Case Study
Factors of Emotion

Emotion **provides a significant part of the success in a lighting design. Unfortunately, this aspect and purpose is Not emphasized enough in the education of those practicing this work.**

Vision is the dominant sense used by humans, and it allows us to understand what is occurring in our surrounding environment. It provides a mechanism by which we can determine space and our movements. It also provides us with an understanding of what is safe or not. It enables our "fight" or "flight" response. All of this is possible through Light.

Light **is the controlling element in life—it stimulates a response. This stimulation is in the form of "Arousal" and it is a physiological response, which is closely linked to Emotion. It is in this understanding where there is great power. As lighting designers, we have the power to evoke emotion— for good or for bad.**

Case Study
Factors of Emotion

Emotion can be broken down into the Factors of Arousal and the Components of the Emotional Experience. These elements will determine the level and type of response from the stimuli.

Factors of Arousal:
- **Valence**—positive or negative
- **Strength**—strong or weak

Components of the Emotional Experience:
- **Valence**—positive or negative
- **Awareness**
- **Motor Activation**—approach or avoid

Depending on the strength level of arousal and whether it is positive or negative, will it provide the appropriate emotional response. The act to respond will either be to "approach" or to "avoid" the situation.

Case Study
The Importance of Emotion

The **ability to stimulate one's emotion** is the 'key' to success within the landscape lighting profession. As stated before, it is an overlooked aspect to the practice. So, "Why is it so important?":

- Emotional experiences are **'Remembered'**
- If the experience is **'Positive'**, then it is **'Desired'** to be repeated
- In Sales—**'Desired'** experiences or memories are a motivational factor to generate purchases
- **Light** or the use of light is the most powerful tool and medium to evoke emotion. This includes the lack of light or **Shadow**, as well
- Emotional well-being is a critical part to **Human Health**

One can easily understand this simple analysis of "Why" we must understand this consideration and use it effectively.

Case Study
Emotional Awareness

The primary reason why so many lighting designers fail to provide excellent works is because they lack **Awareness**. This could be because they have not learned the skills to hone them, or because they are too rushed to miss these hidden opportunities. In either case, the design intent suffers.

Therefore, this Case-Study will address the following aspects of Awareness:

- **Types of Awareness—Visual and Emotional**
- **Types of Emotion**
- **Characteristics of the Emotional States**

Not only is the following information very interesting, but it provides great insight into the understanding of humans—this can be very helpful in Communications and Sales.

Case Study
Visual Awareness

Visual Awareness is 'What we See or Observe.' These are relatively easy to understand, but it takes a concentrated effort to truly evaluate what's in these spaces. The lighting designer should always look at physical forms, whether living or non-living from a perspective of how Light interacts with them. This includes the Shadows. Questions should be asked:

- Does the light reflect off or absorb into the material?
- Does the material allow light to pass through it—is it transparent, translucent or opaque?
- What type of reflection is displayed—specular (mirror-like), diffuse or mixed? What degree of reflection is displayed (albedo)?
- How does shadow play work with this material?
- What color (color temperature) is the light seen? If it's a 'white' light source, then is it 'warm' or 'cool'? What time of the day is it?
- Where is the light source coming from? Is it natural (sun or moon) or is it man-made?
- Is the glare associated with the light?
- Do you like or dislike what you see? Why?

Case Study
Light Reflection and Absorption

The following **Terms** are better explained for understanding and learning:

Types of Reflection:

1. Specular (mirror-like)—a light ray meets a smooth surface and the angle of incidence is identical to the angle of reflectance
2. Diffuse—a light ray meets a rough surface and is equally reflected in all directions
3. Mixed—a light ray meets a very rough surface and is unequally reflected in all directions (this is the most common in nature)

Transmission—light passes through a body

Light Transmission Capacity—light's ability and degree to pass through an object

- Transparent—allows light to pass through
- Translucent—allows partial light to pass through
- Opaque—allows no light to pass through

Case Study
Light Reflection and Absorption

Refraction—light passes through a body, but changes its propagation direction

Absorption—light passes into a body and is absorbed by the body molecules, and then is transformed into kinetic energy. This produces heat, which is radiated to the surroundings

Albedo—measures the degree of reflection of materials in different spectral ranges. It relates to the percentage (%) of absorbed light. An albedo of 100% = no absorption, and an albedo of 0% = no reflectance

- Snow = 80-90%
- Forest = 5-18%
- Concrete = 15%
- Body of Water (sun high) = 5%
- Body of Water (sun low) = 22%

Case Study
Emotional Awareness

Emotional Awareness is 'What we Feel.' These form of awareness is the hardest type to understand and it takes both concentration and practice. The lighting designer should spend quality time in various settings in order to fully understand this. It is suggested that notes be taken and sketches performed, to aid in this learning process. Questions should be asked:

- How do you feel when you initial enter this space? What **Emotion** would you describe for this?
- How **Aroused** are you in this space? In other words, is the space **'positive'** or **'negative'** in **Valence**?
- What **Strength** level is present in this Valence? Rate it on a scale from 1-10, where 1 is weakest and 10 is strongest
- Does the experience cause you to **'Approach'** or to' **'Avoid'** the space? What degree of Valence would you describe this aspect? Again, rate it from 1-10 (weak to strong)
- What **aspects of the setting** do you feel most moved you—the play of light and shadow, the arrangement of landscape elements, the combination of both?

Case Study
Emotional Awareness

By rating your experiences on a 1-10 scale, the lighting designer can better understand lighting applications to particular environments. It is through this 'Experience' that one can mimic or recreate a setting on projects.

Additionally, it would be suggested to perform these studies with others—colleagues, friends, family, and so on, in order to capture their emotional responses. The more this is practiced and understood, the easier it is to emulate.

Case Study
Types of Human Emotions

There are several emotions which can be developed or encouraged through lighting design. Positive Valence Types are the most desired in landscape lighting.

Positive Valence Types:

Happiness—is associated with Joy and Pleasure
Intrigue—is associated with Curiosity, Interest and Fascination
Awe—is associated with Wonder, Amazement, Wonder, Inspiration and Mystery
Contentment—is associated with Peace, Tranquility, Calm and Serenity

There can be a combination of positive emotional types to be described differently. These include: **Excitement, Elation, Surprise, Charming, Delightful, Enchanting** and **Ecstatic**

Case Study
Types of Human Emotions

Typically, the Negative Valence Type Emotions are not desired. However, there are unique situations where they might be effective or preferred. This could include areas of the landscaped setting which are desired to be avoided. They also could be designated areas where 'Fear' might be desired as an emotional response—some people enjoy being scared.

Negative Valence Types:

Fear—is associated with Apprehension, Stress, Tension and Terror
Sadness—is associated with Grief, Fatigue and Pensiveness
Anger—is associated with Aggression, Frustration and Tension

There can be a combination of negative emotional types, and they are described as follows: Nervous, Vigilant, Disgust, Depressed, Upset and Worried

Case Study
How to Design for Emotional Need

Before a lighting designer actually performs his/her work, they must ascertain what is required on the project. Questions must be asked to understand how these settings will be utilized:

- **Does the consumer have one main priority envisioned? Is it for viewing only or is it to be experienced from within the space?**
- **Are there multiple needs? There might be a desire to have a primary focal area which is joyous and provides enchantment, while another space is utilized for restoration and solitude.**
- **Does the consumer have any ailments, such as depression, sadness, stress or tension? If so, then these spaces should employ a sense of Peace, Calm, Relaxation or Contentment.**
- **Does the consumer have the need to be more motivated, energetic or attentive to things in life? It would make sense to design a space which serves to Inspire, Amaze or Fascinate.**

Case Study
How to Design for Emotional Need

Emotional State Characteristics

Joy/Happiness

This state is considered highly positive

- **Arousal Valence—7 to 10**
- **Arousal Strength—1 to 10 (varying)**
- **These lighting scenes are generally the easiest to create, as most everyone is 'happy' with a decent amount of light.**

- **Characteristics: scenes are illuminated fairly well with fewer areas of darkness. They provide little to No Stress, as they are meant for activity, viewing, fun, entertainment and comfort.**

Case Study
How to Design for Emotional Need

Emotional State Characteristics

Contentment

This state is considered mostly positive
- Arousal Valence—5 to 8
- Arousal Strength—1 to 6
- These lighting scenes are a little more challenging because they need to consider all elements associated with providing Calm, Peace, Serenity and Relaxation. This includes lighting, sound, smell and activities.

- Characteristics: scenes are illuminated at lower levels that provide warmth. They should provide No Stress, as they are meant for inactivity, solitude, restoration, thinking, meditation, and healing. Movement and sound should be at a minimum, and the lighting transition between areas should be soft and continuous (less contrast).

- Subtle aspects of Joy and Intrigue might provide for an additional positive response.

Case Study
How to Design for Emotional Need

Emotional State Characteristics

Intrigue

This state is considered mostly positive
- Arousal Valence—4 to 8
- Arousal Strength—3 to 8
- These lighting scenes are somewhat challenging because they need to be thought-provoking. The scene should cause the viewer to pause and to question if it's safe or not to proceed. Shadow and light play dominate these settings, because shadow provides tension.

- **Characteristics:** scenes are illuminated at lower levels and higher levels of contrast exist. Shadows and silhouettes are utilized to stimulate the mind. As mentioned, a small amount of stress should be provided, so that Interest, Curiosity and Drama exists. Movement and sound can be enhanced to provide more excitement.

- Subtle color might be provided for added interest and emotional drama.

Case Study
How to Design for Emotional Need

Emotional State Characteristics

Awe

This state is considered positive, but it can be negative
- **Arousal Valence—3 to 10**
- **Arousal Strength—4 to 10**
- **These lighting scenes are less challenging because they employ more intense lighting, whether its by illumination, color or effect. The goal is to shock, surprise, enchant, or amaze the viewer. These settings typically cause pause in the viewer so that the mind can understand what is being experienced.**

- **Characteristics: scenes are heavily illuminated to capture attention. Scenes should provide Inspiration, Wonderment or Mystery, and they allow the mind to wander and think. If scenes are too dramatic or over-whelming, then they can provide a level of stress.**

- **If Fear is applied with Awe, then this one might experience Reverential Respect or an alternate form of Mystery.**

Case Study
How to Design for Emotional Need

Emotional State Characteristics

Fear

This state is considered mostly negative
- **Arousal Valence—1 to 6 (some enjoy fear, that is why this rating is higher)**
- **Arousal Strength—1 to 10 (varying)**
- **These lighting scenes are the hardest to create because most designers do not use them. They employ intense lighting techniques to encourage drama, added shadows and high contrast. The goal is to scare, shock, surprise, and ensure apprehension with the viewer. These settings should cause one to 'avoid' the space.**

- **Characteristics: scenes are very under-illuminated to ensure hesitation and pause in movement. Typically, destination points are hidden or cannot be verified. Scenes should present many questions towards one's personal safety and towards movement. High drama is the goal, as is any elements of stress.**

- **Color can sometimes add greater levels of tension, but normally this is achieved by the stark black and shades of gray found at night.**

Final Points

- The Factors of Emotion are critical to understand and to develop, if one desires to be an 'effective' landscape lighting designer.

- **Awareness is the key to Understanding & Advancement**.

  - What do we **"See"** and What do we **"Feel"**

- Understand the Factors of Arousal and the Emotional Experience

  - **Valence** (positive vs. negative) and **Strength** (weak vs. strong)

  - **"Approach"** vs. **"Aversion"** (Avoid)

- Why Emotion is Important

  - It's **'Desired'** and it's **'Remembered'**

  - It provides for **Well-being**

  - It increases opportunities for **Sales**

- The Emotional State Characteristics

  - Happiness, Intrigue, Awe, Contentment and Fear

Case Study
Factors of Emotion

Study by: **Mark Carlson (Landscape Lighting Designer)—2019**

Avalon Lighting Design—Orangevale, CA, USA