A Colour Naming Investigation within Different Cultures

http://colornaming.net

Dimitris Mylonas
MSc Digital Colour Imaging
London College of Communication
Outline

• Background
• Objectives
• Infrastructure of Online Colour Naming Experiment
• Stimuli Selection
• Observers
• An Online Colour Naming Database
• Comparison with Previous Constrained Studies
• An Online Colour Naming Model
• Comparison with Previous Unconstrained Studies
• Conclusions & Future Directions
Background

- If colour categorisation derives from vision processing?
- If language influence colour categorisation?

 Neuro-imaging support of the influence of language in categorical colour perception (Tan 2008).
Objectives

• To determine broad multicultural sets of colour names in wide use.

• To determine the regions in colour space corresponding to a broad set of multicultural colour names

• To develop an Online Colour-Naming model
Stimuli Selection

600 samples (589 colour samples + 11 Neutrals)
2:1 ratio sub sampling of Munsell Renotation Data
Observers

• Normal Trichromats
• Speakers of one of the four currently available languages
• Adults (Over 16 years old)
An Online Colour Naming Database

Number of words of colour names

- Two words: 42%
- More than three words: 6%
- B&Ks 11 Basic Terms: 29%
- Monolexical non basic terms: 23%
Comparison with Previous Constrained Studies (En)

mean CIELAB ΔE: 14.1
Comparison with Previous Constrained Studies (Sp)

mean CIELAB ΔE: 24.9
Comparison with Previous Constrained Studies (Gr)

mean CIELAB ΔE: 20.3
An Online Colour Naming Model

A non-parametric Colour Naming Model based on Maximum Likelihood Estimation method
Comparison with Previous Unconstrained Studies (En)

CIELAB $h^*$: $R^2=0.99$
CIELAB $L^*$: $R^2=0.95$
CIELAB $C^*$: $R^2=0.78$
Conclusions & Future directions

- We developed a validated online colour-naming experiment

- We identified the colour range of a broad set of multicultural colour names

- We developed an online colour naming model

- We are planning to develop an online application to facilitate colour communication within different cultures
“As the evening sky faded from a salmon colour to a sort of flint grey, I thought back to the salmon I caught that morning, and how grey he was, and how I named him Flint.”

Jack Handy (American Comedian)