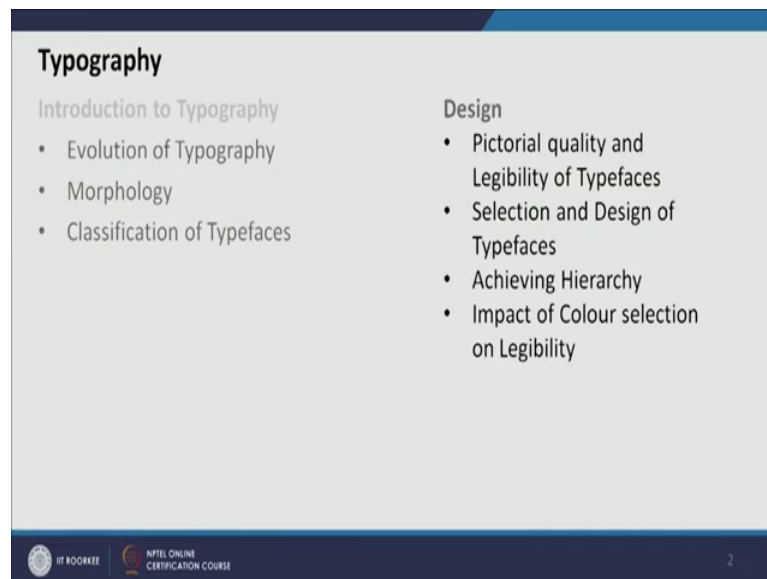


Visual Communication Design for Digital Media
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Department of Architecture and Planning
Indian Institute of Technology, Roorkee

Lecture - 08
Usage of Typography in Digital Media Paradigm Part-II

Welcome students to the online NPTEL course Visual Communication Design for Digital Media. So, in the previous module, we started discussion discussing about typography. So, we are discussing usage of typography in digital media. In the previous module, we covered the introduction part of typography, we have gone through the evolution of typography, and then morphology how we understand, how we identify particular typefaces, and distinguish particulate typefaces from the other typefaces. So, after that we went into the classification of typefaces based on the morphology how we classify different typefaces.

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So, now we will come to the design aspect of our typography, so how typography can be used in design. So, to do that first we will discuss the aesthetics and functional attributes of typographic that is the pictorial quality of a typography of a particular typefaces and eligibility that is the functions. So, typefaces function is to communicate, and it is mode of it is a very strong mode of visual communications. So, when there is a typeface if we can read it. So, it communicates a message, so that the juxtaposition of typefaces with

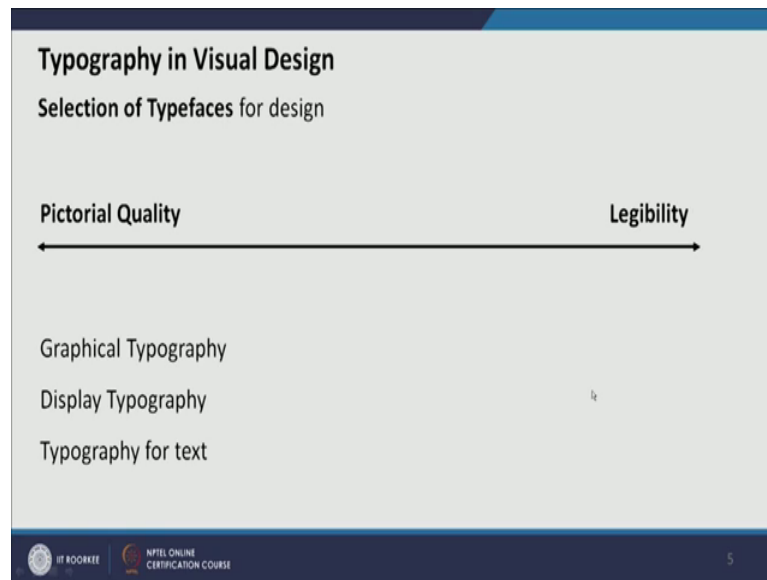
pictures and the other design elements gives us a meaning, so that is the functional aspect of typefaces. So, that is through which it can communicate with the legibility of typefaces we have to read the typefaces.

The other quality is the pictorial. So, each and every typefaces as we discuss the based on the morphology has a particular visual style. So, each the style of Helvetica and style of Bodhini which is a serif font and Helvetica which is sans-serif font is very different even there are a larger variations which we will discuss in the design part, so that is there. And the next part is the selection of a typeface. So, there is a large variety of typefaces available today by the designer. So, we can pick from a large range of typefaces, so which one to pick for a particular design that we will discuss.

And then in some cases for logo design for brand identity design, we cannot pick up an existing typeface we have to design our own typefaces in some cases. So, how do we design our own typefaces from a particular mood board, so that we will touch upon. And then we will come to the again to the functional part of the typefaces that is achieving hierarchy as we were discussing in the previous module that hierarchy is a very important perspective of a important aspect of a visual design.

So, in visual design, there has to be emphasis there has to be a to balance the emphasized area there has to be some redundant spaces, some typography should just be legible and without any ornate features and some typography has to be very bold to catch our eyes. So, these will come under hierarchy, and then there is a impact of color as we were discussing earlier which adds to the legibility and creates the drastical visual impact.

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So, selection of typefaces for design that depends on a pictorial quality and legibility of a typefaces. So, these are two different things if we increase a pictorial quality. So, if we add ornamentations to a particular typeface, and add on to the ornamentation, the pictorial quality will increase. So, it will go towards this side of the diagram. And if we reduce the pictorial quality or if we use the ornamentations, and if we change the typography towards the basic abstract and minimal quality that then the legibility of the typeface will increase, but pictorial quality will decrease.

So, based on that we can have in broader three categories, so one is very graphical typography, another can be the display typography. So, the display of a logo sorry display of a shop front or some heading is a display typography, so which catches our eye which catches users eye and creates a mental models, so which remains in our model. So, we remember the typography. So, there has to be some pictorial quality by which we will identify the typography. If the typography is very minimal, we might not remember the typography it will not create a image into our mind, so that is the display typography which will come somewhere in between. So, there is some pictorial quality and some kind of has to be there, it has to be legible otherwise we cannot read the what is the message.

And then there is a typography for the text. So, typography for the text is like for in a book the body of the text is the typography of the text. When in a newspaper the

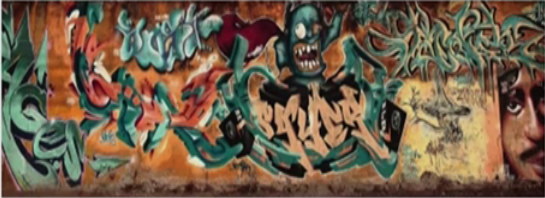
typography used is typography for that text, so we do not pay a larger attention for the typo what kind of typography they are using. So, we just hardly notice that whether it is sans serif or serif, but we do not go into detail because in this context. So, the in content matters more and the message what they are giving the text is giving that matters more than the acidic quality of a typeface selected in case of newspaper or in case of book or pamphlet, which is more informative than its acetic need.

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Typography in Visual Design
Selection of Typefaces for design

Graphical Typography

- Higher Pictorial Quality
- Less legibility



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So, these three classifications are not based on the classification, which we discussed. The classification what we discussed is base based on morphology in the previous module and that was the serif, sans-serif and all these humanist, grotesque and geometric fonts were based on its morphology, but this classification is based on its pictorial quality and legibility. So, in the first category, we have the graphical typography. For example, in a graffiti wall, so the message is definitely important, but the message the typography does not stand alone it goes with the graphics. So, the colour usage of the typography, the line quality, the shapes, textures, the colour scheme and line and everything all the elements of design should blend with the visuals of a in case of graffiti, because that is more important.

And when we look at a graffiti if it attracts our eye then we will stand and read start reading that. So, we will give more time to interpret that it is not just we will just read and go away that is not the intern intention of a graffiti works. So, it is a visual, it is a

composition and more has the more aesthetic importance than giving a message because giving a message it is not in graffiti wall it is not just a typography because it is all the pictures and everything together holistically gives the message. So, here in this case it has a higher pictorial quality and less legibility.

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Typography in Visual Design

Selection of Typefaces for design

Graphical Typography

- Higher Pictorial Quality
- Less legibility

Unknown language acts as a PATTERN; not as a TEXT

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Even in some cases the legibility might not matter for example, if we look at these two examples one is example of Kalamkari a traditional print media technique of Andhra Pradesh. So, here we see vegetable dye a printed on Kalamkari style and there are Telugu scripts in scribe in this. So, for many of us it might not be possible to read at Telugu script, if we do not know the language. For example, in the same way in Tajmahal this is the gate of Tajmahal front gate. So, in Tajmahal's front gate there is a Urdu script written inscribed on top of the Tajmahal script, but this goes as a graphical and it is because of its aesthetic value it enhances the work architecture or the traditional craft style by its visual quality.

So, if we mentally replace the Tajmahal's Urdu script with Telugu typefaces and in the Kalamkari here with Urdu typeface typefaces, it will not go with the picture, because we have certain visual each and every typefaces has its own visual identity. For example, Urdu typefaces with its Kashidas and all these dots and linear visual quality, it goes with the Saracenic style of architecture, Saracenic style of design. So, if you look at the gates

in lay work and this kind of typefaces Urdu typefaces, this goes hand in hand and they create a visual integrity in the typefaces.

Similarly, that the curvilinear Telugu script also has a curvy which blank with the curvilinear features of Kalamkari style. So, here we read these typefaces as pattern not as a text, so that pattern as we all know is again elements of design. So, it is creating as a pattern. So, if there is a blank patch it might not the composition might looked blank here. So, this pattern that typeface is which acts as a pattern for the people who does not who cannot read the time, what is written acts as a pattern and balance the complete composition.

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Typography in Visual Design
Selection of Typefaces for design

Display Typography

- Unique visual quality: creates **mental model**
- suitable for creating **Brand Identity**
- better **legibility** than Graphical Typefaces

Coca-Cola **LINKIN PARK** **PINK FLOYD** **20th century architecture**
at the philadelphia museum of art
saturday, october 14th, 7pm
Total amount: \$15,000

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The next will be the display typography, which is much easier to read than the previous one, but has certain kind of aesthetic ornamentation. So, these are not flat typography is like the body of a text of a newspaper. So, it has certain kind of ornamentation to it because the need of a display typography is to create a brand. So, if we understand the Coco-Cola's logo and recognize the Coca-Cola's logo by its defiantly by its colour, but also by its font, but if we create some font series which resembles Coca-Cola, we can easily identify, this is some font which goes with the Coco-Cola brand. Because this has created a widely accepted brand and we understand the curvilinear feature of the coca cola brand, which glows goes with the fluidity and has the liquidity into the typefaces.

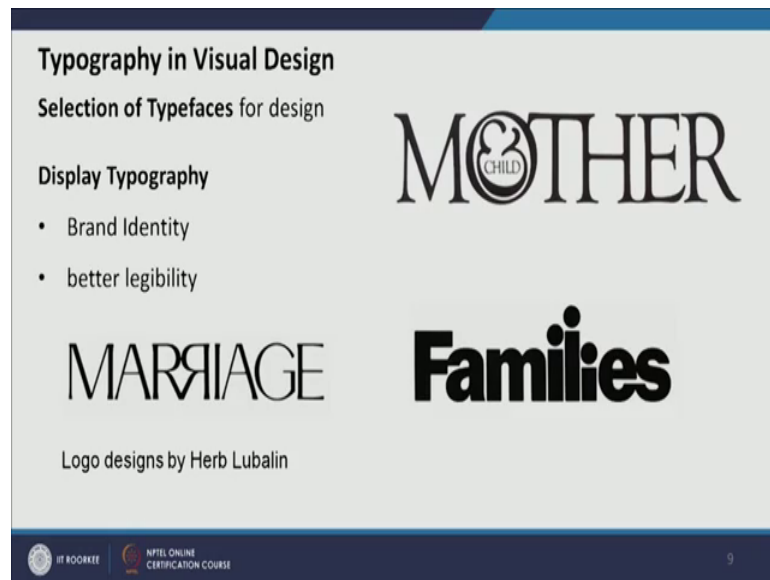
Similarly, if we look at the link in logo which is the rock band has the solid and angular and masculine corner and this is actually a blended under distorted format of thick bold (Refer Time: 12:02) font and some parts are modified visually, and a modified with changes and made more angular which goes with the music bands song. Even the Pink Floyd if you look at this the fluidity of Pink Floyd which is there, joiner of the song also a reflected in the typography. So, there is a ornate ornamentation there in the typography, but still it easy to read and we can recognize the Pink Floyds band by its logo as well.

Similarly, we all know that bow house was the movement in modern era. So, bow house movement is more is also a derivative of the De Stijl movement. So, the De Stijl movement, and Bauhaus movement has the minimalist approach and usage of primary colours for example, red yellow and blue and the black and white combination was more. So, here in the Bauhaus color a Bauhaus poster we can see that. And from that Bauhaus style there was a Bauhaus font derived from that.

So, if we look at the font used over here that is a Bauhaus font, and it also uses the pure geometric shapes. For example, if you look at the architectures a, it starts with the pure circle and then similar in the c, h, and t, e we can see the circular pure circular format and the pure rectangular I think because if you look at this closely the thickness of each and every typeface is same. So, that it also goes with the minimalist Bauhaus approach.

Next for more example we can have Habulance the famous logo designers usage of this display typography with little ornamentation and readability definitely more here than the previous graffiti works. So, here we can see and intelligent way of depicting mother and child. So, child is written in a small type of fonts. So, we need to have some give some effort to read that, but still the complete composition explains the relationship between mother and child to give a shape of a womb and child in a womb.

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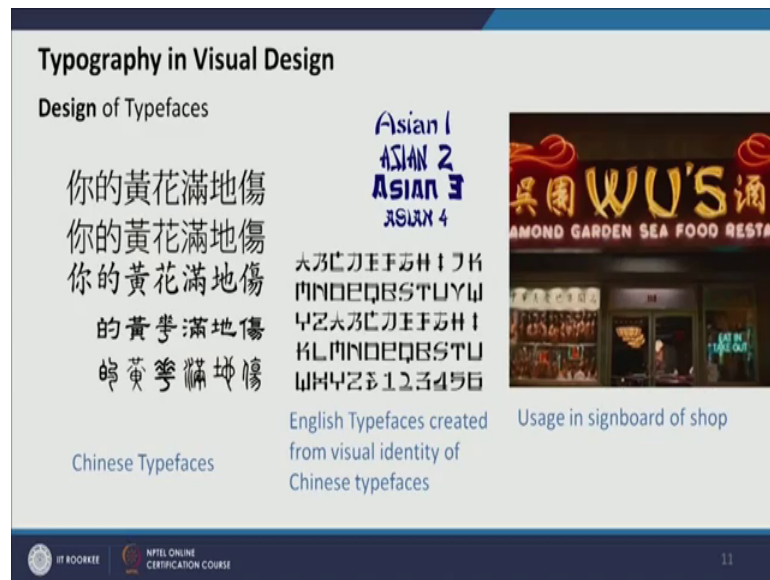


And even in the marriage the letter marriage the R is blend it together and creates form. And in family also the similar it shows the concept of family and we can create with justice principal there is different kind of peoples image comes out of this typefaces. So, there is a R kind of different ornamentation added to it. So, this I become looks like an i, but still it does not create any problem to read the word because of its meaning together the pictorial quality of typefaces and the higher legibility it does not create a problem.

Then we have the simplest form of typography with least ornamentation least tricking, so that is the typography for the text which is used for the regular text which has least cognitive load on users mind, cognitive load for on the users minds has to be minimized, so that we can read it fluently and quickly. If there are more ornamentation people will start recognizing that and it will take more time and it will increase the cognitive load in your mind to read that, so that should not happen in case of cases of typography which is used in book and newspaper.

And as I discussed it is most suitable for body of text and even in the poster if there are the poster is heavy on typography there are lot of information on text, we should not use typography with a lot of ornamentation, we should use basic minimal less ornate typography. So, that people can devote their time on reading and read quickly, and get the information most effectively.

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Next, we come to the design of a typography. So, here till now we were discussing how to select a typography for some cases for designer, we have to design our own typography for particular situation. For example, if you are disc designing for a shop's frontage, and we are discussing and we are creating a brand identity for a particular brand or particular shop. So, we need to design their own typography. So, for example, we can take a case of Chinese typefaces.

So, here there was a example of a Chinese restaurant, so that should give a image of that there is a Chinese Quizens are served over here. So, it should have a Chinese theme in the interior, it should have a time Chinese looking out outside and the typography should blend with that. So, holistically you should give a give a theme of Chinese quizzing. So, for that designers can used in many Chinese restaurant we can see there is a definitely, it has to be written in English otherwise it will not be communicative to the larger English speaking audience, but it should also have a Chinese look.

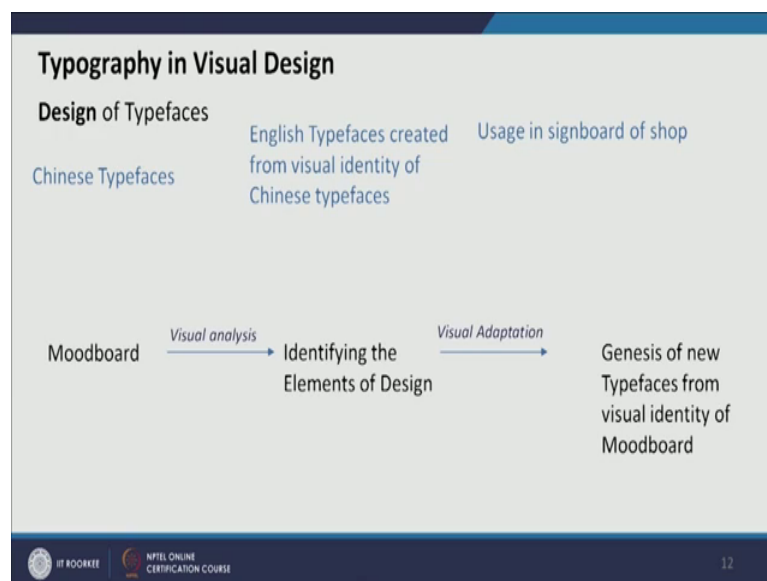
So, what we see here is a Chinese typefaces, the visual quality, line qualities are translated into then English typeface. And the a new kind of English typefaces is derived which clearly gives the Chinese identity. So, how is it happening. So, we can have a closer look. So, this is a Chinese original Chinese typefaces, Chinese as we already discussed in the previous module, they used to draw with they used to write with a calligraphy pen on paper because they have invented paper as we all know quite before

probably the first in the world. So, on a white paper, they use the black ink which they used to ink with the pen which they used to make from a bamboo.

So, here in the calligraphy pen has a thickness variation here in each and every Chinese font is like that. So, it has a triangular shape, and it has the linearity and it crosses. So, if we see each and every font does not match with each other, either it does not join or either it crosses from each other. So, there is no join like this there is either like overlapping joints or it does not touch. So, here the similar thing is achieved over here.

So, here in the W, if you look see, it passes through each other and also here that is the same thing follows, so nothing is properly matched. So, so that it gives a look of carrier somebody have gone it through the calligraphic pen and also here we can see the triangular shapes. So, here this part is thicker and it gradually becomes thin to mimic the brush stroke which Chinese used to use.

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So, if we generalize the process. So, the first process is the adopting a mood board. So, what we will put in our mood board that matter, so that from that our visual identity will be generated. So, here in this case the Chinese typefaces the visual quality of Chinese typefaces was the mood board to create a Chinese font and give or which will go with the Chinese restaurant, and the interior design and exterior lighting and everything of the restaurant.

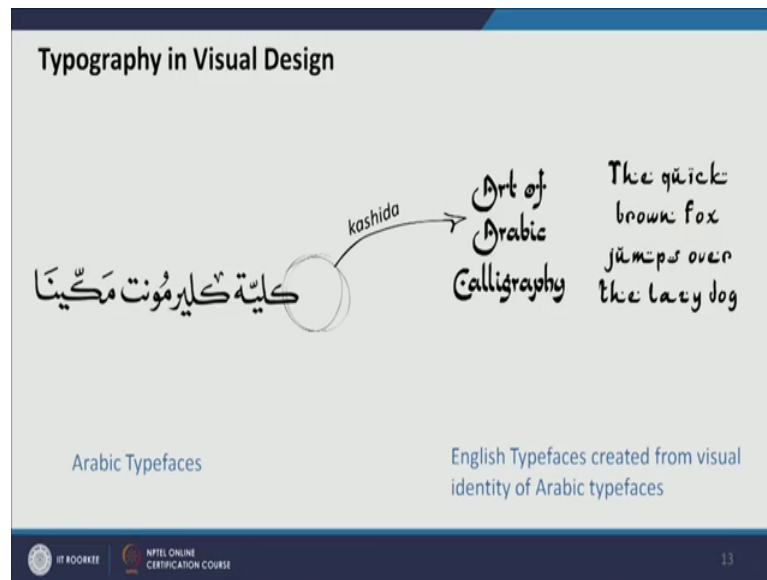
So, next process is the visual analysis we need to understand what is there in the Chinese typefaces, that is a mood board in this case. So, the visual analysis will be identifying the element of design like we discussed they the designer here must have identified the characteristics of the font which is triangular characteristics and the overlapping features. So, that is the visual analysis and the line quality the shapes used for particular designing a particular font.

Then the visual adaptation, now we have to change the Chinese font into English font because we are not finally, designing a Chinese font it has to be in English. So, we will take an English font each and every English font has to be again derived into its morphology based on its morphology. Each and every part has to be segregated or deconstructed and each and every part then can be translated into the Chinese style of visual identity. For example, here if you take the case of W, W has four different strokes. The four different strokes were translated into the style of Chinese strokes, and then we create W which looks like a Chinese script that is an English W but which looks like Chinese script.

So, similarly in case of other typefaces we can translate that into the different typefaces which will go with the thing. So, these are important in bilingual signages and bilingual posters as well. So, if we are designing some signages, which should communicate with people speaking or reading different language here for example, Chinese and English or Devanagari and English. So, we should both the signages should have some visual identity otherwise complete composition will not be holistic.

And even if for a poster which should communicate in two different languages the written text part of the poster should communicate in two different languages, the selection of font has to be so that it blends with each other; in some cases we might not have this kind of fonts which goes with each other. So, that we have to create our own fonts based on the other keeping the other fonts characteristic visual characteristics in mind.

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So, here in Arabic typefaces, Arabic typeface has its own characteristics of Kashidas. An Arabic seems to write from the other side from right to left. So, they used to join each and every words with a elongated Kashida these parts of the letters are called Kashidas. And they have lot of dots on top of the main body of the text. So, these are translated into then English font.

So, English font A, the joining of two stem of the A is dot which is similar to the Arabic dot which has its Squerish form of the dot. Because again of the they are usage of the calligraphic pen when they use the calligraphic pen with on a paper, so the dot might appear like because of the thickness of the pen, it might appear Squerish. So, similar things are translated into these two typefaces designed from Arabic style of Arabic original Arabic typefaces.

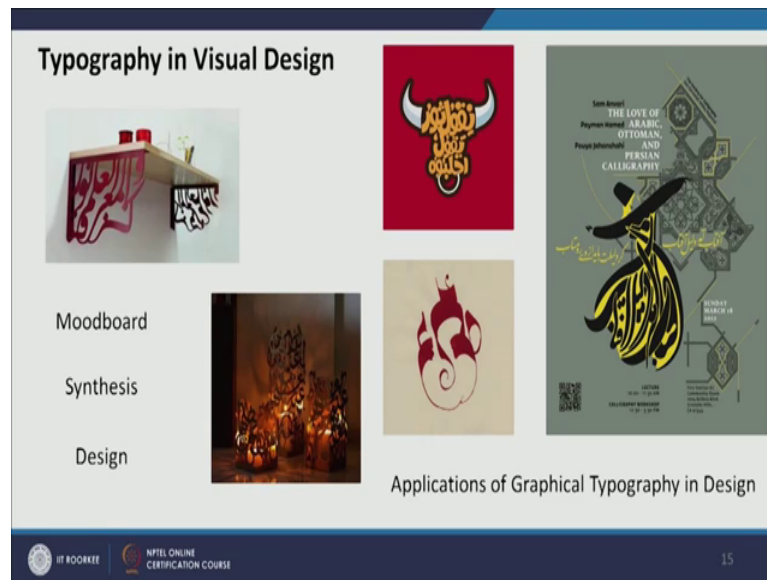
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The slide is titled "Typography in Visual Design". On the left, there is a sample of Devanagari text in a traditional font. On the right, there are two rows of English characters: the first row shows the alphabet 'a-z' and digits '0-9' in a font that mimics the style of the Devanagari text, and the second row shows the same characters in a more standard, clean font. Below the Devanagari text, it says "Devanagari Typefaces". Below the English characters, it says "English Typefaces created from visual identity of Devanagari typefaces". At the bottom left, there are logos for IIT ROORKEE and NPTEL ONLINE CERTIFICATION COURSE. At the bottom right, the number "14" is visible.

Similarly, in from Devanagari this font which we are seeing here is Samarkan. Samarkan is designed from a Devanagari visual identity this is the digital typeface which is available online. And there is a project called Hinglish project which is done to communicate in with uses a speaking of two different target uses speaking to different language for English people who can only read English and people who can only read Devanagari. They are target audience mainly was the people who are the tourist. So, they only can read English and try to learn Devanagari.

So, they can relate the English counterpart of the Devanagari scripts. For example, we can see here a is Devanagari. So, a and is superimposed on each other. So, this is the Hinglish project, it is designed from a similar aspect.

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So, again from typography, we can diversify we can shift the paradigm and create product create posters and have a meaningful communication through the usage of typography. For example, we have this lights coming out from a candle stand, where we have a Saracenic, Urdu or Arabic script with lot of Kashidas and that kind of visual style is there. And the Arabic fonts are translated into a different forms of visual identity here again the picture pictorial quality has more emphasis on the readability definitely readability is not compromised. Here again the Devanagari own is translated into Ganapati's painting.

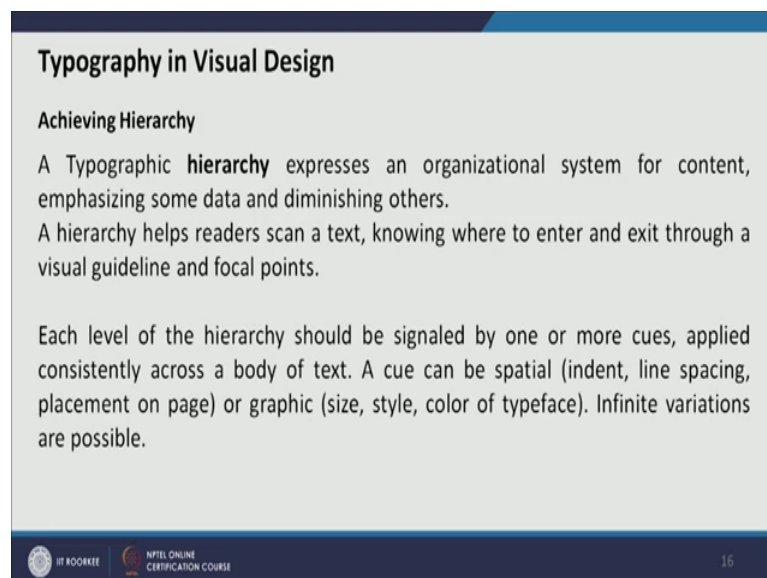
Now, we will come to the functional part of the typography; previously we were discussing the visual attributes of typography. The functional part of the typography is meaning convey meaning. Typography will convey those messages. And in this messages for a visual design it is important to understand important to create a hierarchy of this messages. For example, in a newspaper, the newspaper headings will have the highest hierarchy of message, then the body of the text. And even in the newspapers heading there will be more important news and then the less important newses. So, each and every heading can also will also be of different hierarchy.

Even similarly in a poster. So, posters thin might be more posters for example, for a movie poster the movies name can be the most of are more hierarchical stage and then the other information venues and other things can be of a less hierarchy of a importance

and other detailing of the detailed information can be a of less hierarchy of importance. So, the people for the user who are in hurry who can devote less amount of time looking at the visual will only read only concentrate on the highest hierarchy of information. And for the people who can devote more time and gradually will attracted towards the visual can gradually go into the highest hierarchy towards the least hierarchy of the message, it will not be the other way around.

So, first it should not be the least hierarchy of message then the highest hierarchy of the message. If that happens in that serve visual design fault.

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Typography in Visual Design

Achieving Hierarchy

A Typographic **hierarchy** expresses an organizational system for content, emphasizing some data and diminishing others.

A hierarchy helps readers scan a text, knowing where to enter and exit through a visual guideline and focal points.

Each level of the hierarchy should be signaled by one or more cues, applied consistently across a body of text. A cue can be spatial (indent, line spacing, placement on page) or graphic (size, style, color of typeface). Infinite variations are possible.

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So, in that achieving hierarchy a typographic hierarchy expresses a organizational system or content emphasizing some data and diminishing the other. So, each level of hierarchy should be signaled by one or more cues. So, the cues can be like line spacing, it can be the special arrangement, it can be the size of the font, it can be the style of the font, it can be the colour more contrasting colour has can have a highest hierarchy less contrasting colour can have a lesser amount diminished amount of hierarchy.

So, there can be a permutation, even there can be a permutation combination of all these visual cues. So, here there are some examples of the creating different kind of hierarchy there can be many more. So, one is creating italics if the all these typefaces are in roman and some part is italics. So, italics definitely because of its anomaly it has it will go towards the higher level of hierarchy. Even for bold typefaces, bold typefaces because of

its visual impact it again goes into the higher hierarchy even in the body of the text, some part of the most important parts can be either bold or can be italics and which then it will come to the users eye faster than the other words.

Even we can change the colour which again be based on the principle of anomaly, it will again attracts users mind, and then we can have small caps and the variation in font and serif and by changing the serifs into sans-serifs or vice versa, we can also create hierarchy. So, there are all actually a process of creating anomaly and creating an emphasis. So, while discussing serifs and sans-serifs, we should go into deep of serif and sans serifs usage. So, legibility comparison of serif and sans serif is important because it has a very different criteria.

So, if you can do this experiment in your with the word pa, so if in print media we are using print media serif, we can use serif fonts smaller serif fonts than sans-serif fonts which without destroying the legibility. Because serif fonts has its distinguishable serif ends, if we reduce the font size still it will be readable because of its ends are very prominent.

So, we can read it in print media. But for sans-serif fonts, it might be difficult for reading in a in a very small typefaces because the ends of sans-serif fonts are not very prominent, but in case of digital media it is completely the rivers because digital display media. So, in digital display media, there are light rays coming from behind and the background generally if the background is white we all know that white has more elimination more higher value. So, there are more light rays coming from the white region, and black does not emit much light rays.

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Typography in Visual Design

Creating hierarchy within running text

- *Italics*
- **Boldface**
- Change in colour
- SMALL CAPS
- Variation in fonts
- Serif and Sans-serif

Legibility comparison: Print media and Digital-display media

Serifs designed for Print media Sans-serifs suitable for digital display

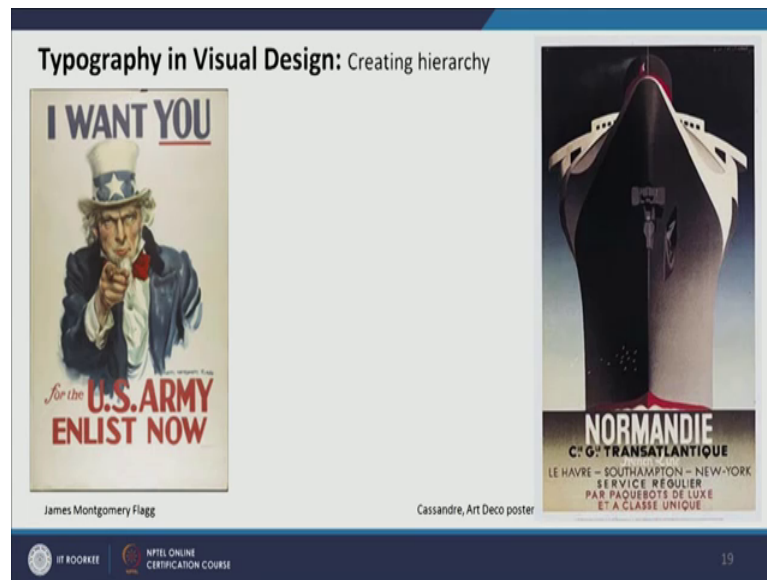
NEW Alphabet Emperor

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So, here the end point of the serifs might be difficult to read in cases of display typography. Even as we discussed in the previous module serif ends were difficult to translate into a typographic with in a display medium with larger pixels. So, the end of the serifs and the modulations of the thickness of a serif font might be pixelated in a larger pics in a display system with large pixels, I mean low resolution pixels with where the each and every pixel units are larger in area.

So, here also in this for these cases there were some pixelated fonts designed for display typography, for example, emperor which is easy to display with low resolution system. For example, Em does not come is not a proper curve its some pixels juxtapose and it gives us image of m. So, here also we can read that side, this is new alphabets written with minimum pixels involved.

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So, now we come to the examples of hierarchy. So, here there are two famous posters designed. First is the US Armies poster designed in during the World War this by James Gumery. So, here we can see the US national colour coding is a blue and red which is created there which is repeated there, and there is a hierarchy in typographic letters. So, first if you read the first line, I want you, you has more importance than the first two letters. So, and if you look at the picture, look at the painting as well, so the person is looking pointing at you. So, you creating a highest emphasis in the first line and then here with it is written for which has which has some kind of redundant meaning. So, you and US army in list US army is has more important. So, US army is a bigger and thicker font and enlist; now that what you have to do that is written in a thicker font.

And again on the right hand side we have the Cassandre famous art deco posters which is also informative and which talks about the cruise. So, it invites people to book the cruise, and it tells the cruisers name which has the highest importance and the colour contrast and because of the dark background and the light font it comes out and it is also the height is more. And then the next contrasting level is the where it is and the other next level of information is this, and these are the next hierarchy or the least hierarchy of the information which is presented.

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Next we have some of the posters designed by Satyajit Ray, he himself designed the posters. So, in the first poster we can look the first hierarchy. In the previous cases, the first hierarchy was on the top that is the general convention, but it might not happen because poster is a holistic composer visual composition. If we look at a poster a photograph attracts our eye first not that typefaces, because in the similar if the photograph and the typefaces are taking similar area on a poster, the photographs are easy to recognize. So, it will attract peoples eye first than the typefaces. For typefaces, we have to read the typeface and understand the meaning which takes more time than understanding a photograph.

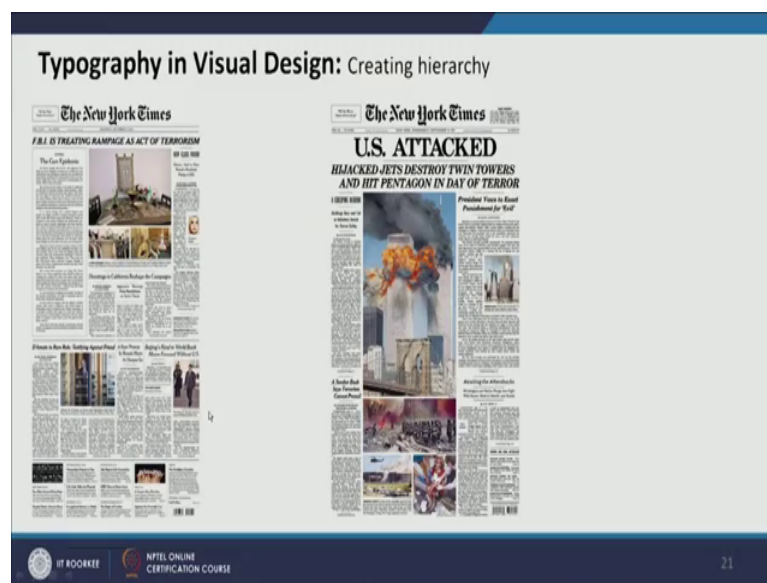
So, photograph will definitely attract our eye first, so that that is why the Shatraj over here the toppled king is attracting our eye first. This is the first focal point and first entry of users eye into the visual composition. From here there is actually a visual cue of similar typefaces into the posters name that is Shatraj Khilari which is written over here has a similar shapes. So, each and every typefaces shapes are similar to the form of each and every chase or Shatraj. So, here we have a visual connection. So, from here we have next hierarchy is the name of the movie, and these information has a lesser and these are subdued and has the least amount least level of hierarchy in this poster.

Similarly, in this poster, the movies name is has the first hierarchy and also you can see his own designed typefaces Bengali typefaces. Here this has a similar visual identity

visual align quality and shapes matches with the ghost photograph, the funny ghost painting which he have done has a similar colour, similar angularity in the typefaces. And the next levels of information are on top and the bottom of the typefaces, and also it creates the balance in the typefaces. So, here in the first most hierarchy level is in the middle, and then it decreases on the top and bottom.

And here also because of the colour contrast and it also has a 3D effect and though it is flat, but it also has a three d affect because of its one sided colour stroke, it creates a contrast because that is the most of the pictures are red. The photo the poster is red, and this part is blue and yellow which are two other primary colours. So, because of its colour contrast it is having higher hierarchy also it is bolded on size and colour gives is adding towards this hierarchical level.

(Refer Slide Time: 38:19)



And similar thing we can look at into the newspaper as we were discussing different newspapers heading can also have a different impact. So, for a first example this is a normal every days New York times. So, in most of the newspapers, newspapers heading is the most important thing because that is the brand identity of the newspaper, and each and every newspaper we can distinguish by its name. So, it should have the most hierarchy in the first page. So, it is there in the daily newspaper in New York times newspaper and which is definitely more ornate you can see and which is by this time you

know this is the old style and it also resembles that Gutenberg Bibles which derived from directly a calligraphy gothic style of handwriting so that is there.

And the next hierarchy is then head line and the body of the text the first line is again highlighted because it is bold and longer and then the body of the text has the least hierarchy in this cases. But in the cases of nine-eleven definitely it was a striking event. So, this is exceptional case here you can see the US attacked this news was so much more important. So, this dominates the newspapers name. So, hearing this case the newspapers names has a lesser height and this the main heading has a larger height because that was so striking and that was so important the message was so important. And this was a definitely a different case and in the general scenario, you will not see there is a blank white space on both of the sides left in front on the both the sides of a type headline.

Because newspaper for each and every area newspaper can generate a money, and they can even the they sell these areas for advertisements. So, leaving a space is actually not economic, but as we all know that leaving a blank space augments the hierarchy of a particular message. So, if there is a negative white space around informative areas, so it in enhances the legibility and attracts users mind, so that principle is also used and here we can see all centrally aligned headlines. So, generally that also does not happen it is right aligned to centrally aliened also creates anomaly, and we try to read that first.

(Refer Slide Time: 41:26)

Typography in Visual Design

Impact of Colour selection on Legibility

Paul Arthur and Romedi Passini, in 1992, have created a visibility chart based on contrast index of text and background colours.

COLOUR	LR (%)	CONTRAST VALUE AND RELATIONSHIP											
RED	51	51	51	51	51	51	51	51	51	51	51	51	51
YELLOW	71	71	71	71	71	71	71	71	71	71	71	71	71
BLUE	15	15	15	15	15	15	15	15	15	15	15	15	15
BROWN	24	24	24	24	24	24	24	24	24	24	24	24	24
GREEN	35	35	35	35	35	35	35	35	35	35	35	35	35
PURPLE	38	38	38	38	38	38	38	38	38	38	38	38	38
PINK	38	38	38	38	38	38	38	38	38	38	38	38	38
BROWN	12	12	12	12	12	12	12	12	12	12	12	12	12
BLACK	8	8	8	8	8	8	8	8	8	8	8	8	8
GREY	19	19	19	19	19	19	19	19	19	19	19	19	19
WHITE	85	85	85	85	85	85	85	85	85	85	85	85	85
BEIGE	61	61	61	61	61	61	61	61	61	61	61	61	61

LR= Light Reflectancy of a particular colour

GEOMETRIC CALCULATION

$$\left\{ \frac{K1 - K2}{K1} \right\} \times 100 = H$$

K1 = Higher color value
K2 = Lower color value
H = Contrast value

Optimal contrast value is at least a base of 70.

EXAMPLE

1

TEXT

Optimal contrast value is at least a base of 70.

Contrast met

2

TEXT

Optimal contrast value is at least a base of 70.

Contrast not met

The contrast Value (H) has to be at least 70 or more for effective legibility

Source: Wayfinding in Architecture, by Paul Arthur and Romedi Passini

23

And the next is the colour contrast. So, how we change the colour and create more legibility or decrease the legibility of a particular typefaces. So, here we can have a different permutation combination of background and foreground colour and they will impact the hierarchy, they will impact the legibility of a particular text. For that we have Arthur and Passini in 1992 have created of visibility chart based on the colour contrast index of a background and foreground text colour. So, he had have given a mathematical formula we will discuss the formula, but before that we can see which has the highest colour contrast.

(Refer Slide Time: 41:38)

Typography in Visual Design

Impact of Colour selection on Legibility

Legibility of text also depends on the text colour and the colour of the background.

Some colour has more legibility while associated with particular background colour.

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So, yellow on black has the highest colour contrast and these gradually comes to the low least colour contrast, but all of these has a most legible colour contrast, there are other colour contrast, colour schemes like green and red has less visibility, and other examples like grey and black might also have a least visibility. So, from this diagram we can see that we also have seen that airports text and information are generally written on black letters on yellow. So, they use yellow black combination, because it has the highest legibility of if we consider the colour combination.

So, the Arthur person is formula creating to identify the colour contrast mathematically is like this. So, he have assigned the colour light reflectancy ratio of each and every colour. So, ray for example, grey has 13, yellow has 71, and blue he have assigned 15 in terms of light reflectancy. So, also we can see the more the value of the colour is that is the

lighter the colour is its light reflectancy will be more. So, white has 85m which has the highest and black has a 8 which is the lowest. So, his formula of readability is $k_1 - k_2$, k_1 is the highest lr or the light reflectancy minus the lowest lr or the lowest lr that is the k_2 whichever will be there in the foreground or background. For example, in the in this example k_1 and k_2 will be red is 31 and black is 8. So, 31 minus 8 divided by k_1 or the highest colour value that is the red's colour value that is 13 over here multiplied by 100 that will be the contrast value h .

And by it is study he have done several ethnographic study and he have conducted many questionnaires with users and he have done several he have surveyed many people and he identified that if the h value of h is less than 70, it is very difficult for users to read. It should be at least 70 or more than that for it is legibility. More the value is more the value of contrast value or h is the more legibility the colour combination the background and the text colour combination will be. So, this is it for the typography segment.

Thank you.