Web Collaboration Motivated by Colors Emotionally based on Common Sense

Ana Luiza Dias, Junia Anacleto, Luciana Silveira, Rosângela Penteado, Marcos Silva, David Buzatto, Johana Villena

12 October 2009
Brasil
Agenda

- Introduction
- Motivation for the Engagement in Activities
- Common Sense to Represent Culture
- Classifications
  - Colors
  - Colors and Emotions
  - Using colors of common sense to Classificate Emotions
- Conclusion
Introduction

- Globalization and communication without fixed places and time

- Web applications are designed to be used by users that are interacting and collaborating to each other to do a certain task

- It is necessary to understand what motivates users to get engaged into a web based task and create an environment that makes possible:
  - The individual satisfaction
  - The group’s satisfaction
Goals

- Application of colors in the web project
  - Essential for visual communication
  - It may reinforce the communicative intention

- The significance of color is explored considering the cultural context - common sense knowledge

- OMCS-Br Project
  - Common Sense is defined as a group of facts known by most people in a group, “including a wide part of human experiences, knowledge on spatial, physical, social, temporal and psychological aspects related to daily experiences of humans”
OMCS-Br to collect common sense

- Collected common sense data based on colors
  - Colors and Emotions: 2,359 facts
  - Colors and Actions: 3,522 facts
  - Colors and Objects: 8,915 facts

- Total collected data:
  - 14,796 facts

www.sensocomum.ufscar.br
OMCS-Br to collect common sense

Collecting information from templates related to colors, objects, actions and emotions on the website

<table>
<thead>
<tr>
<th>No</th>
<th>Template</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(object)</td>
</tr>
<tr>
<td>2</td>
<td>(color image)</td>
</tr>
<tr>
<td>3</td>
<td>(image color)</td>
</tr>
<tr>
<td>4</td>
<td>(color name)</td>
</tr>
<tr>
<td>5</td>
<td>(color name)</td>
</tr>
<tr>
<td>6</td>
<td>Color (image color)</td>
</tr>
<tr>
<td>7</td>
<td>When I am (emotion)</td>
</tr>
<tr>
<td>8</td>
<td>Color (image color)</td>
</tr>
</tbody>
</table>
Color Classifications

- The human eye is able to perceive thousands of different colors, but language conveys a limited number of basic color terms.
- Template 8 on OMCS-Br was developed to confirm that...
Colors (1/2)

- Colors can:
  - evoke emotions
  - communicate messages
  - transmit concepts

- Meanings for colors in the western culture:
  - Yellow: color of the light and the heat, of the sun and the summer; it is associated with prosperity and wealth
  - Blue: the favorite color of more than a half of the western population, water, trust, calmness and harmony
  - Green: fortune and money, nature and ecology; color of hope and transmits security
  - Red: the color of danger, prohibition, love and passion; it is also associated with the heat
Colors (2/2)

- Colors discussion guarantees a debate full of controversies and flamed talks
- It is possible to identify color characteristics attributed through cultural differences represented by
  - Colors’ symbology
  - the study of colors’ collective meaning

<table>
<thead>
<tr>
<th>No</th>
<th>Template</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>sky reminds me the color blue</td>
</tr>
<tr>
<td>2</td>
<td>makes me wish dipping in the pool</td>
</tr>
<tr>
<td>3</td>
<td>reminds me an ocean</td>
</tr>
<tr>
<td>4</td>
<td>light blue reminds me a sky</td>
</tr>
<tr>
<td>5</td>
<td>blue makes me wish swimming</td>
</tr>
</tbody>
</table>
Emotions (1/2)

“Emotion is defined as any kind of mind’s agitation or change, a light feeling or passion; any mental state of excitement or persistence” (Soto, 2005)
The function of emotion is to provide the organism with some level of arousal (pleasurable or unpleasurable experience) according to the most appropriated answer to each specific situation.

Emotion predisposes people to a certain answer:
- To get what might be useful to satisfy the person’s needs
- To avoid what might be opposed to that satisfaction

<table>
<thead>
<tr>
<th>No</th>
<th>Template</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Color □ makes me feel JOYFUL</td>
</tr>
<tr>
<td>2</td>
<td>Color ▒ makes me feel CALM</td>
</tr>
<tr>
<td>3</td>
<td>Color ▶ makes me feel HAPPINESS</td>
</tr>
<tr>
<td>4</td>
<td>When I am happy I remember the color YELLOW</td>
</tr>
<tr>
<td>5</td>
<td>When I am depressed I remember the color BLUE</td>
</tr>
<tr>
<td>6</td>
<td>When I am aggressive I remember the color RED</td>
</tr>
</tbody>
</table>
On the OMCS-Br Project, people mention the color blue, followed by green, red, and so on.
Classifying emotions considering colors

Classify the emotions from common sense knowledge base:

- Love, Joy, Surprise, Anger, Sadness, Fear

<table>
<thead>
<tr>
<th>Primary Emotion</th>
<th>Secondary Emotion</th>
<th>Tertiary Emotion</th>
<th>Common sense emotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Love</td>
<td>Affection</td>
<td>adoration, affection, Love, fondness, liking, attraction, caring, tenderness, compassion, sentimentality</td>
<td>cozy, coziness, beloved, friendly, considerate, thoughtful, affectionate, love-giving, with tenderness, comforted, in love, gentle, safe, romantic, sentimental, nice</td>
</tr>
<tr>
<td>Lust</td>
<td>Arousal, desire, lust, passion, infatuation</td>
<td></td>
<td>crazy, passionate, attractive, elegant, horny, seductive, sensual</td>
</tr>
<tr>
<td>Longing</td>
<td>Longing</td>
<td></td>
<td>desire, hot</td>
</tr>
</tbody>
</table>
Analyzing the relationship between colors and emotions:

- Red color classification from OMCS-Br knowledge base

Primary emotions classification
In progress: emotions, actions and objects related to one color

http://www.dc.ufscar.br/~ana_dias/esquema.html
Conclusions - Next Steps

- The colors’ application on the Web project can influence the user’s degree of engagement and participation in the web collaborative task.

- Individual motivation and participation in work group via Web can be encouraged when applying culturally contextualized colors on the web project to promote and motivate engagement and collaboration.

- Analyzing colors collected from OMCS-Br Project common sense knowledge base, it is intended to formalize Motivational Patterns.
  - Describing social processes to promote engagement and collaboration (intrinsic motivation) proposing either changes or extensions to the web project development (extrinsic motivations).
Thank you very much!

Contact:
- ana_dias@dc.ufscar.br
- junia@dc.ufscar.br
- martha@utfpr.edu.br
- rosangel@dc.ufscar.br
- marcos_silva@dc.ufscar.br
- david_buzatto@dc.ufscar.br
- Johana_villena@dc.ufscar.br

URLs:
- http://www.dc.ufscar.br/~ana_dias (papers)
- http://lia.dc.ufscar.br (Advanced Interaction Laboratory)
- http://www.sensocomum.ufscar.br (OMCS-Br website)