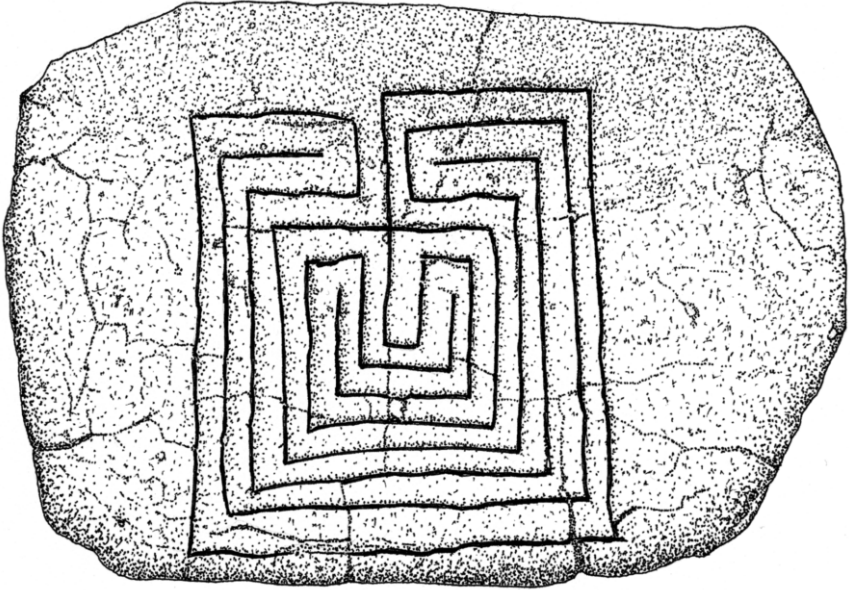


CAERDROIA

THE JOURNAL OF
MAZES & LABYRINTHS



: XXXV :

CAERDROIA 35

25th Anniversary Edition : 1980-2005

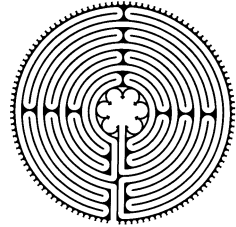
CAERDROIA

The Journal of Mazes & Labyrinths

35th Edition

25th Anniversary
1980 - 2005

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The pavement labyrinth in St. Omer Cathedral, France; a half-size, quarter-area, replica of the labyrinth formerly situated in the Abbey of St. Bertin, also in St. Omer. This labyrinth was almost certainly created in 1843, at the same time as the altar that stands on the pavement, and was probably the first of the numerous labyrinths constructed in churches and cathedrals during the 19th and early 20th centuries.

CAERDROIA 35

The Journal of Mazes & Labyrinths

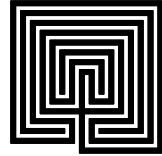
December 2005

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Caerdroia 36 is due for publication October 2006, submissions by July 2006 please

Editorial - Caerdroia 35



Jeff Saward, Thundersley, December 2005

Welcome to the 35th edition of Caerdroia, a landmark edition that marks the 25th anniversary of the founding of Caerdroia in 1980. When I published the first edition of Caerdroia, way back then, it was designed to be a simple newsletter to keep a small group of maze and labyrinth enthusiasts in Britain in touch with each other. Indeed, the fact that the first edition of Caerdroia consisted of three sheets of paper stapled together, with a print-run of 30 copies, will give you some idea of how limited the interest was some 25 years ago.

In 1980, when the current revival of interest in mazes and labyrinths was just beginning, I really had no idea how this spark would be kindled, and spread, to become a worldwide phenomenon. At that time there were a few new mazes beginning to be built in the grounds of parks and gardens, and even a few labyrinths being constructed by artists and the like, often in far-flung fields at festivals on the fringes of popular culture.

But my, how times have changed. Now mazes, in both traditional and radical new forms, are widespread in theme parks and country gardens. Entirely new varieties have appeared - the wooden panel mazes, interactive mazes, and most notably in recent years, the maize mazes that have sprung up in cornfields across Europe and America. Many hundreds of permanent mazes have been built; their numbers boosted each summer by those out in the fields. Their popularity has undergone a dramatic revival of fortune - a veritable maze craze - and a news media always looking for the unusual angle and image has boosted their profile considerably.

While all of this was going on, labyrinths were working away in the background. With little publicity in the early years, throughout the 1980's they were still largely the preserve of the dedicated enthusiast, but their influence was spreading all the while. In the 1990's they staged a dramatic comeback within the Christian Church and surged outward across America and back into Europe from where their influence originated, and then further abroad into South Africa, Australia, New Zealand and beyond.

From a mere handful being built 25 years ago, there are now many thousands of new labyrinths, some estimates suggest more than 10,000 have been built within the last 10-15 years. While mazes were continually evolving dramatic new forms and being created with new materials, labyrinths tended to be more conservative. Many have been modelled on either the original 'classical' design, or the 'medieval' examples from the cathedrals of Europe, but within the last decade a number of fascinating new forms, including some that push the boundaries of what can be considered a labyrinth, have appeared.

Ever since the unicursal labyrinth symbol first appeared, some 4000 or more years ago, its popularity has evidently waxed and waned in long and complex cycles. Likewise, the multicursal mazes, while a more recent development, have also flourished and faded, only to sprout again, in different places, at different times. Since the late Medieval and Renaissance, the history and popularity of both mazes and labyrinths have been inextricably entwined with each other - the growth of one will invariably result in a new-found interest in the other - and this has been dramatically illustrated by the events of the last 25 years or so.

Alongside this latest revival in the construction, use and development of mazes and labyrinths, there has also been a remarkable growth in the knowledge, documentation and understanding of their history and distribution. 25 years ago there were just a few books and publications available on the subject; now there are enough to fill a bookcase! When I first started publishing *Caerdroia* in 1980, Hermann Kern was still compiling his mammoth catalogue of labyrinths worldwide, and a few young researchers in Scandinavia were beginning to publish the results of their extensive field research into the little-known stone labyrinths in the north of Europe. When I visited the turf labyrinths in East Germany in 1983, I was the first 'Westerner' to have visited some of those villages since the 'Iron Curtain' came down. They were exciting times, and with hindsight, the start of a revolution in the understanding of the history of the labyrinth.

Throughout all of the twists and turns of the current revival I have been fortunate, as the editor of the only journal dedicated to the study of mazes and labyrinths, to have had a front-row seat, watching the action as it has unfolded. Looking back through the 35 editions of *Caerdroia* produced during this time, it is possible to see the trends developing, the new ideas appearing, and to identify the people and the locations that were pivotal in the process.

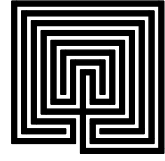
And of course, none of this would have been possible without the support of those who have contributed their articles, notes, illustrations and donations to *Caerdroia* over the years. To those many contributors, the regulars and occasional, I offer my heartfelt thanks for helping to make *Caerdroia* possible. It would be difficult and invidious to mention the names of those who have played a part, but you know who you are! Likewise, no publication can survive without its readers, and my thanks go to you, for your continued support and faith that a new edition of *Caerdroia* would appear, eventually.

It has not always been easy to edit, produce, publish and distribute a journal of such a specialised nature, especially on the shoestring budgets that are available for production. But it has been a great pleasure, and one that I plan to continue. Who knows what mazes and labyrinths might look like in another 25 years?

Jeff Saward - E-mail: jeff@labyrinthos.net
Website: www.labyrinthos.net

The Tomba del Labirinto

Luzzanas, Sardinia



Jeff & Kimberly Saward

The labyrinth incised on the wall of a rock-cut tomb, popularly known as the “Tomba del Labirinto,” at Luzzanas on the Mediterranean island of Sardinia, off the west coast of Italy, has been the subject of some discussion ever since it was first ‘discovered’ and published by the archaeologist Ercole Contu in 1965.¹ Most notably this debate concerns the age of the inscription and the unusual additional lines extending from the entrance of the labyrinth. Whilst visiting Sardinia during February 2005, we resolved to find this little-visited labyrinth location, to study and photograph the inscription, and attempt to clear up at least some of the confusion.

Finding this site is a challenge. It is not marked on even the most detailed of Sardinian maps, nor mentioned in any of the archaeological guides generally available on the island. To the best of our knowledge, the first written description of its location was given by David Singmaster in *Caerdroia* 30, subsequent to his successful visit in 1997, and without his notes and a detailed map of the area we would have struggled to find it.² Luzzanas itself is a vaguely defined area of agricultural land to the south and east of the confluence of the rivers Mannu and Tirso, to the north of the minor road that leads between the villages of Bultei and Benetutti, approximately 20 km northwest of Nuoro. The nearest signposted landmark is the spa building at Terme Aurora, from where any attempt to find the site should begin. The tomb is situated about 1.2 km to the north of the spa, in open fields, on the southeast bank of the River Tirso.

To find the Tomba del Labirinto, we parked at the gates of a construction site, apparently another uncompleted spa building, at the end of the small road that leads off north, into the fields, opposite the Terme Aurora spa. We walked out through the field behind the construction site down to the riverbank and then headed upstream, to the northeast. Following the upper edge of the riverbank for around 600 metres, climbing over or round two field walls along the way, a few scrubby trees and bushes growing around the rock outcrop containing the tomb provides a clue to the exact whereabouts, about 150 metres before the river makes a sharp turn to the northwest. A small hole, around one metre deep, on the north side of the rock outcrop, leads down into the tomb. Fortunately there were no livestock in these fields when we visited, but as sheep flocks in Sardinia are usually guarded by ‘wild’ dogs, which bark and bite, we would advise considerable caution to anybody else attempting to visit this site. The tomb also contains a number of roosting bats by day, and efforts should be made not to disturb these, or the wasp nests on the ceiling!

The tomb itself is of a remarkable form, popularly known as a *Domus de Janas* (Fairy House), consisting of a series of chambers excavated with stone tools and picks directly into solid rock, usually the limestone that outcrops widely across the island, either underground or directly into a cliff face. Well over a thousand of these tombs are known in Sardinia, and they belong to the Ozieri (or San Michele) culture, an advanced society of hunters, herders and farmers who worked copper as well as flint, obsidian and ceramics, and flourished during the Neolithic period, between c.3400 to c.2500 BCE. Their tombs continued to be used for secondary interments through to the time of the Roman occupation of Sardinia, indeed a few were even re-used during the Early Christian period.

The example at Luzzanas is of the underground type, carved into the limestone that outcrops in the field adjacent to the riverbank. The tomb consists of four or more interconnected chambers, which as they have never been excavated, are still partly filled with soil and debris. The northernmost chamber was flooded with water on the occasion of our visit in February 2005, although the central and western chambers were essentially dry, if a little damp and muddy. There is a small hole in the eastern side of the central chamber, which admits a little daylight, but it is difficult to determine if this was the original entrance. Currently, the central chamber, about 2.5 x 1.5 metres wide, is entered through a narrow carved doorway on the south side, from the base of the hole in the rock, which may once have been the original entrance, or a separate ante-chamber, the roof of which has collapsed. Another chamber, completely filled with debris, leads off from the opposite side of this small chamber, back into the rock outcrop.

Inside the tomb, the walls of the chambers are essentially plain, apart from the pick and hammer marks remaining from the original construction of the chambers. However, on the wall on the northwest side of the central chamber, to the right of the narrow doorway that leads into the western chamber, are a number of items of graffiti. By far the most prominent, is a labyrinth of ‘classical’ design, 30 cm wide and 33.5 cm high, the uppermost circuit of which almost reaches the ceiling of the chamber. The lines that form the labyrinth have clearly been carved by a confident hand with a sharp implement, probably a metal blade, as the groove is fairly consistent in width and is deeply incised (3 to 5 mm deep in places), although the line is shallower in places where the undulating rock surface has caused the carving tool to skip. As is common with incised labyrinth graffiti of this free-hand nature, the procedure for constructing the labyrinth design can still be discerned. The central cross has clearly been constructed first; the lines are somewhat bolder and more deeply incised. Then the arcs that mark the ends of the path loops have been inserted in the angles of the cross, and finally, four short strokes have been added to mark the ends of the ‘walls’ of the labyrinth – the familiar ‘seed pattern’ encountered worldwide, wherever the classical labyrinth symbol is found. In particular, the central ‘seed pattern’ of the Luzzanas labyrinth is remarkably similar to the much smaller example inscribed on the Tragliatella vase, although the Luzzanas labyrinth has the opening to the left rather than the right.

In addition to the labyrinth, there are a number of other marks on the rock surface, including a number of linear gouges and deep scratches that may have been made by either human or animal activity in the tomb over the years, especially lower down on the wall. To the left and partly overlapping the labyrinth are a number of modern characters and numbers, evidently drawn sometime in the early or mid 20th century, with a thick blue wax crayon, now thankfully beginning to flake off from the rock surface in places. It is known that the tomb was used, prior to its discovery by archaeologists, by local farmers as a shelter in bad weather.³ Also to the left, and below the labyrinth, are a number of shallow scratch marks, vertical, horizontal and diagonal, that fail to form any obvious coherent pattern, but appear, possibly, to have been scratched in one single episode. Several of these shallow scratches impinge against the outermost circuit of the labyrinth, and two in particular meet at the line leading out from the entrance of the labyrinth. It is quite clear from their appearance and their shallow grooves, scratched with a sharp point, not deeply carved as is the case with the lines of the labyrinth, that these were surely added at a later time and clearly do not form part of the original labyrinth inscription.

This point is significant, as several authors have commented on these additional lines projecting from the lower edge of the design, assuming they are part of the labyrinth. Hermann Kern comments that the “guiding line... points left towards the door” to emphasize his point that the location of the labyrinth beside the entrance doorway into the adjacent chamber is “evoking a door or a threshold through which the deceased had to pass.”⁴

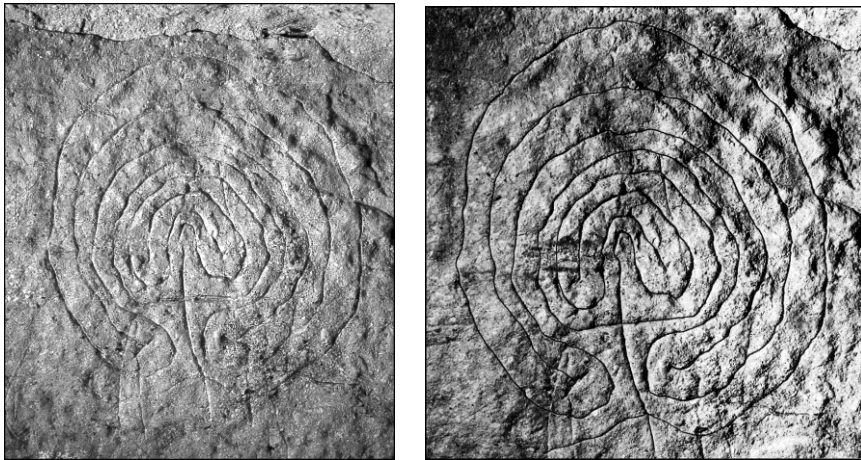


Figure 1: Left the Luzzanas labyrinth inscription, photo: Jeff Saward, February 2005. Right: the ‘enhanced’ photo by Rainer Pauli, published by Kern.

This confusion is understandable, as the only photograph of the Luzzanas inscription commonly published is the one supplied by Rainer Pauli in the late 1970's to Kern, that was subsequently reproduced in his monumental *Labyrinth* in 1982,⁵ and has been widely copied from this source ever since. However, this photograph has clearly been 'doctored,' the lines of the labyrinth have been inked-in to emphasize the design, including both of the incidental lines that touch the line below the entrance (see figure 1).

With this matter resolved, attention must now turn to the question of the age of the Luzzanas labyrinth. In his original description of the inscription, Contu simply regarded it as prehistoric, though he admits that it could be much more recent, even modern. Pauli ascribed it to the Early Nuraghic period of Sardinian history, when many of these Neolithic *Domus de Janas* tombs were re-used, dating the labyrinth to c.1500-1000 BCE, although he provides no evidence of Nuraghic activity at this location to support his dating.⁶ Kern on the other hand was clearly convinced that the tomb and the labyrinth on its wall were contemporary, and he gives an implied dating of 2500-2000 BCE, which like his illustration, has been widely and uncritically repeated ever since.

Staffan Lundén was probably the first to express serious concerns about these differing and rather arbitrary dates, and basing his reasoning on the apparent use of an iron knife blade to carve the labyrinth, suggested a date-range from around 850 BCE, when iron tools first appear in Sardinia, to as late as the 5th century AD.⁷ This later date is based on the virtual disappearance of the simple 'classical' labyrinth in the Mediterranean area after the Roman period. This would certainly seem to be a valid terminal dating, indeed a Roman origin for the Luzzanas labyrinth would seem quite likely, as other Roman labyrinth inscriptions and graffiti are known from around the Mediterranean⁸ and both the labyrinth legend and symbol were clearly widely known at this time. There was a considerable Roman presence in Sardinia⁹ and examples of apparent Roman or Punic graffiti are known in other prehistoric tombs on the island. It is, of course, possible that the labyrinth is relatively recent, but the damp conditions inside the tomb have already smoothed the edges of the carving, and the overlying later additions to the graffiti on the wall are certainly suggestive of a considerable age for the labyrinth itself.

While Lundén concedes that the labyrinth could have been carved with a sharp stone tool, rather than an iron blade, the notion that the labyrinth is contemporary with the tomb can be almost completely ruled out. While the majority of the *Domus de Janas* tombs are entirely plain, apart from the carved doorways between the interconnecting chambers, a small number have extensive carved decoration inside, including bull's heads and stylised bull's horns (fig.2a). A few are even carved to imitate the interior of contemporary wooden buildings, complete with doorways, windows and roof beams,¹⁰ but the key feature of these Neolithic decorations is that they are all carved in relief and in a very distinctive style; incised designs like the Luzzanas labyrinth are unknown in this context.

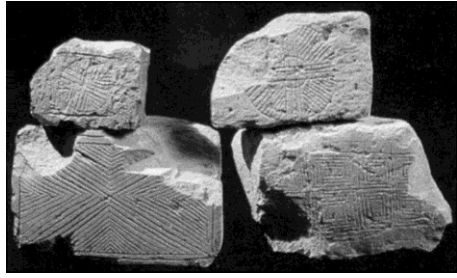
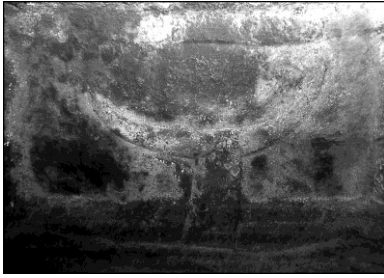


Fig.2: a) decoration inside Domus del'Elefante; b) carved blocks, Nuraghe Nurdole

Incised geometric designs are found, however, on ashlar blocks formerly decorating the walls of the late Bronze Age and early Iron Age Nuraghe towers and temples that form such a distinctive feature of the Sardinian landscape.¹¹ Although many concentric circular designs, coupled with rectangular and diagonal design elements, often very angular and precisely inscribed (fig.2b), are known on both stone and ceramic objects, to date no labyrinths have been reported amongst this Nuragic material, so the Luzzanas inscription would be quite unique if it were from this cultural context and timespan. There are also occasional incised carvings and graffiti found in association with the late Bronze Age *Tomba dei Giganti* (Giant's Tombs), including two inscriptions found at Rio di Palmis, near Sulcis, with depictions of people, animals and wheeled carts, which have been compared with the carvings of Val Camonica in Northern Italy¹² – a location famous of course for its labyrinths, the age of which is a matter of some debate, but they may be from around c.700-450 BCE.

We have already noted the apparent similarity between the construction technique of the labyrinth at Luzzanas and the labyrinth incised on the Etruscan Tragliatella vase, found on the west coast of Italy, and dating from c.650-600 BCE. Another two labyrinths drawn alongside each other in a very similar fashion, albeit inverted, found at Gordion in Turkey, date to around 750 BCE.¹³ While it can be argued that the universal nature of the labyrinth construction technique might render these similarities no more than a coincidence, it is perhaps interesting that four examples, at three locations in the Mediterranean area, two of which are securely dated within a century or so of each other, should be so similar. Perhaps the Luzzanas labyrinth also fits within this timeframe, and this precise way of drawing a freehand labyrinth was the widespread technique in circulation at this time?

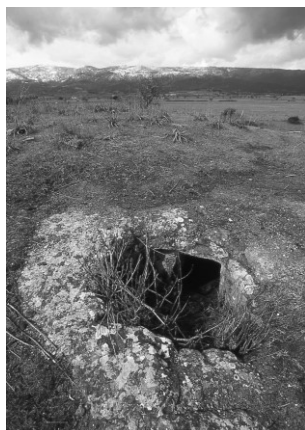
Either way, judging on the scant evidence for the dating of the Luzzanas labyrinth, it seems fair to say that it could be from almost anywhere between the early Iron Age, c.900-850 BCE in Sardinia, to the end of the Roman occupation of the island in the early 5th century CE. Unless future excavation of the Tomba del Labirinto provides some obvious evidence of the visitors that have entered the tomb over the years that can be linked to the labyrinth itself, we will probably never know more precisely than that.

Of course, the question of what the labyrinth on the wall at Luzzanas means is another matter. Contu, admitting the problems of interpreting the symbol, saw it as a symbol of initiation, life, death and rebirth, quite at home in the tomb. Kern saw it as a funerary symbol within the “womb of Mother Earth.” Lundén conjectures that if there were evidence for Roman activity in the tomb, then it might be seen as serving an apotropaic, or protective purpose. If the labyrinth was carved by a casual visitor to the tomb, long after its original construction, as seems likely, then maybe this descent through a hole in the ground into an ‘underworld’ of gloomy interconnecting chambers reminded them of the Theseus and the Minotaur story, prompting the carving of the labyrinth on the wall. If this were the case, then an origin in the second half of the 1st millennium BCE or the Roman period, when these stories were well known in the Mediterranean world, would be all the more likely.

Jeff Saward & Kimberly Lowelle Saward;
Thundersley, England, 2005.

Notes:

- ¹ Contu, E. “Nuovi petroglifi schematici della Sardegna” in *Bollettino di Paletnologia Italiana*, Bd.74, 1965, p.65-122.
- ² See Singmaster, D. “The Oldest Labyrinth in Sardinia” in *Caerdroia* 30 (1999), pp.17-21. Our thanks go to David for his original article, and the photographs and maps he provided, that allowed us to retrace his steps and find the tomb again. During the winter month of February 2005 there was considerably less vegetation obscuring the entrance to the tomb than when David visited in June 1997.
- ³ Contu, *ibid.*
- ⁴ Kern, H. *Through the Labyrinth*. Prestel, 2000. See page 66 & 67, catalogue no.76.
- ⁵ Kern, H. *Labyrinth*. Prestel, 1982. See page 88, catalogue no.76.
- ⁶ Pauli, R. *Sardinien. Geschichte, Kultur, Landschaft. Entdeckungsreisen auf einer der schönsten Inseln im Mittelmeer. Feengrotten, Nauragen und Kastelle*. Köln, 1978.
- ⁷ Lundén, S. “The Labyrinth in the Mediterranean” in *Caerdroia* 27 (1996), pp.28-54.
- ⁸ E.g.: three labyrinths at Pompeii, Italy; and another at Kom Ombo, Egypt, probably of Roman origin.
- ⁹ A mosaic labyrinth pavement is also known from the Roman town of Nora, in the south of Sardinia; fragments of this mosaic are still visible near the theatre area.
- ¹⁰ Notable examples of relief carvings in Sardinian *Domus de Janas* tombs are to be found at Anghelu Ruju, S. Andrea Priu, Puttu Codinu and La Domus del’Elefante. Public access is available to all of these sites.
- ¹¹ Melis, P. *The Nuragic Civilization*. Sassari, Carlo Delfino Editore, 2003. pp.47-52. See also Lilliu, G. *La Civiltà Nuragica*. Sassari, Delfino, 1982. Particularly interesting geometric stone carvings have been found at the Nuraghe Nurdole, near Orani.
- ¹² Guido, M. *Sardinia*. London, Thames & Hudson, 1963. See p.99-100. Margaret Guido’s study of Sardinian archaeology remains a classic in the English language, although inevitably it has dated a little.
- ¹³ See Lundén, 1996 for further details of these labyrinth inscriptions, also Saward, J. *Labyrinths & Mazes*. Gaia/Lark Books, 2003, especially pp.36-49.



*The Tomba del Labirinto,
Luzzanas, Sardinia.*

*Top left: the interior of the
tomb.*

*Top right: the current
entrance to the tomb, looking
northwest.*

Left: the labyrinth inscription.

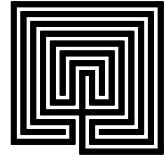
*Below: the wall with the
labyrinth and other graffiti,
and a hibernating bat!*

*Photos: Jeff Seward,
February 2005.*



Mary's Garden

The Labyrinth of Jerusalem



João Baptista

To understand the sources for this article, we must first travel to Portugal, and look carefully at a 17th century painting by an unknown artist, that today hangs in the small convent church at Buçaco, near Coimbra (figure 1, opposite). This particular building integrates a larger religious complex founded between the year 1628 and 1630 by the order of the *Carmelitas Descalços*, and was planned as a Desert - a place isolated from the world where the monks lived as “Priests of the Desert,” the eremites of the early primitive Christianity.¹

According to the historian Paulo Varela Gomes, the painting here in question was originally acquired by the count-bishop of Coimbra, D. João de Melo (1624-1704), during the last decade of the 17th century, and was afterwards placed in the chapel where it has remained until the present day. But despite of the painting's interesting symbolical relationship with the Carmelite Desert, both in terms of its content and physical placement,² from now on we will only concentrate on the work of art itself and the image it represents, and try to find out exactly where it will lead us.

As the Latin inscription clearly states, what is illustrated here is the Holy City of Jerusalem and its surroundings, as they were conceived to have been at the time of Christ. A continuous wall punctuated with gates and towers encloses a well laid out metropolis, in which the Temple of Solomon, with its shrine placed in the middle of several courtyards, assumes a central role. However, what we are looking for is not situated inside, but just outside the city's well-defined perimeter. If we now take a closer look at the right-upper corner of the painting, we can find what seems to be a small multicursal labyrinth, or maze, which was first pointed out by the Portuguese artist Lima de Freitas in his book *O Labirinto*, published in 1975.³

What Lima de Freitas didn't notice was that this particular painting was in fact a copy, and a most beautiful one I must say, of an engraving by Christian von Adrichom Delfo (1533-1585), included in his famous book *Theatrum Terrae Sanctae et Biblicarum Historiarum*.⁴ Adrichom's plan from 1584 (figure 2) is considered to be the finest early artistic representation of Jerusalem, and due to its extremely detailed and elaborate nature, soon became a known reference for those interested in exploring the biblical geography of the Holy City. Together with the map, a list with full descriptions for each single element represented in it was also provided, including references to specific passages in the Bible and other bibliographical sources, some of which are now lost.

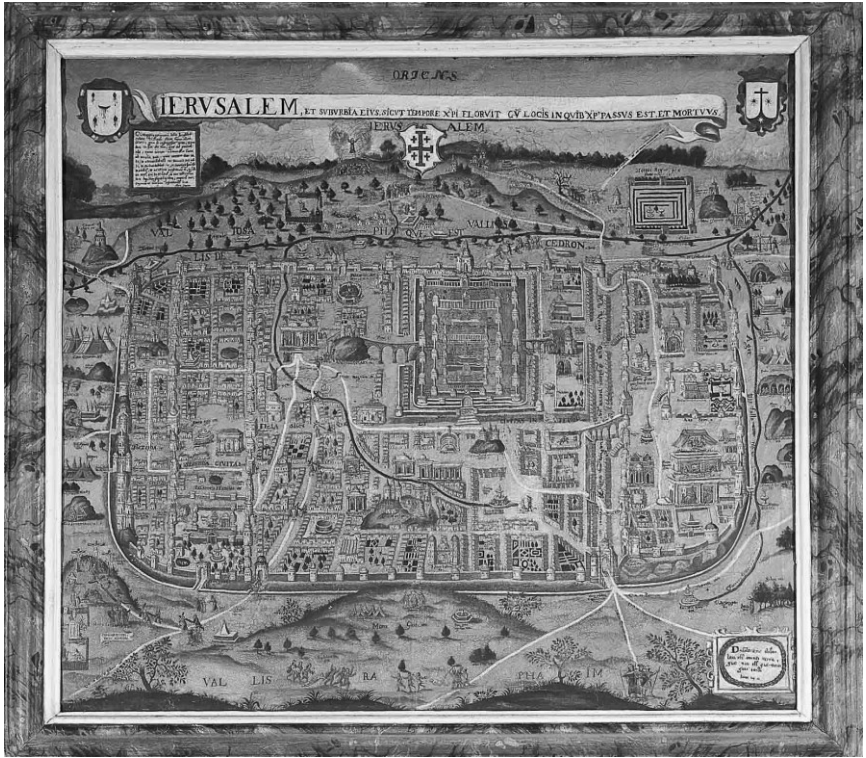
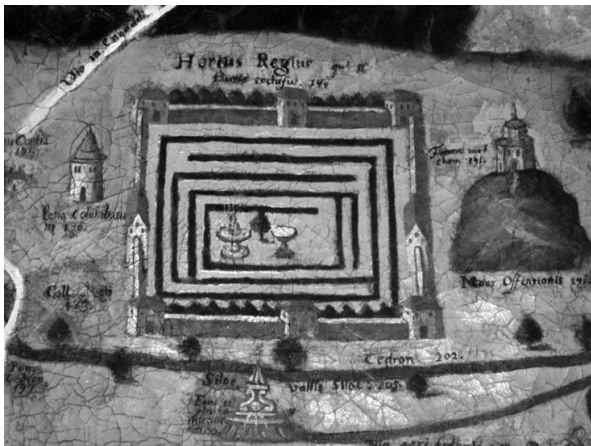


Figure 1. Above: the beautiful map of the Holy City of Jerusalem, painted by an unknown artist, located in the Carmelite Desert at Buçaco, Portugal. Photo by José Pedro Aboim Borges, DGEMN, Portugal, 2003. Below: close-up of the labyrinth.



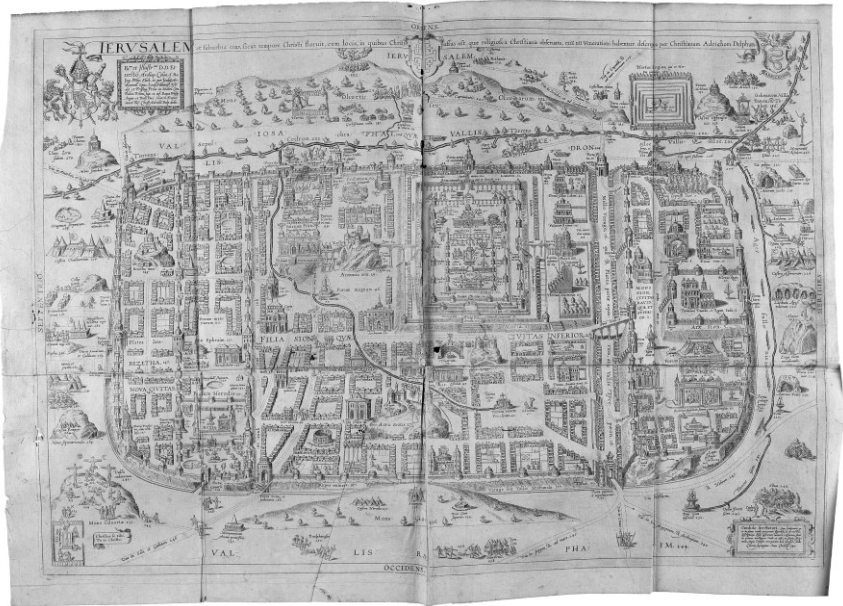
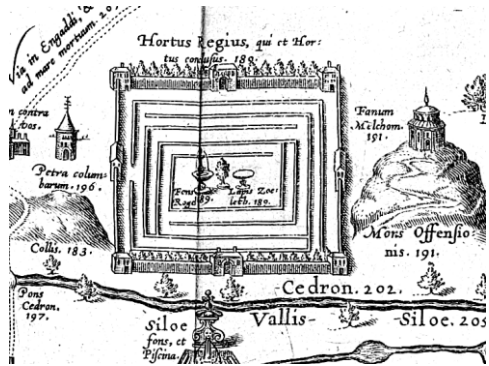


Figure 2.

Above: Jerusalem, engraving by Christian von Adrichom included in his book *Theatrum Terrae Sanctae et Biblicarum Historiarum*, 1589 [1584]. Reproduction of the original from the National Library in Lisbon, Portugal, 2005.

Right: close-up of the labyrinth.



Also testifying to the popularity of this work are the several editions and translations that were made during the following years, for which it seems quite remarkable that this particular labyrinth, so many times reproduced, could have remained forgotten until the present day. We find it yet again in a later version included in George Braun and Franciscus Hogenberg's monumental *Civitates Orbis Terrarum* (figure 3), published in six volumes between 1572 and 1617.⁵ Here, Adrichom's plan of Jerusalem appears rotated 90° in order to respect the North-South orientation, and received some further detailing in comparison to the original work.

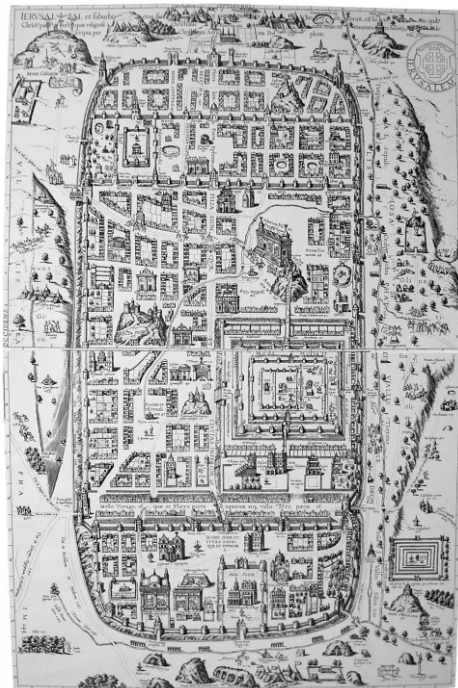
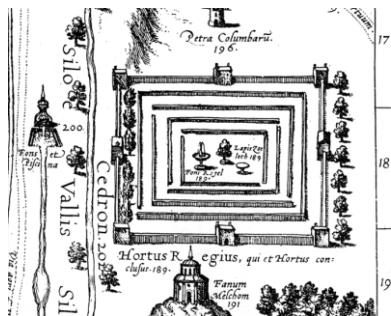


Figure 3.

Left: Jerusalem, engraving by George Braun and Franciscus Hogenberg included in the book *Civitates Orbis Terrarum*, vol.4, 1588. Reproduction of a facsimile copy from the University Library in Gothenburg, Sweden, 2005.

Below: close-up of the labyrinth.



As is common in the reproduction of labyrinthine patterns, in these three different examples I just mentioned - the painting at Buçaco, Adrichom's original, and the Braun & Hogenberg's adaptation - the maze appears with slight changes from one to another, but it is nevertheless representing the same in each case, as we can read from the Latin inscription that was carefully placed alongside it:

Hortus Regius, qui et Hortus Conclusus.

According to Adrichom, the labyrinth represents a garden, or more precisely the “King’s Garden” that is mentioned in four different passages of the Holy Bible.⁶ This rich plantation was located just outside the city of Jerusalem, near the pool of Siloah in the south-eastern end of Cedron Valley, and Adrichom in his book compares it to Eden itself: a paradise garden of abundant beauty, in which grew different fruits, aromatic plants and flowers.⁷ But this pleasure garden was also a private, enclosed space, protected from all exterior interference, and that’s why it is represented with four surrounding walls. The denomination *Hortus Conclusus* or “Enclosed Garden,” possesses in this case a particular symbolical meaning, and has been inspired by a known passage from the Song of Songs in the Old Testament attributed to Solomon:

“A garden inclosed is my sister, my spouse; a spring shut up, a fountain sealed.”⁸

The *Hortus Conclusus* was a popular garden type in the Middle Ages, and it was initially believed to represent the Christian soul, enclosed in the body, or even the Church itself, reserved only for the faithful and barred to all the non-believers. During the late Middle Ages, it progressively started to be seen as an image of the Blessed Virgin Mary, identified with the bride in the Song of Songs, and symbolized her sealed womb and perpetual virginity.

As such, already in the 15th century, depictions of Holy Mary in a Paradise Garden surrounded by a closed wall appear rather frequently, together with different elements attributed to her purity like the fountain (*Fons Ortorum*) or the well (*Puteus aquarium viventium*). Adrichom, being a religious man himself,⁹ was certainly aware of all the distinctive symbolism surrounding the Marian Garden theme and it is therefore within this very context we must look for the true origins of the Jerusalem Labyrinth.

Although its presence in the drawing may strike us as merely coincidental at first, resulting from the increasing popularity that the figure of labyrinth, and in particular the garden maze designs, enjoyed at the time of Adrichom's reconstruction, I am convinced that in this case it derives directly from the religious notion of the *Hortus Conclusus*.¹⁰ Seen from this perspective, its twists and turns are then merely emphasizing the protective aspect of Mary's closed garden, functioning as a kind of chastity device (or should I say chastity belt?) designed to prevent sin from penetrating to the centre of her womb.

In this central sacred space, we find depicted three different elements. One of them is the fountain of En-rogel, commonly identified with the "Fountain of the Virgin," and that according to the Old Testament was the place where David's two spies, Jonathan and Ahimaaz, were hiding. This fountain was located in Cedron Valley, similar to the King's Gardens, and not very far from it was also the stone of Zoeleth, where Adonias secretly assembled his partisans and offered rams and bulls in a sumptuous banquet.¹¹

Since none of these elements appear mentioned in the holy text as really belonging to the *Hortus Regius*, we can only speculate about the reason why Adrichom choose to represent them here. Besides the geographical coincidence, the fact that the fountain was considered to be one of the traditional Marian symbols, were perhaps some of the things that may have influenced his decision.

Finally, the last element included is a tree, and even if it is tempting to try to link it as well to the traditional arboreal symbols of the Virgin Mary, in this particular case it is more likely to be alluding directly to the tree of life itself, planted in the middle of the paradise garden, as it was a common feature in many garden maze representations of that time.

The uses and meanings of the labyrinth symbol have been very varied throughout its long history, and the apotropaic dimension that we find here reflected in the context of the Marian Garden is also not new.¹² Nonetheless, what is doubtlessly unusual is for this to happen in the Church's milieu, since according to the Christian tradition the figure of the labyrinth was by nature evil.¹³ Instead of offering sacred protection, walking the religious maze was primarily considered to be a form of penance and punishment, through which the faithful hoped to obtain some sort of spiritual purification.

This was clearly the case of the popular Pavement Labyrinths that flourished in the French churches during the Middle Ages, where they served as a stage for the Harrowing of Hell, reproducing the tortuous route made by Christ in the Underworld to save the souls of the non-baptized.¹⁴ Later, instead of the bowels of hell, the labyrinth also came to be identified with the terrestrial world sin, and its path was walked by the devoted in a symbolical pilgrimage towards the centre, where awaited (coincidentally) the Holy City of Jerusalem.¹⁵

Now if Adrichom's description was accurate, we can just imagine the disappointment of the exhausted pilgrims as they find, at the end of labyrinthine path that had lead him to the Holy City, yet another labyrinth.

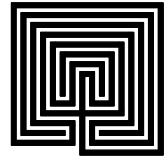
João Baptista; Gothenburg, Sweden, July 2005.

Notes:

- ¹ About this Carmelite Desert, see: Paulo Varela Gomes – “The Carmelite Desert at Buçaco: a brief map of the Holy City of Jerusalem”. *Struggle for Synthesis. A Obra de Arte Total nos Séculos XVII e XVIII*. Lisboa: Instituto Português do Património Arquitectónico, 1999, vol. II, actas do simpósio internacional, Braga, 11-14 de Junho de 1996. Also published in Portuguese as: “O Deserto Carmelita do Buçaco: Hum Breve Mapa da Cidade Santa de Jerusalém”. *Monumentos*. 2004, no.20, pp. 37-43.
- ² Ibid.
- ³ Lima de Freitas – *O Labirinto*. Lisboa: Editora Arcádia, 1975. This work by Lima de Freitas is, without a doubt, the most comprehensive work on labyrinths ever published in Portugal.
- ⁴ Christian von Adrichom Delfo – *Theatrum Terrae Sanctae et Biblicarum Historiarum*. Köln: 1589, pp.145-181. The author wrote that the perspective of Jerusalem had been previously drawn by Jan van Scorel (1475-1562), and that another artist, Jan Verheyden, also contributed with some drawings engraved by Franciscus Hogenberg and Arnold de Looze.
- ⁵ Adrichom's map of Jerusalem is depicted in: George Braun and Franciscus Hogenberg, *Civitates Orbis Terrarum*, vol.4. Köln: 1588.
- ⁶ The Hortus Regius or “King's Garden” are mentioned in four different passages of the Old Testament: 2 Kings, 25:4; Nehemiah, 3:15; Jeremiah, 39:4 and 52:7.

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- ⁷ “Hortus Regius, qui Hortus conclusus dicitur. Hortus erat in suburbanis Jerusalem, muris undique septus, & opfirmatus ; atque, sicut paradisus, arborum, fruticum, herbarum, aromatum, florum, fructuum, que ubertate amoenus, mulcendisque ac fouendis sensibus conueniens, & ad secessus voluptuarios idoneus. In quo erat inclitus ille fons Rogel, & Lapis Zoëleth, quorum frequens in Scriptura mentio fit, ubi Adonias, cum regnare instituisset, immolauit victimas, & una cum fuis asseclis conuiuuium fecit. (Jos.15.18; 2.Reg.17; 3.Reg.1; Cant.4; 4.Reg.25; Jer.39.52; Jose.7.ant.15 & 9.ant.11; Broc.iti.6; Brei.15.lul; Sal.tom.8.c.5. & tom.10.c.1.)” Delfo – *Theatrum Terrae Sanctae et Biblicarum Historiarum*, p.170. The abbreviations that Adrichom provided with the text all refer to different passages in the Holy Bible, except the last 4 that mention these other books: Flavius Josephus – *Antiquitates Judaicae*; Brocardus – *Descriptio urbis Jerusalem & locorum terrae sanctae exactissima*. Basilae & Antuerpiae: 1283; Bernhardi de Breidenbach – *Peregrinatio Hierosolymitana & motis Synai*. Moguntiae: 1483; Bartholomeus à Saligniaco – *Itinerarij Jerusolymitani & terre sancta inibiq; sacrorum locorum ac reru clarissima descriptio*. Lugduni: 1526.
- ⁸ Song of Solomon, 4:12.
- ⁹ Adrichom, born in Holland, was not only a theological writer but also a true Priest. He was ordained in 1566 and later became director of the Convent of St. Barbara in Delft, until he was expelled in the turmoil of the Reformation.
- ¹⁰ This is also not the first time that the maze appears in this context. Craigh Wright in his book, *The Maze and the Warrior*, points for instance to the music manuscript of Cipriano de Rore *Ave regina celorum*, compiled for Duke Albrecht V of Bavaria in 1559, where amongst the different imagery celebrating the immaculate nature of Mary, we find depicted a small unicursal labyrinth with the words *Hortus Conclusus* inscribed in its centre. This example, together with Adrichom’s garden in Jerusalem, gives further evidence to the fact that the religious maze was, sometime during the 16th century, commonly associated with the Marian Garden theme and the protective notion of the *Hortus Conclusus*. See: Craig Wright – *The Maze and the Warrior. Symbols in Architecture, Theology, and Music*. Cambridge, Massachusetts: Harvard University Press, 2001, pp.222-225.
- ¹¹ 1 Kings 1:9: “And Adonijah slew sheep and oxen and fat cattle by the stone of Zoheleth, which is by En-rogel, and called all his brethren the king’s sons, and all the men of Judah the king’s servants.” The fountain of En-rogel is also mentioned in these other passages of the Old Testament: Joshua 15:7 and 18:16; 2 Samuel 17:17.
- ¹² In the Roman culture, for instance, the labyrinth was primarily used as a protective symbol, whether it was drawn on the mosaic floors of the *Domus* to prevent evil spirits from getting in, or choreographed on horseback during the ceremony of the *Lusus Troiae* as a way to magically strengthen the walls of the newly founded cities. About this see: Herman Kern – *Through the Labyrinth. Designs and Meanings over 5.000 years*. Munich: Prestel, 2000 [1982], pp.77-103.
- ¹³ The Christianization process of the labyrinth symbol clearly illustrates this negative connotation. See: Wright – *The Maze and the Warrior*, pp.7-27 and 73-78; Kern – *Through the Labyrinth*, pp.105-141; Penelope Reed Doob – *The idea of the labyrinth: from Classical Antiquity through the Middle Ages*. Ithaca: Cornell University Press, 1990, pp.133-144.
- ¹⁴ About the maze as a Stage for the Harrowing of Hell, see: Wright, pp.80-86.
- ¹⁵ During the late 18th century, the Church Pavement Labyrinths of Reims and St.Omer were actually referred to as “Chemin de Jérusalem” -the path to Jerusalem. About the symbolical pilgrimage in the labyrinth, see: Wright, pp.207-216.
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The Cascading Serpentine



Andreas Frei

The ‘Chartres’ labyrinth is commonly deemed the medieval labyrinth with the most perfect geometric and graphic design. The famous example, which gave name to this type of labyrinth, is the one laid in Chartres Cathedral in France in the early 13th century. The design of this labyrinth, however, is somewhat older and first appears in a medieval manuscript (see figure 1a) from the 10th century.¹ This simple drawing focuses the attention to the essential aspect of the labyrinth design, which is given by the pattern of the pathway.

The majority of all traditional labyrinth designs have four ‘arms,’ as is the case with the Chartres type, or only one arm. Of the labyrinths with four arms, many are true, modified or mistaken copies of the Chartres-style design. The best-known labyrinth with one arm is the ‘classical’ or ‘Cretan’ labyrinth. It is remarkable that there are only a very few examples of labyrinths with other than one or four arms, and these, with some rare exceptions, often have irregular and arbitrary patterns. Whereas it seems trivial to create labyrinths with any number of arms using arbitrary patterns, the creation of labyrinths with similarly high developed patterns and more than four arms is more challenging. In this paper I present a graphical analysis of the pattern of the Chartres design labyrinth and show that this can be generalized to create labyrinths with any number of arms and similar highly developed patterns.

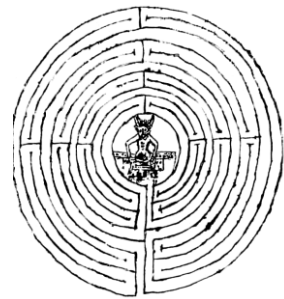


Figure 1a shows the Chartres labyrinth design in its basic form. This implies that the labyrinth is drawn as a closed circular or polygonal form, in a manner comparable with architectural building plans, where the walls are shown, which gives room for the pathway. Another way to represent a labyrinth is to show its ‘Ariadne’s Thread’ in lieu of the walls. In a true, unicursal labyrinth, the Ariadne’s Thread is simply obtained by drawing the line following the pathway of the labyrinth.

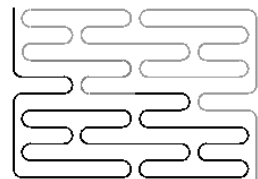
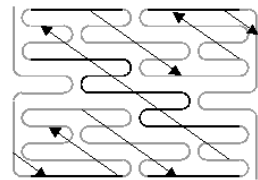


Figure 1a (top right): the earliest known Chartres-style labyrinth, in a 10th century manuscript from St. Germain-des-Prés, France. Figure 1 b (middle right): the cascading serpentine pattern. Figure 1c (lower right): its symmetry

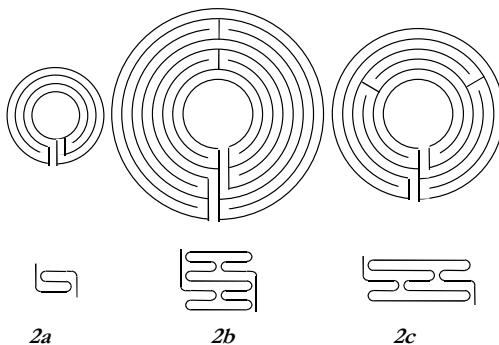
Graphical analysis of a labyrinth pattern is more easily facilitated if the labyrinth is represented by its Ariadne's Thread and transformed to a rectangular form. Figure 1b shows the Ariadne's Thread of the Chartres design labyrinth in this manner. For this transformation the basic form is dissected from the centre to the bottom edge, along the wall at the middle of the lower arm, and then uncurled.² By this process, the centre is dissolved and the lower arm is split. The right part is rotated anti-clockwise to become the right side and the left part clockwise to the left side of the rectangle. The concentric rings are transformed to horizontal lines with the inner circle becoming the bottom line of the diagram, the outer circle the top line, and the lengths of the pathways adjusted accordingly. Thus the entrance is now at the top left and the way into the centre at the bottom right of the rectangular form. The pattern inherent in the labyrinth, however, is not affected by this transformation but rather becomes more transparent. The pattern is independent of the geometric outline (circular, polygonal, rectangular) and is now only defined by the level-sequence of the pathway.

The Chartres design labyrinth has a very highly organized pattern. It is divided into four sectors by four arms. One of these arms is enhanced. This is the central axis where the path enters the labyrinth and also reaches the center. The arms are generated by the turnarounds of the pathway which winds itself in and out, changing direction after one or two quarters of a circle. Except at the central axis the pathway each time it changes direction jumps to the next inner or outer circle. This generates a regular serpentine pattern of progression. There are no spirals or meanders in the pattern. The pathway enters axially along the central axis into the labyrinth and approaches the inner circle as directly as possible. It turns back after half a circle, takes a new approach to the inner circle, and after having passed the second half, winds itself out from the point closest to the point most distant from the centre. On the way back it describes a cascade diagonally through the rectangle. It then turns forward again, filling the rest of the area, and finally enters the centre passing along the central axis from the outermost circle. Thus the pattern is primarily composed of a wavy line that forms three inward and decreasing oscillations diametrically across the entire area of the labyrinth as highlighted in figure 1b. This pattern is symmetric around the point in the middle of the rectangular form. The symmetry is shown in figure 1c: the second half of the pathway exactly mirrors the first half.

This pattern inherent in the Chartres design labyrinth can be generalized and extended so that it is possible to design labyrinths of similar regularity, with any number of arms. In defining the distance between two arms as one unit, the length of the pathway sections between two changes of directions can be measured in units. In a labyrinth with four arms, for example, the unit is $\frac{1}{4}$ of a circle. The maximum possible length of one pathway section would therefore be four units (i.e. a full circle), although the Chartres labyrinth only has sections of pathway that are one or two units long.

In order to design labyrinths with highly regular serpentine patterns and more than four arms it is necessary to also introduce pathway sections that are three units long. First, let us take a look at labyrinths with a serpentine pattern and one, two or three arms, as shown in figure 2. The labyrinth shown in figure 2a is the simplest complete labyrinth with a serpentine pattern. A square labyrinth with this pattern is found on a coin from Knossos, Crete, dating from the third century BCE.³ Note that the pathway enters the labyrinth axially and winds itself from the inner circle out to the outer circle before turning back to the center.⁴ This serpentine form is the simplest pattern that can occur in a labyrinth. In a one-arm labyrinth it is always symmetric and takes at least three levels.

Figure 2: small labyrinths with symmetric serpentine patterns; upper row: basic form with walls shown; lower row: rectangular Ariadne's Thread form.



The labyrinth shown in figure 2b has two arms and seven circles. This labyrinth has sections of pathways, which are one or two units long. This is the smallest two-arm labyrinth with a regular symmetric serpentine pattern.⁵

In figure 2c a labyrinth with a regular symmetric serpentine pattern and three arms is shown. The essential property of this labyrinth is that it has one pathway section that is three units long on both the inner and outer circle. It is, however, not the simplest serpentine pattern for a three-arm labyrinth. Such a pattern can be drawn with only three circles using pathway-sections of one or two unit lengths (see figure 7a below).⁶

These three small labyrinths all have one single pathway section traversing the inner and outer circle. To design labyrinths with more than three arms, it is necessary to combine two or more pathway segments on the inner and the outer circle respectively. The Chartres design has two pathway sections on both the inner and outer circle. For labyrinths with more than four arms, the only essential amendment is that pathway sections of three unit lengths need to be utilized. Such sections only need to be used on the inner and, symmetrically, the outer circle of the labyrinth. It is further necessary to apply selected combinations of two or three unit pathway sections and these combinations can be used to generate three different sub-groups of labyrinths.⁷ Here, and in the following mention of sequences of pathway sections, I will refer to the sequences on the inner and, symmetrically, the outer circle of the labyrinth. From each sub-group one example will be presented.

The first sub-group consists of labyrinths in which a sequence of pathways of three units is enclosed by a pair of pathways with two units, as shown in figure 3. It has a 2-3-2 sequence of pathways on both the inner and outer circle, but on all other circles it shows the same sequences of one or two unit pathways found in the Chartres design. However, this labyrinth has seven arms and 17 circles and in the course through the pattern, the serpentine describes five increasing and decreasing diagonal oscillations. Other labyrinths belonging to this group have designs with 10 arms and the pathway sequence 2-3-3-2; 13 arms and pathway sequence 2-3-3-3-2, and so forth.

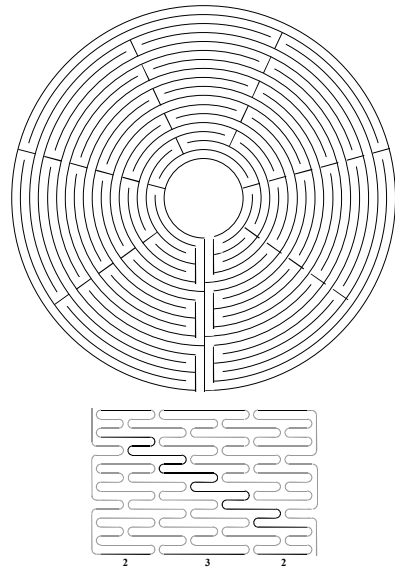


Figure 3: Labyrinth with pathway sequence 2-3-2, seven arms and 17 circles.

A second sub-group exists with the same type of pattern, in which the pathway sequence is made up exclusively of sections that are three units long. These labyrinths have six arms and the pathway sequence 3-3, nine arms and sequence 3-3-3, etc. Figure 4 shows an example of this sub-group, with 12 arms and pathway sequence 3-3-3-3. This labyrinth has 23 circles and is larger than most regular labyrinths. The serpentine describes a total of seven inward and decreasing diagonal oscillations through this pattern.

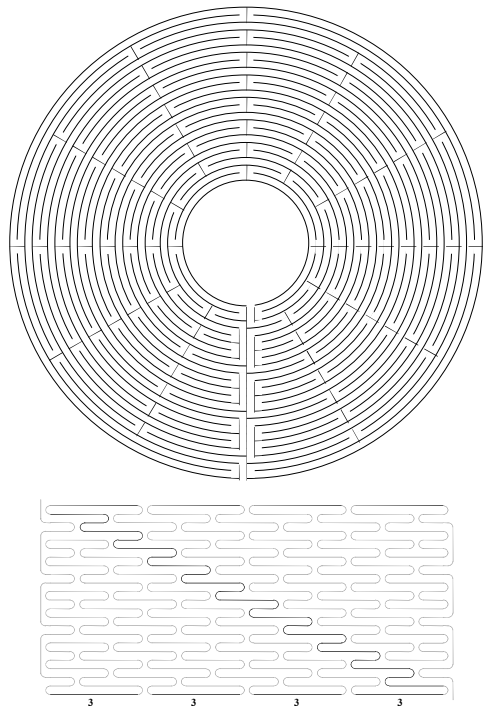
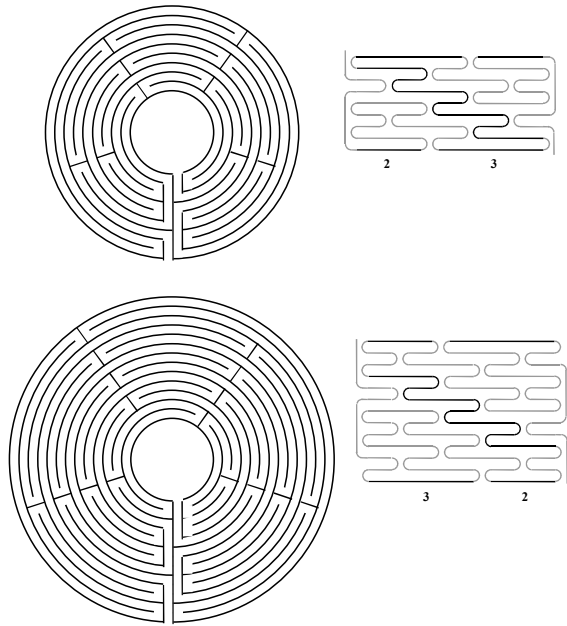


Figure 4: Labyrinth with pathway sequence 3-3-3-3, 12 arms and 23 circles.

Figure 5: Labyrinths with five arms; above - pathway sequence 2-3 and 9 circles; below - pathway sequence 3-2 and 13 circles.

A third sub-group can be generated by combining any number of pathways of 3 units with one pathway of 2 units, either at the beginning, or the end, of the sequence. These labyrinths have two possible sequences for each number of arms, i.e. they may have five arms with sequences 2-3 or 3-2, eight arms with sequences 2-3-3 or 3-3-2, 11 arms with sequences 2-3-3-3 or 3-3-3-2, etc. This is illustrated in figure 5, with two examples of five arm labyrinths. The smaller labyrinth shown with the sequence 2-3 has 9 circles, the larger example has the sequence 3-2 and 13 circles.



For all of these labyrinths there is an obvious interdependence between the number of pathway sections at the inner (or outer) circle and the number of circles. Labyrinths of the first two sub-groups with two pathway sections, i.e. those with the sequences 2-2 (Chartres design), or 3-3, have 11 circles. Labyrinths with three sections, i.e. those with the sequences 2-3-2 or 3-3-3 have 17 circles and labyrinths with four sections (2-3-3-2 or 3-3-3-3) have 23 circles. From this it is apparent that as the number of sections increases by one, the number of circles increases by six. Labyrinths of the third sub-group, with the same number of sequences, have either two circles less (if the sequence begins with a pathway of two units length), or two circles more (if the sequence ends with a pathway of 2 units length), than labyrinths of the first two sub-groups.

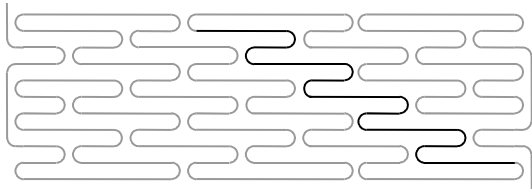
These numbers of circles can be considered as defining the normal, or full size, of the respective labyrinths and will naturally result, so long as the labyrinth pathway exactly describes the entire cascade when moving back from the point closest to the point most distant from the center of the labyrinth. However, a closer look at the patterns in the rectangular form reveals that these cascades are themselves composed of a number of layers.

Figure 6: Scaling up and down. Labyrinth with pathway sequence 3-3-3 and 9 arms.

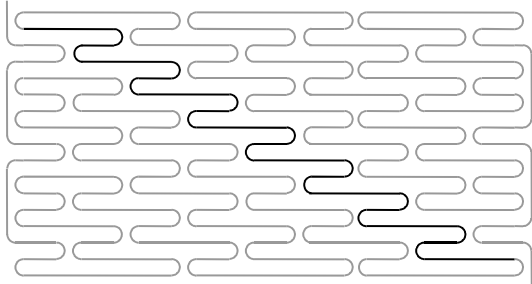
There are a number of examples of scaled-down and scaled-up labyrinths of the Chartres design,⁸ created by adding or removing one or more layers. The labyrinths belonging to the first two sub-groups can therefore be drawn with 5, 11, 17, 23... circles. In the labyrinths of the third sub-group the same applies, but with two more, or two less, circles. This is illustrated in figure 6 with an example of a 9-arm labyrinth, showing its pathway in rectangular form. This labyrinth has the pathway sequence 3-3-3 and its normal size is 17 circles. At this size the pathway shows the entire cascade when coursing diagonally back through the rectangular form (figure 6c). In figure 6b the labyrinth is sized down by one layer, and in figure 6a by two layers. At these sizes the cascade is only partially formed. In figure 6d the labyrinth is sized up by one layer, but now the number of circles extends beyond the full cascade and consequently a second cascade begins to appear.



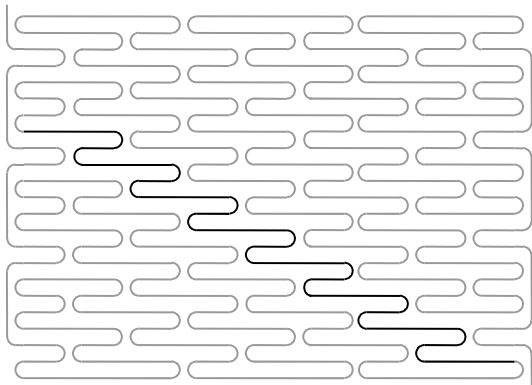
6a: scaled down 2x, 1 layer



6b: scaled down 1x, 2 layers



6c: normal size, 3 layers



6d: scaled up 1x, 4 layers

At its full size, this labyrinth has three pathway sections on the inner and outer circles and has three layers. This can be generalized for all the labyrinth types described above. At full size the number of pathway sections and layers are the same, or conversely: a labyrinth is said to be full size when the number of pathway sections and layers are the same.

The analysis of these patterns within their structures offers fascinating insights into the nature of unicursal labyrinths. We have seen that the Chartres design labyrinth has a carefully composed pattern, generated by a simple serpentine, with increasing and decreasing diagonal oscillations. Whereas most traditional labyrinths have a lesser degree of perfection than the Chartres design, there are, however, other existing labyrinth designs with similar high degrees of perfection using serpentine, and other, patterns.

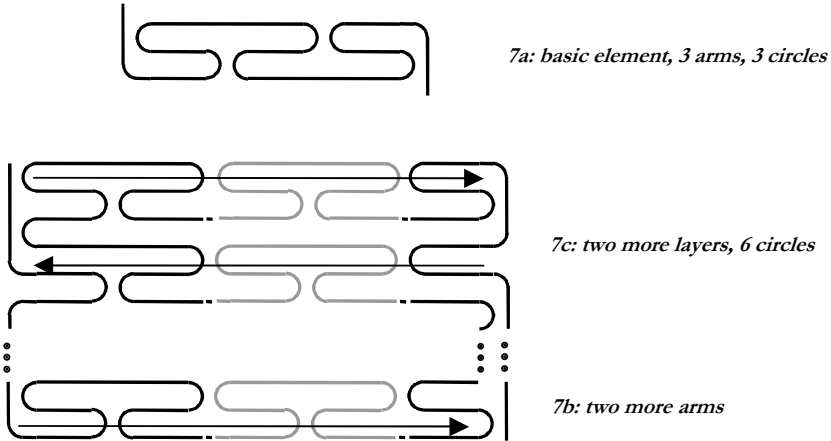


Figure 7: Labyrinths with any odd number of arms and 3, 9, 15, etc., circles.

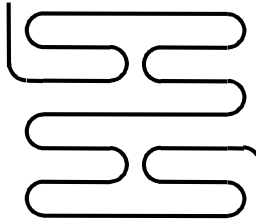
Knowing these patterns allows us to create new designs with similar degree of regularity and perfection. For instance, it is very easy to design labyrinths with any odd number of arms and with 3, 9, 15, etc., circles, using only pathway sections with one or two units of length. This is illustrated in figure 7. The simple three-arm labyrinth shown in figure 7a can be extended by inserting one or more of the shaded elements shown in figure 7b, with each one adding two more arms to the labyrinth. Furthermore, this category of labyrinth is made up of layers three circles wide that also follow a serpentine pattern, as illustrated in figure 7c. So these labyrinths can be scaled up from 3 circles in steps of 6 circles by adding two layers at a time.

The potential for designing unicursal labyrinths with highly organized patterns is huge and the historical labyrinth designs cover only a quite limited number of such possible patterns. I would suggest you experiment and find further examples.

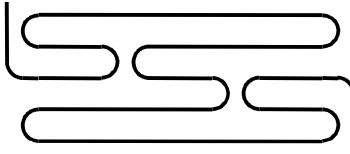
Andreas Frei; Pratteln, Switzerland, 2005.

Notes:

- ¹ Kern H. *Labyrinth*. 2nd edition, Prestel 1983, see p.152 (abb.177). Page 112 (fig.181) in Kern H. *Through the Labyrinth*, English-language revised edition, Prestel 2000.
- ² This transformation has been described and the rectangular form has been shown elsewhere, e.g.: Lonegren S. *Labyrinth*. Zweitausendeins, Frankfurt 1993; Ferré R. “The Sens Labyrinth” *Caerdroia* 32 (2001): 36-8; Saward J. *Labyrinths & Mazes*. Gaia London 2003. These all show the walls of the labyrinth transformed to the rectangular form. For reasons of simplicity and clarity I prefer to use “Ariadne’s Thread”.
- ³ Kern H. *Labyrinth*. p. 66 (abb.50). 2nd edition, Prestel 1983. (p.54, fig.50, in Kern H. *Through the Labyrinth*, Prestel 2000)
- ⁴ A figure in which the pathway makes only one circle does not change direction and therefore is not considered as a labyrinth. Figures in which the pathway traverses two or three circles moving from the outer to the inner circle could be conceived as labyrinths. However these patterns are less perfect as the pathway does not enter the labyrinth axially, but tangentially, and the wall has to be interrupted to allow for the entrance.
- ⁵ Here is another pattern of a two-arm labyrinth with the same size.

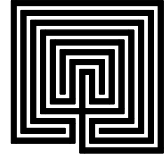


- ⁶ Here is another pattern of a three-arm labyrinth with the same size.



- ⁷ Maybe there exist other possibilities to generate highly regular serpentine patterns (e.g. using pathway sections longer than 3 units or distributing them on other circles/levels as well), but this is not investigated further here.
- ⁸ E.g.: the labyrinths of Compiègne, abb.350, p.278 or Saffron Walden, abb.302, p.251 in: Kern H. *Labyrinth* 2nd edition, Prestel 1983. (fig.354, p.195, & fig.306, p.172, in Kern H. *Through the Labyrinth*, Prestel 2000).

A Daedalus for the 21st Century



Tristan Smith

Preface by Jacques Hebert

In January of 2004, I published a book [2] in which I define the notion of a ‘canonical’ medieval labyrinth based on rhythmic properties of these labyrinths. Using the resulting rules, I derived a set of 20 such ‘canonical’ labyrinths.

My friend, Tristan Smith, a computer scientist, saw my book and developed a computer program, Daedalus, which generates labyrinths based on the rules I formulated. Daedalus confirmed my 20 ‘canonical’ labyrinths,¹ and since then, Daedalus has been generalized to produce labyrinths that satisfy a wider variety of rules.

Introduction

Throughout history, a wide variety of labyrinths have been drawn and built. However, almost nothing is known about the goals of their creators. In particular, out of millions of possible design choices, how and why did they settle on the labyrinths we know? Recently, several authors have proposed potential motivations for particular choices and explored other possible designs that satisfy those motivations ([2],[3]). In this article we describe Daedalus, a computer program that generalizes the search for possible labyrinth designs. Given a set of rules and a depth (the number of concentric levels within a labyrinth), Daedalus will find all labyrinths that satisfy these constraints.

Terms and notation:

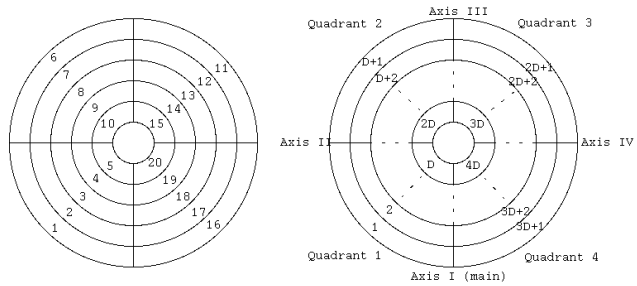
Our aim is to generalize labyrinth design; nonetheless, we must begin with some basic rules. We define a depth D labyrinth as follows:

1. It consists of four quadrants, each with D units, resulting in a total of $4D$ units.
2. It has a single path through the labyrinth that uses each of the $4D$ units exactly once.²
3. The path enters the labyrinth in quadrant one and reaches the centre from quadrant four, both the entry and exit occur adjacent to the division between quadrants one and four.

Figure 1 shows how we number the $4D$ units. Quadrant 1 contains units 1 through D , quadrant 2 contains units $D+1$ through $2D$ and so on. This figure also shows the four axes between quadrants: a main axis (I) along which the path begins and ends, and secondary axes II, III and IV.

Figure 1:

Our unit numbering scheme; an example with depth 5 and a generalized numbering for any depth D .



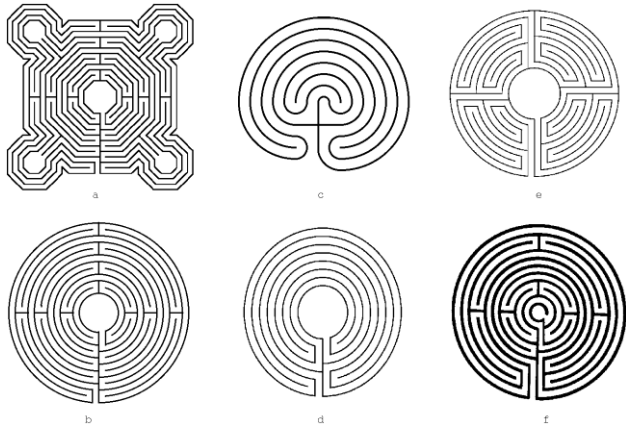
With this numbering scheme, a path can be denoted by the sequence of units visited. In Figure 2 we show some historical labyrinths and describe their paths using our numbering scheme.

Because our focus is the specific path through a labyrinth, we are not concerned with slight changes in shape or embellishments; most known labyrinths can be represented using our numbering scheme and circular design (or script version). For example, we equate the Reims labyrinth in Figure 2a to that of Figure 2b.

Figure 2:

Historical labyrinths:

- a) Reims
- b) its script version;
- c) Cretan
- d) its script version;
- e) Lyon, Roman-type
- f) Bayeux.



Below:
the numbering schemes for labyrinths shown in figure 2.

Reims, historical (a) & script version (b): 3 2 1 12 13 14 25 24 23 34 35 36 37 26 27 38 39 40 41 30 29 28 17 16 15 4 5 6 7 18 19 8 9 10 11 22 21 20 31 32 33 44 43 42

Cretan, historical (c) & script version (d): 3 10 17 24 23 16 9 2 1 8 15 22 25 17 11 4 7 14 21 28 27 20 13 6 5 12 19 26

Lyon (Roman-type)³ (e): 9 6 7 8 5 2 3 4 1 18 15 16 17 14 11 12 13 10 27 24 25 26 23 20 21 22 19 36 33 34 35 32 29 30 31 28

Bayeux (f): 5 15 25 35 34 33 32 22 23 24 14 13 12 2 3 4 1 11 21 31 36 26 16 6 7 8 9 19 18 17 27 28 29 39 38 37 10 20 30 40

Search and Daedalus:

For any depth D , combinatorics allow us to bound the number of possible paths. Consider labyrinths of depth 11 (like Reims and Chartres). A valid path must use each of the 44 units exactly once. Therefore, to build a path, you could start with any of the 44 units.⁴ This would leave 43 choices for the next unit, and so on. This gives us:

$$44 \times 43 \times 42 \times \dots \times 1 = 44!^5$$

possible paths. In general, a depth D labyrinth has $4D!$ possibilities. For only depth 3, this is more than 479 million and at depth 18, it is more than the number of atoms in the universe.

Our goal is to find the tiny subset of these possibilities that are valid paths. This is the essence of a search problem - finding desired solutions from among a huge number of possibilities. Search problems occur all over. MapQuest solves a search problem in which it finds the shortest route from your house to the movie theatre. Computer chess programs tackle a search problem (imperfectly) to decide upon a move. In fact, human chess players also consider a search problem at each move (but use different techniques to address it). Fortunately, rules 1, 2 and 3 as well as physical constraints make most paths impossible.

For example, since we require that the path start in quadrant 1, the first unit cannot be any of units $D+1$ through $4D$.⁶ Similarly, the path cannot jump around; we can never move from a unit in quadrant 1 to a unit in quadrant 3, for example.

Daedalus is our attempt to solve the labyrinth search problem. It searches the $4D!$ possibilities by building paths one unit at a time. When a partial path is known to be impossible, it is not explored further, speeding up the search enormously.

Results:

If Daedalus is limited only by rules 1, 2 and 3, it generates 94 possibilities at depth 3 and 6,480,524 at depth 6. Four examples of the depth 5 labyrinths are shown in figure 3. Notice that Daedalus is general enough to produce labyrinths of most historical styles.

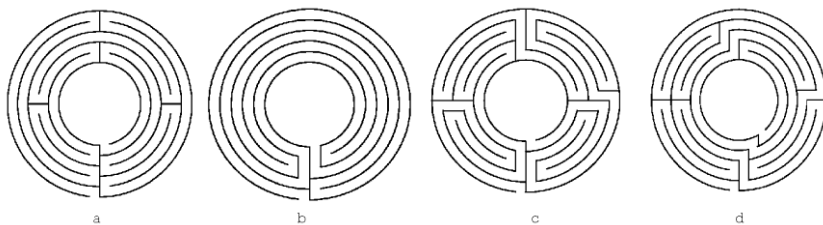


Figure 3: Examples of some of the 134,094 Daedalus-generated labyrinths at depth 5: a) medieval-style b) cretan-style c) roman-style⁷ d) randomly chosen path.⁸

Because we are not willing to wait weeks for Daedalus to find all possible paths,⁹ we cannot generate all labyrinths at depths greater than 5.¹⁰ A compromise is to add more rules and thereby reduce the set of possible solutions to explore. Here is a fourth rule and two versions of a fifth that disallow some of the labyrinths we have seen:¹¹

4. Changes of depth at axes II, III and IV are allowed only where a path folds back immediately on itself (i.e. from unit u to unit $u-1$ or $u+1$ in the same quadrant). This disallows most Roman-style labyrinths; for example, the jump from unit 6 to 15 in figure 3c is disallowed.

5a. *Symmetry*: The crossings of the II and IV axes are identical when viewed from the inside out. The Bayeux labyrinth of figure 2f has this property.

5b. *Anti-symmetry*: The crossings of the II and IV axes are identical when viewed from left to right. Medieval labyrinths like that of figure 2a/2b have this property.

Notice that the Cretan labyrinth of figure 3b satisfies both versions of symmetry while labyrinth 3d satisfies neither.

The table below shows the number of labyrinths produced at various depths with various combinations of our 5 rules.

Depth	Rules: 1,2,3	Rules: 1,2,3,4	Rules: 1,2,3,4, 5a	Rules: 1,2,3,4,5b	Rules: 1,2,3,4,5a,5b
1	1	1	1	1	1
2	4	4	2	2	2
3	94	28	11	10	7
4	2,530	177	45	49	37
5	134,094	1,390	226	194	88
6	6,480,524	10,845	1,134	1,221	558
7	0	90,206	6,063	5,354	1,765
8	0	759,243	32,639	34,379	11,327
9	0	6,558,452	180,872	157,884	35,140
10	0	39,813,680	1,013,122	1,056,235	234,884
11	0	0	5,747,332	4,984,897	761,716

Table 1: The number of labyrinths that satisfy various basic rules at different depths.

Daedalus at your service

The above rules generate a wide variety of labyrinth styles - many more than can be examined carefully at any of the larger depths. What if you are only interested in a particular style? In addition to producing labyrinths, Daedalus can analyze them for desired properties. We have considered the following possible properties:

numCrossings: Number of times the path crosses the main axis (most historical labyrinths have $\text{numCrossings} = 0$ while the Bayeux labyrinth has $\text{numCrossings} = 1$).

numBayonets: Number of *bayonets* (where the path changes quadrants and depths at the same time, as in the path from unit 4 to 16 in figure 3d).

maxInset: The maximum number of path widths out from the main axis that are allowed. For example, the fold from unit 2 to 3 in figure 2f is at crossing width 3 because the path passes between that fold and the main axis twice.

numCourses: The number of *round courses* as described by Hebert. A *round course* is an 8-unit part of the path with 3 folds that alternates long-short-long-short-long. For example, the section (1 12 13 14 25 24 23 34) of the Reims labyrinth in Figure 2a/2b.

maxStraight: The maximum number of units in a row without changing direction. For most medieval labyrinths, this is two.

minStraight: The minimum number of units in a row without changing directions. For most labyrinths this is 1 but for Cretan style labyrinths it is 4.

Reversibility: The path from the inside out is identical to the path from the outside in.

By considering subsets of the above rules, we can derive all labyrinths of a given style. For example, to generate Cretan style labyrinths, we can limit Daedalus to those with $\text{numCrossings} = 0$ and $\text{minStraight} = 4$. With these restrictions, there are 42 labyrinths at depth 7 (the depth of the Cretan labyrinth of figure 2c/2d) and 262 at depth 9.¹² Notice that Daedalus finds the number of Cretan-style labyrinths predicted mathematically by Tony Phillips [3].

Consider now the medieval labyrinths explored by Hebert [2]. He defines 20 such ‘canonical’ labyrinths. Daedalus produces those 20 labyrinths if we require $\text{numCrossings} = 0$, $\text{maxInset} = 2$, $\text{numBayonets} = 0$, $\text{numCourses} = 3$ and $\text{reversibility} = \text{true}$. We can also relax the rules slightly and produce more labyrinths in a similar style; for example, eliminating the requirement that $\text{maxInset} = 2$ yields 49 possible labyrinths (the 20 ‘canonical’ ones plus 29 others). Three examples of these 29 are shown in figure 4.

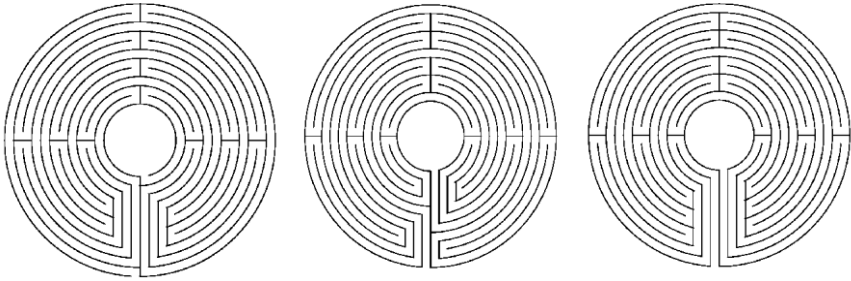


Figure 4: Three examples of new Medieval-style labyrinths achieved by slightly relaxing Hebert's rules.

Future Work:

We have chosen a set of base rules that most historical labyrinths follow. Even those rules are not set in stone, so to speak, and one could extend Daedalus to search for labyrinths that follow even fewer rules, or different ones. For example, the labyrinth could be divided into thirds or eighths, instead of quadrants, as some post-medieval designers have done.

As we mentioned, the exponential growth of the search space means that time constraints limit the labyrinths that Daedalus can explore effectively. While Daedalus has produced most known labyrinths, it has not yet produced large Roman labyrinths for this reason. One way around this issue would be to use alternatives to rules 4 and 5 that limit the number of possibilities Daedalus must consider without excluding Roman labyrinths (for example, we could require all four quadrants be identical).

There is another possible extension to Daedalus that would be interesting. Currently, a user can specify a set of desired rules and Daedalus will produce all paths at a given depth that satisfy those rules. It would be interesting to change Daedalus into an optimisation algorithm as follows. The user could assign scores for various properties - a positive score for desired properties and a negative score for undesired ones. For example, we could give 5 points for each *round course* and subtract 1 point for each *bayonet*. Daedalus could then search for the labyrinths that produce the highest scores. This would allow someone to rank the aesthetic features of labyrinths according to their own measures and produce the best labyrinths according to those rankings.

It is worth pointing out that this approach is not the only way to determine how many labyrinths of a certain type exist; mathematical proofs could potentially be used to achieve the same numbers. This is the approach taken by Phillips [3] in determining the number of Cretan-style labyrinths at various depths. It is not clear whether this could be done for more general cases. An advantage to Daedalus' approach, of course, is that, in addition to determining the number of labyrinths that satisfy a set of properties, it also produces those labyrinths.

Conclusion:

Daedalus is a computer algorithm designed to find labyrinth paths that meet various set criteria. It allows us to quickly explore all sorts of possible paths and greatly expands upon what can be, and has been, done by hand.

Here we have only been able to show and discuss a tiny fraction of the labyrinths that Daedalus has produced. Many other examples can be found on our websites (see bibliography).

Tristan Smith; Eugene, Oregon, USA, 2005.

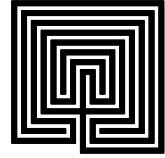
Bibliography:

- 1) Hebert, Jacques. *The Medieval Labyrinth*. - <http://www.labyreims.com/e-index.html>
- 2) Hebert, Jacques. *The Rhythmical Structure of the Medieval Labyrinth*. ISBN 2-9808090-0-4. Quebec, 2004.
- 3) Phillips, Tony. *A Combinatorial Problem: How many different n-level mazes are there?* <http://www.math.sunysb.edu/~tony/mazes/>
- 4) Smith, Tristan. *Daedalus and Labyrinth Generalization*. <http://www.otsys.com/~tsmith/labyrinths.html>

Notes:

- 1 In fact, he had seen the original version of my book, which had only 19 and was initially surprised to see the program produce 20. In the meantime I had discovered my error and had updated my website to include all 20.
- 2 Notice that this rule precludes any dead space in the labyrinth and disallows any choice points (places where the path splits).
- 3 This original design has been flipped since it starts in quadrant 4.
- 4 It is fairly clear, of course, that many of these are not physically possible as a first choice.
- 5 The '!' is the factorial symbol. For example $3! = 3 \times 2 \times 1 = 6$
- 6 In fact, it can be shown that the first unit must be an odd-numbered one. Otherwise, the path will get stranded in one of the units lower than it.
- 7 To hint at the wide variety of labyrinths created by Daedalus, the example chosen does not satisfy some properties common to most Roman labyrinths (the quadrants are not identical, for example). Of course, Daedalus produced others that do satisfy those properties.
- 8 Thanks to Chris Hoge who started the work on a program that will draw Daedalus' labyrinths automatically.
- 9 With only rules 1 - 3, it takes 2 seconds at depth 4, 3 minutes at depth 5 and 509 minutes at depth 6. This means it takes roughly 100 times longer for each increase in depth so that depth 7 would take 5 weeks.
- 10 Of course, improvements to the algorithm might allow slightly larger depths to be discovered but the exponential nature of the problem will continue to be limiting.
- 11 Deciding upon these additional rules is a subjective decision, despite attempts to remain objective!
- 12 Note that, according to our rules, there are no Cretan style labyrinths at any even depth since such a path would have to end in quadrant 1.

A Life of Labyrinths



Jørgen Thordrup

I saw my first labyrinth, while still a young man, in the open-air museum at Arnhem in the Netherlands in 1946. It was a *Doolhof*, a hedge maze, and in poor condition. This was understandable, as the war had just ended the year before.

It wasn't until 1959 that I found my next labyrinth, when together with a friend in the peaceful Rocky Valley, near Tintagel in Cornwall, England; we found two classical labyrinths "from the Bronze Age"¹ engraved in the slate rockface. A notice on the door of the nearby café invited the visitor to inquire for further information from Mr. Ackroyd Gibson at Treforda Farm. We finished our teas first and then started climbing up through the narrow valley along an overgrown path, passing some fields, until we arrived and knocked on Mr. Gibson's door – could he tell us more about labyrinths?

Seldom have I been greeted so warmly - "Do come in, please" - and then he spent the rest of the evening explaining and constructing labyrinths for us. Indeed, it was rather dark by the time we tried to find our way back down from the farm. I was initiated into labyrinths, and since that time I have been lost within them!

Three years later, in the summer of 1962, I visited Chartres Cathedral for the first time, and was disappointed as so many are - the masterpiece in the floor was almost completely covered by chairs. It was difficult to form any impression of the labyrinth at all, but better luck would follow on subsequent visits in later years.

Another three years later, on my next trip to France in the summer of 1965, I located and sketched the graffito inside the Cathedral of Saint Pierre in Poitiers. This "Ariadne's Thread," the course of the path of a Chartres-type labyrinth, is still to be seen incised on the north wall of the cathedral.²

Over the following years I visited a number of different labyrinths in many diverse settings: the Hollywood Stone in the National Museum in Dublin, Ireland, in 1971; the floor labyrinth in Ravenna, on the wall at Lucca, on the rocks at Val Camonica and the Roman mosaic at Piadena, in Italy in 1972. In southwest Sweden the same summer, I visited the labyrinth at Ulmekärr near Grebbestad, north of Gothenburg, laid in stones.

Next year, 1973, and the aim was to visit the Swedish island of Gotland, to see the famous Trojaborg at Visby, the fresco in Hablingbo Church and at Fröjel the stone labyrinth overgrown with grass in the churchyard, which was excavated and restored the following year - surely the only labyrinth with its own water pump.

*Maypole
Dancing on
the labyrinth
at Tulstrup,
Denmark,
May 1995.*

*Photo:
Jeff Saward.*



During 1975 I began lecturing on the subject of labyrinths and mazes in my evening school adult classes, and together we built a *Trojaborg* stone labyrinth, 14 metres in diameter, in May 1976 on the property of two of my pupils from Tulstrup, to the north of Copenhagen. Between 1976 and 1995 we held 15 gatherings, for old friends and labyrinth enthusiasts alike, and successfully experimented with dancing the labyrinth with red ribbons around a Maypole. I am told we were the first people to practice this dance, and our original red ribbons are still used from time to time on other labyrinths in Denmark.

Also in 1976, my first article on labyrinths was published,³ and several others soon followed, but it was not until 1998 that I held my first labyrinth exhibition, at the Vestjysk Kunstforening in Tistrup, West Jutland, Denmark. The next was in the charming town of Risør on the south coast of Norway in 1999, and a third exhibition was held at the Silkeborg Art Centre in Central Jutland, during October to December 2002, to coincide with the publication of my book *Alle Tiders Labyrinter* (Labyrinths of All Times). This was also the occasion of a small conference for labyrinth researchers - "Labyrinthologists"! - from Scandinavia, the UK, the Netherlands and Germany.

I first met with *Caerdroia* through John Kraft of Västerås, Sweden, who was distributing the magazine for readers in Scandinavia. After a while I took over the distribution for Danish subscribers and soon added some readers in Germany, but we never found "Our Man in Norway!" Together with writing articles for *Caerdroia*, describing the mazes and labyrinths of Denmark, and the newly discovered labyrinth frescos in the small village churches, I have also built labyrinths here in Denmark, and elsewhere in Scandinavia and Northern Germany, during this time: at least 55 *Trojaborgs*, both permanent and temporary, of a variety of materials for all manner of different occasions.

*Labyrinth in
Valbyparken,
Copenhagen,
Denmark,
May 1995.*

*Photo:
Jeff Saward.*



By good fortune, Jeff Saward photographed one of these, the stone labyrinth, 17 metres in diameter, built in Valbyparken, Copenhagen, shortly after completion on a glorious sunny day in May 1995. The photos of this labyrinth have now been reproduced in many books and magazines, and it is now well known, worldwide. The largest of my creations you will find at the Labyrinthia activity park,⁴ south of Silkeborg, in Jutland - 22 metres in diameter, it was constructed from 1388 large boulders.



Dear friends, I admit, after all these years I am still suffering from labyrinthitis!

Jørgen Thordrup; Bagsværd, Denmark,
August 2005.

*Left: Jørgen points to the problem at the
Silkeborg Arts Centre, November 2002.*

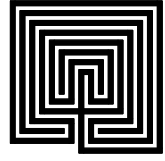
¹ See Caerdroia 33, p.18-19, for current thinking on this dating.

² Kern, 1982, no.273.

³ ICO (Den Iconographiske Post) 1-2, 1976, pp.23-36.

⁴ See www.labyrinthia.dk for details.

The Most Dynamic Quarter Century in the History of Mazes



Adrian Fisher

A quarter century is a good time span to review trends and changes in a field of endeavour. For mazes, the last 25 years or so have possibly seen the most explosive development, diversity and prolific creativity in its “mere” 400-year history (compared with perhaps ten times that duration for labyrinths). If there were ever a “Golden Age of Mazes,” we are surely living through it now.

Vertical Mazes

The most widely shared public perception about mazes is that they have vertical barriers, whether of hedges or otherwise. In the popular mind, this is probably even stronger than the appreciation that mazes have junctions, choices and a puzzle challenge to solve, whilst labyrinths do not.

Early stirrings of the modern renaissance of mazes began with Randoll Coate’s symbolic mazes, starting in 1975 with “Imprint” in Oxfordshire, and followed by “Pyramid” at the Chateau de Beloeil in Belgium (1977), and “Creation” at Varmlands Saby in Sweden (1979). Randoll achieved multiple layers of symbolic imagery, and for sheer panache and ingenuity, “Creation” is a particularly remarkable achievement, with its multiple layers of meaning. Randoll created over 50 maze designs between 1975 and 2005.

By contrast Greg Bright was creating raw puzzle mazes in the 1970’s, devoid of symbolism, and entirely aimed at achieving deceptive puzzles – in deep earth trenches (notably in the early days of the Glastonbury Festival), in books and in the formal landscape. At Longleat House, he designed the world’s largest permanent hedge maze (as measured by path length), planted in 1974 and opened in 1978. His use of 6 bridges and avoidance of straight lines created a remarkably difficult and massive puzzle.

At Wanaka on New Zealand’s south island, Stuart Landsborough created a wooden fence maze in 1973. One year he was visited by two Japanese businessmen; when they returned the following year, he had added bridges and transformed its puzzle potential. They returned to Japan, commissioned Stuart, and he designed for them 22 gigantic wooden fence mazes with multiple and multi-layered bridges, spearheading a Japanese ‘Maze Craze’ where a total of around 220 wooden fence mazes were built between 1984 and 1988. Stuart Landsborough’s Puzzling World continues to thrive at Wanaka. More recently, Greg Gallivan has built 23 wooden fence mazes across America; several of them temporarily erected each summer in the car parks of winter ski resorts.

Edward and Lindsay Heyes created a hedge maze and “Museum of Mazes” at Symonds Yat, combining their enthusiasm and willingness to dress in Edwardian striped blazers and ride unicycles, with an impressive maze visitor experience that in the late 1980s was featuring the world’s first obligatory ‘pep talk’ for every maze visitor.

After a boyhood designing puzzles and games, I created my first full size hedge maze in 1975 in my parents’ garden in Bournemouth. One of my early formative experiences was to meet Canon Harry Cheales, who had created a hedge maze in the rectory garden in Wyck Rissington, combining the puzzle format with Christian truths and a ‘True Path’ to be discovered.

Randoll Coate and I met through Lord Eliot (now Earl St Germans), himself a maze owner. Between 1979 and 1986, as Minotaur Designs, Randoll and I created 15 mazes together, joined during the latter half by Graham Burgess. This saw the creation of the Leeds Castle Hedge Maze with its remarkable Tower, Grotto and Underground Tunnel (designed together with Vernon Gibberd), and the Beatles Maze at the 1984 Liverpool International Garden Festival.



The Beatles Maze, 1984.

After 1986, my own company began as Adrian Fisher Maze Design, later to be incorporated as Adrian Fisher Mazes Ltd. After moving from St Albans to Portsmouth, since 2002 we have been based in Durweston in North Dorset, where our team of a dozen staff create some 90 mazes a year around the world, still constantly pioneering new forms of maze construction.

Our 45 hedge mazes include those at Blenheim Palace and Cheju Island in South Korea (both co-designed with Randoll Coate), Russborough House, Scone Palace, Chateau du Colombier, Blackpool Pleasure Beach and Edinburgh Zoo. Keynote features in mazes have been a notable trend in our design approach, with the visitor experience varying from moment to moment. The mazes at Three Lands Point, Holywell Bay and Edinburgh Zoo have foaming fountain gates; those at Legoland, Holywell Bay and Peaugres Safari Park have walk-through parting waterfalls; at Atlantic Village, Escot Park and Staunton Country Park there are wrought iron maze gates, and central towers feature at Three Lands Point, Holywell Bay, Escot Park and Capel Manor.

Multiple bridges to achieve 3D puzzlement are widely used, including nine bridges at the Chateau de Thoiry. The Multi-sensory Mobility Maze, created at RNIB New College in Worcester for a TV programme, abounds in tactile features. Our hedge maze at Three Lands Point in the Netherlands was a pioneering maze in many ways; it demonstrated that a standalone maze attraction could be commercially successful, with up to 125,000 visitors every year since opening in 1991; it has bridges, foaming fountain gates, a central tower, a quick exit, and a maze courtyard with six-minute mazes, refreshments and retail sales.

Horizontal Mazes

The past 25 years have seen many innovations in horizontal mazes. Randoll Coate and I pioneered the brick-path-in-grass maze with the Archbishop's Maze at Greys Court in 1981; this reversed the role of grass in a traditional turf maze from being the path to becoming the barrier. Others followed at the Lappa Valley Railway, Beazer Gardens in Bath, Parham Park, Windsor, Marlow and Chester.

Brick pavement mazes using rectangular clay paving bricks are another innovation, firstly the Tudor Rose Maze at Kentwell Hall (1984), and then the Lion and Unicorn Mazes in Worksop Town Centre, Cliff School in Wakefield, a dozen other British primary schools, and in America at the Norton Museum of Art in Florida.

Mosaic now appears outdoors in mazes, using modern adhesives that never existed in Roman times. Installations include the centrepiece of the Bath Festival Maze (mosaic created by Randoll Coate), four mosaic sections in the Millennium Maze at Marlow (using Mitre Mosaic Tiles, patented by Adrian Fisher), and in the church at Wyck Rissington in memory of Canon Harry Cheales.

Taking decorative paving further, I invented two paving systems, Edinburgh Pavers and Fisher Pavers, which involve obtuse angles. These systems allow intricate designs to be laid straight off the pallet with no cutting. They have been used in the Oran Utang maze at Edinburgh Zoo, the Mall of Georgia in Atlanta, Goswells Park in Windsor, Shawford Parish Hall in Hampshire, and on a private estate in Roxbury, Connecticut.

Paved labyrinth, Roxbury, CT.



A third system, Mitre Pavers, features acute angles, and has been used in a private garden maze in Hampshire. In its Mitre Mosaic form, it appears in four mosaics in the Millennium Maze in Marlow, the Tree of Life centrepiece in Roxbury, and in a mirror maze in the 2006 Dubai Shopping Festival. Pre-printed colour ceramic tiles were used at Warren Street Underground Station in London. Regular tiling has been used in County Mall in Crawley, and as a wall tile maze at Norton Museum of Art in Florida.

In America, Alex Champion has pioneered another distinctive form of construction with his mounded labyrinths, which have pronounced vertical mounds, often planted with wild flowers, to define the barriers between the paths.

Spiritually, the most significant movement has been the work of Lauren Artress and Veriditas since 1991, initially at Grace Cathedral in San Francisco, which led to the creation of hundreds of Christian labyrinths at churches across North America. These horizontal mazes are usually based on the labyrinth design of Chartres Cathedral, and are typically made in cut stone, granite setts or tinted concrete, as well as portable versions created on canvas.

There are also, of course, examples of spiritual mazes, including the Maze of the Mysteries of the Gospels in mosaic in Wyck Rissington church, and the Archbishop's Maze at Greys Court.

Water Mazes

Water is a crucial element in garden and landscape design, and modern mazes use water in different ways.

The Beatles Maze in 1984 had a raised pathway within a pool, and distinctive stepping-stones in the shapes of musical notes, leading to the Yellow Submarine. The Hever Castle Water Maze has a similar pool and raised pathway, with water jets that jump across the paths.

Walk-through parting waterfalls have been used in mazes since 1991, first at Holywell Bay, and then at Peaugres Safari Park and Legoland. Foaming fountain gates also appeared in mazes for the first time in 1991 at Three Lands Point, Holywell Bay, and then Edinburgh Zoo. The Chinese Maze at Blackpool Pleasure Beach has two bronze dragons guarding its entrance, with water jets spouting out of their mouths. Numerous water tricks of this kind are also found in Yorkshire at the Forbidden Corner, in its maze-like network of mysterious paths, chambers and tunnels. In the Leeds Castle hedge maze, the grotto has water cascading over a giant's face.

Sometimes the entire maze is made of water, most notably in the Jersey Water Maze, where 208 fountain jets form walls of water, which rise and fall from moment to moment to change the puzzle, thus having a maze with an extra dimension – of time!

Cornfield Maize Mazes

Don Frantz and I created the world's first cornfield maize maze in 1993 at Lebanon Valley College in Pennsylvania. It attracted 2,000 visitors on its first day and 4,000 on the second day, set a new world record for the world's largest maze, and got coast-to-coast TV coverage on 3 American channels. Don's American Maze Company continued to be our client for five years, which included setting other Guinness World Records at Shippensburg (1997) and Dearborn (1998).

Corn mazes really took off from 1998 onwards, and now there are hundreds each summer around the world. Maize as a seasonal crop is particularly suitable for making mazes. It is cheap, grows fast, and allows a new design every year. GPS technology makes it easier than ever to create wondrous designs and challenging maze puzzles.

In France, Isabelle de Beaufort and her company Labyrinthus established a few large maze sites in the late 1990s featuring beautiful crop art, each attracting up to 100,000 visitors. In America there are several corn maze design companies.

Each year Adrian Fisher Mazes creates over 50 corn mazes worldwide across England, Scotland, Wales, Ireland, the Netherlands, USA, Canada and South Africa. We pioneered many aspects of maize maze operation, from the concept of a Maze Courtyard and filling it with "Six Minute Mazes", to multiple bridges for 3D puzzlement, and a Victory Bridge as a quick exit. In 2001 in Massachusetts, Davis Megamaze - "the grand-daddy of them all" - was the first to feature a double-decker bridge in a corn maze, and has done so ever since.

The double-decker bridge at the Davis Megamaze.



Small Scale Mazes

In the 1980s, our portable "Six Minute Mazes" made of coloured plastic tiles began to prove popular with American Science Centres and Children's Museums. Each has an extra rule to follow, which transforms their challenge even though they are only a few feet across. They have proved ideal for corn maze Courtyards, and also for Maze Festivals and Events held at historic settings such as Hampton Court Palace, Leeds Castle, Polesden Lacey and George Washington's Mount Vernon. The range has expanded to include Rolling Block Mazes, Inflatable Mazes, Finger Mazes and Rope Mazes.

Robert Abbott has pioneered many other “mazes with rules”. They have also proved ideal for the Internet, with Andrea Gilbert’s www.clickmazes.com website containing many ingenious new examples. International Gatherings have sprung up in the past 25 years, most notably the International Puzzle Parties held each year (founded by Jerry Slocum), and the bi-annual “Gatherings for Gardner” in honour of the recreational mathematician Martin Gardner (organised by Tom Rodgers).

Mirror Mazes

The world's first mirror maze is thought to have been created in Constantinople in 1889, although it has not survived. The next was built in Prague in 1891 and still exists, and within a few years 6 were created on both sides of the Atlantic - in the Czech Republic, Switzerland, Canada and the United States. The 1899 example in the Glacier Gardens, Lucerne, Switzerland was inspired by the Alhambra Palace in Spain and is particularly notable. A further 8 were created between the two world wars. In the 46 years from 1945, about 20 mirror mazes were built, mainly in America.

The renaissance of the modern Mirror Maze began in 1991, with our Magical Mirror Maze at Wookey Hole Caves in England, which captures the atmosphere of a seaside pier, with seagulls overhead and a brass band's music wafting across in the breeze; not just a new mirror maze, but also conceived to a different scope, scale and quality.

Half the world's new mirror mazes are now devised in the design studios at our 1830s English manor house in Dorset. In 1994, the Labyrinth of Dragons at Peaugres Safari Park in France was themed on the Great Labyrinth of Ancient Egypt, with vertical tanks of aquarium fish reflected by the mirrors. In 1988, King Arthur's Mirror Maze at Longleat House in England became the world's first mirror maze with two episodes, featuring an enchanted forest and a ruined chapel. “A*mazing Chicago” on Navy Pier, Chicago, USA, celebrates the city of Chicago and its skyscrapers. In Wisconsin Dells, our mirror maze at Noah’s Ark Water Park portrays the main Livestock Deck of the ark, with visitors emerging onto the “dry land” of Mount Ararat. Skyline Caverns in Virginia have an Enchanted Dragon Mirror Maze. Others have been installed in America, China and Thailand.

Merlin Entertainments, the world’s 9th largest leisure group, have made our mirror mazes a consistent hallmark feature in each of their Dungeons across Europe, from the House of Corrections in Hamburg, to the Labyrinth of the Lost in the London Dungeon, with similar gruesome storylines at their other Dungeons in Edinburgh, Amsterdam and York.

Our temporary Mirror Mazes have featured at various Events, Festivals and Conventions including New Orleans (for Computer Associates), an Internet convention in Los Angeles, the Oxo Gallery in London (for Absolut Vodka), and the Ibn Battuta Mall during 2006 Dubai Shopping Festival.

The Broader Cultural Dimension

In the past quarter century, Mazes have become much more evident in the public consciousness, in advertising, novels (Larry's Party) and films ("Labyrinth", "The Shining", "The Man with the Golden Gun" and "Harry Potter and the Goblet of Fire"). From "Mazes and Labyrinths" by W H Matthews in 1922 which served as the only substantial book of reference for much of the twentieth century, one or more impressive large-format books on mazes are now being published every year.

Various TV programmes have featured mazes, from creating a Maze for the Blind on "Challenge Anneka!" to a Maze of Motor Cars on "You Bet!". Maze Exhibitions have been held at the Ashley Gallery in Surrey, the Norton Museum of Art in West Palm Beach, and the Oxo Gallery in London.

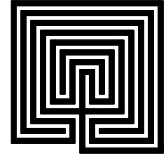
Jeff Saward's Caerdroia Project and my own maze-designing career both started around the same time, a collaboration that has seen our joint authorship of "The British Maze Guide," and the use of numerous photographs in illustrated books by each of us.

New forms of mazes are already being conceived and planned. My next quarter-century Caerdroia report will abound with many further maze innovations, but you will have to wait until 2030 to read it. Many congratulations, Jeff and Caerdroia, on your first 25 years!

Adrian Fisher; Portman Lodge, Durweston, England, 2005.
Website: www.mazemaker.com



The Labyrinth Revival in Switzerland



Susanne Kramer-Friedrich

It all started in 1990 with Rosmarie Schmid and Agnes Barmettler's project for public women's spaces in Zürich. "Public Labyrinth places should become as common as football grounds", said Rosmarie's husband. This was a good argument for the authorities to build, and to pay for, the installation of a labyrinth in the back yard of an old military arsenal in Zürich, the Zeughaushof, chosen among others in a competition entitled "Zürich tomorrow," to celebrate the 7th centennial of the Swiss Federation in 1991.

This all may sound very traditional, very patriarchal - and in many respects this country is behind others. Women only got political voting rights in 1971 and Swiss women's reality still is far from equality. Swiss Labyrinth Culture gives them a chance for self-empowerment, to create a model of social life, which meets their own measures and means. They discovered an open space, and they love it and keep it in their own authority.

The first thing to do for the two initiators was not to choose the design or to order materials, but create publicity, looking for other women to join them. Labyrinths in their perspective were more than strange landmarks in well-kept parks. Right from the beginning they were meant to be a forum for cultural and political development by discussion. Non-violence in words and deeds was their ideological creed, and still is. A movement of a minority standing for the population's majority persevered in the project.

The first period: 1990 to 1997 – the boom years

In order to find out how many public labyrinths there were in Switzerland, people were asked to fill out and send in a questionnaire, which revealed a total of 49 examples. As a result, a "Labyrinth Map of Switzerland" was published in the panorama pages of the small periodical *Aufbruch*, which was ordered and copied over and over again. Even today people still ask for it, but labyrinths are on the move, as always. The first period of the pioneers and the spread of interest lasted some 7 years and we soon discovered that there is no such thing as "The Labyrinth". A labyrinth in a park (i.e. Basel) differs from one in the mountains (Schächental, Kt. Uri). A labyrinth in a former military camp (Zeughaushof, Zürich) differs from one on the site of former graveyard (Hausen am Albis). A labyrinth in front of a supermarket (Effretikon) differs from one at the entrance of a church (Bubikon). A labyrinth cared for by five women differs from one that is maintained by a township's gardening department and a labyrinth in a schoolyard differs from one in a prison.

*The Zeughaushof Labyrinth, Zürich,
Switzerland. Photo: Jürgen Hohmuth.*

We learnt that every place generates an appropriate design, asks for the appropriate materials and stands for what the people around it think is important. They all have their seeds in the pioneering labyrinth in the Zeughaushof in Zürich, but they developed a variety of patterns: many of them follow the line of the classical 7-circuit labyrinth and the Chartres-type prevailed in the beginning, not only in catholic areas and church institutions. The Baltic Wheel and other similar types, which were not initially accepted by many people pretending to know the criteria for true labyrinths, are now well established and seem to meet the need of many of us today, not really knowing which way to go. These labyrinths teach that there is not ‘this or the other way’ - but ‘this AND the other ways,’ all equally true, equally leading to the centre, opening new space and perspectives.



During these first years we learnt that every project, every labyrinth in Switzerland is autonomous, situated in a definite and unique place, created with a definite intention and equally unique. Every one of them has its own history and it's own stories to tell. Stories about those who pass by, those who visit it, those who work there and those who live nearby. Stories about their changing meaning too - such as the one told by Ursula Knecht of today's Zeughaus Labyrinth Crew:

“The Stranger... she stood outside the labyrinth, in an elegant suit and high heels. A boy of some nine years with dark hair and clear eyes was with her. They were watching us. It was in spring, the earth was bare and waiting for plants. “Would she like to have a piece of it to plant herself?” asked Vera with an inviting smile. “No, thank you, I can’t,” she answered in a foreign accent. “And what about you?” Vera said to the boy. “What’s your name?” “Manuel”, he answered. “Well, Manuel, you could seed or plant what you want, then watch and see them grow, then get your crop - radishes will grow in just a few weeks.” He was keen, and urged and dragged his mother to join him in walking into the labyrinth, but heavy lumps of soil stuck to her high heels. Vera was afraid she would be concerned about this and showed them a spot near the entrance. She showed the boy how to prepare the soil for the seeds. Soon the mother was on her knees, crumbling the earth with her hands, watching it trickling down. She did not care about her dress, or her shoes. It seemed to be the first time she had touched the earth of the foreign country where

she happened to be. Ilona became one of that year's most devoted gardeners, she was part of the team - she became one of us - for the time she was here."

This is one story among many others; in fact many foreigners of all continents, displaced people, refugees or immigrants, have found 'a place to be' on our labyrinths ever since the movement started.

The second period: 1997 to 2004 – each on their own way

In the next seven years, we lost the orientation of what existed and what had disappeared. Instead, we were more concerned with the general idea of what had started and continued to exist. We became aware of the importance of being open to the public - gaining and giving evidence to non-violent communication and what it means to the individual and to people in other circumstances, with other traditions and another 'way of life'. Talking about our personal differences shows the diversity in social 'ways of life', and how they can be integrated. This kind of exchange was an important preoccupation during this period. Rosmarie and Agnes decided to pass the responsibility for the Zürich Labyrinthplatz to a new crew in 2001 and to concentrate on coaching and counselling.

The 2nd International Labyrinth Congress of the German-speaking Countries took place in Zürich in August 2003. The group in charge of the Congress put the stress on several excursions, trying to show the variety of the Labyrinth Revival in Switzerland, and the numerous projects in Germany and Austria, which had been inspired by it. Ironically, even the owners of nearby labyrinths did not know each other, and the congress proved very helpful in connecting them. As a result of the Congress, especially for the purpose of increasing contacts and relations between different labyrinth locations and owners, the organisation Labyrinth-International.Org was founded in 2004. Andreas Fritschy is in charge of the website of the same name (www.labyrinth-international.org) which we hope will be a useful tool in the future. Take a look, enjoy the pictures and start to learn German... or ask for a translation!

Ahead of us: the third period – aware of the changes

Now, in 2005, the people in charge of the Swiss labyrinth website - Rosemarie Schmid and myself for the contents, and Andreas Fritschy as webmaster - are busy setting up a new compilation of the currently existing Swiss Labyrinths. The Labyrinth Map of 1997 has become a historical document of little practical use today and we stopped updating it in 2000. Instead the Internet will facilitate this - but still we have to take the initiative ourselves. What will the next 7 years bring to the Swiss Labyrinth Movement? We expect new commitments to show up - individual, collective and global events, changes in political, economic and ecologic circumstances. Let us face whatever is ahead of us - and trust that it will lead to the centre and make sense.

Susanne Kramer-Friedrich; Labyrinth-International.Org, 2005.



Snow labyrinth in the Swiss Alps (Schaechental). Photo: Heidi Gisler-Brun.



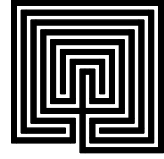
*Above left: Boldern-Labyrinth, Männedorf, Switzerland. Photo: Maurice K. Grünig.
Above right: Labyrinth at Bubikon Church, Switzerland. Photo: Erwin Reissmann.*



*Ceramic spherical labyrinth
by Marianne Ewaldt.
Photo: Jeff Saward.*

“Das Labyrinth” exhibition, St. Pölten, Austria, 1999. Photo: Jeff Saward.

The Labyrinth Revival in the Germanic Countries



Ilse M. Seifried

Talking about labyrinths and their specific aspects within the German speaking countries, I would like to point out, first of all, that the labyrinth itself does not consist of a linear structure, and similarly, a linear history of these labyrinths does not exist either. It is almost impossible for me to report about a labyrinth related kind of movement, but I can tell you about the colourful and manifold impulses and initiatives that yield a lively picture. These pictures represent a net, the “Ariadne’s Thread”, where many threads join in some places, and single threads join at others.

The German speaking country’s intensive interest in labyrinths can be traced back to the 1970’s and has been influenced by researchers, artists, geomancers and spiritual people. I have been working with many people, and in many labyrinth specific fields, during the last eight years, and while there is still a lot to discover, here I hope to describe a few of the stones in the labyrinth puzzle.

Germany ¹

The scientific research regarding the labyrinth is mainly based on the extensive work of Hermann Kern who, for the first time, clearly defined words like meander, spiral, maze and labyrinth, which finally made a distinction and systematic research possible. His work on the labyrinth was, and still is, the basis of all research in this field. To date, there are few books written by other academics about the labyrinth - it seems that Kern’s emphasis on this topic has discouraged others from further researching the labyrinth.² For many artists this book was both basis and provocation, for as Kern puts it, when it comes to this complete form, artists can only fail because there is no way of improving the labyrinth.

Since Kern’s worldwide correspondence and research lasted for more than 10 years, he can be seen as the essential initiator of the scientific networking process in the labyrinth field. His exhibition in Milan in 1981 was the first labyrinth specific exhibition within Europe and his book (developed from the Italian-language exhibition catalogue) was published in German³ in 1982. Due to his sudden death in 1985, his wish to stage this exhibition across Europe unfortunately never materialised.

Kurt Krüger has concerned himself with documenting the historic labyrinths in Germany and he also focuses on the mathematic aspects of mazes. Likewise, Jørgen Thordrup from Denmark has supported many German-speaking people who are interested in the historic labyrinths. In Prussia, Germany, there are regions once under the control of the crusaders and here are found the so-called “lawn-labyrinths” from the 17th century: Steigra, Graitschen and Eilenriede (Hannover). Another at Kaufbeuren is from the 19th century, and was restored in 2002. In Munich, in the inner courtyard of the town hall, there is a mosaic-floor showing a labyrinth, made by Georg

von Hauberrisser around 1900. In addition, there are the documented or suspected sites of approximately 20 other former “lawn-labyrinths” and evidence of around 16 so-called “Hills of Jerusalem,” hinting at other former labyrinth locations.

In more recent times, many more labyrinths have been created for walking. The first were developed because of an ecclesiastical connection, e.g. those in Köln (1973), Heersum (1985), Münsterschwarzach (1988), Augsburg (1990) and Zazenhausen (1992). Others were built through female initiatives in Würzburg (1990), Ingolstadt (1992), Ostfildern-Nellingen (1992) and many more. Today, there are at least 116 walkable labyrinths in Germany. 18 new labyrinths⁴ were created in the year 2004 alone.

These labyrinths were, and still are, either built by individual people (e.g. Gundula Friedman⁵, Rafaela Schmakowski⁶, Peter Pintatis, Sigrid and Klaus Kirdorf, Anke Peters and Angelika Koras), by ecclesiastical initiatives from the catholic or protestant church or by people with spiritual intention, outside of any institution (e.g. Beatrice Grimm). Some of the labyrinths were created during workshops and seminars (e.g. at Dörnberg-Helfensteine and Schloss Altenburg), during a women’s project that supported a labyrinth installation in Zurich (at Nürnberg and Dresden), in an anthroposophic context (at Ahrensberg and Schloss Freudenberg), in cooperation with schools (at Darmstadt and Rechtenbach), by architects that specialise in gardening (at Haae and Sömisch) and finally by geomancers (at Kassel and Dörenberg-Hohlestein). There are also a few new labyrinths in private gardens that grant access by appointment only, such as those at Weismain and Wetzlar.

Labyrinths are also used in psychotherapy, e.g. by Hannelore Eibach⁷, Rosemarie Strunk⁸ and Franz Miller⁹; in combination with contemplation, body-prayers and dance by Beatrice Grimm¹⁰, Susanne Bischoff, and Birgit Wehner¹¹; in Gi Gong by Rafaela Schmakovski¹² and in certain subjects in schools, e.g. by Hubertus Halbfas, Theo Tröndle, Peter Hofacker, Martin Autschbach andere Fächer and F. Steinauer. Additionally, they are being used as earth-healing and art-objects by Martin Gebhardt, intercultural objects (to mark connections between Germany and South Africa, at Schorndorf), set up in activity camps (Tennenlohe) and as a public place for women (Nürnberg). Helge Burggrabe¹³ produces permanent and transportable earth-labyrinths at Tuchstoff and Lothar Bracht has produced wooden finger-labyrinths¹⁴ in various designs, colours and sizes.

There are also many temporary labyrinths being built in Germany and I would just like to mention Anke Trümmler’s sunflower-labyrinths¹⁵ at Greiz and LiShaLima’s corn-labyrinth at Schöbendorf. In the year 2000 Dagmar von Garnier organised the “Party of 2000 Women” in Frankfurt Main in Germany. The idea of the party involves the construction of a Women’s Memorial Labyrinth that is re-created as it travels from town to town. Every stone is dedicated to an important woman.

When it comes to the artistic field, we have to mention Voré. He studied at the academy of arts in Karlsruhe and has been working on sculptural and multi-medial projects concerning labyrinths since 1985. Under the heading of the labyrinth he invited artists¹⁶ to take part in a city-project¹⁷, which has not yet been realised.

Voré now possesses the widest documentation of the current works in this field. Talking about his labyrinths, he himself calls them “construction works.” In the year 2004 an exhibition with the title *Labyrinths and Mazes* took place at the castle in Honhardt,¹⁸ featuring 50 artists.¹⁹

The theatre company Eisingen²⁰ works with handicapped people and has created a masquerade-play that deals with the myth of a labyrinth, with each play developed in cooperation with its actors. Using masks made of different materials, their literature states: “Like the labyrinth, the mask is a phenomenon of mankind. The mask is a mirror of our soul. During the making of the mask, hidden inner layers are brought to the surface. The labyrinth is a mirror as well, a picture, a symbol for the veil way of the human life between our inside and outside.”

A number of labyrinth related books have also been published in Germany in recent years, authored by Helmut Jaskolski, Uwe Wolff, Peter Hofacker and Mathias Wolf, Jürgen Hohmuth, Marion and Werner Küstenmacher, and many more besides. In addition, Freya and Graeule,²¹ two labyrinth experts who travel all over the world, have produced a map of walkable labyrinths in Germany.

In 2000 Silke Wolf and Werner Kaufmann set up the www.begehbare-labyrinth.de website, which is frequently updated. It provides a catalogue of all the walkable labyrinths in Germany that they know of, including details and information about labyrinth-activities. 2004 saw the creation of an online labyrinth-tracking network, regularly updated by Sigrid and Klaus Kirdorf, and an online labyrinth discussion forum, so far little used, for the German-speaking countries, was also set up.

Erwin Reißmann started his www.mymaze.de website in 2002. On this creative and multi-functional site you will find historic labyrinths, many pictures of labyrinth-events, information about labyrinth books and much more. Moreover, there is information about the labyrinths he has built and/or designed at Holzkirchen, Würzburg, Altenkirchen and Eisingen.

Switzerland

My first contact regarding labyrinths in Switzerland was with the psychotherapist Monica Monico. Her article “Labyrinth and Psychotherapy,” an examination of the labyrinth from a female point of view, was published in 1989. During the preparations for my 1999 labyrinth exhibition in St. Pölten, Austria, I also met with Rosemarie Schmid and Agnes Barmettler, founders of a Zurich-based political and artistic women’s labyrinth project that was completely unknown in Austria at that time. Agnes Barmettler works as a freelance artist, focusing on drawing, painting, film and interior- and outdoor-decoration since 1970. In 1997, together with Anka Schmid, she produced a film entitled *Labyrinth-Projections* and presented it at the exhibition in St. Pölten, Austria in 1999 (see below). The Swiss musician Paul Giger²² has also assimilated labyrinths with his musical style and produced the CD *Chartres* in 1988. Susanne Kramer-Friedrich,²³ an associate of the Swiss-based Labyrinth-International.Org, describes some of these projects from Switzerland in further detail elsewhere in this edition of Caerdroia (see page 44).

It is interesting to note that, in comparison to Germany and Austria, both the Chartres type and the 'Baltic Wheel'²⁴ labyrinths are equally popular in Switzerland. In the year 2003, the second labyrinth-congress (approximately 80 participants) was held in Zurich, and out of the many motivated Swiss labyrinth-experts, I would especially like to mention Ursula Knecht, Katharina Zaugg (Basel) and Heidi Gisler-Brun,²⁵ who builds labyrinths in the mountains and offers painting workshops.

Austria

After attending the founding of The Labyrinth Society in St. Louis, USA, in 1998, I decided to organise the first Labyrinth Congress²⁶ for the German speaking countries in Dornbirn in Austria. The 36 participants experienced its labyrinthine character, organisation and content. There were no lecturers - all participants were equal in their responsibility and in their own initiative. The dynamic of a lively process was the most important thing, and this was realised through the communicative skills and the quality of the participant's conflict management.

In 1999 I was the curator of the first labyrinth exhibition within the German speaking countries, entitled *The Art of Wandering - The Labyrinth - Myth and Reality*. Sponsored by the provincial government of Lower Austria, it took place at the Shedhalle in St. Pölten, and an exhibition catalogue was published in German and English. The interdisciplinary exhibition was characterised by physical experience - a walkable boulder labyrinth and a maze - contemporary pieces by European artists, literary and musical elements, and the display of a small selection of art history items, such as the labyrinth-decorated bowl from Tell Rifa'at, Syria, which was presented for the first time. Alex Champion and Marty Cain's videos and Jeff Saward's labyrinth slideshow were also very popular with the visitors.

The Viennese Labyrinth Association was founded in December 2001. Its purpose is to explore the history, effect and phenomenon of the labyrinth on the one hand, and to promote further artistic examination in this field on the other. A labyrinth-centre is planned for the future, offering various opportunities for experience and exploration. The presentation of the artwork should invite others to further impulses. Other aims are to support both labyrinthine research and interdisciplinary cooperation and to find practical usage for their results. In addition, the opportunities for networking will provide information and make communication easier, so that new ideas can come into life. To that end, a labyrinth enthusiasts gathering is organised twice a year in Vienna.

Of course, Austria has some important historic labyrinths. The roman mosaic labyrinth in Salzburg is the oldest, constructed in c.280 CE, and is now exhibited at the Historic Art Museum in Vienna. A number of labyrinths preserved in early manuscripts, including those from Admont, dating back to the 12th century, the famous Otfrid manuscript labyrinth from the 9th century (imported from Weißenburg, Germany), and two other labyrinths from 16th century Venice are stored and exhibited in the Austrian National Library. An early example of the 'Chartres-type' labyrinth, created in the 12th or 13th century, probably at St. Gallen, is nowadays held at the monastery of Zwettel, in Southern Austria. The enormous hedge maze in the grounds of the Schönbrunn palace, built in 1698, but destroyed in 1892, was (partially) restored in 1999.

During the 1970's & 80's a number of artists and geomancers were working with labyrinths, and it was not long before permanent labyrinths were being installed. In 1985 Erich Strasky, an Austrian geomancer, created the first of the new wave of labyrinths in Austria at the recreation resort of Loipersdorf, which was then restored in 2002. In 1994 the artist Marianne Ewaldt built a labyrinth at the Doppler clinic in Salzburg, and the church community of Freistadt built another. In 1995 vice-mayor Pöllaus Heribert Hirschegger built a labyrinth in the castle park. In 1997 more labyrinths were created by Jörg Purner at Pöllau, by the church community at Heiligenkreuz, by Marianne Ewaldt in Obdach and another was created in the Catholic Congress House in Vienna. In 1999 labyrinths were built by Christa Moises in Bad Mitterndorf, by the church community in Obereis, in Bad Tatzmannsdorf, by Gernot Candolini in the city park in Innsbruck, and at the Viennese central cemetery.

In the millennium year, 2000, labyrinths were created in the church at Südstadt near Vienna, by Kinast in the Unterprenstätten Park and near the church of Gleisdorf. In 2001 Herman Friedel built a labyrinth in Krumbach, Willie Engelmayer built one in Schweiggers and Marianne Ewaldt built another by the Mondsee Lake. In 2002 labyrinths were created during the provincial exhibition in Prägarten/Wadhausen, in St. Georgen by a Catholic educational institution, in St. Johann/Herberstein next to the Catholic Women's House, at St. Gerold, Propstei von Friedl, in the park called "World of Senses" at Haag and at the Franz Josefs Höhe in Luedeling.

2003 saw further labyrinths created in Schreibersdorf and Kufstein, in the churches of Maria Alm and St. Christoph in Dornbirn, (prototype), in the garden of the church at Hard, and at the cathedral of Gurk. In 2004 labyrinths were built by Friedl in Buchboden, at the congress house in Loschberg, at the church of St. Lambrecht, at the cathedral of the Kreuzschwestern, near the church of Söll and at the Franciscan cathedral in Telfs - these last three were all built by Gernot Candolini.

By 2005, when Marianne Ewaldt created a labyrinth at the church of St. Elisabeth and in the garden of Seitenstetten Cathedral, there were now at least 41 walkable labyrinths in Austria, 23 of them of 'classical' type, but curiously only 3 of the 'Chartres or medieval' type, although many of these new labyrinths are located in, or adjacent to churches.

There have also been many temporary labyrinths built in recent years, and I would like to mention Gonschorowski, Josef Volsa, Marianne Ewaldt, Gernot Candolin, Brigitta Mathes and Veronika Hopfner, among the more prolific creators of these. Some of them still work with the labyrinthine theme, the others occupied themselves with the labyrinth only for a short term.

Among the artists working with labyrinths, mention should be made of Horst Mundschnitz, Herman Friedel, Hans Tupal, Hans-Rudolf Koch, Ingrid Mantschef, Rosemarie Sternagl, Siegfried Holzbauer²⁷, Editha Taferner, Yvette Heller, Gabriele Ulmer²⁸ and Harald Metzler.²⁹ The most popular and well-known piece of modern labyrinth art in Austria is probably Rudolf Hausner's *The Labyrinth*, finished in 1987. In the spring of 2005 the Association of Artists in Visual Arts of Styria organised an exhibition³⁰ at the Künstlerhaus in Graz that was dedicated to the labyrinth, where a jury selected 29 artists in order to present their works for the first time.

For a better understanding, let me describe the labyrinthine minds and works of three of these Austrian labyrinth-inspired artists in greater detail:

Martha Theresa Kerschhofer

Martha's first experience with the labyrinth was in 1965, at Chartres Cathedral in France. In 1967 she happened to see Trojaborg stone labyrinths in Sweden and Finland and completed her first sketches and outlines. She then stayed in Crete for a long time and began her cyclic work "Paths Towards the Centre" that consisted of labyrinth pictures that were filled with symbols and texts. Wood engravings, monotypes, paper works, sewn pieces, Chinese ink, sand and oil paintings followed shortly after. Of her work, she writes: "For me as an artist, the labyrinth (in comparison to the maze) represents having confidence in the way, it is like an archaic swing, carried by a huge power and a mother that guide us to the centre."

Ernst Steiner

Ernst has written the following about "The Secret of the Labyrinth":

"There is the question why exactly in our recent time the labyrinth – which is a very special ancient symbol – is winning back its meaning. The true longing for the labyrinth, which shows the spiritual hunger and emergence of spirit, is not realized by the church and is so often ignored. That is the reason for esoteric groups and businessmen to take the labyrinth and give it a character of fun.

This is one reason the rebirth of the labyrinth has lost its ethic and spirit value. Another reason is the social phenomenon of disorientation and an unconnected civic community. That leads to arbitrary and indifference. We are not able to choose something special, but we are able to select from an indifferent offer. People are longing for structure and a living that makes sense to them. The labyrinth has a healing power, but it can also be frightening to start walking in it. Being able to walk into it depends on your faith and maturity. Walking the path of the labyrinths and finding the centre (after over-coming irritation and other emotions) means coming home. This kind of home is based on the infinity. We lose our middle a million times, that is the reason for us to walk this way again and again. Reaching the centre provides harmony and a transcendent feeling, the pilgrim knowledge that he or she is more than their ego.

This is an existential approach that believes in death and rebirth. Everybody experiences many deaths in his or her life. We have to come out of the dark ways of the labyrinth – similar to corn, growing towards the sunlight and later becoming a fruit. Walking out of the labyrinths gives a feeling of rebirth and maturity. The labyrinth is an archetype, but everybody gives it another personal meaning. For me, a clear conscience is like calling myself, a compass that leads us to our goal – our own truth. The conscience is like the voice of our kismet and guides us to the real purpose of our life. Our inner world is connected with the outer world, comparable to our breathing – in and out. If our inner experiences make sense, our world outside will become clearer and easier to orientate ourselves."

Marianne Ewaldt

Marianne has worked as a freelance artist since 1976.³¹ She has her own studio in Salzburg and does a lot of individual and cooperative exhibitions in Austria and abroad. Since 1994 she has practiced “country-art,” with the focus on labyrinths and their construction, both temporary and permanent and with different materials, especially meadows, bricks, stones and mirrors. She says: “My whole work is all about the essential, the basis, the release and liberation from distraction. It is my political duty to create a conscious awareness of how important it is not only to transport negative, but positive things through art. In times of terror and multiple violence and destruction it is necessary to stimulate positive vibration and harmony. With my work I would like to create a balance between the existence of too much violence in this world and my subjective feelings. A third thing that could connect the contrary aspects of our dual world is the structure of the labyrinth. As I see it, it represents rational thinking on the one hand and the mystery and art of wandering around and letting yourself go, on the other hand.

Commenting on her labyrinth-ball art pieces, she said: “I took the structure of the ball to focus on the completeness and unity that has no beginning and no end. I see the ball as a symbol for our fragile threatened world. The labyrinth-ball stands for our thoughts because the whole world is actually a labyrinth. The completed ball consists of an invisible empty space that could be interpreted as the unconsciousness. The way of the labyrinth experiences further dimensions through its impermeable surface that makes the achieving of our goals and life-centres still possible.”

The labyrinth has also found a focus in other artistic, literary and educational fields:

The Austrian musicians Karl Heinz Essl and Alex Seidelmann have examined the labyrinth through their music. Literary works on the labyrinth by Marie Luisa Kaschnit (lyric), Christoph Ransmayr (a novel: *Der Weg nach Surabaya*), Ilse M. Seifried (a libretto: *Im Labyrinth*) and Gerhard Roth (a novel: *The Labyrinth*) have also been published and performed. Brigitte Hoger and Ursula Baatz recently broadcast a series about the labyrinth on the radio station ö1. Also in 2005, there was a postage stamp produced with the slogan “Austria is a labyrinth where everybody finds their way!” a quotation from Helmut Qualtinger, the famous Austrian writer, kabaretist and actor, whose last appearance before he died was as cellar master Remigio de Varagine in the film version of Umberto Eco’s *The Name of the Rose*.

The psychologist Eva Scala and the German linguist Professor Birkhan have also included the labyrinth in their studies. Eveline Weiss wrote her dissertation at the theological faculty upon the subject of the labyrinth, and Getraud Ladner from the catholic-theological faculty in Innsbruck, Ulrike Amann³² from the church of St. Christoph in Dornbirn and Elisabeth Hämmerle³³ have all dealt with the labyrinth in the ecclesiastical field. Eveline Weiss, Veronika Hopfner, Gernot Candolini, Ilse M. Seifried and Veronika Komuczky, have all worked with the labyrinth in schools and educational settings, Ruth Lasser has even specialised in labyrinthine work with animals.

Finally, let me mention those labyrinth specialists who work throughout the region:

Gernot Candolini

His work with the labyrinth began in 1997, when he travelled to visit many labyrinths in Great Britain, France, Italy and Germany. Since then he has given many slide shows and seminars and has written five books.³⁴ He quickly reached a wide audience throughout all the German-speaking countries and was one of the key people that spread this topic. His books have been translated into English, French, Italian, Spanish and Dutch. He thinks that the revitalisation of the labyrinth has to do with the human desire for each of us to find the meaning of our own way. He wonders how long this tendency is going to be 'trendy' and how this 'labyrinthine spirit' is going to spread. So far he has built 15 permanent and 30 temporary labyrinths in Austria and Germany.³⁵

And, of course, myself: **Ilse M. Seifried**

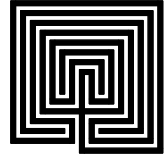
I also began working regularly with labyrinths in 1997, but do not focus on constructing labyrinths, more on their sources, origins and their 'healing power.' How does the labyrinth affect us - ourselves, children, grown-ups and those people with special needs? In 2002, my book *The Labyrinth - The Art of Wandering*³⁶ was published and I also organised the first international scientific workshop in Vienna. I still hold a labyrinthine meeting twice a year in Vienna, organise regular seminars and talks regarding the labyrinth and administer the Austrian website www.das-labyrinth.at I am fascinated by the manifold nature of the labyrinth, which is such a lively personal and socio-political mirror.

Ilse M. Seifried; Vienna, Austria, 2005.

Notes:

- ¹ This part of the text came into being through a series of exciting and supportive discussions with Silke Wolf. Email: silkewolf@begehbare-labyrinth.de
- ² Friedrich Dürr: *Die Schrift als semitische Morgengabe an Athen und Rom. Gubltisch, Kyprisch, Kretisch und Etruskisch im Licht neuer Entzifferungen*. Published by Friedrich Dürr, Rückersdorf, books on demand, 2000. He has a theory that the word labyrinth actually means "guide the straying to the middle."
- ³ Hermann Kern: Exhibition: *5000 Years of the Cultural History of the Labyrinth*, Palazzo della Permanente, Milan, 1981.
- ⁴ Stuttgart-Hohenheim, Rechtenbach, Paddingbüttel, Neuwied, Memmingeberg, Marquartstein, Lippstadt, Lauffen, Holzkirchen, Himmelpfort, Haltern am See, Gemmingen, Elgersweiler, Eckardtshelm, Damme, Breselenz, Bad Gögging, Aurach.
- ⁵ She founded the labyrinth at the hill of Disiboden in 1996, the place where Hildegard von Bingen used to work. She thinks that the aspect of solidarity amongst women should be focused on and that the call for solidarity should take place where personal transformation is possible.
- ⁶ <http://www.rafaela-schmakowski.de/>
- ⁷ A pioneer in therapeutic uses of labyrinths, she believes that the labyrinth brings patients to their inner world, and to guides them to the fears and hopes that accompany them in their way of life.
- ⁸ She has included the labyrinth in her group therapeutic work and suggests that not having a choice in a labyrinth, and letting oneself walk an unknown path, can be very releasing for many patients and is effective for people who suffer from ambivalent feelings and actions.
- ⁹ In Augsburg, especially for elderly people who suffer from senility.
- ¹⁰ <http://www.beatrice-grimm.de/>
- ¹¹ <http://members.fortunecity.de/labyrinth>
- ¹² <http://www.rafaela-schmakowski.de>

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- ¹³ <http://www.fankhauser.de/helge/>
- ¹⁴ <http://www.t-r-i-t-o-n-u-s.de>
- ¹⁵ <http://members.fortunecity.de/labyrinth/>
- ¹⁶ Participants: Madelaine Dietz, Petra Kurze, Gerda Schlembach, Bernhard Garber and Peter F. Strauss from Germany; Teres Wydler (Switzerland); Anga Sterrenberg & Andreas Lehner (Austria); Harald Smykla (Britain); Bea Verheul (Netherlands); Peter Prutkay (Hungary); Zeev Krisher (Israel) and Konrad Loder (France).
- ¹⁷ The concept presents the idea of a social estrangement from the collective view in our western world. This includes a development towards solitude and the idealisation of pure individuality. "Labyrinth" wants to combine the multiple tones of the individual way of living with the individual comprehension of symbols, their interpretation and arrangement. The concept strives to offer integrative and socio-cultural possibilities for beginners with different shapes, meanings and practical levels. Artistic, scientific and profane results should be integrated and kept together content-wise.
- ¹⁸ http://www.dellarte.de/ver_ausstellungen.htm
- ¹⁹ Angerer d.Ä., Alfred Bast, Lena Brauer, Stefan Caltia, Rafael Cázares, Fabrizio Clerici, Otfried Culmann, Corina del Carmel, Michael Engelhardt, Marianne Ewaldt, Christian Flora, Andreas Franz, Gernod Frick, Peter Gric, Victor Hagea, Peter Paul Halapa, Wolfgang Harms, Erik Heynink, Jürgen Hohmuth, Manfred Hönig, Fritz Hörauf, André Janout, Hanno Karlhuber, Lukas Kandl, Heide Kornelson, Richard Kölbl, Boris Koller, Peter König, Michael Krähmer, Ariane Krischke, Michael Lasse, Lo Ch'ing, Brigid Marlin, Michael Maschka, Anne Mayr, Paco Minuesa, Hans Niklaus|o Niklaus, Martin Oscity, Tamara Ralis, Aleksej, Ravski, Ines Scheppach, De Es Schwertberger, Manfred Sillner, Susanne Steinbacher, Ernst Steiner, Hans Stuchlik, Meena Valail-Dieter, Elke Wassmann, Wessi.
- ²⁰ <http://www.josefs-stift.de/theaterlaby1.html>
- ²¹ A youth hostel at Alte Bergstr. 13, 64342.
- ²² <http://www.paul-giger.ch> – "Music is the worldly reflection of the spiritual worlds and realities, the mental and effortlessly, technical examination with the physical body, the "materialistic" tone (sine vibration) and its spiritual aspect, the range of natural tones, as well as silence, noise and "white noise" (sum of all frequencies). The combination of the experience of the relativity between time and space results in scales, themes, motives, timbre, harmonies, rhythms and times which can widen to mental universes, if it is meant to be the body of resonance of the creative principle."
- ²³ In 1997 Susanne Kramer-Friedrich worked on the first map of labyrinths in Switzerland, which consisted of 50 labyrinths, and was subsequently updated on the website in 1999.
- ²⁴ St. Gallen (a school house, modified classical type, 1990), in Antoniushaus, Mattli (in 'Weg der Sinne' from Hugo Kükelhaus, Chartres-type, 1991), in Flüeli-Ranft (1992), in Wurmsbach SG (Kloster Wurmsbach, Chartres-type, 1992), in Verborga-Pischasee GR (Mönchalptal, classical-type, 1993) in Rüti ZH (modified classical, 1992) in Hitzkirch LU (church, Chartres-type, 1993), in Hölstein BL (Congress Center Protestants Heimstätte Leuenberg, classical, 1995), Männedorf ZH (Boldern Protestamt Congress Center, Baltic-type, 1995) and Bubikon ZH, (Chartres, 1995).
- ²⁵ <http://www.8ung.at/heilabsuudaa/>
- ²⁶ <http://www.das-labyrinth.at/labyrinth/projektedetail.htm/tagung>
- ²⁷ <http://www.nibelungenlied.com>
- ²⁸ <http://www.hellerulmer.com/>
- ²⁹ <http://www.haraldmetzler.at/>
- ³⁰ There is a CD-Rom that you can order at: Gabriele.foissner@mlbc.at (it costs 10 Euro).
- ³¹ <http://members.aon.at/marianne-ewaldt/>
- ³² Those who find themselves on the way discover joy, movement and astonishment. They are surprised how much the labyrinth tells them about themselves and their relations. It is often reported that the labyrinth has a special power and that it is important just to keep moving. Again and again we feel a deep connection with other people, the labyrinth reveals old connections and is an archetype.
- ³³ Email: elisabeth.haemmerle@aon.at
- ³⁴ Including *The Fascination of the Labyrinth* – see his website: <http://www.labyrinth.at/candolini/>
- ³⁵ Some of these are traditional, but others are individual constructions.
- ³⁶ Haymon Publishing, 2002 - an anthology that includes interdisciplinary and international articles.
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Our regular round up of matters labyrinthine brings together short contributions and notes from Caerdroia readers, also items from the Archives that need further research, or simply deserve recording. Similar notes, and queries, are welcomed for future editions.

The Oldest Labyrinth in India?

John Kraft

In 1993, local people called the director of the Archaeological Survey of Goa in India, Dr Prakashchandra Shirodkar, to inspect a newly discovered rock surface, covered with carvings. He found an incredibly rich collection of ancient rock carvings on a large horizontal rock surface on the bank of the river Kushavati in southern Goa - see the illustrations opposite.

Much of the rock was buried, but once the overlying soil and vegetation was cleared away, more than a hundred carvings were discovered. According to the short description written for visitors to the site, there are altogether 118 motifs on the rock surface, the majority of them carved several centimetres deep in the red laterite rock. One of these figures is a big labyrinth of angle-type with eight walls, 285 x 264 centimetres in diameter, and cut between two and four centimetres deep in the rock surface. It is truly a beautiful and unusual example!

The location of this carved rock is not easy to find. The labyrinth has previously been described as being located at Pirla, but there is more than one village with that name in the neighbourhood. At the Museum of Goa, the place is described as "Pansaimal, Dhandalem area in Colomb village, near Rivona in Sanguem taluka". There is no proper road to the place, but it is possible to drive quite close to it on dirt tracks and over flat rocks. When I visited the site in January 2005, it took me several hours of driving around asking local people before I found a person who could help us to find the place. I was happy to see a young man, who also serves as a guide to the carvings, guarding it. But this is not a place that many tourists have yet discovered, and the previous visitors I could trace in the guest book had been there three days earlier!

The rock is situated very close to an abandoned iron ore mine, an enormous, wide hole in the ground with a small lake at the bottom. It is almost unbelievable that the strip mining came to a halt just a few metres from the rock carvings, and one wonders if other carvings haven't already been destroyed? This is a hilly and mountainous landscape, dominated by bush vegetation and some trees, far away from the fertile paddy fields closer to the coast. It really is in the 'middle of nowhere' and is not in an area where one would expect to find traces of early farmers, and the carvings give no hints of farmers or farming.



The labyrinth carved on a rock outcrop near Rivona in Sanguem taluka, on the bank of the river Kushavati, in Southern Goa, India.



Left: close-up, the labyrinth is 2.85 x 2.64 metres in diameter.

Below: two animals from the same rock.

Photos: John Kraft



On the contrary, the carvings are predominantly of wild animals, such as deer and the like. Undoubtedly with this in mind, Dr Shirodkar has suggested (“Stone Age Rock Carvings in Goa” *Nave Parva*, vol.31, 6-9, pp.10-15, Goa, 1998) that these carvings must be older than the Neolithic age, which starts c.2500 BCE in this part of the world. In the museum exhibition the carvings are dated to the Mesolithic era, c.8000-2500 BCE, and if the labyrinth carving is really that old, it might be the oldest in the world! However, I doubt that anyone can say for certain how old these carvings are.

A miniature of the whole rock with the carvings, made of concrete, is displayed in the garden of the Museum of Goa. Several photos and a sketch of the whole rock were published in an Austrian yearbook (*Indische Felsbilder III, Jahrbuch X, der Gesellschaft für vergleichende Felsbildforschung 1997/98*, Graz) by a group of rock carving enthusiasts who visited the location in 1996/97. However, as far as I know there is still no accurate, detailed documentation of the carvings. I think the next step should be to make detailed drawings of every carving, but that will be quite a job! It would also be interesting if experts could analyse how the deep carvings have been made. Were they really made with stone tools, or do they reveal the use of metal tools, and therefore a more recent origin?

A Labyrinth at Kurukshetra, India

Jeff Saward

Further to John Kraft’s note on the extraordinary labyrinth carving in Goa, another recent discovery (and thanks go to Gloria Ruano and Miguel Villalobos from Venezuela for bringing this to my attention) concerns a labyrinth to be found painted on a balcony in the Temple of Kali, at Kurukshetra, north of Delhi in the State of Haryana, in India. This is the legendary temple where the Pandavas went to pray to the Goddess Kali (Durga), before the battle detailed in the Mahabharata. It was at this battle that the magician Drona devised a troop formation known as “Chakra-vyūha” in the form of the labyrinth design. Depictions of this on temple carvings and in manuscripts are widespread throughout India (see my *Labyrinths & Mazes*, pp.60-66). The Temple at Kurukshetra is regarded by the Indian people as



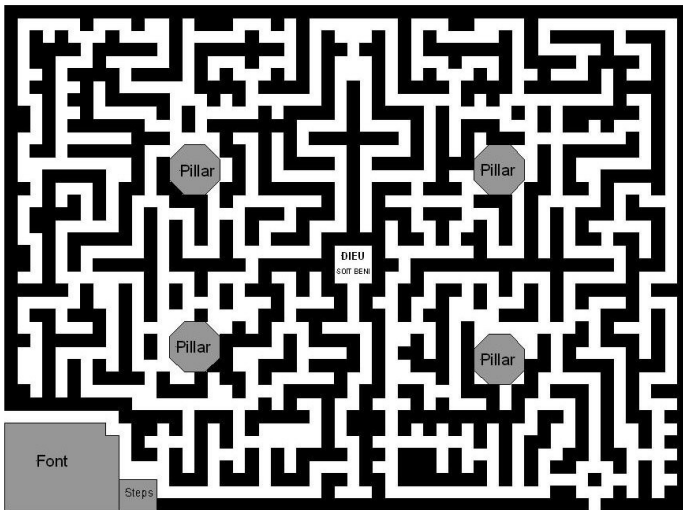
being at least 5000 years old, and while clearly the labyrinth painted in the balcony is of more recent origin, the connection between the site and symbol is evident.

The labyrinth painted in the Temple of Kali, Kurukshetra, India.

Situated some 32 km NE of Amiens, the church of St. Pierre in the small village of Mailly-Maillet has a curious labyrinthine floor, constructed of black and buff-coloured stone floor tiles, apparently first recorded by Paul de Saint-Hilaire in his book *L’univers Secret du Labyrinthe* (Laffont, Paris, 1992, p.180 & 182). Saint-Hilaire gives only a sketch of the central portion of the pavement, which includes an engraved slab bearing the inscription “Dieu Soit Beni,” as only the central strip is readily visible - the rest of the pavement being permanently covered with pews.

Created in 1927, when the church was restored following extensive damage during the 1914-18 War, the pavement fills the entire floor of the nave, covering a total area of 16.34 x 12.13 metres, and runs under the wooden entrance doorway structure that also supports the gallery at the back of the church. The tiles forming the pavement run around the base of the font, the steps leading to the gallery and the four pillars supporting the roof of the church. In addition, all of the bench seating and various items of church furniture and carpets further obscure the design, which to the best of my knowledge has never been mapped before.

During May 2005, while on a visit to the pavement labyrinths at St. Omer, Amiens and St. Quentin, Lisa Gidlow Moriarty, Kimberly Lowelle and myself resolved to spend a few hours in the church at Mailly-Maillet, with tape measure and graph paper in hand, to map and record the design. The result, given below, shows that while it has apparently been inspired by the design of the St. Omer labyrinth, much of the layout is little more than a meandering maze, with little coherent design as such. A curious and rather unique feature, it should perhaps be classified as a pavement maze, rather than a labyrinth, in future.



The curious labyrinthine pavement in the Church of St. Pierre, Mailly-Maillet, France.

Plan by Jeff Saward, 2005.

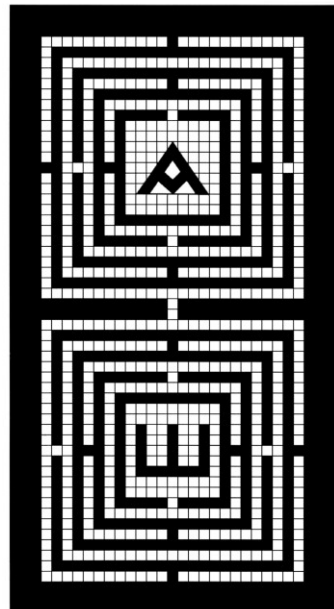
The Kruisvinding (Holy Invention of the Cross) Church on Breeplein in Rotterdam in the Netherlands has an interesting pavement maze, so far unrecorded in the literature. The church was built during 1926 & 1927 to designs made by the Rotterdam architect H.P.J. de Vries (1895-1965). The booklet (*60 Jaar H. Kruisvinding Parochie 1923-1983*) available in the church gives a good explanation of the floors:

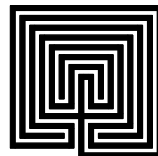
“The floors, in both church and priests’ choir, are covered with black and with grey tiles, in different patterns each and every time, produced by the firm of Villeroy & Boch in Merzig, Luxemburg. In the front part, right before the present altar, there is a separate tile-tableau with a maze pattern, in which have been incorporated the Alpha and Omega, representing how man's life is a search for Christ, who is the Beginning and the End of everything.”

Since no other names are mentioned in the booklet, it would seem that De Vries was probably also the designer of the floors, but I would be very cautious about definitively attributing the maze to him. Whether the maze in the floor was laid at the time the church was built, or at some later time, appears not be recorded. However, I suspect that the maze has been taken up and re-laid, quite possibly shortly after changes in Roman Catholic liturgy, decided by the Vatican Council of the 1960’s, which often entailed moving the altar, would have caused anything directly in front of the altar to be obliterated unless moved as well. Likewise, the exact date of this move may now be impossible to ascertain.

The size of the maze would originally - i.e. as in the original plans - have been 290 x 155 cm; as each tile is 5 x 5 cm, except in the broad band across the middle and in the outer edges of the even wider borders, where tiles are 10 x 10 cm, unless they have to be 5 x 10 cm for structural reasons. In its current condition, the upper border has been reduced to just a very narrow strip, of about 2 cm wide and I surmise that this reduction was concomitant with the relocation of the maze: At present, it is situated roughly halfway up the central aisle of the church, but I would imagine that originally it was positioned further forward, very close to the altar, where it was apparently previously situated.

The Pavement Maze, Kruisvinding Church, Rotterdam, Netherlands. Plan courtesy of Hansa Krijgsman, Frits Stuurman & Jan Vredenberg.





One of the joys of following the labyrinthine path is the fellow travellers one meets along the way, but one of the consequences of the length of the journey is the inevitable sadness of losing those companions. Here we remember the contribution of the remarkable Randoll Coate, foremost designer of symbolic mazes.

Randoll Coate

Randoll Coate, one of world's greatest maze designers who died on December 2nd 2005, aged 96, had three distinguished careers in his lifetime – in secret military operations across Europe during the Second World War, in the diplomatic service of the Foreign Office in peacetime, and finally in retirement, fulfilling his true passion for creating symbolic mazes by designing some of the most important and influential mazes of the late 20th century.

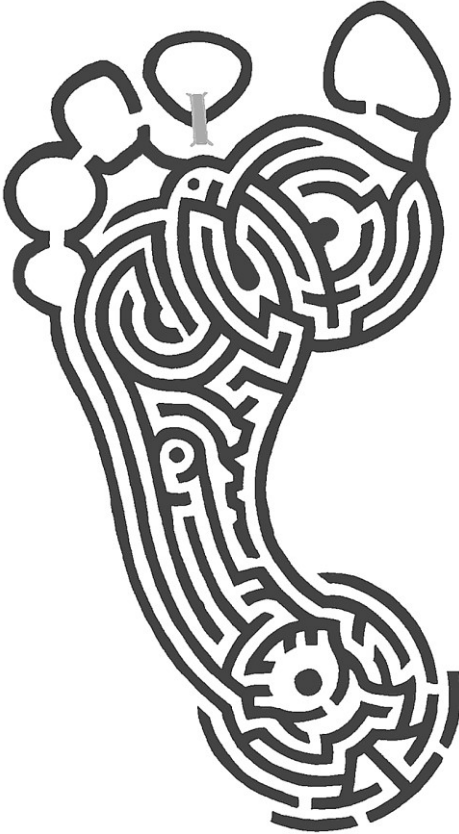
Randoll was born of British parents in Lausanne on 8th October 1909; from the College de Lausanne, he won a scholarship to read French and German at Oxford, before enlisting in a Cavalry regiment, which, he was disappointed to discover, no longer went to war on horseback. Because of his language proficiency, he was seconded to secret military operations and participated in commando raids in Norway, Greece and France. Towards the end of the war he helped to co-ordinate the military campaigns in Italy and the south of France.

With the return of peace he joined the diplomatic service of the Foreign Office, serving in Salonika, Oslo, Leopoldville, Rome, the Hague, Buenos Aires, Stockholm and Brussels. His final posting was as First Secretary in the embassy in Oslo. For his services Randoll was awarded the MVO by the Queen in 1966, and the Chevalier de l'Ordre de Leopold by King Baudoin in 1965.

After taking early retirement in 1967, Randoll devoted himself to his true passion of designing symbolic mazes. He saw the maze as a paradigm of life and as a reflection of human longing to reduce life's confusions. Working alone and in partnership with the maze designer Adrian Fisher, he created more than twenty mazes around the world, and prepared detailed designs for dozens more, some of which still may be realised. Never compromising on design quality, the sheer volume and diversity of his mazes in the landscape was unprecedented.

His first commission, in 1975, was a 57x29-metre 3,000 bush yew hedge maze entitled "Imprint" in a private garden in Gloucestershire. Laid out in the form of a giant footprint, scaled to the size of a man as tall as the Eiffel Tower, one toe of the design forms a small island in the adjacent river.

Plan of Randall's "Imprint" maze, 1975.



As many of his subsequent maze designs were for private clients, they have tended not to draw the publicity that other installations attracted, but he was, however, both prolific and highly influential upon other designers in this arcane field.

His "Creation Maze" planted in 1979 at Falconberg, Sweden, contained within the outline of a Falcon's egg, The Garden of Eden as its theme, with men entering by a separate gate to women and the two only meeting up in the centre of the maze.

Working with Adrian Fisher between 1979 and 1986, and also with Graham Burgess, he designed the Archbishop's Maze at Greys Court, near Henley, created to commemorate the maze metaphor Robert Runcie employed in his enthronement address when he became Archbishop of Canterbury in 1980.

During this period he designed the Marlborough Maze at Blenheim, the Roxburgh Maze at Floors Castle, and the Leeds Castle Maze, all traditional hedge mazes in the British Isles, as well as providing the design for the central mosaic of the Bath Festival Maze.

Subsequently he went on to design the Sun Maze and Lunar Labyrinth for Lord Bath at Longleat, several impressive installations for private clients in Europe, the Millennium Maze for the Borghese Gardens in Rome, Italy, and the memorial maze in Buenos Aires, Argentina, for his friend Jorge Luis Borges.

Inspired by Borges' short story "The Garden of Forking Paths," Randall used smooth stones to pick out in Braille the blind writer's celebrated quote that a book and a labyrinth are one and the same.

Randall's Sun Maze & Lunar Labyrinth, created for Lord Bath at Longleat House, England, 1994.

Randall pioneered and excelled in the art form of the Symbolic Maze. By his work and his achievements, he has furthered the maze as a valid landscape art form.



His designs abound with symbolism in every conceivable way, from their outline shape and the internal patterns of paths and barriers, to numbers and proportions, hidden meanings, verbal allusions and puns. His ultimate passion was creating gigantic mazes; in an era when so much landscape and garden design was of necessity becoming ever smaller in scale.

In 1986 Randall wrote “Seven Golden Rules for making a maze”, which combined his passionate enthusiasm, ambitious optimism and canny wit that were rarely far from the surface. His seventh rule stated: Do not allow the cost of the maze to cloud your enjoyment of a creation which will bring pleasure to young and old for generations to come. You will have given our world of harsh reality and mindless speed a timeless oasis, a leisurely paradise, the substance of a dream.” So did his life.

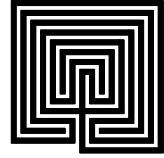
In 1955 he married Pamela Dugdale Moore, a painter, in the Benedictine Abbey of Pluscarden in Moray, where he was later received into the Roman Catholic Church and where he is buried. He died serenely at his family home in the south of France on 2nd December 2005, and is survived by his wife and two daughters.



Randall at work in his studio, c.1988.

Edited by Jeff Saward, with words provided by Adrian Fisher, Allan Shiach and the Daily Telegraph, reproduced with thanks.

The Labyrinth Society



Kimberly Lowelle Saward

The Labyrinth Society, affectionately known as TLS, was founded in 1998 to support all those who create, maintain, and use labyrinths and to serve the global community by providing education, networking, and opportunities to experience transformation. Though it is based in the United States, it is an international organization with members all around the world.

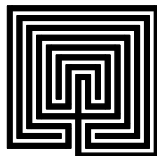
TLS stages an annual Gathering and Conference in the USA each fall; in 2005 it was held in Lenox, Massachusetts, in November 2006 it will be in San Antonio, Texas. These Gatherings are an opportunity to meet with fellow enthusiasts from around the world and participate in a weekend of labyrinth-related presentations, workshops and activities. Additionally, smaller regional events are occasionally held to help promote the Society and support local enthusiasm. Following the success of our 2002 event in Glastonbury, England, another UK regional event was held on May 21-22, 2005, at Breamore in Hampshire, England, home of the historic Mizmaze turf labyrinth. Some 50 people, from 12 different countries, attended this splendid weekend of labyrinths.

In addition to these opportunities to meet with others who share an interest in things labyrinthine, TLS strives to serve the global community by maintaining an extensive website: **www.labyrinthociety.org** with information about labyrinths and their use in various settings, labyrinth references, resources, and events. There is even an opportunity to experience a virtual walk on various labyrinth designs. Technology, without a doubt, has certainly impacted the recognition, appreciation, and integration of the labyrinth symbol!

TLS, in co-operation with Veriditas from San Francisco, also maintains an online database of labyrinths, the **Worldwide Labyrinth Locator** (WWLL), to provide information about the multitude of labyrinths, new and old, that are found around the globe. This user-friendly database allows individuals to upload information about their local labyrinths, public and private, and a picture and website link can also be included. The database can then be searched by anyone with access to the Internet. Jeff Saward is the administrator, assuring a high level of accuracy and consistency, and the WWLL already has over 2000 labyrinths listed, with more being added each week. It can be accessed through the website of either organization: **www.labyrinthociety.org** or **www.veriditas.net**

For more information about The Labyrinth Society, visit their website or write to The Labyrinth Society, PO Box 736, Trumansburg, NY 14886-0736, USA.

Kimberly Lowelle Saward Ph.D; TLS President.



Review copies of maze and labyrinth related books, publications and CD's, etc., are always welcome for inclusion in future editions of Caerdroia.

Mazes and Follies : by Adrian Fisher. Pitkin, Jarrold Publishing: Norwich, England, 2004. ISBN 1-84165-142-7. Hardback, 80 pages, many colour photographs. UK £9.99.

Mazes and follies, quirky structures to be found in parks and gardens, are natural bedfellows, and are often consigned to the same chapter in studies of garden design and architecture. This colourful little guide, produced in the Pitkin "Pleasures & Treasures" series, is big on pictures of both mazes and architectural follies, and also has a concise text to link them. The majority of examples covered in the book are situated in England, and with Adrian Fisher's authorship, obviously many of the mazes are his creations – splendid as they are. I would have liked more information on how to visit the locations mentioned and illustrated in the book, but apart from this minor gripe, this is a charming little book that would make an ideal gift, or souvenir of a visit to England for the tourist, which is, after all, the market for which this title is clearly intended.

The Complete Guide to Labyrinths and Mazes : by Cassandra Eason. The Crossing Press: Berkeley, California, 2004. ISBN 1-58091-126-9. Paperback, 328 pages, black & white diagrams. USA \$14.95, UK £10.99.

Any book claiming to be a "complete guide" on the front cover is clearly setting itself a difficult remit, and the author's bio on the back cover shows that she has also written similarly titled "complete guides" on psychic development and divination amongst the 50 or so titles she has written over the years. Her book on labyrinths is essentially a handbook for creating and using labyrinths in a variety of contexts, and this aspect of the work is packed with a considerable number of novel and interesting ideas, based on her neo-pagan/new age background, and is peppered with entertaining and anecdotal accounts of her visits, and those of others, to labyrinths, mostly in Southern England and Northern France.

However, as is so often the case with books of this nature, the historical asides that are presented alongside this material are often rather misleading and based on the assumptions and misconceptions that surround the subject. Some of these facts, presented without any references, should be taken with a considerable pinch of salt - the usual romantic preference for a Bronze Age origin for the Rocky Valley labyrinth rock carvings; the idea that the labyrinth in Ely Cathedral may have been "re-created" in 1870; the claim that the Saffron Walden turf labyrinth is the most ancient of its kind in England (when in fact it is probably one of the later examples) and some very spurious information about "Celtic labyrinth stones" - whatever they may be. As a guide to pagan-themed usage of labyrinths for the modern day practitioner, this work is both useful and entertaining, but I would urge readers to be very cautious about quoting any factual material from this book without checking a more reliable source of information first.

Jeff Saward

The Unending Mystery – A Journey Through Labyrinths and Mazes : by David Willis McCullough. Anchor Books: New York, 2005. ISBN 1-4000-3164-8. Paperback, 262 pages, black & white photographs and illustrations. USA \$14.

David McCullough is an accomplished writer, with a string of fiction, non-fiction and anthologies to his credit, and this background clearly shines through in his “journey through labyrinths and mazes.” Opening with the line that “Even the newest labyrinth has a past,” the author starts by questioning just what is it about the labyrinth that has fascinated so many people for thousands of years? He then explores, in a series of interlinked chapters, the long history of labyrinths and mazes, with numerous illustrations, historical examples and literary quotations, all written in a style that is both readable and entertaining, and also reliable in its presentation of facts and figures. It is clear McCullough has done his homework, the acknowledgement pages of those he consulted and interviewed in the lengthy process of writing this book reads like a veritable “who’s who” of the maze and labyrinth world. Likewise, his bibliography contains just about all of the obvious titles that one should read to become familiar with the major source materials.

While the author’s concise summaries of the long and complex phases of labyrinth history are a pleasure to read and contain a number of useful interpretations, for this reviewer, it is the closing chapters that focus on the modern revivals of both mazes and labyrinths, which are by far the most incisive. With quotations from many of those involved, appended with McCullough’s observations, these chapters provide a previously unwritten insight into the driving forces and characters behind this matter.

Along with all of this factual material, are numerous, often humorous, remarks by the author, which punctuate the text with many memorable moments, although this is not, by its very nature, a book to read as a source for factual reference. Instead I would heartily recommend it as the ideal introduction, indeed I would suggest it should be compulsory reading, for those wishing to learn about the history and purposes of mazes and labyrinths, in both ancient and modern times, before going on to weightier tomes.

Jeff Saward

The Spirituality of Mazes & Labyrinths : by Gailand MacQueen. Northstone: Kelowna, BC, Canada, 2005: ISBN 1-896836-69-0. Hardback, 128 pages illustrated in colour. USA \$30, Canada \$37.

Based in Ontario, Canada, and with a background in educational theory, philosophy, and theology, Gailand MacQueen’s engaging study of the more philosophical and spiritual aspects of labyrinths (and mazes), is both a pleasure to read and browse for its illustrations and ideas. The book itself is beautifully produced with many colour photographs and contains a number of useful demonstrations of how to construct labyrinths and mazes, suggestions for how to use them with both adults and children, and a resources section with recommended further reading and websites, etc. A short section on needlepoint and cross-stitch labyrinth designs is a quite unique addition to books on the subject. With a number of historical interludes and recollections of the author’s visits to memorable locations, this book provides an interesting and colourful read. An ideal and recommended introduction for church, and other spiritually inclined groups and individuals, wishing to learn more about the labyrinth and its possible applications.

Jeff Saward

Keeper of the Circles: Answering the Call to Wholeness : by Toby Evans. SageBrush Exchange, Missouri, USA, 2005. ISBN 0-9762728-0-6. USA \$22.

In 1995 Toby Evans created a huge labyrinth, 166 feet across, in a field of tall prairie grass on her property in Missouri, and has tended it ever since. Relating her personal story of constructing the labyrinth, the author describes the transformation that occurred during the process, her evolving relationship with the labyrinth and invites others to embark on their own labyrinthine journeys and offers guidance for the path ahead. The book is packaged with a CD of the author performing 11 of her original songs.

Kimberly Lowelle Saward

Chakra Labyrinth Cards : by Toby Evans. SageBrush Exchange, Missouri, USA, 2005. ISBN 0-9762728-1-4. USA \$32.95. Details from www.chakralabyrinth.com

Also by Toby Evans, these cards and accompanying booklet combine the principles of labyrinth walking with the Chakra system, drawing elements from a number of spiritual practices. The 55 cards, corresponding to intention, integration and centering, are intended to be used either as oracle cards or in combination with the chakra-coloured finger labyrinth embossed on the box. Colourful and intriguing.

Kimberly Lowelle Saward

Making The Santa Rosa Labyrinth : by Lea Goode Harris Ph.D. The Santa Rosa Labyrinth Foundation, California, USA, 2005. ISBN 0-9762054-3-2. Illustrated booklet, details from www.srlabyrinthfoundation.com. US \$25.

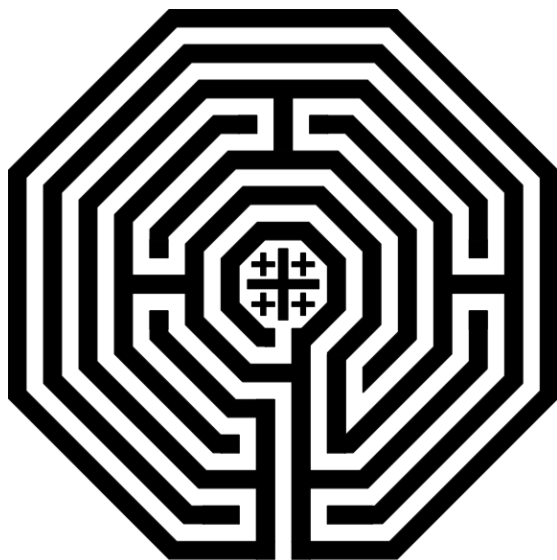
Amongst the many 'new' labyrinth designs to have appeared in recent years, one of the more popular is the Santa Rosa design, a 7-circuit medieval labyrinth, better suited to installing in smaller places or with wider paths, than the full 11-circuit Chartres version. Created by Lea Goode-Harris of Santa Rosa, California, this booklet provides practical advice and suggested measurements for the construction of labyrinths of this type. Lea has also produced several other booklets, including the charming children's story, *Ladybug Labyrinth: a journey home*, written to accompany her hand painted canvas finger labyrinths. Details of all of these publications can be found on her website.

Kimberly Lowelle Saward

Amazing Mazes : Reader's Digest, USA, 2005. ISBN 0-7621-0676-X. Hardback, 16 pages. US \$19.95.

This short but factual introduction to mazes and labyrinths is geared to the younger reader, but will be enjoyed by anyone who is young at heart. There are 7 colourful and interactive 3-dimensional mazes fitted into the covers of the book, which challenge the reader to navigate between them by guiding a small ball along the meandering paths. Illustrated with many colourful pictures and diagrams, the book also contains a short list of some of the best mazes around the world to visit and websites for further information. Ideal for a school project or a child with a growing interest in mazes and labyrinths.

Kimberly Lowelle Saward



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