

## Module 15: "Color and Emotion"

### Lecture 40: "Non-functional Elements Understanding Emotions"

The Lecture Contains:

- Non-functional Elements
- Understanding Emotions
- Emotions
- Affect and Cognition
- Emotions and Behavior
- Three Levels of Processing: Visceral, Behavioural and Reflective
- Visceral level: perceptive reaction
- Situations resulting in positive emotions
- Situations resulting in negative emotions
- Visceral reaction towards designs

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Non-functional Elements: auditory, visual, tactile, olfactory, and taste

Human emotion is related to the *non-functional elements*. Living beings including human beings are subject to various emotional experiences. Emotion is a fascinating experience that all the living beings experience through agony and ecstasy. Emotion relates to humour, agitation, romance, sadness, etc. Emotional experiences create a bond between two entities. It is perhaps the most challenging area to understand, analyze. It is almost impossible to generalize a product globally as per human emotion and its effect. Directly or indirectly it is related to socio-cultural conditions. Nature also plays effective role in human mind and body. Seasonal changes, day or night conditions evoking and inspiring human being from the very early human history.

Cognition (perception) and emotion are closely related. It is perhaps the most common human experience that man learns from the infant stage. Recognizing form, color, shape, texture, etc are part of human experiences. Human being relates to sounds before even recognizing any form or shape. Smell and auditory senses are the most important organs that human being is associated from the early stage to use for their protection and safety. The sound of footstep in dark signals warning for taking defence while burning smell warns of danger.

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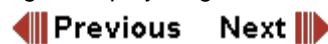
Human instincts or senses are built to protect or experience the joy. Thus human instincts supported by auditory, visual, tactile, olfactory, and taste senses have equipped us to accommodate and appreciate the pleasure of life. On the other hand the same senses enable us to confront the hostile environment. **Safety and comfort** are the two most essential elements in our living condition.

Until very recently design profession mostly depended on formal functional elements which are being verified through quantitative parameters. In most cases design explores various formal elements and principles that are related to *functional elements* such as- form, shape, size, texture, color, line, etc. All these elements are part of design's formal structure. However, in most cases the *non-functional elements* remain untouched or unaddressed since it is a complex area that cannot be quantified by one single parameter or a methodology. In the recent years the non-functional elements are being experimented in design.

Non-functional elements deal with human emotions that evoke a sense of affection and attachment. Every living being in varying degrees has the sense of such emotion.

At this stage it is necessary to have a brief introduce to the role of cognition, affect and emotion in decision making. In the field of design emotion has direct or indirect relationship. Donald Norman the renowned scholar has contributed significantly in the area of *emotion and design*. Norman's theory of *attractiveness in design* relates to human emotion. Also briefing the theory framed by Donald Norman about the three levels of brain processing in his book 'Emotional Design'.

All living beings have mechanism of emotion which guides them all the time. Such mechanism tries to create favourable situations for survival. On the other hand under unfavourable conditions mechanism for survival helps to warn or create conditions to confront the negative situation. These features directly or indirectly related to human work 'efficiency and safety'. In the process of understanding the emotion and its relationship with product design *cognition* plays significant role.



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## Understanding Emotions

Cognition (Latin: *cogito*, "to think") is a facility for the intelligent processing of information. It refers to the mental processes involved in gaining knowledge and comprehension, including thinking, knowing, remembering, judging, and problem solving. It encompasses language, imagination, perception, action, problem solving, mental imagery and planning. Cognition is an information processing system which recognizes the environment, understand it by comparing it with the stored mental representations of experiences, and derive logical conclusions out of it, guiding us in taking decisions. Cognition also recollects earlier experiences. In the process of cognition the nature of value creates impression on our emotion. Relating to earlier experience the cognition evokes emotional contents.

In the Maslow's hierarchy of needs, **social value** has direct relationship with the design process. To 'hold a value' is to have a 'favourable attitude towards its realization', Values resemble 'preference' or 'desire'. They often are associated with strong feelings, which offer no general rationale. In fact that is the reason it is one of the most complex and challenging areas. Tradition, culture, social values, etc are directly responsible in 'holding value'. Such values are the sources of human emotion. Color has especial reference to such value system.

## Emotions

All living organisms have perceptive mechanisms, which are a part of the *cognitive* system, that allow them to recognize and understand those stimuli that are significant for their survival or in other words favourable to the organism, stimuli that help them to obtain food, to be protected from attacks, etc. But perception only solves a part of the survival problem, because perception just recognizes the stimuli and identifies them. But that is not enough for living beings survival. They also need to know if the perceived (recognized) stimuli are useful and favourable to them.

- Emotion has positive and negative effect on our mind.
- 'Positive emotion' we refer to- happiness, satisfaction, joy, desire, peace, etc.
- 'Negative emotion' refers to sadness, disillusion, sorrow, anguish, etc.
- Conditions change due to various societal or personal reasons.

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## Affect and Cognition

Much of human behavior is subconscious, beneath conscious awareness.

Eye sees while brain perceives

Consciousness comes late, both in evolution and also in the way the brain processes information: many judgments have already been determined before they reach consciousness.

Perception follows- description (eye sees), analysis, interpretation and finally ready to pass judgment. The entire process goes through a complex process that affects our emotion.

Emotion is the conscious experience of affect, complete with attribution of its cause and identification of its object. Sometime it is difficult to explain certain emotional affect immediately. Breaking the ceramics *Windmill model* that goes to my experience of visiting The Netherlands emotionally affected me. Thus, 'cognition' and 'affect' are intermingled, some time emotions and affective states are driven by cognition, while affect often impacts cognition.

## Emotions and Behavior

The emotional system is strongly coupled with behavior. It helps to preparing the body to respond appropriately in a given situation. For example, the moment one enters to a restaurant the emotional aspect prepares one for the food and accordingly the chemical components of the human body begins reacting unknowingly. Thus, pleasant tastes and smells cause one to salivate, to inhale and ingest. An unexpected bad taste may disagree and cause the mouth to react emotionally, food to throw out, and accordingly the body would react physiologically by contracting muscles.

It is found that color in food has direct relationship with taste. Research suggests that certain colors do evoke physical responses. Red, for instance, is a very stimulating color and has been shown to produce increased heart and respiratory rates. On the other hand, the color blue has a relaxing effect on the nervous system, and some studies have shown that it increases productivity when used as a background color.

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## Three Levels of Processing: Visceral, Behavioural and Reflective

Cognitive scientist Donald Norman along with his colleagues Andrew Ortony and William Revelle, professors in the Psychology Department at Northwestern University, framed the theory of three levels of processing-

- **Visceral level:** perceptive reaction
- **Behavioral level:** behavioral reaction
- **Reflective level:** **affective system** to learning new concept

(Ref. Donald Norman (2004), 'Emotional Design: Why we love (or hate) everyday things'

Norman Donald (1988), '*The Design of Everyday Things*'

<http://www.ind.org/books/emotional-design-why-we-love-or-hate-everyday-things.html> ; June 15, 2012

[http://en.wikipedia.org/wiki/The\\_Design\\_of\\_Everyday\\_Things](http://en.wikipedia.org/wiki/The_Design_of_Everyday_Things) ; June 15, 2012)

## Visceral level: perceptive reaction

At this level the brain perceives, analyzes and reacts to the situation. We see, hear, feel, or otherwise sense the environment, and the affective system passes judgment, alerting other centres in the brain. At this stage the functioning is based on intuition rather than from reasoning or observation.

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Situations resulting in positive emotions:

- Sweet taste and smell
- Soft breeze Rhythmic beats Symmetric shapes
- Attractive and beautiful faces
- Pleasant melodies
- Rounded smooth objects

Situations resulting in negative emotions:

- Darkness
- Heights
- Extreme hot or cold
- Snakes and spiders
- Sudden incident
- Loud sounds
- Crowds of people
- Bitter Tastes

To summarize, at the visceral level, the brain perceives through seeing, hearing and listening, and immediately the affective system starts processing. Thus the intuitive action does wait for logical or rational process it results in the person experiencing appropriate emotions. The flow of emotions, help him make appropriate decisions. Hence at the visceral level, the decision made is purely by the affective system and not by the cognitive system. The logical interpretation of what is perceived follows the affective system which has already made a decision.

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## Visceral reaction towards designs

The human preference for faces and bodies that are symmetrical presumably reflects selection of the fittest; non-symmetrical bodies probably are the result of some deficiency in the genes or the maturation process. The following examples (plate 4) show the symmetry and non-symmetric features that may cause Visceral Reactions.



Plate 4 At the visceral level, physical features- look, feel, and sound, dominate

(Source: <http://www.google.co.in/search?hl=en&biw=1329&bih=555&noj=1&q=Human%20face%20and%20body&um=1&ie=UTF-8&tbm=isch&source=og&sa=N&tab=wi&ei=A1TbT7qCMI63rAfTuJWxCQ> ; June 15, 2012)

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