Notes - Design - Visual Attributes

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A brief intro to visual attributes relative to application and interface design.

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Intro   Visual elements are the components we use to build our graphical interface for a website, mobile application, and so on.

For example, these might include buttons, icons, drop-down lists and menus, checkboxes, &c. However, it can also include the text itself, images, organisational or decorative divisions, and embellishments such as borders, fonts and colours, horizontal lines and so on.

Visual attributes are *properties* of these visual elements. This means we can consider visual attributes as *styling* for our page's visual elements. When placing and organising these elements, we normally determine a consistent pattern for their arrangement and usage, and apply a similar scheme for styling. Such patterns aid a user in reducing cognitive load, and create an aid to vision, perception, and recognition.

Contrast   Elements with similar function should normally be styled in the same, general way. However, we can also selectively apply attributes to create a sense of *contrast*.

Within our interfaces, contrast presents itself as an intentional and easily recognisable difference we create between two elements. Contrast can be immediately eye catching, and can be selectively applied to draw a user's attention to a given, notable element or section of the screen. It also helps us provide a user with clues that elements are meant to be different, or at least perceived as different.

Size   *Size* is another visual attribute we can use to create differentiation within our interface designs.

Differences in perceived size between two elements is relatively straightforward for a user to notice and, in general, they will be drawn initially to the larger of the two elements. So, as with contrast, size differentiation can be easily employed to draw attention to a key part of a user's screen.

This concept has been used for centuries in print design, we only need consider Lombardic capitals in mediaeval manuscripts to see their application. It's a simple premise to apply to our designs. If one element is bigger than the others, and thereby visually dominant, it allows a user to quickly focus attention on that relative element.

It has also been observed that users tend to attach a sense of greater importance to such elements. Rightly or wrongly, size makes a difference in certain aspects of interface design.

One obvious application of this concept has been in the use and development of grid layouts in web design. Whilst they obviously present the benefit of easier, more tightly controlled layout, instead of earlier hacks such as tables for layouts, they also allow us to easily define relative sizes for content divs and elements. Larger centre panels perceived as presenting the important information, whilst the smaller headers, sidebars, and footers offer supporting information and links. Smaller contextual sources to the larger primary content.

We use this same principle in data visualisation to quickly and effectively communicate larger data values relative to an overall dataset.

When assigning size attributes, we need to consider the relative weighting of importance for visual elements. Whilst certain elements are naturally useful, in and of themselves, are they essential or particularly crucial to the overall usage and task at hand?

Colour   Colour can play a vital role in the presentation and user perception of a graphical interface.

It is generally held that after size, colour is the next primary attribute for user differentiation. Colour, when applied appropriately, can naturally be used to guide a user to given aspects of a graphical interface. It can easily provide supporting directions through an interface, guiding our user to the correct parts of a given application.

Colour can also be used to suggest inherent similarities and, of course, differences. Elements that share identical colours will be perceived by our users as belonging to the same group. The flip side is that elements with contrasting colours will naturally be perceived as being different and belonging to disparate groups.

Whilst cultural preconceptions can confuse our use of colours, we can also note that there are certain given implied meanings. For example, we still associate red with danger, stop, error &c. It has now almost become an accepted uniform colour for such usage within interface design.

Shape, direction, and angularity   As seen with concepts such as the Gestalt principles, users are often able to quickly and easily differentiate shapes and patterns. Easily differentiating, for example, squares from triangles and circles.

We can obviously use this recognition to our advantage, and easily differentiate content and elements with bordered shapes and outlines. Want to highlight a given content section or image, place a differentiating outline around it within the interface design.

However, traditional graphical design holds that elements placed at an angle to one another present a jarring, *visual tension*, that may be perceived as distracting for a user. Again, the development and prevalence of grid layouts and designs presents us with an issue relative to angles. As we organise content and elements within a grid, such angles become even more noticeable. The flip-side can, however, oncemore present us with a useful tool to present important data and elements. The key here is simply to use it sparingly.

Weight, text styling, texture   *Weight* in interface design refers to the thickness of a line, font &c., and therefore its relative presentation within the design. If applied correctly, this can be a quick and easy differentiating factor within our interfaces.

The underlying concept is, oncemore, a play on the use of contrast. Its relative differentiation between juxtaposed elements within the interface design.

Text styling in general can be a very useful, and practical, application of contrast and styling to create differentiation within a user interface. Simple styles such as underline, italics, strikethrough &c. presents easy differentiation within our designs.

Likewise, texture plays a useful role in the presentation of elements. It has been used and abused for many years within mobile applications, and was one of the notable components of the web 2.0 look and feel. Various attempts to mimic realistic objects within a user interface characterised early mobile platforms. Simply recall the designs employed within iOS before the intervention of Jonny Ives and iOS 7. Whilst these updates were far from perfect, they were certainly a move away from the skeuomorphic representations of early iOS versions.

An interesting side note regarding texture is its broader usage within graphic design. Texture is often perceived relative to the overall visual look and feel of a block of text, in essence its visual effect. This notion refers to a user's perception of a block of text, in particular if they are not able to readily discern the exact content.

For example, if we minimise some text to the point where it is no longer readable, we start to perceive its relative texture. This notion also refers to the concept of printing such a block of text, and physically discerning the difference in typeface.

Resources

- Card, S.K., Moran, T.P. and Newell, A. *The psychology of human-computer interaction.* Lawrence Erlbaum Associates. 1983.
- Google Art Project