Analysis of the Design Methodology "Grid System" with Internationalism Characteristic

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Abstract: The "Grid System" is a methodology used in typography that came into being under internationalism after world war II. This methodology takes control of the image's aspects with the grid lines that equally divides and distributes the space, which resulted in the visual balance and a sense of coordination. As a design method, it represents how mathematical subjects interact with art. And even after decades of evolution, it still acts as a crucial part of art & design and deeply influenced many designers and their works. This paper starts with the history of the "Gird System" method while introducing its concept and following its major developments and practices, then finishing up with an analysis of its main character and methodology for some future design.
Keywords: Grid System; Graphic Design; Typography; Internationalism Characteristic

The "Grid System" played an important role in unifying and developing the 20-century graphic design. It is commonly used in most designs and has had enormous influences on typography and character design, and other subjects. The rational and balancing ability which carries creates a field of managed and a sense of standardized industrial production. The system isn't a simple form as it seems but a sophisticated measurement of the space and the elements' visual weight. It was an integration of multi-subjects such as psychology, etc. Analysis of the "Grid System" can provide an up-to-date reference of its developments and fundamental principle for our future design practice and offer the possibility to expand the frontiers of design in China and worldwide.

1. Concept and brief history of Gird System

1.1 Concept

Gird System can essentially be called a kind of framework that controls and regulates the elements on a graphic. The grid represents lines that constructed several rectangles with the same size equally laid on the surface with a balanced pattern. "A net-liked mixture made of a pattern of equally distributed crossed horizontal lines and vertical lines" can be the description of the Grid System form. As Anthony Froshaug stated in the article

"Typography is a grid" published in 1976 on designer magazine "grid, n. The frame of spaced parallel bars … network … gridiron …'.Or, 'net, plexus, web, mesh, twill, skein, sleeve, felt, lace; wicker; matting; plait, trellis, wattle, lattice, grating, grille, gridiron, tracery, fretwork, filigree, reticle; tissue, netting[1]", Grid is a means to integrate different sizes of characters and pictures along with other visual aspects to an even and well-distributed whole. But on the practical level, unlike the grid system with its theories and evidence, the grid itself is actually invisible in the final pieces, only acting as a reference during the design, a tool, and a passage for us to orchestrate our work better. Using a grid system, we should use an x-axis and a y-axis as a reference; then, we divided it into two grid forms. One is the point-based grid, which acts on specific coordinates and intersections, while another is a field-based grid that includes module-based and line-based.

1.2 Brief history of Grid System

The Gird System is formally established in the early-20s century, but before that, the grid itself has been explored and experimented with for a few centuries. The first known usage of the grid in art & design was in the early-15s centuries when a new printing method was invented in Gutenberg called "Hot Metal Typesetting". In this initial attempt, the gridded visual aspects

modern women's clothing aesthetic concepts and clothing systems in China and abroad.

Reference

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represent a vertical relationship in the visual prospect of a link between spirituality and reality. Then we come to the renaissance times when people start to see the figures in religious beliefs, more humane and science been put forward. And the grid gradually serves as a medium of scientific research and a process of rational ideology. One vital example is that in the late 15 century, the prospective laws were discovered and wildly used in illustration and paintings, where the grid system helps the artist define the prospective point in the paint and build a prospective space accordingly. The designers commonly used the gird in other subjects in design, such as refining the ratio in character design and discovering other fundamental principles. As we advance to the 20-century, it is universally acknowledged that the first attempts were made in Europe and gradually came into a system with its organized internal structure. Peter Behrens first applies the grid system in the manufacture illustration and other advertisements. Similar effects also happen at the constructivism and Bauhaus design school. In 1914, the constructivist E Lissistzky's work "The Isms of Art" exhibits a strong characteristic of the grip system, the typography is standardized, and all the text is in non-serif fonts. Simultaneously, the grid system also exhibits itself at Piet Mondrian's work "Composition in Red, Blue, and Yellow". Under the influence of this work and its concept, Theo Van Doesburg's magazine changes its cover to a different size of blocks that form a contrast on the visual weight, which forms a grid structure that restrains the whole layout. Furthermore, when we take industrialization as a factor to the equation, the visual coherence it provides by mass-production of looks-alike products formed a visual habit in the standardized and similarity, which answers the grid system's growing usage.

2. Major developments & practices

As World War II began, the grid system did not have its perfection in Russia, or the Netherlands, or even German. But it does come through its first breakthrough in Bauhaus, German. Bauhaus Institute being a crucial part of modern design, bound the designers of another design school. As for the Bauhaus school itself, with its known rational, order, and scientific approach, the grid system naturally applies to it and begins to be used in typography. In 1922, the Bauhaus Ausstellung Poster made by Oskar Schlemmer used the grid system to simplify the fonts with 5 by 5 blocks in bold character while 4 by 5 in narrow ones. In 1928, Joost Schmidt using the grid system to optimize the whole typography class in Bauhaus, advocating "Everything should start with a square or a circle."

But the actual practices of the optimized typography system are the Jan Tschichold, where he combines the current design form to become a new thing. He used to gird system that was influenced by Mondrian's work, which interreacts with the constructivism to create a structural frame in his work "New Typography" and fill in the designed words under the optimized typography, which presents a sense of restriction and management. And that marks the foundation of the later on-grid system with internationalism characteristics. Finally, as the war began and the Bauhaus school dismantled, many designers fled to Switzerland's neutral zone, where we embrace our second major development.

Because of the unique position and its neutrality, many designers have come here to seek refuge, which, in a way, facilitate the transformation and evolution of the grid system. Switzerland has always sought functional and simple nature in design and advocates to be professionalized, and irrational individualism and these particular surroundings have empowered the gird system. It offers a sense of stability and non-personalization as the means to express and to perform.

After World War II, the international style of grid system formed in Switzerland. The grid system acts as a stimulus for the international style design; it essentially represents a standardized design law that provides unity and coherence in graphic design typography, which adapts to the industrialization background and the visual expectation. Its major practice exhibits in the Switzerland journal "Graphics" and "Die Neue Grafik".

During the 50s-60s of 20-century, the grid system in international style has reached its top. Similarity and coherence it provides became its biggest flaws, and some designers began to put back some personalized touch into the gird. By preserving the grid itself but removing its functionality, the grid became an invisible element in the picture like other elements. And it formed the grid system in postmodernism.

3. Main character & methodology

As a tool or a widely used design method, it provides a universally suitable standard that fits into the industrial manufacture background and redirects the graphic among other designs to a standardized and coherent visual expectation. Furthermore, its ability to convey and deliver meets the core needs of the visual psychology of humans.

3.1 Restrained Orders

Gird System itself represents a sense of restriction and a certain order[2]. The first and most obvious character of the grid system is balancing the space in the pictures. The grid system is a general mechanism that manages all the visual elements in the picture, from a paragraph of words to an attached photograph. Gird systems introduce order into the design, the restriction provides stability in the picture, an invisible internal law provides harmony, and most importantly, provides a sense of secure[3]. Those who are not specially trained in art & design school might not be able to come to a rational comprehension of the grid system, but they can sense and feel by looking at the pictures. The horizontal and vertical lines might not be visually there, but it exists within the layouts.

3.2 Simplified Information

To convey the information effectively, we must achieve four conditions: 1. the Information itself must be recognizable; 2. the transformation must establish between the designer and the audience; 3. on selecting the medium and transformation methods, information must be able to symbolize to achieve a certain common-sense level; 4. the information itself must have adequate creditability. Therefore, by using the mathematical principle in the grid design, we can prioritize the information on the scale of

importance according to the audience's perspective. The grid system can visualize different levels of interests in different pounds of fonts in a coherent pattern of the places on the pictures. Typography with a grid system improves the efficacy and effective rate of information communication. Eventually, it displays a categorized visual element; a standard visual placement procedure will be developed using the grid system, which again provides a guideline for both designer and audience to place similar elements in standard positions, making the pattern foreseeable and perceivable for the audience.

3.3 Standardized Unity

In the era of mass manufacturing and industrialization, a standard code becomes a natural need for design. And by using the grid system, we can achieve unity and generalized guideline for visual management. The grid system is the boundary lines and the overview layout and choice of fonts, pounds, etc. Using the grid system, we can create specifications for each different kind of needs and repeatedly continue its usage. When there is a need to change, we can also change this mechanism's parts, like repairing a car. Furthermore, the general guidelines meet the need for expedited the process and mass production. A universally acknowledged specification can greatly boost the efficiency of the designing process.

4. Conclusion

Under the age of industrialization, we create a landscape where the sense of standardized unity has infiltrated our lives and become a new norm. This visually hidden rule comes for various reasons. From a political perspective, the order provides stability and equality. And the fundamental methods of capitalism need to form a standard for mass production to make more profits. Therefore, the grid system has its necessities for being a crucial part of modern design; it creates a general guideline for all aspects of design, making it rationalized and easily replaceable. The same guidelines also act as a medium for designers to coordinate design elements and form information priorities to meet different audiences' needs. Furthermore, the grid system exhibits the beauty of standardized unity and provides an excellent visual impression. The balanced space and delicately calculated measurements composite an image of order and controlled. And as we were getting to the principle of the grid system, we can now better apply it to the practical design process and expand its frontiers in this time of ours.

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