Visual Depth of Landscape Photography into Digital Illustration

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Abstract: One of the attractive factor of natural scenery image, either it is a photography or digital illustration, is because there is a sense of depth in the visual of the image. The existence of depth in photography can be learned and developed into form of digital illustration. Method that will be used is by observing the photography image from its color, lighting and objects size which will lead to depth of the image. The purpose is to make it easier for illustrators or learning person to make a scenery image with sense of depth in it. The end result is an application example of observing results of depthness in photography into digital illustration with sense of depth in it.

1 INTRODUCTION

The definition of image depth is an imaginary image that the dimension of space can be identified from the image. This space represents sense of spaciousness, explaining the place that the condition of its dimension is understandable or measurable. Images from camera are replica from the real world which have 3 dimensional space. Three dimensional space has 3 size of dimensions, that is height, length and width. In 3D program, these 3 size of dimension translated into 3 axis coordinates, that is X axis representing length, Y axis representing height, and Z axis representing width. The existences of Z axis or width dimension is the reason why a 3D space or a room possessed a sense of depth. The simple example is when we see a photo of a person with natural scenery background behind him, from the image we can easily detecting the depth sense of the image based on the order the objects in the image. We know that the person in the image is located in front of the scenery which made us unconciously knew that there is a space between the person and the scenery, therefore there is depth in the image. In order to create a depth in an illustration, we need to understand about the depth of an image that can be created by photos, which can be mimicked, or by formulating the visual keys in the photo for reference material for the illustration.

Today photos are more known as a "materials" or "footages" for later to be processed, rather than as a "final images" or "final photos". Besides being duplicated, a photo produced into a new photo by various montage techniques. More photos are being produced, resulting in a lot more photos that are being deleted. This fact made the direction of this study easier that is how to use photography as a foundation of visualization background and references for the illustration itself. Photo is a "proof of the existence of an object" (Sontag, 2005). Photo is an index or trace of a material object. There is a causal connection between photo and objects in front of camera, objects in front of camera resulting an image in the photo.

Therefore, observing a photo will simulating the existence of objects in front of camera when it was being photographed. A photograph recording objects that are in front of the lens as it is when it was being photographed. With techniques and experiences of the photographer, the beauty of objects in front of camera can be interestingly presented with various interpretations. One of the interpretation is the beauty of scenery image with sense of depth in it, the popular phrase in photography is "depth of field". This type of image is affected by various tools in recording process, lighting, ambience, time and location of photo shoot.

The question arises, what if it was done in the domain of illustration picture and translated into various ilustration with various illustrator's understanding. The important matter that will be dicussed is how to move photography's image into

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scenes of digital illustration, an images that have depth or as if it have a dimension.

For common people, including students who is learning about drawing and illustration, there is a need for a guide in observing visual photography before later imagining it in drawing a landscape illustration that have dimension. One of the things that they need to understand is the discipline of cinematography. Cinematography is similiar with photography, both are also have same specification of image recording tools, the utilization of lens, lighting and angle. Transforming photography into digital illustration is a visual reconstruction in new media (Latif, 2012). This is in line with Noor Lateev CM's (2012) idea in Pramowardani Photography comic. The difference is his visual reconstruction is discussing about the strategy in designing a character with support from empiric data based on Form Follow Culture (Harmer, 2010). Meanwhile this study focusing on visual reconstruction (illustration) of natural scenery.

Generally all of visual element in photography have three main function. First function is to help directing the eyes on the main object, second function is as a filler for the empty space in frame, and third function is as inductor of feels or emotion which will make the photo more meaningful. Every category of visual element (line, pattern, shape, texture and color) have its own way in fulfilling common function as mentioned above (Felix, 2011).

2 METHOD

This research use practice based research. To facilitate the explanation, the flow is simplified as follows:

1. Literature study supporting visualization
2. Observe the image recording location
3. Determination of visual key from visual data of recording (photography)
4. Specify selected photos for illustration example
5. Applied some sample illustrations from the specified photographs

Literature study will be needed to deepen the understanding of all key elements in this research and to help researcher in observing research materials. Key elements in this research are photograph, depth, color and illustration. Research material in this research is landscape photographs. After gathering research materials, it will be observed using knowledge of photography and illustration, specifically in the aspect of color, lighting and

perspective of the photograph, in order to find factors that are creating sense of depth in material photographs. Research materials will be observed one by one until researcher reach general conclusion, and later translating it into illustration based on observation result.

3 RESULTS AND DISCUSSIONS

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Discussion done through observation of feels of depth in photo which focusing on lighting and color that existed in photo. Color and lighting considered as closest reference in providing depth in illustration image.

3.1 Color, Object and Depth

In this study, researchers will limit the discussion to color as one of important factor in creating sense of depth. Color is one of design element that closely connected to human psychology. Every color have ability to create certain feeling in human psychology. For example, blue color can create cool or cold feeling, yellow color can create warm feeling, white color can create holy or sacred feeling, etc. In creating sense of depth, color is one of important factor to create sense of space and depth. In visual design, there are term called hue and color saturation. Hue is a color from the image itself, and color saturation is intensity of hue. The higher the color saturation, then the color produced will be more contrast. Primary color like red, blue and yellow considered as the real version of color because they have full level of color saturation. When the saturation of color is reduced, the color will looks dull or not contrast. According to Paulina, theoretically, color is one of important element in photography, colors are strikingly had an impact towards visual respond of human, also color can stimulate feeling (Gunawan, 2012). Color also can create emotion stimulation, so each individual can express deferent feelings in commenting a color. Color also often be symbolization or used to represents a purpose or to identify things.

3.2 Natural Scenery

Using photograph of natural scenery we can identify how color are affecting sense of depth in an image. In a photo of natural scenery, we can see a difference of color between objects that are close to camera and objects that are far from camera. The color of objects that are close to camera tends to looks contrast, meanwhile objects that are far from camera tend to have a dull color. This happened because in real world there is an atmosphere which contains dust, moisture and air pollution in it, so when an object is far from camera, all the elements that exist in atmosphere are getting thick and reducing the intensity of color of the object. Also we often see a blueish color on top of the color of distant object, this happened because atmosphere reflecting the color of sky and the blueish color intensity is stronger than a distant object's color intensity. This differences in color saturation in real world also create sense of distance between one object to another object. Therefore reducing color saturation value on distant objects in illustration can create sense of depth, especially on landscape illustration. This manipulation of color saturation had been used since a long time ago, especially on painting, for example painting of Pieter Bruegel the Elder titled "The Peasant Dance" (1576), the intensity of color saturation is low in the background, so the painting of buildings on the background will looks like it placed so far away from the eyes.

3.3 Foreground, Midground and Background

Differentiating size of an object in illustration will also have the same effect with photograph that is it will give impression of depth. In digital compositing and matte painting, this is related to layering system. Generally there are 3 type of layer in compositing that is foreground, midground and background. Foreground is terms for any visual elements located in front of midground. Midground is terms for any visual elements located between foreground and background. Background is terms for any visual elements located behind midground. To make an impression of distance, a compositor or matte painter will make foreground objects size bigger than midground and background according to its real object size and scale. If there is a tree at foreground and mountain at background, it doesn't mean that the tree is bigger than mountain in real world size, it just to give differentiation between closer object and

farther object, and at the same time creating depth in composition.

Color and also differentiating object size or scale according to object's distance from camera will creating impression of distance therefore create feels of depth, especially in illustration. The most effective way to know the nature of these factor is with using real world or photo of real world as reference and later observes them. Below are the process of observation from scenery photo that are being translated into simple illustration in purpose to prove that color is one of main factor in creating depth in illustration.

3.4 Photography to Digital Illustration

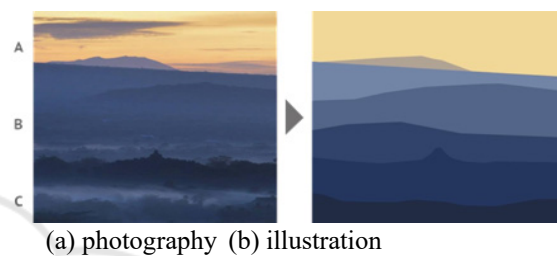

(a) photography (b) illustration

Figure 1: Morning scenery at Punthuk Setumbu near Borobudur temple. Photo and illustration by Tunjung Riyadi.

(a) Photo analysis:
- A: The most distant objects from camera (background layer): have the lowest saturation value, so the color looks dull, also the color looks a bit warmer because the color of the sunrise have higher saturation value than the objects.
- B: The objects between the closest and farthest from camera (midground layer): have higher saturation value than the farthest object and the color looks a bit dull , also the color looks a bit blueish than background objects because of atmosphere color.
- C: The objects closest from camera (foreground layer): have the highest saturation value than another objects in the photo, so the color looks more contrast, also it looks not so blueish anymore.

(b) Illustration analysis process:
- Based on photo analysis, each layer that are already observed are created into simple illustration.
- Identifying base color of each layer then reducing saturation value starting from foreground layer to background layer based on photo analysis

- Adding atmosphere color into each layer based on photo analysis
- By adding atmosphere color, we can make the illustration to looks like it have different level of lighting intensity in each object

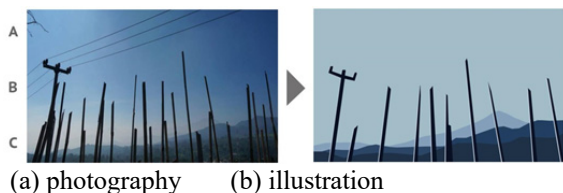(a) photography   (b) illustration

Figure 2: Morning scenery of mountain ranges at Ciater, West Java. Photo and illustration by Tunjung Riyadi.

(a) Photo analysis:

- A: The farthest objects are the mountains (background layer): have the lowest saturation value so the color looks dull. In this photo, the farthest object not looks as warm as previous photo because the saturation value of sunrise color is not as high as previous photo's sunrise color.
- B: The middle object is the land in front of mountains (midground layer): the saturation is higher than the mountains and also the land's color not so blueish anymore, this is because the amount of particles in atmosphere is not as thick than previous photo.
- C: The closest object from camera are the poles (foreground layer): the color is much more contrast and have a lot more saturation value than the land, this means the object are a lot more closer from camera than the foreground layer of previous photo.

(b) Illustration analysis process:

- Based on photo analysis, each layer that are already observed are created into simple illustration.
- Identifying base color of each layer then reducing saturation value starting from foreground layer to background layer based on photo analysis
- Adding atmosphere color into each layer based on photo analysis
- In this illustration, the sunrise's color is not strong enough to effect object's color

(a) Photography (b) illustration

Figure 3: Morning scenery of mountain ranges at Puncak, Bogor, West Java. Photo & illustration by Tunjung Riyadi.

Photo analysis:

- A: The farthest objects are the lands behind the house (background layer): have the lowest saturation value so the color looks dull. In this photo, object's color almost totally washed out by sunrise's color because the saturation value of the objects is a lot weaker than the sunrise's.
- B: The middle object are the house and the land in front of the house (midground layer): the saturation is a lot higher than the background, also the original color of objects are a lot clearer.
- C: The closest object from camera are the trees in front of blue house (foreground layer): have a bit more saturation value than the house, this means the object are very close from camera.

Illustration analysis process:

- Based on photo analysis, each layer that are already observed are created into simple illustration.
- Identifying base color of each layer then reducing saturation value starting from foreground layer to background layer based on photo analysis
- Adding atmosphere color into each layer based on photo analysis
- In this illustration, the sunrise's color is so strong and affecting the color of every object in illustration

4 CONCLUSIONS

Simple method for common people who want to draw any scenery objects that create certain perception of dimension. Simple method in understanding the depth of an image also can help illustrator in making their illustration to have a lot more dimension even with just using simple object shape. Differentiation of color saturation and contrast are only one of the way to create depth in illustration.

This study applied the concept of depth of a digital scenery image which developed from photography approach. The method that used is observing part by

part of photograph starting from color, lighting and perspective of object's shape that will lead us to the depth of the image. With the purpose of simplifying study method for any learners or students in making of illustration with interesting 3 dimensional depthness. The results above are the examples of the application in the simple illustration which create an interesting perception of space depthness or illustration dimension. The study is possible to develop further using other photography approach or art approach with the same purpose that is creating illustration, drawing or picture that have depth as its attraction value.

ACKNOWLEDGEMENTS

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