Image Processing - Color

EPITA Imagerie Couleur

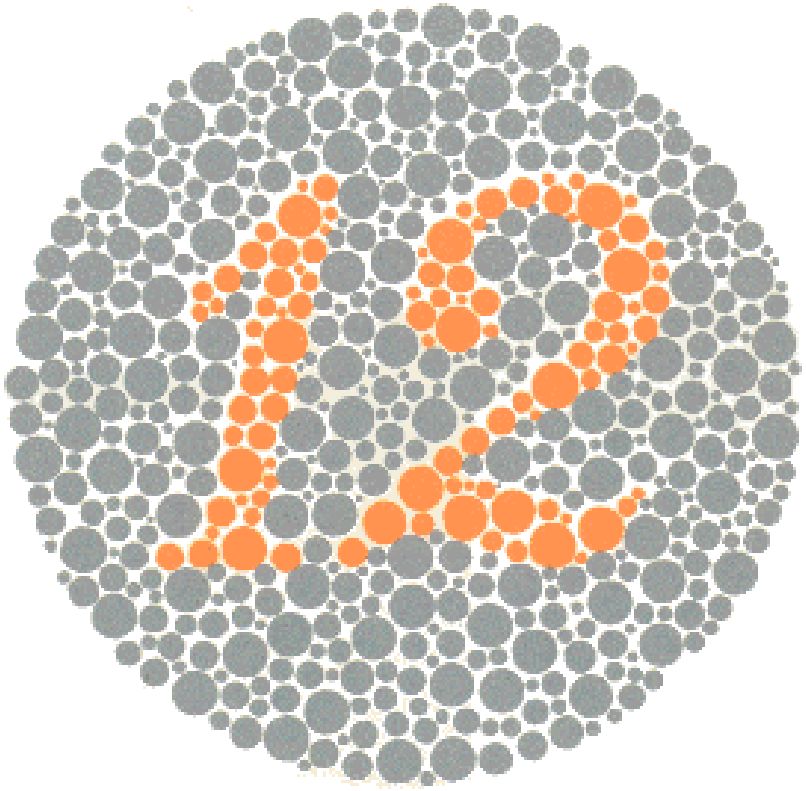
27 mai 2019

TP 1

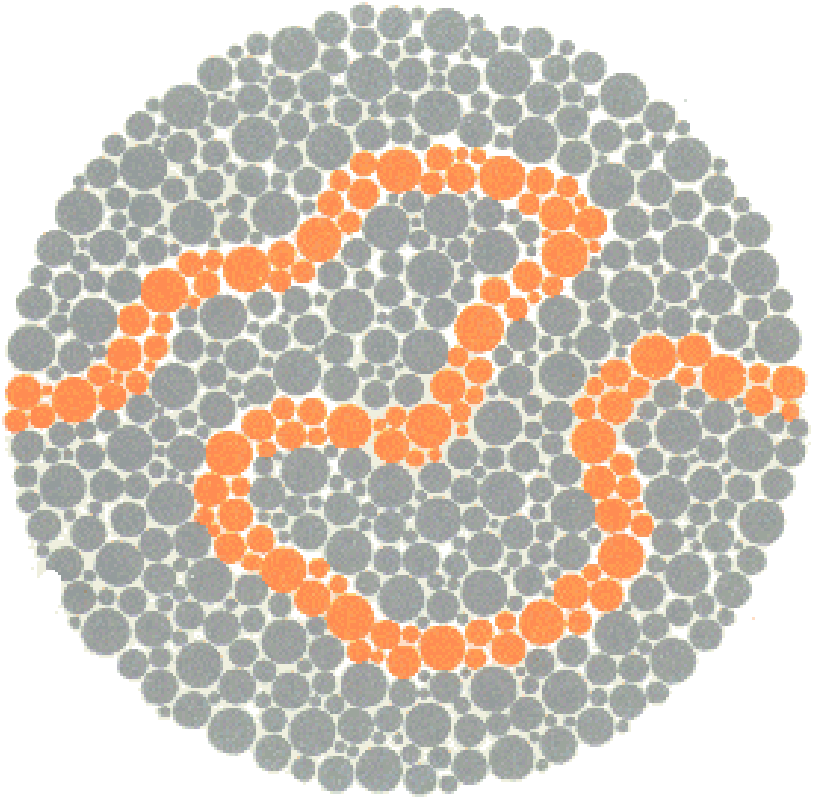
- How well do I do with colors?
  - Ishibara test 1971 (30 min)
- Are you sure about that?
  - Illusions (30-45 min)
- GIMP(Photoshop) exercises
- Illumination / Metamers

How well do I do with colors?

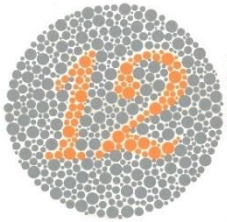
Ishibara Test: in **5 seconds** try to identify the correct number (or nothing), or correctly trace the wiggly lines (or nothing).



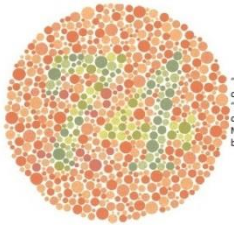
Plates 1 – 17 each contain a number



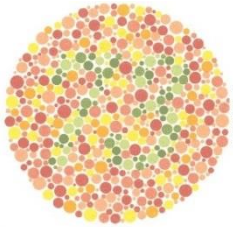
Plates 18 – 24 contain one or two wiggly lines



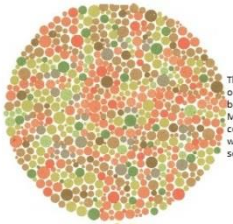
"12" All people should see a number 12, including those with total color blindness – If someone said they can't see something, or saw something else – they are fibbing:)



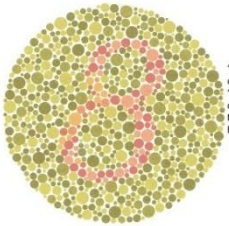
"74" Those with normal color vision see a 74.
"21" Those with red green color blindness see a 21.
Nothing Those with total color blindness see nothing.



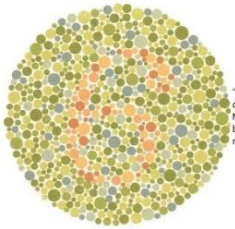
"73" Those with normal color vision see a 73.
Nothing The majority of color blind people cannot see this number clearly.



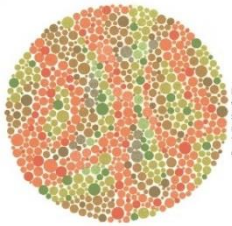
Those with normal color vision or total color blindness should be unable to trace the line.
Most people with red green color blindness can trace the wiggly line, depending on the severity of the condition.



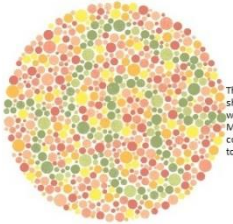
"8" Those with normal color vision see an 8.
"3" Those with red green color blindness see a 3.
Nothing Those with total color blindness see nothing.



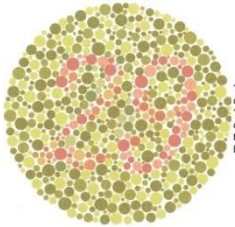
"6" Those with normal color vision see a 6.
Nothing The majority of color blind people cannot see this number clearly.



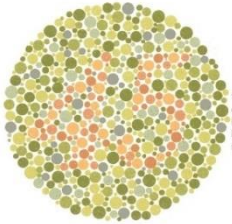
Nothing People with normal vision or total color blindness should not be able to see any number.
"5" Those with red green color blindness should see a 5.



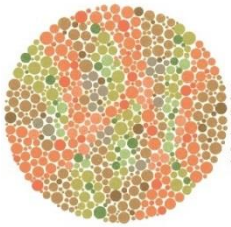
Those with normal color vision should be able to trace a green wiggly line.
Most people with any form of color blindness will be unable to trace the correct line.



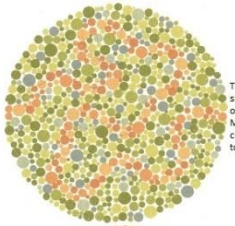
"29" Those with normal color vision see a 29.
"70" Those with red green color blindness see a 70.
Nothing Those with total color blindness see nothing.



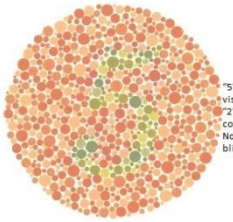
"45" Those with normal color vision see a 45.
Nothing The majority of color blind people cannot see this number clearly.



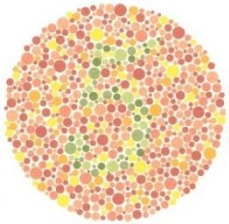
Nothing People with normal vision or total color blindness should not be able to see any number.
"45" Those with red green color blindness should see a 45.



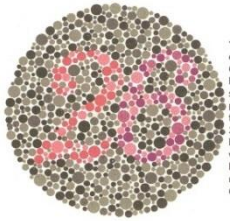
Those with normal color vision should be able to trace an orange wiggly line.
Most people with any form of color blindness will be unable to trace the correct line.



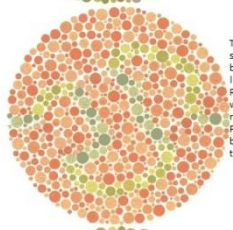
"5" Those with normal color vision see a 5.
"2" Those with red green color blindness see a 2.
Nothing Those with total color blindness see nothing.



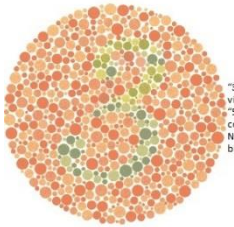
"5" Those with normal color vision see a 5.
Nothing The majority of color blind people cannot see this number clearly.



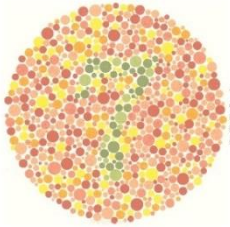
"26" Those with normal color vision should see a 26.
6, faint 2 Red color blind (protanopia) people will see a 6, mild red color blind people (prontanomaly) will also faintly see a number 2.
2, faint 6 Green color blind (deuteranopia) people will see a 2, mild green color blind people (deuteranomaly) may also faintly see a number 6.



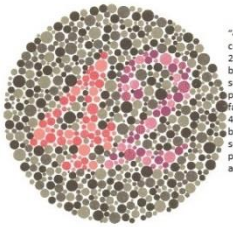
Those with normal color vision should be able to trace the blue-green/yellow-green wiggly line.
Red green color blind people will trace the blue-green and red line.
People with total color blindness will be unable to trace any line.



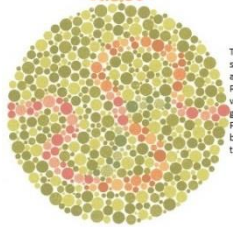
"3" Those with normal color vision see a 3.
"5" Those with red green color blindness see a 5.
Nothing Those with total color blindness see nothing.



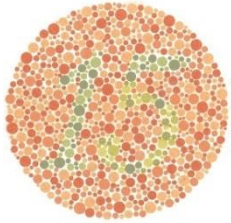
"7" Those with normal color vision see a 7.
Nothing The majority of color blind people cannot see this number clearly.



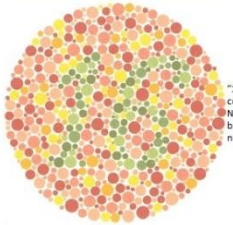
"42" Those with normal color vision should see a 42.
2, faint 4 Red color blind (protanopia) people will see a 2, mild red color blind people (prontanomaly) will also faintly see a number 4.
4, faint 2 Green color blind (deuteranopia) people will see a 4, mild green color blind people (deuteranomaly) may also faintly see a number 2.



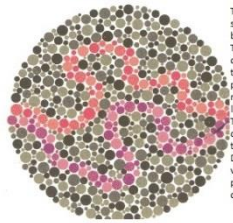
Those with normal color vision should be able to trace the red and orange wiggly line.
Red green color blind people will trace the red and blue-green wiggly line.
People with total color blindness will be unable to trace any line.



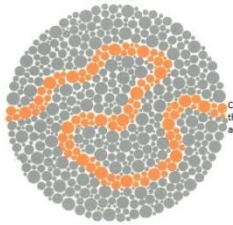
"15" Those with normal color vision see a 15.
"17" Those with red green color blindness see a 17.
Nothing Those with total color blindness see nothing.



"16" Those with normal color vision see a 16.
Nothing The majority of color blind people cannot see this number clearly.

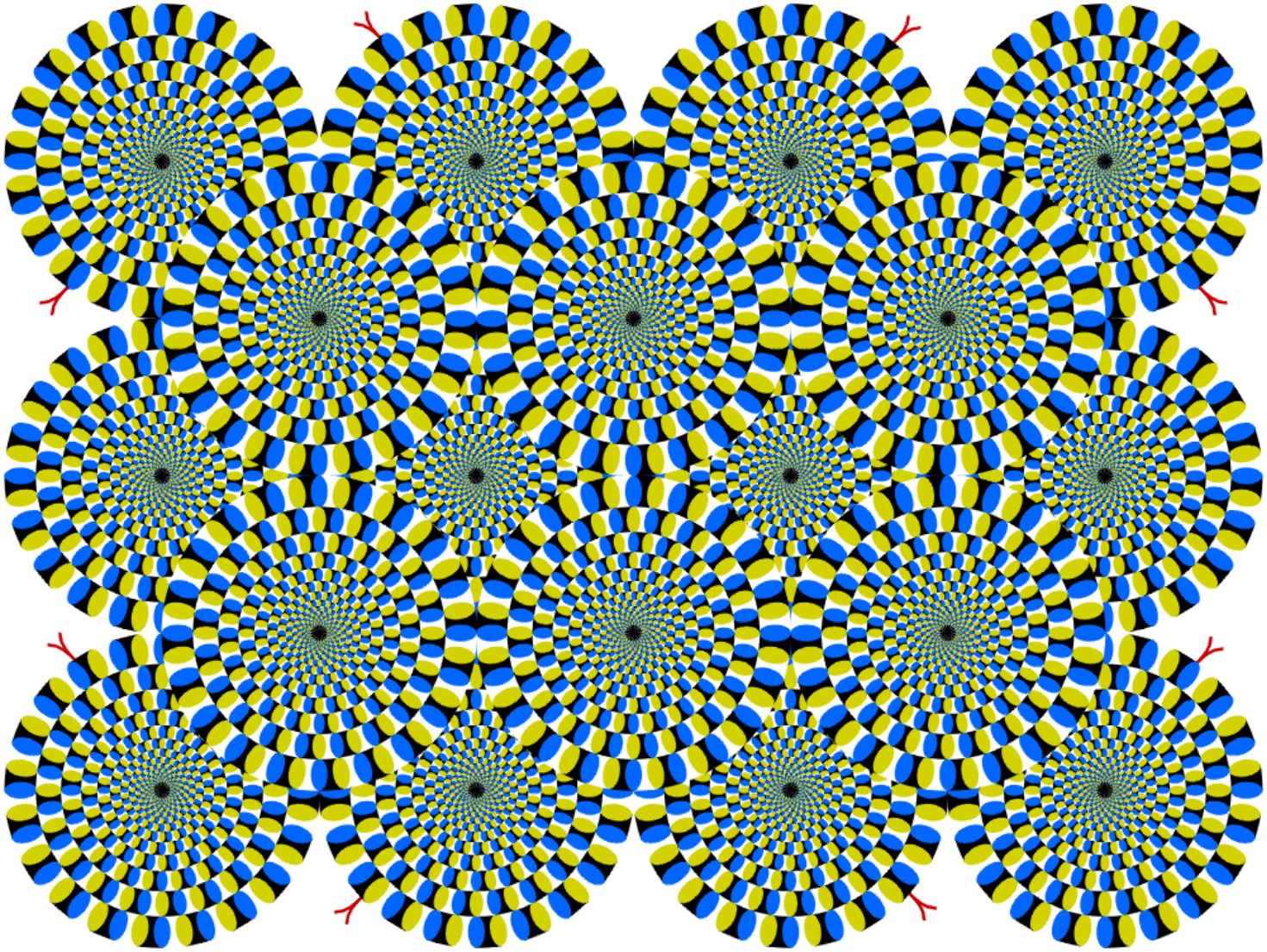


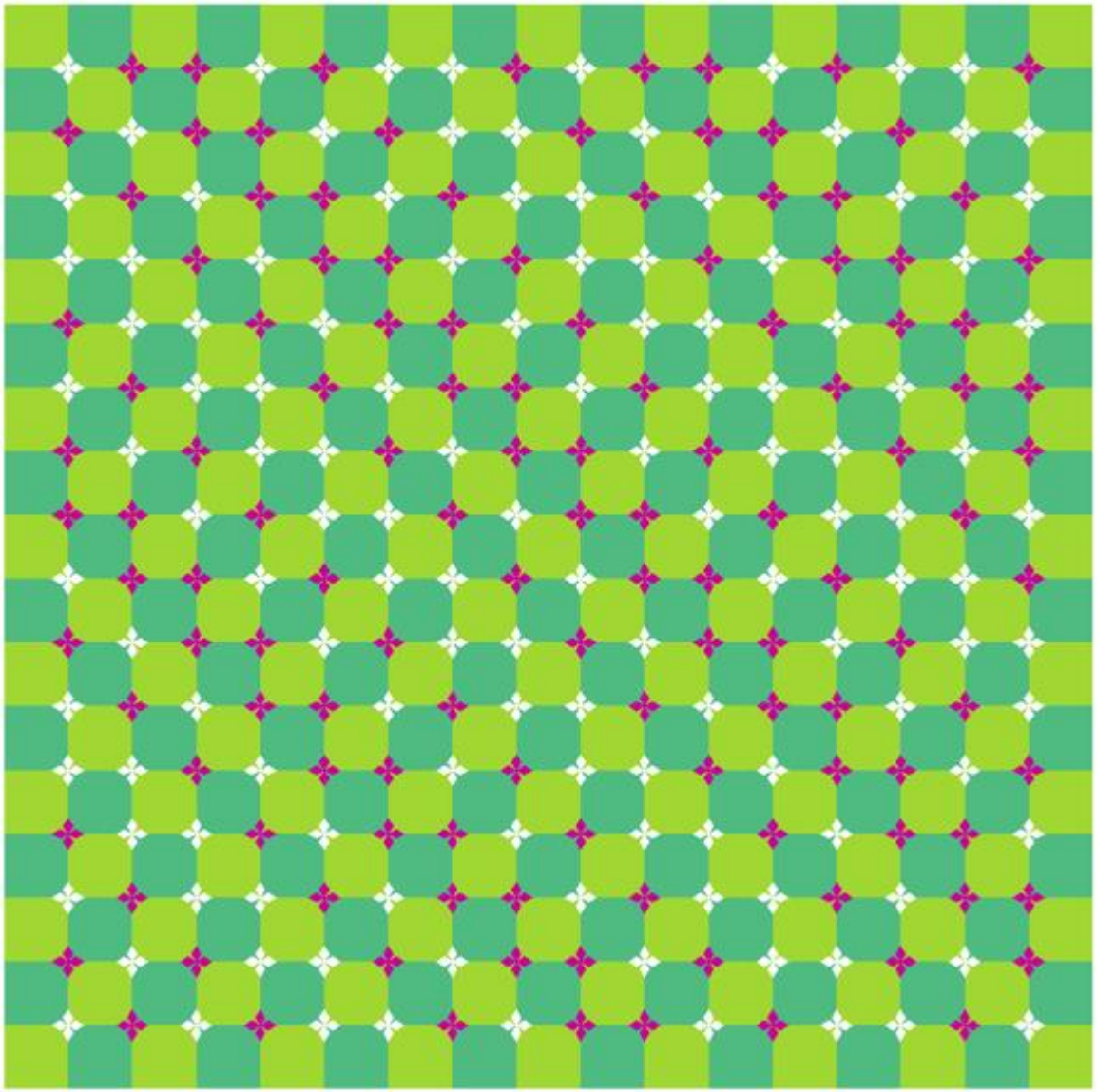
Those with normal color vision should be able to trace along both the purple and red lines.
Those with Protanopia (red colorblind) should be able to trace the purple line, those with protanomaly (weak red vision) may be able to trace the red line, with increased difficulty.
Those with Deuteranopia (green color blind) should be able to trace the red line, those with Deuteranomaly (weak green vision) may be able to trace the purple line, with increased difficulty.



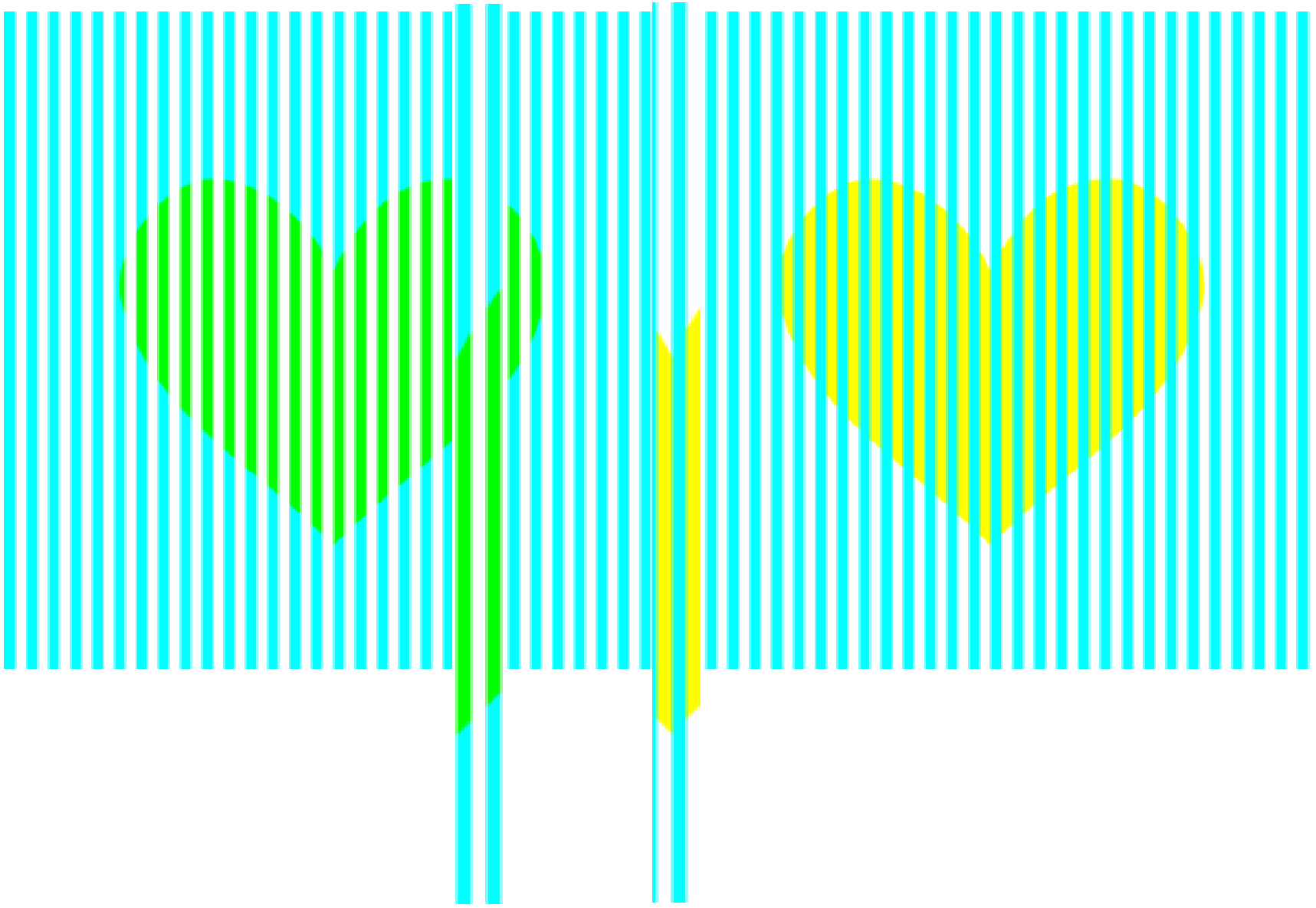
Congratulations, you made it to the end! Everyone should be able to trace this wiggly line.

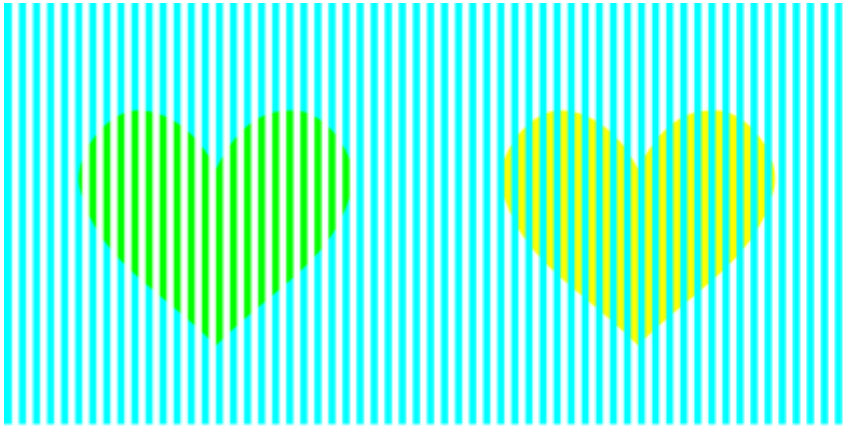
Are you sure about that?

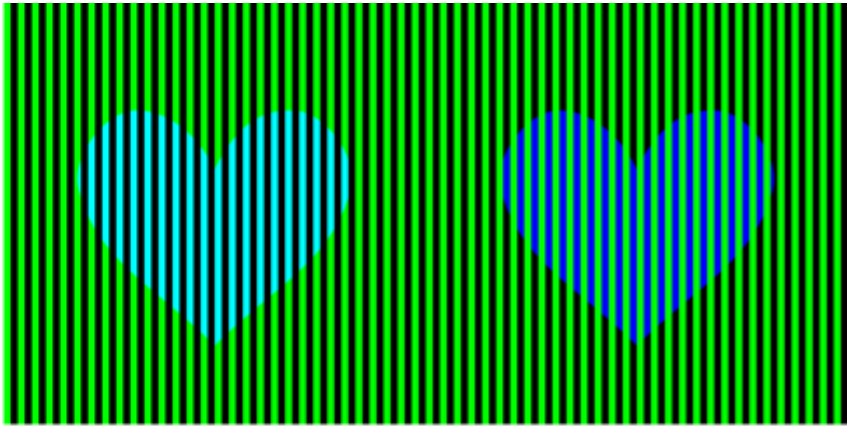


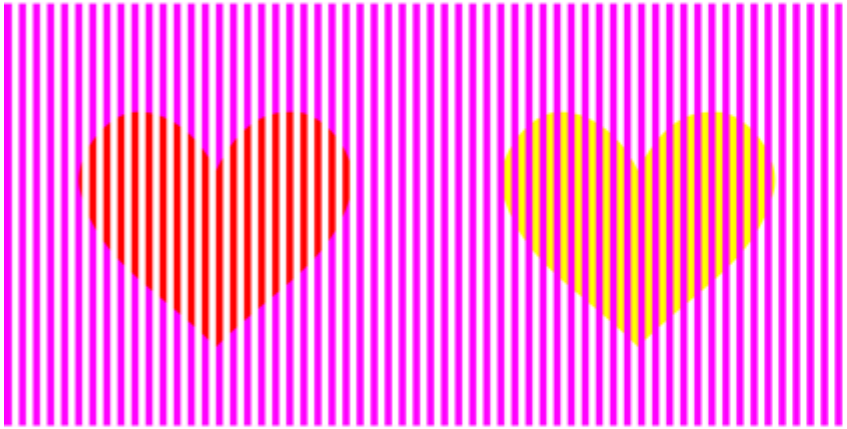


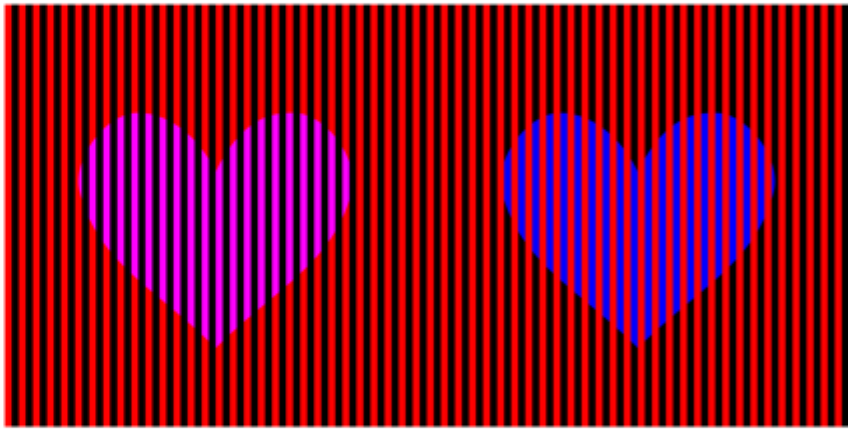
Munker illlusion

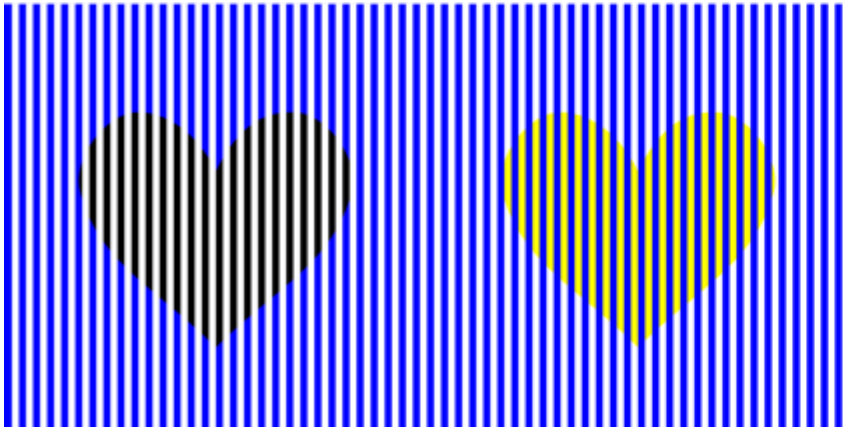


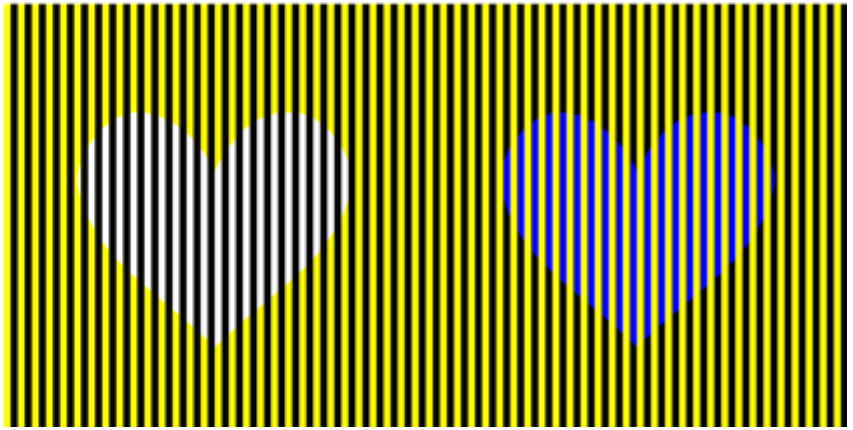


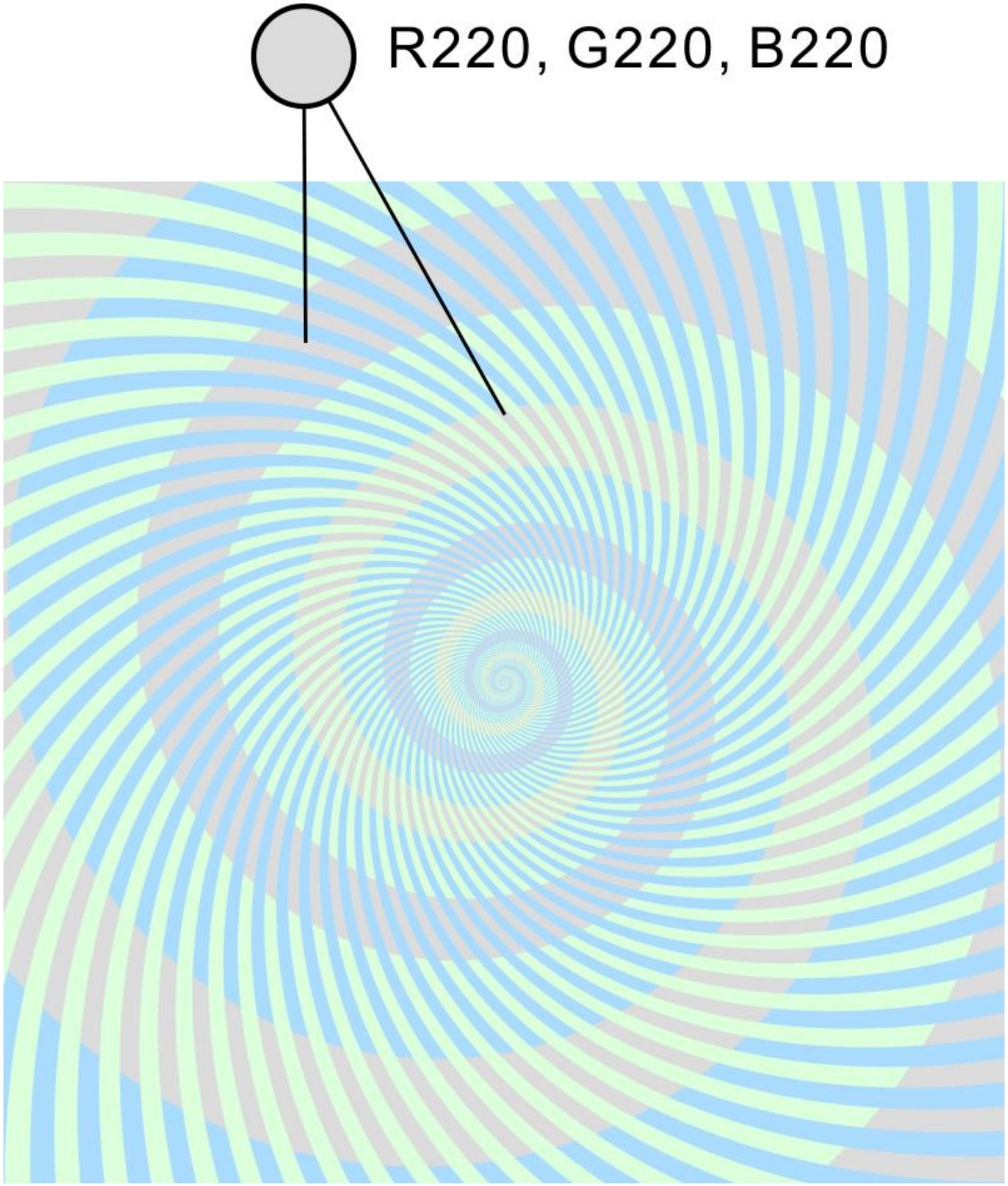




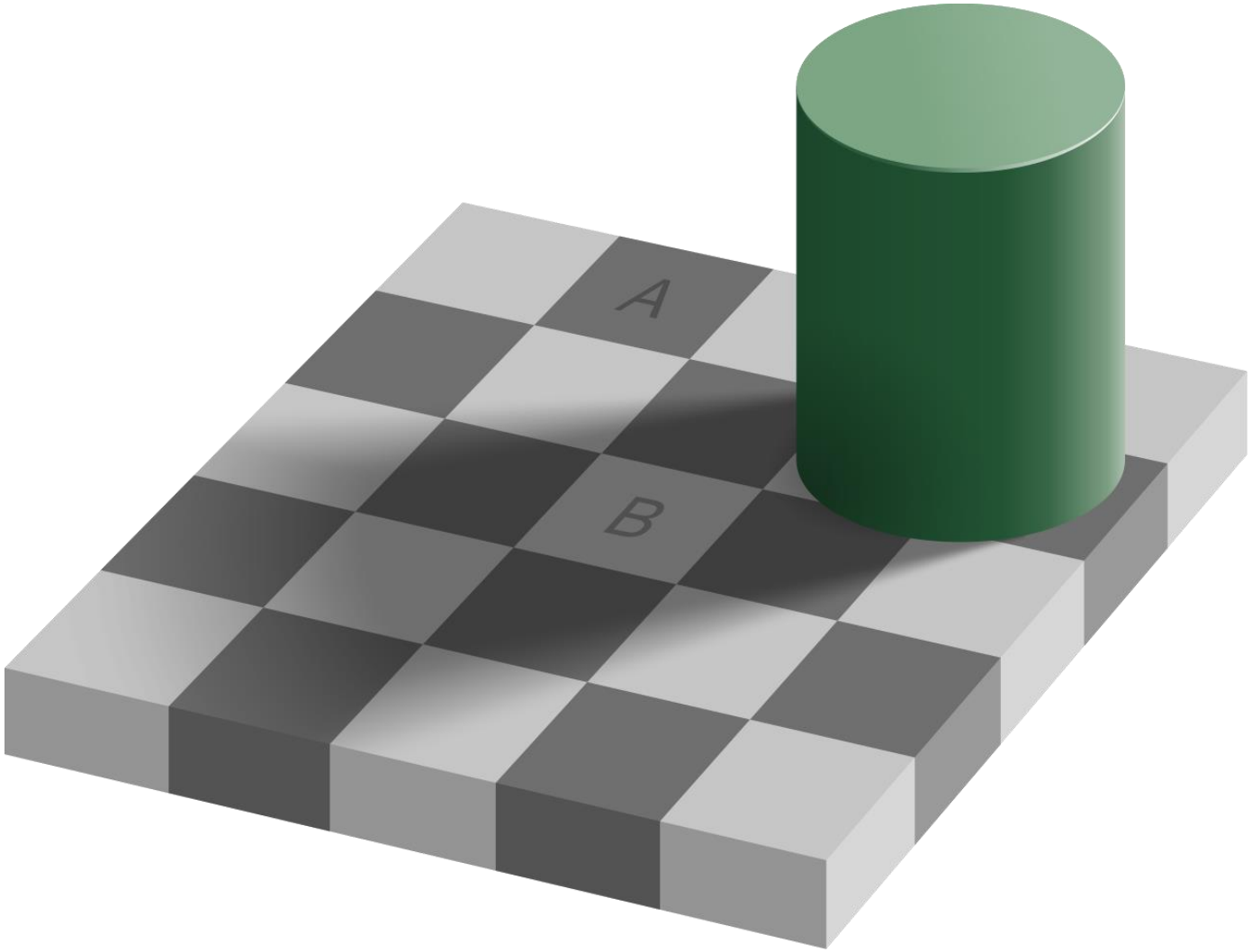


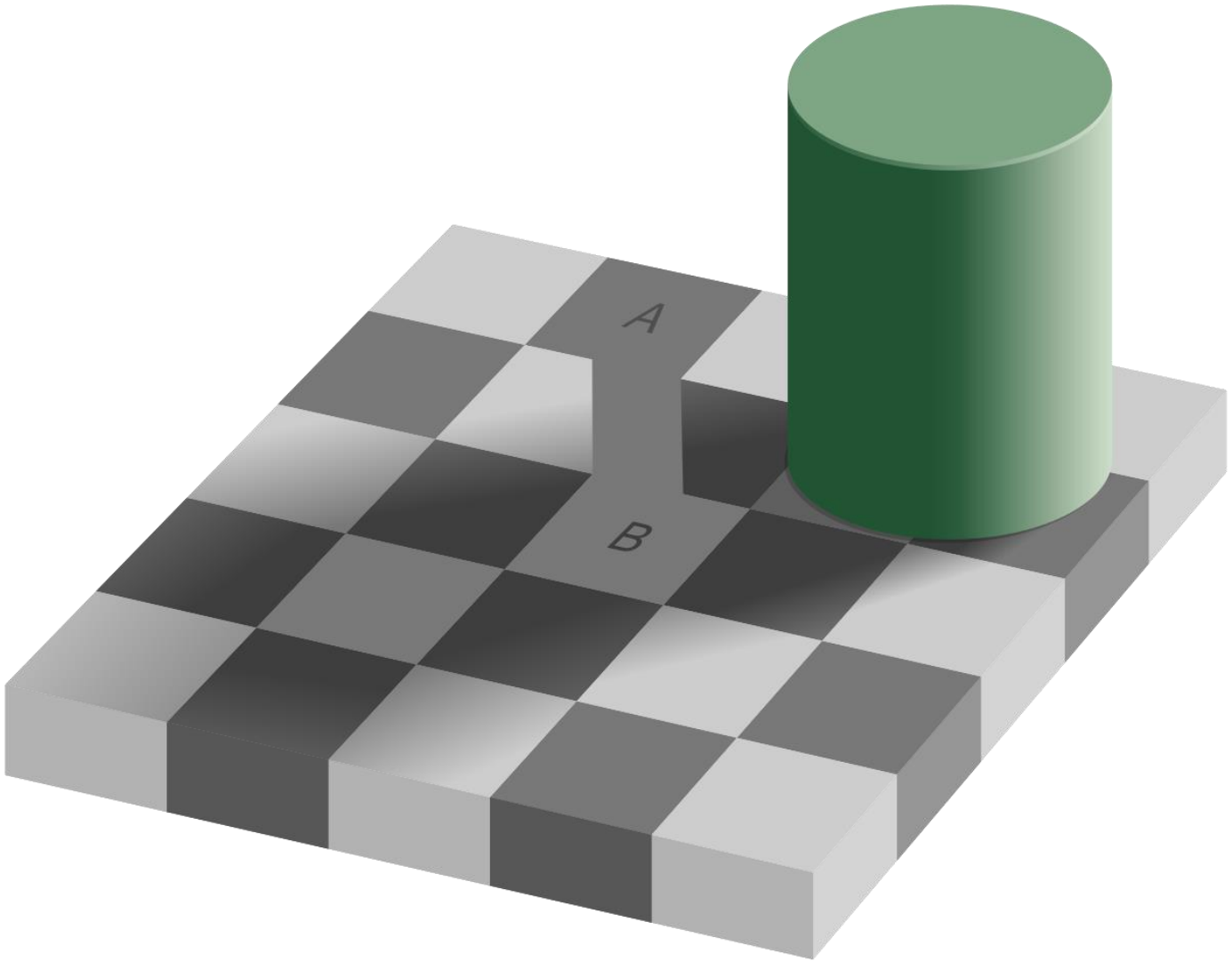




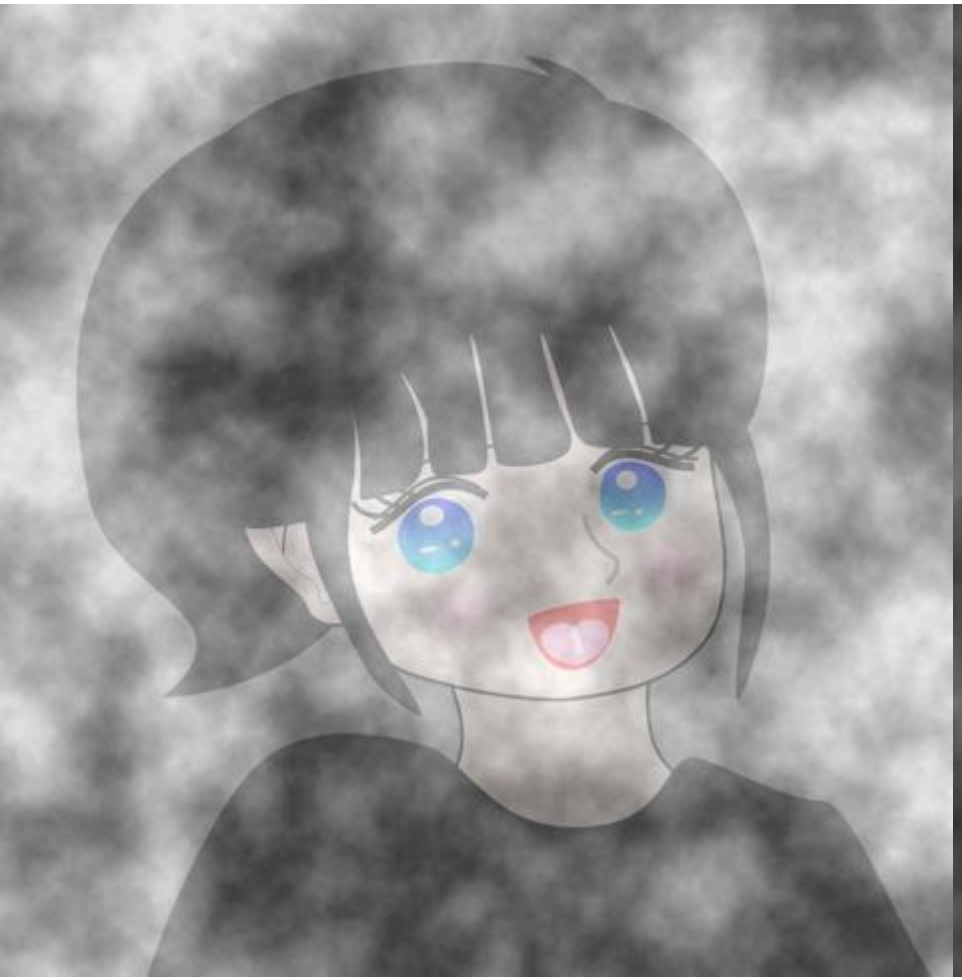

R220, G220, B220

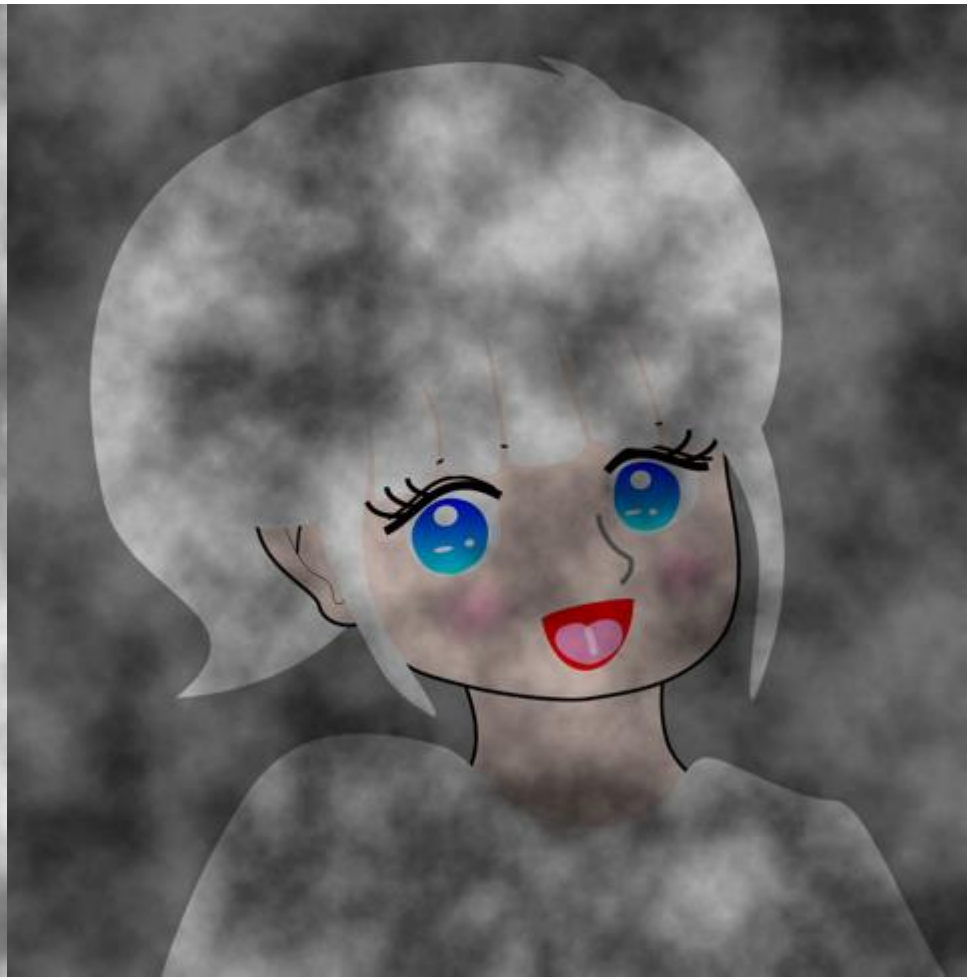
Checkerboard illusion

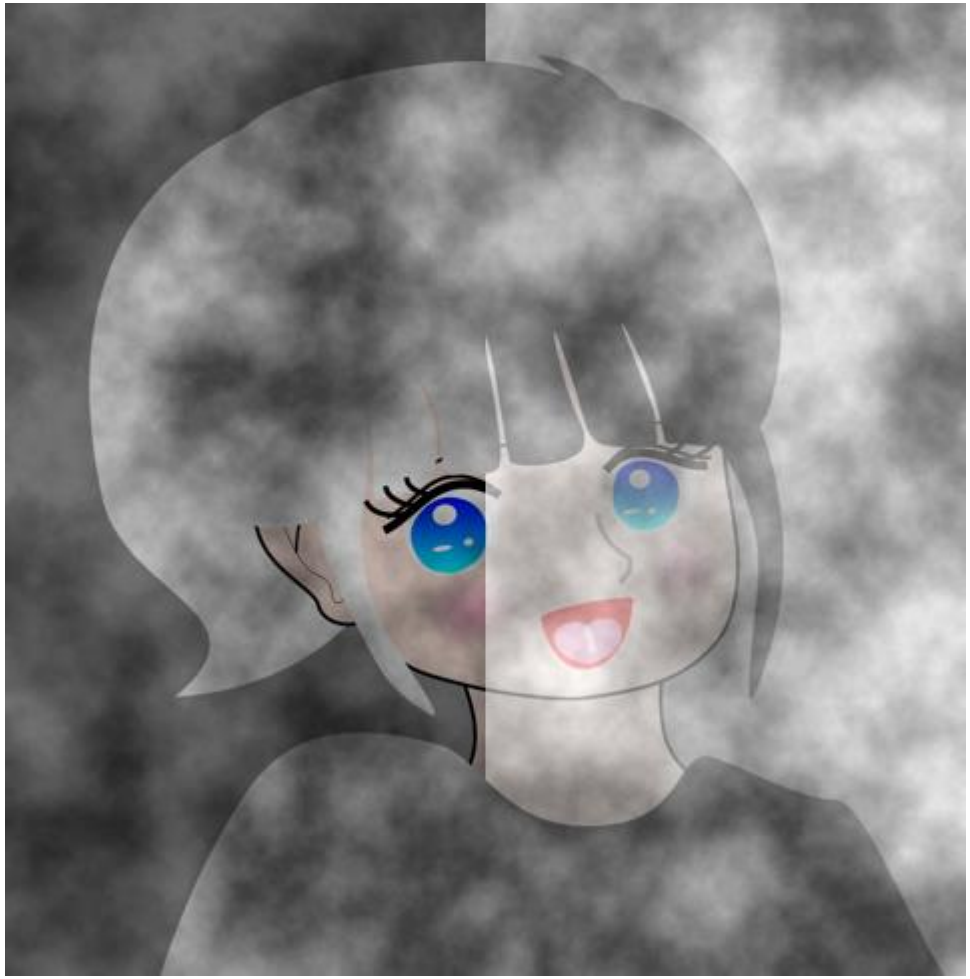


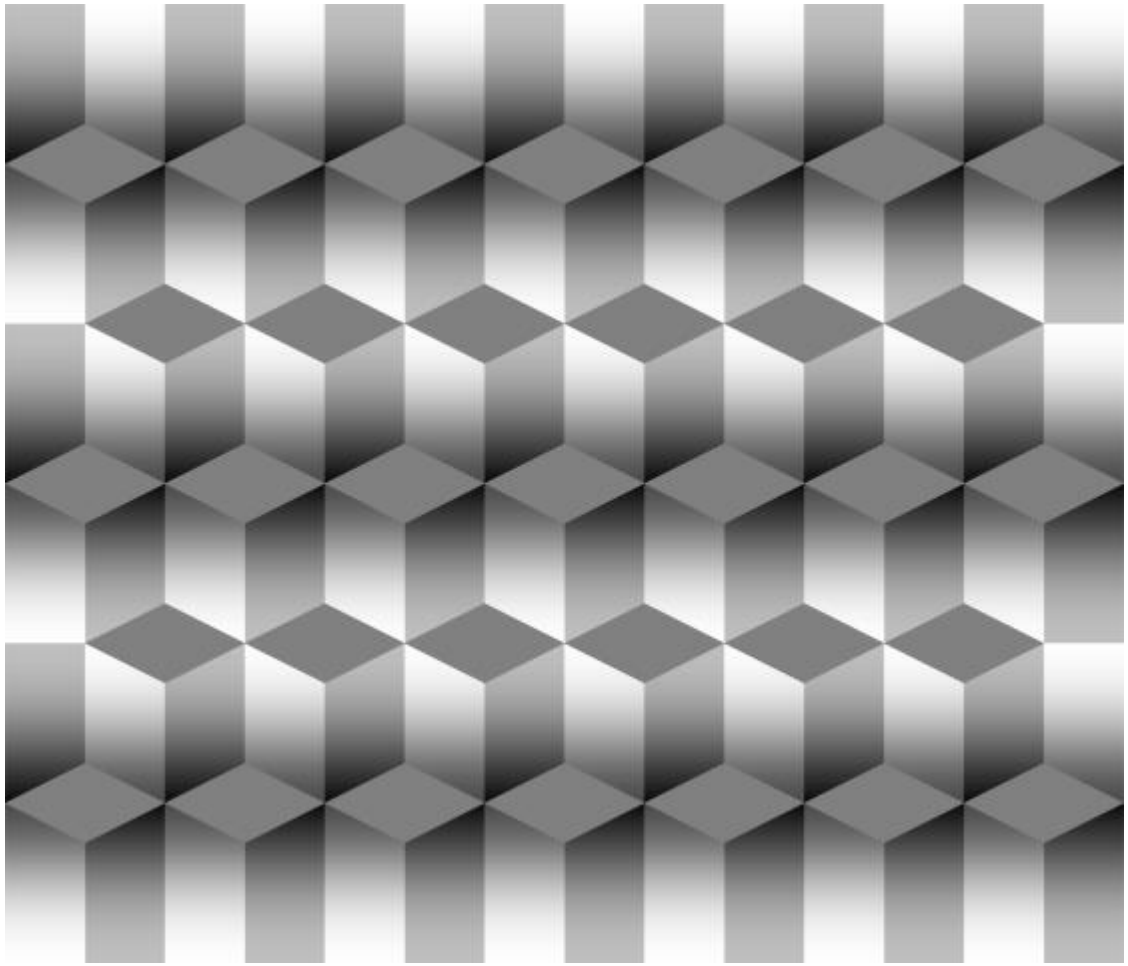

A
B

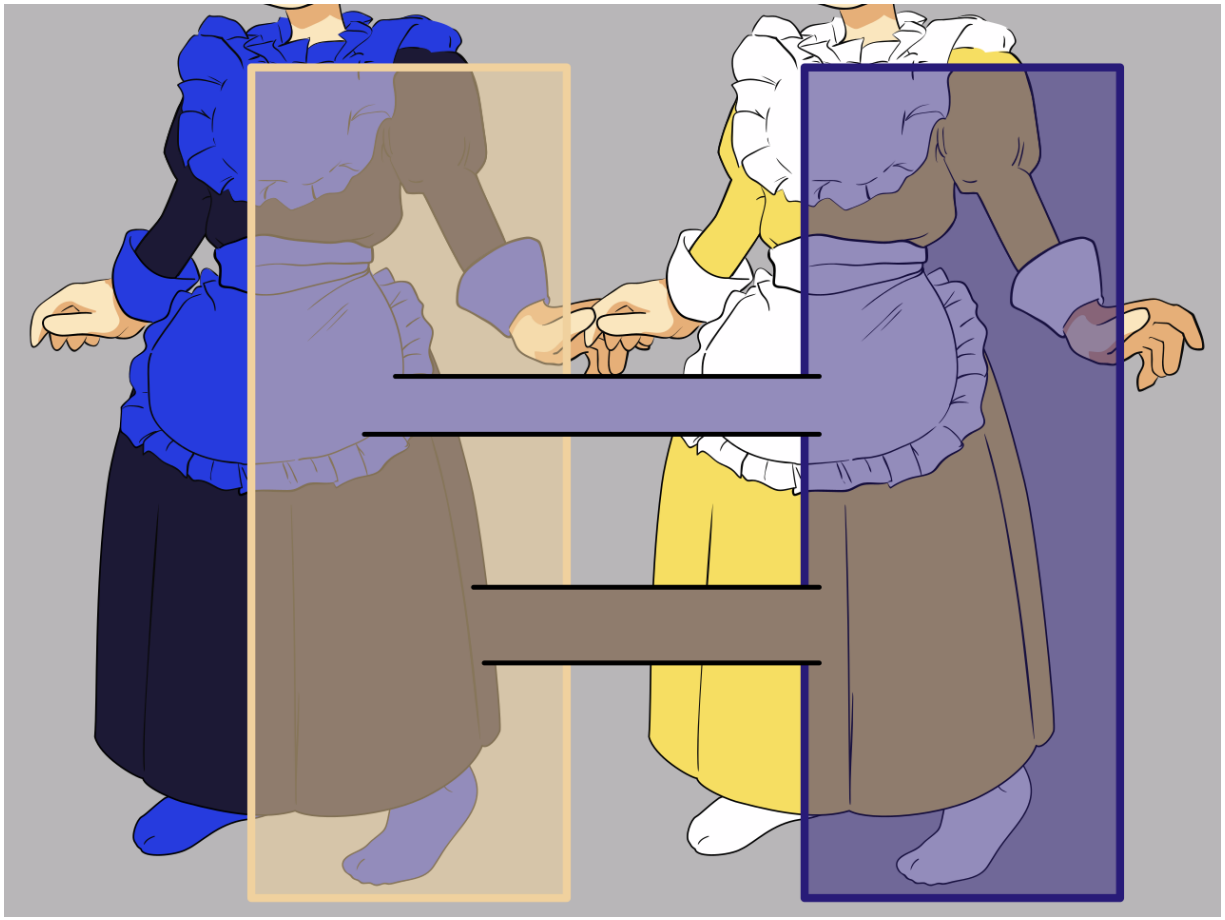

youtube.com/brusspup

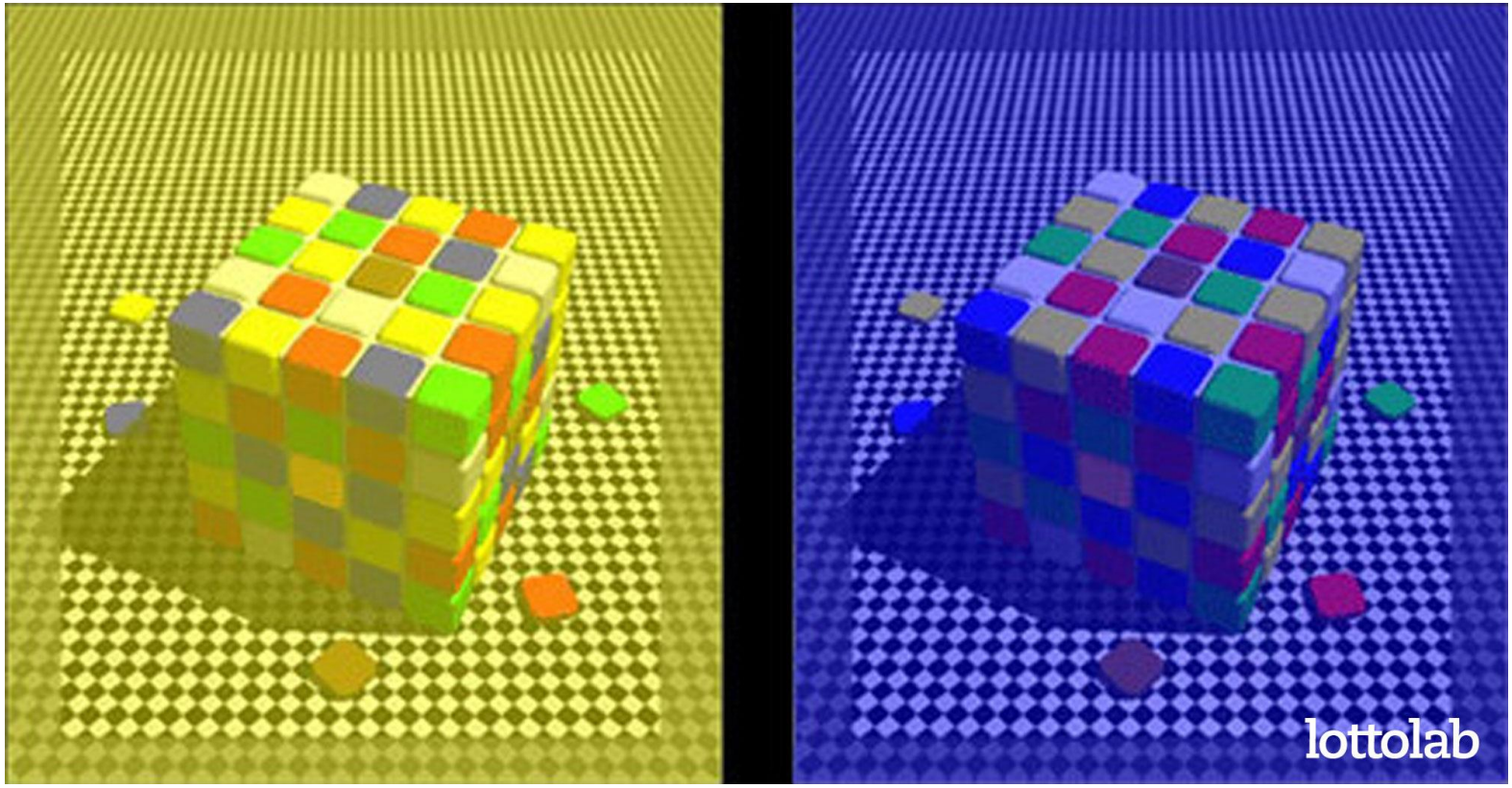


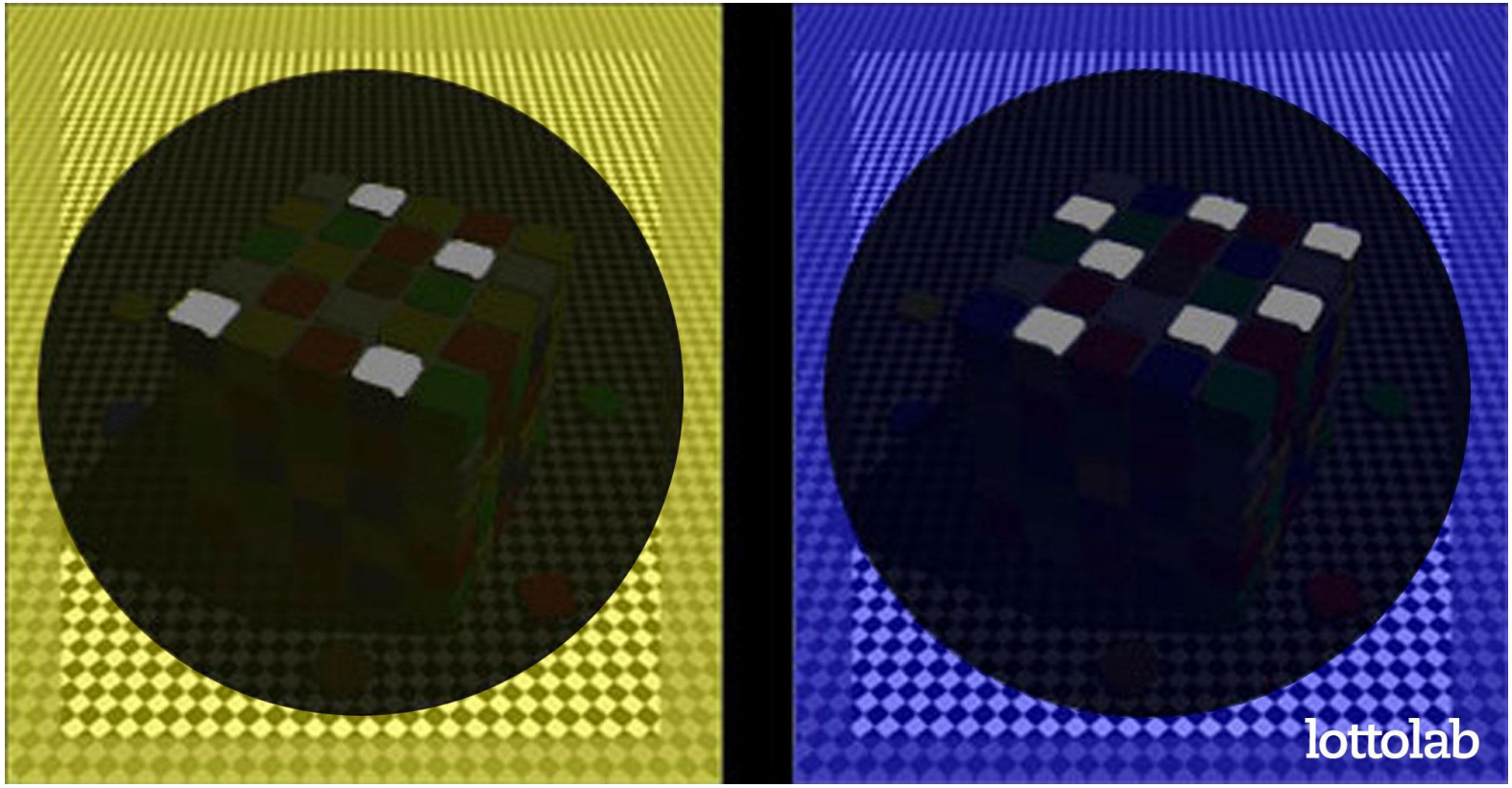




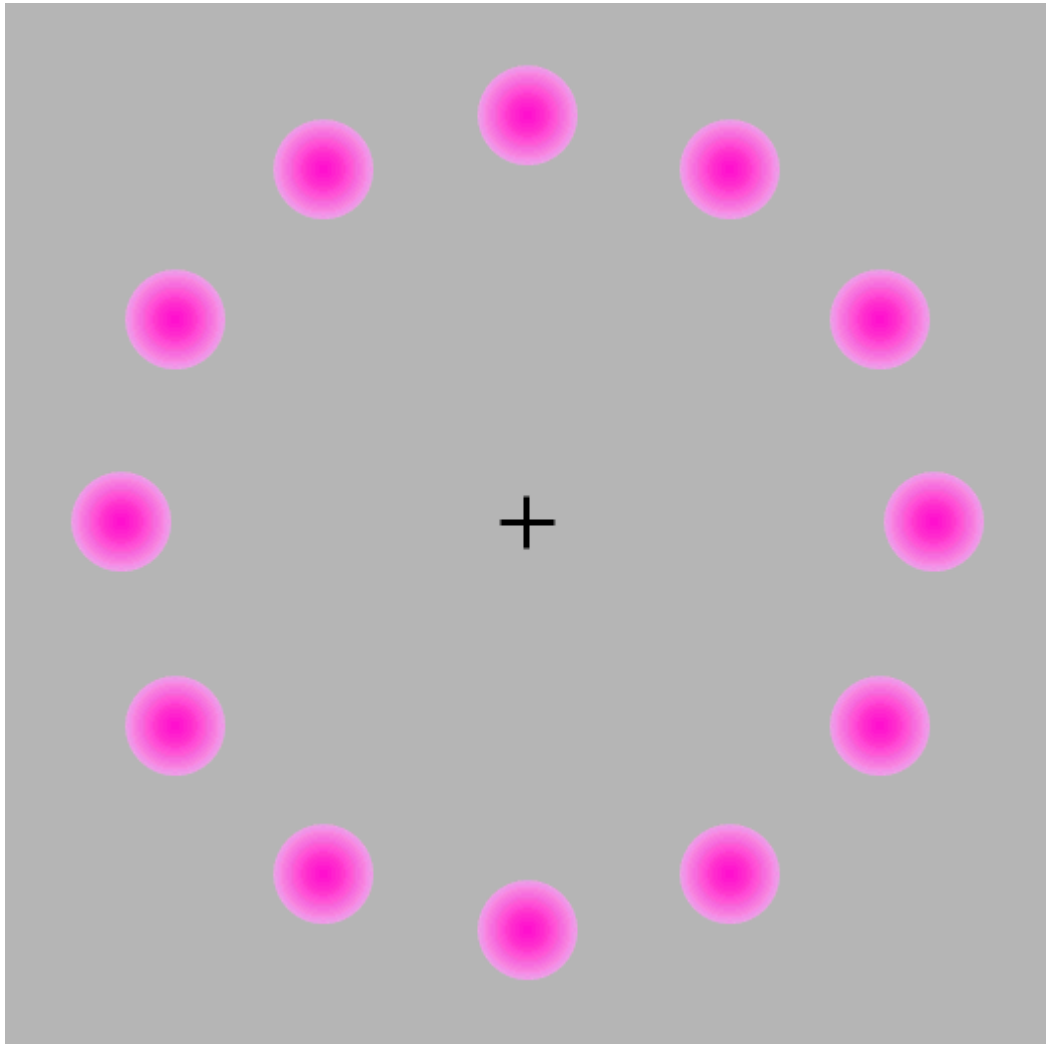


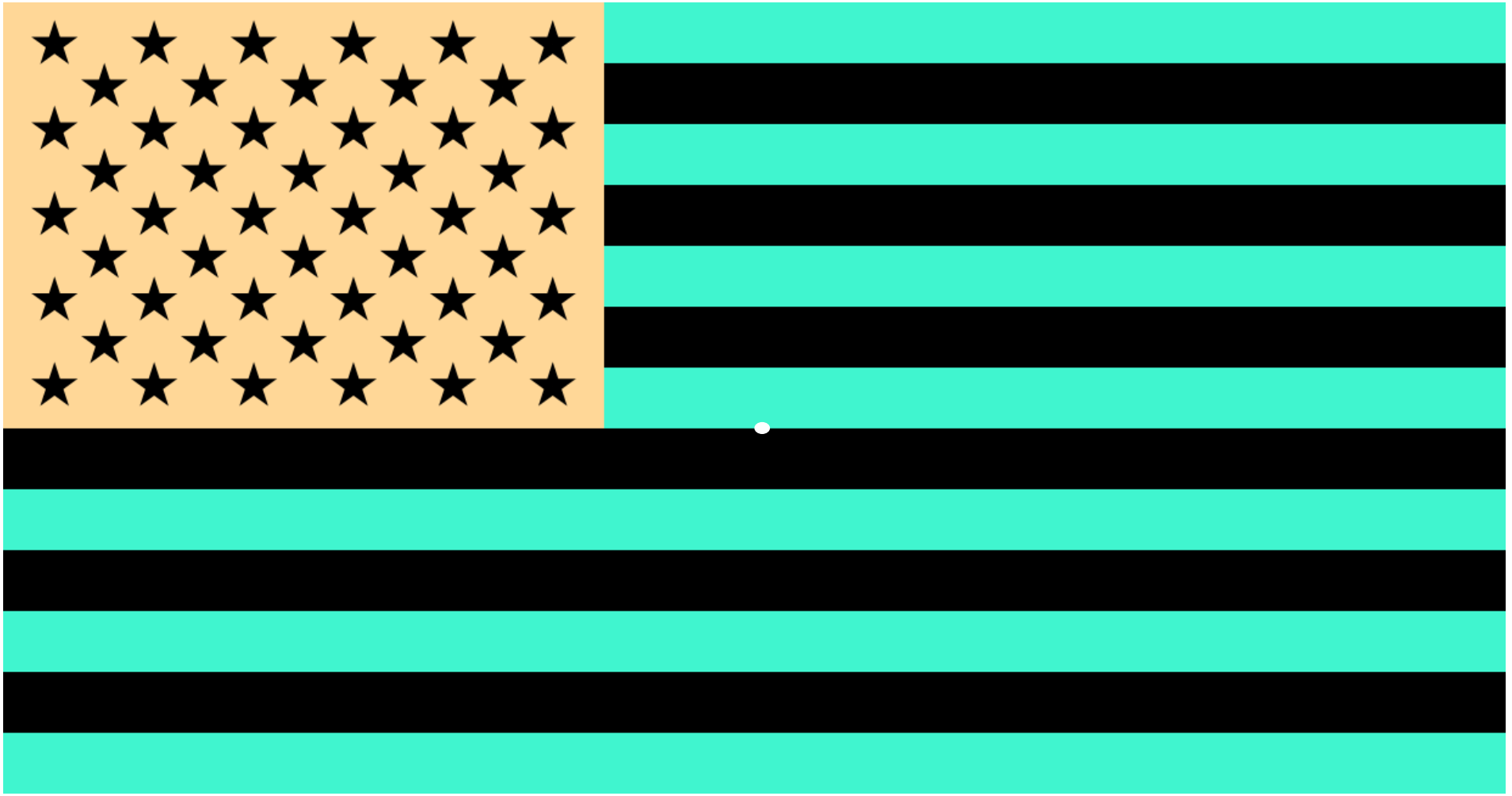


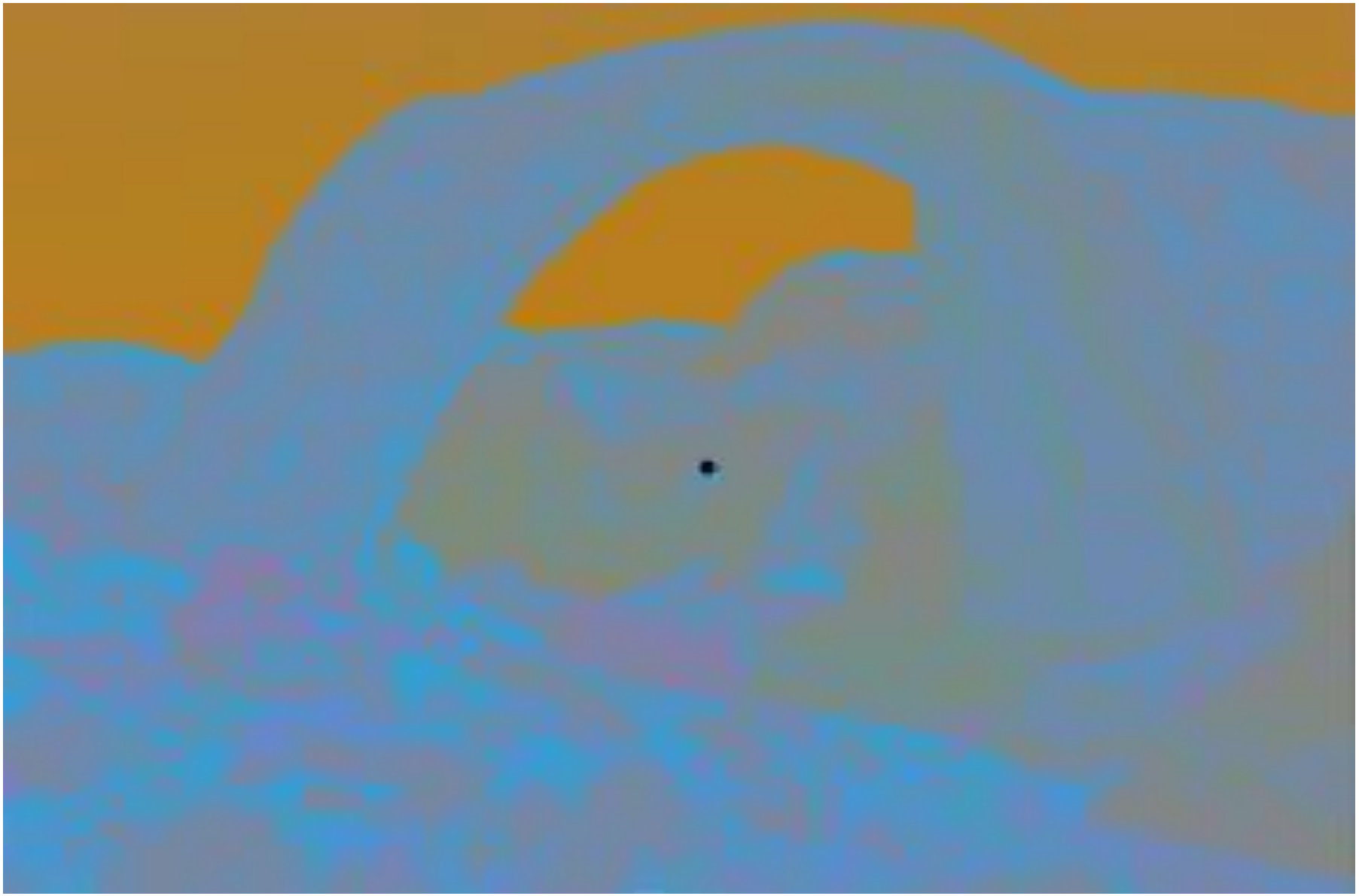

lottolab


lottolab

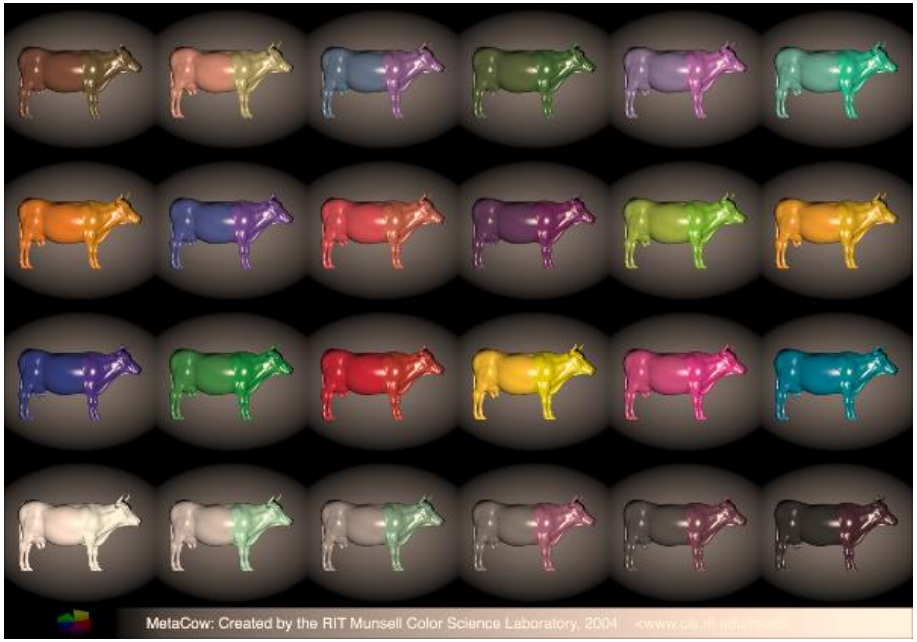
Afterimages: Complementary Colors



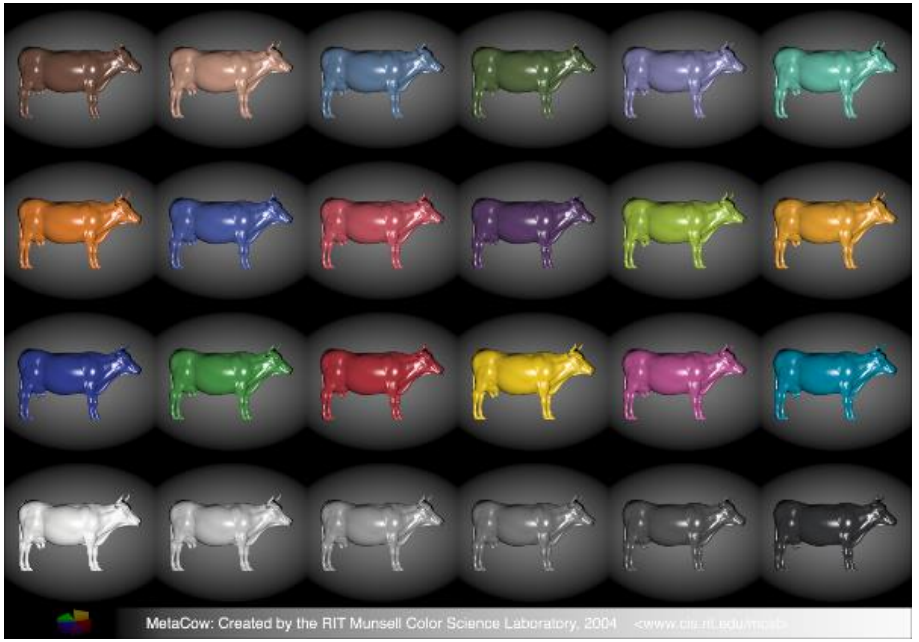




Metamerism



CIE1931, Illuminant A



CIE1931, Illuminant D65

Metacow Spectral Image Database
https://www.rit.edu/cos/colorscience/rc_db_metacow.php