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Nature's Geometry

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NATURE'S GEOMETRY

A Thesis

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Master of Fine Arts

in

The School of Art

by

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B.A., Beijing Institute of Graphic Communication, 2011

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ABSTRACT

The beauty of the natural world, from the literal to the abstract: color, texture, shape, sounds, plant structure and anatomy, has continuously been the source of inspiration for artists and graphic designers. Our natural environment provides a readily available resource as a basis of visual study and exploration to develop a unique visual language and construct compelling work. Therefore, the aim of my thesis investigation is to create a new visual language and communication based on the inherent beauty within nature and geometric forms found in nature.

I began my investigation by developing a family of symbols based on natural elements and geometry, for example flowers, water, mountains, clouds, stars, etc. These symbols and shapes were then simplified into abstractions and illustrations with geometric and organic characteristics. Next, I transformed the family of symbols into patterns that formed the basis of raw material to develop this unique visual language. The elements (line, shape, direction, size, texture, color, value) and principles (balance, repetition, contrast, harmony, unity) of design formed the building blocks to help create my design language.

These visual explorations are manifested into a unique design language, and then applied to the methodology of visual communication and problem-solving to promote the Helsinki Design Week 2015. This international festival, the largest design event in Northern Europe, offers a city-wide meeting place and discussion forum for design professionals. The program includes exhibitions, fashion shows, seminars, galas, and workshops. Helsinki Design Week 2015 is a

noteworthy event that invites enthusiasts, professionals, and all friends of design to participate in extraordinary happenings throughout the city of Helsinki, Finland.

Through these visual investigations and experimentations, introducing typography and juxtaposing patterns, I was able to achieve my goal of developing a unique visual vocabulary and adapt it to communication design.

CHAPTER 1: INTRODUCTION

Today, more and more people experience stress in their daily lives. What are our preferred solutions to relieve stress at the end of a long day? Listening to music, exercising, or watching a movie? I admire the magic and enjoyment of nature that can be a healthy way to relax and help relieve stress. One of my goals of this visual investigation is to attract my audience's attention and be in tune with the natural world. As the saying goes, "Natural beauty is beyond expression." However, as a graphic designer, I am aiming to express this natural beauty by developing a design language that is underpinned by this natural beauty. As a form of visual communication, graphic design plays an important role in our daily life, while combining art and technology to communicate ideas (Poggenpohl). I believe this is an effective way of communicating with my audience. Visual communication provides me with a new approach to problem-solving through utilizing typography, pattern, color and other methods as part of my tool box and skillset. This approach also places emphasis on design process.

CHAPTER 2: RESEARCH

Finnish Design

Scandinavia is the historical and cultural region in Northern Europe that first comes to mind, when people discuss the subject of nature and its relationship to design. People who live in the Nordic country of Finland enjoy many natural resources such as blue skies and natural lakes. Scandinavian design is a design movement emerging in the 1950s characterized by functionality, minimalism, and simplicity. The purpose of Scandinavian design lies in the concept that beautiful and functional objects are available to everyone, regardless of social class. In the 1950s, Finnish design work appeared in numerous international exhibitions, such as the Milan International Art Exhibition recurring every three years. The influential Finnish designers Timo Sarpaneva and Tapio Wirkkala have won various awards in the triennial because of their avant-garde concepts of furniture for mass-production and industrial design (Laurén and Koivisto). Finnish designers, who experienced a lack of material, worked very hard to create a revival after the end of World War II. Designers tried to meet public's needs by using limited physical resources to realize the demands of industrial progress and social transformation. Around the 1950s-1960s, Finnish designers built and promoted the country's image and brand. This strategy won a large number of followers from America, Australia, and Europe. Since Scandinavian design has influenced the entire world, Finnish design became gradually more popular.

Finland has outstanding advantages of modern design that affects the

whole world. For instance, Helsinki was identified as the capital of world design in 2012 and design has become an entrenched element in cities throughout Finland. Design and its role in people's lives can be seen everywhere, especially in Helsinki. For example, Kokoro & Moi, a full service creative agency focusing on strategy and identity, have developed corporate identities for airport spatial design (Figures 1 & 2). The visual elements of the World Design Capital Helsinki 2012 are built around the concept of openness. Creative elements are reshaping Helsinki's economy and at the same time increasing the living standards for residents. In addition, design in urban planning, architecture, industrial design, services design and some broader perspectives, play fundamental roles in the development of urban services.



Figure 1, Helsinki airport spatial design by Kokoro & Moi, 2012



Figure 2, Helsinki airport spatial design by Kokoro & Moi, 2012

The theme of “Open Helsinki – Embedding Design in Life, Global Responsibility, and Roots for New Growth” has pushed Helsinki to the forefront of design thinking and function. Pekka Timonen, executive director of World Design Capital Helsinki 2012, says, “The World Design Capital’s task is to highlight the significance of design; indicate the intended usage of contemporary design, and to increase the demand for design.” He says, “Our projects have succeeded brilliantly in all of these. Helsinki and its partner cities have concentrated on building better cities and initiated development work that utilizes design.” (qtd. in Horton).

In short, design in Finland is particularly important in citizen’s lives. A lot of people can tell its story and the narrative derived from a chair, a vase, or a lamp. Many Finnish citizens pay more attention to details of household articles and life qualities such as space and light, material and texture, color and shape. I believe

Finnish designers play a crucial role in creating a blend of the modernism, tradition, natural resources, democratic spirit, and a good ecological system.

Design Principles

Kenneth Bates, who was known as the “Dean of American Enamelists”, said the task of artists is to organize elements into a comprehensible whole by simplifying, organizing and unifying. I think the secret of a successful design work is that the designer incorporates the use of design principles to communicate the functional message effectively. Design principles help designers arrange images and texts on the page, so that it feels more comfortable to audiences and makes a profound impact. Each part of a design work must fit together in order to ensure a consistent whole. The whole will be more than the sum of its parts, and it is very hard to isolate the parts and think of them separately. Unity is based on italicize theory, meaning that the structure is unified and the viewer is looking for a unified whole (Zelanski and Fisher). The traditional concepts of design principles are nevertheless still important and timeless in contemporary design. As a graphic designer, this argument of unifying principles is a significant theory to my development during my thesis research and process. Therefore, I set out to explore my process through repetition, variety and balance.

Repetition

Repetition is the process of repeating elements to strengthen the unity throughout a design (Smith). A coherent visual structure is generated by the repetition of similar lines, shapes or colors. Andy Warhol's use of repetition should be regarded as a classic example, like his Marilyn Monroe pop art (Figure

3). He repeats the same image of Marilyn Monroe in order to give the work an “all over” quality. There is no focus point on any particular piece of the composition so that audiences can understand the relationship between these parts easily.

According to Matt Smith’s experiences, there are a few methods to apply repetition in graphic design. For instance, once can limit the different number of elements, weights and colors before repeating them. Secondly, the style of graphics should be kept the same. Furthermore, a grid system is helpful to keep consistent across a design with some pages, like book or magazine design. If designing several items for a brand identity, that includes a logo, business cards, letterhead, posters and brochures, designers have to share design elements between each (Smith).



Figure 3, Marilyn Monroe design by Andy Warhol, 1962

Variety

Variety is one of the most important aspects of well-designed principles by a designer to create visual interest throughout a design. Variety means changing the character in a slight variation or strong contrasts (Zelanski and Fisher). The design work will be chaotic and intangible without unifying principles, and the design work will be dull and boring without variations.

Andy Warhol created *Ethel Scull Thirty-Six Times* that is based on the unifying principle (Figure 4). This work is an excellent example of achieving unity by using the method of variety, because the variety of a colorful grid shows us multi-appearances and emotions of Scull within harmony.



Figure 4, *Ethel Scull Thirty-Six Times* design by Andy Warhol, 1963

Balance

Another fundamental method in which designers may consider to achieve a unified whole is to balance elements. Balance is based on the apparent weight and how it is distributed (Zelanski and Fisher). Generally speaking, visual weight is influenced by position, size, texture, isolation, value, orientation, color and so

on. Symmetrical and asymmetrical are two main types of balance. Symmetrical balance is an even distribution of elements by arranging them to the left and right, or top and bottom from the center. On the contrary, asymmetry is an arrangement of uneven weight on each side of a layout. For example, one object will draw viewer's attention if it is in a light value or bright color.

In addition, rhythm, emphasis, and economy also can help designers to organize their works in a unified whole. These principles are not absolute rules that designers have to keep in each work, but they are worthy to be considered in the execution of work or design process.

CHAPTER 3: PROCESS

In addition to my study on Finnish design and its principles, I have developed research on natural elements during my three years of graduate study. When I first studied here in the United States, Baton Rouge was the first city where I lived. Thus, as a Chinese graduate student, Louisiana State University is the most familiar place to me. During my graduate studies, I have continuously explored my passion for landscape photography on the LSU campus. I focused my efforts primarily on composition and invoking a unified thematic narrative for each post card. From there, I began to study in depth of native trees in Louisiana. The following information graphic example was developed based on these native tree studies to help the citizens of Louisiana to preserve and enhance their beautiful trees (Figure 5). The information graphic is suggestive of native and well-adapted trees from our region. There are twenty-seven native tree species selected for this design, which includes common names, tree types, heights, spreads, moisture conditions, and a brief narrative commentary. Moreover, in the project of public information display (Figure 6), I redesigned a smartphone app, trail signs, trail map, tree labels and educational information for the Burden Museum & Gardens in Baton Rouge. The informational displays were designed to offer discovery and adventure through historic, natural and educational experiences. The primary target audience was people who are interested in the flora and fauna of Louisiana's lush landscapes and agricultural heritage, as well as students involved in an outdoor educational curriculum.

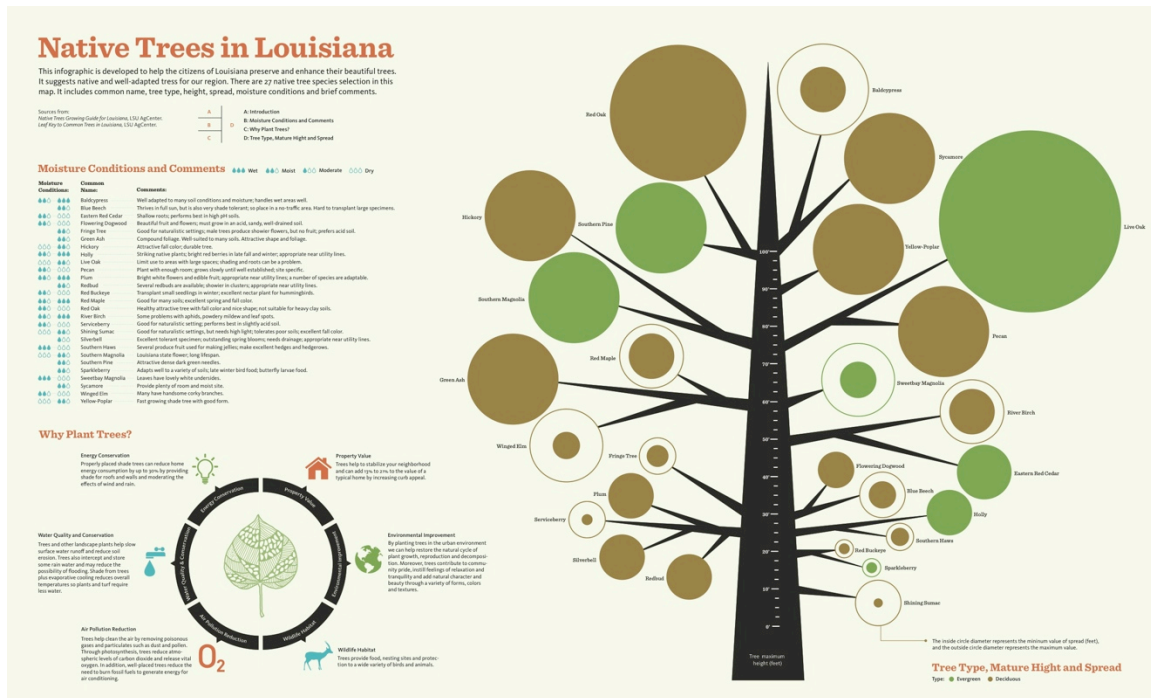


Figure 5, Native Trees in Louisiana, 2014



Figure 6, Burden Museum & Gardens Public Information Display, 2014

After gathering the topics of recent projects, I was inspired by the world of trees. I developed a series of symbols of natural elements such as flowers, water, mountains, clouds, stars, etc. (Figure 7).

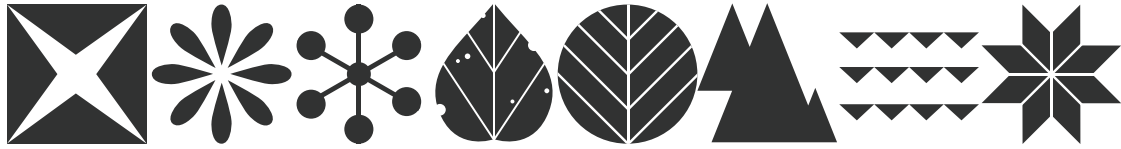


Figure 7, Nature's Symbols, 2014

Based on my research of Finnish design, I found inspiration from the campaign designs of New Finnish Design CITY by Tsto (Figure 8). Tsto is a design agency in Finland that services the fields of graphic design, art direction and consultancy in both digital and printed media. New Finnish Design CITY was a series of events held in New York City in 2012. The themes of this event revolved around Finnish architecture, design and the famed school system in Finland. I decided to test different applications to promote Helsinki Design Week 2015, since the aim of my thesis investigation is to create new visual communication from natural elements to promote a global campaign.

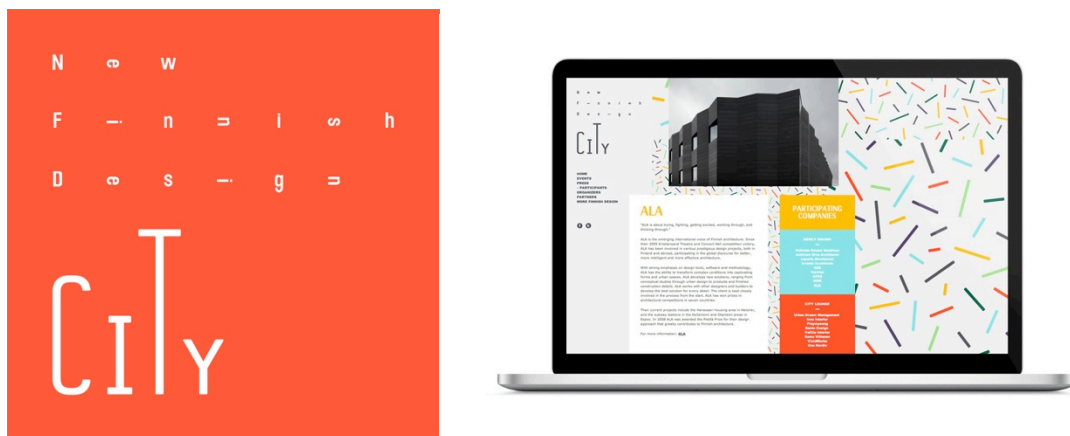


Figure 8, New Finnish Design CITY design by Tsto, 2012

CHAPTER 4: FORMAT AND RESULTS

Symbols

Symbols can represent words in order to convey meaning more efficiently as it should be understood quickly in a single glance (Hyland and Bateman). Symbols that are categorized as geometric shapes can be easily recognized based on their simple forms. Geometric symbols are an important expression for communicating with my audience. For this thesis project, I gathered several common elements that related to the natural environment, and transformed them into a unique visual language. I created nine single geometric symbols and arranged them in a 3" x 3" grid (Figure 9). This series focused on nine natural elements: branch, leaf, snow, iceberg, cloud, star, tree rings, flower, and water waves. As I had mentioned previously in my research chapter, design principles can help designers arrange images so that it is perceived as logical and makes a profound visual impact to my audiences. Using negative and positive lines and shapes allowed me to represent a visual balance.



Figure 9, Nature's Geometry: Symbols, 2015

Patterns

Pattern is more than decoration. It is a type of perceptual grouping which is a vital necessity for recognizing objects through vision, thus a powerful approach to help me communicate and differentiate my work. Composition, graphics, and colors all help to engage the viewer. I continued my design process by developing symbols into patterns and applying the principles of repetition, contrast, and scale to create intricate symmetrical and asymmetrical compositions. I designed four different patterns: tree rings (Figure 10), branches (Figure 11), water waves (Figure 12), and icebergs (Figure 13). Each large square layout consists of four small square pieces. It also encourages the patterns to have a consistent appearance in each piece. Unifying principles create further embodiment by using the same visual elements, similar scales, and comprehensive spacing. This visual consistency and juxtaposition of principles creates a context for my audience that is compelling and recognizable, and provides viewers with a high level of interest and sense of balance.

Color palettes within my visual language represent a controlled system based on color associations from nature. By taking cues and associations from plants in our environment as a design strategy, I have been able to develop a color system. For example, the red tone is prevalent in nature is found from the sun to flowers, and humans. I have adopted it as a symbol of warmth, energy, resilience, and courage. The green tone is another familiar tone to us that means growth and prosperity. The blue tone is inspired by the sky and sea, and it symbolizes depth, peace and heaven.

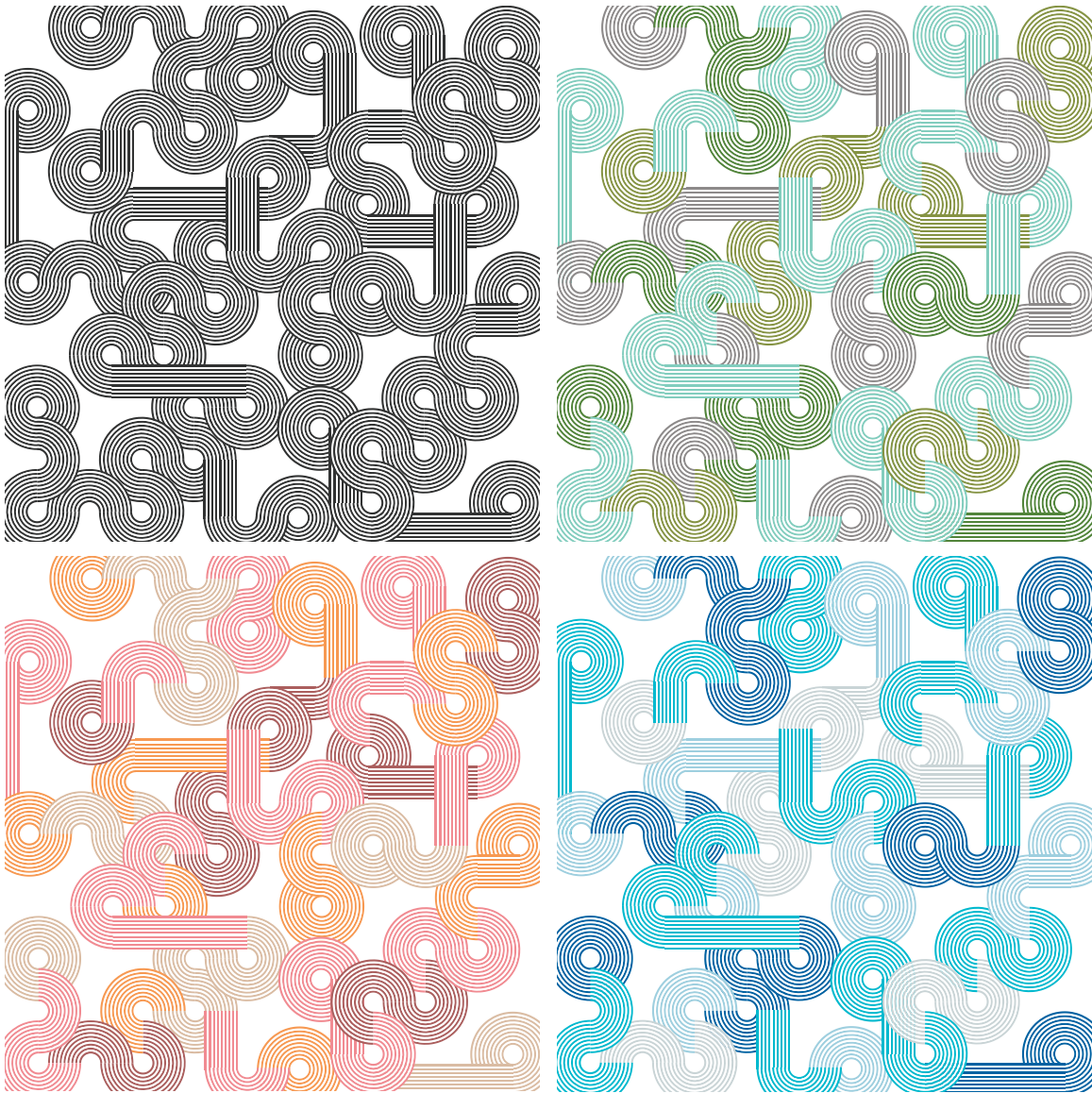


Figure 10, Nature's Geometry: Patterns, 2015, Tree Rings

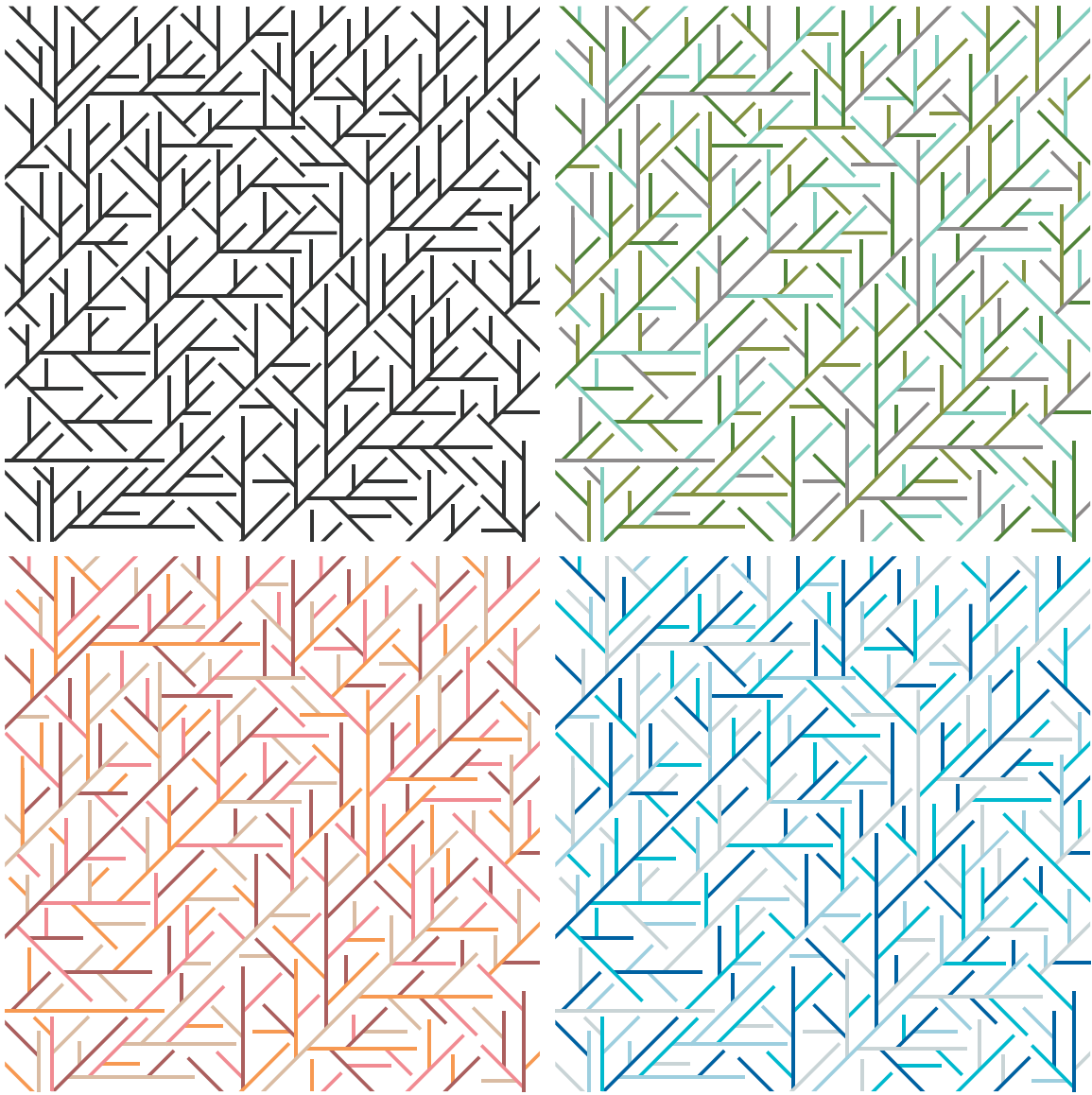


Figure 11, Nature's Geometry: Patterns, 2015, Branches

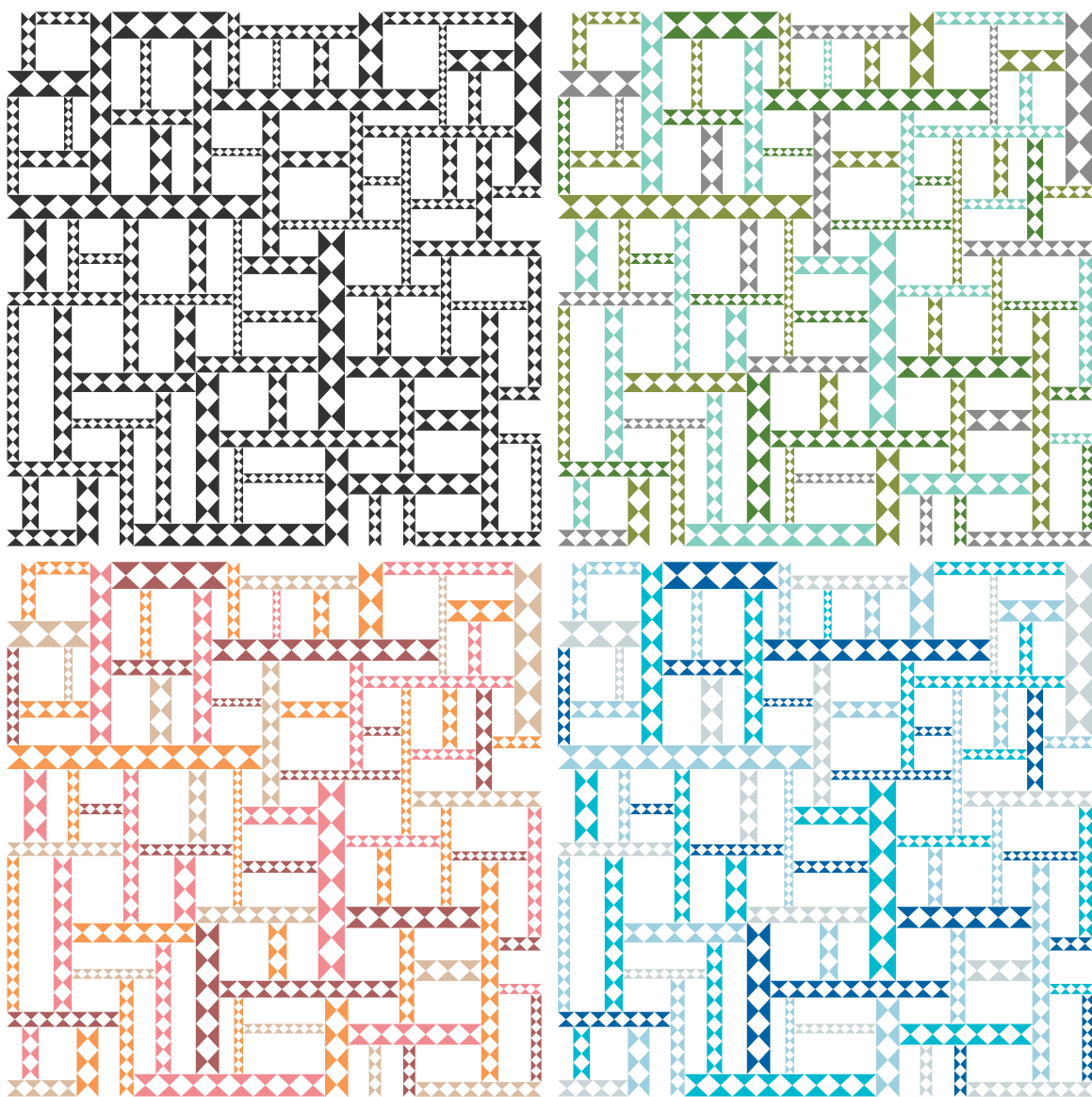


Figure 12, Nature's Geometry: Patterns, 2015, Water Waves

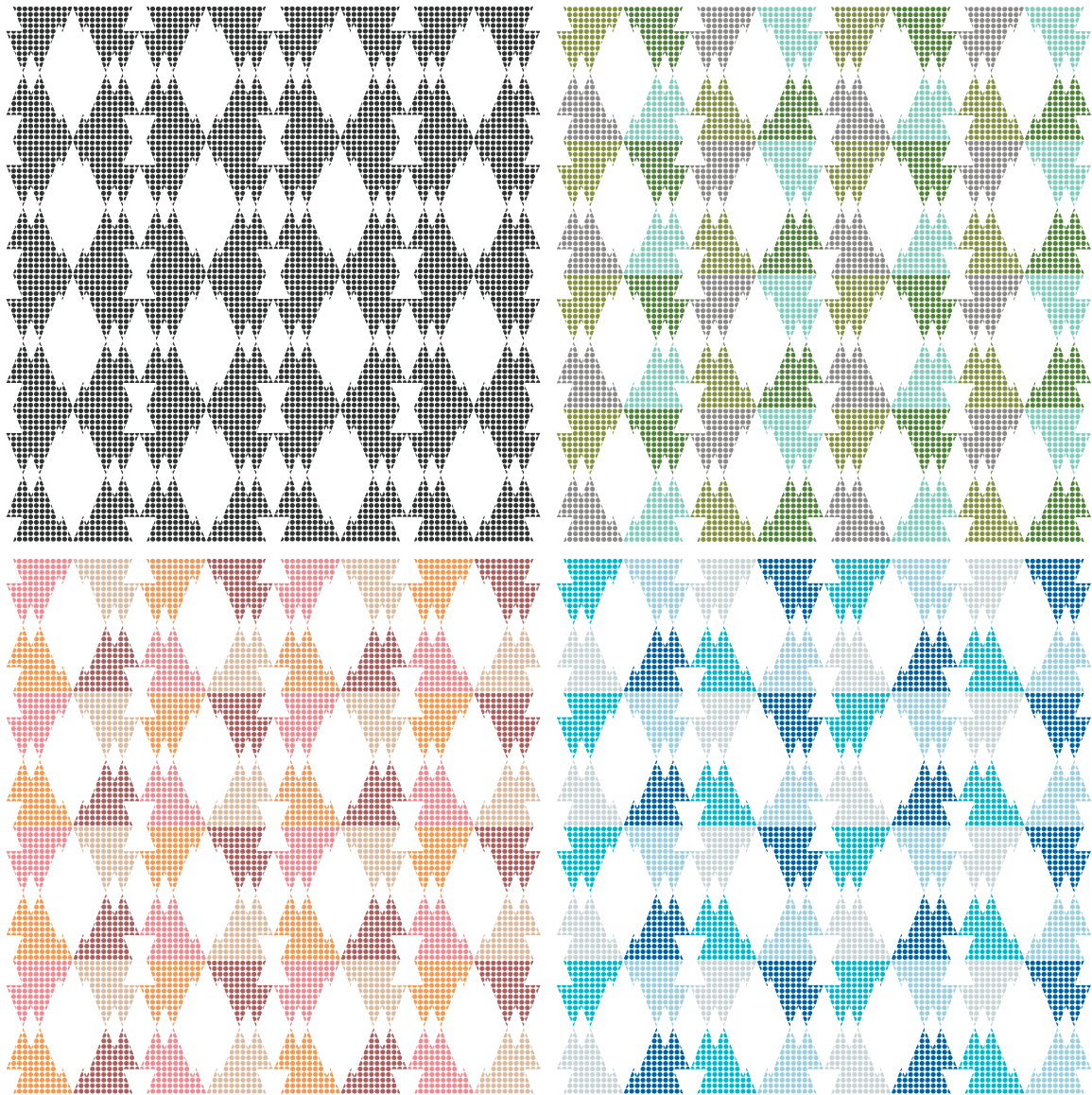


Figure 13, Nature's Geometry: Patterns, 2015, Iceberg

Illustration Poster Series

My aim in applying my visual language to graphic communication is to promote events of the Helsinki Design Week 2015 by designing illustrated posters. Helsinki Design Week is the largest design festival in the Nordic countries. Over 150 design events from workshops to seminars and fashion shows spread throughout the city.

I created four posters based on my symbol and pattern investigations. Each poster has its own primary theme to promote design week. The first illustrated poster within this series promotes the “Design Talks” (Figure 14). The Design Talks are comprised of six well-respected native Finnish designers who share their special experiences in the process of design and unique views on design trends. The most prominent element within the composition: a three quarter circle, represents an open mouth that can speak and share information with participants.

The second poster presents the subject of “City Jam” (Figure 15). City Jam is a service design workshop that focuses on independent living for elderly and disabled people. The water waves was incorporated into this poster and constitutes a large numbers of road mazes, which represent a structure of a city map.

The theme of the third poster is “14°C, Still Summer” (Figure 16), which is an exhibition of a pattern collections printed on silk scarves. The prominent symbols, an Iceberg, representing winter, and the sun identifying the summer season. These two symbols are combined to represent 14°C, the standard climate during Finland’s summer, although it is winter in other countries.

The fourth poster represents the architectural event “Open House Helsinki” (Figure 17). The event organizes guided walks in fascinating interior spaces, interesting parts of the city as well as old and new architectural points of interest. The main illustration in “Open House Helsinki” is based on branches, which can be considered to represent many directions of trails throughout Helsinki.

For the composition of the poster series I considered the relationship between the typography and illustration. I tried to keep a consistent layout throughout in order to achieve visual hierarchy, consistency, and variation interplay within the series. Each element on these posters was an iterative process, highly selective, and organized accordingly. I enjoyed creating my own illustrations to express the themes of the different events. The iterative process allowed me to keep thinking and experimenting continually in order to enrich myself during the design process and execution. Additionally, the color choice in the posters is an extension of my patterns and the themes they represent.

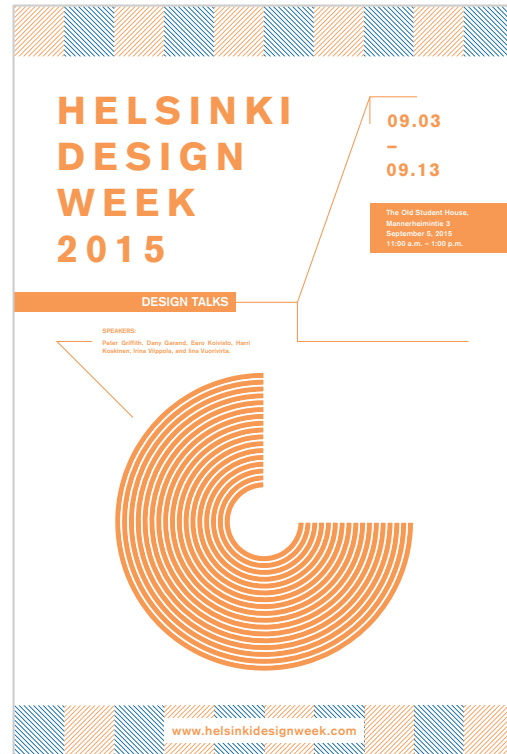


Figure 14, Helsinki Design Week Poster – Design Talks, 2015.



Figure 15, Helsinki Design Week Poster – City Jam, 2015.



Figure 16, Helsinki Design Week Poster – 14°C, Still Summer, 2015.



Figure 17, Helsinki Design Week Poster – Open House Helsinki, 2015.

Applications

Nature's geometric symbols are essentially design templates and can be systematically applied to design applications, and in my particular design application, to promote the Helsinki Design Week 2015. The typography logo is an important visual element to communicate with my audience and used as a branding element to unify the series. I had chosen one geometric sans-serif typeface and developed variations within my concept of nature, simplicity, and peace (Figure 18). The geometric patterns were developed as the basis for the visual identity in various applications. For example, paper bags, cups and T-shirts for Helsinki Design Week 2015 (Figure 19).



Figure 18, Helsinki Design Week: Typography Logo, 2015.



Figure 19, Helsinki Design Week: Paper Bags, cups, and T-shirts, 2015.

CHAPTER 5: SUMMARY AND CONCLUSIONS

In conclusion, primarily my thesis work is based on exploration and experimentation. Through this entire investigation, I embraced the challenge by opening up my mind, and through my personal lens, developed a strategy to express my thoughts and design approach in a distinctive visual language. The experimental process gave me an opportunity to research natural elements that I am interested in the wide-ranging natural world. This process allowed me to discover and exercise various design principles and investigate unusual styles as a graphic designer and visual communicator. For instance, on the basis of my profound research of unifying principles, I applied this theory into my patterns and poster designs. Further research and discovery of contemporary Finnish design gave me a new understanding of global campaign design and how to incorporate those ideas into my work. Ultimately, as a graphic designer, this is what is most important to me.

My artwork is composed of creative symbols, elaborate patterns, illustrated posters and applications for a global visual identity campaign. Each category and the various avenues that were explored are clear directions to pursue, allowing me to develop further investigations and areas of visual inquiry. I plan to continue with my study on geometric patterns, which can be pushed further into other fields of applications such as packaging design for natural food and beverage products. Moreover, interactive mediums are more attractive for people. My further experiment on user interface and web design for campaign design will provide people with additional useful information and tools to navigate.

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VITA

Lin Feng was born in Qingdao, Shandong, China in 1988. She received her bachelor's degree of Art and Design from Beijing Institute of Graphic Communication in 2011. She has worked as a user interface designer in Qingdao. Feng plans to receive her Master of Fine Arts from Louisiana State University in May 2015.