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**Grids and Webs**

Thesis

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## **Introduction**

My dissertation essentially addresses questions related to my practical work. I began to make grid shaped sculptures previous to my doctoral studies. After the enthusiastic beginning different questions came to the surface that referred to things other than my work. I was interested in grid shape generally, how these forms appear in the nature and in the artificial environment. I was intrigued by their function and how they work and why they are so common. I have been searching for their occurrence in fine art – mainly in ceramics where the connection of this form and the material is very contradictory. In the last part of my thesis I introduce my works of the last few years.

## **Geometry of grids**

The first chapter deals with the „anatomy” of the grids. I compiled geometrical construing procedures that can help to design grids and to classify them. Line-patterns are shown here, the 17 wallpaper-groups and a method that is similar to them, the tessellation in 2 and 3 dimension.<sup>1</sup> I also write about the crystals because their structures can be described with the previous methods, and because they present the connection between the inner structure and the quality of the material.<sup>2</sup>

## **Occurrence of grids, their function and symbolic meaning**

A grid is a form in 2 or 3 dimension which continuity is interrupted by holes – lack of material – or by other materials. It can be made in a constructed way when it is built up from elements or it can be perforated when it is cut out from one piece.

We can find a lot of examples for grids in our natural and artificial environment. Their shape and function is very varied. In the second chapter I present why they are advantageous, why they are so common.

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1 Lundy, M. (2001) *Sacred Geometry*. Walker & Company, New York

2 Hargittai Magdolna, Hargittai István (2005) *Képes szimmetria*. Galenus kiadó, Budapest

The grids can be classified in many aspects. I made three groups in my dissertation on the basis of the property of the grids. The first category presents the *supporting systems and scaffolds* that are strong, stable and light at the same time. These structures serve to strengthen some living being, object or building. We can find them in the skeleton – that's micro-structure is also latticed itself – of the animals and humans. It also occurs in the plants mainly in the cell wall where the cellulose fibers make up the wood. In the man-made world the most interesting scaffolds can be found in architecture. The roof and sometimes the wall of a building is also a grid. Sometimes they are hidden but in many cases they became an aesthetic element, part of the ornament. Some examples can be seen for this occurrence in the Gothic era, mainly in cathedrals, in the 19. century's architecture and in the folk art.<sup>3</sup>

The second group contains grids forming or enhancing surfaces. An example for these is the respiratory organ of higher vertebrates, the lung, which is – because of its structure – suitable to provide even larger animals with the necessary amount of oxygen. In this category external surfaces of animals is to be mentioned, as hair, providing thermoprotection, scale, serving mechanical protection, and microscopical optical grids, creating colour of beetles and butterflies.

The third category is that of filters, the function of which is to lock certain things out or up, or to let particular organisms or objects in, while others not. Selection is ensured by the shape and size of the holes on the filter. Such natural formation is the cellular membrane, and the eggshell, which – alongside with the mechanical protection of the cell – lets certain substances inside. Examples for artificial filters are textiles made of fibrous materials.

These categories are of course not clearly separated, the groups overlap. So this classifying is a little arbitrary. The examples show us the importance of the inner structure, how it influences the appearance, functioning and quality of objects and materials.

As the grid motive appears in the ornamental art very often, it is supposable that people have a preference to it. In the same time they have negative feelings in

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3 Müller, W., Vogel, G. (1993): *SH Atlasz Építőművészet*. Springer Hungarica Kiadó Kft.

connection with it which is expressed in the symbolic meaning of it. I discuss these meanings in this chapter, too.

### **Grids in the contemporary ceramic art**

Apparently it is a contradiction to make grids from clay. This earth-like, mud-like material that comes into being by decaying of volcanic rocks occurs in nature as a sedimentary deposit or detritus which lies on the ground. It does not look like something that defies with the gravitation and starts to grow as a living being or a crystal and builds up light and fine structures. In spite of these facts, a lot of contemporary ceramic artists make grids from this ancient material. In the third chapter I would like to find the causes of this phenomenon. I show some details from the art of Stanton Hunter, Netty van den Heuvel, Beatrijs van Rheeden, Eva Hild, Neil Forrest, Ruth Borgenicht<sup>4</sup>, Anita Manshanden, Chunbok Lee and Barbro Aberg<sup>5</sup>.

A lot of common elements can be found in the works of these artists. Many of them use space as an important component. Most of the creators are interested in nature, science and mathematics. More artist is kept employed by materiality and technique. Most of the mentioned artists begun it's career with making articles for personal use, mainly dishes.

I introduce these artists one by one in the second sub-chapter. I explain the mentioned questions and phenomenons in the third sub-chapter and I touch general fields of art.

The mentioned problems are not recent. Most of them are the same age as mankind. The relationship of science and art has a great past. The visual and spatial representation of animals comes from ancient times. There were regular periods of art-history when the artists attached importance to observing nature. The knowledge of nature, curiosity and sensitivity to the change of the environment is very useful to us.

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4 Clark, J. (2006) Ruth Borgenicht, Articulated Spaces. *Ceramics: Art and Perception*, 66. 90-93.

5 Van der Stelt, G. (2007) Puls Gallery, Barbro Aberg & Jonathan Keep, Contemporary Ceramics. *Ceramics: Art and Perception*, 67. 91-94.

That is why it is supposable that these properties were an integral part of the personality of man.<sup>6</sup> An artist and a scientist investigate after all the same thing with different tools. Because their aim is the same, it is probable that the two fields is sometimes entwined as it is shown by the examples: the Butterfly Migration<sup>7</sup> from Stanton Hunter; Netty van den Heuvel<sup>8</sup> examines aquatic creatures but their shapes are not recognizable in her works; Chunbok Lee is under the influence of nature but natural forms in his art are not obviously perceivable; Beatrijs van Rheeden's<sup>9</sup> and Eva Hild's<sup>10</sup> work feed on inner spiritual process but the result reminds on natural forms as well.

Many of them use space in their artworks as an important component that is mostly equal to material. In Eva Hild's art the material part is decreased and a stream comes into being between the outside and the inside. Netty van den Heuvel explains her works as three-dimensional spatial drawings in which the spaces and holes play a very important role. Chunbok Lee also thinks that space is one of the most important part of his works.

Many artist make sculptures in connection with everyday objects. Barbro Aberg carries out dishes and sculptures with the same motif that makes a link between them. Stanton Hunter made dishes, bowls and pots at the beginning of his career. He used them later as part of site-specific installations and architectural pots combined with spatial grids that finally led to the independent three-dimensional wooden and ceramic grids. Netty van den Heuvel also made hollow objects that were later replaced by free open structures.

The question arises, why these artists use this material to make their sculptures, while there are a lot of techniques that would be in practical aspects more suitable to make these shapes, because of their flexibility and strength. The answer is that some of

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6 Barrow, J. D. (1998) *A művészi világegyetem*. Kulturtrade Kiadó, Budapest

7 McGrew, R. (2007) Butterfly Migration Grids. *Ceramics: Art and Perceptions*, 69. 65-68.

8 Wall, S. (2008) Netty van den Heuvel. *New Ceramics*, 5/6. 14-16.

9 Wall, S. (2006) Beatrijs van Rheeden. *New Ceramics*, 9/10. 22-23.

10 Koplos, J. (2005) Eva Hild Dark Matter at Nancy Margolis, New York. *Ceramics: Art and Perception*, 55. 98-102.

them create a contrast with the earthy clay and the immaterial space in this way. In some cases they use porcelain that makes the light part of the work which also expresses immateriality and space.

### **Grids in my own works**

In the third chapter I show my grid-shaped works, my ideas in connection with them and how I am thinking about space<sup>11</sup> and materiality. In this part I represent the causes why I use grids in my works and how ceramics influenced my relation with the working process. I describe my works that I made during my doctoral studies and the preliminaries of it. I write about the way that lead to my masterwork which sums up my works of the three years.

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11 Hall, Edward T. (1980) *Rejtett dimenziók*. Gondolat kiadó, Budapest