

# Fundamental Graphic Design Study Notes

From Simple Studies, <https://simplestudies.edublogs.org> & @simplestudiesinc on Instagram

## Foreword

### Art and Design

Kurt Weidmann, a well-known German layout designer and graphic designer, said: "*Artists do what they want. Designers want what they do.*"

Design is always pursuing a goal. The less conspicuous the design, the more it merges with the background. The less awardable a design is, means the more enhanced its function, purpose, and success it will be.

The cost of design should be kept at a certain ratio with the benefits. The cost of completing a design work and putting it into production should be considered as part of its function.

- **Layout Designer:** a person responsible for the arrangement of predetermined items such as image, text and style on a page
- **Graphic Designer:** the person responsible for the arrangement of predetermined items such as image, text and style on a page.
- **Design:** an outline, sketch, or plan, as of the form and structure of a work of art, an edifice, or a machine to be executed or constructed

### Core of Graphic Design

A few points that are crucial for every design:

1. What is the purpose of producing this product?
2. How can this product exert its function to achieve this purpose?
3. What form should I give this product to maximize its functionality?
4. Are the costs of design and production in harmony with the purpose of the product?

## How to Study Design?

- It is recommended that a person who is ready to engage in full-time design work turn himself into a professional idiot, that is, let yourself focus on a few specific areas of design, and do a good job in these aspects, instead of only understanding a little of everything.
- Start with completing a few small projects instead of doing a little part every time. If building a car is too hard, don't start with the wheel, instead, try to make a whole bicycle first.
- But do not ignore other areas. Knowing something beyond your major will not only deepen your understanding of these principles, but also broaden your horizons and bring inspiration.
- *You have to open your eyes to observe the world.*

## Designer's Rules

- What makes you a better designer is not the theories introduced to you in this note, but the trained eyes and comprehensive comprehension that you have developed over time.
- Every designer should know and master the rules introduced in this note.
  - On the one hand, you can have rules to follow when making choices, and solve the problem of "why do you design like this", which will affect whether or not customers buy this design.
  - On the other hand, design rules can help you design more efficiently.
- *The highest rule of design is to watch.*

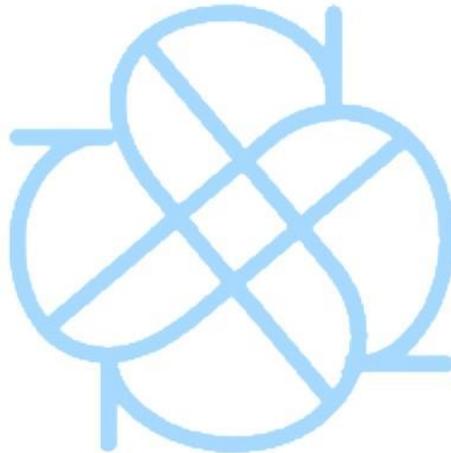
## Types of Designers:

- Material impression designer
- Intellectual stereotype designer
- Inspirational expression designer

People who are new to design can't help but click on the keyboard, and hope the computer will complete the whole design. Although the computer has countless powerful features, it cannot solve creative problems. Wisdom is not a computer but a person who uses it.

- Most professional graphic designers use paper and pen instead of keyboard and mouse to start work.

Creativity comes from the mind. In addition to having creative ideas for the overall layout, you also need to have original inspiration and use your own methods to turn ideas into reality.



# 1. Design Principles

## 1.1 The Purpose of Design Principles

The principle exists to help you, not to limit your creativity. You have to understand the principle you will break.

According to Dieter Rams, good design:

1. Is innovative
2. Makes a product useful
3. Is authentic
4. Makes a product understandable
5. Is unobtrusive
6. Is honest
7. Is long-lasting
8. Is through down to the last detail
9. Is environmentally friendly
10. Involves as little design as possible

## 1.2 Design—A pure matter of taste?

- Think with others' brains. Taste that caters to the target group is the way in which the product plays a decisive role.
- Graphic designers think of an art that others think of.
- Many factors that make music good are not objective measurables, but exist in subjective feelings, as well as graphic design.

## 1.3 Standard of Excellent Graphic Design

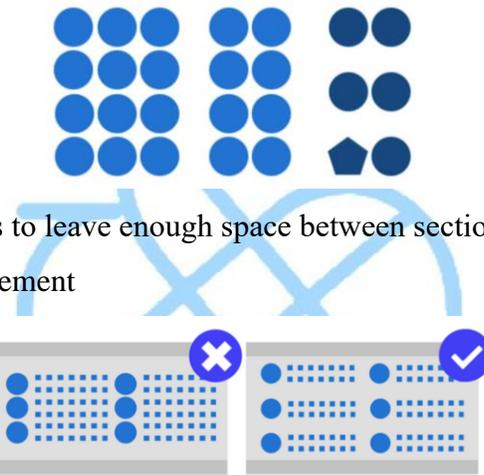
- A good design doesn't contradict common sense or natural instinct.
- There are two basic standards for judging design: function and aesthetics.
  - Usefulness is not necessarily beautiful, but it must not be neglected because of the pursuit of function.
- Harmony and contrast define an excellent design.
  - Too much harmony can make the design boring.

- If the two design elements are different in size, the difference in size should be obvious.
- People like simple things that can be seen through at a glance
- As a designer, you have to decide what information is most important, and try to convey this information through clear visual expression

## 1.4 Gestalt Visual Perception Principle

(the following graphics are all from <https://uxcam.com/blog/gestalt-principles/>)

- **Law of Proximity:** objects that are close to each other are treated as a whole, no matter the shapes, colors, or sizes

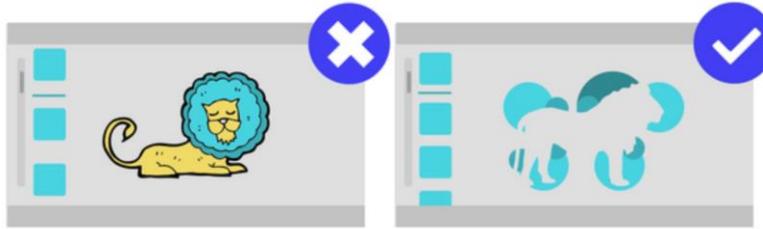


- This law tell us to leave enough space between sections so users don't think they are the same element

- **Law of Closure:** people have the tendency to make what they see make sense, so if there are gaps in between a figure, the human brain will ignore it and understand the bigger context.



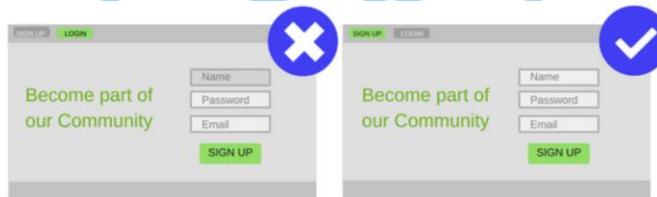
- With the effective use of this law, it is possible to design icons and pictures that use less elements as possible.



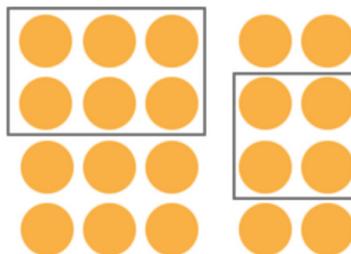
- **Law of Similarity:** users understand elements which look similar to a group or a pattern



- Group elements with similar functionality together so user can have a more fluent experience.



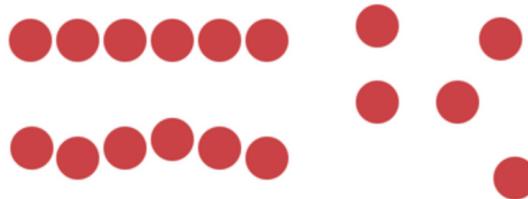
- **Law of Common Region:** elements which are together in the same closed region will be understood as a group.



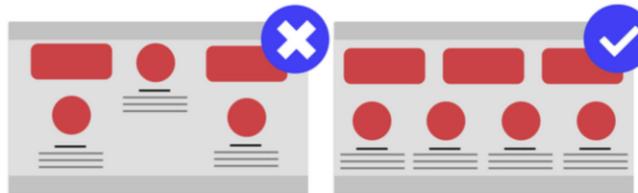
- Give related elements a frame and show that they belong together. Define a clear border to show that the inner elements belong together



- **Law of Continuity:** elements which are ordered in a line or a soft curve seem more related to each other than elements which are ordered randomly or in a sharp curve

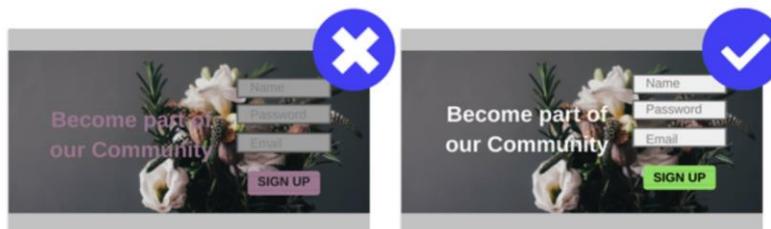


- Use this law to guide the user through the different segments and contents. When the continuity is disturbed, people will know it's the beginning of a new segment.



- **Law of Figure and Ground:** people instinctively recognize if elements are in the foreground or background and that the foreground is more important than the background

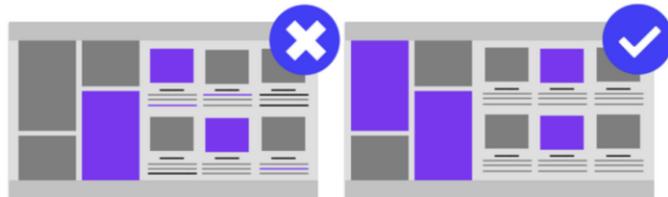
- Use this law to influence where the user focuses on



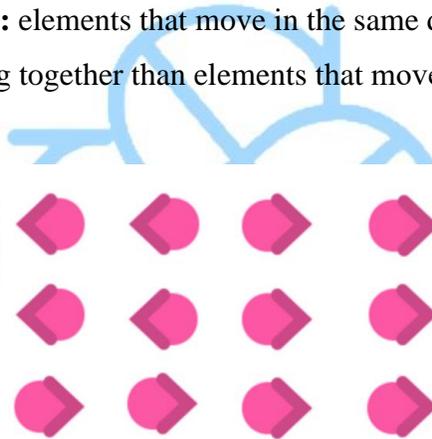
- **Law of Symmetry:** symmetrical elements give the feeling that everything is ordered



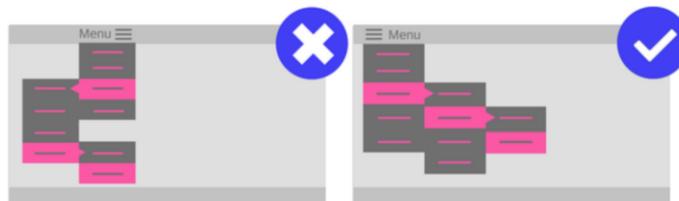
- Too symmetrical would make the design look very boring, but too asymmetrical would make the design too messy. You need to try to find a balance.



- **Law of Common Fate:** elements that move in the same direction are more likely to be considered as belonging together than elements that move in different directions or don't move at all.



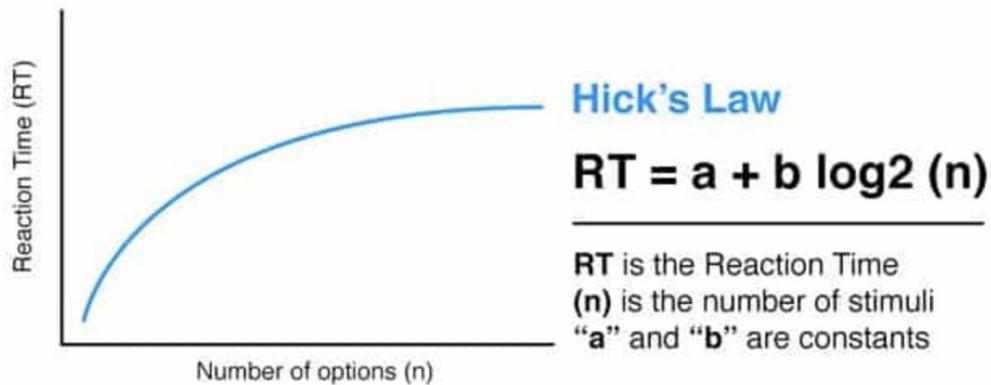
- If you happen to have any objects in motion in your design that belongs to the same category, make sure they are the same speed and direction (e.g. drop-down menus, process graph)



- **Interference Effect:** the interference effect refers to the appearance of two opposite expressions in the same image

**BLUE**   **GREEN**   **YELLOW**  
**PINK**   **RED**   **ORANGE**  
**GREY**   **BLACK**   **PURPLE**  
**TAN**   **WHITE**   **BROWN**

- **Hicks Law:** the more choices a person faces, the longer it takes for him to make a decision.



(from <https://www.designorate.com/hicks-law-building-usable-navigations/>)

- **The Kiss Rule:** Keep It Simple
- **Reliability:**
  - Product design itself can also convey information. For example, first-class design (such as gorgeous packaging) makes the product appear luxurious, and this often means high prices.
  - Most consumers choose their products with their eyes and make decisions based on their feelings. They think that what looks cheap is really cheap.

## 2. Shape

### 2.1 Format

- In the layout design, if the background is very dark or black, then the text and symbols set to white or other bright colors will be highlighted.
- On the contrary, simple black and white text will give people a calm, real and cautious feeling.
- Elements with high brightness are more noticeable than elements with low brightness.
- Adding a border can avoid the foreground picture to be integrated with the white background
- Horizontal formatting is more suitable to people's daily viewing habits
- Vertical formatting is more suitable for holding in hands

### 2.2 Points

- Point is the smallest graphical unit
- Use focus points to attract the user's attention when designing
- When reading, our eyes also jumped from point to point, wandering between the lines in the word.
- There is always a prominent point in attractive design works that can catch people's attention, and it is also possible that two or three points are related to each other, thus guiding our sight.

### 2.3 Lines

- The point allows the line of sight to stay, and the line serves as a guide.
- When improving your own design, think about whether or not you added dynamic lines that guide the user exactly the way you want to guide them.
- Shape is connected with emotion. The slender lines give a gold and silver feel and look very light. Lines as thick as the beam will make people feel heavy.
- Squares composed of horizontal lines look taller, and squares composed of vertical lines look wider.

- The basic tendency of horizontal lines is to guide and connect, while vertical lines are to stop and divide.
- **Dynamic Lines:** Inclined lines that convey movement and vitality, creating a sense of tension and movement.
- If you want to align a circular object with other elements, you must properly break through the "align into a straight line" state, so that the circular object looks fit.

## 2.4 Surface

- Surface is commonly used as an organizer or for decor.
- Circles are always associated with warmth, softness, and femininity.
- Oval-framed paintings give a nostalgic feeling.
- The emotion conveyed by the square is quiet and stable, but also indifferent and tough.
- As an unstable shape, diamonds are more noticeable than static and stable shapes, so they can come in handy in occasions that need people's attention, such as traffic signs on lanes.
- An equilateral triangle usually gives pyramid-like stability; however, this shape is also dynamic.
- A triangle supporting itself with a point is also unstable, like diamonds, which is easily noticeable.
- A horizontal rectangle is malleable and tends to move horizontally.
- Vertical rectangles have a tendency to move vertically.
- Comparing horizontal and vertical rectangles, you will feel that their aspect ratios are slightly different.
- The wider vertical rectangle conveys a sense of stability, but sometimes it looks bloated.
- The higher vertical rectangle reflects the elegant and noble temperament, but may also appear tall and unstable.

## 2.5 Ratio

- Most DSLR cameras use the standard ratio, 3:2, but some still use 4:3. Also, some pocket cameras use the television ratio, which is 16:9.

- If you have mastered the basic knowledge of morphology and the relevant knowledge of proportion, you can get along with the best design scheme quickly on this basis, without having to endlessly struggle with the size of each element.

## 2.6 Position and Weight

- In order to achieve the visual effect that a certain point is in the center of the vertical axis, we have to move it up slightly during the design.
- When weighing the weight of elements, the most critical factors are area and brightness.
  - Of course, color, shape, and location are also important
- Dark design elements are considered to be heavier than light design elements.
  - This conclusion also applies to colored objects.
- Harmony in a design does not mean that all design elements are balanced
  - Setting the key strategically can make the design more alive.
  - Asymmetric designs have more tension than harsh designs, and they are more noticeable.
  - When weighing the various points, a clear, relaxed design is the charm of art
- The left and right edges of the text that are aligned at both ends are straight, so the visual effect is quiet and stable. This is suitable for designs that dilute the layout and highlight the content, such as books, newspapers, and periodicals.
- Left-aligned text with different line lengths looks more lively.
- Center-aligned texts make the lines of text evenly arranged on the left and right sides of the central axis of the page, which conveys static effects. However, this layout usually does not look very stable because it makes the text on both sides of the central axis deviate from each other.
- In the design, please *do not mix different alignments*.

## 2.7 Symbol and Association

- The circle has no obvious starting and ending point, which is why people associate it with endlessness and rebirth. Its roundness and softness are in line with the characteristics of women.

- The square is reminiscent of a sharp, hard, and masculine look. It is often used in logos in the technical field and represents absolute geometric characteristics
- Compared to static and compact circles and squares, equilateral and isosceles triangles always point to one direction only.
- We connect the ideal image we pursue with stars.
  - Stars with a lot of sharp corners have an explosive sensation effect visually.
  - Where there are novelties like exciting announcements or rare big sales, you can see this shape of the sign.
- The purpose of visual communication is mainly to express a certain idea graphically to achieve the effect of emphasis and communication.
- The meaning of the word "focus" is that what you show to people should be as simple as possible, so as to accurately convey the idea of the work and trigger the association that the viewer should have.
- “A picture is worth more than a thousand words.”

## 2.8 Perspective and Spatial Effects

- Perspective in a two-dimensional plane is purely an illusion.
- Parallel perspective means that parallel lines in reality also look parallel on the screen
- Compared with the parallel perspective, the picture presented by the central perspective is more natural
  - Two parallel lines extending far away from each other will eventually meet at the end of the line of sight, which is the vanishing point.
- Color and shadow can create a sense of space.
  - Thick and light tones are the visual effects of objects near and far respectively.
- Warm tones also make objects feel closer, and the bluer the object is, the farther it looks.

## **3. Color**

### 3.1 What is Color?

- **Psychological primaries (primary colors):** Red, blue, green, and yellow
- **Achromatic colors:** black, grey, and white

- Colors have different visual effects that depend on the lightness or darkness of the background color.
- A basic color must generate complementary colors
  - The gray area under the red background looks a little green, and the visual effect is cold.
  - Green is the complementary color of red, and the gray areas on the green background reveal red accordingly.
- In fact, there is no such thing as a color ring. The color spectrum of visible light ranges from 380 nanometers to 780 nanometers, and the corresponding colors at both ends are purple and red, respectively. The two colors and the colors between them should be connected in a straight line, rather than a ring. Bending this color line into a closed ring is artificial, not its original appearance.
- Website designers and graphic designers use different colors in their work.

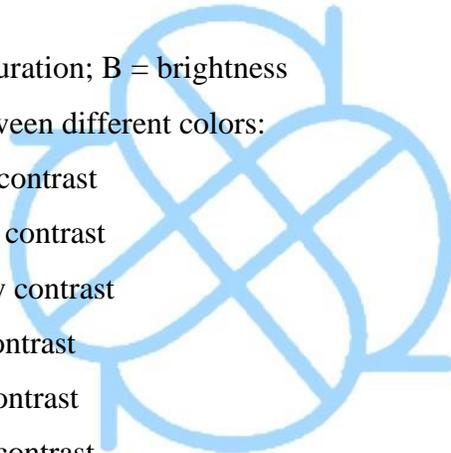
### 3.2 RGB and CMYK Color Spaces

- Strictly speaking, the color of all white objects we see can only be said to be similar to white, and the color of all black objects is only relatively close to black.
- The color of all the object surfaces we see (including the surface of the printed matter) is actually the result of subtractive color mixing, which is the color formed by the white light filtering.
- **Basic printing colors:** cyan, magenta, yellow
- The basic colors of pigments by the subtractive color method are mixed in twos of cyan, magenta and yellow to form the basic colors of light color with the additive colors - red, green and blue.
- The so-called color space is made up of all colors that are generated based on a certain color system and the basic colors it contains.
- Although the pigment colors of subtraction and mixing play a great role in the printing process, when viewing pictures through impression scanning equipment and digital cameras or watching videos with computer monitors and projectors, we see the light colors of pseudo-addition mixing.

- Generally, when taking pictures with digital cameras, the photos will be greenish, which is also compatible with the fact that there are many green vertebral cells in the human eye.
- The colors seen on monitors are more vivid.
- The printing basis of the CMYK color space is paper.
- The more basic the color components are, the darker the overprinted picture
  - The RGB color space is mixed on the basis of matteness and darkness.
- The higher the intensity of each color, the brighter the picture appears.

### 3.3 Other Color Spaces

- **Lab:** is a reference color space in PS and can play a role in the conversion of different color spaces.
- **HSB:** H = hue; S = saturation; B = brightness
- 7 types of contrast between different colors:
  - Light and dark contrast
  - Cold and warm contrast
  - Complementary contrast
  - Synchronous contrast
  - Color quality contrast
  - Color quantity contrast
  - Color relative contrast



### 3.4 Hue, Lightness, Saturation

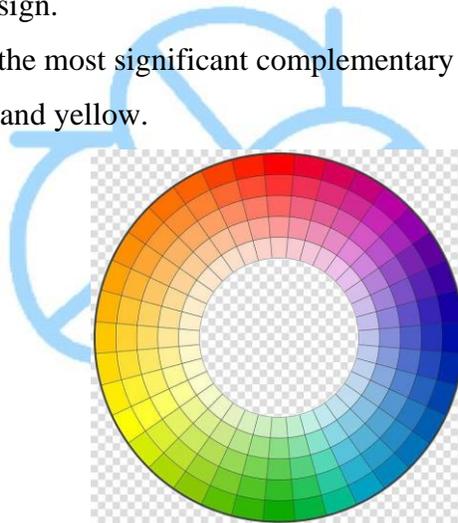
- Saturation can be defined as the "purity", "chroma" or "vibrancy" of the color
  - High saturation = vivid colors
  - Low saturation = plain colors
  - Zero saturation = gray

### 3.5 Hue Value

- When people remove the saturation of a certain color, the hue value is the most obvious.
- We want to strive for the visual effect of the trademark to remain the same, even in black and white mode (or a change to another color).
  - Even the richest companies will inevitably have some black and white advertisements because certain media only releases monochrome products.
- You should also pay attention to the mutual influence of putting a certain color element in another color, especially when it comes to text.
  - If you don't pay attention, it will destroy the visual effect.

### 3.6 Color Ring

- Color rings can help us understand the process of forming mixed colors based on the desired effect of the design.
- For graphic designers, the most significant complementary pairs are red and cyan, green and magenta, and blue and yellow.



(from <https://ringofcolour.com/en/>)

### 3.7 Contrast of Colors

- **3.7.1 Hue Contrast**
  - When we arrange two or three colors together, there will be a color contrast. This is the simplest among the comparisons, but also the strongest.
  - The contrast between the primary colors of the color space is particularly strong, such as red, green and blue or cyan, magenta and yellow
  - The contrast between the mixed colors is more peaceful, but just as sharp.



(image from

[https://personal.utdallas.edu/~melacy/pages/2D\\_Design/Itten\\_ColorContrasts/IttenColorContrasts.html](https://personal.utdallas.edu/~melacy/pages/2D_Design/Itten_ColorContrasts/IttenColorContrasts.html))

- **3.7.2 Light and Dark Contrast**

- Pure colors make people dazzled before they see the main message of the work.
- The contrast between light and dark is of course not only between black and white and various gray tones, but also different brightness of various colors.
- Among the basic colors, the contrast between blue and yellow is the highest, second only to the contrast of achromatic black and white. The basic colors with the lowest contrast between light and dark are magenta and green and some other colors that are adjacent to each other in the color circle.



(from <https://vansedesign.com/web-design/luminance-working-in-grayscale/>)

- **3.7.3 Cold and Warm Contrast**

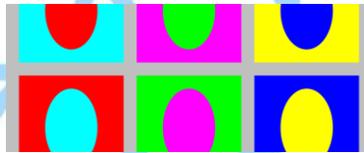
- In the fields of photography and science, blue light has a higher color temperature than red or yellow light, but in the eyes of designers, it is the opposite.
- In the future, we will still use the psychological experience of color as a reference, and temporarily put the physical color temperature aside, so red is still warm, and blue is still cool.



(from <https://br.pinterest.com/ulyssesvenancio/cold-and-warm-contrast/>)

- 3.7.4 Complementary Contrast

- The three complementary colors in the basic colors have their own characteristics:
  - Blue and yellow are the pair of complementary colors with the highest contrast between light and dark
  - Red and cyan have the strongest contrast between warm and cold
  - Green and magenta have the lowest contrast between light and dark.



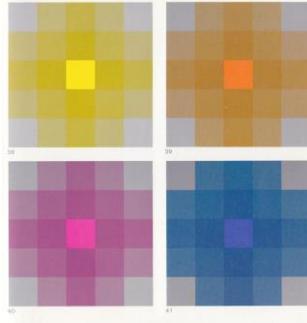
(from [https://en.wikipedia.org/wiki/Complementary\\_colors](https://en.wikipedia.org/wiki/Complementary_colors))

- 3.7.5 Synchronous Contrast

- The theory of synchronous contrast shows that each color can produce its complementary color in a specific environment.

- 3.7.6 Color Quality Contrast

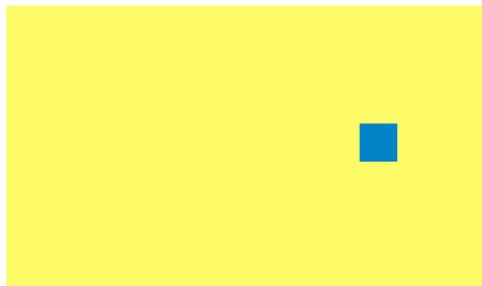
- The most practical comparisons for the design process: color and complementary contrast, light and dark contrast, and color quality contrast.
- Color quality contrast refers to the contrast high and low-saturated colors
- Commercial designers should also learn the persistent spirit of artists, and occasionally put down the full palette, pick only one color, and use the different transformations of monochrome to create a good work.



(from

[https://personal.utdallas.edu/~melacy/pages/2D\\_Design/Itten\\_ColorContrasts/IttenColorContrasts.html](https://personal.utdallas.edu/~melacy/pages/2D_Design/Itten_ColorContrasts/IttenColorContrasts.html))

- **3.7.7 Color Quantity Contrast**
  - This concept involves the relationship of the size of different color areas.
  - It sums up a solution that allows different colors to be coordinated together:
    - Yellow (3) : orange (4) : red (6) : purple (9) : blue (8) : green(6)



(from <https://www.loveofgraphics.com/color/colorcontrast/>)

- **3.7.8 Color Harmony**

- **Harmonious three-phase color:** an equilateral triangle in the center of the color circle shows the harmonious relationship between the three-phase colors.
- **Complementary three-phase color:** an isosceles triangle whose top angle is a certain basic color, and the remaining two corners refer to two colors adjacent to the complementary colors of that basic color.
- The contrast of these color combinations is strong, but they are not too cluttered and destroy the visual harmony.
- In the design, the mixing of different fonts and different colors is very challenging
  - Some people think that the combination of colors based on squares and equilateral triangles produces extreme effects, which is a prejudice.
- **Harmonious complementary colors:** Harmonious complementary colors do not appear in a certain shape on the color wheel, but form a line through the color circle. A bunch of complementary colors form a set of double colors, and the double colors increase to quadruple colors as the line segment passes through the center of the color ring.
- Pictures, photos, and graphics created by the transformation of the same color tone value are called **single-phase color works**.
- **Harmonious near-phase color:** In a harmonious near-phase color combination, each point is connected into an arc centered on the color ring.

## 3.9 Colors and Associations About Them

- **3.9.1 Red**

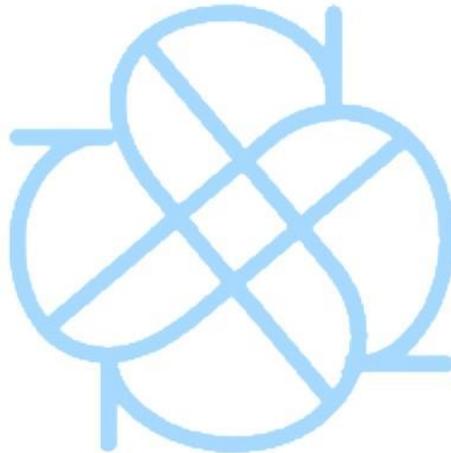
- Red is always prominent and eye-catching; it is the "closest color".
- Red can express desire and love, but also hatred.
- It is the color of blood and also represents war and violence
- Associations about red: love, war, pornography, heat, danger, anger, enthusiasm, hatred, warning, spicy, fire, energy, communism, socialism, vitality, sports, intimacy, etc.
- Red means "important" - we use red to mark important information.

- Because red is very prominent, we rarely use it as the background color in the design, otherwise the theme image will appear dull compared to red
  - Red and black: danger ; Black, red, and yellow: casual and comfort
  - It is best to combine the red forecast colors in the design, which is bright and vibrant.
- 3.9.2 Blue
  - Blue represents knowledge, science, and wisdom, and is also an iconic color for health, sports, and technology
  - Blue is far away. Blue is obviously the best background color. The farther away the object is from us, the more blue it appears, so blue is easy to give people a sense of distance, which is the opposite of red. Blue feels calm, soft, and gentle.
  - Associations about blue: distance, cold, quiet, wide, clean, boundless, sky, water, harmony, relaxation, technology, seriousness, dream, longing, loyalty, fantasy, freedom, etc.
  - Blue is serious, free, the color of ordinary class, and is a union color
  - From a psychological point of view, the effects of blue and red are the strongest.
    - The combination of them is the epitome of all colors.
  - Blue + gray looks very calm and solemn → technical field characteristics
  - Bright blue + white looks vibrant → suitable for symbolizing ingenuity and innovative ability.
- 3.9.3 Green
  - Green is linked to the life of plants.
  - If a representative color of a certain social class is exclusive, then green is the color of the middle class, red is the color of the nobility, and blue (indigo) is the color of the general public.
  - Green makes people feel calm.
    - We know that blue produces a sense of distance, co-coloring and aggressiveness, and green is indeed peaceful and modest.
    - Blue is cold, red is hot, and the green temperature is just right
  - Associations about green: nature, health, ecology, spring, hope, vitality, life, fruitfulness, vitality, youth, growth, fertility, immaturity, jealousy, evil, hunting

- If nature and ecology are the themes, green is the well-deserved color of choice.
  - Green not only reminds people of the growth of nature, but also heralds economic growth, so it is often used by some companies, such as banks and insurance companies
- Red + green are the colors of Christmas.
- Green + orange/yellow will make the green look fresh and full → fruit shops
- The green grass and blue sky or water form a fresh and natural color space, which makes people not only think of leisure time and fresh air, but also feel relaxed and comfortable.
- Green + purple/black has the meaning of hypocrisy and viciousness
- 3.9.4 Yellow
  - Yellow is the brightest and most sensitive of all colors
  - Its warm colors are suitable for creating a comfortable and warm atmosphere.
  - Yellow also means lively, optimistic, friendly and friendly.
  - It is an iconic color of the sun and summer, a symbol of good weather
  - Associations related to yellow: summer, sunshine, gold, optimism, vitality, maturity, blooming, shame, sulfur, jealousy, envy, angry, miserly, arrogant, cheating, dangerous, angry, etc.
  - With yellow as the background and black font, it has a good farsightedness effect
    - The combination of yellow and black can be a good warning
- 3.9.5 Orange
  - Orange is clearly seen in the distance, so it is often used as a warning color. The warning vests that every driver must equip today are orange or yellow.
  - Orange + black is very shiny, but also a bit dazzling.
  - Orange + brown make up the colors of autumn, which symbolizes maturity and harvest, but also the withering of vegetation.
    - This combination is quiet, warm, and comfortable, but also looks old and outdated, mainly when there are duller browns and oranges.
  - Orange + red look fresh, sweet, and full.
  - Orange + purple is full of high-profile and luxurious.
- 3.9.6 Purple

- Purple-related associations: religion, personality, obscurity, magic, mystery, fantasy, sex, originality, homosexuality, feminism, rights, glitz, sin, seduction, depravity, contrition, ambiguity, emotional use
- 3.9.7 Pink
  - Pink-related associations: charming, polite, soft, sensitive, fragile, delicate, love, vanity, high-quality, sweet, petite, romantic, cute
  - Pink + white looks delicate and sweet
  - Pink + black are sexy and attractive, and it is even more exquisite with purple.
- 3.9.8 Brown
  - Associations related to brown: chocolate, coffee, land, leather, Nazis, dung, beer, disgust, stains, autumn, decay, plants, raw, natural materials
  - Brown also represents comfort, naturalness, and no modification.
  - Brown + orange/yellow looks fresh, natural, and vibrant.
  - Brown + red looks comfortable and traditional, but also conservative, outdated, or even vulgar.
- 3.9.9 Black
  - Black-related associations: death, sorrow, night, nothingness, neutral, hostility, abyss, solemnity, reliability, inability, evil, heaviness, integrity, cyan, truth
  - Black is elegant and very emotional.
  - Black objects look heavier than objects of other colors. Black as a background color can make other colors appear brighter. Black is just and selfless. Only when we see black on white paper can we believe the authenticity of an event.
- 3.9.10 White
  - Associations related to white: innocent, pure, upright, chaste, bright, daytime, empty, untouched, beautiful, pale, ghost
  - White is the ideal background color. On a white background, all colors can fully demonstrate their qualities. White gives a friendly, warm, and bright feeling.
    - In fact, no color is lighter than white.
  - Blank space is an important part of the design.

- Like black, white has always been the darling of the fashion world. All other popular colors have a certain shelf life, but black and white are timeless classics.
- 3.9.11 Grey
  - Grey-related associations: bad weather, materials, numbness, old age, frustration, technology, theory, humility
  - Gray is the supporting role of oil. The light gray plane is a low-key and restrained design element, and the text on the dark gray or graphite background looks softer than the straight black on the white paper.
  - Gray is also the color of precious silver and platinum.



## 4 Text

- In addition to images, text is the most important graphic design element.

### 4.1 History of writing

- Text is a process of development from a mural with artistic and religious colors or an illustration representing the environment derived from daily necessities to a coding system with the help of abstract symbols.
- 4.1.1 Pictographs and epigraphs
  - Egyptian hieroglyphs were one of the most famous scripts in the early writing system, expressing objects through specific graphics.
  - Simplified object images/graphics or abstract symbols with specific meanings are called **morpheme words**.
    - If the morpheme text is very specific, it is called an **epigraph**.
  - **Ideographs** are slightly changed and combined epigraphs, and can be said to be freely formed and created symbols; the concepts it represents are not concrete.
- 4.1.2 Sumerian cuneiform
  - The name of the cuneiform script comes from its artistic shape.
- 4.1.3 Phoenicians and Greeks
  - The English alphabet widely used today can be traced back to the alphabet used by the Phoenicians in the first century BC.
  - "Haleph" became the first letter in Greek.
- 4.1.4 Roman and Latin scripts (fonts)
  - The name of the Roman cuboid is derived from the shape of the Latin alphabet, which is particularly like a square, and includes inscribed capital letters and square capital letters.
  - In the Renaissance, in order to maximize the beauty of the glyphs, Italian printers used glyphs engraved with capital letters as a model for printing fonts.
  - The Romans used a relatively smooth writing style; that is, vulgar capitalization.
- 4.1.5 Medieval font evolution

- The fonts of the post-classical period and the early rise of the Middle Ages were influenced by the Ansel style.
- During the reign of Charles the Great, the development of writing began to have unified standards. Under his leadership, Caroline Little Italic was born, which became an important milestone in the evolution of typefaces to modern typefaces.
- After the Carolingian lowercase appeared in Gothic lowercase, in the 14th century this type of font was divided into two main branches: round and textile.
- Until the late 20th century, in the German book market, Gothic fonts with angular features were still widely used, such as Schwabacher and Fraktur.
  - At the same time, in other countries outside of Germany, Latin fonts dominated the world, while their close relatives, Gothic fonts, crowded out everywhere.
- Another important reason for the widespread use of Latin fonts is that they have better readability.
- 4.1.6 The invention of Western movable type printing
  - Johannes Gutenberg was the inventor of Western movable type printing.
    - Before Gutenberg invented movable type printing, Europe used woodcut printing plates for printing.
- 4.1.7 Italian type printing and Latin fonts
  - The main fonts used of the early Latin fonts were Renaissance fonts. In this font, the lowercase letter o and the uppercase letter O are shaped like complete circles, and the letters C, D, b, d, e, etc. are also biased toward a circle. In addition, the width of each capital letter is obviously different.
  - It can be said that the Renaissance and the classicism typefaces constitute the poles of the different design principles of the Latin alphabet.
  - The typical Renaissance fonts are round and square with capital letters that are different in width and have open character.
- 4.1.8 Renaissance fonts in Venice
  - The line at the thinnest part of the character is slanted, which is usually obvious from the letter O.

- Although the line thickness is different, these differences do not appear abrupt.
- The line of the lowercase e is always slanted.
- 4.1.9 French Renaissance font
  - The inclination of the line at the thinnest line is not obvious.
  - The difference in line thickness is significantly greater than the Renaissance font in Venice.
  - The horizontal line of the lowercase letter e looks horizontal.
- 4.1.10 Classical font
  - For classic fonts, font designers try to make the width of each letter the same.
  - The first thing to distinguish between Renaissance fonts and classic fonts is to see whether the width of capital letters is different or equal.
  - The second way to distinguish them is to look at the ending lines of round letters.
    - Renaissance fonts are dynamic and open; classicist fonts are more boxed and give a static feeling.
  - Classical fonts are the darling of fashion magazines and lifestyle magazines.
- 4.1.11 Transition font or Baroque font
  - The most famous transition fonts are Caslon font and Baskerville font.
  - Scope of use: Renaissance fonts are the most extensive typefaces in books, and transitional fonts are common in newspapers and magazines. If you choose a usable font for large texts, classical fonts are rarely used.
- 4.1.12 Strong serif font
- 4.1.13 Sans serif font
  - Many sans serif fonts are based on the glyphs of classicist fonts.
- 4.1.14 Geometric font
  - In the 1920s and 1930s, German artists, designers, and Bauhaus architects were all looking for ways to return to simple basic geometric shapes.
    - Fonts also began to pursue the basic principles of geometry.

- In professional graphic design, these line-type fonts are considered very suitable for use in headlines. Even laymen often choose these fonts because they are attracted to one of the letters.
- 4.1.15 Sans serif fonts based on Renaissance fonts
  - Sans serif fonts such as Helvetica, Univers, and Arial are all based on classic fonts, while geometric fonts have their own way.
  - British sculptor and panel designer Eric Gill also created a sans serif font called Gill Sans.
  - Sans serifs that use classic fonts as templates convey a more static, refreshing, and elegant feeling, while sans serifs that use Renaissance fonts as templates look more flexible and friendly.
- 4.1.16 Digital Revolution
  - Until the 1980s, the publishing industry used lead to cast fonts for manual typesetting.
  - Virtual typesetting on the display opened up new horizons for designers interested in layout design.
- 4.1.17 Fonts on the display
  - Although the resolution of computer monitors is slowly increasing, Kyoto is getting higher and higher, and the so-called anti-aliasing display technology can enhance the readability of the text on the monitor, the requirements for fonts on the monitor are completely different from those on the printer.
    - For ex., the classical Bodoni font is classified as a strong serif font on a computer monitor, and its fine details and flexible shapes are difficult or almost impossible to present.
  - Widely used screen fonts: Arial, Georgia, MS Trebuchet, Tahoma, Times and Verdana fonts.

## 4.2 Fonts and nuances

- Classical typefaces are the four typical representatives of sans serif typefaces: Grotesk, Helvetica, Arial, and Univers.

- The Arial font, which is widely used in various systems, is particularly rejected by most graphic designers.
- To quickly determine the type of font, certain contact and enthusiasm are indispensable.
- The difference between fonts is not the difference in shape between individual letters, but the difference in overall effect when all subtitles are placed on one page.

### 4.3 Font classification (German standard 16518)

- **4.3.1 Group 1: Renaissance fonts in Venice**
  - Venice's Renaissance font is the source of Latin fonts. It is suitable for choosing the typeface of the novel describing the Renaissance period, the typeface for other texts about traditional themes, or the typeface for the web page of an ancient art seller. This set of fonts can also be used in places related to gardening, landscape architecture, vegetable name labeling, cooking recipes and cosmetics.
  - Representative fonts: ITC Beekeley Old Style, Centaur, Golden Type, Adobe Jenson, ITC Legacy Serif, Schneidler
- **4.3.2 Group 2: French Renaissance fonts**
  - The printing of books, especially novels, mainly uses the deformed form of the Renaissance font in Venice—the French Renaissance font. This set of fonts is the most commonly used font in our daily lives.
  - Representative fonts: Adobe Garamond, Mendoza, Meridien, Minion, Palatino, Sabon, etc.
- **4.3.3 Group 3: Baroque**
  - This font is mainly used in newspapers and periodicals.
  - Representative fonts: ITC New Baskerville, Adobe Calson, ITC Bookman, Linotype Concorde, Times, Utopia
- **4.3.4 Group 4: Classical font**
  - Classical fonts are mainly used in layouts related to fashion, especially for those who design classic text. The glyphs of this group of fonts are clear and precise and are also suitable for the layout of precise mechanical texts.

- Representative fonts: Bitstream Bodoni, Walbaum, Linotype Didot, Linotype Centennial, ITC Century, ITC Zapf Book
- 4.3.5 Group 5: Strong serif font
  - The serif is thicker than the serif in the classicist font.
  - Representative fonts: Clarendon, Linoletter, Officina Serif, Museo Slab, Serifa, Memphis, City, Candida, Courier
- 4.1.6 Group 6: Sans serif font
  - Representative fonts: Helvetica, Univers, Corporate S, Franklin Gothic, Frutiger, Myriad, Meta, Officina Sans, TheSans, ITC Johnston, Gill Sans, ITC Legacy Sans, Graublau Sans, Stainless, Museo Sans, Avenir, Futura, Avant Garde
- 4.3.7 Group 7: Other Latin fonts
  - All non-Gothic fonts, non-Latin fonts, and fonts that do not belong to the other eight groups are classified as "Other Latin fonts".
  - Representative fonts: Copperplate, Diavlo, Lithos, Ruthless, Moby, Handel Gothic
- 4.3.8 Group 8: Writing
  - Derived from smooth handwriting, mostly connected to each other.
  - Representative fonts: Amazone, Monterey, Shelley Allegra Script, Arcana, Caflisch, Zapfino
- 4.3.9 Group 9: Handwritten Latin font
  - Representative fonts: Chauncy Decaf, ITC Clover, ITC Humana Script, ITC Kristen, Marker Felt, ITC Skylark

## 4.4 Font matrix

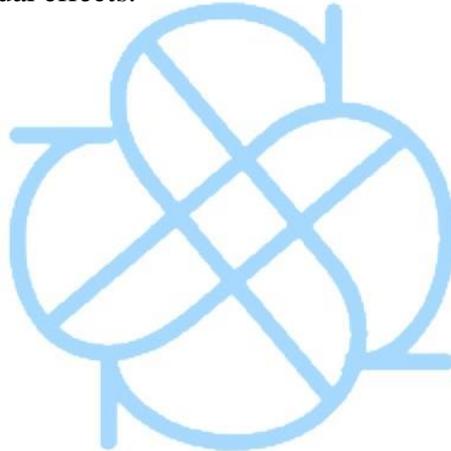
- 4.4.1 Main font groups
  - Latin fonts can be roughly divided into five main font groups: serif fonts, strong serif fonts, sans serif fonts, handwriting, and Gothic.
  - **Serif fonts:** From Renaissance fonts in Venice to classicist fonts, all serif fonts fall into this group, including modern versions of all classical fonts and fonts that do not emphasize serifs.
  - **Strong serif font:** Based on the 19th-century font trend, it includes classic and modern font versions, and new fonts have been added.

- **Sans serif (Sans):** The word "Sans" comes from the French word meaning "no", and is a common name for sans serif fonts.
- **Writing fonts:** The first three groups are called "typesetting fonts", and the writing is indeed written by people.
- **4.4.2 Subdivision according to shape**
  - Fonts generally have two shapes: dynamic fonts and static fonts. Geometric fonts were also added in the 20th century, as well as "other fonts" that could not be clearly categorized.
  - **Dynamic font:** The shape of this font is generally more free and open, where the capital letters are generally square or square, and the width of each letter is obviously different.
  - **Static font:** The capital letters in this font are almost the same width, and the ends are arc-shaped letters (such as C, G, S, a, c, e, and s). The ends of the strokes of these letters almost form a closed circle.
  - **Geometric fonts:** Bauhaus font designers follow geometric principles.
  - **Other fonts:** italic, artistic, handwritten and others.
- **4.4.3 Text font or decorative font?**
  - **Text font:** Text font refers to the fonts that use the public reading habits.
  - **Decorative fonts:** Decorative fonts either do not include all Latin letters or add more decorative elements.

## 4.5 Font mixing

- Certain fonts with rich styles (standard, italic, bold, bold italic, semi-bold) can basically be used in all situations. In addition, we can also mix different fonts.
- The most frequently mixed fonts are the so-called serif and sans-serif fonts, which are used for titles and text.
- There must be sufficient differences between the two mixed fonts.
- **4.5.1 Can I mix more than two fonts?**
  - The answer is yes, provided that the effect is better.
  - Appropriate font size differences can alleviate the conflicts that may arise when fonts are mixed.
- **4.5.2 Mixing fonts according to matrix**

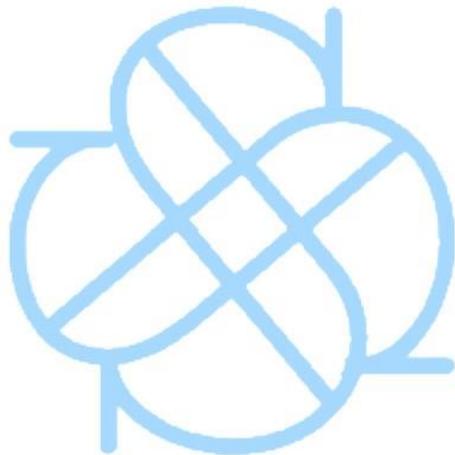
- A dynamic serif font can be perfectly used with another dynamic strong serif font, such as Adobe Garamond or Chaparral.
- Static fonts work better with each other.
- Because geometric fonts consist of simple and well-balanced basic shapes, many of them can be mixed with other fonts.
- 4.5.3 The fonts in the same row in the matrix must not be mixed!
- 4.5.4 Mixed text fonts and decorative fonts
  - Many variations of many standard fonts include decorative fonts, which can perfectly match the original standard fonts.
- 4.5.5 Clan of fonts
  - All fonts in the same clan can be mixed, which is very suitable for creating harmonious visual effects.



## 4.6 Graphic designer as a typesetting worker

- Before the popularity of personal computers, the typesetting of printed materials was done in the workshop by so-called typesetting workers.
- **4.6.1 Phototypesetting**
  - With the aid of optical principles, there are techniques for shooting text onto photosensitive film or photo paper.
- **4.6.2 Computer typesetting**
  - Computers cannot automatically create pleasing articles
- **4.6.3 Important professional concepts**
  - Latin font is one of the most widely used fonts in the world today.
  - **Word width:** The width of the entire letter including the front and back spaces.
  - **Handwriting:** The concept of handwriting originated from the field of calligraphy and represents the shape of written symbols.
  - **Line space:** The space between the lines. If you want to set a 12-point line spacing for a 10-point font, fill in a 2-point line space.
  - **Whole word space:** The width of the whole word space isn't fixed, but depends on font size; the font size and width of the whole word space are both 10 points.
  - **Baseline:** For example, the horizontal line at the bottom of the capital letter H.
  - **Small capital letters:** refers to capital letters with the same height as the small letters.
  - **Italics:** This concept comes from the Latin word "currere", which originally meant "running".
  - **Ligature:** Connects two or more letters together. The most common ligatures are fl, ffl, fi, ffi.
  - **Lowercase numbers or medieval numbers:** the height of lowercase numbers is almost the same as lowercase letters. In addition, arrays like 3, 4, 5, 7, and 9 have descending parts.
  - **Ascending part:** The ascending part refers to where letters like b, d, f, h are higher than the height of x.
  - **Proportional numbers:** The digital forms of general fonts are used for table layout.

- Shu Zezeng, with different word widths and balanced character spacing, is called a proportional number. Such a number will be very beautiful when used in text.
- **Font family:** A collection of various font styles that match each other. There are generally four types of font styles in font families: whole, italic, bold, and bold italic.
- **Font size:** corresponds to the height of the font.
- **Font style:** Another classification standard of font style is character width - extremely narrow font becomes compressed, narrower is condensed, wider is extended or wide.
- **Serif:** The so-called serif is the decorative detail at the end of the letter strokes.
- **Character spacing:** Expand the distance between letters to the extreme to become sparse. In general, thinning is more suitable for sentences composed of capital letters because there are often unsightly gaps between capital letters.
- **Table numbers:** Different from proportional numbers, in table numbers, all numbers have the same width. Strictly speaking, it is not the width of the number itself, but the width of the position it occupies.
- **Lower part:** The lower part refers to the part where the letters highlight the baseline; we can see the lower part in the letters g, j, p, q and italic f.
- **Word spacing:** In the simplified word "Tom", there is a gap between T and o due to the shape of the letter. If you let o cut in from below T, you can visually balance the distance between the characters. The distance adjusted in this way is called  **Kerning**.
- **Uppercase numbers:** The height of uppercase numbers is generally the same as uppercase letters.
- **X height:** it is the height of the lowercase letters.
- **Characters:** In text layout, characters can be any shape that can be printed, including all letters (upper and lower case), numbers, punctuation, symbols, and illustrations.
- **Line spacing:** The distance between the baseline of a text line and the baseline of an adjacent text line.



## 5. Type Setting

- Layout design must follow strict rules so that readers can read the text efficiently and without hindrance.

### 5.1 Who do we typeset for?

- Reading is not only one form, we need to consider many possibilities.
- Before you do the layout design, first, think about who, where, and under what circumstances, and for what purpose will they read such text.
- **5.1.1 Different target audiences**
  - Graphic designers must consider the audience from beginning to end, and their audience should be placed in the center.
  - Font size for reading text: The font size suitable for reading text is generally 9-12.
    - For most articles, 12-point words are too large, and it is easy to give the impression that these things are written for children or people who are just beginning to recognize words.
- **5.1.2 Senior readers**
  - If you want to attract older readers, don't oversize the font size.
    - For most articles, a font size of 10 to 11 points is recommended.
      - In this way, you don't need extra design to consider the elderly.
- **5.1.3 Children and junior readers**
  - For children readers who are initially exposed to reading, simple and clear fonts are very important.
  - **Guidance systems:** Guidance systems are needed in streets (traffic guidance systems), parks, fairs, and airports. People also turn the guidance system with information into an information system.

### 5.2 Text format and layout

- It is not enough to design on a computer monitor, since the choice of paper will also affect the effect of the printed matter in the eyes of the reader.
- 5.2.1 Books
  - The designer can influence the reading comfort of the reader.
    - For example, he/she can choose the specification of the book that is convenient for the reader to hold. There should be enough space between the edge of the center of the page and the edge of the paper, otherwise the reader needs to move his thumb constantly to see the entire article.
  - **Edition Heart:** the place where text is placed on books, magazines, and brochures.
  - For plain text, the type of paper is important - plain text should be printed on rough paper because the rough surface can reduce the reflection and refraction of light. Otherwise the reader must hold the book at a certain angle.
- 5.2.2 Magazine
  - The picture effect of the magazine is of primary importance.
- 5.2.3 Newspaper
  - Newspapers usually use A3 or larger pages.
- 5.2.4 Journal advertisement
  - Pay attention to the design of advertisements. You must be able to attract readers' attention.
- 5.2.5 Folds and brochures
  - The touch and surface effects of paper can convey the style and emotion of the work to a certain extent.
- 5.2.6 Posters
  - The so-called "external advertisements" such as posters must attract people's attention more quickly.
  - *Less is more.*
- 5.2.7 Commercial supplies
  - Stationery and business cards are the core of the so-called "commercial supplies".
  - In addition, there are seals, notepads, folding pages, envelopes, and post-it notes.

- Letter paper is A4 size, business card type 85mmX54mm.
- 5.2.8 Outer packaging
  - Choose an optimized font suitable for small text as much as possible.
- 5.2.9 Internet pages
  - Common fonts suitable for monitors are: Arial, Georgia, Verdana, Trebuchet and Tahoma.

### 5.3 How to read?

- 5.3.1 Straight reading
  - Most of the novels are read from front to back, in a straight line. When reading novels, you should be particularly focused.
  - Traditional Latin fonts with serifs are usually used. Standard styles and italic styles are sufficient.
- 5.3.2 Information-based reading
  - Eye-catching title with pictures to attract attention.
- 5.3.3 Differential reading
  - Scientific works require a lot of information to be highlighted for readers.
- 5.3.4 Reference reading
  - Typical objects for reference reading are phone books and professional dictionaries.
  - "Organization" is a good keyword, because designing reference reading works must be organized.

### 5.4 Suitable reading of large texts

- 5.4.1 Font
  - Serif fonts are required for novel layouts, while sans serif fonts can also be used for non-fictional layouts.
- 5.4.2 Font size

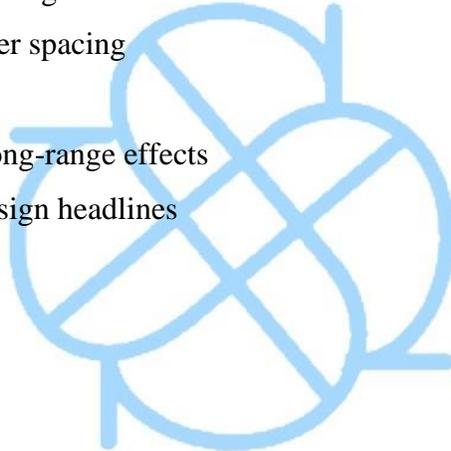
- The line of sight jumps from one focus to another in the text line. This jump is called **glance**. A short stay on an important point is called **fixation**.
- Words that are too large have poor readability.
- Choose the right font size. You should consider the size of the base surface
  - For ex., the layout of the business card or pocket novel is smaller, so the font size used needs to be smaller than that used on A4 paper.
- In addition, the target audience of the publication should also be considered. For publications aimed at older readers and junior readers, the font size you want to use is obviously larger.
- 5.4.3 Adjustment and layout
  - For reading comfort, the distance between letters should be as uniform as possible.
  - The optimization of the distance between letters in a font by a font designer is called **adjustment**.
  - Graphic designers should pay special attention to special design elements composed of text, especially the layout of the logo.
  - Eye-catching text and titles should also be carefully checked to see if the spacing between letters meets the standard.
  - All text composed of capital letters also needs the care of graphic designers.
- 5.4.4 Character spacing
  - Text with a small font size looks compact, and text with a large font size looks loose and needs adjustment.
  - The larger the letter, the greater the actual distance of the first letter from the left edge. To account for this situation, manually align left.
- 5.4.5 Column width
  - The larger the column width, the larger the line spacing.
- 5.4.6 Line spacing
  - Corresponding to the column width of 65~130mm, there is an optimal line spacing. The basic criterion for setting the line spacing is that the ideal line spacing should be 120% of the font size.

- If the font size and line spacing are the same, such a layout is called a **compact layout**.
- For reading text, the suitable line spacing is 120% to 150% of the font size.
- 5.4.7 Paragraph alignment
  - Four alignment methods: flush head (left alignment), flush tail (right alignment), center style (center alignment), and flush head (end alignment).
- 5.4.8 Background and base
  - Aspiring graphic designers should also consider the choice of paper—this is an emotional factor based on art.
  - The surface effect and touch of the printed matter convey certain feelings.
    - The rough, soft and delicate paper and the smooth and shiny paper give people a completely different feeling.
  - **Coated paper:** more suitable for printing photos, suitable for illustrated books, panoramas, folding pages, magazines, etc.
  - **Uncoated paper:** There are many kinds of elegant, high-quality or interesting papers to choose from, which can provide the best emotional support for the design.
- 5.4.9 The charm of excellent layout design
  - Without any modification, only concentrate on the design of the essence, which is much more difficult than adding various decorations to the layout.
  - Many people will exaggerate when they see excellent layout design, even if they are complete amateurs.

## 5.5 Title and headline title

- 5.5.1 Title rating
  - **Title level:** generally consists of the headline, first level, second level, and third level titles.
  - **Label title:** Mainly used in scientific works and professional books, such as "1.", "1.1", "1.1.1", etc.
  - **Visual marking:** adjust the font size, change the careful style, choose the font, all capital letters, etc.

- When visually marking, the most important thing is to let the reader know the affiliation of each title.
- **5.5.2 Format the title**
  - Whenever possible, set the title to be head-to-head or centered.
  - Don't use head-to-tail for headlines.
  - Try to avoid splitting the words in the title.
  - Generally, you should pay attention to the relative completeness of the meaning when you wrap the title.
  - Try to avoid the situation where the title is as long as two lines when it wraps.
  - Also avoid the shape of the title after a line break looking like a springboard.
- **5.5.3 Headline format**
  - Reduce line spacing
  - Reduce character spacing
  - Narrow words
  - Close-up and long-range effects
  - Consciously design headlines



## 5.6 Highlight text

- You can only highlight certain texts to attract attention by creating distinctive effects through layouts.
- **Negative prominence:** Under normal circumstances, only by reading carefully or consciously looking for it can you find what you want to highlight.
- **Active prominence:** The most common way to highlight certain texts is to set a semi-bold or bold effect on the font.
- **Underline:** This method is a taboo in layout design, and is generally only used for complex scientific works or popular professional books.
- Don't be too exaggerated.

## 5.7 Advice and avoidance in some micro layout design

- 5.7.1 Character shape
  - The font cannot be deformed.
  - Both traditional and pure typographic designs tend to set shadows behind text.
- 5.7.2 Line break
  - For information such as "Dr. Mabuse", the title and name should not be separated when wrapping lines. There are similar "100m", "-5 °C" and so on.
- 5.7.3 Punctuation marks
  - There should be a small gap between the punctuation mark and the text that follows.
- 5.7.4 Rules and basic guidelines
  - Guidelines for the correct use of punctuation marks are fixed.
  - Others are rules that layout designers should follow.

