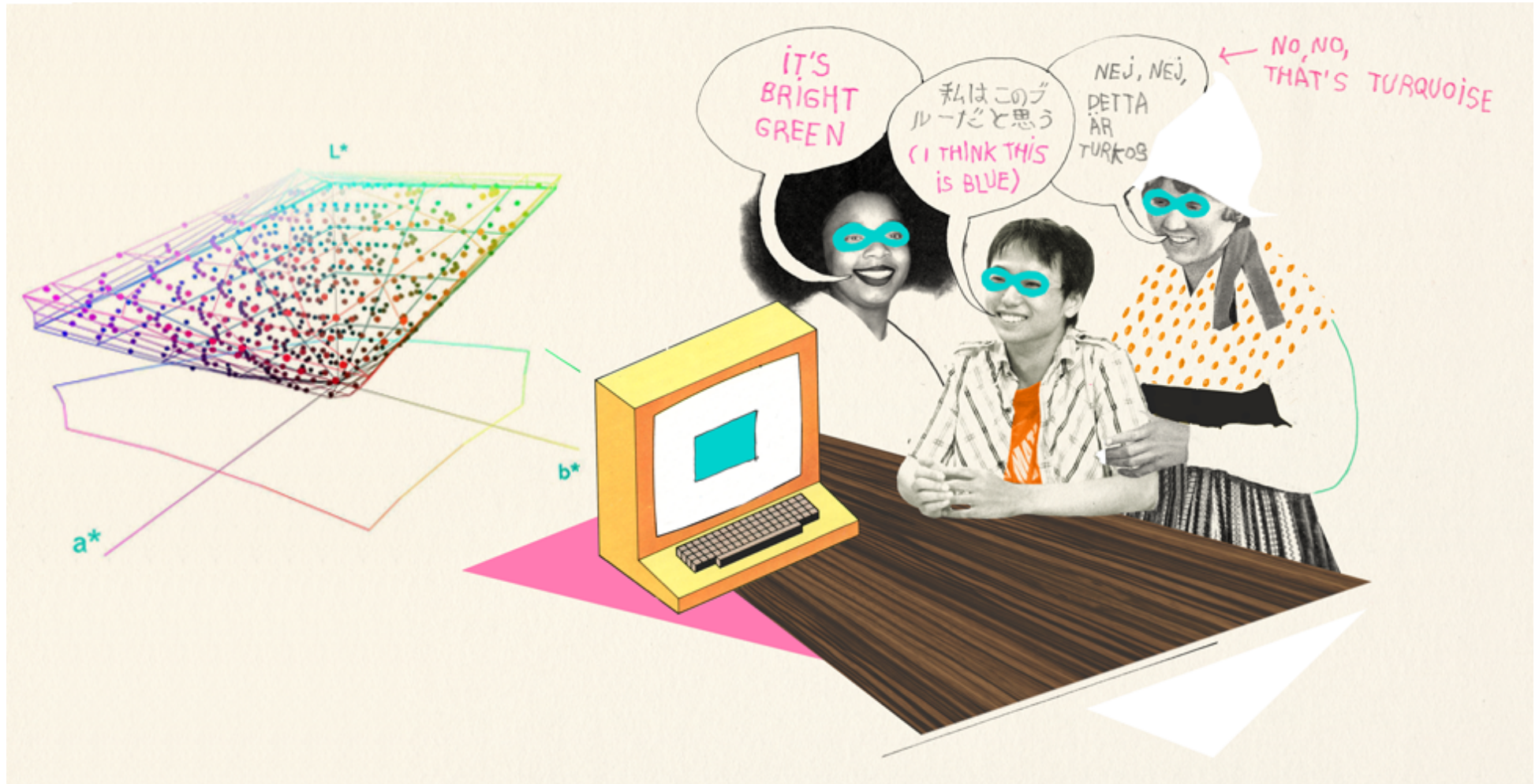


Colour naming across languages

Dimitris Mylonas,
Computer Science, University College London
Chair of Study Group on the Language of Colour, AIC

An Online Colour Naming Experiment



User Interface of Online Experiment

Display Properties

Display Properties


This experiment is designed to perform better under the sRGB web specifications. If you would like we set up the properties of your display. This will improve your viewing experience of online images and videos. Please maximize the size of your browser's window and choose between basic and advanced mode, how following is too complicated, you can always skip to the NEXT step.

Basic Mode
Advanced Mode

Set the color temperature of your display to 6500K or D65 or sRGB. This is the same white point, this is default for LCD displays, while the default settings of old CRT is 9000-9300K.

The gamma of your display should be set at 2.2 to reproduce more real-looking images of a natural scenes.

The following image consists of 21 equal greyscale steps. Adjust the contrast of your display until you can just see the difference of the last two white steps (20-21 steps). Most of the times it is suggested to set the contrast to 100%, this is why most laptops have only brightness control.



For more information: [Tutorial monitor calibration & gamma](#)

A standard default color space for the internet

Adjust the brightness of your display until you can just see the difference between the first black steps of the above test image (01-02 steps). As a rule of thumb brightness should be set approximately to 60% to 70%.

1

Viewing Conditions

Viewing Conditions

We would like you to give us the following information on your display technology and viewing conditions.

- What is your Monitor Technology?
LCD
- What is the brand and model number of your monitor/computer if known?
- What is the diagonal size of your display?
17 inches
- What is your distance from the monitor?
20 cm
- How would you describe the surrounding environment of your monitor?
Dark
- How would you describe the light conditions in your room?
Dark
- How would you describe the white point on your display?
Bluish White
- Did you calibrate your display?
No

2


Colour Vision Test

Colour Vision Test

The movie below displays a moving "coloured" square that is buried in flickering luminance contrast noise. The square changes colour as the movie plays. You may be able to see the colour for some or all of the time. If you have a form of severe colour deficiency, you will have difficulty in seeing the "coloured" square moving all the time.

The absence of the moving square may only last for 2 to 3 seconds, before you see it reappearing in a different colour. This temporary disappearance of the pattern is what you have to watch for in the test. When this happens, you can continue the experiment but you may like to confirm this with your optometrist who will be able to diagnose the type and severity of your colour deficiency loss.

The movie lasts for 90 seconds and all you need do is play it and remember if the "coloured" square disappeared at any time during the movie. For optimum performance the test should be viewed under dark viewing conditions.



Did the "coloured" square disappear at any time?
 Yes No

This test developed by City University London and Professor John Barbur

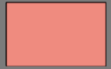
3

Colour Naming Task

Colour Naming Experiment

You are presented with one colour sample at a time of a series of 20 colour samples. Please name each with the best representative colour term that you remember. Please note that your response time will be recorded for scientific purposes.

Sample Number
1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20



4

Cultural Background

Cultural Information

Well done and thank you for your participation. Before you leave, please provide us with some background information. This is the final step, once this is done you are able to enter for the prize draw and see a summary of your results.

- In which country did you grow up as a child?
Afghanistan
- Which is the country where are you currently resident?
Afghanistan
- How would you describe your skills in the language of the experiment?
Native Speaker
- How would you describe your experience in working with colour?
Beginner
- What about your educational level?
GCSE
- What is your age?
22
- What is your gender?
Female

5

Communication Form

Thank you

Thank you for participating. Please feel free to invite your friends to participate. The performance of the experiment depends on the quality of your responses and the number of observers. Below you can find a summary of responses.

If you would like to inform you for the results of this research and have the chance to win one of five high quality prints by Valero Dovol.

Name

Email

Comments

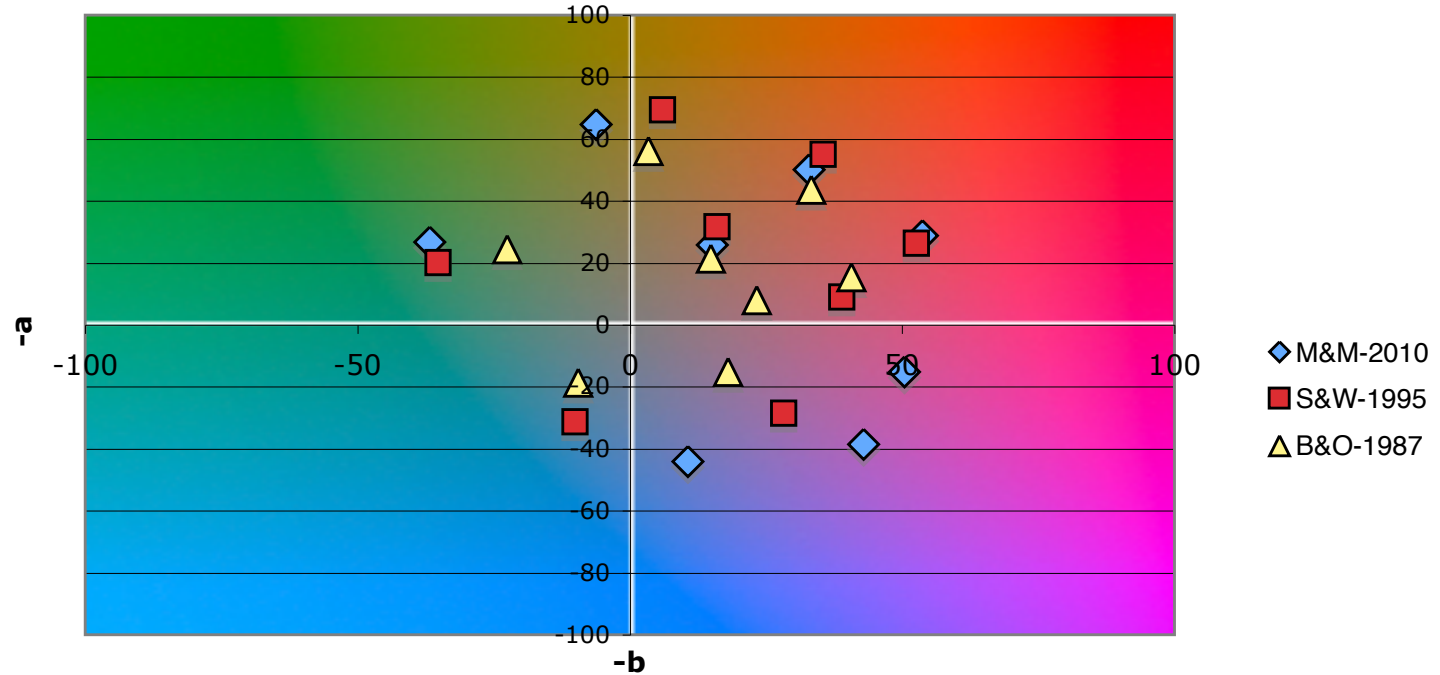
Your responses

- turquoise
- grey
- dark purple
- dark violet
- purple
- red
- pink
- lime green
- pale light green
- pink
- blue
- light green
- black
- light violet
- dark blue
- magenta
- red
- black
- dark violet
- green green

6

Validation of Experimental Methodology (English)

Location of Basic Chromatic Terms in a* b* plane

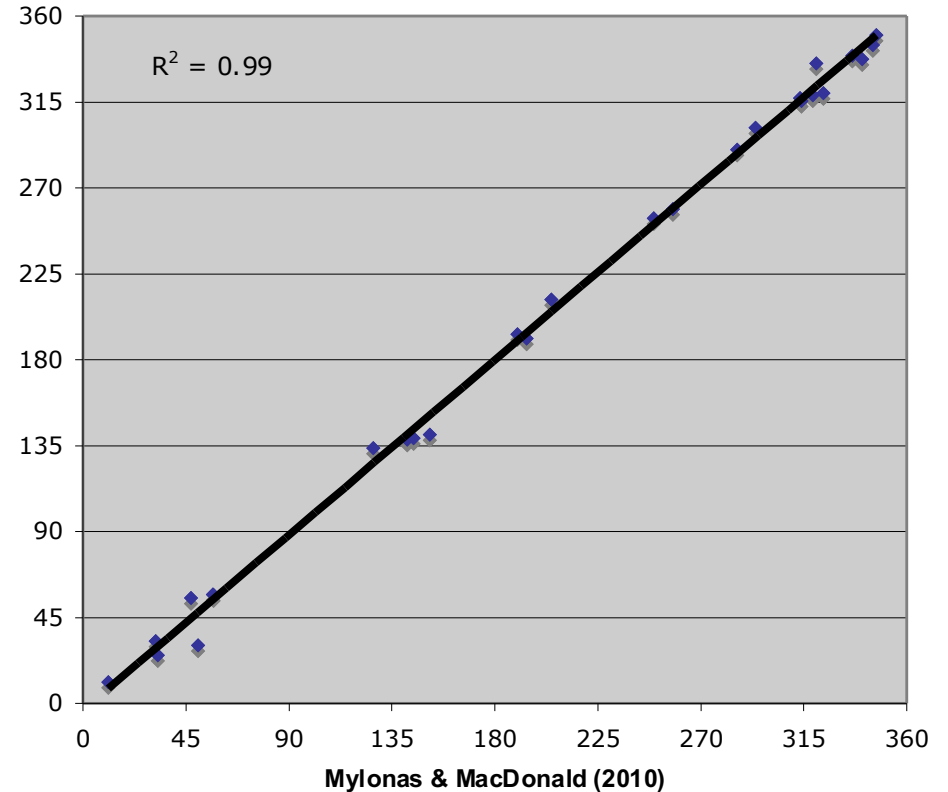


Boynton & Olson vs Sturges & Whitfield	Boynton & Olson vs Mylonas & MacDonald	Sturges & Whitfield vs Mylonas & MacDonald
mΔE _{ab} 13.92	21.53	14.1

Inter-Experimental Variability of Online Experiments

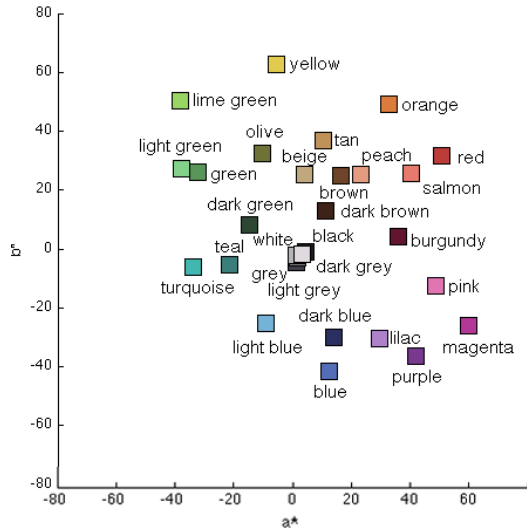
Moroney, N. (2003)
Unconstrained web-based color naming
experiment.
Proc. SPIE/IS&T Conf. on Color Imaging VIII
SPIE Vol. 5008, 36-46.

Top 27 Frequent Chromatic Colour Names $h_{(ab)}$

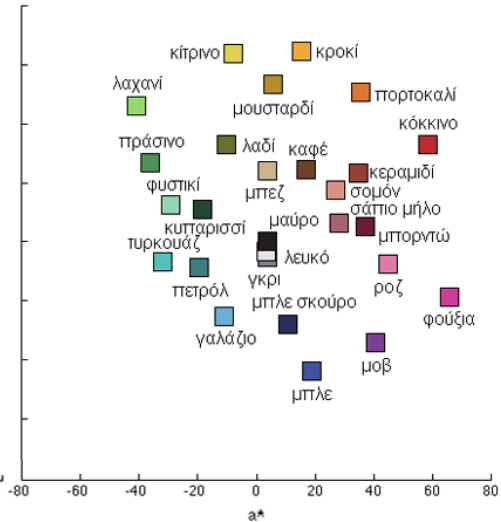


Location of consistent color names in a* b* plane (EN, GR, ES, DE)

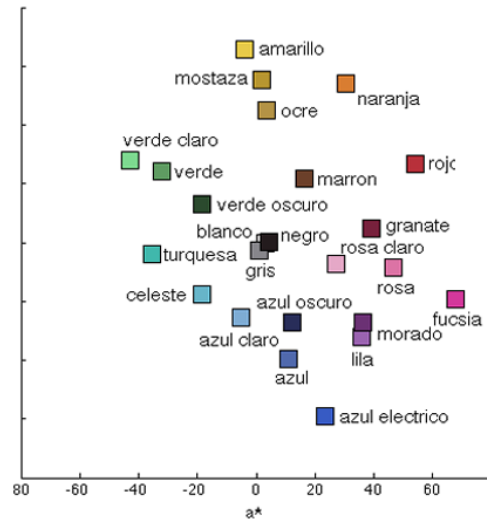
English (n=30)



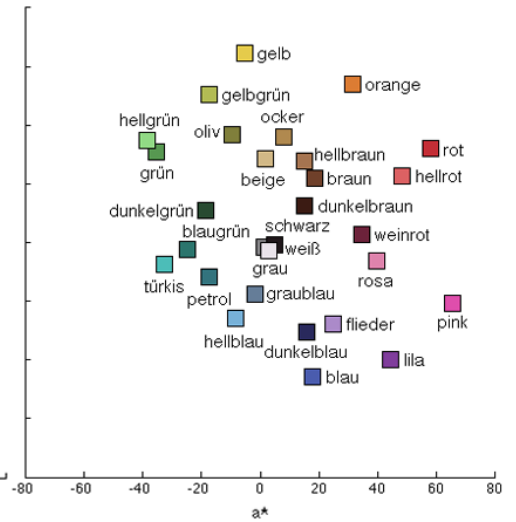
Greek (n=27)



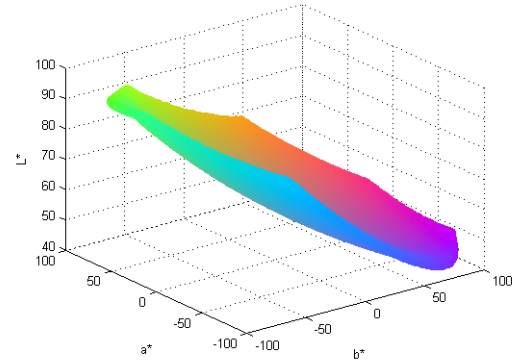
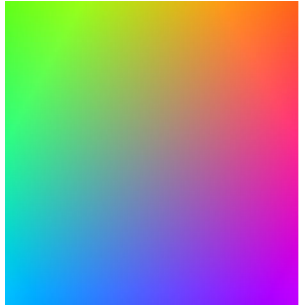
Spanish (n=24)



German (n=29)



Colour segmentation of synthetic image (EN, GR, ES, DE)

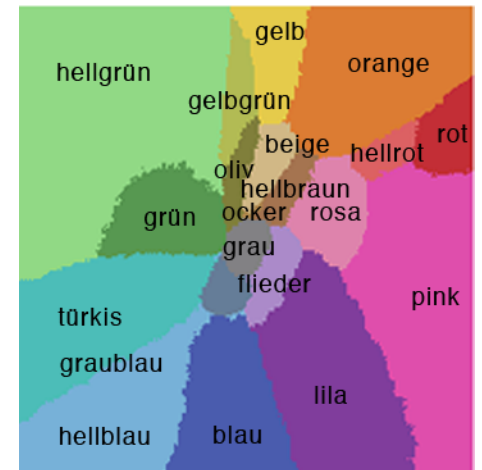


English (n=19)

Greek (n=18)

Spanish (n=16)

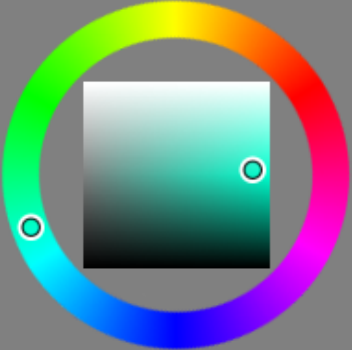
German (n=20)



Colournamer - an online colour naming model

English | dark green | Enter a colour name | Go

RGB: 33 | 242 | 203 | HTML: #21f2cb



light green

turquoise

light blue

Chromatic Achromatic

Feel Free to improve me: Disagree Agree

What is the most representative name for this colour? | Submit

<http://colournaming.com/research>

Future Directions

- Use colour naming data to evaluate **common colour appearance** (with Fogra)
- Redesign experiment for **mobile devices**
- **Other languages**, more observers, ... more data ... , ... new collaborations ...

