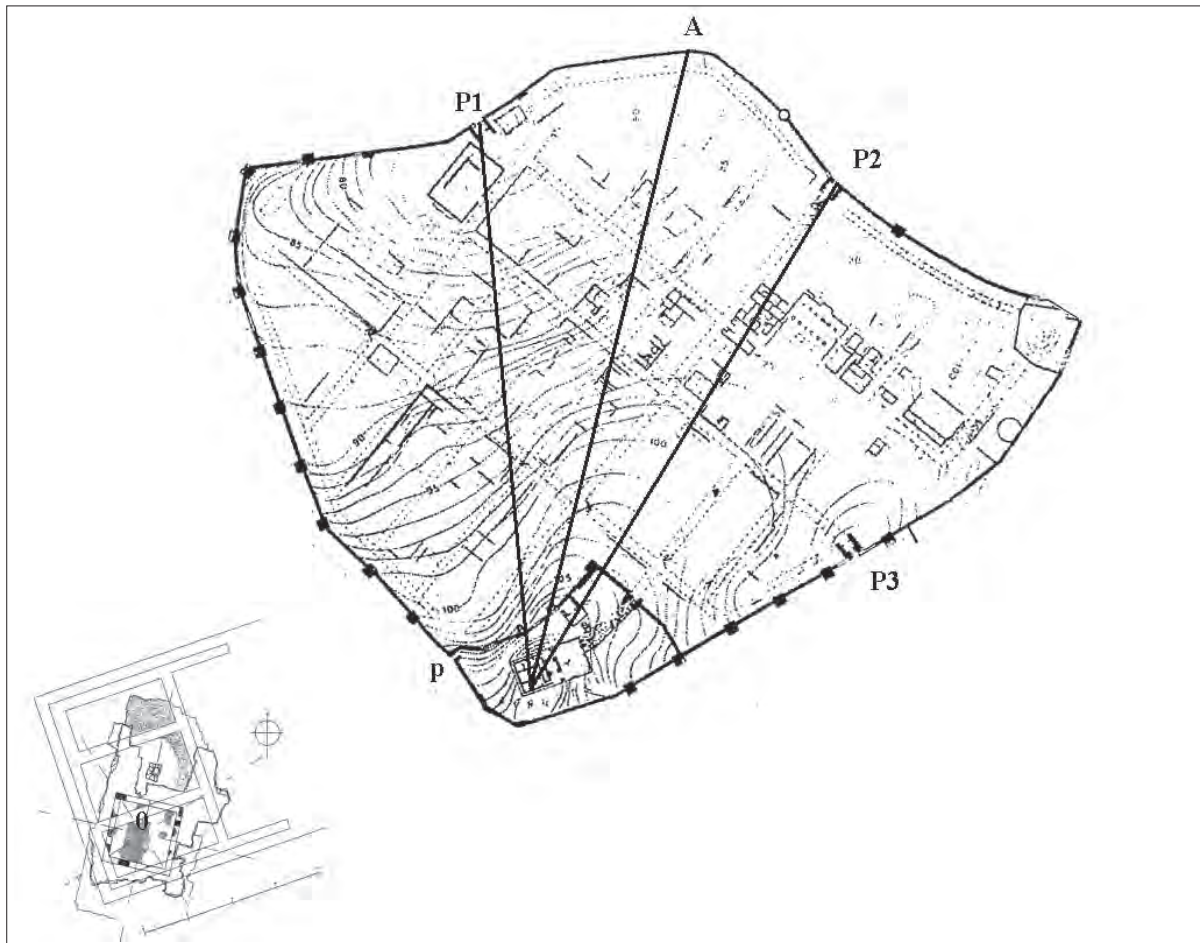


Fig. 2. Plan of Cosa – see the text for an explanation of the superimposed lines.

is perhaps much older. In fact, an Etruscan town named Cosa is cited by Vergil (Aeneid 10.168) and Etruscan towns such as Roselle – some 80 km north of Cosa – were equipped with megalithic walls as far back as the 6th century B.C.

The Acropolis of Cosa is located in the southern corner of the area within the town boundary, upon a small hill which overlooks the rest of the town. During the excavation of the main temple of the Acropolis, a pre-existing structure was unearthed: the Capitolium, constructed around the middle of the 2nd century B.C. (Brown 1960). It comprises a square basement oriented  $12^\circ$  east of north and, a few meters behind the basement and in the alignment, a natural pit in the rock (Fig. 2, inset). The pit contained traces of a foundation deposit of burned vegetables. It is probable, therefore, that the basement and the pit are simply the original auguraculum and mundus of the city, respectively. Whether or not these structures were consecrated in a pre-Roman phase, they were subsequently obliterated by the Romans (with the construction of the Capitolium) in a very careful and respectful way. Indeed, the whole temple, which is quite huge, was laid out in such a way as to locate the pre-existing foundation pit at the

very centre of the most sacred part of the new building, the central *cella*. Furthermore, an altar located in the forecourt was constructed with the same orientation as the square basement. (A similar ritual obliteration also occurred at Lavello.)

### The Problem of the “Tripartite” Town

The evidence discussed above clearly demonstrates the existence of a pre-Roman and early Roman tradition of foundation rituals as described by the classic writers (for recent, important advances on the problem of the foundation of Rome see Carandini and Cappelli 2000). However, many things remain unclear, especially from the point of view of the astronomical and geometrical references. In particular, it is puzzling that there exist sources which clearly mention a “tripartite” town geometry. In the Latin context the most important passage is the famous one by Marius Servius, who, in his comment to Vergil Aeneid, says: “the experts of the Etrusca Disciplina state that those founders of towns who do not plan the layout with three gates, three main streets, and three temples dedicated to Jupiter, Juno and Minerva, cannot be considered as people obey-

ing the rules” [translation by the author]. This passage describes a sort of radial, or at least triangular, town. While the dedication to three gods can be easily explained in the Roman context, the town’s layout based on the number three can hardly be accommodated in an orthogonal grid or, even worse, within the Roman *Castrum*. As a consequence, this passage has generated much confusion among those scholars who have tried to interpret it. Similarly, there are some enigmatic passages by authoritative Greek writers who mention a radially planned town (e.g. Plato’s “ideal” city described in the *Laws*, and the star-like town described by Aristophanes in *Birds*) that have always eluded explanation (see e.g. Castagnoli 1971). In this connection, the pre-Roman and early Roman megalithic towns of Italy are of special interest (Magli 2007b). For instance, Ferentino (in southern Lazio) and Erice in Sicily clearly exhibit a triangular plan, and Alatri and Norba (again in southern Lazio) are very suggestive of an original *radial* plan. In addition, in Alatri a foundation pit and an obliterated original temple exist on the Acropolis, and in Norba and on the Ferentino Acropolis the presence of a single squared tower – among many kilometres of megalithic walls – suggests a sacred purpose and also perhaps the existence of an *auguraculum*. Research is continuing on this subject, but we shall concentrate here on the case of Cosa. As we have seen, the basement is not cardinally oriented, nor has it a recognizable bearing with the orientation of the town’s grid. According to the excavators, its orientation was “a function of the field of vision delimited by significant natural features of the immediate horizon”; however, none of the elements visible at the horizon has a clear and unequivocal interpretation as a topographic foresight (such as the summit of a prominent hill), and no such topographical alignments are known elsewhere in the Italic context. Therefore, the interpretation of the complex on the hill, and its orientation, seem quite disconnected from what is actually visible in the *Roman* town. A possibility of reconciling the evidence comes, however, from the following considerations. Suppose for a moment that the original layout of the city was *not* based on the orthogonal grid, and consider only the elements that certainly belong to the first phase, namely the walls with their monumental gates and the sacred area on the Acropolis. It can then be seen (referring again to Fig. 2) that the complex on the Acropolis does have a relevant role in the planning of the town: the lines connecting the centre of the basement to the two northern gates (O-P1 and O-P2) divide the city into three parts which are very similar in size. Furthermore, the ideal line O-A, orthogonal to the northern side from the centre of the basement and therefore oriented 12° east of north, crosses over the

*Mundus* and further divides the city into two roughly equal sectors.

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## DĖL ROMĖNŲ MIESTO IDĖJOS KILMĖS: GEOMETRINIAI IR ASTRONOMINIAI ASPEKTAI

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Santrauka

Gerai žinoma, kad miesto įkūrimo ritualas, aprašomas romėnų istorikų (Varo, Plutarcho ir Plinijaus Vyresniojo), yra tiesiogiai perimtas iš etruskų šventų haruspi-

cijų knygų, vadinamų *Disciplina*. Pagrindinė ritualo paskirtis susijungti su kosmine tvarka, siekiant sukurti žemišką dangaus atvaizdą (templum). Remdamasis šios idėjos analize, Rikvertas (Rykwert) darė išvadą, kad miesto įkūrimo ritualas ir urbanizuojamos erdvės struktūros principai kilo iš „italikų religinių ceremonijų“ ne vėliau kaip apie IX–VIII a. pr. m. e., jeigu ne dar anksčiau. Šios hipotezės ištyrimas reikalauja tarpdalykinio tyrimo pastangų. Tyrimų metu turėtų būti atsakyta į šiuos svarbiausius klausimus:

1) Kokius seniausius laikus siekia miesto įkūrimo ritualas ir kokios yra jo galimos sąsajos su astronomija, kurias galima būtų atsekti pagal archeologinius duomenis?

2) Kodėl patikimi ir senovės graikų, ir senovės romėnų veikalų autoriai, tokie kaip Platonas ir Servijus, kalba apie tridalį ar net radialinį miestų planavimą? Ar senuosiuose miestuose galima aptikti tokio suplanavimo pėdsakų prieš tai, kai įsivyravo stačiakampio miesto planas?

3) Kaip tarpusavyje buvo suderinamas įkūrimo ritualas ir stačiakampis miesto planas, o ypač – ar stačiakampis planas buvo paimtas iš Graikijos, ar nepriklausomai išvystytas Italijoje?

4) Ar šio miesto plano vystymosi rezultatas – romėniškas miestas (castrum) – turi kokių nors sąsajų su astronomija?

Vertė Vykintas Vaitkevičius