

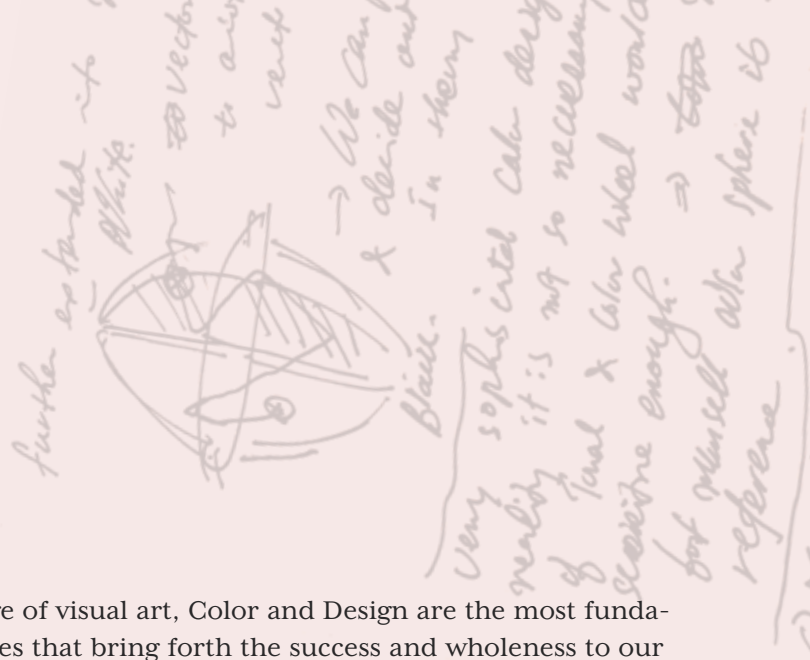
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# PREFACE

“An artist should live amidst the uncomfortable spiky ground, and try to claw his way through the crooked paths.”



In the language of visual art, Color and Design are the most fundamental qualities that bring forth the success and wholeness to our works. Indeed, they are the grammar that overlay our end product, providing structure, cohesiveness, diversity, our very plot and storyline that we wished to convey. I began my formal education in art at a mature age of 34 but already brought along with me a long history of struggle with these aspects. I gained a fair deal of appreciation then and more so now as I teach students these two subject matters. There is an apparent need to resolve challenges that Color and Design whether intertwined or standing on its own rights create. Indeed, numerous issues related to these aspects surface constantly that require practical or creative resolutions.

I felt compelled to share my struggles, provide some invaluable insights to hopefully arrive at a perceptive understanding of both Color and Design. The morphology of Color Theory dates back to hundreds of years ago since Newtonian times. The science of color was studied and today, its development and pace of practical use in the field of science and high tech areas are comprehensive and exacting. However, one could not quite say the systems of Color Theory can be applied in a formulaic method in visual arts to guarantee success.

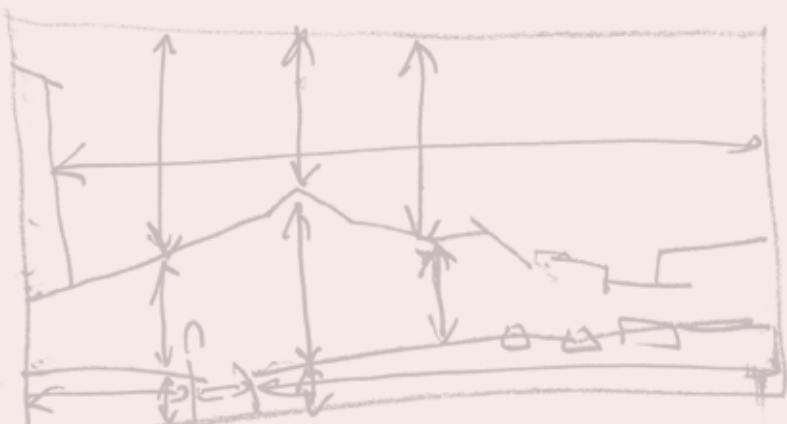
My practical experience and theoretical understanding with color issues helped me develop a practical, fundamental yet simple to understand system of Color. I named it the *Friend-Enemy Color System*. Whilst it is provocative sounding, it gives a quick ‘aha’ moment to the reader. How so? Well, inevitably we know who we form friendships and antagonistic relationships with in our social and familial circles, so just like that, it would be a foregone conclusion we will know our friends and enemies in the play of colors!

分析画中的画面构成要素  
 → 个人视觉~理解画作的  
 边缘的处理。  
 空间色彩与构图问题

Similarly, throughout my teaching career, I realized students were encountering designing problems along with color challenges. Students were focused on the construction of forms but less conscious of the importance of picture plane design. Students' imbalanced knowledge of form versus design had again driven me to look into the root cause of this design issue. In *Design Concepts*, I share my various sketching approaches and abstract concepts in the process of composing to arrive at a holistic picture plane design. Along the process, fundamentals in construction of space, sophistication of edges and design guidelines are discussed.

With this book, I hope to bridge the gap between theory and practice through summarizing the essential parts of the scientific theories for visual art and my personal experiences in the field. But more importantly, it will bring me immeasurable joy if my book helps us realize that 'As we shape our paintings, our paintings in turn shape us - bringing wholeness - no part left out, everything belonging'.

Ng Woon Lam  
 李雲龍



It generally takes a long period of practice for a visual artist to be adept at identifying the inherent tones of each color. This is because the conventional art curriculum does not provide an essential and structured training approach for students to learn the actual tonal range of each color. Most of them acquire this through many years of practical experience later on.

1

Ng, W. L. (2015). A New Approach for the Teaching of Practical Color Theory. *Proceedings of the 3rd ICCI 2015: Opportunity and Challenge of Creative Industries in the Era of Global Free Trade*, 255-261.

I have developed a step-by-step exercise<sup>1</sup> to aid students in training their eyes to see the tonal value of colors. We can simplify this arduous and time-consuming training process with the help of digital media. Fig 1.1 and 1.2 illustrate the required steps.

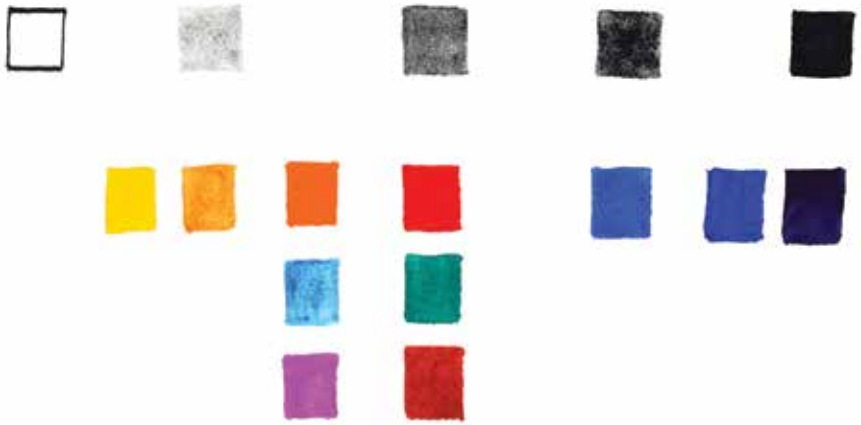


Fig 1.1. Trial that illustrates the process of matching pure colors to their respective grays.

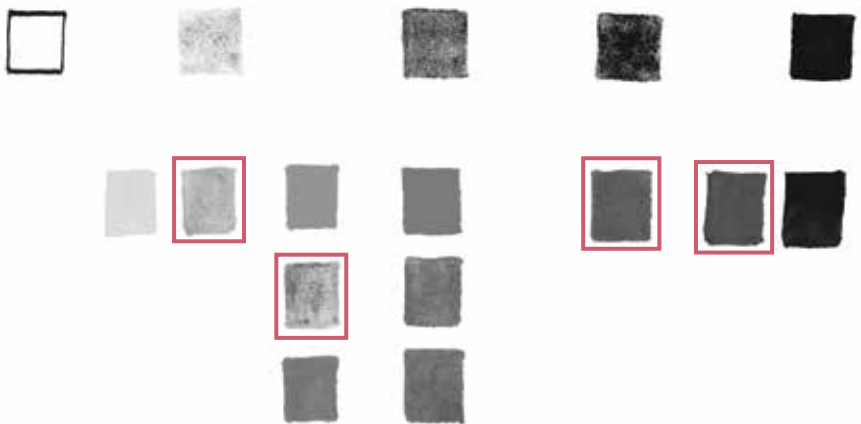


Fig 1.2. Grayscale conversion of Fig 1.1. The mismatched tones can easily be identified.

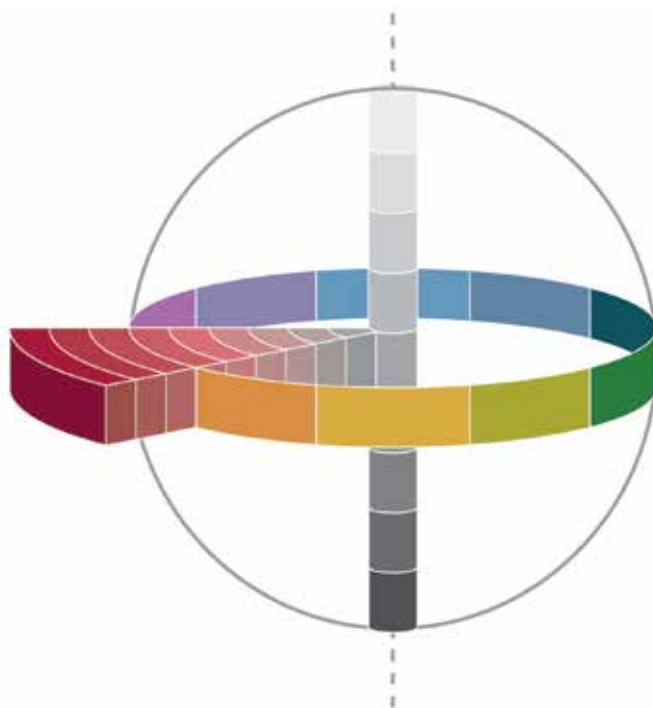


Fig 8. The three color dimensions of the Munsell Color System<sup>2</sup> (p. 14).

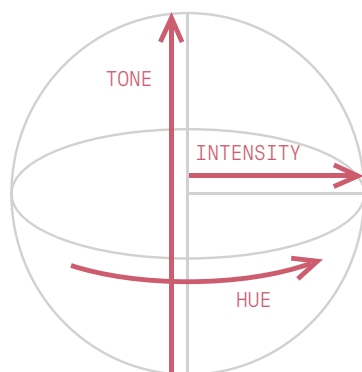


Fig 9. Munsell Color System describes all three attributes of colors, namely tone, hue and intensity.

Intensity is best described with reference to the three-dimensional model of the Munsell Color System. As illustrated in Fig 8 & Fig 9, the vertical axis that runs through the center of the sphere represents the scale of tones; the radius perpendicular to the vertical axis, which expands outward from the center, represents the scale of intensity; and the circumference of the sphere

represents the range of hues. Within this color space, we can also locate all different hues of tertiary browns and grays, including the most neutral grays close to the vertical axis in the middle of the sphere. Here, it is key to note that this color space is practically asymmetrical. However for illustration purposes, I have simplified and represented this diagram symmetrically.

It was mentioned earlier that intensity was more commonly used after the Industrial Revolution, as opposed to the Old Masters period. Apart from some relatively purer crimson and blue colors, the colors that predominated during the Old Masters period were tertiary browns and grays extracted from natural substances.

Usually, the difference in intensity is critical when differences in tone and hue are not so apparent. When two objects share the same local color (hue) and have a similar lightness (tone), we have to vary the intensity of the objects to differentiate between the two. By doing so, we form a figure-ground relationship between the purer and less pure colors of the same hue.



Fig 9. Two pairs of colors – yellow and blue respectively – with similar tones and hues, but different intensities.









Orange, Yellow and Purple are seen in varying intensities in this painting.





In this painting, we see colors with similar hues diagonally positioned across each other on the picture plane. This creates a constellation of color relationships engendered by visual tension. Arranging these hues diagonally also suggests visual movement, in and out of the picture plane, and thus illusorily enhances the depth of space.

# FRIEND- ENEMY COLOR SYSTEM

We have previously discussed the importance of designing color rhythm and transition colors in *Application Guidelines for Colors*. However, simply connecting two distant colors on a color wheel to determine their intermediate components is too elementary in color design. In practice, color design generally involves the selection of multiple colors, each with different color vectors, throughout the entire color space. Common color schemes such as split complementary, triadic and tetradic systems were developed as guidelines to aid in color decision-making. The limitations of these systems have been discussed in earlier chapters, particularly since they do not take into account the fact that each hue occupies a different proportion of the color space.

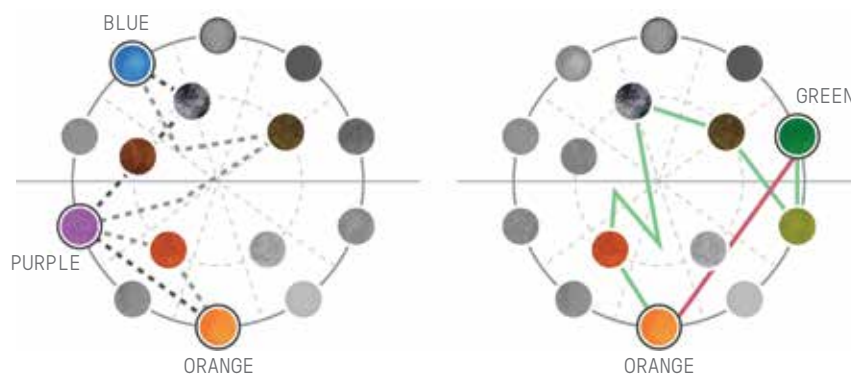


Fig 14. Color vectors for designing color rhythm.

Fig 15. Direct and indirect paths of transition.

Fig 14 shows an assemblage of colors consisting of three pure colors – namely blue, purple, and orange – selected to design an image. The color rhythm of these three hues can be designed in an infinite number of permutations, since there can be many paths passing through different intermediate colors to create transitions between the hues. With reference to the Munsell Color Wheel, the selected vector directions intersecting different regions of tertiary browns and grays will determine the speed of transition between the three pure colors. Fig 15 contrasts the direct and indirect paths of transition from orange to green.



Fig 8 illustrates that white and black are located at the top and bottom ends of the vertical axis of the Munsell Color Space. While all the colors near the white region are tinted to a light tone, the colors near the black region are shaded to a dark tone. As a result, some colors may lose their characteristics of hue, since we know that not all colors span the full tonal range of 1 to 9. Yellow tends toward green and orange tends toward brown as they approach the black region.

In addition, color space converges and shrinks significantly near the white and black regions. That is to say, all colors within these respective zones are friend colors, despite having different hues. Impressionists' *en plein air* paintings are based on an understanding of this concept, where color harmony can be achieved using a variety of tinted hues.



In this painting, principles of Impressionism were applied to effectively design color rhythm on a picture plane. It contains a significant amount of white areas and many of the colors are tinted. These tinted colors and white areas associate with each other to form a large group of friend colors. The only strong enemy colors here are the orange hues on the roof and figure, while some blue hues appear as weaker enemy colors.



In this painting, each of the dark colors - dark blue, violet and dark browns - have different hues, but are coexisting harmoniously on the picture plane. This is largely due to dark tones being compressed into a narrower color space as they approach the black region.



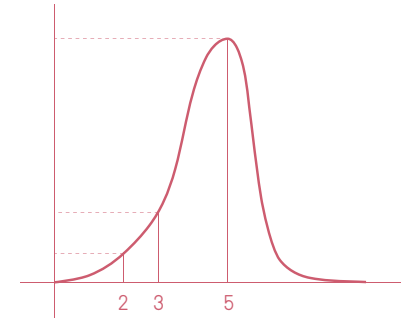


Fig 24.3. Tones 2, 3 and 5; Proportion 10% : 20% : 70%

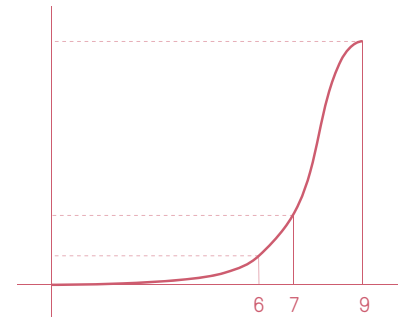
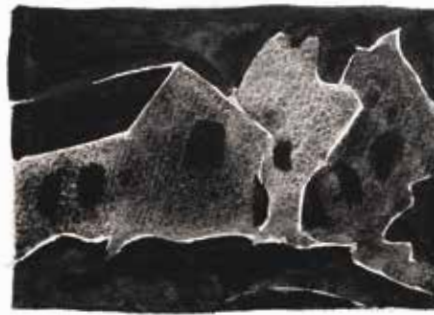


Fig 24.4. Tones 6, 7 and 9; Proportion 10% : 20% : 70%

Similarly, if we vary the discrete tones but retain the same tonal proportions, the two different tonal structures also present completely different moods.

Tonal transitions will form naturally when these two major factors are given due design considerations. The tonal transition of an image corresponds to the gradient of the curve (Fig 24.1 – 24.4). This gradient represents the degree of hardness and softness of edges between two adjacent shapes that carry different tones. When two adjacent tones are immensely different or when its transition width is narrow, the gradient is steeper. On the contrary, when two adjacent tones are similar or when its transition width is wide, the gradient is gentler. This shows that tonal design is intrinsically linked to the concept of edges. The design of hard and soft edges is more sophisticated, and will be discussed in subsequent chapters. The focus here will be on the selection of discrete tones and its tonal proportions.

The tonal designs of these two sketches yield different outcomes of edge softness. The former has a steeper gradient – forming harder edges, while the latter has a gentler gradient – forming softer edges.



Study depicting a sunny day  
Tones 1, 5 and 9;  
Proportion 30% : 50% : 20%



Painting in color, based on tonal design of study.



Study depicting a foggy environment  
Tones 3, 5 and 9;  
Proportion 20% : 50% : 30%

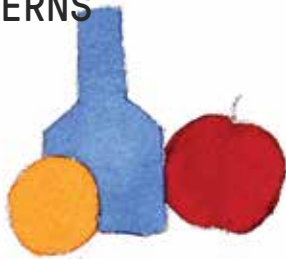


Painting in color, based on tonal design of study.

# SPACE DESIGN

/09

## OVERLAPPING PATTERNS



Space can be formed merely  
by overlapping various  
shapes on a picture plane.

The depiction of space on a two-dimensional surface is a complex combination of fundamental visual elements we have discussed in all of the earlier chapters. Knowledge of the various concepts of space construction in visual art will certainly aid us in grasping the design of space.

When shapes overlap, suggesting that an object is in front of the other, space can be depicted.



## MASS STRUCTURE

Mass structure is another approach that can be used to visualize an object three-dimensionally and depict space. The planes of these structures are typically arranged diagonally to depict three-dimensional masses.

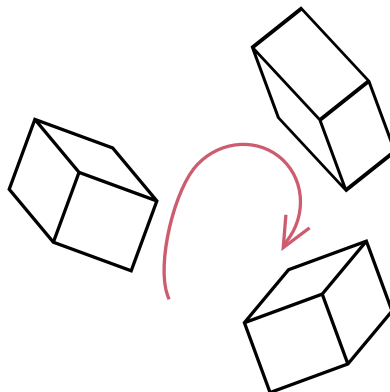


Fig 25. Three-dimensional masses relate with each other to depict space.



Spatial relationship is suggested when three-dimensional forms are organized in various directions in relation to each other on a picture plane (Fig 25). The viewer's eye is guided around the picture plane as it feels as though air can flow through the gaps between these forms. This technique is applied most pertinently by Russian master, *Ilya Repin*, in *Reply of the Zaporozhian Cossacks to Sultan Mehmed IV of the Ottoman Empire*. In that painting, the underlying structures of all the figurative elements – heads, hands, bodies, wine barrels and musical instruments – are pointing in different directions. These suggested visual paths create an extremely sophisticated space structure and dynamics. Fig 26 shows an analysis of the underlying structure of this painting.

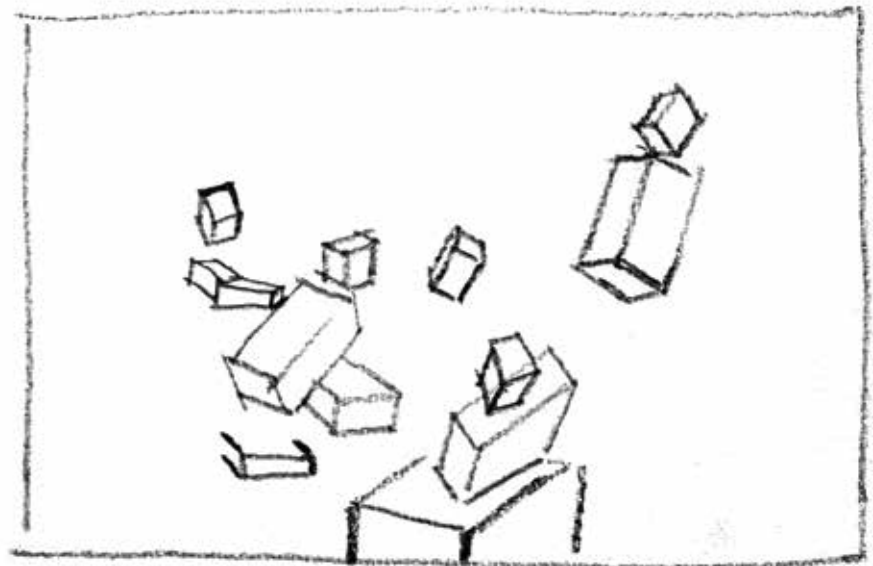


Fig 26. Analysis of mass structures on a few major figures and objects in *Reply of the Zaporozhian Cossacks to Sultan Mehmed IV of the Ottoman Empire* by Russian master, *Ilya Repin*.

Edge design can be regarded as one of the most advanced design concepts of image making. The degrees of edge softness allow an artist to manipulate and control the visual speed and rhythm of an image. In addition, with more varieties of edge, the richer the image will be. The understanding of edges is indeed critical, but is only possible after an artist grasps all the fundamental elements of visual art.



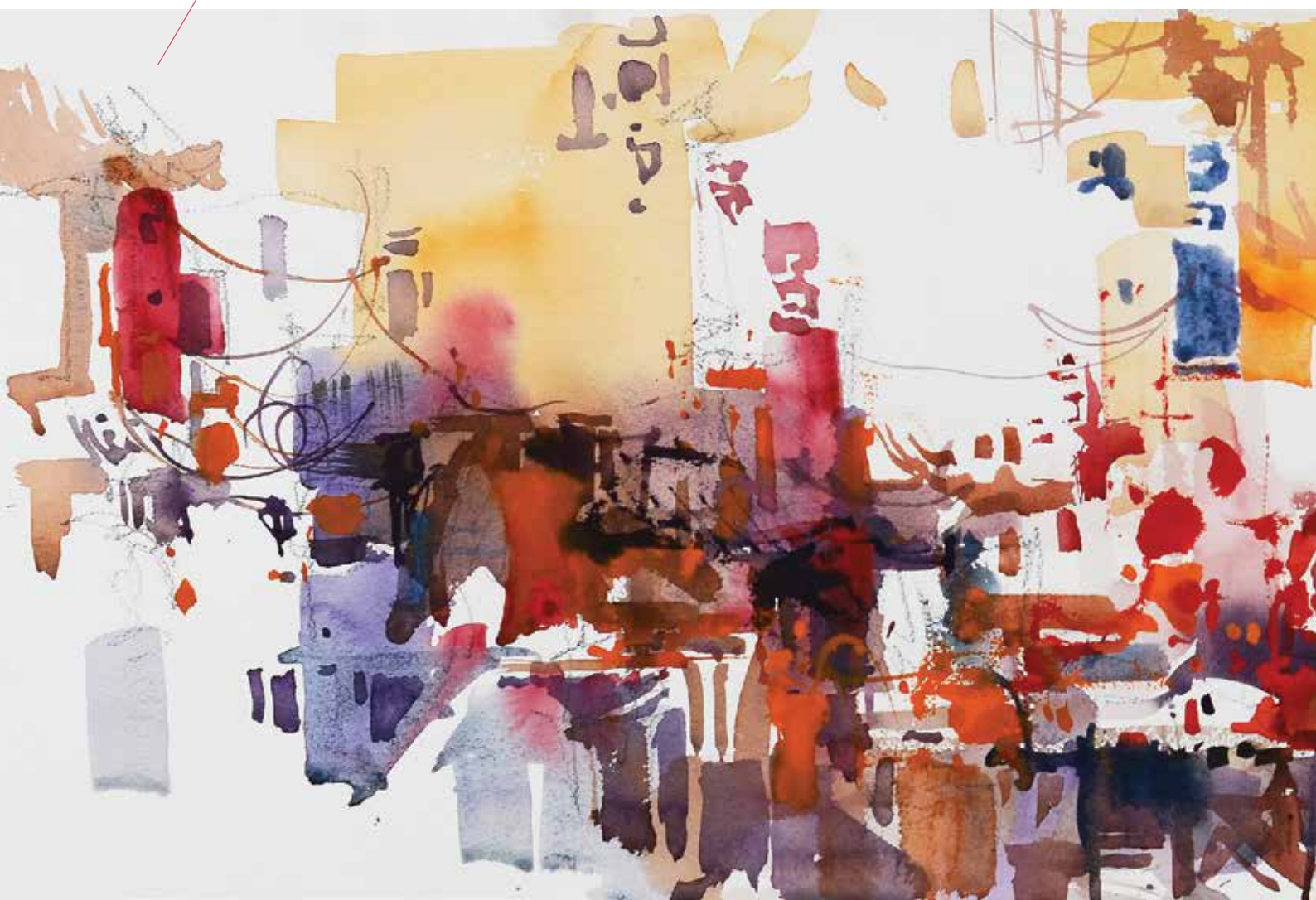
This painting features different combinations of soft edges triggered by changes in hue, intensity, tone, texture and shape density.

Variation of edges creating different speeds of transition.





In order to compose in this panoramic format, I looked from one end of the street to the other, in order to source for certain essential shapes to use in a repetition manner.



DISCOVERING NEW POSSIBILITIES IN COMPOSITION



The first *en plein air* painting was completed on site during rush hours along Chulia Street at Georgetown, Penang. There were some qualities in the composition that excited me, so I decided to iterate on a semi-abstract and more colorful version of the same scene when I returned to my studio.





To me, a sketch is a sketch, a mere rough, preliminary drawing or painting done to assist my planning and design. At times, my sketches may turn out surprisingly better than my paintings. It is a common phenomenon of creative actions. However, do not let these 'precious' sketches stop your exploration process. Allow these sketches to surprise you but most importantly, to propel you to mine your creative mind for further breakthroughs and discoveries.

Human beings are typically resistant to change. We tend to develop habits after we find some comfortable ways to achieve our objectives. An overly skillful and comfortable working process usually fosters a soulless craftsmanship. An artist should live amidst the uncomfortable spiky ground, and try to claw his way through the crooked paths.

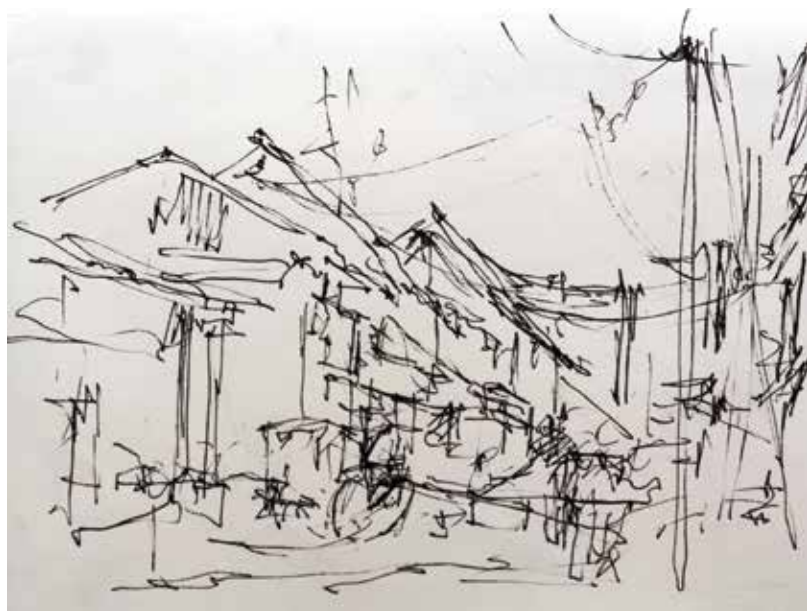
In order for me to retain the mindset of an artist, I often challenge myself to seek and develop processes that excites and enlivens me – I alternate, combine and experiment with different sketching approaches to allow this process to constantly stay fresh and magical.











Before the Storm at Moro Island  
38cm X 56cm

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