09 Contour Bias

Friday, February 14, 2020   3:18 PM

Admin
Sketching cubes
Universal Principles of Design: Contour Bias

Admin:

Final (Exam) Expo will be Sunday May 3, 7:30-10 pm in the Idea Forge. Snacks, open to the public. Invite your friends and family.

Great projects, and informative reports. However NO CREDIT WITHOUT FEATURED IMAGE. Use Worktrade to get help, or see me or Behruz if you are still having trouble uploading. Yes, you may have to make an appointment.

Yes, OK to use content from previous posts in Upcycle Final Report, but please integrate it into your narrative. No more future tense.

Highlights from guest speakers?
Greg Whiting, Aesthetics Game
Hope Saska, museum and design movements
John Bakus, sketching
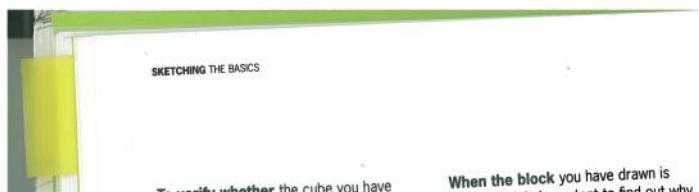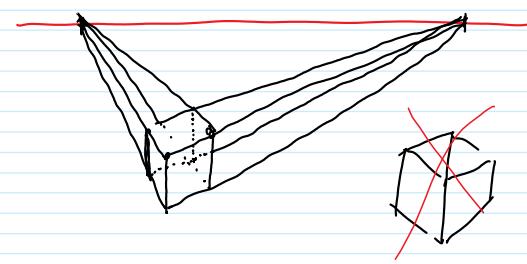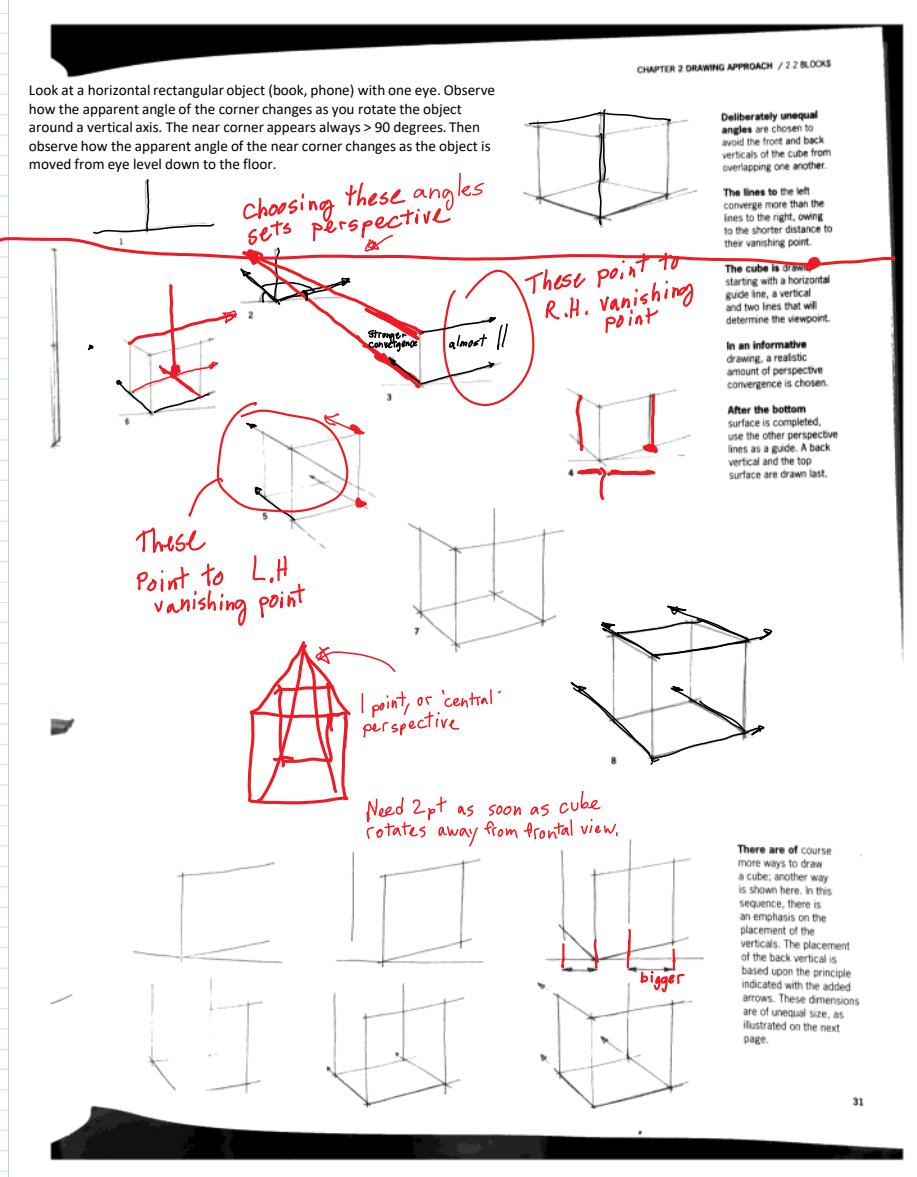
To verify whether the cube you have drawn is in correct perspective or not, several quick checks can be made:

- Compare the shortening of the top surface with that of the ground surface; the top surface should be 'flatter', as it is closer to the horizon (see A, A').
- Check the two angles of the ground line with the horizontal line; they should differ, as should the width of the two vertical sides (see B, B').
- The most foreshortened vertical side (here on the left) should be much smaller that its opposite side (see C, C').
- Only in the case of a cube, the corner on the most foreshortened side should be 'higher' than that of the less foreshortened side. (D, D')
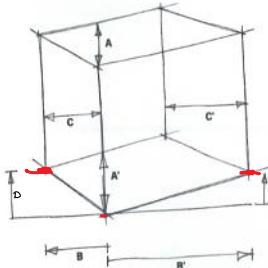
When the block you have drawn is incorrect, it is important to find out why, and try to avoid making the same mistake again. Here are some common beginners' mistakes. Starting at the top left, there is a block shape (1) using parallel lines instead of perspective convergence, an axonometric image. Next to it is a shape (2) where the amount of convergence is estimated incorrectly. The vanishing point on the left is closer, so lines in that direction should converge more than those in the right direction, not the other way around. Block (3) shows a one-side frontal view, so it should actually be a central perspective, and not show the left side. It can easily be avoided using a horizontal guide line as you see next to it.
The last block (4) shows an incorrect perspective of the ground surface. It may help to extend and use the lines already there as a guide when you draw the ground surface.
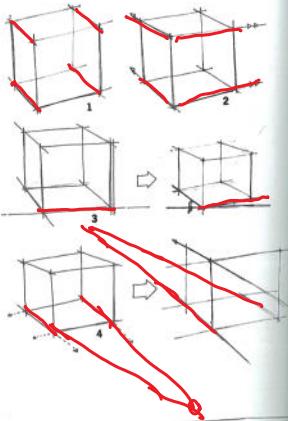
As horizontal surfaces of a column get closer to your horizon, the more foreshortened they become.

**As vertical surfaces** get closer to the vanishing point, the more foreshortened they become.
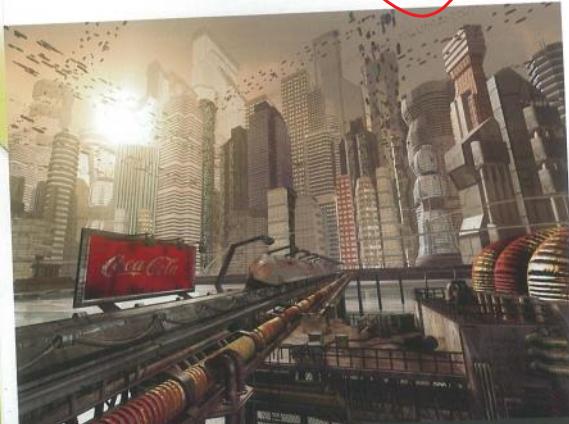
Learning to draw a cube at different angles will give enough experience to create a correct-looking perspective drawing. Keep this rule in mind: never exceed the measurement of the closest vertical. The width of the book's pages appears much smaller and foreshortened as the pages turn.

In this picture you see perspective distortion due to the fact that the third vanishing point is above the horizon, but also used incorrectly for every vertical below the horizon (see 3-point perspective rule). It is, however, subordinate to the spatial effect due to the effective use of perspective colouring and contrast.
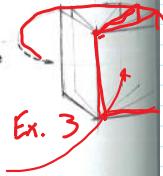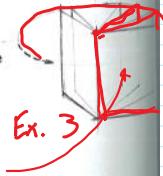
Homework exercises. Do these in your sketchbook for practice. Not graded, but you'll be asked to compare your work with neighbors in class.
Prerequisite practice: you need to be able to draw straight lines at any angle. You can use a straight edge, but try to gain muscle memory and work towards free hand drawing
Exercise 1: Draw a stack of horizontal and
Exercise 2: vertical surfaces. In both, note the foreshortening, how a surface narrows as the surface rotates and moves away from the frontal, or central perspective.
Exercise 3: draw a book standing up on a surface, with pages spread out all around
Exercise 4: Draw a rotating cube in flip book format, maybe at the corner of your sketchbook. Have something come out of the cube at the end for fun.

Universal Principles of Design (UPDes)

Book and video series, available on Linked In Learning /Lynda.com

Access LinkedIn Learning from MyCUInfo

Faculty, Staff, and Students should access LinkedIn Learning via MyCUInfo.

- After logging in, click the **CU Resources** dropdown menu.
- Select **Training**.
- Click the **LinkedIn Learning** tile.

Many good functional design rules, based on ergonomics, psychology, market research; what do people do when they interact with designs? Text has references that video omits.
And some good aesthetics rules, based on research on human likes/dislikes.

Today, Contour Bias (no LIL video available)

Contour Bias

A tendency to favor objects with contours over objects with sharp angles or points.

When presented with objects that possess sharp angles or pointed features, a region of the human brain involved in fear processing, the amygdala, is activated. Likely a subconscious mechanism that evolved to detect potential threats, this fear response suggests that angular features influence the way in which objects are affectively and aesthetically perceived. Indeed, in experiments where subjects were presented with otherwise similar angled versus contoured objects (e.g., round-faced watches versus square-faced watches), subjects strongly preferred the more rounded, contoured objects. In some of these experiments, brain activity was observed using functional magnetic resonance imaging (fMRI) as subjects indicated their preference. The degree of amygdala activation was proportional to the degree of angularity or sharpness of the object presented, and inversely related to object preference. These effects were observed in both male and female subjects, and suggest an innately rooted contour bias in humans.[1]

The picture is more complex, however, than to simply infer that all designs should be made round to increase their appeal. Objects used in the experiments were emotionally neutral. For example, a baby doll was not used for a contour object as it carries with it a set of positive emotional associations and biases, and a knife was not used for an angular object as it carries with it a set of negative emotional associations and biases. It is clear that absent these competing biases and associations, the contour bias is a relevant influencer of overall perception. The degree to which the bias influences perception when competing biases (e.g., baby-face bias) or semantically relevant perceptions (e.g., criminals use knives) are at play is not yet clear. Additionally, objects with pointed features elicited stronger activations in regions of the brain related to associative processing, meaning that although the angular objects were less liked, they elicited a deeper level of processing than did the contoured objects—they were, in effect, more interesting and thought-provoking to look at. This seems consistent with the kind of innate response one would expect from potential threats and suggests a tradeoff between angular and contoured features. Angular objects are more effective at attracting attention and engaging thought; contoured objects are more effective at making a positive emotional and aesthetic impression.

Consider the contour bias in all aspects of design, but especially with regard to objects and environments that are emotionally neutral. Use angular and pointy features to attract attention and provoke thought. Use contoured features to make a positive first impression. Generally, the degree of angularity corresponds with the strength of amygdala activation, so ensure that the angularity of design elements aligns with the design objectives.

See also Archetypes, Baby-Face Bias, Freeze-Flight-Fight-Forfeit, Hunter-Nurturer Fixations, and Threat Detection.

[1] The seminal work on the contour bias is "Humans Prefer Curved Visual Objects" by Moshe Bar and Maital Neta, Psychological Science, 2006, vol. 17. See also "Visual Elements of Subjective Preference Modulate Amygdala Activation" by Moshe Bar and Maital Neta, Neuropsychologia, 2007, vol. 45.

From top left to bottom right, the Alessi il Conico, 9093, 9091, and Mami kettles arranged from most angular to most contoured. At the extremes of this continuum, the il Conico will be most effective at grabbing attention, and the Mami will be most liked generally. The 9093 and 9091 incorporate both angular and contoured features, balancing attention-getting with likeability. Historically, the il Conico and 9093 are Alessi's best-selling kettles.

Pointy objects are scary, they activate the amygdala, the part of the brain that processes fear (flight vs fight)
Pointy objects command attention and provoke thought

Rounded objects are more liked.

Where do you see this play out? Cars, furniture, architecture, other products?

What did you want for your Upcycle project: to be liked or be thought provoking?