



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

Fakulteten för landskapsarkitektur, trädgårds-  
och växtproduktionsvetenskap

# A spatial analysis of three Italian renaissance gardens

- A field study of Villa Gamberaia, Villa Lante and Villa Medici at Fiesole

En rumslig analys av tre italienska renässansträdgårdar

- En fältstudie om Villa Gamberaia, Villa Lante och Villa Medici i Fiesole

*Camilla Göller*



Självständigt arbete • 15 hp  
Trädgårdsingenjör:design - kandidatprogram  
Alnarp (2015)

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## Foreword

This paper is a bachelor work in Landscape Architecture submitted at the Swedish University of Agricultural Sciences. *A spatial analysis of three Italian renaissance gardens* is the result of a field study conducted by myself in Italy during summer 2015. Examiner is Åsa Klintborg Ahlklo, researcher and lecturer at the Department of Landscape Architecture, Planning and Management.

I would like to thank course leader Frida Andreasson, for helping with practicalities and coordinating, and my family and friends who have supported me through out the whole process. A special thank goes to my coach Åsa Ahrlund for her patience, time and good advice.

SLU Alnarp,  
2015-08-30

Camilla Göller

## Abstract

*A spatial analysis of three Italian renaissance gardens* is a bachelor thesis in Landscape architecture at the Swedish University of Agricultural Sciences in Alnarp. The intent is to do a spatial analysis of Italian renaissance gardens and their underlying structures to see if this can provide guidance in creating interesting garden design. The hypothesis is that underlying structures of Italian renaissance gardens can shape the experience in predictable ways. To investigate the hypothesis, two research questions are posed: What can be learned by studying underlying structures of Italian renaissance gardens in terms of guidance in creating interesting garden designs, and what, if any, underlying structures of Italian renaissance gardens evoke specific emotions. This is an exploratory field study drawing on personal experiences of three gardens: Villa Gamberaia, Villa Lante and Villa Medici at Fiesole. Central concepts studied are static and dynamic space, openness and closeness, divisions and links, direction and geometry, scale and proportion. In this paper, support for the hypothesis is found as each of these concepts in practice can and do evoke a whole range of specific emotions, like exhilaration, comfort et cetera.

## Sammanfattning

*A spatial analysis of three Italian renaissance gardens* är ett kandidatarbete inom landskapsarkitektur vid Sveriges Lantbruksuniversitet i Alnarp. Avsikten är att studera italienska renässanssträdgårdar för att se om de kan vägleda i skapandet av intressant trädgårdsdesign. Hypotesen är att underliggande strukturer i italienska renässanssträdgårdar kan forma upplevelsen på förutsägbara vis. För att undersöka hypotesen ställs två frågeställningar: Vad finns det att lära genom att undersöka underliggande strukturer hos italienska trädgårdar i form av vägledning i skapandet av intressant trädgårdsdesign, och, vilka, om några, underliggande strukturer i italienska renässanssträdgårdar kan väcka specifika känslor. Detta är en explorativ fältstudie som bygger på personliga erfarenheter av tre trädgårdar: Villa Gamberaia, Villa Lante and Villa Medici vid Fiesole. De centrala begrepp som studeras är statiska och dynamiska rum, öppenhet och slutenhet, avgränsningar och kopplingar, riktning och geometri, skala och proportioner. I det här arbetet har stöd för hypotesen hittats då varje koncept i praktiken väcker en hel rad av specifika känslor såsom upprymdhet, komfort med mera.



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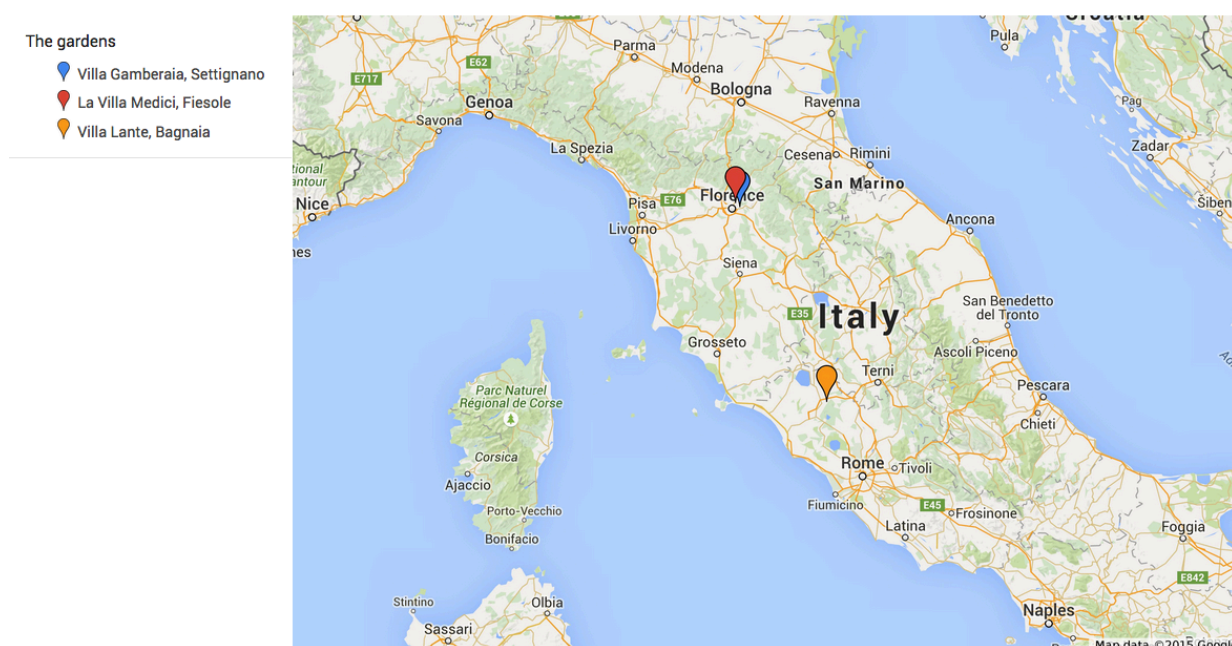
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# Introduction

The opportunity to visit great gardens in Italy this summer (2015) and my passion for Mediterranean gardens form the basis for the theme of this paper. My studies at SLU have made me aware of how important it is to study historic gardens in order to design more thoughtful gardens.

In this paper, I look at Italian renaissance gardens, how they are built and their underlying structures. More specifically, I examine the underlying structures using a set of concepts related to spatiality. When I design a garden the hardest part of it is dividing the given ground into a composition of spaces that form the underlying structure. Hopefully studying Italian renaissance gardens that have been around for a long time and still fascinate us, can provide guidance in creating interesting underlying structures in my own design work. Italian renaissance gardens were chosen as renaissance architecture is heavily dictated by formal rules of geometry and proportion, i.e. concepts defining the underlying structures. (Van der Ree et al, 1993, p. 12)

I traveled through Italy starting in the north in Milan, from where I visited the lakes. After which I continued to Verona, Padova, Florence, Siena, Viterbo, Rome and Napoli.<sup>1</sup> Due to the scope of this paper, I chose to include only three gardens: Villa Gamberaia, Villa Lante and Villa Medici in Fiesole. The gardens were chosen as they have intriguing aspects, are relatively small and well preserved in beautiful condition today. They all have the added benefit of being well documented.



**Figure 1** The gardens, Italy: locations of the three gardens I chose to include in this paper (Google Maps, 2015)

<sup>1</sup> For the complete travel map and list, please see the appendix.

## **Hypothesis and research questions**

I believe that a sustainable garden should not only be environmental friendly, but should have a lasting design too. Italian renaissance gardens are still very appealing and continue attract visitors from around the world leaving them in awe. I think this is because their designs and underlying structures reach us subconsciously. My hypothesis is therefore: underlying structures of Italian renaissance gardens shape the experience in predictable ways.

To investigate the hypothesis, two research questions are posed: (1) What can be learned by studying underlying structures of Italian renaissance gardens, in terms of guidance in creating interesting garden designs and (2) what, if any, underlying structures of Italian renaissance gardens evoke specific emotions.

## Method

I have done a field study in Italy and chose to visit gardens from the renaissance era, e.g. Villa Gamberaia, Villa Lante and Villa d'Este just to mention a few. I visited all the gardens in similar manner to be able to compare them. First I walked through them, noting how I reacted to and felt about the different spaces of the garden. Following this, I revisited the garden, using a map if available, to observe the details relating to a set of theoretical design concepts and their elements.

The concepts and elements that I chose to study are based on Catherine Dee's definitions on morphology from her book *Form and Fabric in Landscape Architecture* (2001). To describe the dynamic space I use Arne Branzell's (1976) report to the National Council for Building Research in Sweden to understand the meaning of space bubble. I chose to base my definitions on theirs because I found their work most applicable for my research questions, and because I like the idea of using modern interpretation on landscape structures to study timeless renaissance gardens. The concepts I chose are: static and dynamic space, openness and closeness, division and links, direction and geometry, scale and proportion.

Thus, this is an exploratory field study with some phenomenological aspects, as I draw on personal experiences of the spaces. I also explore the research questions by reviewing available literature and articles about underlying structures and the historic gardens of the Italian renaissance, and link my findings from experience to theory.

I have structured this paper to contain an introduction and method section, parts where I describe the renaissance art period, history of the gardens and define central concepts. In the analysis section I examine and compare the gardens and finally I conclude with a discussion of my findings and what I will take with me for future design projects.

## Art period

The renaissance era started in the fifteenth century in what today is Italy. The people on the Italian peninsula were constantly reminded of the former greatness of the classical antiquity by the omnipresent ruins, and this inspired them to rediscover the ideas and ideals of the era. The Medici family sponsored the Platonic academy where the elite went to discuss renaissance humanism that included literature, architecture, history and philosophy of the classical era. A well studied work was Vitruvius' *Ten books on architecture* from year zero. The classical ideal of perfecting both mind and body, through exercise and studying, became the role model once again. It was argued that man should discover and study the world where he was born. At the time the focus shifted from god to human in center. (Blennow, 2009, p. 101-2)

Vitruvius way of looking at the human body, became a foundation for using proportional systems. Nature created the human body with parts that are harmoniously proportional to the whole, which led him to the conclusion that architecture should be based on exact proportions. (Nygaard, 2011, p. 76)

Leon Battista Alberti was a so called *uomo universale*, someone with proficiency in many fields such as art and mathematics. As his peers, he too was inspired by Vitruvius and wrote books, like *De re aedificatoria* on architecture. In *De pictura* he developed new methods using central perspective, which became essential for the renaissance period. (Blennow, 2009, p. 101) Alberti's concept of beauty is based on consistent use of simple proportions to create harmony. (Nygaard, 2011, p. 78)

As Vitruvius did not write much about gardens, it is likely that Alberti was inspired by the classical natural scientist Plinius in describing what to include in a garden. Alberti emphasizes where to build a private villa: up on a mountain on a sunny site with good water access and with a view over a city, coast or mountains. The villa should be recognizable from far away and have a pleasant breeze. He also states that a garden should contain half-private places, somewhere to take a walk, swimming pools, loggias, spaces in sun and shade and party sites. Geometric forms should be added to the garden that correspond to the house, like circles, half-circles and squares and the trees should be planted in *quincunx* form, i.e. five objects forming a square with four in each corner and one in the center. Stone urns and fountains should serve as eye catchers and comical statues should decorate the garden. (Blennow, 2009, p. 102-3)

A villa was an extension of urban properties, i.e. *palazzos*, on the countryside where the aristocracy owned land, had agricultural activities and used it as a country house. Villa architecture was therefore a new independent genre that was derived from *palazzos* and farms. These houses were usually smaller and the garden played a bigger role, where architects tried to bring in nature and surroundings. But this was not new, it was also typical in Ancient Rome where villas usually also were built on the countryside at beautiful sites preferably next to thermal spring. (Schnadelbach, 2009, p. 14) These villas were built for enjoying country life and nature, which also was a beginning of cultural ideal of rural life during renaissance called *villeggiatura*. (Van der Ree et al, 1993, p. 15)



## The history of the gardens

In order to understand the underlying structures, the history of the gardens is important, as some designs may have changed over time.

### Villa Gamberaia, Settignano

Villa Gamberaia is a Florentine renaissance villa in a small village called Settignano north of Florence. In the fourteenth century, a farmhouse was built on land by the convent of San Martino a Mensola. The owner, Matteo di Domenico changed his surname to Gamberelli during the fifteenth century, which also is the origin of the name of the villa and comes from the word *gamberi*, which is crayfish that can be caught in fresh water ponds in the area. He had four sons, two of which became famous architects and sculptors, Antonio and Bernardo, better known as Bernardo Rossellino, taught by Leon Battista Alberti. (Villa Gamberaia, 2015)

Zanobi Lapi was a businessman dealing with textiles from Florence. He bought the house in the seventeenth century and built what today is considered as the main part of the house and the chapel, on pre-existing foundations. His two nephews constructed the garden from 1624 to 1635. (Landscape Architecture Study Tour, 2010) in the same state that we see today: a fountain system, a division of the garden into the main areas and the bowling green, also known as *viale*. (Villa Gamberaia, 2015) The bowling green is the long axis reaching from north to south. It is a garden avenue, a place that was used for playing *palla e corda*, i.e. real tennis. Substantial information is hard to find from this period, but some descriptions are found in the 1717 notarial act for the change of ownership from Lapi to Capponi. (Caputo, 2002, p. 56)

The Capponi family was a wealthy Florentine family earning their wealth from mercantile and banking activities. They are often compared with the notable Medici family. (Palazzo Capponi All Annunziata, 2015.) There are many well preserved documents from this time, showing how the estate looked like. The oldest one, the *cabreo* from 1718-25 dedicated to Scipione Capponi, is “an atlas of the agricultural properties belonging to the landed aristocracy or to secular and religious institutions”. The *boschetti*, or ilex woods, the upper terrace with its lemon house, garden and olive groves, the statues, busts of the four seasons, and urns in the grottoes and garden walls can all be found in these documents. (Caputo, 2002, p. 56)

On the map the *paretaio* is clearly recognizable, an area for hunting small birds. The architecture of the house and the embroidered parterre with its oval-shaped rabbit hutch at the very end are both

illustrated in detail. At the bottom of the map there is a perspective illustration showing the *Facciata laterale del Gabinetto rustico ad uso di Grotta*, the stair construction on the east-west axis, the cypress avenue and the *nymphaeum* on the north-south axis, i.e. the end of the bowling green. (Caputo, 2002, p. 56)

On etchings created by the famous artist Giuseppe Zocchi dedicated 1744 to Scipione Capponi, one can see the little road from the small village Settignano and the tunnel that goes under the bowling green and the cypress avenue, and the oval entrance gate. All still remain the same today. On the other etching the villa's facade viewed from further up the street is recognizable. The terrace, the entrance cypress avenue and the two other buildings, including the chapel are also seen. (Caputo, 2002, p. 56-9)

In nineteenth century, the villa was passed on to the d'Outreleau Family and in 1896 to princess Johanna Ghyka, sister of queen Natalia of Serbia. She did the last alterations to the garden with the architects Martino Porcinai and Luigi Messeri. Together they created the famous water parterre, where the former embroidered parterre was. The evergreen and architectonic character, the topiary, was later created under the American-born owner Matilda Cass Ledyard, baroness von Ketteler. Other than that, the villa and its garden have not changed much since the time of Capponi (Caputo, 2002, p. 60).

At the beginning of the nineteenth century, it became very important to Americans to study Italian villas of the sixteenth and seventeenth century and the American Academy in Rome was established. Many came to study architecture and landscape architecture. Articles with illustrations, drawings, photographs and plans were published and Villa Gamberaia got a lot of attention. One of the most important works published was written by Edward G. Lawson in 1918, assistant professor of landscape architecture at Harvard. (Caputo, 2002, p. 61-2)

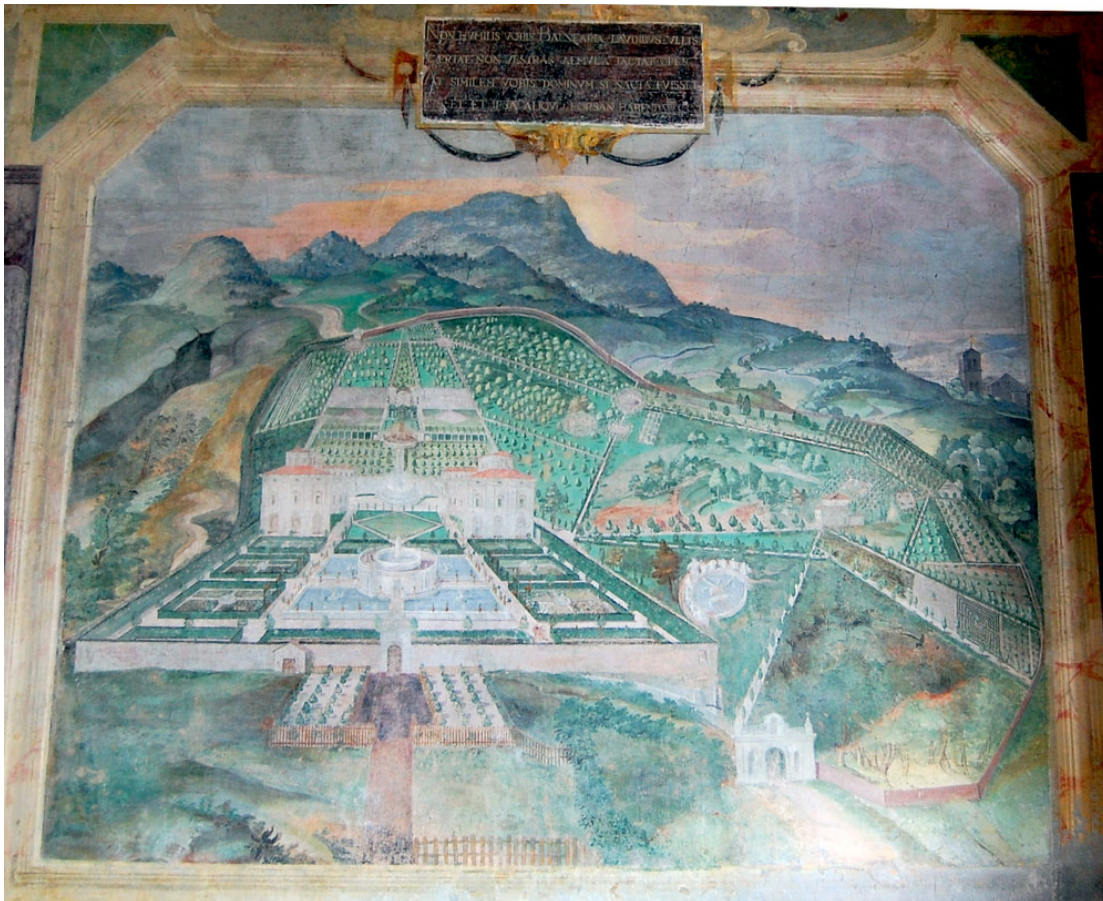
The villa was partly destroyed during the Second World War. Marcello Marchi and his wife, Nerina von Erdberg, acquired the villa in 1954. Together they carried out a major, careful restoration. Their daughter inherited the villa in 1966 and after her passing in 1998, her husband Luigi Zalum continued the work of conservation and restoration. (Villa Gamberaia, 2015)

### **Villa Lante, Bagnaia**

Villa Lante started as a hunting park in 1514 for cardinal Raffaele Riario when the city Bagnaia belonged to the bishop of Viterbo, two cities just north of Rome. Cardinals and bishops created

Villa Lante over a period of over 60 years. Around 1523 the hunting lodge was built by bishop Ottaviano Visconti Riario. Cardinal Niccolò Ridolfi had the aqueduct built in 1549 to provide water to a public fountain and to the hunting park. Cardinal Gambara started to build the garden with the famous architect Jacopo Barozzi in 1566. The architect, also known as Vignola after his birthplace, was at the time working on the garden of Villa Farnese at Caprola. Vignola was one of the most influential architects in the Italian renaissance and mannerism. Vignola died before the completion of the garden, but the architect and hydraulics expert Tommaso Ghinucci finished it. (Lazzaro, 1990, pp. 243-6)

Cardinal Gambara passed away before the completion in 1587. At that time only one of the two *casinos*, country houses, was completed. In the completed casino a fresco dated 1578 details the garden and both the casinos, including the unbuilt one. It is likely that the fresco painter had access to the plans, which must have been lost later. (Lazzaro, 1990, pp. 248-51)



**Figure 2** Villa Lante: fresco of the garden in the right-hand casino dated 1578 (Photo: Camilla Göller, 2015-06-30)

The villa passed many owners before it was completed in the first decade of the seventeenth century. In the documents of transfer it is stated that the owner had to complete, repair and restore the property according to the initial designs. The earliest printed evidence is an engraving made by

Tarquinio Ligustri in 1596 on which it can be seen that not much has changed since that time. (Lazzaro, 1990, p. 248)

Pope Alexander VII passed the villa on to Duke Ippolito Lante in 1656 and it remained with the Lante family until 1953 when it was purchased by the Società Villa Lante. The villa became property of the Italian state in 1973. (Lazzaro, 1990, p. 269)

### **Villa Medici, Fiesole**

The Medici family was a very influential Florentine banking family for centuries – the Medici bank was the biggest bank in Europe during the fifteenth-century. The Villa Medici at Fiesole was built between 1451 and 1457 by the Florentine architect Michello Michelozzi for the banker Giovanni de' Medici. He also built the palazzo Medici in Florence. Villa Medici is one of the earliest renaissance estates and is built on a site much like one Alberti recommends in *De Re Aedificatoria*. The book was published after works on the villa had started and the villa became a muse for other buildings. The Medici family owned the villa for about two hundred years. (Chatfield, 1988, pp. 108-10)



**Figure 3** Villa Medici: Medici coat of arms (Photo: Camilla Göller, 2015-06-26)

A fresco by Domenico Ghirlandio in the Santa Maria Novella church in Florence shows how the original villa and garden might have looked like. The loggia has four arches and the terraces are visible too, although not the same size as today. (Van der Ree et al, 1993, p. 61)

In 1671 the villa was sold to the Del Sera family, after that, the villa had numerous owners, both Italian and English, under which the villa underwent some changes, mostly enlargement and redecoration of the house. (Chatfield, 1988, p. 110)

The villa was owned by Lady Orford in 1770-80 when, with help of the architect Paoletti, the upper garden was extended and the lemon house and the *belvedere* added. The two paulownias trees in the garden are also from this time. (Villa Medici, 2004) The villa was passed on William Blundell Spence in 1850, who enlarged the drive. (Van der Ree et al, 1993, p. 61) Later by turn of the 20<sup>th</sup> century, Lady Sibil Cutting carried out work in the lower garden with the pergola and modified the secret garden to the west. (Villa Medici, 2004) Aldo Mazzini bought it in 1959. His widow is the current owner. (Van der Ree et al, 1993, p. 61)

## **Concepts and elements**

In this section I define concepts and their elements that form the underlying structure. Central concepts are static and dynamic space, openness, divisions and links, direction and geometry, scale and proportion. The elements are subordinate physical building blocks of the concepts. These chosen concepts are the main tools used in the analysis and form the basis for understanding how the underlying structures affect the visitor and evoke emotions. The concepts are sometimes overlapping to a degree and can share elements.

### **Static space**

The easiest and most obvious definition of space is an area characterized by three physical static elements: floor, wall and ceiling where its borders define the space. In landscape architecture elements like trees, sky or constructions such as pergolas, form the ceiling. Vegetation and landmarks form walls and ground creates the floor. These elements Dee (2001, p. 35) argues “can be thought of as a basic palette of spatial design”. Built walls provide sculptural aspects, texture, seclusion, shade or absorb sun. They can function as backdrops, places for art or for vegetation to grow on. (Dee, 2001, p. 72-3)

### **Dynamic space**

Another way of defining space can be done, as Arne Branzell (1976, pp. 19-20) explains, by looking at space as a sort of space bubble. In this case space is dynamic and defined by the viewers emotions and perceptions about it. This bubble can vary in size depending on how strong someone feels to certain orientations in space. A space can therefore be around an element in focus like a fountain, a large tree, a landmark or even two people meeting. Branzell (1976, pp. 19-20) argues that for every space situation there is a predetermined bubble that changes with perception of the current space.

Foci can be used to attract someone into spaces. If a focus is in the center it communicates symmetry and stability, unity and hierarchy. Something off-center is more dynamic. (Dee, 2001, p. 148-9) Water as a focus can also attract people into a space by the movement, texture, light, sound, reflecting effects, and on warmer days by its coolness, it can also evoke emotions depending on its state. Historically, fountains were a sign of wealth and power. (Dee, 2001, pp. 76, 167)



## **Openness and closeness**

How open or closed a space is perceived can be controlled by how a space is designed with elements such as floor, wall and ceiling. A closed space in a garden can be perceived as secure and private, but in a public situation perhaps unsafe and threatening. Walls on two sides can enclose a space that generates a loose enclosed environment, if it encloses on three sides the more private and restricted the space becomes but allows overlook and refuge. Enclosure on four sides creates a closed space. Depending on the height of the wall elements, a space can be perceived as claustrophobic if they are too high, or dull if too low. A closed space usually tend to be more shady and cooler, and an open space sunnier and warmer. (Dee, 2001, p. 42)

## **Divisions and links**

An edge is a divider where two spaces meet with different character or function and support diverse human use. The gradient transition of two spaces can either be hard or smooth. Harder edges are more formal and symmetrical, while smoother edges are simple, continuous, and have thicker gradients. The edges can be rhythmical, have sequences along their length or repeat in texture, form and color to bring excitement. Edges are defined by elements such as steps, walls, paving varieties, hedges, shrubs, columns, and trees. (Dee, 2001, pp. 115-43)

Unlike edges, thresholds are small spaces between spaces, a space that prepares or acclimatizes you for the next space. Here you wait, rest, arrive, leave, greet, contemplate or change. If thresholds are well designed they should surprise and provide visual and physical integration, e.g. linking outside and inside. These are for example windows, gateways, canopies, plinths, both in and out, half private and half public. (Dee, 2001, pp. 170-87)

Terraces can link landscapes with architecture and enlarge living spaces. A terrace is either a higher or lower flat space level that is created either by constructing or excavating land. Depending on scale, size and arrangement, terraces can either excite if revealing or balancing natural typographies, or dull a landscape if they are over-scaled or not arranged harmoniously. (Dee, 2001, p. 60)

## **Direction**

Paths play an important role in the landscape; they link spaces and can dictate the visitor to follow a predictable direction. Paths do not necessarily have to be spaces for travel, but can also serve as spaces to stay in. Travel on its own can also be pleasant and enriches the kinetic experience of a landscape. Together with space, paths are considered as fundamental structures of landscapes that

allow pleasure and changing the experience with texture contrasts and if used right, avoid monotony. When designing paths, arriving and leaving in different contexts play an important role. Foci and paths are related and a focus can drag a visitor along the path. Paths can either enhance openness by hugging a space when defining its edges, or divide a space into two when they are the edge of both spaces. Paths can be axial or curvy. Axial paths symbolize power, goal, authority, control certainty, order or simplicity, while curvy paths have more natural associations responding to natural topography or vegetation. If the topography is steep, ramps or stairs are used and can provide excitement. Water can function as a path, when the visitor is invited to walk along it. Paths can be exposed or enclosed, built or by vegetation, and influence the experience accordingly. (Dee, 2001, pp. 81-112)

### **Geometry, scale and proportion**

Geometry is closely related to the tools of architecture that has not changed much until today: rulers, triangles, compasses and verticals. (Nygaard, 2011, p. 72) Geometry is a way to form and shape space. It can be understood as simple or complex forms, where simple forms are for example rectangles, circles or triangles. Complex forms are repeated patterns, such as fractal geometry or simple forms repeated on a bigger scale. Geometry can also be viewed on a micro or macro level, i.e. on a smaller or bigger scale. (Dee, 2001, p. 38)

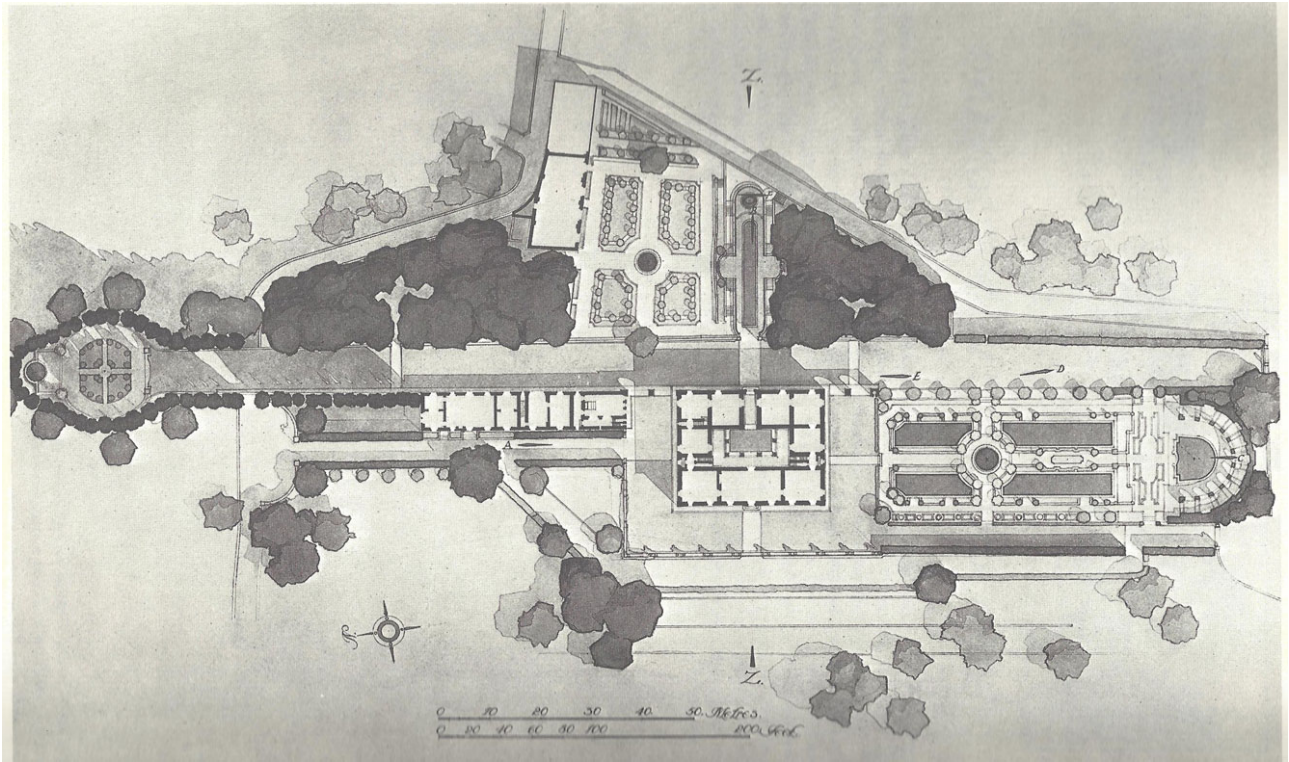
Scale is understood as relative size of different objects or parts of landscapes in relation to each other or the observer. Spaces that are human-scale, i.e. close in size, cause harmonious feelings like comfort, orientation or reassurance. Spaces that are not human-scale can cause wide variety of emotions from anxiety by intimidating or alienating to exhilaration from openness or vastness. (Dee, 2001, pp. 46-9)

Proportion on the other hand is the relative size of a part to the whole. It is suggested that certain proportions are more pleasing than other, e.g. the golden section. (Dee, 2001, pp. 46-9) Simple proportions are for example 1:2, 2:3 and 3:4, which in music as well as in architecture can create harmony. Geometric forms can be divided or repeated according to simple proportions to create harmony. (Nygaard, p. 78 )

## Analysis

In this section I will analyze the gardens using the previously defined concepts. The analysis is based on literature and direct observation.

### Villa Gamberaia today



**Figure 4** *Villa Gamberaia: Plan by John C. Shepherd (1925, p. 50)*

The villa is accessible from the Via del Rossellino and the road continues straight and crosses the garden in a tunnel. The entrance is a gate with a half circle of walls. A long avenue with a high cypress hedge leads the visitor up to the house, exactly positioned in the centre, and gives a beautiful first glimpse of the house. On the right side of the avenue there is small road leading to the lower garden and cellar, and on the left a chapel and other small buildings.



**Figure 5** *Villa Gamberaia: Gateway leading up to the house (gate not pictured) (Photo: Camilla Göller, 2015-06-25)*

Grass-covered terraces surround three sides of the house. The distance from the façade of the house to the edge of the terraces is the same on all sides. The western side has a beautiful view over Florence with dog sculptures with hundreds of years of patina on the parapets.



**Figure 6** *Villa Gamberaia: Terrace with dog statues, and the hedge blocking the view at the water parterre (Photo: Camilla Göller, 2015-06-25)*



**Figure 7** *Villa Gamberaia: View of Florence (Photo: Camilla Göller, 2015-06-25)*



On the south part of the garden, there are water parterres that are reached through a small gate. Topiary with yew, boxwood and cypress hedges in different geometric forms frame the ponds that mirrors the greenery. In the center, there is a fountain and somewhat surprisingly, statues scattered in the small hedges beside the central axis. On the right hand side there is a high cypress hedge that limits the view over Florence. This can at first be perceived as annoying, but it heightens the presence of the visitor in this space; drawing attention to the sound of water, the ornamented floor, the statues and other details. In a way, this is a *giardino segreto*, i.e. secret garden, as it has a very intimate character due to the hedge, but also because the whole parterre has been lowered a few steps.

At the very end of this room there is a cypress hedge resembling an amphitheater with a semicircular pond in the middle. Through the hedge it is possible to catch a glimpse of the view through cutouts that automatically catches the attention of the visitor. The view was not hidden from the visitor; it was just concentrated.



**Figure 8** Villa Gamberaia: Entrance to the water parterre (Photo: Camilla Göller, 2015-06-25)



**Figure 9** Villa Gamberaia: The water parterre, one of the four ponds (Photo: Camilla Göller, 2015-06-25)



**Figure 10** *Villa Gamberaia: Amphitheater with a semicircular pond and concentrated view (Photo: Camilla Göller, 2015-06-25)*

A characteristic of Villa Gamberaia is the long bowling green. This path, or rather avenue, is an axis stretching from the very north of the garden to the very south. It has a grass floor and half way through on the right side is a support wall and on the left the villa. The right amount of enclosedness, proportion, flow and light makes this bowling green very harmonic. It is as if the bowling green goes through the house and cuts it in half, because the wall the same color and height as the house. At the end of the bowling green is a statue of Diana, gazing into infinity.



**Figure 11** *Villa Gamberaia: Bowling green facing south (Photo: Camilla Göller, 2015-06-25)*

The hidden *gabinetto rustico* with stairs and *grotto*, an artificial cave, is on the central axis of the house. A gate separates this space from the bowling green and hydrangeas greet the visitor on the right side. The walls are decorated with stones and shells and at the very end there is a fountain. The walls are tall and on each side there are stairs leading up onto the terraces. The one on the right side leads to the *bosco*, which is a forest-like part of a garden, and the other one leads to the lemon garden where different sorts of citrus fruits are planted in terracotta pots. At the very end of the terrace there is the *limonaia*, the orangery, which borders to the other bosco in the garden. Both of the boscos go downhill until they reach the same level as the bowling green.





**Figure 12** *Villa Gamberaia: Gabinetto rustico (Photo: Camilla Göller, 2015-06-25)*



**Figure 13** *Villa Gamberaia: Gabinetto rustico and behind one of the two boscos (Photo: Camilla Göller, 2015-06-25)*



**Figure 14** *Villa Gamberaia: Limonaia terrace with potted citrus trees (Photo: Camilla Göller, 2015-06-25)*

On the north side of the bowling green is the *nymphaeum*, a monument for nymphs, cut in the mountain. The east side of the bowling green and the *nymphaeum* are framed with tall cypresses, providing a darker and mysterious feeling to it.



**Figure 15** Villa Gamberaia: The nymphaeum at the north end of the bowling green (Photo: Camilla Göller, 2015-06-25)

Villa Gamberaia is big enough to impress and include all typical characteristics of a renaissance garden, yet small enough to be cosy and not intimidating. All the compartments of the garden have a natural fit in the environment and relate to nature and landscape in different ways.

## **Analysis of villa Gamberaia**

### **Static space**

Although the garden is relatively small, it feels big because there are so many rooms and new things to discover. The entrance road, topiary parterre, semicircle theater, bowling green, terrace, *gabinetto rustico* and lemon terrace are all created with wall elements like built walls, hedges and trees. The variety of rooms serves to keep up interest through the whole garden.

### **Dynamic space**

There are some foci in this garden that creates space bubbles around them, as the fountain in the parterre and the tree at the south side of the bowling green. The central fountain communicates symmetry and stability and gives the space character. The still water and the small sprays of water from the fountain heads lend this space a calm and relaxed feeling. The presence of the big tree at the end of the bowling green creates a calm and safe space and even perhaps invites the visitor to take a nap in shade under it. The baby and dog statues on the parterre are the actors of this scenery and populate the garden in an amusing and lively way in their space bubble. This garden is entertaining.

### **Openness and closeness**

The garden provides open and closed spaces. The terraces and the end of the bowling green invites the landscape to the garden and makes it very open. There are also intimate spaces such as the topiary parterre where hedges block the view and the smaller trees create an enclosed atmosphere. At the *gabinetto rustico* the high walls make this space feel somewhat confined and together with

the intriguing figures it almost has a frightening feel to it. Although high walls define the bowling green too, the fact that there is nothing else but a huge lawn, makes the room very open because the whole length is visible. The openness and the view over Florence convey a feeling of power.

### **Division and links**

The entrance road and the *gabinetto rustico* constitute thresholds in this garden. The entrance road is confining with its high hedge and narrow width. It is a long walk from the gate up to the house, but gives the visitor time to acclimatise and anticipate what comes next. By foot this is much more noticeable than by faster modes of travel because the space can be fully perceived. The narrow and long road with the high hedge can feel a little claustrophobic and encourages faster walking. Visitors can feel small and the road reminds the visitor to be respectful to the powerful owners who can afford such a vast property.

The bowling green is like the spine of the garden and links all the compartments by its length and axuality. It provides orientation in the garden.

The *gabinetto rustico* can be said to be both a threshold and a static space. However, if it is viewed as staircase, it wholly falls under the definition as a threshold that prepares the visitor to enter the lemon garden or the bosco.

The obvious edge of the garden is the terraces where the ground below is steep. The other edges are the semicircular hedge around the pond and the hedge that limits the view towards Florence. The many gates in the garden also function as edges: the main entrance gate, the gate to the topiary parterre and the gate to *gabinetto rustico*. The walls of the bowling green are also edges. The impression of all the edges is a feeling of inclusiveness and security, as long as you are on the inside.

### **Direction**

The garden has a natural flow and path that gives a sense of direction. When walking towards the house from the gateway the view to the right invites the visitor to the terrace. A curiousness to see what is behind the gate draws visitors to the topiary parterre. Finally at the edge of the garden looking back to the villa, the bowling green offers a path to what is hiding at the very back of the garden. While walking back on the bowling green, the entrance in the wall on the right side suddenly opens up to the *gabinetto rustico*. The stairs in the *gabinetto rustico* invites the visitor up



to the lemon garden. I felt like a child when I let myself be seduced by the flow of the garden and all the surprises along the way.

### Geometry/scale/proportion

When standing on the bowling green the garden is perceived as almost infinitely long, not human scale. The fact that the bowling green is on the longest axis in the garden, gives the illusion that the whole garden is bigger. Everything except the bowling green and gateway are in human scale. The proportions and scale of the different rooms create a feeling of harmony. From a map it is obvious that there are geometric forms repeated in this garden. Half-circles and squares are delicately designed in proportion to each other. This however was not something I noticed much when visiting the garden.

### Villa Lante today

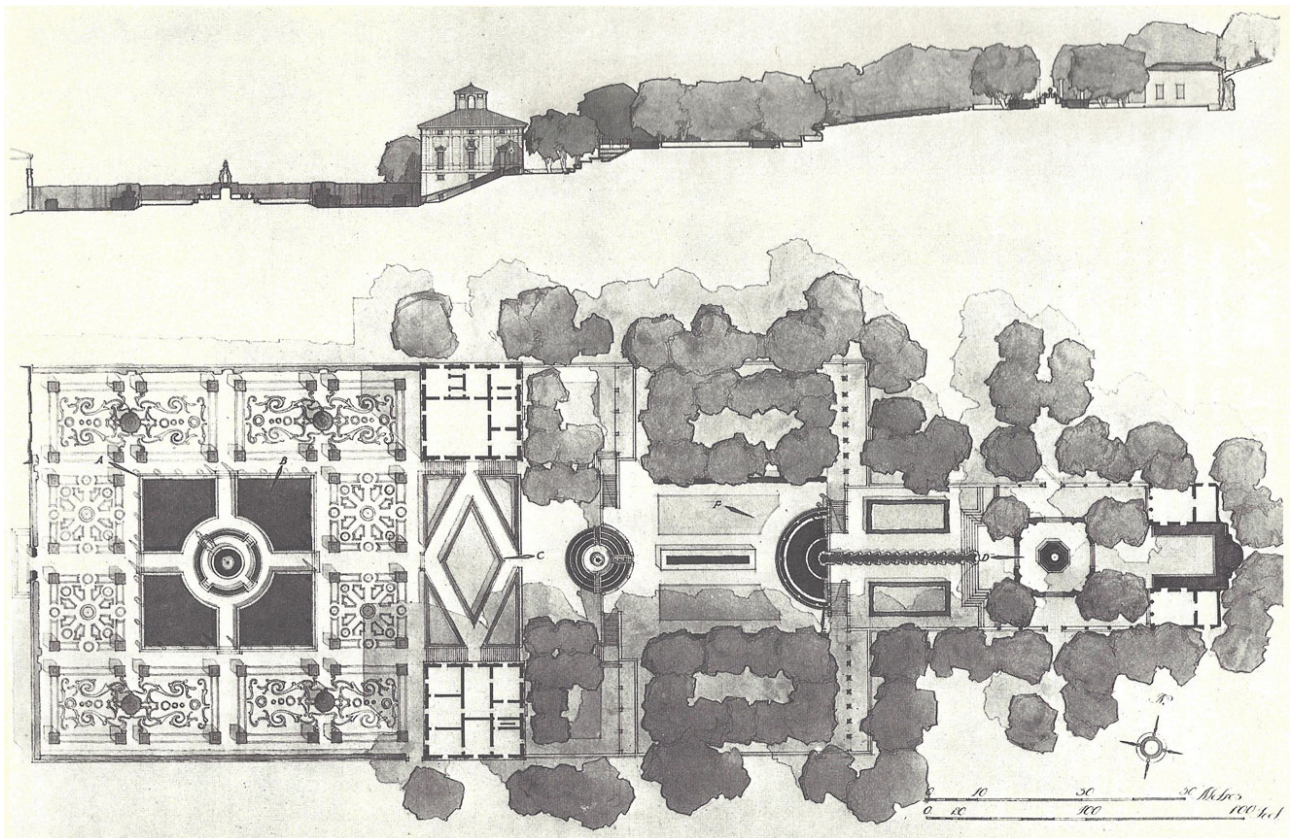


Figure 16 Villa Lante: Plan by John C. Shepherd (1925, p. 26)

Villa Lante is situated in the small town of Bagnaia, close to Viterbo, an old city north of Rome. The formal garden is a part of a bigger park, the *barchetto*, but due to the scope of this paper, only the formal garden will be included in the study.

A topiary parterre greets the visitor when entering the formal garden on the side via the south gate that is in front of the casino. It is geometrically formed with four squares on each side, making it equally wide as long. In the center is a big square fountain consisting of four smaller squared ponds. An island with a circular fountain is in the middle. All the fountains at Villa Lante represent elements, and the fountain of the square represents air. Walls, closing out the surrounded city, frame this space. It is a very open and sunlit space and on the hillside to the west a glimpse of the shadier garden can be caught.



**Figure 17** Villa Lante: Parterre with fontana del Quadrato o dei mori and view over Bagnaia (Photo: Camilla Göller, 2015-06-30)

The casinos do not play such a big role in the composition as they are in the periphery. Uniquely, there are two houses and they are not positioned on the central axis. Between them you reach the first terrace via two stairs on each side with diagonal ramps in between.



**Figure 18** Villa Lante: Parterre, fontana del Quadrato o dei mori, the two casinos, the diagonal ramps and big platanus trees on the upper terraces (Photo: Camilla Göller, 2015-06-30)

The first level is dominated by the view over the town Bagnaia and the round fountain on the central axis connects the first and second level. This fountain, the fountain of the torches, represents the element of fire. It consists of many small water fountains. On each side of the fountain there are two grottos with statues of Neptune and Venus. The room is in shade and closed off due to the wall



that separates it from the second level and large plane trees. The view is only open towards the town and parterre.



**Figure 19** *Villa Lante: the fountain of the torches (Photo: Camilla Göller, 2015-06-30)*

Stairs on each side of the fountain lead to the second level where a famous stone table is found. There is a water tub in the center of the table and on the sides under the table, used to cool drinks and feet. Behind the stone table, the fountain of the giants links this level with the next. Two giants lie in a half circle pond with water pouring from the upper level. This fountain is representing earth. The sides of this level are not very prominent, on one hand because the table, fountain and the view get most of the attention, but also because the outer parts are cut off with boxwood hedges. Behind the hedges plane and chestnut trees grow and create both walls and ceiling.



**Figure 20** *Villa Lante: famous stone water table and behind fountain of the giants (Photo: Camilla Göller, 2015-06-30)*

Behind the fountain, stairs on each side lead up to the water cordon that connects and links the terrace levels. This level is not flat. It has a slight upward slope, a staircase as a matter of fact. Along the central axis lies the chain of water streaming all the way down. Beside this stretched



fountain are stairs framed with hedges, again making the sides less relevant. Trees on the other side of the hedge create a high wall and partly a sky panel.



**Figure 21** Villa Lante: the water cordon, *catena d'acqua o cordonata del gambero* (Photo: Camilla Göller, 2015-06-30)

On the third level there is a circular enclosed room with hedges with cut-out doors in four directions. In the center there is a circular fountain, the fountain of the flood and the dolphins. Around this enclosed room old plane trees grow that give the space light and filtered sunlight.



**Figure 22** Villa Lante: the fountain of the flood and the dolphins (Photo: Camilla Göller, 2015-06-30)

Behind the fountain of dolphins, is the end, or the start if you follow the direction of the water, of the garden. Two *loggias* and a *grotto* create a U-form space. Out of the *grotto*, water is pouring from a rocky slope like rain. It is the source of the water for the whole garden. This space is cool and so are the *loggias*.



**Figure 23** Villa Lante: the grotto between the two loggias on the highest level of the garden (Photo: Camilla Göller, 2015-06-30)



**Figure 24** Villa Lante: the south loggia (Photo: Camilla Göller, 2015-06-30)

## Analysis of Villa Lante

### Static space

Though the garden is very big, it is perceived as quite private as the whole garden is never completely visible regardless of spectator position. This is because all the levels are only open towards the parterre. Even standing at the top, only one level is seen as trees shield the view. The spaces are very small and even if they belong to the same garden, they are shielded and separate. There are many different spaces to discover. It is like walking through a story entertaining the visitor throughout the garden.

### Dynamic space

The strong foci of the water installations on every level create several space bubbles. Some are cheerful, like the stone table space bubble. Some are intriguing, like the space bubble around the fountain of giants and goods. The space bubble of the fountain on the parterre is calm and symmetric and has a grounded feeling to it. The various creations with water not only fascinate, but

also keep the visitor interested and entertained. All of the fountains tell a story and it is like watching a play and being in it at the same time.

### **Openness and closeness**

The parterre is an open space, but shielded from the city. Some parts of the topiary are tall, and even if the space is relatively open, the hedges are high enough to create feelings of privacy and seclusion. Level one and two are semi-closed but open on one side overlooking the town and parterre. The open view conveys feelings of power but the enclosure also provides a sense of security. The water chain path is enclosed with hedges and the last level to which it leads is the darkest space, enclosed by large trees. The grotto with its high walls on three sides feels shielded, mystical and somewhat cramped. The fountain of dolphins also has a strong enclosure of high hedges. All these enclosures offer the spectator a sense of safety.

### **Division and links**

Even if the spaces are secluded from each other in different ways, the water connects them and makes the garden coherent. The edges of the garden are the walls at the parterre, the waterfall at the very top, and the pillars and walls at the sides by hedges or trees. The garden embraces the visitor and conveys feelings of inclusion. The height difference of the garden from the lowest to highest point is 15 meters, which makes the experience of visiting more interesting.

### **Direction**

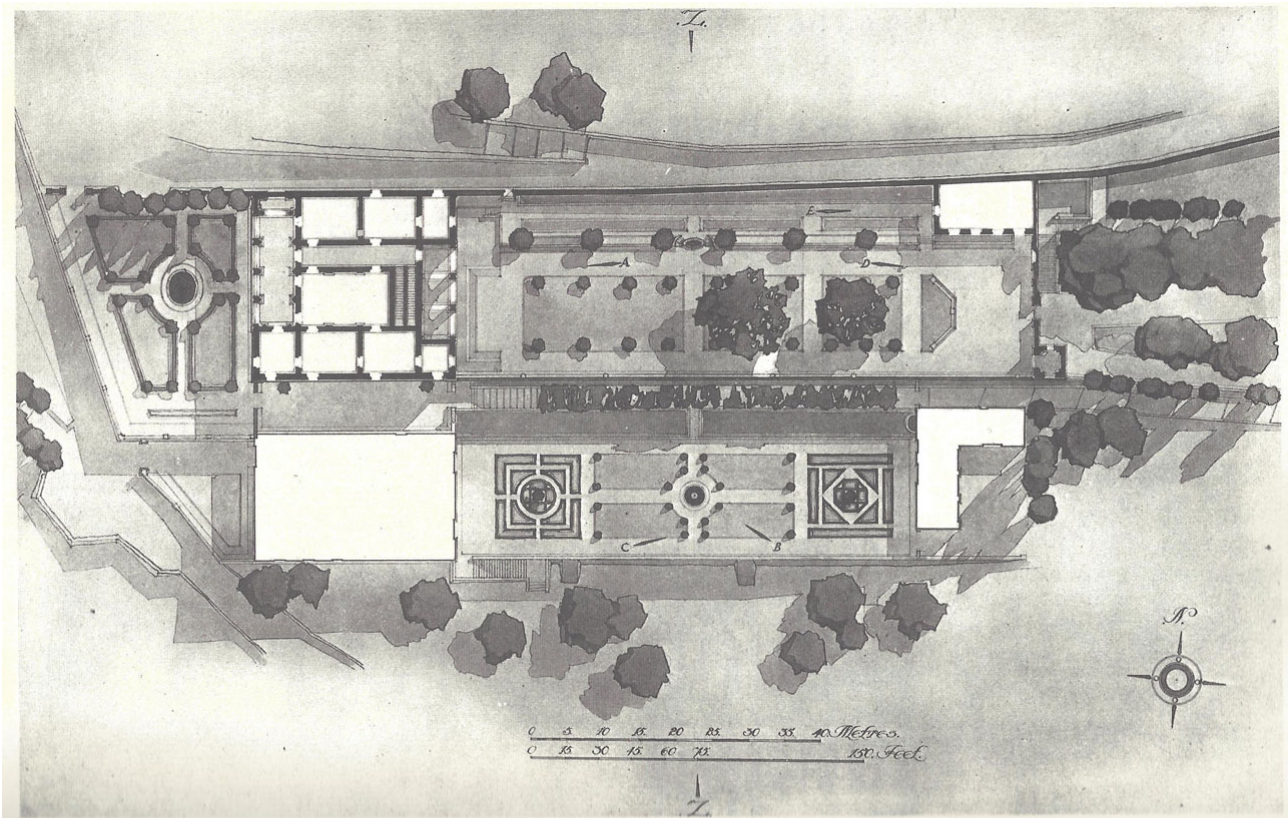
Water dictates direction in this garden. It is natural to move along the path of the water, either up- or downstream. The central axis is no walking path, because all the focal points are on the axis. The visitor feels in control of the walking direction and can easily leave the natural paths dictated by water and embrace the garden experience. Usually, when too much focus is put on the central axis, a garden can be perceived as boring, but here the shielded qualities that you cannot see the other levels keep the spaces exciting.

### **Geometry/scale/proportion**

In the closed and private garden above the two casinos, everything is human scale and therefore provides the visitor with orientation and comfort. Squares are the main geometric forms dividing the plan of the garden. The parterre has very obvious grid of 4x4 squares. The second and third levels can be divided into a 3x3 grid, almost equally wide as the parterre. The upper level is as wide as middle row of the assumed 3x3 grid below. (cf. Van der Ree et al, 1993, p. 180)



## Villa Medici today



**Figure 25** Villa Medici: Plan by John C. Shepherd (1925, p. 5)

Nowadays you enter this Florentine villa from the main gate on the road to Fiesole, a town north of Florence. The gateway is long, like at Villa Gamberaia. Between the cypresses you catch a glimpse of the villa.



**Figure 26** Villa Medici: view of the villa from the entrance gate (Photo: Camilla Göller, 2015-06-26)

The garden has three levels and the highest level is where you arrive from the *viale*. The main entrance to the villa is also on the highest level. On the hillside, the full length of the terrace, is a raised rose bed and lemon trees on the wall. Between these levels is a fountain, decorated with

stones and shelves. The fountain is a starting point for the central axis of the garden. This is where the natural spring water emanates. The terrace has three lawns, that that likely were parterres earlier. On two of them, very old Paulownia trees still grow. On the parapet there are hydrangeas and potted pelargoniums. At the opposite side of the villa there is a *limonaia* and in connection to it is the gate. Outside the gate and behind the *limonaia* is the *bosco*, which is in rather in bad shape today. Opposite of the *limonaia* and as an extension of the gate there is the niche from where the visitor can enjoy the view over Florence.



**Figure 27** Villa Medici: highest level of the garden, the paulownia trees and view from the limonaia over Florence (Photo: Camilla Göller, 2015-06-26)



**Figure 28** Villa Medici: upper level of the garden and the fountain as a starting point of the central axis through the garden (Photo: Camilla Göller, 2015-06-26)





**Figure 29** Villa Medici: the limonaia to the left, in the middle the gate and the niche right ahead (Photo: Camilla Göller, 2015-06-26)

The second level can not be reached via stairs, only through the villa or a ramp outside the gates. The second level consists of one long, shady pergola which leads to *giardino segreto*. In the middle of the pergola on the central axis are stairs leading down to the third level. This is the formal garden with topiary and flowerbeds. The secret garden can be reached from the pergola via a terrace. The secret garden consists of a central elliptical pond with topiaries and four magnolias framing it.



**Figure 30** Villa Medici: the ramp leading to the second level of the garden outside the gates, and the niche's backside (Photo: Camilla Göller, 2015-06-26)



**Figure 31** Villa Medici: the pergola (Photo: Camilla Göller, 2015-06-26)



**Figure 32** Villa Medici: the stairs leading down to the third level with fountain from the pergola along the central axis (Photo: Camilla Göller, 2015-06-26)



**Figure 33** Villa Medici: the third level from the linking terrace (Photo: Camilla Göller, 2015-06-26)



**Figure 34** Villa Medici: the third level from the linking terrace between the pergola and the secret garden (Photo: Camilla Göller, 2015-06-26)





**Figure 35** *Villa Medici: the secret garden with its oval fountain and four magnolia trees (Photo: Camilla Göller, 2015-06-26)*

## **Analysis of Villa Medici**

### **Static space**

There are not many static spaces defined by walls and ceilings in this garden. Except the niche and the pergola, the spaces are defined by the edges of the terraces. The niches are entirely enclosed, and the walls are decorated with renaissance motifs. Walls and ceilings also enclose the pergola. Spaces create concentrated seclusion in contrast to the other very open and vast spaces of the garden that can be seen through windows and entrances.

### **Dynamic space:**

This garden has dynamic spaces around trees and fountains. The most significant is the space bubble of the secret garden. The fountain and the four magnolia trees add an intimate character to the space. A feeling of being hidden away in this garden is prominent and the visitor could even be naked here and no one would notice. No wonder this is called the secret garden: it is not seen from anywhere outside.

### **Openness and closeness**

The garden is open on every level and invites the landscape to be a part of it. Although the garden is quite small, the infinite landscape you see from the first and the third levels, fools the visitor to perceive the garden as much bigger than it really is. It is calming to stand in this small, quiet and very private garden and look over the busy city of Florence. Stress disappears. Calmness and exhilaration from openness are perfectly balanced. The pergola is a fully enclosed space. The enclosure prevents the tall and massive supporting wall behind it from being intimidating. The



windows and the viewpoint eliminate any claustrophobic feelings. The niche has the same quality as the pergola, the feeling of being embraced and hidden away for a moment.

### **Division and links**

The thresholds of the gardens are the gateway, niche and the terrace leading to the secret garden. Just as at Villa Gamberaia, the entrance road is confining. The high cypresses are not human scale and the road is narrow. The visitor can feel small and a little claustrophobic which encourages faster walking. Again the long walk gives the visitor time to acclimatize and anticipate what comes next. And exactly as at Villa Gamberaia, the road reminds the visitor to be respectful to the obviously affluent owners.

The niche between the gateway and the upper terrace becomes a stop on the way before going down, or a place to catch your breath after you walked up. It offers a place to reflect on the garden while resting and enjoying an amazing view. If the visitor has travelled a long way to see this garden, the niche offers the soul the opportunity to catch up.

Before entering the secret garden, the visitor needs to climb the stairs from the end of the pergola to a semi-terrace that has built walls on every side. Except for some potted plants, this space is sterile, dull and a space to pass through, a threshold. In the sigil-ornamented, massive wall that creates an edge to the private garden, an entrance is cut out. This space is somewhat boring, but this serves to create a stronger effect of surprise and excitement when passing this threshold into the intimate and beautiful secret garden.

The high terraces divide the garden very drastically with their vertical surfaces. These strong divisions add interest and a feeling of vastness to the garden. The three dimensional aspect strengthens the illusion of the garden being larger than it is.

### **Direction**

There is no clear direction to walk in this garden, despite not leaving much of a choice of paths. This lack of direction is caused by the central axis being impassable as it runs across three levels and the vertical surfaces. However, a direction does not have to be somewhere you walk, but can also be a path for your eyes that is dictated by the axial direction, which is evident in this garden.

**Geometry/scale/proportion**

In terms of geometry, the garden is very harmonious as it follows geometric system of repeated squares. (cf. Van der Ree et al, 1993, 66-8) The proportion of the garden is also harmonious to length and width of the villa. The dimensions of the gardens are human scale, but this is contrasted by the vertical surfaces that are not. The way the pergola hides the non-human scaled support wall prevents feelings of anxiety while providing a sense of security.

## Discussion

To answer my first research question, what can be learned by studying underlying structures of Italian renaissance gardens, I first looked at concepts and elements that form the underlying structures. The central concepts that I chose were static and dynamic space, openness and closeness, divisions and links, direction and geometry, scale and proportion. Then I studied how they are used in the gardens. To answer my second research question, what, if any, underlying structures of Italian renaissance gardens evoke specific emotions, I have studied how the concepts can affect humans in theory but also noting how I reacted to the visited gardens.

An immediate finding on space, is that variety and change of spaces in a garden serve to keep visitors interested. It is less important if the space is static or dynamic. Central foci are more dominant than off-center foci and form strong space bubbles that provide variety to the experience. The central water table at Villa Lante (see figure 20), for example, dominates the space fully while leaving the sides unnoticed. These kinds of spaces can be both entertaining, if the water of a fountain is lively or the statues are comical. They can also be relaxing and intimate, if defined by a single tree or a still water pond. Villa Lante is full of entertaining fountains and therefore creates lively spaces. At Villa Medici the pond in the secret garden (see figure 35) and the ponds on the parterre at Villa Gamberaia (see figure 9) are very still and create relaxed and intimate spaces.

As for openness, it can invite the landscape to the garden, provide orientation and can make the visitor perceive the garden as bigger than it is. An example of this are the main levels at Villa Medici that are very open and use the landscape to make the garden feel larger (see figure 27). The openness here is slightly alienating, but the vastness confers a balance of calmness and exhilaration. Openness can also be intimate with defined walls if there are no high objects blocking the view from one end to the other. The parterre at Villa Gamberaia is a good example. It has clear walls that define the space, but because you can see to the end of the sun-flooded space, it is also open.



**Figure 36** *Villa Gamberaia: The parterre that is closed and open at same time (Photo: Camilla Göller, 2015-06-25)*

This is contrasted by the parterre at Villa Lante where the topiary has grown much higher. It has to be noted that perception of openness depends on the spectators height. A short person like me, probably perceives it much more closed than a taller person would.

Closeness evokes a sense of security, privacy and feelings of being embraced and hidden away. The pergola and the niche at Villa Medici are good examples where closeness can evoke these specific emotions (see figure 29 and 31). But closeness can also make the visitor feel confined, frightened and claustrophobic. Although the *gabinetto rustico* at Villa Gamberaia is beautiful, it can confer these feelings (see figure 12). There is a big spectrum going from openness to closeness.

Division and links can hold a garden together, acclimatize and help prepare visitors to what to comes next. Either a space is defined by transit or invites the visitor to stay and reflect. The gateways at Villa Gamberaia (see figure 5) and Villa Medici serve as thresholds that can make the visitor feel small and even claustrophobic to a degree and encourages fast walking. The linking terrace to the secret garden at Villa Medici is uneventful (see figure 34), however by dulling the visitor the surprise is greater once you experience the contrast entering a considerably more interesting and beautiful space. The bowling green at Villa Gamberaia, and the natural flow of the water through the entire garden of Villa Lante, create the spines of these two gardens and link all spaces, which is helpful for orientation in the gardens (see figure 11 and 21).

In terms of direction, the gardens are very different. The direction at Villa Gamberaia is clearly dictated with simple means, like the attention-seeking parterre, that pull the visitor in predictable ways through the garden, even if it is not on the axis or a clear path. The direction at Villa Lante is also dictated, but here by the central axis. This makes the visit easy as visitors can just let themselves be seduced and leaves no alternatives for moving around in the garden. Villa Medici

does not have clear direction, even if you have no other choice than walking a certain route. While the central axis is visible to the eye, you cannot walk on or along it (see figure 25). The lack of direction is confusing, in comparison to the comforting and entertaining directions in the other gardens.

When looking at geometry, scale and proportion, all three gardens are characterized by repeated, proportional geometric forms, such as squares and half-circles, that make the gardens harmonious (see figures 4, 16 and 25). In the gardens there are human and non-human scaled spaces, where the human scale creates feelings of orientation and comfort. Non-human scales can evoke feelings of anxiety, however this is prevented at Villa Medici by the pergola under the support wall (see figure 31).

Underlying structures are clearly defined and easy to spot in Italian renaissance gardens. By looking at theory about underlying structures and then experiencing how they were applied, it is obvious there is much to be learned. In this paper, it is described how static and dynamic spaces, openness and closeness, division and links, direction and geometric, scale and proportion can and do evoke specific emotions, for example calmness, intimacy, exhilaration, security, embrace, secrecy, confinement, fright, claustrophobia, surprise, seduction, confusion, harmony, orientation and comfort. The two research questions have helped me analyze if underlying structures of Italian renaissance gardens can shape the experience in predictable ways, for which I have found some evidence.

My intention is not to recreate renaissance gardens in my design work, but studying them have helped me understand underlying structures of a garden and how they affect visitors. I have learned that there are many ways to create different interesting spaces within a garden that can evoke feelings and emotions in predictable ways.

As this paper is partly based on personal experiences, research on a more quantitative level is recommended to avoid personal bias of the experiences.

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# Appendix

## Travel map

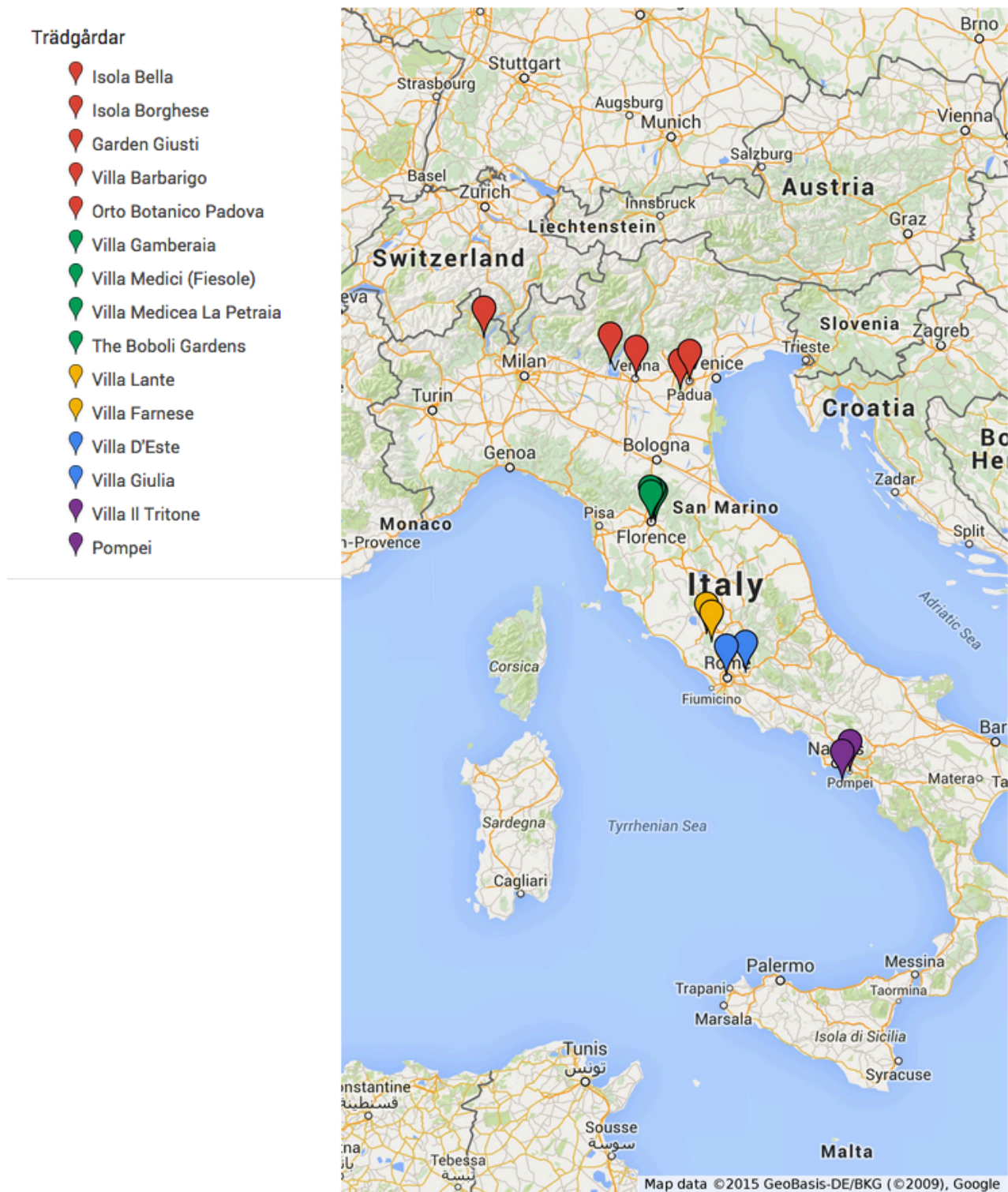


Figure 37 Travel map, Italy: position of all the gardens I visited during my trip in Italy summer 2015 (Google Maps, 2015)