

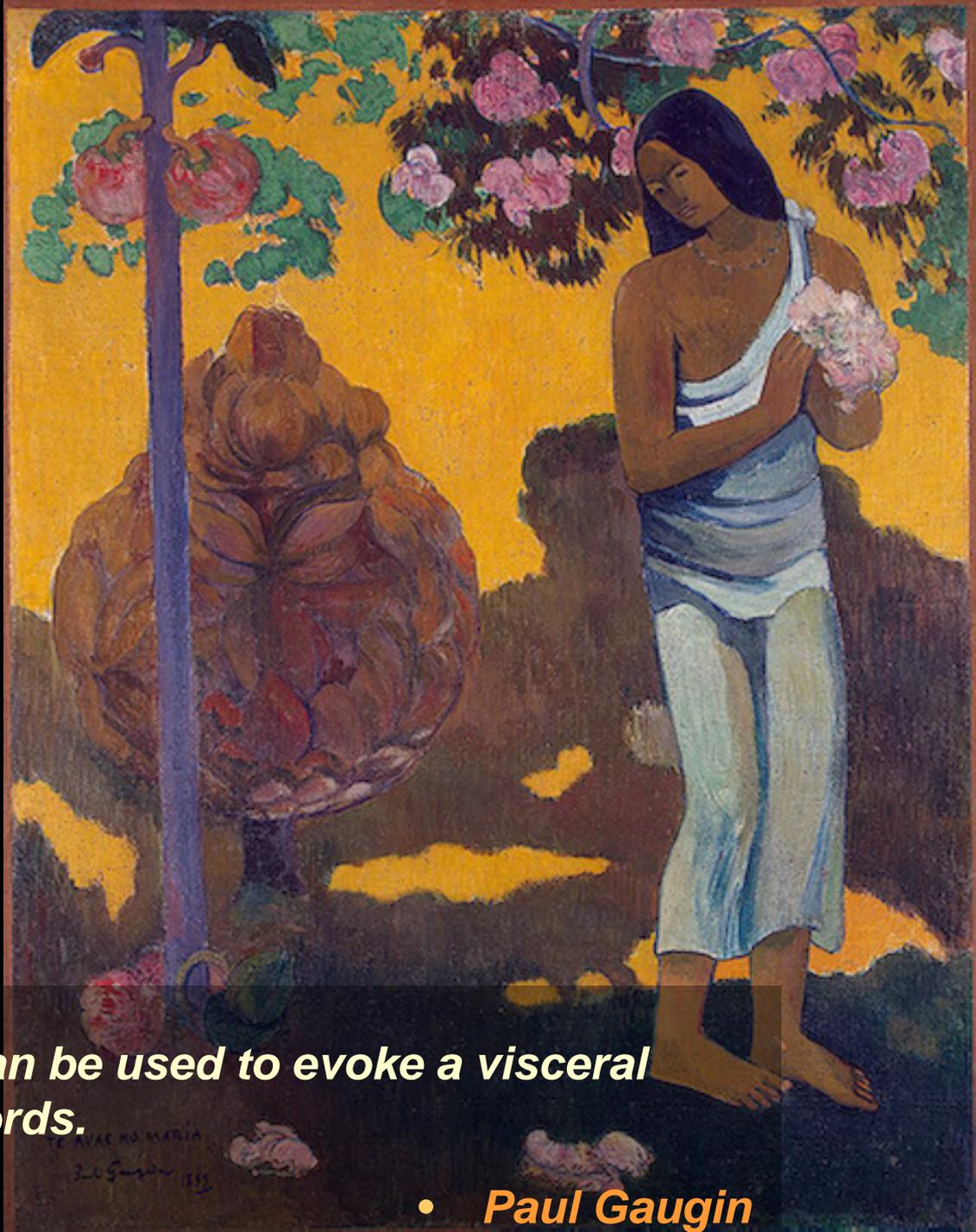
- Ch. 4
Psychological
Effects of Color

*Color
Psychology
Emotion
Personality
Preferences*



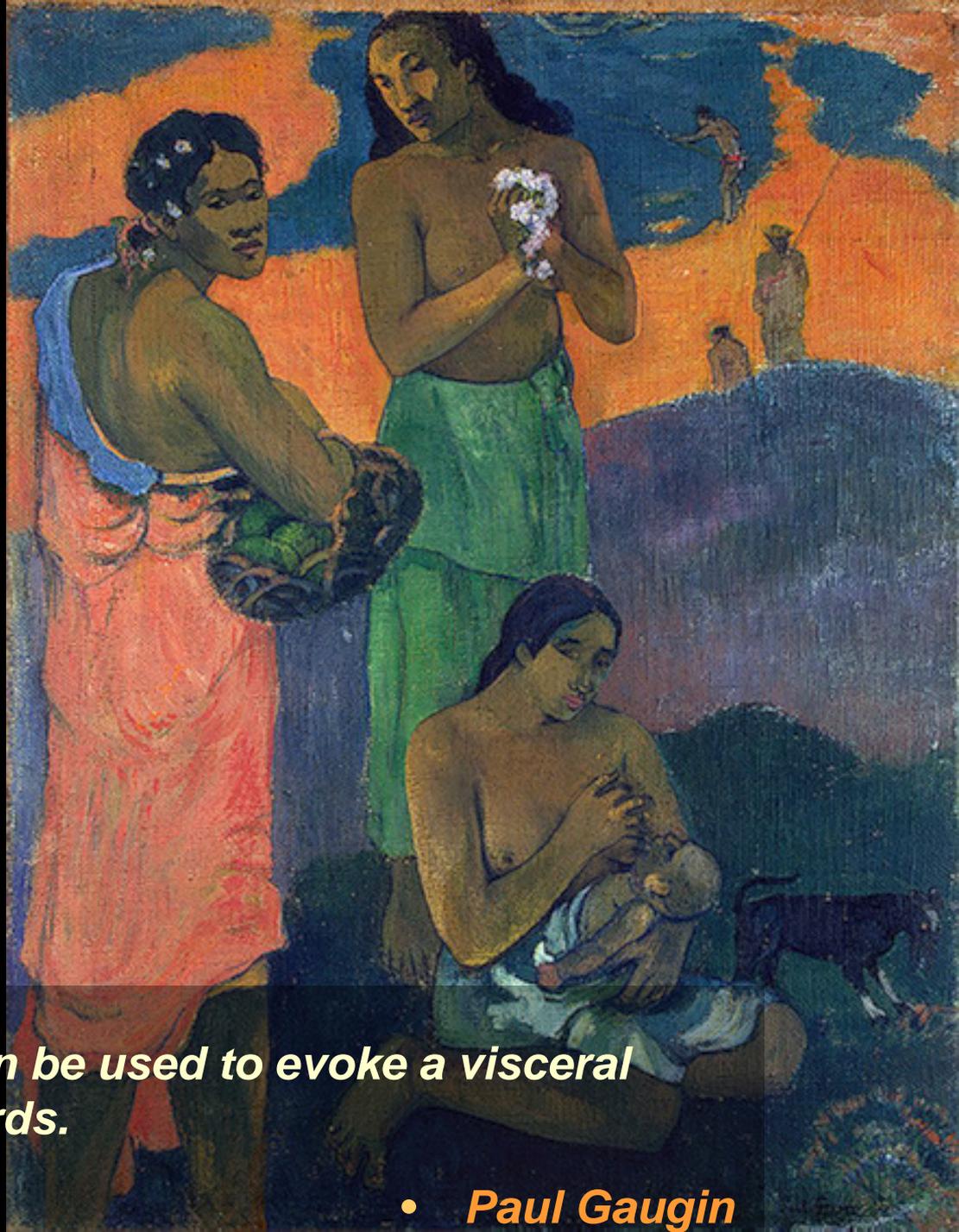
- ***By trial and error, color can be used to evoke a visceral reaction antecedent to words.***

• ***Paul Gauguin***



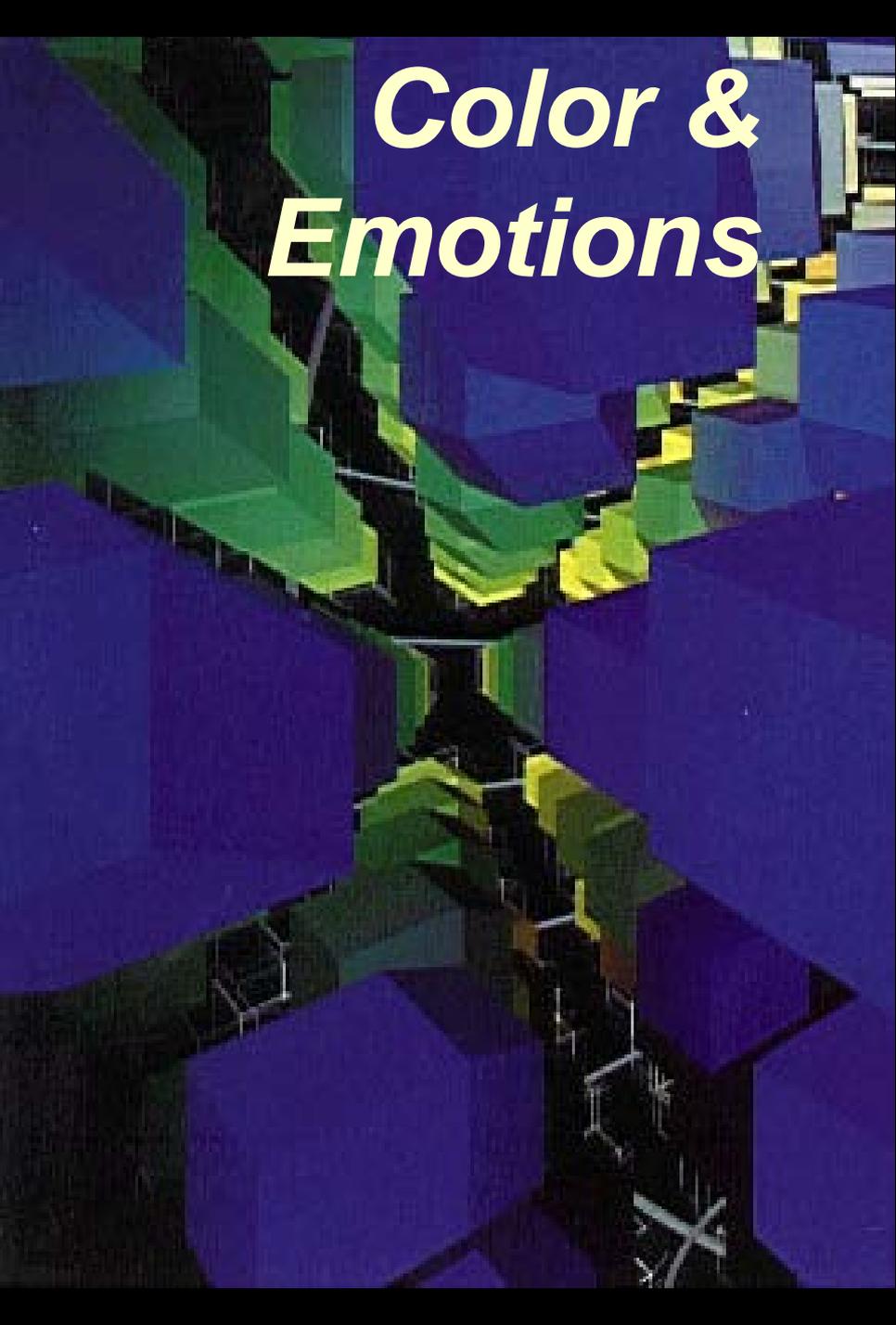
- ***By trial and error, color can be used to evoke a visceral reaction antecedent to words.***

• ***Paul Gauguin***



- *By trial and error, color can be used to evoke a visceral reaction antecedent to words.*

• *Paul Gauguin*



Color & Emotions

- ***What do color preferences disclose about a person?***
- ***What emotions or responses can color evoke?***
- ***What colors tend to evoke particular responses?***
- ***Are color associations universal, personal, or cultural?***

- **Design and Color-emotion:**
conceive viewer-experience *before* selecting color

- Sight is our most important sense when we enter a room.
Colors conveys atmosphere instantly make us feel relaxed or uneasy.

- **Design concept strategy:**
First, decide how you want the room to *feel*.
Consider descriptors that apply. Brainstorm mood words.

Clean	Cozy	Modern	Other Adjectives?
Refreshing	Snug	Contemporary	
Calm	Intimate	Country	
Cool	Bright	Victorian	
Warm	Dim	Sleek	

- **Design and Color-emotion:**
conceive viewer-experience *before* selecting color
- Here are some typical descriptions for different rooms in a home.
- **Bathroom:** clean, refreshing, bright, cool
- **Living room:** warm, cozy, dim, calm
- **Bedroom:** calm, snug, dim, intimate
- **Dinning room:** intimate, dim, warm
- **Kitchen:** clean, bright, warm or cool
- Other spaces?
- *Graphic Design/Marketing/Art/Drama: Consider the same sorts of distinctions for products/services/clients/viewers.*

- **Design and Color-emotion:**
associate colors with emotive qualities
- **Design Concept Strategy:**
After defining the desired atmosphere for a design, associate the description with colors.

• **Clean:**

• **Refreshing:**

• **Calm:**

• **Cool:**

• **Warm:**

• **Cozy:**

• **Snug:**

• **Intimate:**

• **Bright:**

• **Dim:**

• **Modern:**

• **Contemporary:**

• **Country:**

• **Victorian:**

• **Sleek:**

- **Design and Color-emotion:
associate colors with emotive qualities**

- **Design Concept Strategy:**

After defining the desired atmosphere for the room, you need to associate the description with colors. This should get you started.

- **Clean:** whites, creams,

- **Refreshing:** whites, blues, yellows, greens

- **Calm:** blues, blue-greens, lavenders

- **Cool:** blues, greens, lavenders, greys

- **Warm:** orange-yellows, tans, peaches, reds, browns

- **Cozy:** browns, tans, reds, oranges

- **Snug:** reds, oranges, greens

- **Intimate:** reds, yellows, dark blues

- **Bright:** yellows, whites, greens, light blues

- **Dim:** creams, tans, reds, dark blues, olive greens

- **Modern:** whites, blues, greys, bright colors

- **Contemporary:** pastels, light greens, yellows, peaches, light blues, lavenders

- **Country:** blues, yellow, whites, reds, greens

- **Victorian:** dark colors, reds, greens, whites

- **Sleek:** greys, white, blues

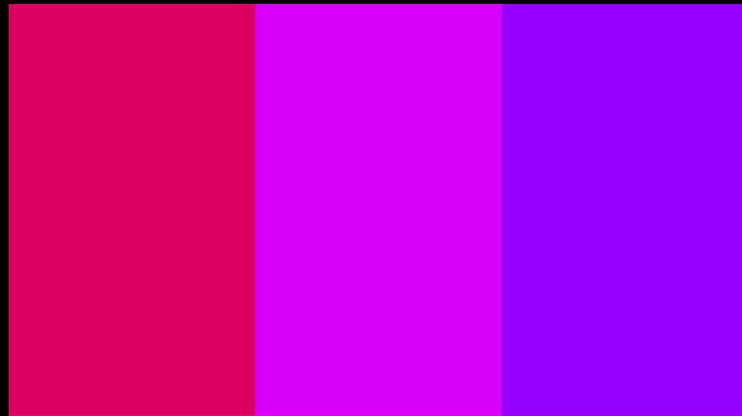
- **Design and Color-emotion:**
conceive viewer-experience before selecting color
- To help in deciding which colors will create your desired atmosphere, think of situations that match your descriptions.
- **Color is very personal, and your perceptions and associations are influenced by your past experiences.**
- **Clean:**
Can mean sterile like a hospital with lots of white walls. White walls makes it easier to see how clean it is.
- **Calm:**
Can mean the sunset over an ocean. You are sitting on the beach with the lavender sky and the blue ocean at rest. Or it can mean a sunset over the pasture. You see the greens in the grass and the pale blue and lavender sky.
- **Cozy:**
Can mean a cabin in the woods with lots of brown woodwork and a glowing fire in the fireplace.

Warm vs. Cool

- *Color “temperature” -- Warms vs. Cools*
- *Color temperature is relative -- a color seems cool when juxtaposed with warmer colors...*
- *...or warm when juxtaposed with cooler colors.*

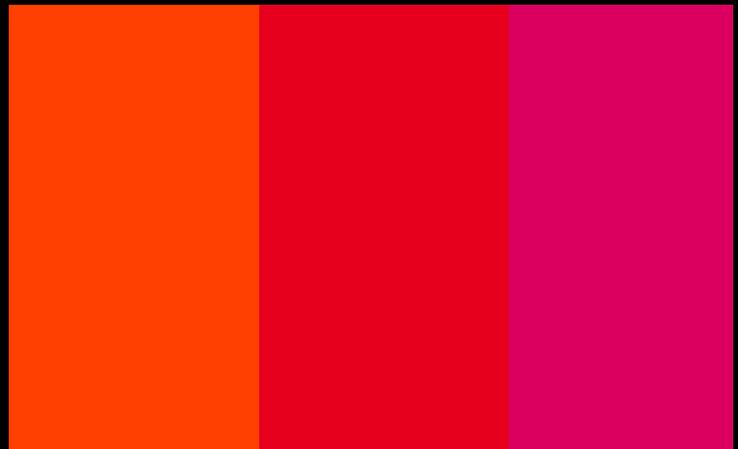
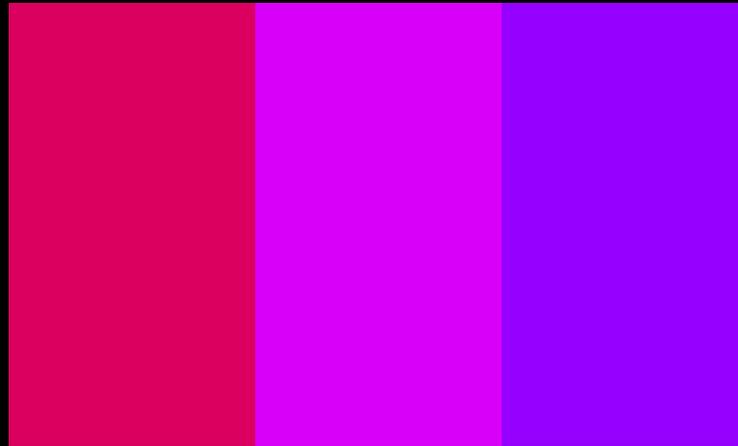
Warm vs. Cool

- *Color temperature is relative -- a color seems cool when juxtaposed with warmer colors...*

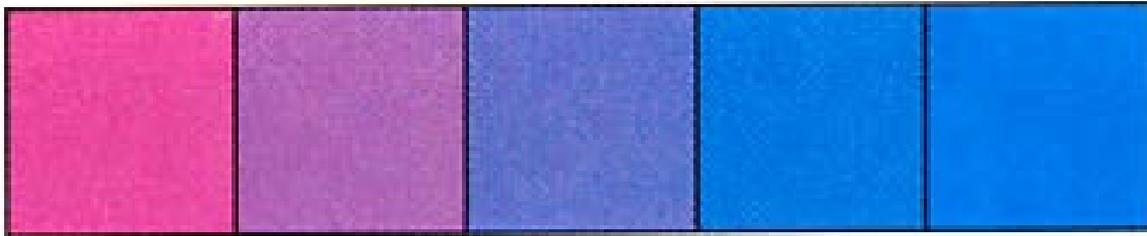


Warm vs. Cool

- *Color temperature is relative -- a color seems cool when juxtaposed with warmer colors...*



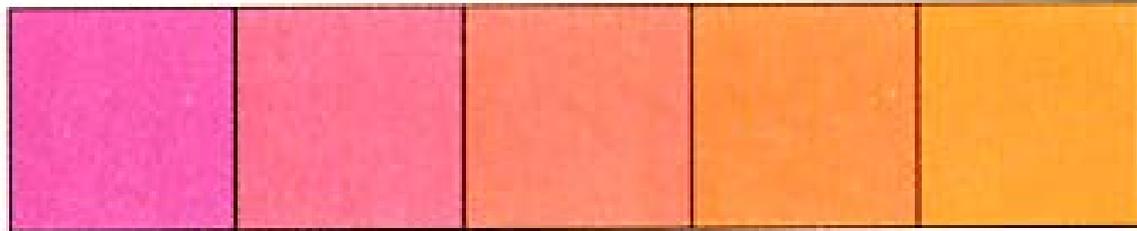
Red-
Violet



Blue-
Violet

Scarlet as Warm

Red-
Violet

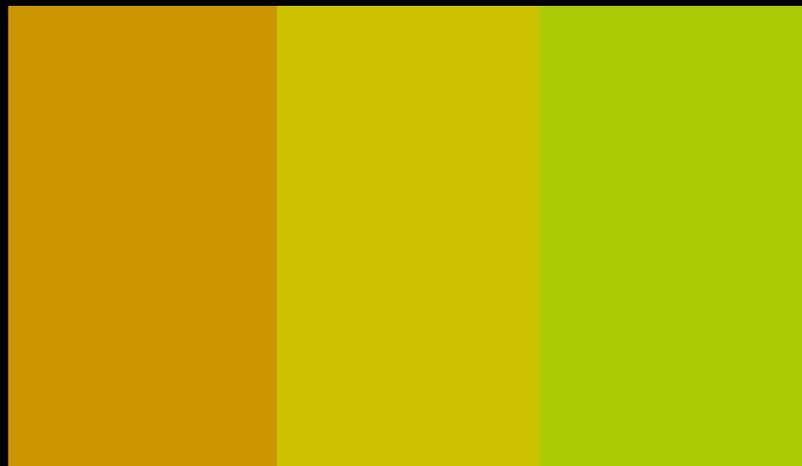
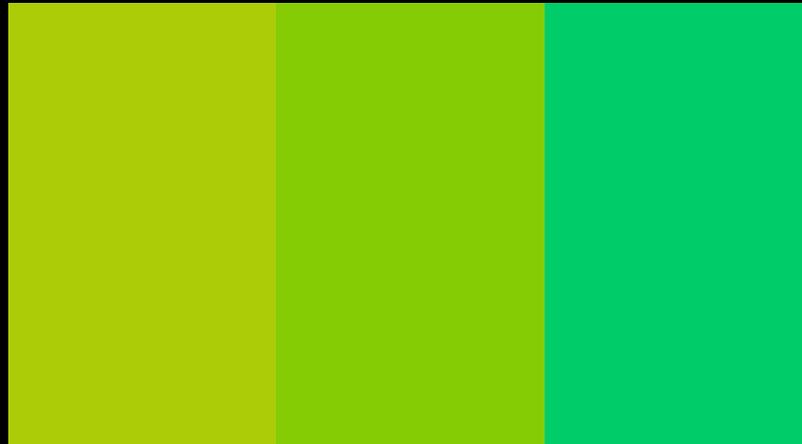


Red-
Orange

Scarlet as Cool

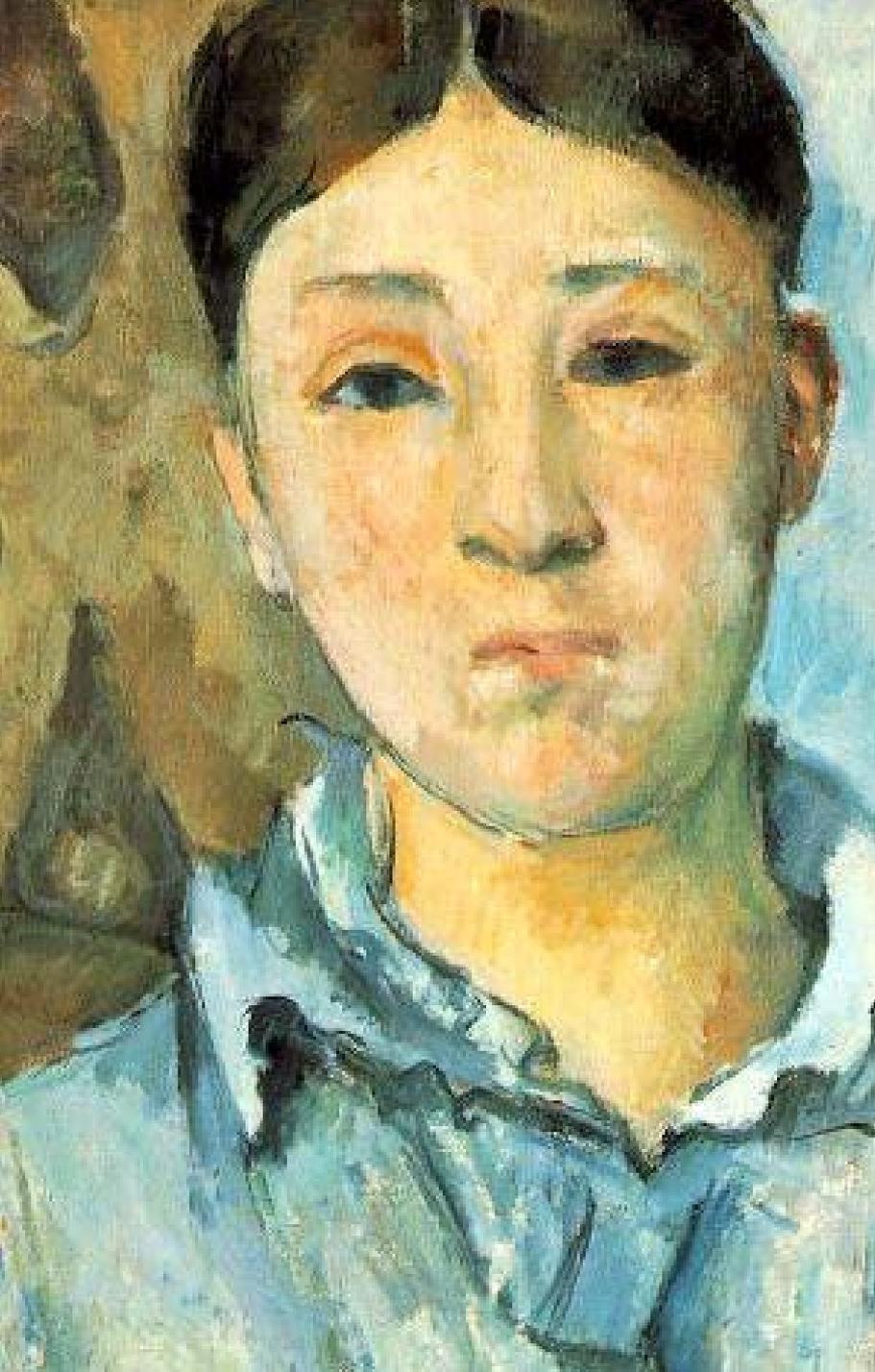
Warm vs. Cool

- *Color temperature is relative -- a color seems cool when juxtaposed with warmer colors...*



- *Value and chroma can also influence the temperature of a color.*
- *Higher value colors tend to feel cooler.*
- *Higher chroma colors tend to feel warmer...lower chroma colors tend to feel cooler...sometimes.*

- *Value and chroma can also influence the temperature of a color.*
- *Higher value colors tend to feel cooler.*
- *Higher chroma colors tend to feel warmer...lower chroma colors tend to feel cooler...sometimes.*



Colors can be made to feel both warm and cool by breaking the color with a somewhat complementary hue (vibrance of hue)(a warm added to a cool, or a cool added to a warm)

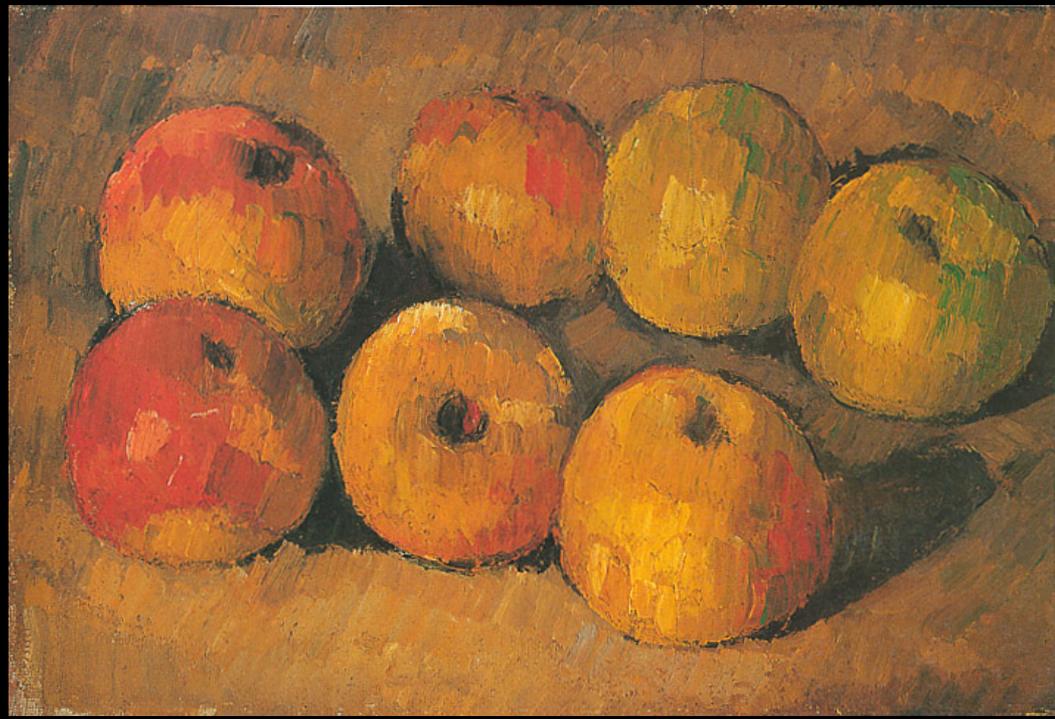
- **Cezanne**





Colors can be made to feel both warm and cool by breaking the color with a somewhat complementary hue (vibrance of hue)(a warm added to a cool, or a cool added to a warm)

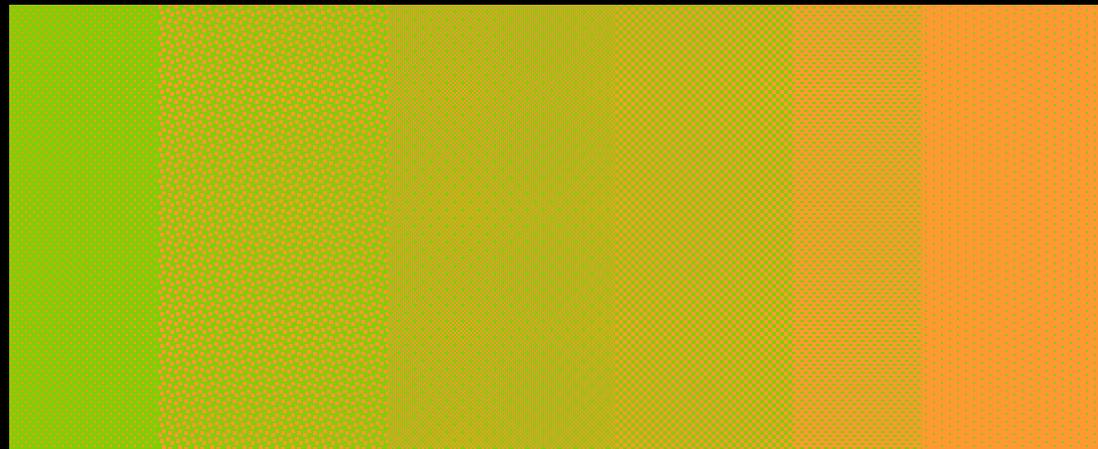
- **Cezanne**



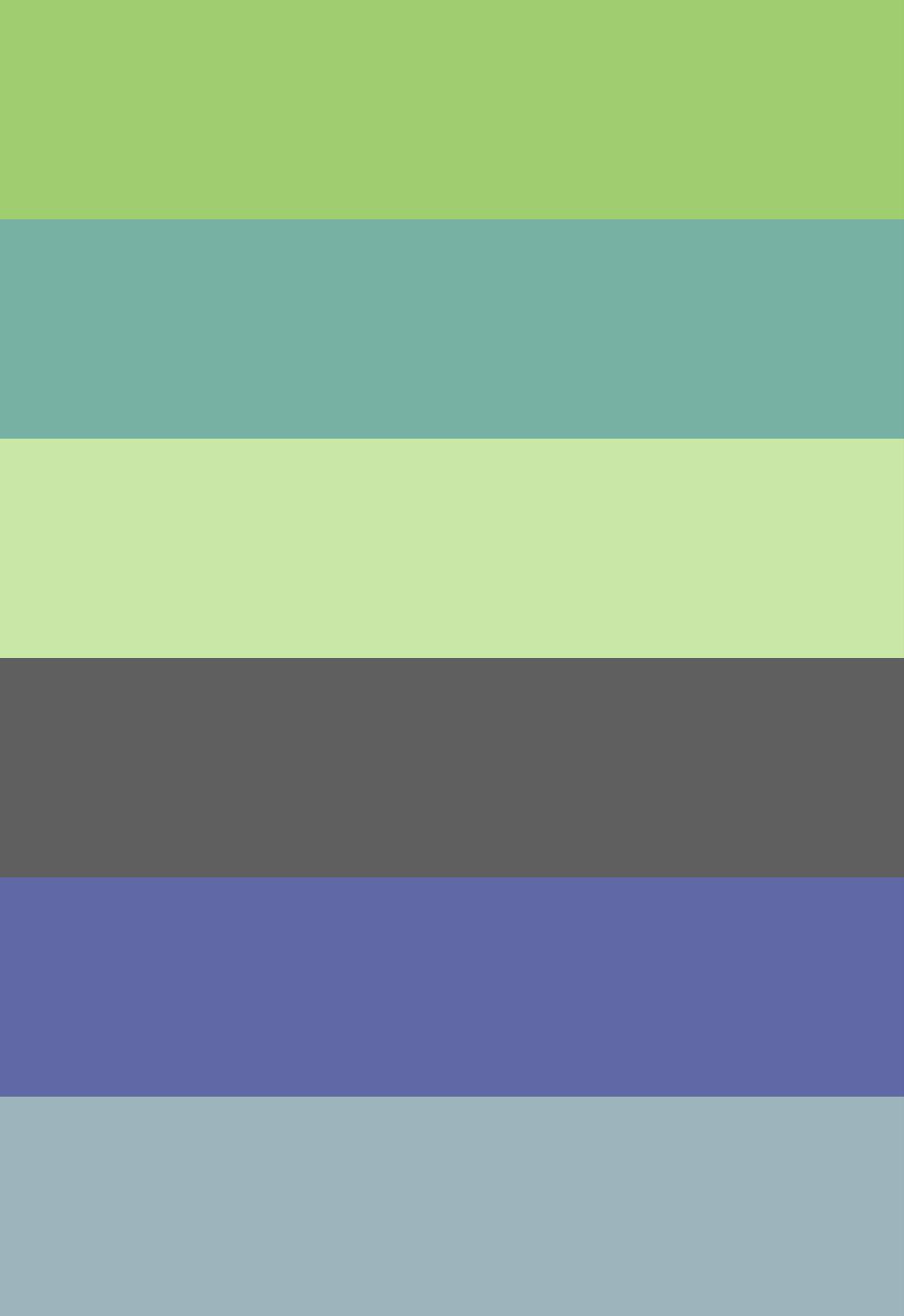


Vibrance is difficult to create with flat digital color—it needs mixed (opaque) pigments or contrasting fibers (in fabric).

- ***Dithered colors offer “multi-colored” colors. At proper viewing distance, the colors do not blend, but vibrate.***
- ***Photoshop tip: Add noise (filter) to flat color.***
- ***Gauguin Eiaha Uhipa***



- 
- ***In general, “bright warm colors seem conducive to activity and mental alertness and are therefore increasingly being used in schools.”***

- 
- ***“Cooler, duller hues (lower chroma)...tend to sedate.”***

Color & Physical Response

- ***The effects of color on physiology are real--demonstrated in reliable research studies.***
- ***“..under red lighting our bodies secrete more adrenalin, increasing our blood pressure and our rate of breathing, and actually raising our temperature slightly.”***

“physiological research shows that green or blue lights will slow our heartbeat, decrease our temperature, and relax our muscles.”

p. 35

***Henner Ertel:
color and student
performance***

Yellow, yellow-green, orange, and light blue interiors led to children's IQ scores rising by up to 12 points.

Henner Ertel: color and student performance

- *White, brown, and black environments produced lowered IQ scores.*

Henner Ertel: color and student performance

- ***Orange also made children more cheerful and sociable and less irritable and hostile.***

Color-psychodynamics

- ***Colors that increase blood pressure, pulse rate & respiration rate: red, orange, and yellow (in order of increasing effect).***
- ***Colors that decrease these physiological levels: green, blue, and black.***

Wohlfarth

- ***Wohlfarth & C. Sam found both coloration and illumination altered behaviour and experience significantly for handicapped children and caretakers.***
- ***Same effects were observed in both blind and sighted children.***



Knute Rockne's Locker Rooms

- ***Red for Fighting Irish of Notre Dame.***
- ***Blue-green-gray for visitors.***



Color, Personality and Emotion

- We are all profoundly affected by light — both the *range of colors/wavelengths* and the *quantity of light*.



For example, it is now a medically accepted fact that *some people become chronically depressed when deprived of adequate daylight*.

They suffer from what is called **Seasonal Affective Disorder (S.A.D.)**.

<http://www.paulgoldin.com/memoryframe.html>

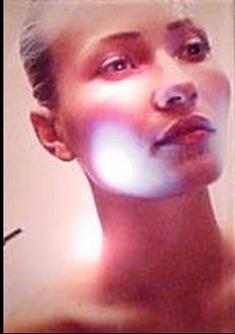
- Winter months are the worst for S.A.D. sufferers —
days are shorter,
the angle of the earth's tilt reduces sunlight (in Northern hemisphere),
and we tend to stay indoors due to the cold.
- Therapies/suggestions include adding more full-spectrum lights to the home and workplace, time outside in full sunlight...and heading south for the winter.

- *Applied design fields have sponsored research studies of how color alters health and behavior.*
- *Graphic design and marketing are particularly concerned with how color effects purchasing decisions.*

- *The physiological color responses are complex and sensitive -- subtle variations in color seem to have a significant effect.*
- *Some effects diminish as people become conditioned to the color environment over time.*

Chromatherapy

- ***Light therapy uses colored lights to influence particular organs or systems -- particular colors are prescribed for particular conditions in a similar way to medicines being prescribed by an M.D.***
- ***Currently there is limited acceptance of Chromatherapy as an alternative to mainstream medicine.***



Chromatherapy: **"from Matter to Energy"**

- “*Phytobiodermie* is the originator of the application of chromatherapy to the field of aesthetics and beauty. **Chromatherapy is a treatment system based on the healing and re-balancing properties of light energy.**
- “Each color in the spectrum of natural light has specific properties corresponding to known energetic ‘wavelengths’ or ‘frequencies’ unique to each of the body's major organs and energy centers.”



Chromatherapy: **"from Matter to Energy"**

“The scientific application of pure distillations of **monochromatic light on specific acupuncture points, reflex zones, and major energetic centers or chakras, as well as in conjunction with lymphatic drainage** - has been shown to effectively correct and restore an optimum energetic organic balance.

- “Aesthetically, this produces a dramatically visible "lifting" effect and a marked, long-lasting improvement in overall appearance and profound sense of well-being.”



Chromatherapy: Color and the Brain

- Specific colors have different effects

Black: self-confidence, power, strength

Blue: calming, lowers blood pressure, decreases respiration

Green: soothing, relaxing mentally as well as physically, helps those suffering from depression, anxiety, nervousness

Violet: suppresses appetite, provides a peaceful environment, good for migraines

Pink: used in diet therapy as an appetite suppressant, relaxes muscles, relieves tension, soothing

Yellow: energizes, relieves depression, improves memory, stimulates appetite

Orange: energizes, stimulates appetite and digestive system

Red: stimulates brain wave activity, increases heart rate, respirations and blood pressure.

(list copied from
Biopulse.org, also
available at:

[http://www.princetonol.com/
groups/iad/lessons/middle/c
olor2.htm](http://www.princetonol.com/groups/iad/lessons/middle/color2.htm))



Mainstream Medicine: Reluctant colorists

- Traditional western medicine does not yet widely acknowledge color's therapeutic value.
- For several decades pre-term infants have been illuminated with blue lights that helps *stimulate the immune system of vulnerable premies*.
- “Biliruben lights” have been used on pre-term infants to treat jaundice.

Jaundice, biliruben, yellow skin and blue lights

THE PROBLEM:

Our **red blood cells die** after a few months—that's normal. Ordinarily our liver collects the dead red blood cells and dissolves them—so they can be expelled via urine and intestines.

Hemoglobin in red blood cells **breaks down into biliruben**. **Jaundice (skin turning yellow/YO)** is basically caused by biliruben getting trapped in the body by saturating the skin tissue, rather than being expelled in urine and intestines.

Early in fetus development, biliruben is expelled by the mother's liver, not the infants. **Preterm babies are sometimes too immature to process all of the biliruben** their bodies produce—so biliruben builds up. Excess biliruben is toxic—in severe cases the child can die.



Jaundice, bilirubin, yellow skin and blue lights

THE SOLUTION: BLUE LIGHT



- Phototherapy involves the exposure of bare skin to fluorescent light. Specific wavelengths of the light break down the bilirubin. **Blueish fluorescent light helps to break down the insoluble bilirubin into a soluble form that the body can secrete.**

Light blanket – fiber optic blanket delivers light to the skin while the child is with the mother wrapped in the blanket. (a more recent alternative to bilirubin lights)

The only alternative to phototherapy is exchange blood transfusions.

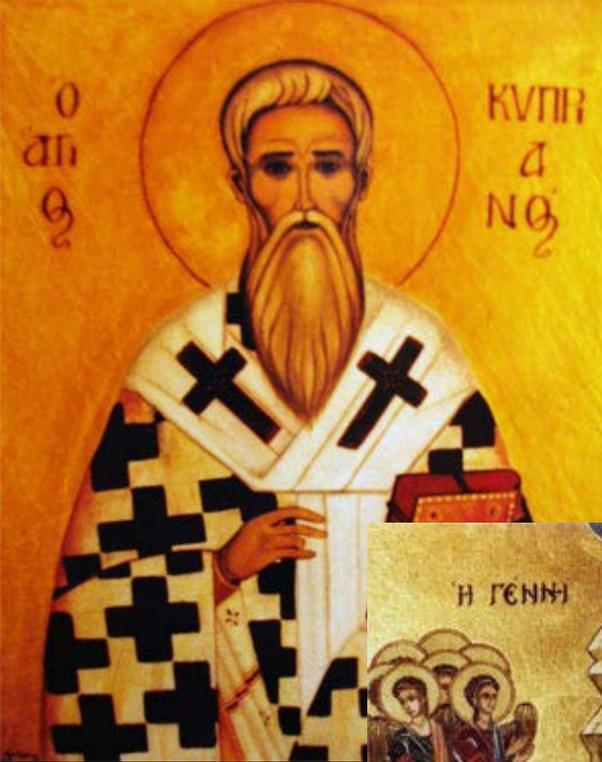


Auras & halos

- ***Some religious/spiritual traditions hold that people, or even all living things, emanate a colored glow, or aura.***

Christian paintings of ‘halos’ represent a form of aura.

The color of the aura “is thought to reflect the state of a person’s health and spirituality.”



Auras & halos

- “Throughout the ages artists have depicted the aura as a halo or glowing light that appears around the heads or bodies of highly evolved spiritual masters and saints. “Apparently, the auras around these beings were so clear and so powerful that others could easily see, feel, or sense them. “Recently, the aura has been scientifically detected through Kirilian photography and other electronic equipment.

<http://www.auracolors.com/intro-your-auracolors.html>



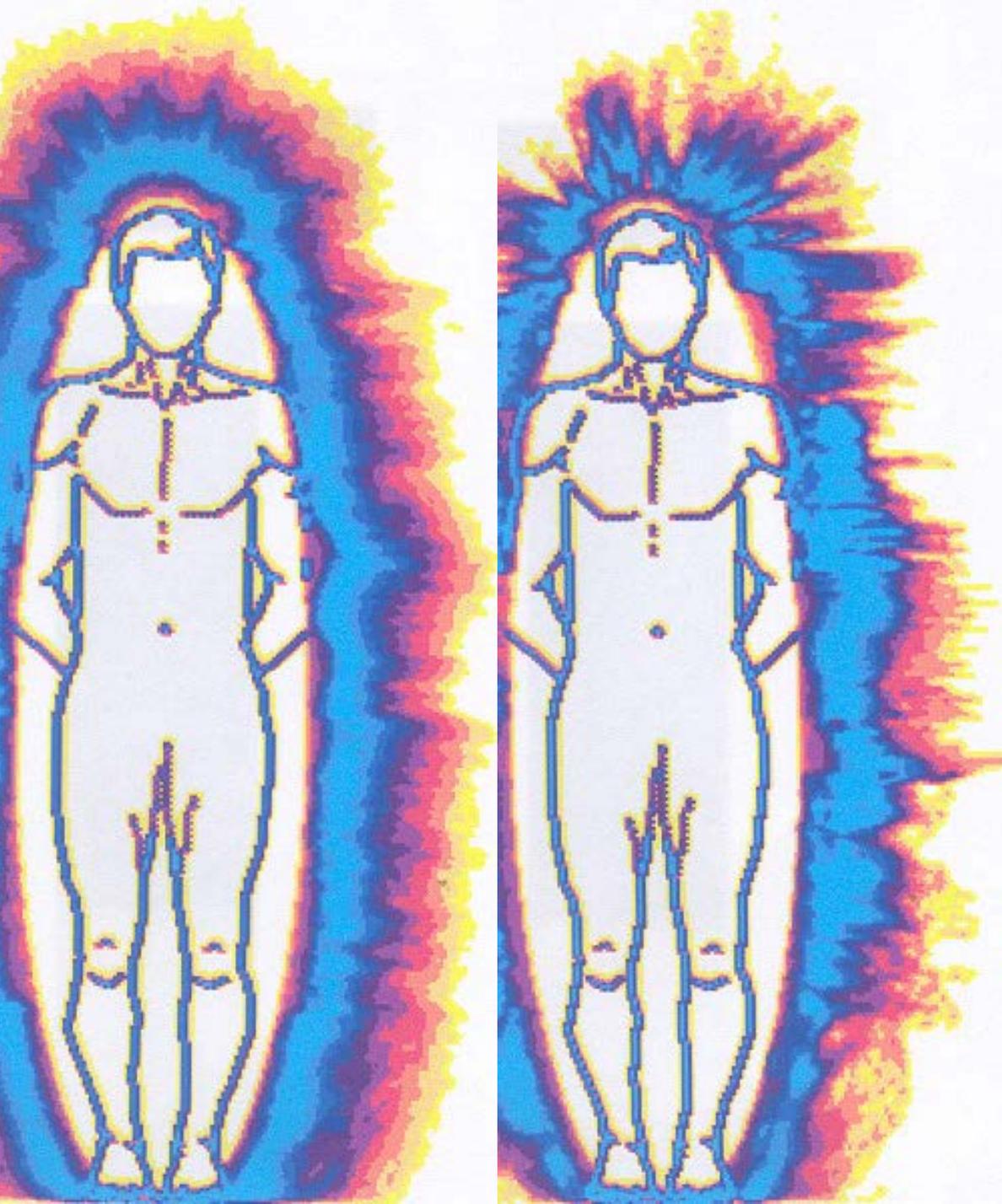
Auras

“Everyone is surrounded by a bio-magnetic energy field which vibrates and fluctuates at different levels. The frequency of vibrations reflects the inner state of being.”

- ***Kirlian photography claims to capture the energy***
- <http://www.healthaura.com/nfo/methods.htm>

Kirlian Photography





Alternative medical diagnosis claims

“...it seems possible to determine, not only what happens in the human body, but also where it happens – by examining specific sectors of the electro-photonic glow.

Bio-electrography has the potential to serve as an extremely powerful and comprehensive medical diagnostic tool, capable of showing malfunctions of the body and mind long before any physical symptoms become evident.”

“The colors of our aura have their own meaning and affect you in different ways. What your aura shows you right now are the issues that require your immediate attention.”