Good Eye

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Fig. 1.1 Traditional artists sometimes spent months sketching these simple shapes under different light conditions.

SECTION I

Chapter 1

Things We Can't Unsee



t's a given in every creative pursuit. If you want to get better at your craft, make it a habit to look at and study good work. Good writers read lots of great writing, serious architects study great

buildings and artists glean lessons and inspiration from the masters. This is also solid advice for anyone interested in design. Look closely at good work, a lot of good work, especially work that might not align with your aesthetic. This is not about learning to duplicate or imitate, it's more like prospecting for gold. Yet this advice has a built-in problem. If you are just starting out, what, exactly, are we searching for when we examine good work? A masterful piece of furniture, no matter how humble or simple, might contain enough gold nuggets to fill a notebook. Not to worry. If something is truly excellent, you should be able to glean some lessons that apply to where you are today. You can return to that same piece a few years from now and gain more insight because you can see and appreciate it more.

In the 10 chapters in this book we are going to walk you through many examples of looking deeply at good work. We'll be looking at each example with a designer's eye and perspective. In fact we'll be looking at most of these masterworks through the filter of a design process. The process itself breaks a design down into the essential parts and how they fit together from the big broad brush strokes to the tiniest details. Our vision is that learning to see great work through this design-process filter will help you to enjoy and gain insight from work far beyond the scope of this book. We'll begin by looking at how traditional artists and designers learned to train their eye.

Learning to See Simple Shapes

Beginning art students have a training regimen using charcoal to draw cones, spheres and cubes.

The goal is to understand how light and shadow fall on simple shapes – a fundamental property you must see before painting with color. This intense study also helps train the eye to see those simple shapes woven into everyday things, such as a human face or a building. Once that deeper understanding of light, shadow and simple shapes is gained, it can't be unseen. In fact, an artist will tell you they don't paint a tree or a horse. Instead, they paint simple shapes and use color to imagine light and shadow falling on those shapes.

That's what this book is about. Helping you to see things differently. We deconstruct historic furniture pieces not so you can see a side table or bookcase. It's so you can see the underlying shapes and patterns woven into the design beneath the surface. The beauty of unlocking these shapes and patterns is that you quickly realize they aren't tied to a furniture style of a bygone era. They're actually timeless lessons that can inspire ideas for the modern woodworker.

Formulas vs. Forms

If you are interested in formulas or recipes to understand design, this book is not for you. We unveil **forms**, not formulas. In a nutshell, we've learned there are two strands that run through our design tradition that goes back to antiquity. Those two strands together are the Rosetta stone that unlocks the structure woven into historic designs.

The first strand is proportions, or more simply put, patterns that appeal to our inner sense of beauty. Much of this book will seek to clarify patterns that are timeless and still apply to contemporary work. In many cases, we will share some common proportional schemes that artisans used to tackle a design problem.

In general, traditional artisans used proportions to break up a surface to create a flow. They almost never used a grid, or a long string of identical spaces. Instead, they often placed elements together that played off one another, like in the simple carv-



Fig. 1.2 The proportional key above this simple carving pattern of beads and rods shows a proportional sequence of 3:5:3:5. That pattern woven into this carving adds rhythm and gives the design a sense of life.



Fig. 1.3 Besides providing an underlying structure, a rectilinear form helps the designer form a baseline to generate graceful curves.

ing sequence shown below. These patterns can be quite valuable today for roughing in a design. But don't think of them as something to be followed rigidly, rather think of them as a good spot to launch your boat into the river.

If the first strand is proportions, the second strand is geometry. Not the sort of geometry you associate with mathematics but a simple version we've dubbed **artisan geometry**. It's used to establish the forms that undergird a design – a skeleton just beneath the surface.

Seeing Simple

Albrecht Dürer, one of the great 16th-century artists, made famous an iconic font. Versions of his designs for letters can still be found in use today.

This is a great example of learning to look past an object and see the simple shapes that make up the form and the design as a whole. Look at his drawing for the letter "M."

Ignore the letter itself. Instead focus on the shapes that form and define this design. Note that it's bounded by a square. That's what we call **form** because it forms the simple shape, in this case a square, that governs the overall design. Formation is the first stage in the design process. That form is then **defined** by three triangles that are nested



Fig. 1.4 Like many artists in his day, Dürer had a deep understanding of geometry and how it lies behind everything we see.

together inside the square. Those triangles define the major elements of the design, which is the second stage of the design process. Once defined, the composition is refined. Some call this dialing into a sweet spot, the third and final stage of the design process. In this case, the legs of the triangles vary in thickness to give a sense of rhythm. Then, the top

Dürer Letter Designs

Here are some additional letter designs from Albrecht Dürer. The overall form for all letters is a square. Note how simple shapes define the space inside the form. Then look closely at the refinements for each letter. One other thing to and bottom of the vertical legs terminate in partial circles to give the composition a sense of flow and help it to connect with adjacent text. Finally, a tiny refinement: The apex of the middle (upside down) triangle where it touches the base of the square is not centered in the square, but shifted slightly to the left. This small tweak helps give the design some life

see: Look at how on the letters A and N, a small bit spills out beyond the overall governing form. This happens in furniture design also. At times the crown moulding on a cabinet may spill outside the overall rectangle that governs the form.



and rhythm. Once you see this, you can't unsee it. You no longer think of it as a letter "M" but as a collection of simple shapes and refinements.

A Development Process

Looking at Dürer's letter "M" walks you through a development process to organize a design. This process dovetails with how our vision works and how we connect with things spatially. A good way to understand this is to think about our ability to see objects from different distances.

If you spy someone from across a large room, you wonder if they're a friend, but the distance is too far to make out much more than the general form or shape of their face. Human faces all share a similar form, an oval that outlines the face. This ability to visually key in on simple shapes from a distance is something our ancestors used to survive in a hostile landscape. Is that patch of dark brown in the distance a moose or a grizzly bear? Something we can eat or something that will eat us?

Back to our friend across the room. As we move closer, our vision shifts from that simple oval shape. We begin to see the major divisions inside that form. In the case of a face, we notice (if we know how to look) the eyeline cuts across that oval about halfway between the top of the head and the tip of the chin. This corresponds with the **define** stage where we break the overall form into smaller internal shapes.

Finally, we get close enough to shake hands. All the detail in the face, nose, ears, and cut of the jaw can be seen clearly. We recognize Ruthie, an old chum we haven't seen since high school. That closeup view is where we can see detail. This is what we call the **refine** stage. We look at the small differences in the details.

Throughout this book, we'll be deconstructing historic furniture examples to uncover important lessons about design and linking these examples to the design process. In most cases, we don't give an exhaustive step-by-step look at how the piece was originally composed. We may show the overall form of the piece, then focus on a particular lesson that is hidden within. Point being, we don't need to show every step in how someone designed a work (which would be a guess on our part anyway).

We have covered this development process in step by step detail in two previous books, "By Hand & Eye" and "By Hound & Eye." Yet, it's helpful to have a clear understanding of the steps or stages of the design process to understand what we are seeing. We'll be looking at and walking through the mind-set used by pre-industrial artisans. No one can be certain this is how it was carried out in all cases, but once you become familiar with geometry and proportions, all the arrows point in this direction. This process applies to any furniture form that has an underlying rectilinear form. Note: Many traditional designs that are dominated by curves, or look to our eye to be non-rectilinear, actually have a simple rectangle or square form just beneath the surface.

Quick & Dirty vs. Detailed

The first phase of organizing a design is **forma-tion**. This is that view from a distance that involves developing the overall whole-number-ratio rectangles that make up the front, sides and top of the form.

The second phase is to **define** the major divisions and simple shapes inside the overall form. We are stepping closer so we can begin to rough in the big pieces. We develop the location and size of major elements such as aprons, plinths, doors, drawers, posts and large voids. Most of what we are sharing in this book is the result of years exploring historic furniture pieces with dividers to uncover proportions. Jim Tolpin did most of the deconstructions we share in each chapter, some of which



Fig. 1.5 Our ability to visualize at different distances is baked into how we see our world.

were challenging to decipher. One of the side benefits we've gained is that once you become familiar with proportions, you can do a quick-and-dirty look to grasp a design. Often, a design has some big proportional brush strokes that are easy to see. The overall form might be divided into halves or thirds or quarters with the top third assigned to the case, and the bottom two-thirds to the open space below the case. It's not a stretch to think that even a young apprentice could look at a new furniture design fresh off the ship from London, and quickly understand at least the big overall proportions.

Yet, if you want to dive deeper to uncover how the details in the design are woven together, we have to understand how they used proportions to create music for the eyes. A big key to this is to understand a concept called a **module** and how it was used. Traditional artisans selected a module that they could use to tie a design together proportionally. Sometimes they selected an element in a design and



Fig. 1.6 Often the simplest route to break up a form can lie hidden in plain sight.

Deconstructing a Historic Form

S o you want to take a stab at unpacking a historic form.

This is easier to learn by doing than by reading about it. With that in mind, here's a drawing of a wall cabinet that uses pre-industrial geometry and proportions to create it. Take some time with a pair of dividers to see if you can unpack the proportional structure.

1. Begin by trying to discover the overall rectangle that underlies the form. Step off the overall height and width of this piece using trial and error to identify the overall form. Hint: Often the sections of moldings that extend out beyond the case are not part of the overall form. Obviously this is a rectangular form – not a square with a ratio of 1:1. So you are looking for a simple rectangle such as 1:2, 2:3, 3:4 etc.

2. Go after the low-hanging fruit. By this we mean, see if you can identify the module. It's usually one element that ties all the other elements together. In furniture, it's often an element that is a simple division of the overall height, i.e. one-fourth, one-fifth, one-sixth, oneeighth etc.

3. Once you find what you think might be the module, use your dividers to see how other elements relate to the module. It's that simple.



used that as the module. Ancient architects used the diameter of the stone columns as their key or module to the design. On smaller objects such as furniture, they generated a module by stepping off the height of the front elevation into a desired number of equal-length portions, which we call **parts**.

One of those parts is designated the module and is used to locate and size, or, in other words, **define**, all the major elements inside the form. The number of divisions stepped off is arbitrary, but you'll get a feel for it as we deconstruct a number of historic pieces. Every element in the design will be a multiple or a simple fraction of the module. The beauty of a module is this: It's a simple way to size and locate elements in a design and tie them all back proportionally to the overall form.

Our third and final phase is that close-up view where we **refine** smaller details in a design. We adjust or dial in that rough design to a pleasing sweet spot. Many of these small refinements are simple proportional tweaks on a small scale, much like we did when defining a design.

If some or all of this development process is unclear, we'll briefly touch upon and clarify these steps as we walk through the historic deconstructions.



Fig 1.7 You can think of stepping off a module as creating a custom proportional scale, specific to this specific form.



Fig. 1.8 You could think of a module as a ruler. But it's a ruler tied to internal proportions, not to an external numerical standard.

Fig. 1.9 This small refinement, a chamfer on the edge of a tabletop, gives the impression of lightness. The chamfer in this case occupies one-fourth of the thickness of the top.

6

Furniture Families

Before we dive into individual furniture examples, it's helpful to look at furniture at a basic level. Furniture can be roughly divided into two groups or families, platforms and containers.

All the furniture in the platform family have one thing in common. They all are sized directly to the human frame. The height of all these platforms corresponds to our height and must mesh with it. Thus, chair and table heights will dovetail with a comfortable sitting, eating or working height, such as in the case of a workbench. Secondarily, all the other elements like legs will have a connection to how we think about the human body. Our ancestors looked to the human body as an ideal for understanding proportions. Baked into that outlook was the idea that every part in a human body must be linked proportionally with parts next to it and to the whole. Thus, legs on a table aren't proportioned directly from a human leg, but in some sense they



must relate to parts next to it as well as to the design as a whole. That's why stout legs are appropriate on a workbench and more delicate legs on a side table (Fig. 1.13). Over time, as you play with proportions, you'll develop a sense for what works.

Containers begin with a linkage to what they are designed to store. You can think of them as little special purpose houses. They are designed around the sizes of books or shoes or a collection of hand tools. However, they all have that secondary connection to the human form of needing to dovetail with adjacent elements as well as the overall design. They may be elevated on legs to give easier access so we don't have to bend all the way over to get something from a bottom drawer. In addition, they often have a third layer of proportions to consider. They may be sized to complement a room interior, which if you drill down far enough is sized to the human form. They also are designed to fit through an open doorway when moving them from room to room. Doorways are, in height and width, generally sized to the human body, except in cathedrals, the house of God, which are the exception. So, platforms and containers are both linked to our bodies in multiple layers.



Fig. 1.13 Each of these legs are proportioned to look natural to the piece they are supporting.

Overview

This book is organized around this development process of forming, defining and refining. Section I, chapters 1 and 2, focuses on the development process itself. This chapter serves as an overview while chapter two dives into the details of that process so you can put the lessons to work as you go through the book.

Section II, chapters 3 through 6, dives into the deconstruction of historic pieces and looks at **form** and how basic forms were **defined** into major elements. We show how artisans of the past stepped off proportions with dividers to create the simple rectangles that govern a **form**. We look at historic work to understand how artisans organized a tall vertical form such as a bookcase, as opposed to how they tackled a low horizontal form like a hall table. These insights can be applied directly to problems in contemporary work.

In Section III, chapters 7 through 10, the focus turns to **refining** elements in a design. We look at how designers took a rough design and tweaked the proportions to unify the composition to create a pleasing aesthetic. You'll see examples of how to dial into the sweet spot as we finalize a design.