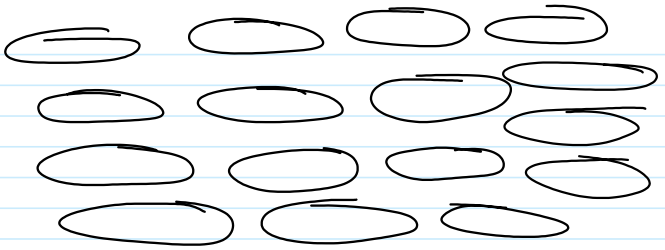
23 Color and Anthropomorphic Effects

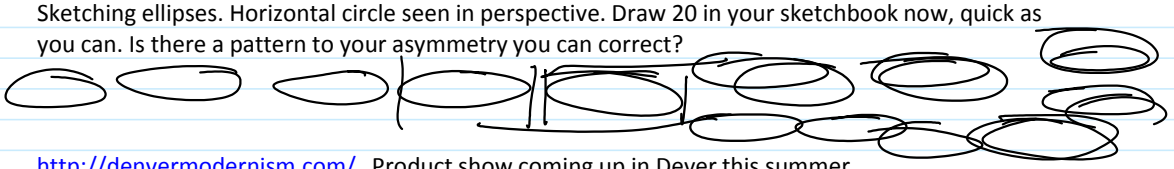
Saturday, February 20, 2016 10:51 PM



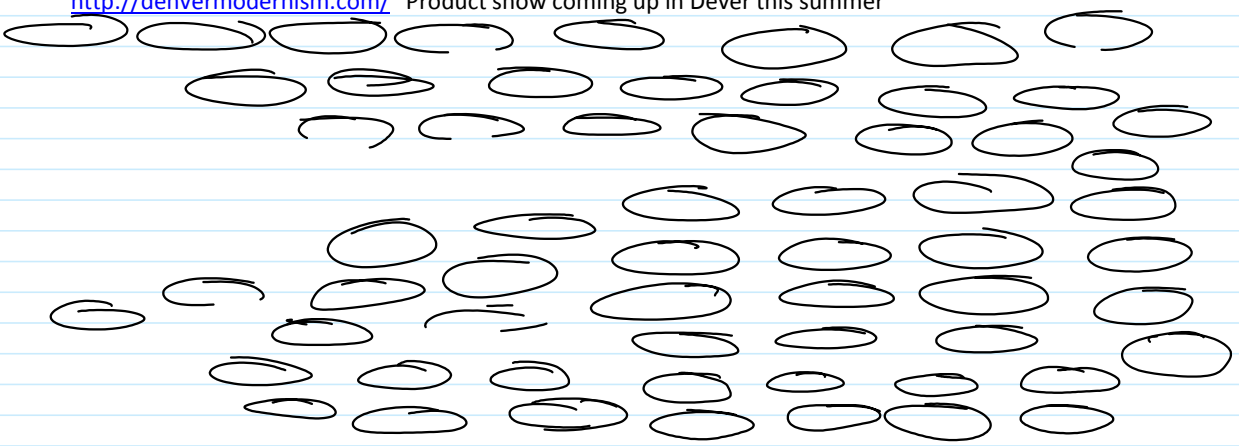
Today:

- Sketching
- Color
- Anthropomorphic Effects
- Blog: Timeline for finishing

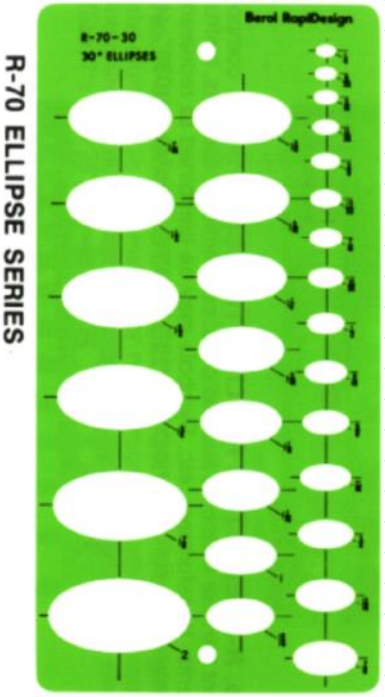
Sketching ellipses. Horizontal circle seen in perspective. Draw 20 in your sketchbook now, quick as you can. Is there a pattern to your asymmetry you can correct?



http://denvermodernism.com/ Product show coming up in Dever this summer

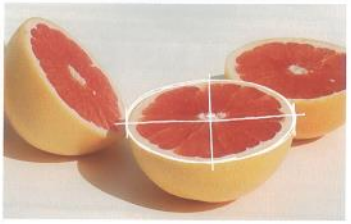


Doodling homework for this week. Sketch ellipses whenever you get a chance. Try to correct your common errors. Maybe draw on a template for practice?

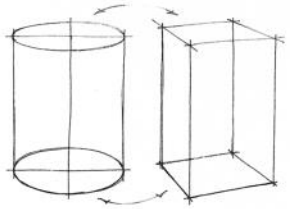


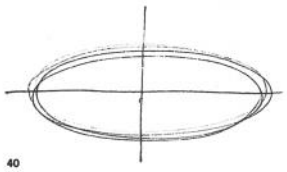
2.4 UPRIGHT CYLINDERS

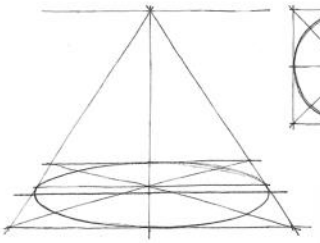
A circle drawn in perspective is represented by an ellipse, a mathematical shape. Useful rules are related to their axes. The major axis is the longest line possible, while the minor axis divides the major axis into two equal parts. The crossing of those two lines is exactly 90 degrees at the middle. Drawn in perspective, the perspective centre of the circle is of course not through this point, but, depending on the amount of convergence, somewhat behind this point, as shown in the example. If you cut a grapefruit in two equal halves you can see this difference.

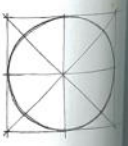


To draw a cylinder you need a centre line, two ellipses and two vertical tangents on the outside. The base ellipse will be rounder because of perspective. You may compare it to a block shape but you do not need to draw a block and construct a cylinder within this block.

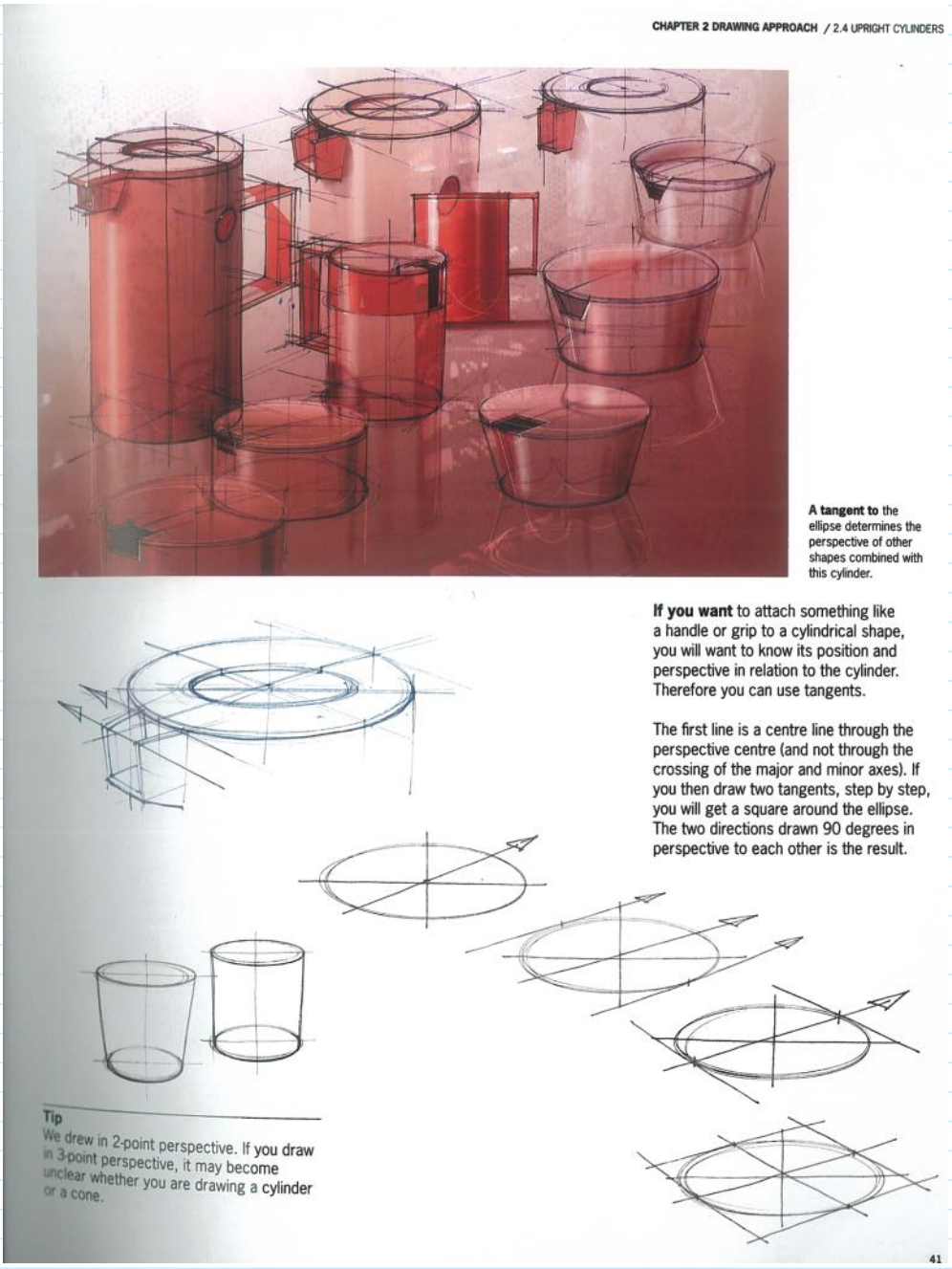








Ellipses are drawn by repeating the shape several times. This will not result in a perfect symmetrical shape, but it emphasises the other main character of ellipses: the fluency of the shape.



Color

Nomenclature

- Digital, photoshop
- Pantone https://en.wikipedia.org/wiki/Pantone

Additive/subtractive physics

Other aesthetics of color

Texts

Color

Color is used in design to attract attention, group elements, indicate meaning, and enhance aesthetics.

Color can make designs more visually interesting and aesthetic, and can reinforce the organization and meaning of elements in a design. If applied improperly, however, color can seriously harm the form and function of a design. The following guidelines address common issues regarding the use of color.[1]

Number of Colors

Use color conservatively. Limit the palette to what the eye can process at one glance (about five colors depending on the complexity of the design). Do not use color as the only means to impart information since a significant portion of the population has limited color vision.

Color Combinations

Achieve aesthetic color combinations by using adjacent colors on the color wheel (analogous), opposing colors on the color wheel (complementary), colors at the corners of a symmetrical polygon circumscribed in the color wheel (triadic and quadratic), or color combinations found in nature. Use warmer colors for foreground elements, and cooler colors for background elements. Light gray is a safe color to use for grouping elements without competing with other colors.

Saturation

Use saturated colors (pure hues) when attracting attention is the priority. Use desaturated colors when performance and efficiency are the priority. Generally, desaturated, bright colors are perceived as friendly and professional; desaturated, dark colors are perceived as serious and professional; and saturated colors are perceived as more exciting and dynamic. Exercise caution when combining saturated colors, as they can visually interfere with one another and increase eye fatigue.

Symbolism

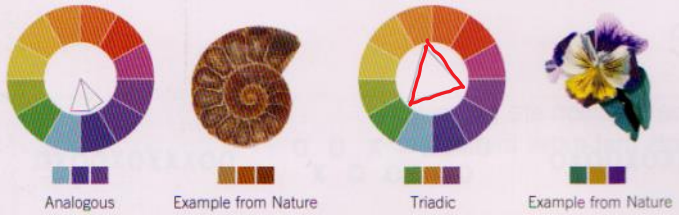
There is no substantive evidence supporting general effects of color on emotion or mood. Similarly, there is no universal symbolism for different colors—different cultures attach different meanings to colors. Therefore, verify the meaning of colors and color combinations for a particular target audience prior to use.[2]

See also Expectation Effect, Highlighting, Interference Effects, Similarity, and Uniform Connectedness.

[1] A nice treatment of color theory is *Interaction of Color* by Josef Albers, Yale University Press, 1963. For a more applied treatment, see *The Art of Color: The Subjective Experience and Objective Rationale of Color* by Johannes Itten, John Wiley & Sons, 1997; and *Human-Computer Interaction* by Jenny Preece, et al., Addison Wesley, 1994.

[2] It is reasonable to assume that dark colors will make people sleepy, light colors will make people lively, and irritating colors will make people irritated. Otherwise, the only observable influence of color on behavior is its ability to lead people to repaint walls unnecessarily. For those determined to try to calm drunks and win football games through the application of color, see *The Power of Color* by Morton Walker, Avery Publishing, 1991.

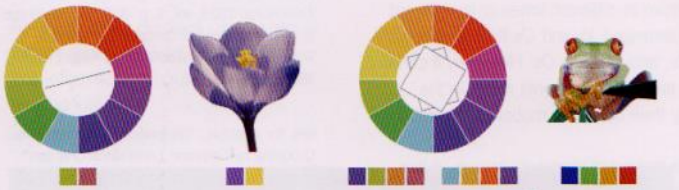
Girl-Boy Pink-Blue preferences are from cultural training. Pink used to be boy color; from diluted blood (red was male color)



Analogous | Example from Nature | Triadic | Example from Nature

Analogous color combinations use colors that are next to each other on the color wheel.

Triadic color combinations use colors at the corners of an equilateral triangle circumscribed in the color wheel.

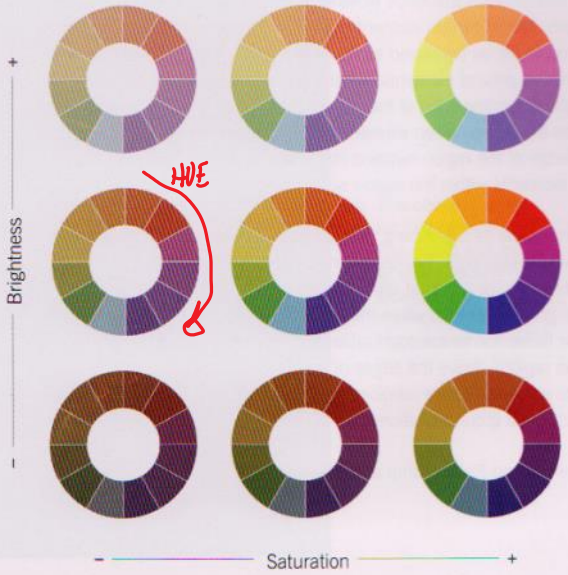


Complementary | Example from Nature | Quadratic | Example from Nature

Complementary color combinations use two colors that are directly across from each other on the color wheel.

Quadratic color combinations use colors at that corners of a square or rectangle circumscribed in the color wheel.

Hues from yellow to red-violet on the color wheel are warm. Hues from violet to green-yellow are cool.

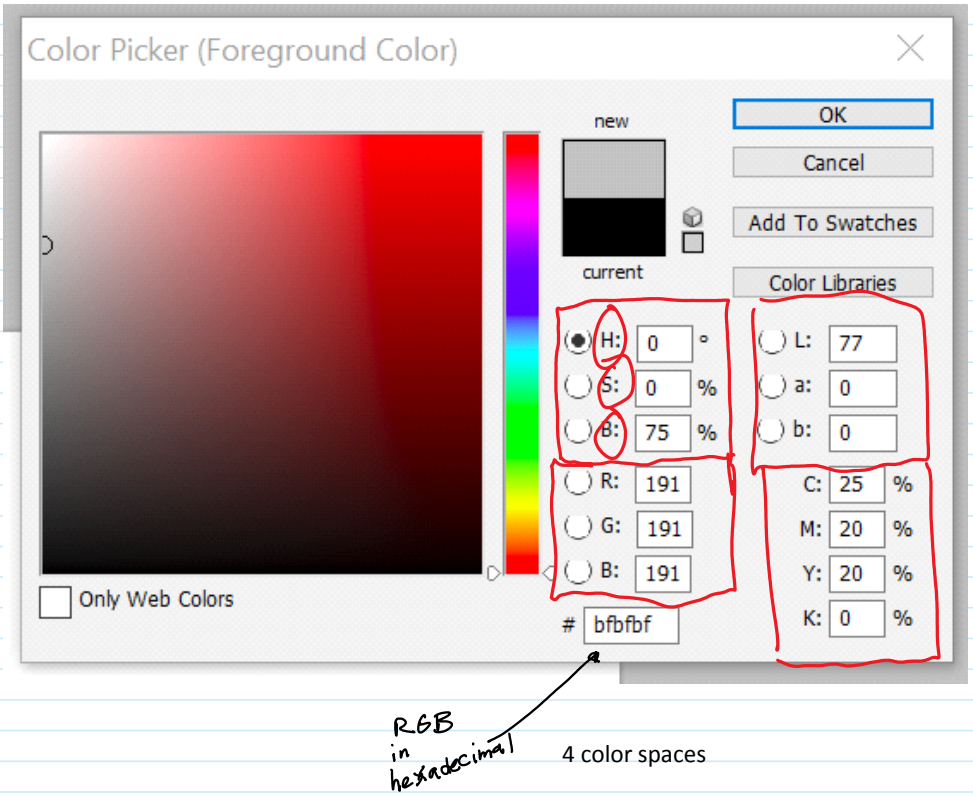


Saturation refers to the amount of gray added to a hue. As saturation increases, the amount of gray decreases. Brightness refers to the amount of white added to a hue—as brightness increases, the amount of white increases.

⇒ HSB color space

Color Nomenclature

Range of colors that can be produced by a technology = gamut
Matching across devices, technologies = color management
From Photoshop:



http://colorizer.org/
Shows conversion between many color spaces. Also shows complementary, triad, square etc. pairings

Another site for choosing palettes, from Olivia: https://coolors.co/

Pantone https://en.wikipedia.org/wiki/Pantone
Another color nomenclature and color management system. Common in design world.

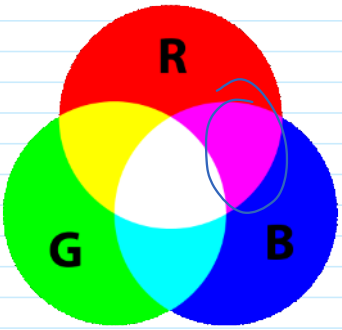
Color of the Year

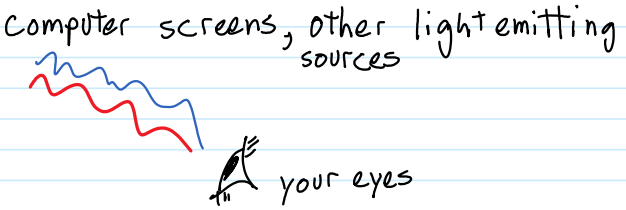
Since 2000,[18] the Pantone Color Institute declares a particular color "Color of the Year". Twice a year the company hosts, in a European capital, a secret meeting of representatives from various nations' color standards groups. After two days of presentations and debate, they choose a color for the following year; for example, the color for summer 2013 was chosen in London in the spring of 2012.[19] The color purportedly connects with the zeitgeist; for example, the press release declaring Honeysuckle the color of 2011 said "In times of stress, we need something to lift our spirits. Honeysuckle is a captivating, stimulating color that gets the adrenaline going – perfect to ward off the blues."[20] The results of the meeting are published in *Pantone View* ($750), which fashion designers, florists, and many other consumer-oriented companies purchase to help guide their designs and planning for future products.

From <https://en.wikipedia.org/wiki/Pantone#Pantone_Goe_System>

Additive/subtractive color

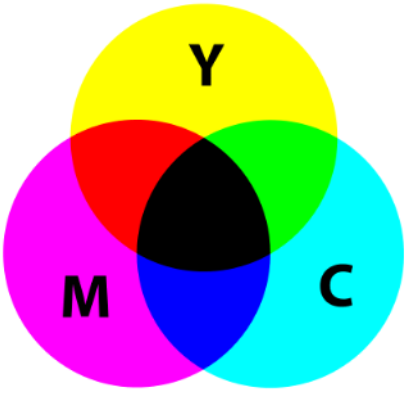
Additive color = light.

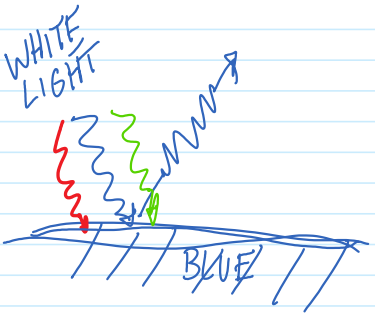




By SharkD at English Wikipedia Later versions were uploaded by Jacobolus at en.wikipedia. - Transferred from en.wikipedia to Commons., Public Domain, https://commons.wikimedia.org/w/index.php?curid=2529435

Subtractive color = surfaces; dyes, pigments, inks. All wavelengths are absorbed except the scattered ones.





By SharkD at English Wikipedia Later version uploaded by Jacobolus, Dacium at en.wikipedia. - Transferred from en.wikipedia to Commons., Public Domain, https://commons.wikimedia.org/w/index.php?curid=3791468

Perception of Color

Classic text:

Albers, Josef, and Nicholas Fox Weber. *Interaction of Color: 50th Anniversary Edition*. -50th Anniversary ed. edition. New Haven Connecticut: Yale University Press, 2013. First edition 1963. $12 paperback

Much has been learned about the physiology of vision; active area of research.
Recommended: Livingstone, Margaret, and David Hubel. *Vision and Art: The Biology of Seeing*. Reprint edition. Abrams, 2008. $20 paperback.

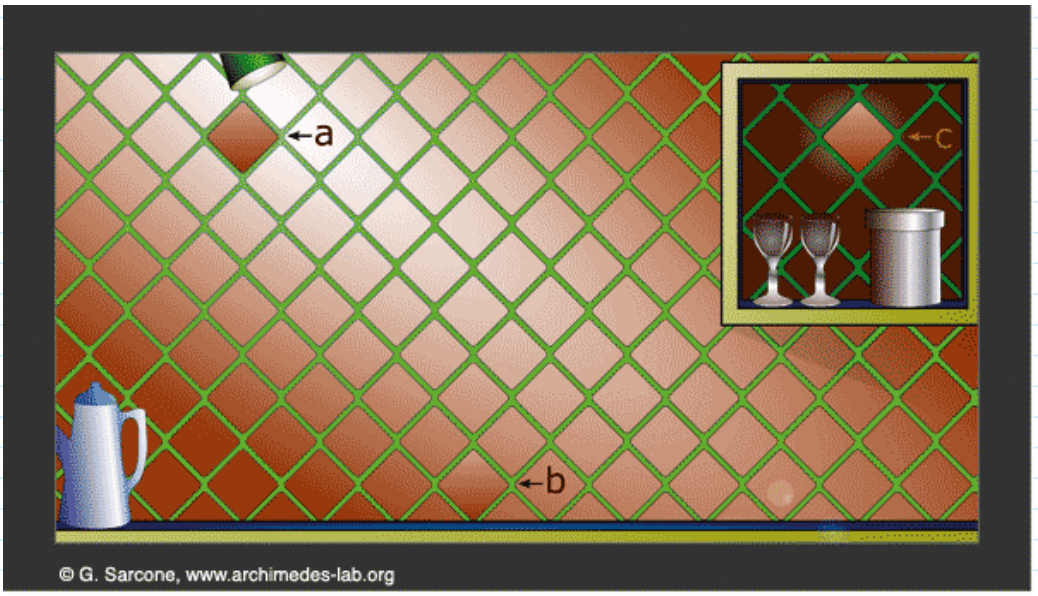
Topics:

- The eye and color vision
- Luminance and night vision
- Neural processing of color information
- Acuity and spatial resolution
- From 3-D to 2-D: Perspective, Shading and Chiaroscuro, Stereopsis
- Illusions of motion
- Color mixing and color resolution
- Digital color

Color perception is HIGHLY VARIABLE among humans

- Remember the blue/gold dress?
- http://www.nytimes.com/interactive/2015/02/28/science/white-or-blue-dress.html?_r=0

Color illusions: http://www.archimedes-lab.org/color_optical_illusions.html



Tiles a, b and c are identical

Are there universal color preferences/responses?

UPD says yes, Black, White and Red Effects. Some references are provided in text, but admittedly few.

Other recent psychology studies say no:
Palmer, Stephen E, Karen B Schloss, and Jonathan Sammartino. "Visual Aesthetics and Human Preference." *Annual Review of Psychology* 64 (January 3, 2013): 77–107. doi:10.1146/annurev-psych-120710-100504.

Abstract

"Human aesthetic preference in the visual domain is reviewed from definitional, methodological, empirical, and theoretical perspectives. Aesthetic science is distinguished from the perception of art and from philosophical treatments of aesthetics. The strengths and weaknesses of important behavioral techniques are presented and discussed, including two-alternative forced-choice, rank order, subjective rating, production/adjustment, indirect, and other tasks. Major findings are reviewed about preferences for colors (single colors, color combinations, and color harmony), spatial structure (low-level spatial properties, shape properties, and spatial composition within a frame), and individual differences in both color and spatial structure. Major theoretical accounts of aesthetic response are outlined and evaluated, including explanations in terms of mere exposure effects, arousal dynamics, categorical prototypes, ecological factors, perceptual and conceptual fluency, and the interaction of multiple components. The results of the review support the conclusion that aesthetic response can be studied rigorously and

meaningfully within the framework of scientific psychology."

Summary

Aesthetic response can be + or -
Art is more than just aesthetic response; cultural, social etc.
Art vs aesthetics: "Perhaps the most straightforward difference
is that significant aesthetic experiences can (and
do) occur anywhere in response to seeing any
sort of object, scene, or event, whereas art is
limited to the subset of human artifacts intended
to be viewed as art, whether in a museum,
a gallery, or one's own living room"
No universal positive response to any specific thing.

Back to UPD: Aesthetics do matter:

20 Aesthetic-Usability Effect http://www.lynda.com/Higher-Education-tutorials/Aesthetic-usability-effect/193717/436485-4.html

Anthropomorphic Aesthetics

26 Anthropomorphic Form
34 Baby-Face Bias (video)
242 Uncanny Valley
240 Top-Down Lighting Bias (video)

Anthropomorphic Form

A tendency to find forms that appear humanoid or exhibit humanlike characteristics appealing.

Humans are predisposed to perceive certain forms and patterns as humanlike—specifically, forms and patterns that resemble faces and body proportions. This tendency, when applied to design, is an effective means of getting attention, establishing a positive affective tone for interactions, and forming a relationship based, in part, on emotional appeal. To explore how anthropomorphic form can be applied, consider the design of three bottles.[1]

The classic 1915 Coca-Cola "contour" bottle, often referred to as the "Mae West" bottle due to its distinctly feminine proportions, was a break with the straight and relatively featureless bottles of its day. In addition to its novelty, however, the bottle benefited from a number of anthropomorphic projections such as health, vitality, sexiness, and femininity, attributes that appealed to the predominantly female buyers of the time. The Mae West comparison is apt, because like the actress, the Coke bottle demanded (and got) the attention of all passersby.

Anthropomorphic forms do not necessarily need to look like a face or body to be compelling. Consider the Adiri Natural Nurser baby bottle. The bottle is designed to look and feel like a female breast, and not surprisingly it elicits the positive associations people have with breastfeeding. The affective tone set by the bottle is one of naturalness and caring. What parent would choose a traditional, inorganic-looking bottle when such a supple, natural-looking substitute for the real thing was available? This, of course, does not mean the bottle performs better than nonanthropomorphic bottle designs, but it does mean the general inference of most people, based on its appearance, is that it does perform better.

Lastly, the Method Dish Soap bottle, nicknamed the "dish butler," brings a more abstract anthropomorphic form to bear. The bottle transforms the perception of dish soap bottles from utilitarian containers to be hidden beneath counters to sculptural pieces to be displayed proudly atop counters. The large bulbous head triggers baby-face bias cognitive wiring, reinforcing its aesthetic appeal as well as associations such as safety, honesty, and purity. Labeling is applied in what would be the chest region, with a round logo on top, giving it the appearance of a kind of superhero costume. It is more than a dish soap bottle—it is a helper, an art piece, and a symbol of sophistication and cleanliness.

Consider anthropomorphic forms to attract attention and establish emotional connections. Favor more abstract versus realistic anthropomorphic forms, as realistic depictions often decrease, not increase, aesthetic appeal. Use feminine body proportions to elicit associations of sexuality and vitality. Use round anthropomorphic forms to elicit babylike associations, and more angular forms to elicit masculine, aggressive associations.

See also Baby-Face Bias, Contour Bias, Uncanny Valley, and Waist-to-Hip Ratio.

[1] Empirical literature on anthropomorphic design is surprisingly nascent. See, for example, "From Seduction to Fulfillment: The Use of Anthropomorphic Form in Design" by Carl DiSalvo and Francine Gemperle, *Proceedings of the 2003 International Conference on Designing Pleasurable Products and Interfaces*, 2003, p. 57–72.

Mary Jane "Mae" West (August 17, 1893 – November 22, 1980) was an American actress, singer, playwright, screenwriter, and sex symbol.
https://en.wikipedia.org/wiki/Mae_West

Adiri Natural Nurser. Designed by Whipsaw Inc
http://www.yankodesign.com/2008/12/04/better-bottle-for-baby-adiri-natural-nurser-review/


petal vent
soft
supple
realistic

The Method Dish Soap bottle (left) designed by Karim Rashid put the Method brand on the map. Though not free of functional deficiencies (e.g., leaking valve), its abstract anthropomorphic form gave it a sculptural, affective quality not previously found in soap bottles. Contrast it with its disappointing replacement (right).