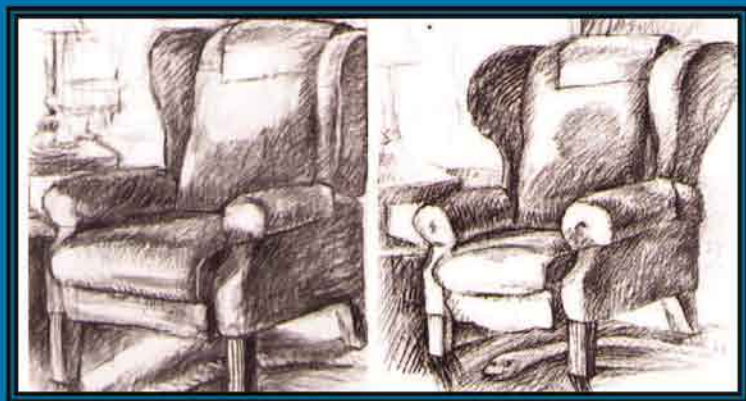


## PERCEPTUAL DRAWING



**PERCEPTUAL DRAWING**  
A Handbook for the Practitioner

Conrad Ross

With a Foreword by  
Andrew Rush

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## **Dedication**

To those who look closely and think about what is seen, that is the heart and dictum of perceptual drawing. The rest is simply practice.



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## Foreword

This is a very thoughtful precise work by an artist with a lifetime of teaching and thinking about the nature of perception. In this handbook, Conrad Ross confines himself to the experience of drawing as a process of direct observation, and in that focus gives us a much needed core-corrective to the conceptual bent of institutional art learning at a time when the interest in the nature of visual intelligence is expanding broadly beyond the bounds of the art-school.

Indeed, *Perceptual Drawing, a Handbook for the Practitioner* is written in a way that is open to any person interested in the experience of perception, with or without art school experience or even any mindset about art. One could imagine any serious student of philosophy, of perceptual psychology, or even spiritual practices using this portal of guided drawing exercises as an entry into a wider way of seeing the world around us. At the same time the author lays no claim to exclusivity, and even points to the wealth of other well-done drawing manuals by including a bibliography of more than 30 of the best.

In the first section, the author/artist sets out to clarify the many terms used to refer to visual learning through drawing. This clarification cleans up our ability to reference the practices that lead to mastery of the visual experience-in-action. In other words, Ross presents us with a canonical vocabulary that allows us to address the nonlinguistic nature of art knowledge, then immediately lays out for us a pathway of crisp sequential studio exercises based upon that language.

It is a thin line the author/artist walks, between theory and learning-in-action. But it is a very welcome and much needed

endeavor, because he corrects the source of much confusion in the teaching of drawing to ordinary people. Which is that the language conventionally used to reference art learning is often vague to sloppy, rendering much of what passes for studio art learning both inaccessible and vague to most people outside the ‘art school’ culture.

From my own experience as a longtime teacher of drawing, Ross’s joining of a reclarified and precise vocabulary with which we speak about drawing to very specific drawing exercises that reveal each element-as-action is a unique contribution to the few really useful art handbooks that help one learn how we see.

The later sections of this book then invite us to follow his course of practice. While carefully holding to the canonical theme in language, he lays out with diagrams and examples simple exercises that isolate each visual element in practice, using common materials like a floor diagram, a chair, a few boxes, paper, cardboard and the simplest of drawing materials. The confidence that gently appears from doing these first simple applications of each isolated point provides a step-by-step foundation in which the author guides his book-user to an increasingly poetic understanding of subjects such as light, shadow, and compositional eloquence.

Finally, a comment about working with and without a teacher. The author has set this book up as an independent course of study. Given the nature of our active lives and the need for tools for self-learning outside-the-box as it were, it is a valuable syllabus for the self-learner, especially if the student brings a high level of attention, does the lessons exactly and with great care.

But as the founder of The Drawing Studio Inc. of Tucson, I have been teaching drawing to students from all ages and walks of life for over twenty years. While our work using the role of observation as the basis of visual intelligence is very much in line with this excellent work by Conrad Ross, the value of a coach and a learning group in the early stages can accelerate and clarify the learning path of vision that is difficult to do for oneself, given the idiosyncratic visual world each person lives in without knowing it.

Thus I would hope this self-learning handbook will also find advocates among teaching artists who will train themselves in its methods and then create classes to assist others in its assignments or perhaps encourage independent learners to join together as informal learning groups.

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## **Introduction / the state of the art**

Perceptual drawing is drawing “what you see.” Simply put it is looking and recording - a kind of journalism of the arts. It is one way to examine the world about us. It involves seeing in terms of line and tone. It has appeal to both the professional and amateur, and holds both among its practitioners. Many outsiders would like to be made better aware of what appears to be a simple process, seeing and drawing what you see.

To be sure, in the Contemporary Art World, perceptual drawing has taken a back-seat. Some recent movements such as Pop Art and especially the Op Art of the 1960’s and 70’s considered those concepts stemming from the practice of perceptual drawing in a somewhat more friendly, albeit lukewarm, fashion. But much of Conceptual Art and certainly the Outsider Art of the 1980’s and 90’s seemed to not need what perceptual drawing offered. There was often outright scorn for the skills and effects that the practice might obtain, couched in the often heard expression, “skillful but so what!” Perceptual concepts of drawing have in general not found favor in recent times.

This recent history has downplayed drawing-what-you-see concealing if not ignoring those essential concepts underlying perceptual drawing, concepts that might prove useful to whatever “new” art movements the future might hold. And so, the so-called “traditional values” associated with drawing “what-you-see”, which indeed permeate the notion of drawing itself, have become somewhat downplayed in the lexicon and training of the artist, if not in some cases set aside entirely. The ideas often occupying the contemporary artist, in expressive thought and critical thinking, whether political, analytical, social or process oriented have come to color the very idea of



the concept of drawing itself.

Because of their humbled status in the Art World, many traditional drawing skills have either been skirted, shunned or outrightly disdained. The practices necessary for maintaining practitioners of “Good Drawing” have been confounded, both for the amateur practitioner and the professional. These concepts and skills having fallen out of favor - a sad state for drawing and for art, if not for perception itself.

However, when in the presence of “Good Drawing” one knows it. The picture grabs the eyeball and marches it through and around the portrayed space revealing the artist’s idea and composition. It is then that we know we are in the presence of a draughtsman.

So the reader might ask, “What makes a good drawing?” What are those essential concepts involving line and tone used by the artist to organize his vision and what he sees?

This practicum is an attempt to adjust our outlook toward perceptual drawing, and to reveal to an understanding reader, appreciator, amateur, or practicing artist, those considered concepts, that maintain their usefulness in the process of drawing and seeing, even today.

There need be no necessary conflict between the “social artist” and the “technical artist.” The contemporary artist can both continue to explore humanity’s crying needs for the twenty-first century and embrace an artistic climate that cultivates “Good Drawing.” “Good Drawing” still has a need to be practiced and supported, to become part of the contemporary artists’ so-called “bag-of-tricks,” alongside their

computer, web site, camcorder, scanner and camera.

It is the intention of this handbook to look through that doorway once again, the doorway that the architect Brunelleschi allegedly looked through when he discovered perspective in the 15th century and to make relevant what we see today. Brunelleschi's discovery affected seeing for his time. We should and perhaps can do the same for ours. We can at least try.

### **Getting started conceptually**

In presenting some eleven drawings - more if you choose - we will present a thorough understanding of the perceptual concepts that a draughtsman considers when drawing what he sees, in line and in tone ( see Figs. 3, 4, 7, 9, 10, 19, 21, 30 32, 36, and 47).

We will begin with developing our perceptual concepts first by investigating linear construction and then tone. After selecting drawing materials we will begin by orienting our eye and easel developing an awareness of eye level. In our first drawing we will develop an awareness of the picture plane and make use of that awareness for measuring distances, to block in our subject and to establish proportional relationships when we observe a subject's many parts. In our second drawing we will encounter convergence and use that concept to make our drawings convincing. In our third and fourth drawings we will encounter some of the various ways to construct the forms we see and sense including the curvilinear. Our fifth drawing will introduce the perceptual concept of the rectilinear nature of space.

With these first five drawings we will have gained a sense of linear construction, and covered that first foundational concept, that of line.

The next five drawings (lessons/problems) will introduce us to a thorough investigation of tone, the second foundational concept to be covered in this practicum of ten drawings.

Encountering the gradient of tone on our picture plane we will explore ideas relating to the perceptual concepts of gradation, value, local color, and shadow. And then we will introduce the concept of an environment-of-tone which will be useful when observing and recording the gradient of tone, what we see before us.

## **Instruments and surfaces**

A pencil and paper would suffice. But in the artist's candy store, our local art supply mecca, we find instrument and support surface enough to sustain effort for a lifetime or two. In fact so many choices of media are available that the act of beginning to draw may seriously be hampered, if not brought to a complete immobilizing stop.

So let us narrow our choices and get started. Hurry down to the "candy" store. Barge into that media land and make some initial investments. Be adventurous in your choices if you choose, and if your pocketbook allows. Strange as it may seem, those who stray from the authoritative supply list do as well as those who scrupulously follow it. It is the process of trial and error and the demands that time place on our stamina, that will eventually narrow our choices. Eventually we'll be led

to the right ones. So, quickly round up materials and we'll begin that adventure, a lifetime of drawing, expanding our initial supplies with an occasional trip to the "candy" store.

## **Materials:**

Several sticks of vine charcoal, perhaps a box to hold them  
three compressed charcoal pencils, HB, 3B, 6B  
a kneaded eraser  
a chamois cloth  
a sandpaper paddle  
a utility knife  
a two-foot piece of string  
an 18" x 24" pad of charcoal paper  
a 24" x 36" 1/4" masonite board  
two large bulldog clips  
a can of fixative  
an easel

Sticks of thin vine charcoal, soft compressed charcoal, several charcoal pencils of various degrees of hardness - HB, 3B, 6B, a kneaded eraser and a chamois cloth to remove unwanted marks, a sandpaper paddle, a utility knife for sharpening, and a two foot piece of thin string for measuring should give us the needed starting point in terms of instrument.

For a drawing surface, we'll use an 18 by 24 inch piece of charcoal paper slipped out from its pad and fastened onto a 24 by 32 quarter - inch thick masonite drawing board with two bulldog clips. Adjust the board with its paper secured in the proper place on the easel -- so you don't have to look either up

or down, just straight ahead. Your eye level should cut the paper in half. So now with the paper positioned at the right height for our height we can stand and draw.

It is best to start out standing with our board on a sturdy adjustable easel. Later after you get the hang of it, we can sit, perhaps on a tall stool, or even work from a chair or as in Fig. 39 on a low stool. The last drawing in this practicum of approximately ten drawings, five in line and five in tone, suggests an alternate orientation while sitting ( see page 76 ).

## **SECTION ONE - LINE**

### **First drawing**

This first effort is difficult, but worth doing well. We will learn a lot, and what is learned can be applied to all the drawings that follow. Although the first drawing is a simple one, it is uncompromising. Go slowly and give it your serious attention. Even the experienced draughtsman will not be able to whip it out. To draw well requires that the draughtsman engage in what is seen on the picture plane, to be sensitive to it and to faithfully record what is found there. And that takes effort.

Drawing quickly becomes a battle, and not just because it is the first drawing, but because the task of drawing is not an easy one since there is much to be considered, reconsidered and adjusted. So, we will spend about a half hour and make this drawing fill up the 18 by 24 inch sheet. The size is important, if for no other reason, than that discrepancies can be made visible.

Remember: to see and recognize error is half the battle. Rest assured; you will discover error!

And now for our subject: we are going to lay a plane on the floor some four or five feet out in front of us. It could be a piece of cardboard or masonite or even a flat piece of paper, approximately 18 by 24 inches. This practice will help us understand perspective. The idea is to draw that plane exactly as it is seen on our picture plane. The picture plane is that imaginary plane or window corresponding to the surface of a picture and perpendicular to the viewer's line of sight. It is the window through which we look out into the space of the drawing.

### Set up / Orientation

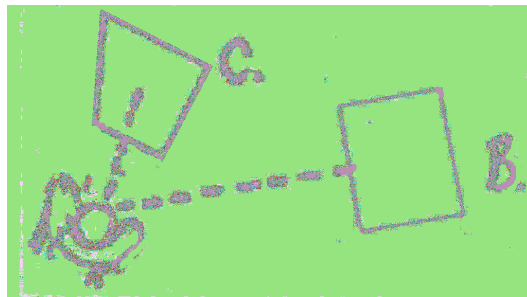


Fig. 1

The first thing, after placing the plane on the floor ahead of us, is to set our easel off to one side so that it doesn't block our view. We want to have a clear view of both our paper/ board/ easel at ( Fig. 1,C ) and that plane ( Fig. 1,B ) lying on the floor. Our line of sight from the plane on the floor to our paper should be set at approximately a 45 degree angle, or less.

Our first question, assuming drawing involves moving through a series of questions is: should we place our 18 by 24 inch paper on the board horizontally or vertically? This is not to laugh at! It is critical to an understanding of the picture plane, and to whether we recognize the subject we are about to draw as taller than it is wide, or wider than it is tall. To understand how the picture plane works is crucial to resolve that question, and in making use of the picture plane we will reap one of the prime benefits of perceptual drawing. But unfortunately the picture plane is imaginary! That makes matters worse. So, our first perceptual concept needs to be conjured. This requires holding the proper attitude toward the picture plane which cuts through our line of sight to our subject at a 90 degree angle ( Fig. 1,B ).

Because it is imaginary, we might think, “Why worry, no one will know if we see the picture plane or not. After all it’s not really there.” That lack of credulity will get us into trouble. Imagine the picture plane! The payoff lies in its usefulness in creating believable space, so let us make a serious attempt. Our first need is to make a decision about which way to lay our paper on the drawing board in order to make as large a drawing as possible.

## **Measuring/sighting**

Take the string out of our supply box and measure, on our imaginary picture plane, across the object we are sighting using both thumbs and forefingers to “inch up” on the string. Keep the string moving on the imagined picture plane “inching up” with thumbs and forefingers until you find a horizontal measurement on your picture plane. Pull the string taut. Remember, the picture plane cuts through your angle of vision

at 90 degrees. Keep the string on the proper plane. The line of the string has now captured the furthestmost point to the right and left of the object we are drawing, the horizontal measurement. We need to do this with one eye, while closing the other to establish a fixed point of view. Yes, we've engaged the process of drawing.

Now, this is the tricky part. Take the string measurement and turn it on a vertical axis, keeping the string taunt. Place the bottom part of the measurement held by thumb and forefinger on the bottom most point of the object you are measuring. Be careful to stay on the plane. In order to keep measurements comparable, one must keep measurements on the same picture plane. Do not poke a hole in that imaginary picture plane!

Extending the arm while measuring will help gain true comparisons. Although not the most accurate of measuring devices, this procedure does give useful information. In this case, we now know if the total height is less than or more than the total width of the plane we are drawing from the point of view we selected. And so we discover how to place our paper on our drawing board, longest dimension upright or lying on its side, to make the largest representation that can possibly be made.

## **First Proportional Relationship**

In this case our longest length is horizontal, so with the paper lying horizontally on our board we can set marks in vine charcoal about one inch from each vertical edge. These are arbitrary marks (Fig. 2). To find the height relation for that width we need some proportional information, not actual



information; we have no need to put a rule to the plane on the floor!

Dragging a vertical measurement across our picture plane by moving the string and hitting both the near and far corners of the plane sighted on the floor with our string, we get a measurement that can be put into the horizontal measurement, from the point/mark on the left to the point/mark on the right. Does it go into the horizontal measurement twice? Two and half times? Or two and a third times? This is tricky business, and we must remember that the information we gain is approximate information, to be confirmed, fortunately, by other measurements.

But it is the information we seek, and with that information we can turn our attention to our drawing and place some marks to block in the total area of our drawing. Again we can use the string measurements to find the best unit of measurement relating height to width, but this time in the drawing. To complete the “blocking” we can extend horizontal and vertical lines through those marks noting distances that we established.

We gain proportional information by trial and error. By using vine charcoal and our chamois to remove trial markings, we will also develop the lightest of touches, a skill that is usually slow in coming, but useful. Be assured, it will come in time as we progress.

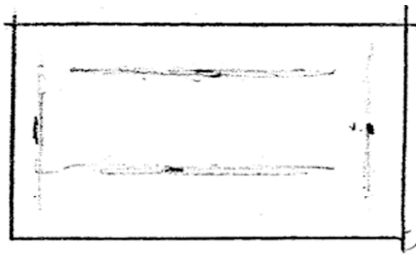


Fig. 2

Remember, this process compares measurements on the picture plane to other measurements on the picture plane, not directly to the drawing. It is proportional information we want. With that information, we build relationships within the drawing. Each drawing requires a great, great, great many proportional measurements.

### Angles of Inclination

This particular process of measuring angles balances the information gained from proportional measurements in finding points R,S,T and U in ( Fig, 3 ), along the horizontals and verticals already established in the drawing, with the actual observation of angles of inclination measured on the picture plane at those very points.

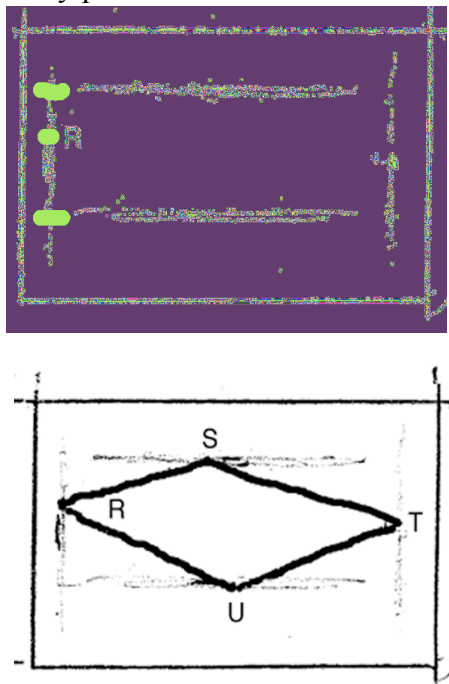


Fig. 3

To observe angles of inclination hold a pencil or a straight edge horizontally or vertically on the picture plane at the point of the angle to be measured, R,S,T and U. The angle observed, still using one eye, is the angle to be recorded in our drawing. This information is directly applied from the picture plane to the drawing, quite unlike the findings of proportional information. Measuring angles of inclination serves well as a check to the proportional measurements we've been making.

Another source of information is to make simple comparative observations using the pencil: such as, the angle to the right at point R (Fig. 3) is greater than the angle to the left, or both angles at T (Fig. 3) are actually the same. Comparing angles is but another check to proportional measurements and to the measurement of an angle of inclination.

## **Summary of first drawing**

The lessons to take away from this first drawing are basic. We should make our own personal list however, and then after a day has passed repeat this drawing, and check it once again against our list in order to assure that the lessons have indeed been learned. Everything will change, of course, since each drawing is a new beginning if however only slight, which is one of the joys of perceptual drawing, noting things being similar yet different. And so by drawing we become ever more perceptive and sensitive to that which is seen, one of the signs of a "good drawing."

To extend this lesson let's move on to something a little more challenging. Try placing a small object under the plane to tilt a solid form, and so separate the angle of the plane from the plane

of the floor. Go through the your checklist with the newly angled plane.

In this first drawing we have:

- (1.) Oriented our easel and paper with what we are drawing.
- (2.) Blocked in a total height to a total width by measuring on the picture plane.
- (3.) Made several proportional measurements using the picture plane to gain information.
- (4.) Judged angles of inclination on the picture plane.

### **Convergence / second line drawing**

Divide the plane that we've been drawing into quarters. Yes, the actual plane lying on the floor. Get a piece of chalk, and then measure either height or width using your string. Fold the string back onto itself to gain a half measurement. Using that measurement place two marks measuring from the edges of the plane and strike a chalk line across the plane to divide it in half. Repeat in the opposite direction to quarter the plane. Yes, the actual plane!

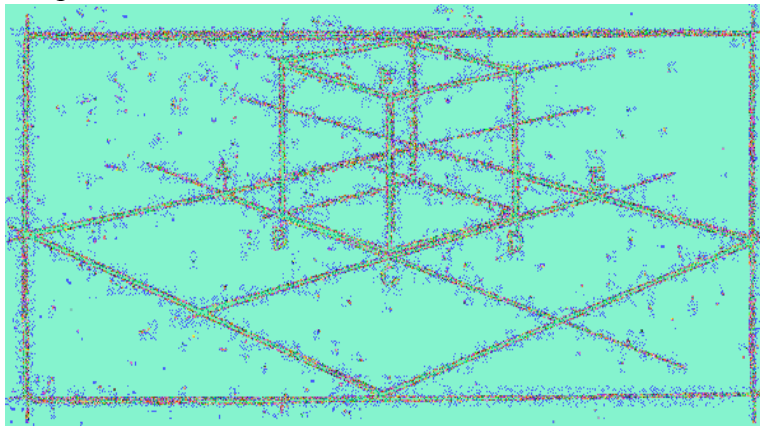


Fig. 4 2nd line drawing

Now place a box in one of the quadrants, putting a point of the box in the center with two of the box's sides aligned with the lines quartering the plane (Fig. 4). After orienting yourself, take twenty minutes to draw this setup, again using your checklist from the first drawing sequence.

First, establish the relationship of the total width of what we are about to draw to the total height. This time we will have two objects, the box and a plane, and that will change the overall proportions on the picture plane. Orient the paper and place those arbitrary marks about an inch from the edge, and then block in the remaining proportional dimension, comparing height to width. The height goes into the width 2 times plus a little (Fig. 4). Again use the string but this time work on the picture plane, not the actual plane!

Establish a vertical (a line actually parallel to the edges of our paper) (Fig. 4, C - F) where the quadrants meet, in the center of the plane we're drawing.

Our next problem is to create accurate proportions of the box to reflect the proportions of the box before us by placing points on the lines that break the plane into quadrants (Fig. 4, B and D). Verticals can be constructed at those points. The box's height can be determined by finding the right point on the leading edge of the box (Fig. 4, F) using our developing skills of gathering comparative data: angles of inclination and proportional measurements.

Using vine charcoal and the chamois as an eraser, and with trial-

and-error for mental armor, we, with some effort, should determine those three points (Fig. 4, B, F, D). This skirmish will take a little time and imagination, and we might well have to recall and put to use our ability to collect proportional information and to determine angles of inclination for verification of our hunches.

Measure for verification and then measure again. Measuring on the picture plane is somewhat like the carpenter's dictum of measuring twice to make one cut; the dictum saves a lot of wood. In our case the accuracy gained creates less turmoil when we discover parts that don't come together. With three verticals tentatively established, our need then focuses on that point on the leading edge of the box, which will help us create the top plane and then we'll have to satisfy both the idea of convergence as well as what we see on our picture plane.

As parallel lines recede into the distance they TEND to converge as they approach the eye level, "L", as in Fig. 5. We need to satisfy that condition of convergence in order to convince the viewer of the reality we see. It is a small matter, but useful to gain a convincing drawing.

To convince ourselves that what we see is what we are drawing is another matter. There are two masters to satisfy in this endeavor, and our own sensibility of what we see becomes the taskmaster. The key to satisfying convergence is to realize that parallel lines need not converge to a point, only TEND to converge. Tending to converge makes the task of what we see on our picture plane much easier.

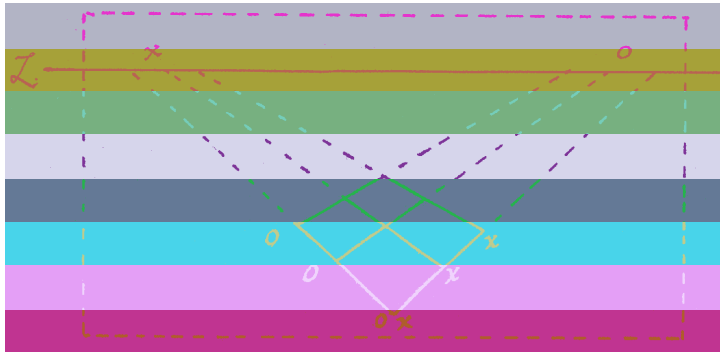


Fig. 5

Other points to find on our picture plane could reveal the hidden lines of the base of the box (Fig. 4) which when constructed will also recede to points x and o on our eye level as suggested in Fig. 5. The plane of the base of the box and of the base plane itself should occupy the same proximate space.

Getting both convergence and proportions to work creates space in our drawing, space in which to create, to compose, and in which to visually and imaginatively move about.

In our last line drawing emphasizing construction ( Fig. 10 ) we will further investigate this idea of space.

### **Summary of second line drawing**

In this drawing we have:

- (1.) Established verticals parallel to the edge of the paper.
- (2.) Satisfied convergence with what is seen on the picture plane.
- (3.) Established a rectilinear space by defining the top and bottom planes of the box in relation to eye level.

## Test concerning convergence

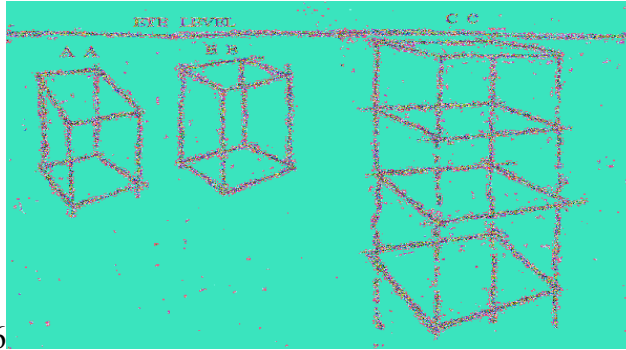


Fig. 6

In Fig. 6, “CC” illustrates how planes dropping below the eye level present more surface to the viewer. To confirm what you have learned from working on the previous drawing, answer this one-question test: Which of the two rectangular boxes, “AA” or “BB” is correctly drawn in relation to the eye level which is indicated above them? Any hesitation? Of course not. I knew, you would have the right answer. Drawing it is, of course, and continues to be the hard part.

During the process of drawing, think about stepping back from the work every now and then to test yourself by simply asking: Is convergence working?

## The cylinder / third and fourth line drawings

To begin this exercise once again draw on the plane and divide it into quadrants with lines. Wrap string around a stick of chalk or compressed charcoal, and place the point of the stick on the edge of the plane. Hold the other end of the string in the center



of the plane, secured with your thumb, and swing an arc into each quadrant, one quadrant at a time.

We will now have a plane on which we've constructed a circle, (Fig. 8) a reminder that every circle is dependent on its plane as it moves in space.

Now find a cylinder, a large can, perhaps an oatmeal box, and place it somewhere in one of the quadrants. For this first cylinder drawing, place it touching an edge on the quadrant furthest from your picture plane. This will then become the next setup to draw.

As usual we will first block in the total height and width of what it is we are drawing, from our particular point of view, and set those dimensions down on paper.

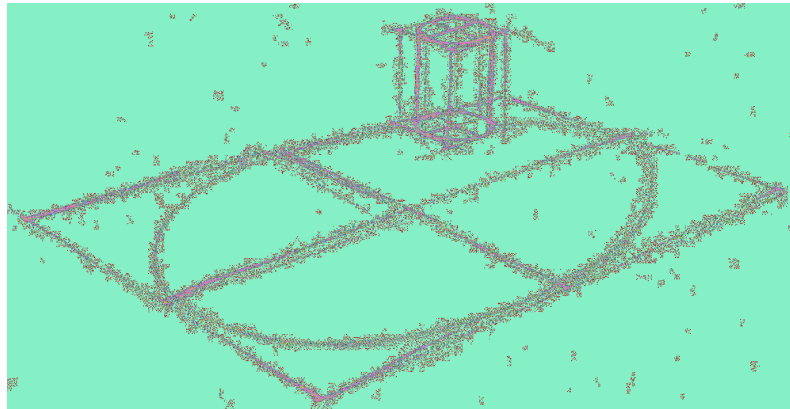


Fig. 7 3rd line drawing

First we draw the plane on which the cylinder is to rest (Fig. 7). Then we quarter that plane making sure that

convergence is satisfied, and that proportional relationships on the picture plane are observed as well - perhaps stepping back from the drawing to check.

To construct the cylinder we need to draw and relate both planes of the cylinder, containing the top and bottom circles. That will assure us that when the planes are related to the same eye level, the circles drawn in those planes will also be related to the same eye level, and so, satisfy convergence.

Draw the base plane of the cylinder and position it in relation to the quartered plane. Erect a rectangle from the base plane and then construct the top plane, again being careful to satisfy convergence. Swing arcs through each quadrant (Fig. 7), one at a time, much as was done on the actual plane (see Fig. 8). Do this for both top and bottom planes.

By drawing lines diagonally across the base plane (Fig. 8), we create a check for judging the proportions of the arcs and also to find the center of the base plane. The tendency is to not swing arcs out far enough on the diagonal cutting through each quadrant.

Circles tend to become ovoid shapes as they satisfy convergence and take their place in their proper plane. This holds true for all circles, the top and bottom of the cylinder being drawn as well as the circle in the plane on which the cylinder rests.

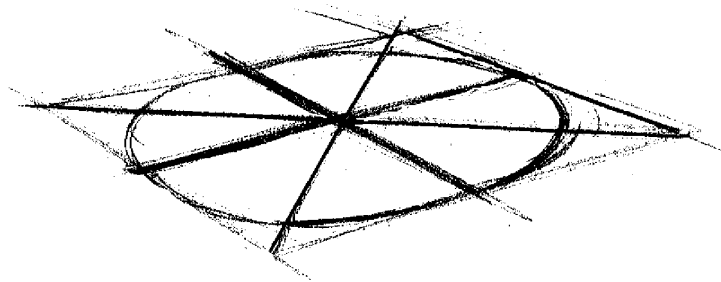


Fig. 8

### **Summary of first cylinder drawing**

- (1.) Block in total height and width.
- (2.) Construct and position the plane on which the cylinder is to sit.
- (3.) Construct the plane and circle of the base plane of the cylinder, swinging arcs in each of the quadrants.
- (4.) Construct the plane and circle of the top plane of the cylinder and then find the vertical sides of the cylinder.
- (5.) Construct the hidden lines of the base plane of the cylinder before swinging arcs for the circle in the bottom plane (see Fig. 9).

### **Construction/ 2nd cylinder drawing**

Now begin another cylinder drawing, the 4th line drawing (refer to Fig. 9). This time move the cylinder to the front quadrant and draw both the quartered plane containing the chalk circle and the cylinder once again.

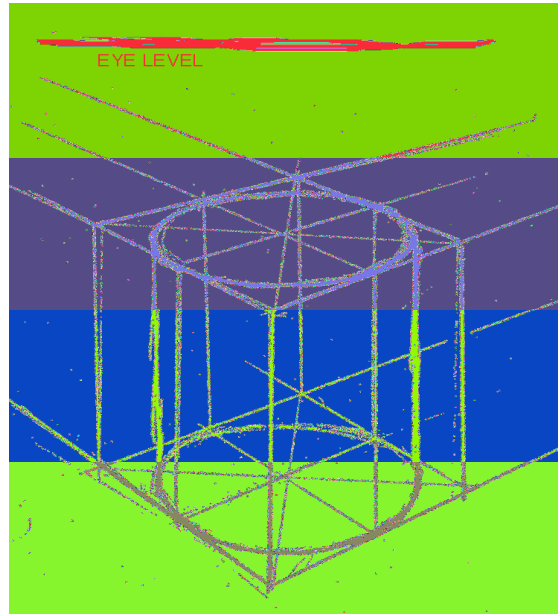


Fig 9 4th line drawing

But this time change your method of construction. Construct the rectangle in which the cylinder sits before tackling the circles. There are many ways to construct what you observe, and this change of method in construction for the cylinder is a good example. Practice until the cylinder feels as though it is sitting on the plane (Fig. 9).

### **Summary of second cylinder drawing**

- (1.) Draw a rectilinear solid in which the cylinder is to sit. Place it in one of the quadrants.
- (2.) Quarter the top and bottom planes.
- (3.) Construct circles in each plane.
- (4.) Find the vertical sides of the cylinder.

## Construction and Rectilinear Space / fifth line drawing

Collect several different sized boxes, four or five. If you have a cylinder, a pyramid or other geometric forms, include them as well (Fig. 10).

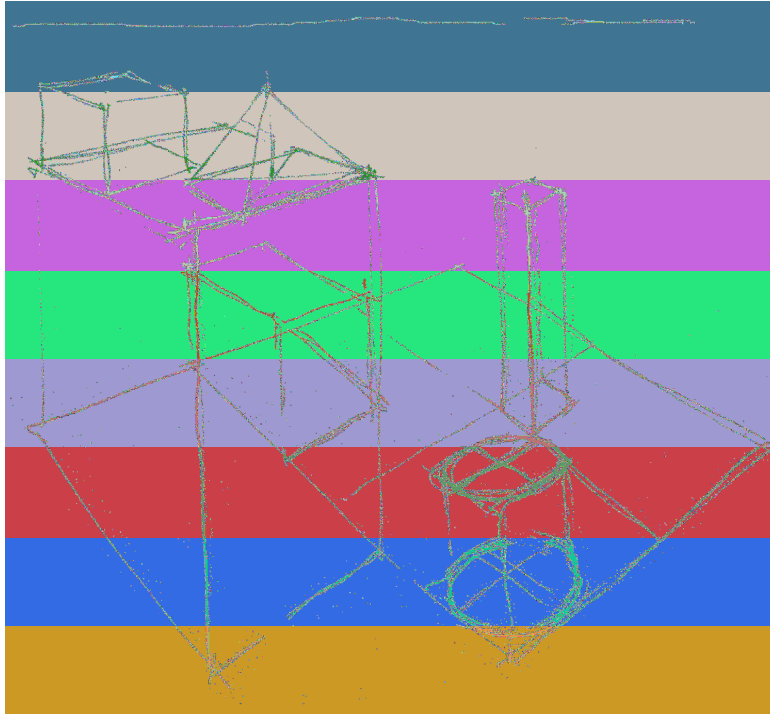


Fig. 10 5th line drawing

Begin with the positioning of the plane, then place each form in the quadrants marked on the plane, or stacked one on top of the other or alongside the plane. If they go above the eye level the challenge will be so much the greater, although that is not really necessary. Each form should share a common edge or plane. By doing so you emphasize the rectilinear character of the

space to be drawn.

Set up our drawing surface and obtain a sense of the picture plane and what you will be drawing.

Begin by taking in overall measurements, blocking in all of the forms that have been set out. Work in vine charcoal using the chamois to make the right proportional measurements. Check observations one against another by considering several different sets of measurements, working horizontally and vertically across the picture plane. Construct verticals where needed.

Check angles of inclination, convergence and when in doubt construct the relationships of the forms that have been assembled.

When favoring construction as opposed to observation on the picture plane, it might be useful to move away from a fixed point of reference in order to gain information, to actually get up and look at the setup from a different point of view, and then use that information in the drawing. A good demonstration of this lies in the hidden box of the drawing (Fig. 10) since it could not have been seen on the picture plane from a fixed point of view. Likewise if only a part of the box might have been seen, construction of the unseen part would then make sense in the space of the picture.

This approach that we have been following, to create a rectilinear space with linear means, can be repeated often enough and with increasing benefits. A new arrangement of forms, even the same forms rearranged, will produce a new set of problems to resolve. By so working, the idea of the perception of space

as a whole will eventually be gained, as well as a sense of ease in handling space and the positioning of individual objects. The space held by individual objects in a drawing will be linked to the sense of space that has been constructed within the picture.

Eventually some information can be gained by “eyeballing” (estimating by looking) without engaging the tedious process of measuring. Yet when doubts arise, and things don’t look right, one can always rely on measurements to verify and test your developing skill.

The task of satisfying convergence and construction as well as those observations noted and measured on the picture plane including judging angles of inclination is, extremely difficult and does test one’s sensitivity. It is unlikely that when facing this task one can whip out a drawing. Yet when proportions are keenly observed and the effort to record them with reasonable accuracy is made, then the space that is created lays the groundwork for obtaining drawings that have a strong compositional basis. These drawings often produce an overpowering sense in a viewer of spaciousness, unity or oneness.

### **Summary of fifth line drawing**

- (1.) Setup boxes and geometric forms with planes abutting one another.
- (2.) Orient the drawing surface and block in the total setup.
- (3.) Work in vine charcoal and with a chamois satisfying proportional measurements, convergence, construction, and angles of inclination.
- (4.) Use a compressed charcoal pencil to sharpen the line

structure in the drawing begun in vine charcoal.

### The Theory of The Picture Plane

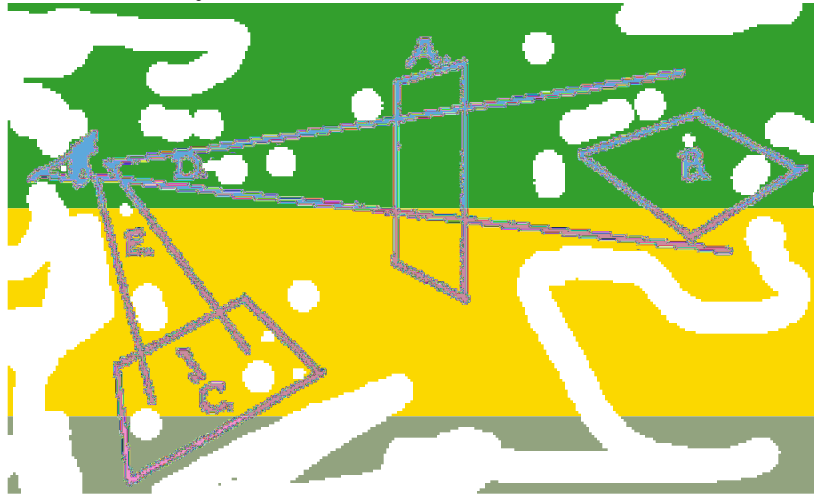


Fig. 11

Ever since the Renaissance (ca. 1450) draughtsmen in the Western tradition have used the picture plane as a valuable conceptual tool to represent what is seen. The historian Vasari claimed it was the architect Brunelleschi who first observed that the self-contained view through a doorway, such as the picture plane (Fig. 11,A) could be related to the 2-dimensional sheet of paper and so provide an aid to establishing relationships of point, line and plane between the object seen ( Fig. 11,B ) and its representation ( Fig. 11, C ).



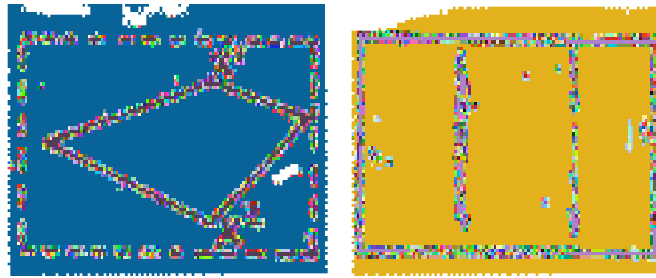


Fig. 12                      On the picture plane                      In the drawing

For example, points  $x_1$  and  $x_2$  may be noted by the draughtsman to be directly above one another on a vertical dividing the space of the imaginary picture plane into thirds. This information can then be recorded in the drawing and so become one of many observations in the making of a “visually effective” drawing.

The theory demands the one-eyed view of a cyclops; it employs but one eye in sighting and does not allow for peripheral vision. However, the theory does provide a self-motivating device for obtaining useful proportional information about structures from the visible world enabling the draughtsman to proceed with the work. The structures may be extremely complex organic forms or simple man-made objects. The theory aids in analyzing the significant parts of a structure and their relationship to the whole and sustains one in the process of observing the relationships of point, line and plane over the length of time it takes to make a drawing. It also provides a means of communication with others and serves as a standard in evaluating one’s own work, both after the drawing when you step back to see what you’ve done and especially while in the process of creation. Others can assume your point of view and therefore see what you have seen.

## Orientation

Being aware of the spinal column and standing or sitting erect provides a sense of verticality, useful when constructing verticals in a drawing. You can use this body sensation to help determine both horizontal and vertical elements in the object being observed. These body sensations are also useful when positioning a pencil on the picture plane either horizontally or vertically, to get proportional information as one measures

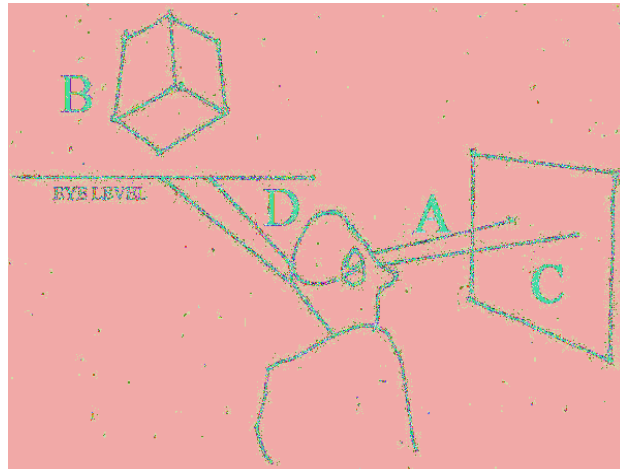


Fig 13

relationships of point to point, line to line. The angle of vision should be directed to the object ( Fig 13 ) so that one can be aware of eye level being above, below or cutting through an object. This awareness helps us to recognize the kind of spatial image ( Figs. 17 and 18 ) we are dealing with. The imaginary picture plane should cut through one's angle of vision in a perpendicular manner, at a 90 degree angle. It is good practice to set up your drawing surface at a 45 degree angle to

the object being drawn so that you can both see what you are drawing and maintain a 90 degree angle of vision toward your drawing ( Fig. 1 ).

Maintaining this orientation keeps one aware of the difference between information obtained from the picture plane and the use of that information in the drawing.

The view to the drawing board (Figs. 11,A and 13,A) should likewise be cut by the plane of the drawing board (Figs. 11,C and 13,C) in a perpendicular 90 degree manner. If not, all the careful observations placed effectively in the drawing will result to a viewer in distortion, and so the intent of the draughtsman will be lost. Distortion can easily be discovered when a drawing is viewed from a slight distance, when the draughtsman simply takes a step back.

## **Measuring**

The measurements made by making comparisons within the picture plane are of a peculiar order and can be used only in a relative way. After a measurement has been made it can only be compared to another measurement on that picture plane. The relative proportional information gained from this comparison can then be made use of by setting marks, points and lines in the drawing which will reveal the proportions observed. A drawing demands many of such measurements.

If one were drawing a plane below the eye level, one of two images ( with some variation ) would present itself, either (F) or (G) as in the diagrams below ( Fig. 14 ).

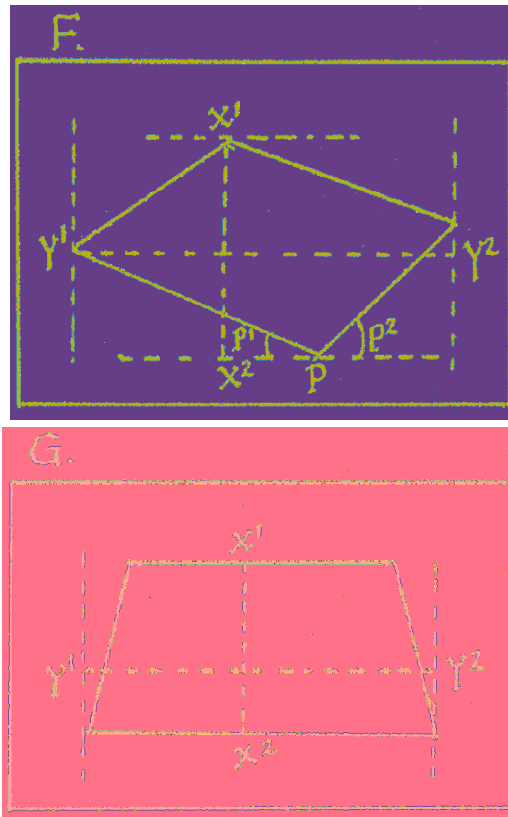


Fig. 14

Suppose one finds that the measurement  $x$  in Fig. 14 goes into  $y$ , almost 2 times, that is for Fig 14,G. This information can be established in the drawing by locating 4 marks. First an arbitrary unit would be established; let us say two marks on the vertical lines at  $y_1$  and  $y_2$ . Then the unit  $x$  could be established by finding a measurement that would go into  $y$  not quite but almost 2 times.

In Fig. 14,F  $x$  goes into  $y$  1 and  $3/4$  times. Again arbitrary marks would be established at vertical lines at  $y_1$  and  $y_2$ . Then a unit of measurement that would go into  $y$  1 and  $3/4$  times would need to be found. Place trial marks at  $x_1$  and  $x_2$ ; measure

that vertical distance with your string and lay that measurement on the vertical  $y_1$  and  $y_2$  to see if it went into  $y_1$   $\frac{3}{4}$  times. If it doesn't, set two other marks and try again.

Since information gathered from the picture plane must be consistent, measurements must be made on the same picture plane; the practice of extending one's arm full length is one way of gaining consistency.

The distance between any two observed points might give you information which will not relate to the proportions that you have already established in the drawing! Because this constantly occurs, it necessarily becomes part of the drawing process. A certain tentativeness or doubt needs to be maintained by the draughtsman as proportions become adjusted. With practice one is able to gather information by eye alone-called eyeballing - gathering information without the use of pencil or string. Yet a piece of string longer than a pencil can serve as a useful tool in measuring, halving, quartering and even dividing distances into thirds.

The process of proportional measuring must be repeated time and again in each drawing; the draughtsman selects several different units of measurement and checks the findings, one against the other. This both exposes erroneous information and furthers the development of the structure and the space of the picture. In this way, information being observed is always transcribed into meaningful visual relationships in the drawing. The proportions of 1 to 2, 1 to 3, even 1 to 5 might well be visually effective; whereas, the proportions 1 to 10, and 1 to 20 would probably not do as well.

Another use of the imaginary picture plane involves judging the

inclination of angles. If, a horizontal - for example, a pencil - were placed at point P ( Fig. 14,F ) the angles formed could be judged on the basis of being greater than or less than one another. The angles could also be judged as to their precise degree of inclination and those angles without distortion could be incorporated directly into the drawing. This approach can be used either for the initial construction or as a means of checking information obtained in another manner. Through practice, one can train oneself to be highly sensitive when it comes to judging the inclination of angles.

### Convergence

If a plane, that is being drawn, is quartered into four equal sections, some of the images that are to be found on the picture plane, might be H, J, or K depending on the relation of the plane to the draughtsman's eye level ( Fig. 15 ).

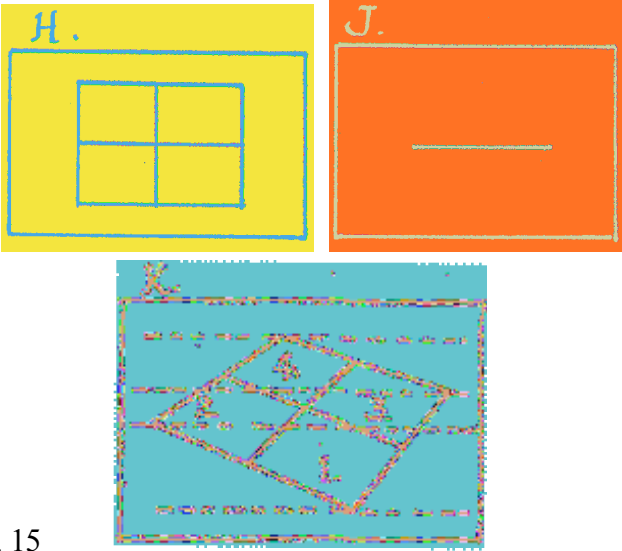


Fig. 15

If the plane, that is being drawn, were parallel to the draughtsman's picture plane, the imagined plane, the image diagrammed at H would be seen ( Fig. 15 ). If the plane were perpendicular to one's picture plane and at the same time on one's eye level, J would be seen. In all other instances the image diagrammed at K would be seen, or some slight variation; this is the most common image of a plane that would be encountered. And in K the effect of perspective is operating since equal units of the plane appear to diminish in size on the picture plane as they recede from the viewer - quadrant (1) being the largest in area, (2) next large, then (3), and lastly the quadrant at (4) being the smallest ( Fig. 15, K). By extending a series of planes parallel to the picture plane going out toward the object, the larger of equal units will be the first to make contact with that series of planes. The equal segments of the quartered plane at K appear to diminish in size and that enhances our perception of space.

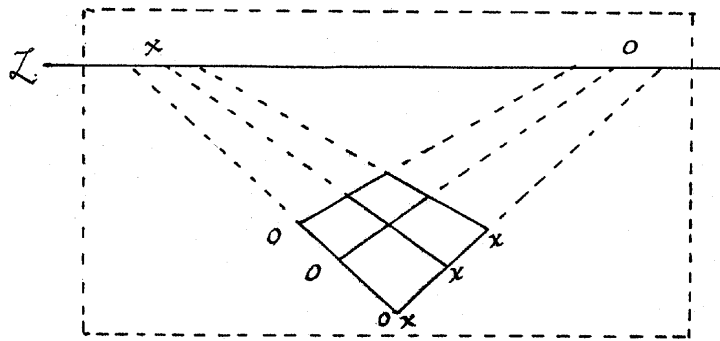


Fig. 16

If a plane, seen below eye level, is being drawn, such as in image K ( Fig. 15 ) then the converging lines marked x on the picture plane ( Fig. 16 ) will tend to meet on the eye level of the draughtsman (L) as will the converging lines marked o.

But if there is a tendency for the parallel lines of a plane, as they appear in a drawing, to diverge rather than possibly converge as they are extended toward the proper eye level in a drawing, then one's measurements must be rechecked. And so the idea of convergence can be used as a check on one's measurements along with the measurements produced by proportional observation. Convergence should not be used alone in lieu of critical observation. Another such check would be a consideration of angles of inclination. It is important to remember that parallel lines TEND to converge and not necessarily to a point.

## **Spatial images of a rectilinear solid**

There are ten images of a rectilinear solid that occur on the picture plane. They can be considered in their relationships to the picture plane, and/or whether they present a plane, an edge or a point on the picture plane and/or whether they are on, above or below the eye level of the draughtsman.

If one plane of a rectilinear solid is parallel to the picture plane, one will see images 1, 2, or 3, ( Fig. 17 ) often referred to as one point perspective. If one's eye level is below the solid, one will see 2, and if one's eye level is above, you will see 3. If the eye level passes through the form, you will see the image at 1.

If one edge of the rectilinear solid is on a plane parallel to the picture plane, then you will see the images 4, 5, 6, 7, or 8, ( Fig. 17 ) often referred to as two point perspective. If the top of the rectilinear solid is on the eye level you will see the image diagrammed at 5; and likewise, if the bottom is on the eye level you will see 6. Should the eye level pass through the form,



one would see the image at 4 or some variation. Should one's eye level be below the form, one would see image 7 and if above, one would see 8.

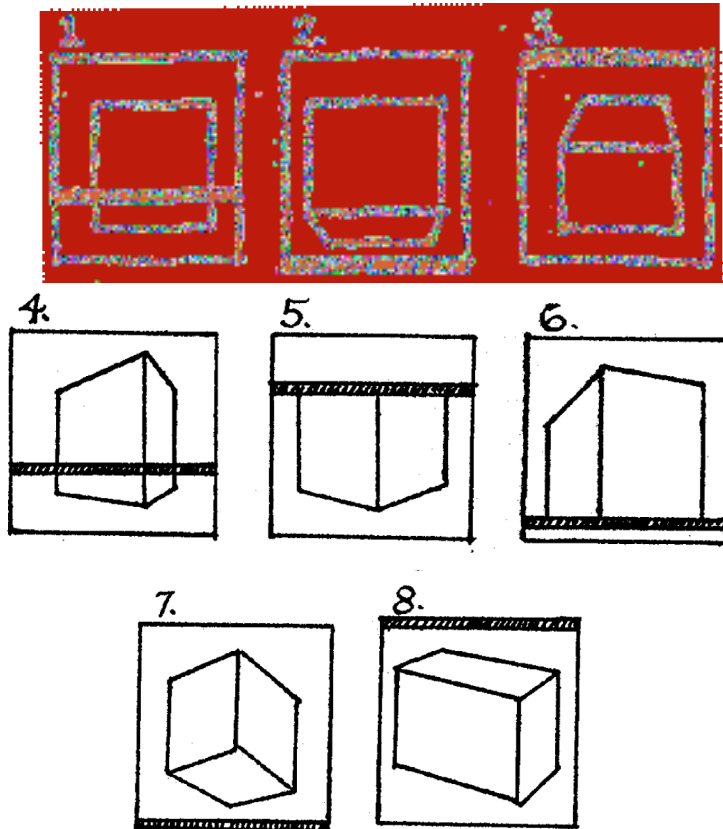


Fig. 17

If only one point of a rectilinear solid is on a plane parallel to the picture plane, one will see the image at 9 ( Fig. 18 ) often referred to as three point perspective. If the form is above the eye level you will see the image diagrammed at 9; and likewise, if the form is below the eye level you will see the image at 10.



Fig. 18

In the images at 9 and 10 ( Fig. 18 ), one of the three upright lines delineating the two side planes might possibly appear to be a vertical line, yet it would not be a true vertical since the “appearing vertical” ( appearing to be vertical because it is parallel or perpendicular to the edges of the paper ) would actually be receding from the picture plane.

The images 9 and 10 ( Fig. 18 ) are infrequently encountered unless one’s eye is either extremely close to the form being drawn or if vast distances are involved; such as, looking out of an airplane window with the eye far above. Or again the eye somehow stationed far below.

In all other images, 1 thru 8 ( Fig. 17 ), the lines delineating the side planes would always be constructed as vertical elements in the drawing.

These ten images are sometimes ordered into three groupings to explain one point perspective, two point perspective, and three point perspective. Eight of the ten images are conveniently imagined to evolve from the movement of two planes ( Fig. 19 ) in space in relationship to the eye level.

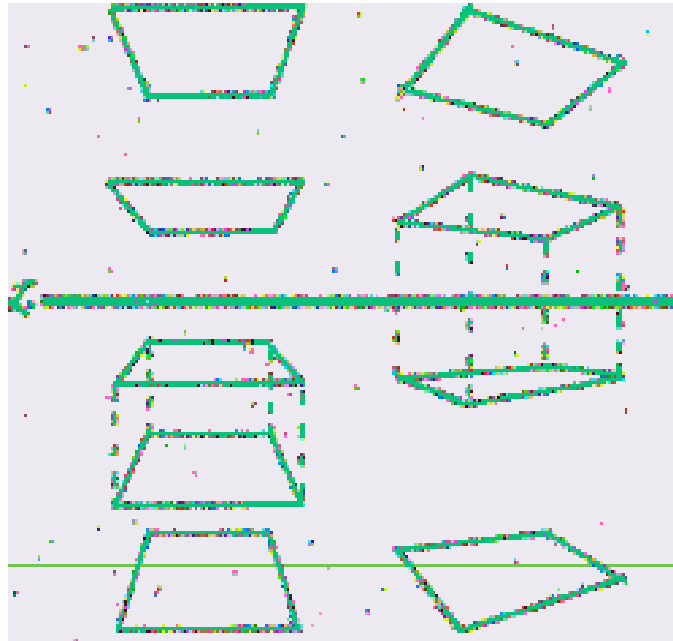


Fig. 19

It should be noted that as a plane moving vertically in space travels away from the eye level of the draughtsman it reveals more of its surface area. So the bottom plane of a rectilinear solid below eye level will be larger in area size than its top plane nearer to the eye level; whereas, the bottom plane of such a solid approximately the same distance above eye level will be smaller than its top plane in area size .

### **Summary of Linear construction**

We perceive objects in space and orient our eye, easel and drawing surface. We become aware of these objects in relation to

eye level and on our picture plane. We select points on the picture plane and are able to measure proportions, block in our subject and determine distances from one part to another. We judge the inclination of angles by holding out a pencil.

As we develop our drawing we observe the tendency of convergence in the planes we see and build in the drawing. We relate perceptual concepts and bring them to bear on organizing the many marks and lines observed from our given point of view. We use line as we have been doing and build a structure to record what we see.

In this process we have become a draughtsman, one whose chief concern is of relating, and of bringing our perceptual concepts to bear on the parts and forms ( boxes, cylinders, planes or other objects ) that we observe and examine on our picture plane. When we finish a drawing we will have constructed in line a structure that not only represents the elements we have perceived, but we will have established the space they must occupy.

To draw what one sees, one must ultimately bring together a large number of thoughtful, considered observations of what one actually does see. We bring these observations into the space and onto the paper of our drawing. Understanding space is the key to our success.

All of this can be accomplished through a mastery of linear construction and in time becomes the natural groundwork for strong compositions and the basis for developing convincing images in tone as well. Linear construction is our first foundational concept.

## **SECTION TWO -TONE**

### **Gradient of Tone**

We have looked out at the world surrounding us through that imaginary picture plane that we've conjured and have attempted to make sense of what we see in terms of line. And then we attempted to capture what it is we actually did see using various perceptual concepts.

Now cut a 6 x 8 inch window in a piece of cardboard and hold it at arm length. Look through it and look around. What is seen includes tone and so presents us a view of the "gradient of tone", potential material for our drawing practice.

## Gradation / first tone drawing

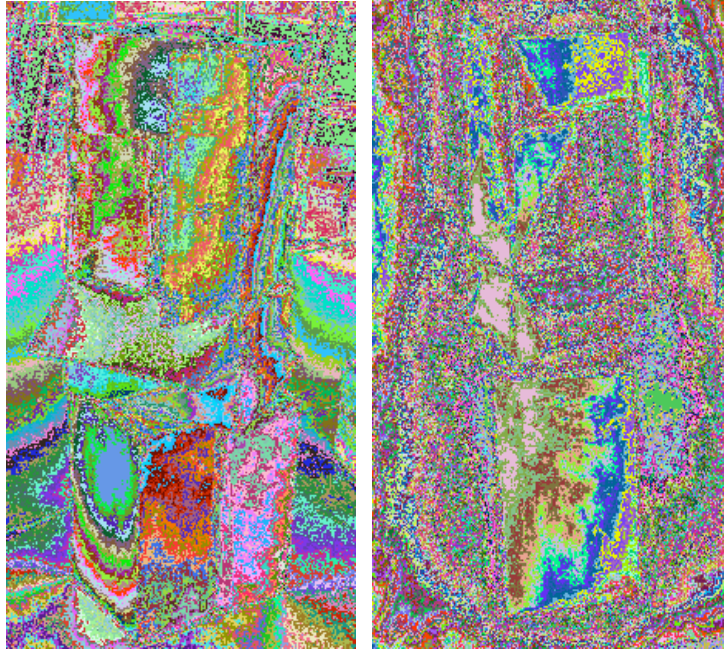


Fig. 20

Stack three boxes, preferably painted white, although that is not necessary. Open some of their flaps. Focus one strong light source on the boxes. Take a piece of compressed charcoal and snap off about an inch or inch and a half. Work the charcoal down on a sandpaper pad producing a many faceted surface (Fig 19 A). This is the instrument to be used for our first drawing.



Fig. 20 A

Your hands, will probably be a mess, coated at this point with charcoal dust. Best to wash up before beginning the drawing. It

is certainly true that rubbing tone with the hand is one way to produce a gradation, and it is also true that hands coated with charcoal dust might well be the ideal way to begin a drawing. But not just yet.

Begin this first tonal drawing by constructing a line structure using vine charcoal. Take your time. About 20 minutes is good to establish our linear elements. This process of working first in line and then converting to tone will become the basis for all of our tonal drawings.

With a clean chamois, “brush” the vine charcoal, lightly and alternately, both inside and outside of the line structure that was created ( for an example of this “brushing” see Fig. 44 on p.72 ). This will serve as a template for further tonal development. Although the drawing will appear faint at this stage, by brushing vine charcoal with the chamois, we will have begun to establish patterns for the potential gradations that we can sense on our picture plane. By observing and reacting to the gradient of tone found on our picture plane, we will be guided to find a home in the drawing for the gradations of tone we can create.

Now we can introduce the faceted compressed charcoal which we fashioned earlier. Since compressed charcoal leaves a much darker mark than the vine, we will have to develop a very light touch or our marks will get too dark too quickly. Carefully fitting the faceted charcoal onto the paper and against the sides of the line structure where it fits , both inside and outside of the drawn boxes, follow the faint patterns earlier indicated. We must press ever so lightly, dragging and releasing the compressed charcoal using the side of the charcoal to create broad but very light strokes of tone. This process will leave indications of a gradation of tone. At this stage we will have the

opportunity to access and organize the growing pattern and so develop a stronger gradation of tone.

To develop these gradations of tone further, we can return to the chamois and, if we choose, to our fingers to disperse the media. By smearing and smudging along with the use of a kneaded eraser to lift tone and lighten areas, gradations of tone can be adjusted to match the gradient of tone we observed on the picture plane.

Remember, it takes three tones to make a gradation visually work - a progression of light, medium and dark tonal areas. Although sometimes the dark area will merely be an accent that gives focus to the gradation.

After another twenty minutes of work, we should have our first tonal drawing. There will be no lines present in that final drawing since they will have been incorporated into the tonal expression. One of the characteristic qualities of the approach we have taken is that tone will have replaced the linear expression, although the presence of a linear structure will still remain and be felt.

Another aspect of this approach is that local color is not recorded. Look at the darkish flap of the top box in the photo for example, and compare it to its representation in the drawing ( Fig. 20 ); the local color of the flap is much darker overall in tone in the photo. In general with this approach the viewer gets messages of “no color,” just tone.

The chamois should be readied for the next drawing. Wash it in luke warm water with some detergent and rinse it out several times in clear water. Let it hang to dry and before using it again.



Crumple it in your hands to raise the nap.

## **Summary of first tone drawing**

- (1.) Prepare the setup; stack boxes.
- (2.) Facet a small piece of compressed charcoal.
- (3.) Make a line structure in vine charcoal.
- (4.) Use the chamois to organize a template,  
brushing tone inside and outside of the  
linear structure.
- (5.) Use the faceted compressed charcoal to further  
establish gradations.
- (6.) Develop gradations with the chamois or by rubbing  
with fingers and lifting tone with the kneaded eraser.
- (7.) Wash the chamois and your hands.

## **Gradient of tone continued**

At this point we have made several attempts to capture line structure, and we will have developed at least one drawing that has made a statement about what is seen, not in line but rather, only in tone. We may come to the realization that the line out there that we perceive and attempt to record is indeed illusory, that line is merely the edges of tonal surfaces meeting, butting one against another.

This realization, that “there is no line in nature” (or for that matter in what we see of the man-made world as well, including boxes) is a startling welcome to the confusing world of tone. What we see is tone, and it is tone and tone alone we see when we examine the “relative values,” and the “patterns of light and dark,” that seemingly come to life on our picture plane. That is

why the words and ideas associated with tone become most critical to our understanding of what we see. We call this phenomenon, those patterns of light and dark, the “gradient of tone.” How to organize these many and subtle patterns and make visual sense of them becomes the task of the draughtsman.

But as we do so we should not forget the hard won lessons acquired in our attempt to master line, for it is truly concepts associated with both line and tone working in concert that bring to life the “good drawing.”

To achieve a clear view of the work that needs to be undertaken in dealing with tone, we need to investigate yet another theory in addition to The Theory of the Picture Plane. This new concept is a Theory of Relative Values. At the heart of this theory is an understanding of the application and handling of gradation, heavily dependent on line structure and not to be confused with that other term, the gradient of tone, which was what we experienced when we first encountered tone on the picture plane.

It is interesting to note that The Artificial Intelligence Laboratory of the Massachusetts Institute of Technology, which studies computation in physical and biological systems and is noted for their creativity, focuses attention on unlocking the secrets of human intelligence. They have published papers using the term, “gradient” when talking about tone. That gradient of tone is our gradient of tone. We refer to the same phenomenon.

Although digital imagery has a tendency to be associated with algebraic equations we shouldn’t be dissuaded from examining the term, for the terms and the concepts of assessing tone

viewed on the picture plane can prove to be as useful to the draughtsman with his unassisted vision as to the digital designer and mathematician with their computer.

## **Gradation and Value / second tone drawing**

This next setup requires gathering a set of two lights that can be clipped onto a chair or post and two geometric objects of contrasting local color. Fig. 20 is a setup of a dark purplish ball with a large coffee can painted white and Fig. 21, a drawing of the setup in vine charcoal, our next tone drawing.



Fig. 21

A trip to the hardware store for the lights and extension cords is in order, unless one might find some lying around the house or studio. A dark colored ball can be found in the children's section of a large big-box department store. The objects are to

be placed on a white board, or a board covered with white paper which will reflect light back again onto the objects.

Begin with a good line drawing constructed large on the page working from a given point of view. With that structure in place continue working in vine charcoal. Avoid the uncompromising darker density of the compressed charcoal stick or even the soft charcoal pencil. Begin the laying of gradations of tone using those many lines of tone laid close together. Keep the work in vine charcoal. Again, use vine charcoal.

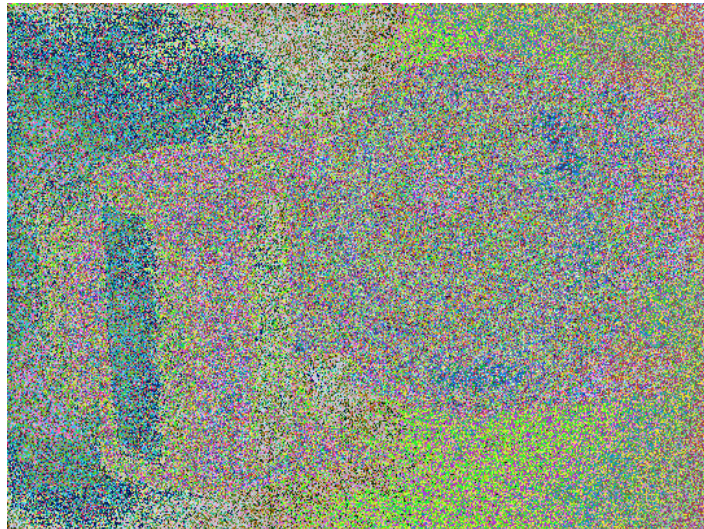


Fig. 22 2nd tone drawing

But before beginning this development of tone we need to first further develop and sharpen our sensitivity to the handling of tone. So, an exercise emphasizing handling is appropriate to interject at this point, since understanding how to handle tone is critical to understanding value.

For this exercise as well as in the second tone drawing we continue to use vine charcoal alone and to use a linear means of layering and controlling both the gradations of tone and the value of tonal areas that occur in the process, the lightness or darkness of tonal areas. Then on returning to and finishing this drawing we will have made a statement both about gradation and of value.

## Exercise

On an 18" x 24" sheet of charcoal paper, using vine charcoal, place six 3" x 4" squares in line at the top. In these squares we will develop a range of values.

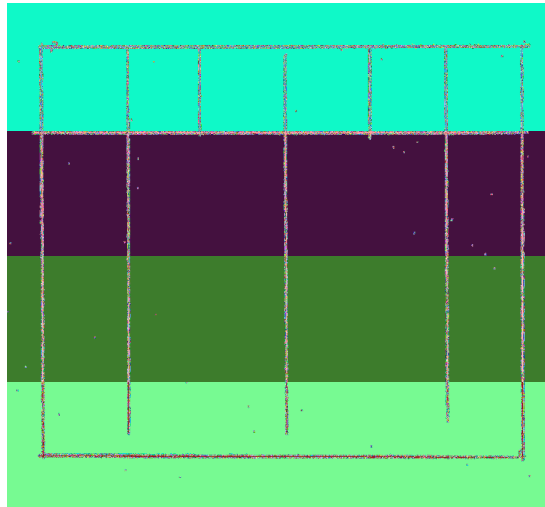


Fig. 23

Using a light touch, lay a series of lines across each of the squares one at a time. Choosing another direction lay another series of lines. Keep the lines close to one another if not touching; across that first series of lines add a second series, a

third and so on. Repeat the process many times and move across the six squares keeping your attention on forming various degrees of tone going from light to dark.

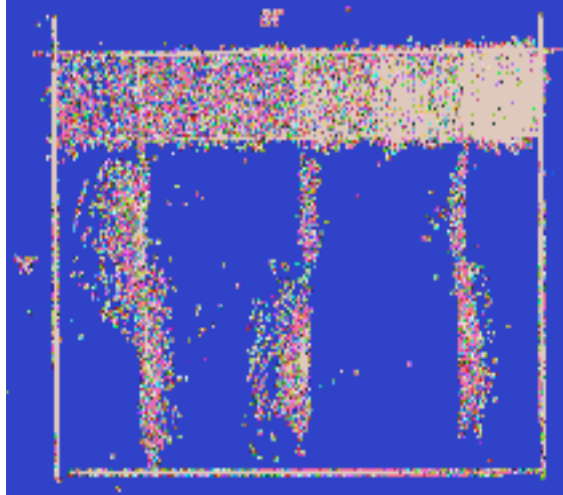


Fig. 23

When the charcoal builds up into a value in one of the squares, gently blow the charcoal off and build that area up again. Develop a light touch as you adjust the tonal areas and work toward establishing a progression, a range of values.

Extend the alternate vertical lines as in the format (Fig. 23), staying with vine charcoal. The idea in this exercise, this time, is to make the three lines dividing the lower part of the sheet seem to disappear into the paper itself by generating gradations of tone and by laying a series of lines, one atop another, blowing them off and building them up again, and again and gently blending them into the value of the sheet of paper itself. The term vignetting has been used to describe this effect.

This is skill development pure and simple. The handling of tone

requires the ability to modulate it, and vine charcoal because it is so unpredictable and fickle, is the exact right medium for us to develop this sensitivity.

## **Continuing second tone drawing**

Now return to the second tone drawing. Position two light sources on the cylinder and the ball, minimizing the effect of shadows. With the light sources being close to the objects, it will be impossible not to have some shadows produced, but by adjusting the lights we can reduce their effect.

Since all gradations go from something to nothing, from light to dark or vice versa, and we are changing tones gradually in degrees as we look closely with both eyes and examine the complexity of the gradient of tone on our picture plane, our job becomes clear: to record observations in terms of gradations of tone, and to maintain the relative values of the various areas we observe, the most obvious being the white cylinder and the much darker ball.

Begin by closely examining the line structure. Using linear means; grade tones out from those edges. As tone builds up, don't be hesitant to blow it off -- blowing is a way to blend tone without rubbing which disturbs the tooth of the paper. Build the tone up again, laying a series of lines in a different direction. There will be many reflected light areas and areas that hint of shadow to observe and incorporate into the emerging drawing in tone. Select the more promising areas to work with, be aware of a sense and feeling of an emerging volume that occurs.

## Summary second tone drawing

- (1.) Set up a cylinder and ball with two light sources.
- (2.) Make a line structure in vine charcoal.
- (3.) Practice handling vine charcoal, vignetting and building a range of values.
- (4.) Develop gradations of tone in vine charcoal using linear means.
- (5.) Make a tonal statement maintaining the local color of the objects, the light cylinder and dark ball.

## Theory of relative values

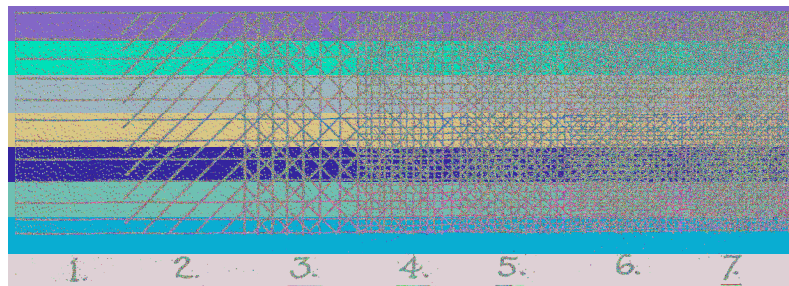


Fig. 24

The use of tone by the draughtsman is acknowledged to be a complex activity, one that requires more than the usual skill and sensitivity. Many terms are used to explain the function of tone in a drawing. Such terms as CHIAROSCURO, TENEBRISM, NOTAN, SFUMATO, VIGNETTE and LIGHT AND DARK suggest a multiplicity of possibilities in the application of tone.

The theory of relative values does not propose to change the poetic and provocative response to vision that these terms suggest, but is concerned with what these terms refer to,



concerning tone. Sometimes the terms confuse and obfuscate the activity of drawing rather than illuminate and clarify that activity for either the amateur or for that matter, the professional practitioner as well. The theory of relative values intends to clarify by referencing the terms being used for their place in the activity of drawing.

Unfortunately the use of a term by one artist, critic or historian on one occasion suggests different meanings from the use of the same term on another occasion. This lack of consistency lends to the confusion, especially when different meanings emanate from the same source.

Subtle changes in context are crucial to an understanding of the use of tone by the draughtsman. And so, an analysis of the terms used when discussing tonal aspects of drawing should be useful, but only, it appears, if the aim of the analysis is comprehensive.

The terms would then reveal the scope of the use of tone, useful when referring to the practical aspects of seeing as well as to the interpretive needs as found in perceptual drawing.

Whatever insight is gained should be used in not only making more responsive representations of what is seen, but also in gaining a better handling of tone in the actual drawing itself.

## **The locus of terms**

The handling of tone is not only a mechanical and physical activity involving the distribution of a medium on a support, but has a conceptual component. That component, interpretative

in nature is essential to the draughtsman's function when facing those relative values that are sensed on the picture plane, what we call, "the gradient of tone." Reaction to the gradient of tone in terms of perceptual concept is essential in developing the draughtsman's sensitivity.

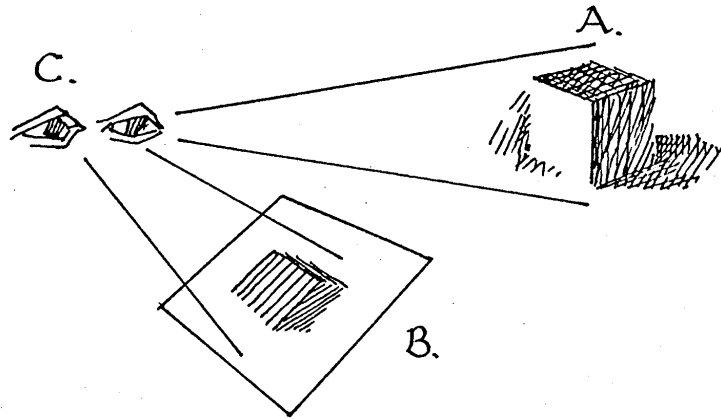


Fig. 25

The consequences of associating each term with a placement should provide some insight into the activity of drawing ( see Fig. 25 and Fig. 26 ) and suggest possible avenues of exploration for developing perceptual concepts to assume in practice.

To begin to understand this problem let's consider six terms widely used in discussing tone and place them within the context of the activity of drawing. The terms to be considered are: LIGHT, LOCAL COLOR, GRADIENT OF TONE, GRADATION OF TONE, PATTERN, and RANGE OF VALUE. By referring to a former diagram (Fig. 25) we can establish the three major contexts in which these terms practically operate: (B) the drawing, (A) what's out there, and (C) one's perceptual concept. We can characterize these contextual placements as (A) what the draughtsman senses on

his picture plane, that gradient of tone, or “what is out there?”; (B) the markings made by instruments on a support, or the drawing; and (C) the judging eye of the draughtsman, or the concept within a perceptual context ( see Fig. 26 ).

**What is out there / The markings / The judging eye**

	A	B	C
LIGHT	X		
LOCAL COLOR			X
GRADIENT OF TONE	X		
GRADATION OF TONE		X	
PATTERN	X	X	X
RANGE OF VALUE		X	

Fig. 26

The consequences of associating each term with a placement should provide some insight into the activity of drawing (see Fig. 25 ) and suggest possible avenues of exploration and/or attitudes to assume in practice.

In an effort to be comprehensive, Fig. 26 presents one possible placement for the six terms. They are placed in the matrix as follows: (A) standing for what is out there, (B) for the markings made on paper - the drawing, and (C) the judging eye - perceptual concepts to be held by the draughtsman as he works. I'll make my case.

It should be obvious that LIGHT occurs only “out there” although sometimes it is used as a concept when referring to the light side of objects or to projected shadows cast by objects. LOCAL COLOR is a concept; it often requires the comparison of values and the designation of a given value for a whole area, shape or object. Whereas a GRADATION OF TONE occurs only in a drawing and can be managed through skill and practice. A GRADIENT OF TONE is sensed by the draughtsman only on the picture plane and requires perceptual skills. The draughtsman might note a quality or relationship which must then be worked for in the drawing by adjusting values and gradations in the drawing.

A GRADIENT OF TONE must often be converted into conceptual terms before it can be worked into the drawing. PATTERN is an organizing element: it appears on the picture plane and when incorporated into a drawing can make for a strong tonal statement. One might also argue for its conceptual status and place it at (C), the judging eye. It seems to be the most ambiguous of the six terms being considered, the most difficult to place. And therefore, it becomes even more important to understand the context in which the term is used.

RANGE OF VALUE occurs only in drawings. Mediums that are used or combined in a drawing can influence the value range, as well as the specific and purposeful handling of a given medium; for example, one might “step down values” by darkening or “push them out” by spreading the value range, or select stronger or weaker contrasts. Referring to the seven-step value scale cited above, one could develop a drawing using the scales 1,3,4 or 4,6,7 or 1,4,7 as in Fig 27.

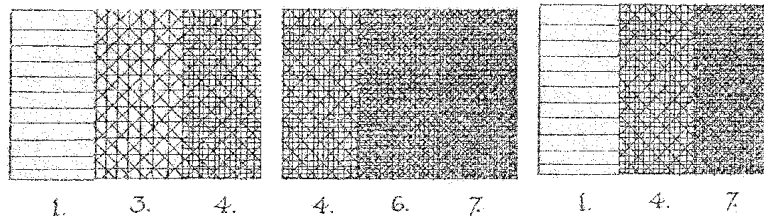


Fig. 27

The value designated #4 appears in each of the scales (Fig. 27); when used in composing a picture it would produce various effects because of the values it would be associated with. Such controlled vision would require much discipline.

When discussing tone, terms other than the six discussed here are sure to pop up. A consideration of those terms by placing them in the matrix should clarify the context in which they are being used. Placing a new term in the matrix to replace “What is out there”, “The markings”, and “The judging eye” ( A. B. and C. in Fig. 26 ) with the designations GRADIENT OF TONE, MARKINGS and CONCEPT might also prove relevant in clarifying the terms and ideas about tone that one comes upon.

## Light and dark

Assuming that there are only five major ways to conceive the distribution of tone in a drawing, the symbolic diagrams presented here (Fig. 28) will serve as a comprehensive aid to look at and judge what is seen. These interpretive aids should lead the draughtsman to question how he or she views the gradient of tone and so sharpen perceptual concepts.

These concepts stimulate thought about tone, enhance the conversation about tone in general from the artist's point of view and direct attention to dealing with tone in a drawing. They also help the draughtsman arrive at a workable decision as to how to handle the observed tone for any given drawing.

These concepts should lead to the production of unique pictorial results. They are often combined and used in one drawing; for example, the last tonal drawing in this section (Fig. 48) which combines several concepts to develop a drawing of several objects in a given space.

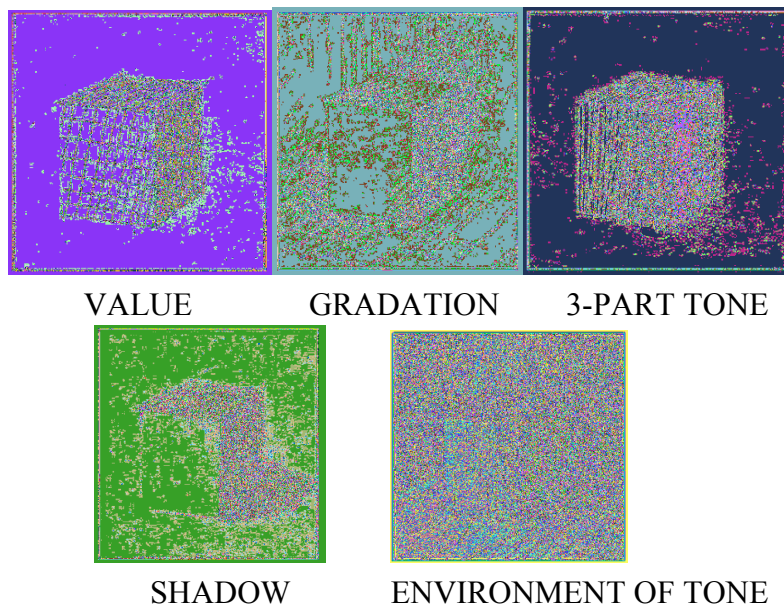


Fig. 28

So, there are five major conceptual approaches for the draughtsman to keep in mind: we will label them as VALUE, GRADATION, 3-PART TONE, SHADOW and ENVIRONMENT OF TONE.

The diagrams of a rectilinear solid ( Fig. 28 ) along with their designated names will serve us as a reminder of those possibilities, of how to think, to draw, and perhaps, to talk about tone.

The diagrams will also serve as a reminder of the tonal concepts concerning perceptual drawing that we will take up and that are explained and demonstrated in this section of the handbook.

### **Value / third tone drawing**

Take our largest box and using a utility knife cut away two sides and the top, leaving two sides and the bottom, a nest of sorts in which to place objects, our smaller boxes, for this drawing.

Place two boxes into our nest and fix one light source. Clamping the light onto a chair allows one to move the light and so adjust the light source. Get eyes up close to the boxes, about two or three feet from the setup.

It would be nice if one of the boxes were painted lighter or darker, than the other, but that isn't entirely necessary, because the affect of assigning values will have on the picture space and an awareness of that effect is what we hope to gain. You could however, paint the various surfaces black or values of gray.

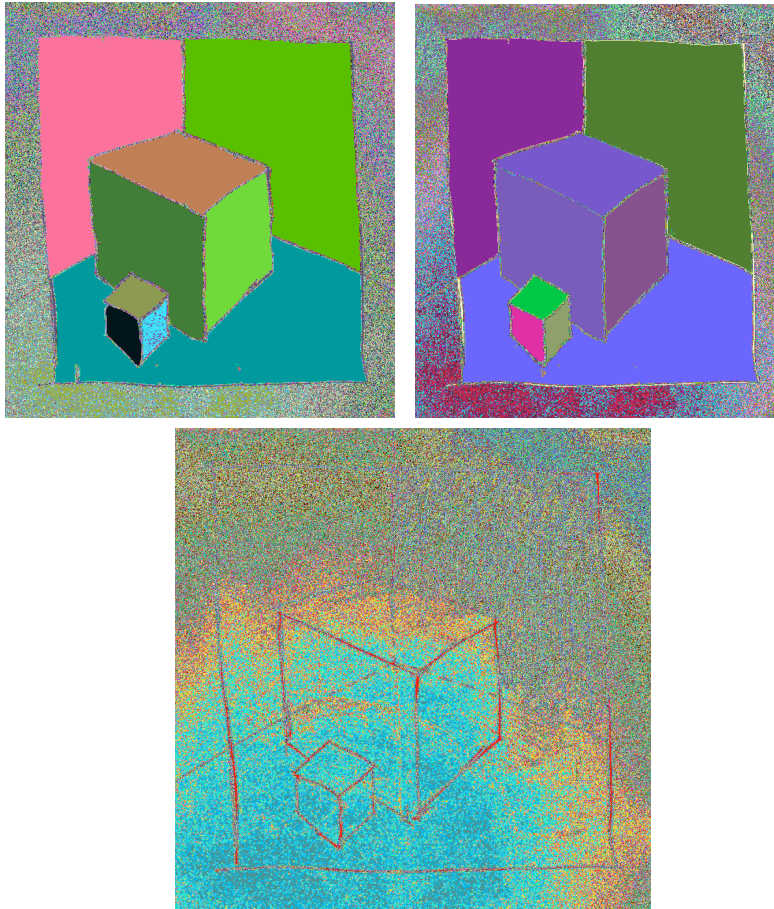


Fig. 29

After establishing the line structure it will be necessary to begin assigning values ( light ones and dark ones ) to each of the shapes formed in our picture space, and that would be whether the shapes are positive shapes of the objects themselves or negative ones of the background planes of the interior of the large box that has been cut apart, our so-called nest.



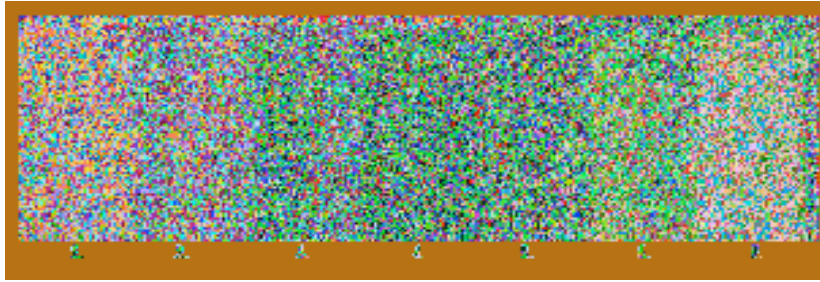


Fig. 30

Our job is to assign values to each plane adjusting them to the gradient of tone we sense on our picture plane and in the pictorial space.

Start with some dark shape, preferably not a shape that is a cast shadow, but a dark surface or plane and move toward shapes of middle value leaving the lightest till last. Remember that here we are not concerned with gradation, and that one value must be assigned to an entire shape. So our vision must distill values into areas, irrespective of gradations of tone. The gradient of tone is to be interpreted according to a range of values ( Fig. 30 ).

The disciplined draughtsman will train his vision to respond to a given set of values and pattern them accordingly ( see Fig. 31 ).

Use vine charcoal in the beginning, but employ the services of darker media to achieve a range of value if needed. As each value finds its place one can use compressed charcoal or a soft charcoal pencil over the deposits of vine charcoal if necessary.

When finished, we will have established a range of value for that particular drawing.



Fig. 31 3rd tone drawing

The contrasts might be great - such as #1,4,7 (see Fig. 32). The drawing might be dark and somber - such as #4,6,7, or light and airy - such as #1,3,4. Let your observation, perception and judgment be your guide as you assign values to the shaped areas. This exercise is similar to the one presented earlier under Range of Value( Fig. 27 ) when both values and gradations were combined and being considered.

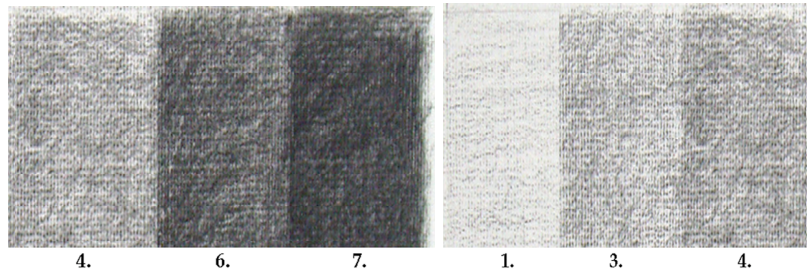
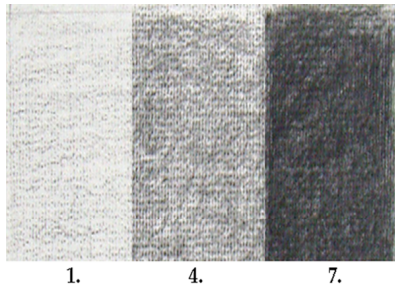


Fig. 32

### Summary of third tone drawing

- (1.) Cut a large box down using the interior sides to make a “nest.”
- (2.) Place two boxes in the “nest” and fix a single light source.
- (3.) Assign values to each shape in the picture space to achieve a range of value.

### Shadows / a series of sketches

The sketch (Fig. 33) emphasizes shadows, not only projected shadows but the shadow side of objects. Gradations of tone are



developed only within the shadow structure and are to interpret the reflected light perceived in the shadows. Only four objects are involved in this exercise and a low light source with a baffle, a board rising perpendicularly to the base plane. Fig. 33 shows a projection of shadows cast by a cylinder, two small rectilinear solids and a sphere.

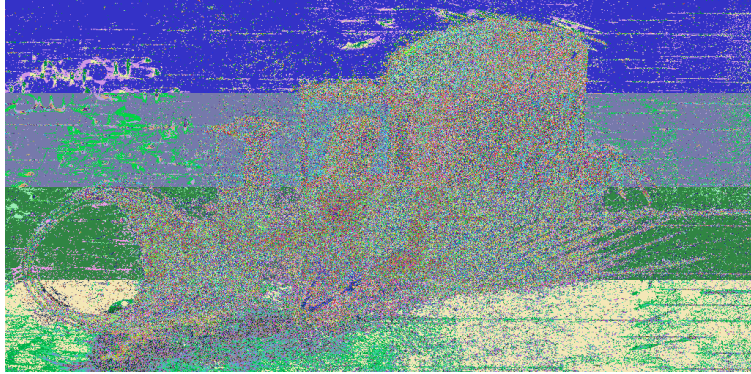


Fig. 33 4th tone drawing

To study shadows, gather four geometric forms; for example, a ball, a cylinder, and two rectilinear solids. Place them on a white plane and place another white plane, the baffle, behind the setup to receive the projected shadows. Move a single light source around until an interesting arrangement of shadows presents itself. Secure the light and begin your sketches.

Work with a soft charcoal pencil. Sharpen your pencil with a utility knife and sand the point into an ellipse by using the sandpaper paddle (see Fig. 34). Begin first by building a line structure. Work quickly and lightly to establish the line structure. Then develop tone only within the shadow. The point could be used for line work and the elliptical side for generating tone.

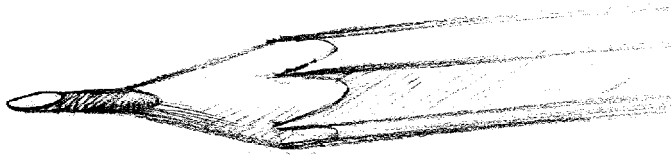


Fig. 34

Look closely at the shadow areas noting lighter and darker places within the shadow structure. Lay gradations of tone according to your observations. Keep the work fluid and work quickly, no more than 15 minutes for a drawing. Remember, generate tone only in the shadow areas.

Move the light. Find another shadow structure to work with. Rearrange the objects, and on another sheet of paper begin again. Do a series of shadow sketches, perhaps four, moving both the light source and the objects. Some have likened this approach of 2-part tone to NOTAN referring to the Japanese design concept of light and dark placement in the picture space.

### **Summary of shadow drawings**

- (1.) Place four geometric forms against a baffle.
- (2.) Move a single light source to find a set of shadows to work with.
- (3.) Develop gradations of tone, but only within the shadow areas.

### 3-part tone

To understand 3-part tone one must see gradations as having a light, middle tone, and darker part. No matter what the overall value of a shape or area might be, there must be a progression of tone. Sometimes one must look closely for where an accent could be placed, a tone slightly more light or slightly more dark, but most often attention must be paid to finding the middle value.

To exercise this concept one must first assume that all gradations have three parts, a light, medium and dark value, whether they be in a dark area such as a shadow or on the side of an object that catches the light. And then one must look out to actually find where the more light or more dark must go. The areas covered by the three parts of a tone may vary widely. It might make more sense for the draughtsman to begin with a designation of general value and then work toward finding the 3-part gradation.

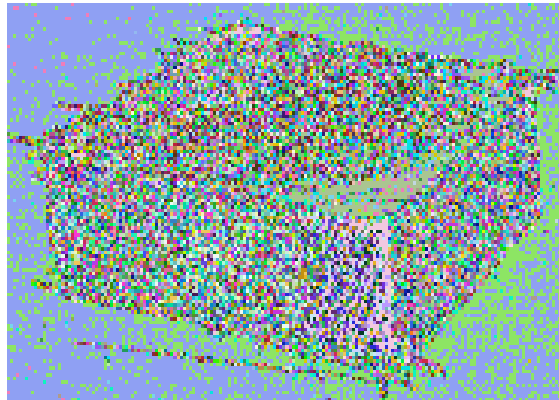


Fig. 35

Place a simple geometric form in front of you, a rectilinear solid (Fig. 35) or a sphere (Fig. 36) would be fine. After imagining the establishment of a line structure, also imagine placing values in each plane or should the form you chose be curvilinear on both the light and dark sides of it. Now having established the general values we can develop 3-part tone.

The planes of a box ( compare Fig. 35 with Fig. 30) are of different values yet each plane contains gradations and reveals the use of 3-part tone. These three planes have been recorded in response to observation. Sometimes 3-part tone is revealed when noticing a highlight or accent in a dark area, or when seeing more contrast on a leading edge of a form.

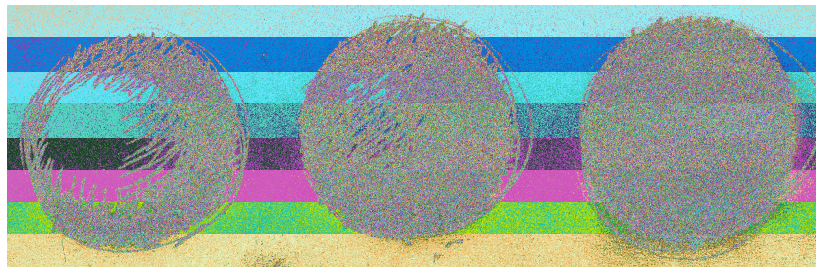


Fig. 36

There is a basic skill at work and needed here , for one must juggle two observations (if not more) with every stroke, smear, smudge or eraser mark that is made. In many ways drawing becomes like the childhood stunt of patting one's tummy and running a hand around one's head at the same time. Hard to do, but not impossible if one concentrates. And each stroke, smear, smudge or eraser mark that is made must be judged as to whether it progresses the 3-part tonal statement of the forms observed or not.

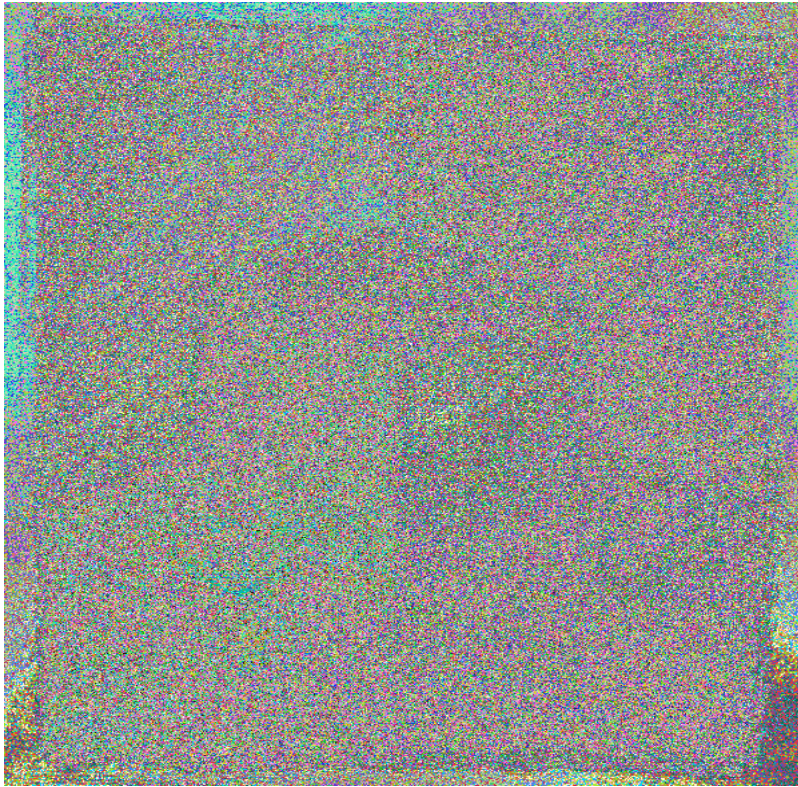


Fig. 37 3rd tonal drawing / altered

### **3-part tone / exercise**

Return to the 3rd drawing and alter that value drawing to include a 3-part tone concept. Each of the planes would need to be adjusted to include a gradation of tone, a light, medium, and dark tone, within the overall value that had been established for each of the planes to begin with. Imagine stripes traveling across each plane. Consider where to place the light or dark accents



using the middle tone to be the value already established for each plane.

### **Summary of 3-part tone**

- (1.) Observe simple solitary geometric forms by finding light, medium and dark gradations of tone across each plane or curved surface. No drawing necessary just seeing. Note highlights, accents and contrasts on leading edges of form.
- (2.) Alter a drawing that has already been made using a range of values (the 3rd tonal drawing in this practicum). Find light, medium and dark tones within each of the established value areas. Establish stripes of light, medium and dark tones across each area.
- (3.) Adjust the stripes to maintain the original range of value. Encourage subtlety in your handling of tone.

### **Environment of Tone**

For our last drawing a change of orientation will be used. We will use the four legs of a chair to support our drawing surface ( Fig. 40 ). To continue standing using an easel would work just as well, but this will be a long drawing, about two hours, and we might tire and want to rest. You could sit on another chair bending over or on a stool while you orient your “easel-chair” off to one side so as to have a good view of the setup. However you choose to orient yourself, adjust your view so as to make sure your angle of vision cuts the plane of the drawing surface at a 90 degree angle.

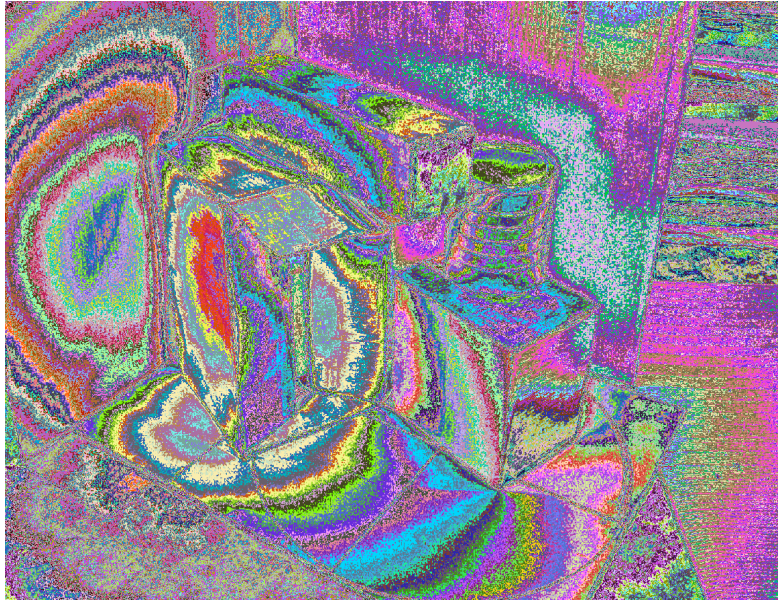


Fig. 38 setup

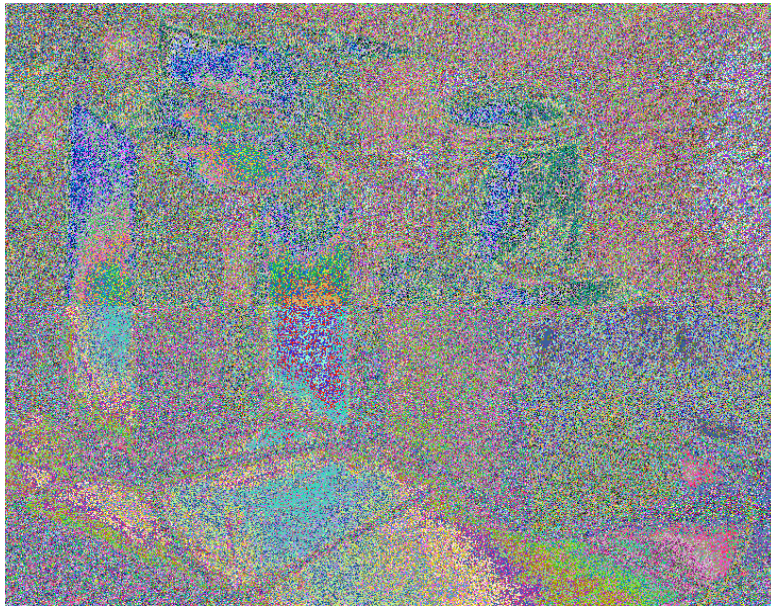


Fig. 39 environment of tone/ 5th tone drawing

Choose four geometric forms, some surfaces of which were actually painted various tones of gray; set them on a white plane that has a circle which was quartered ( Fig. 41 ). For this setup arrange two light sources to illuminate the objects, one from each side. Arrange these geometric forms inside a large

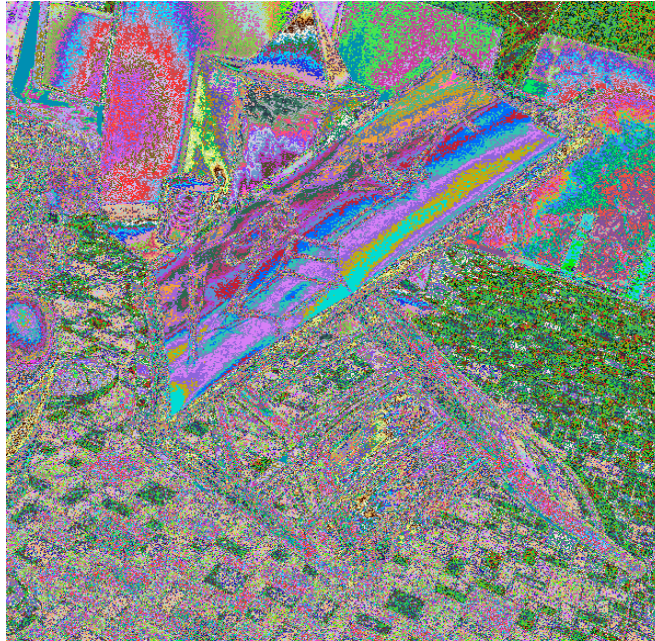


Fig. 40

box that has its sides painted gray and darker gray. We might decide to use other objects at this point, and should be encouraged to do so, although we need to choose simple objects at first so that we are not overwhelmed by complexity. As we examine the gradient of tone we need to maintain the serious attitude we have developed toward perceptual concepts. The geometric forms should make for a challenging gradient of tone to start with. Begin the drawing in vine charcoal.



On studying the setup, I decided to include all of the base plane. The first job was to determine the overall height after placing marks at both two sides of my paper and at the bottom.

Establishing the vertical furthest to the right of the box on the right (A, in Fig. 41) became my first challenge.

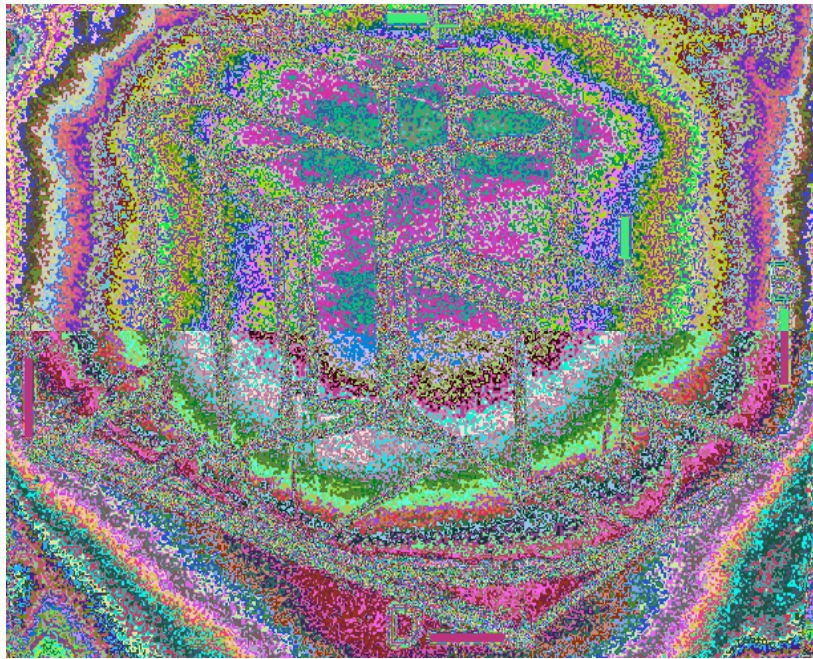


Fig. 41 schema

## **schema**

I made a small schema of the line structure and placed it in the upper left hand of the drawing to help me think about strategy

and which proportional measurements I was to pursue. As the line structure took shape the schema was easily erased with a swipe of the chamois.

Using the distance of A to B ( Fig. 41 ) as a unit of measurement, I found A-B went into A-C about three and a half times and into D-E four times. Taking the distance A-B and fitting it onto a horizontal from the point of the base plane at (C) gave me useful proportional information to begin constructing verticals in the long box above and the cylinder and the box on which the cylinder sits. Gather much more information.

### **stage #1 / line structure**

Satisfying convergence, judging angles of inclination and paying attention to the rectilinear space being created below the eye level eventually helped to ( about 40 minutes later) produce a linear structure in vine charcoal (Fig. 42 stage #1). The chamois used as an eraser was especially useful through trial and error when verifying one set of markings against another set of markings. Eventually I arrived at a set of proportions and a linear structure I could live with.

From this line structure the process of developing tone began. Beefing-up the lines by bearing down with soft charcoal and then depositing a good amount of vine charcoal on the linear structure was a first step (Fig. 43).

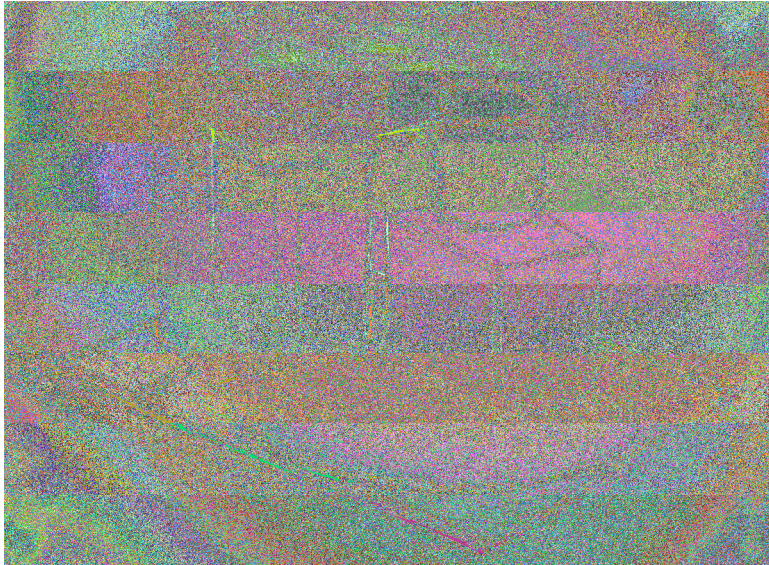


Fig 42 stage #1

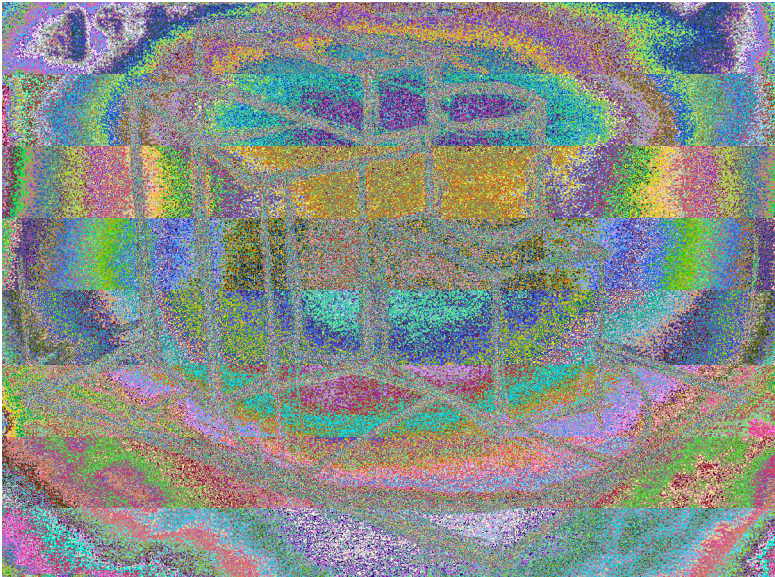


Fig 43 stage #1 / preparation for template



## Stage #2 / template

Next a template was formed translating the gradient of tone into gradations of tone using the chamois and smearing. While examining the gradient of tone on the picture plane, observations switch from one concern of handling light and dark to another.

Observations of VALUE, GRADATION, 3-PART TONE AND SHADOW were converted into simple gradations by the act of smearing charcoal from the deposits on the line structure, to one side or the other of the line structure (Fig. 44).

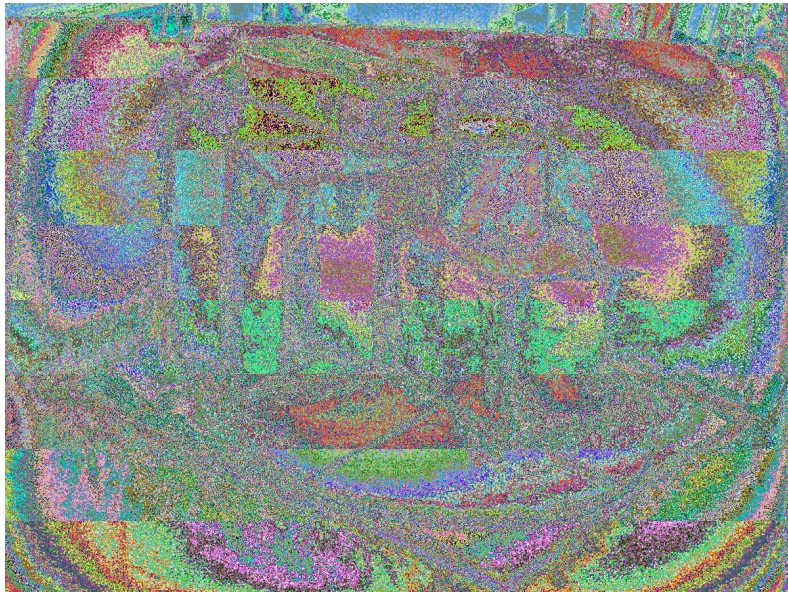


Fig. 44 stage #2 - template

### **stage #3 / statement**

As the tone gets developed, the drawing converts into a perceptual statement with some concepts being favored over others. Some concepts, such as GRADATION, VALUE, 3-PART TONE, and SHADOW, appear to be better suited for handling what is seen, some combined and merged, some were downplayed. The environment of tone at this point becomes a pictorial statement. Work at this stage continued in vine charcoal, although other media were soon introduced.

Using compressed charcoal and charcoal pencil over the vine charcoal increased the range of value. Sharpening and softening edges introduced subtleties of tone that were noticed.

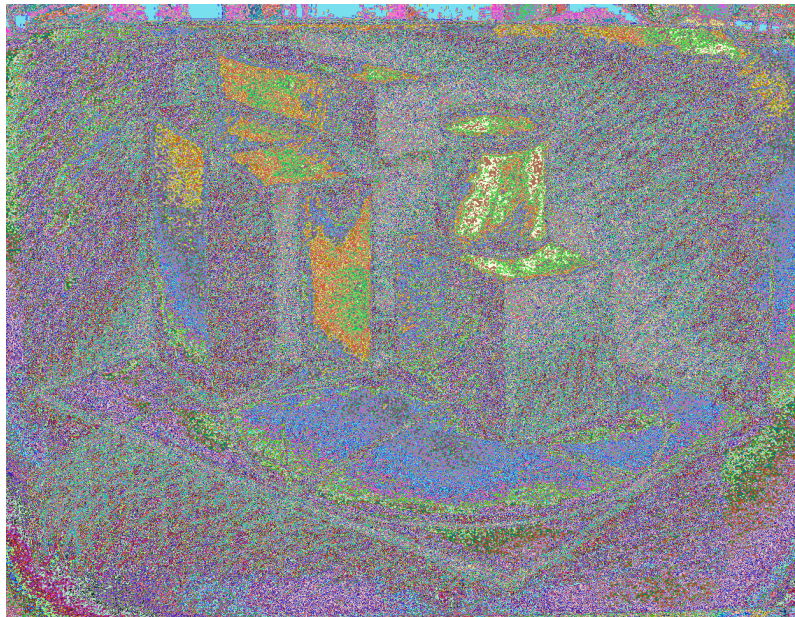


Fig. 45 stage #3



I began noticing gradations within value areas as well as the suggestion of shadows (Fig. 45).

#### **stage #4 / cropping**

Because the spaces that were created seem to overwhelm the objects and because a strong sense of picture space appeared to me to be out of reach in this drawing, I entertained the device of cropping. First the drawing was sprayed with fixative to settle the vine charcoal. The drawing was then laid on the floor and two large “L” shaped boards were adjusted to box-in the desired view ( Fig. 46, stage #4 ).



Fig. 46 stage #4

Finding a better balance between space and the objects presented was the aim of the cropping.

A pencil was run around the inside of the frame and then the boards were removed (Fig 47, stage #5). Tone was further spread about the surface by reworking and refining, always referring back to the setup and what was observed. I worked over the surface of the vine charcoal using charcoal pencil and compressed charcoal. Spraying fixative is normal for this stage of development for it sets the ephemeral dust of the vine charcoal and makes the surface more receptive for the development of tone. But be sure to pay attention to the health hazards as described on the label of the fixative can or bottle.

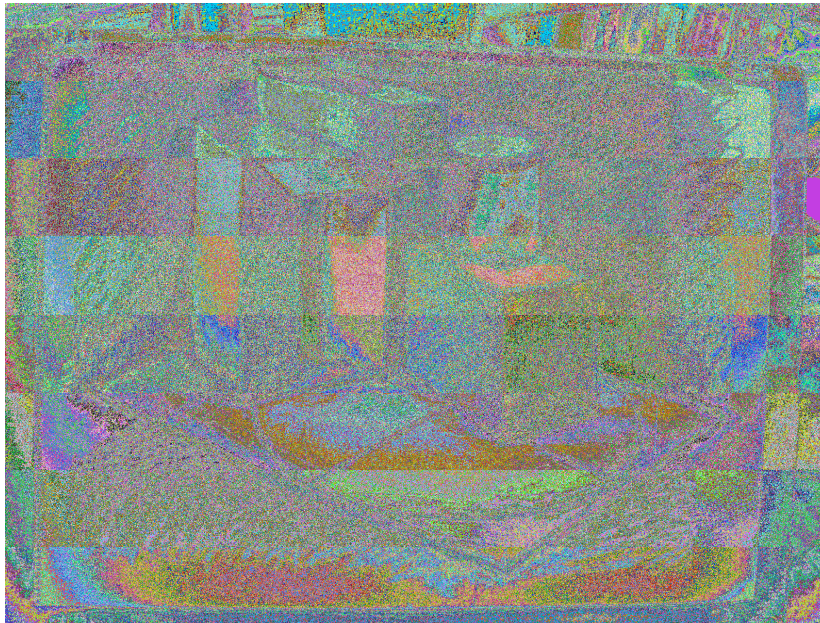


Fig. 47 stage #5



## Summing up / environment of tone

On finishing this the last drawing of our ten-drawing-practicum, I was struck by this irony: that the first impulse, to include the base plane during the creation of the line structure in the initial stages, should end up in these final stages with a decision to cut off three of the base plane's edges. But then again perhaps it is not so strange, since making fresh observations, direct and simple, often lead to conclusions and views which at first were not considered. That is, of course, why we observe, to find! Seeing, it would seem, changes one's point of view. So that discovering change and even coming back to an original consideration should perhaps not seem so strange at all, just part of that unending process of engaging vision, arrested only by each drawing made along the way.

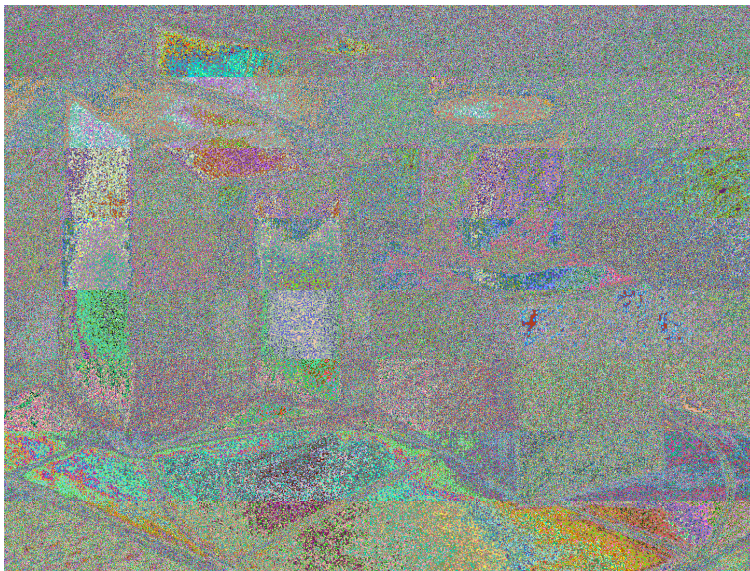


Fig. 48 environment of tone

Perceptual drawing is challenging especially since it takes time and patience to develop the handling and skills necessary for the practice. It is best to consider these skills and skill development as one would that age-old question of which came first, the chicken or the egg. So the question of seeing and doing also becomes unanswerable. That is, you just begin to draw, and then you note where it has taken you.

To look closely and think about what is seen, that is the heart and dictum of perceptual drawing. The rest is simply practice ( compare Fig. 48 with Fig. 44 ).

Perceptual drawing can be frustrating when the eye sees, but the hand doesn't express what is observed. I hope this practicum will move you, the draughtsman, in the right direction and that you will find that you can, with practice, make good drawings, statements about what you sense and see out there.

## **Why Geometric Forms?**

We have been looking at simple geometric forms, rectangular, square, cylindrical, circular, forms made of planes, not very complex nor have they been organic forms. To look for the geometry underlying more complicated forms would require an understanding and imaginative interpretation of space. Being grounded in the exercises presented so far on line and tone, one should be equipped with those foundational concepts and practices needed to investigate more complicated subjects and environments through what is seen and what can be interpreted.

To do that I leave you with one last concept to tackle what it is you see.

That concept is “Gesture,” that beginning effort explored with a rambling line that you imagine moving through the space to be portrayed. It is a tool at once designed to tackle complex forms and environments that are seen, as well as to make them understandable.

Geometry is at its base and the spaces seen are sensed in the imagination. That beginning impetus is accompanied by a feeling of adventure to investigate and a willingness to attempt an understanding of what at first attracted and is seen.

A determination to not be overwhelmed by complexity is essential.

## **Gesture**

For this very last drawing I chose to investigate a certain chair I sit in while watching television in our den (Fig. 50). Although a single object, several objects could just as well have been chosen. A strong light was focused to shine on the chair from below and to the left.

To begin, I surveyed the entire subject while lightly spinning out a line noting all the parts and spaces perceived, moving continuously (Fig. 49) , not lifting the charcoal stick I was using from the surface. For this drawing I suggest holding the charcoal

stick on its back half, and working lightly, keeping the charcoal held gently in your outstretched hand as though you were shaking another's hand in greeting.

While working you might internalize. Talk to yourself in order to keep alert and present in the work. Tell yourself what you are seeing, what you are measuring, what part you are comparing to another part. And as the work progresses, what kind of light and dark patterning you are seeing and what concepts you are planning to use in interpreting what you see. This is like seeing for the first time, and it is very personal.

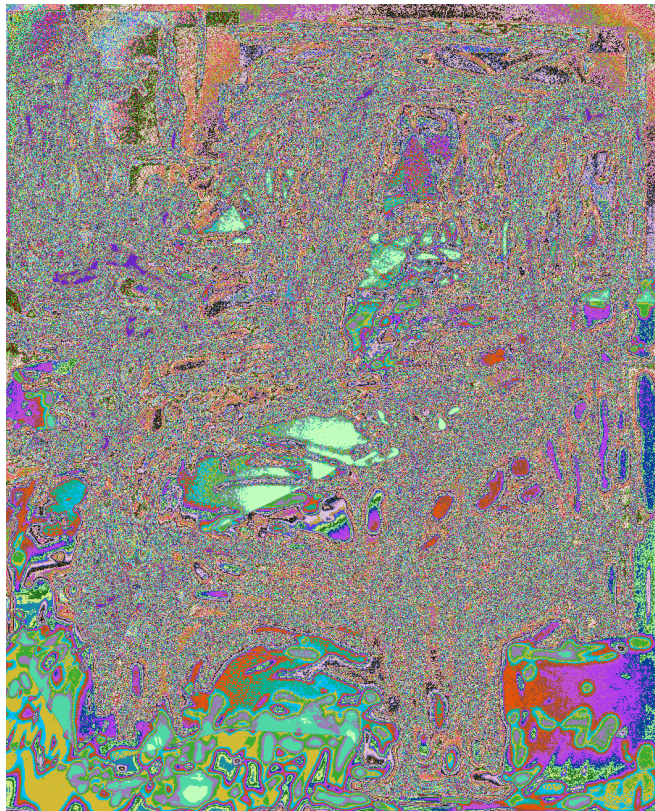


Fig. 49





Fig. 50

What you select and what attracts and what you choose to see will probably in some way not be what another sees. Spend about five minutes, no more than ten, investigating the subject you have chosen to draw with this spun line, whether it's one, two or four objects.

You've now created a very personal record, perhaps understandable only to yourself, but nevertheless a template upon which to build giving form to your investigation: first with

delineation in line and then with the breakdown of that linear structure, finding, creating and articulating one of tone, which will in the end cumulate in a structural statement of both line and tone. After twenty minutes of work a drawing will most often emerge, one you will recognize as such (Fig. 51).



Fig. 51

If you judge your drawing to be satisfying, great! If not, which might more than likely be the case since you may have at this point developed a restless eye, then rearrange the subject, or view the subject from another point-of-view and so begin your



investigation again.

It is my hope that seeing and drawing will have become for you a never ending process. And that perhaps you will begin, if you don't already, read drawings as the statements of observation that they are, done by a draughtsman from a particular point of view, certainly not the objects themselves.

Practice is what keeps vision attuned to the reality of what is seen; that is the dictum of this handbook. So may the statements you make with your very own observations, as recorded by your very own drawings, grow in the clarity that your judging eye can create.

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