Persuasive Urban Systems
Healthy and Sustainable Routines (MAS.S60) Fall 2015

Instructors – Agnis Stibe, Niaja Favre
Advisors – Kent Larson, Rosalind Picard, Ryan Chin, Kevin Slavin

Class Description — We all live and work in an urban environment. Oftentimes, we are not aware of how hugely our behavior is influenced by the environment. For example, if stairs are inconveniently located, we take an elevator. If bicycle lanes are dangerous, we prefer to drive a car. Future cities will alter human behavior in countless ways. Persuasive urban systems will play an important role in making cities more livable and resource efficient by addressing current environmental problems and enabling healthier routines.

In this course, we will work on reshaping our current environments and designing future spaces to help people become healthier and to acquire sustainable lifestyles. We will explore how good urban design might be combined with socially influencing systems to encourage healthy behaviors (such as walking, bicycling, stair-use) at scale. We will study how quality of life and the health of the individual and communities might be improved through the creation of persuasive cities, streets, buildings, homes, and vehicles.

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Website — hobs.media.mit.edu
Class Days – Tuesday, 4-5:30pm (E14-633), Thursday 2-3:30pm (E15-359) – First Class September 10th
Important Dates

• MIT Media Lab – Members Week
  • Oct 27 – Wellbeing talk (Me?)
  • **Oct 29** – Posters (out of class)

• Persuasive Technology – Conference
  • **Nov 13** – Submission Deadline for Research Papers
  • Jan 29 – Submission Deadline for Posters, Demos
Class 4 – Oct 1

• Social Influence / Persuasion
• **Typology** of Computer-Supported Influence
• Reviewing **Student Projects**
• Assignment 4
There is [this group of people]

who currently [do this unsatisfactory behavior].

In the future, I would like them to [do this new behavior].
Albert Bandura’s theory

Behaviour

Personal factors
(Cognitive, affective, & biological events)

Environmental factors
Socially Influencing Systems (SIS)

Users
Interaction
Interfaces
Information

Social Influence

Social learning (SL)
Social comparison (SC)
Normative influence (NI)
Social facilitation (SF)
Cooperation (CR)
Competition (CT)
Recognition (RE)

@agsti
Badgers at Work

Eric Informational Literacy Badge
- Committee Members:
  Mrs. Godwin
  Mrs. Leavy
  Mrs. Gaffin

Messinger Collaboration Badge
- Committee Members:
  Mrs. Stanton
  Mrs. Fish
  Mr. Battaglia

Elie Acceptance Badge
- Committee Members:
  Mrs. Sim
  Mrs. Friedman
  Mr. Emborn
  Mrs. Wallace
  Mrs. Icard

Kagan Empowered Learner Badge
- Committee Members:
  Mrs. Porcell
  Mrs. Berland
  Mrs. O'Brelbaum

- Learners develop self-discipline and stand up against pop cultures.
PARTICIPATION

- CT: Competition
- RE: Recognition
- CR: Cooperation
- SF: Social facilitation
- SL: Social learning
- SC: Social comparison
- NI: Normative influence

ENGAGEMENT

INVolVEMENT
Persuasive Technology

Using Computers to Change What We Think and Do

B.J. Fogg
Figure 5.1
Computers as social actors.

Social actor
*Creates relationship*

A social actor can be persuasive by
- Rewarding people with positive feedback
- Modeling a target behavior or attitude
- Providing social support
Class 4 – Oct 1

- Social Influence / Persuasion
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- Assignment 4
PERSUASION

an action of causing someone to do something through reasoning or argument
SOCIAL INFLUENCE

a capacity to have an effect on the behavior of someone in a social context
<table>
<thead>
<tr>
<th></th>
<th>Persuasion</th>
<th>Social Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cialdini (2009)</td>
<td>Liking, scarcity, authority, consistency, reciprocity</td>
<td>Social proof</td>
</tr>
<tr>
<td>Guadagno et al. (2014)</td>
<td>Reasoning and argument</td>
<td>External pressure</td>
</tr>
<tr>
<td>O’Keefe (1990)</td>
<td>Central and peripheral cues</td>
<td>Actions of surrounding people</td>
</tr>
<tr>
<td>Petty and Cacioppo (1986)</td>
<td>Written or spoken messages</td>
<td>Interaction with others</td>
</tr>
<tr>
<td>Rashotte (2007)</td>
<td>Detailed argumentation</td>
<td>Enabled by complex social settings</td>
</tr>
<tr>
<td>Wood (2000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PERSUASION</td>
<td>SOCIAL INFLUENCE</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td><strong>Origin</strong></td>
<td>Intention or agenda</td>
<td>Presence of other people</td>
</tr>
<tr>
<td><strong>Driver</strong></td>
<td>Reasoning or argument</td>
<td>Behavior of surrounding people</td>
</tr>
<tr>
<td><strong>Impact</strong></td>
<td>Controlled and guided</td>
<td>Unpredictable and ambient</td>
</tr>
<tr>
<td><strong>Direction</strong></td>
<td>Push</td>
<td>Pull</td>
</tr>
</tbody>
</table>
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• **Typology of Computer-Supported Influence**

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TYPOLOGY OF COMPUTER-SUPPORTED INFLUENCE
COMPUTER – MEDIATED (CME)

COMPUTER – MODERATED (CMO)

COMPUTER – HUMAN (CHU)

FACE–TO–FACE (FTF)

Dynamic design

User behavior

User content

Dynamic content

Persuasive design

USER

INTERPERSONAL

INFLUENCE
<table>
<thead>
<tr>
<th>Content</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed</strong></td>
<td><strong>(FC)</strong></td>
</tr>
<tr>
<td>Preset by developers and owners</td>
<td>Preset by designers</td>
</tr>
<tr>
<td>Supports <strong>CHU</strong> influence</td>
<td>Supports <strong>CHU</strong> influence</td>
</tr>
<tr>
<td><strong>Dynamic</strong></td>
<td><strong>(DC)</strong></td>
</tr>
<tr>
<td>Generated by users</td>
<td>Evolving through user behavior</td>
</tr>
<tr>
<td>Supports interpersonal <strong>CME</strong> influence</td>
<td>Supports interpersonal <strong>CMO</strong> influence</td>
</tr>
</tbody>
</table>
**Stanford**

- Sunny
- Jogging: 374

- Now: 19°
- 3PM: 21°
- 4PM: 19°
- 5PM: 17°
- 5:06 PM: 15°
- 6PM: 14°
- 7PM: 12°

**Today:** Sunny currently. The high will be 21°. Clear tonight with a low of 10°.

- Sunrise: 7:23 AM
- Sunset: 5:06 PM
- Chance of Rain: 0%
- Humidity: 53%
- Wind: N 8 kph
- Feels Like: 19°
- Precipitation: 0.0 cm
- Pressure: 1,021 mb
- Visibility: 16.1 km
- UV Index: 1

**Eindhoven**

- Rain
- Jogging: 12

- Now: 8°
- 2PM: 9°
- 3PM: 9°
- 4PM: 8°
- 4:48 PM: 8°
- 5PM: 8°
- 6PM: 8°

**Today:** Rain conditions with 26 kph winds out of the southwest. The high will be 9°. Clear tonight with a low of 5°.

- Sunrise: 8:41 AM
- Sunset: 4:48 PM
- Chance of Rain: 30%
- Humidity: 100%
- Wind: ssw 26 kph
- Feels Like: 4°
- Precipitation: 0.6 cm
- Pressure: 1,018 mb
- Visibility: 6.4 km
- UV Index: 0

**Chicago**

- Clear
- Jogging: 0

- Now: -14°
- 7AM: -17°
- 7:18AM: -18°
- 8AM: -17°
- 9AM: -17°
- 10AM: -17°
- 11AM: -17°

**Today:** Clear conditions with a wind chill of -28° and 47 kph winds out of the northwest.

- Sunrise: 7:18 AM
- Sunset: 4:35 PM
- Chance of Snow: 0%
- Humidity: 48%
- Wind: nw 47 kph
- Feels Like: -28°
- Precipitation: 0.0 cm
- Pressure: 1,035 mb
- Visibility: 14.5 km
- UV Index: 0
Eindhoven
Rain
82
Friday
7
Saturday
6

Today: Rain conditions with 26 kph winds out of the southwest. The high will be 9°. Clear tonight with a low of 5°.

Sunrise: 8:41 AM
Sunset: 4:48 PM
Chance of Rain: 30%
Humidity: 100%
Wind: ssw 26 kph
Feels Like: 4°
Precipitation: 0.6 cm
Pressure: 1,018 mb
Visibility: 6.4 km
UV Index: 0

Chicago
Clear
20

Today: Clear conditions with a wind chill of -28° and 47 kph winds out of the northwest.

Sunrise: 7:18 AM
Sunset: 4:35 PM
Chance of Snow: 0%
Humidity: 48%
Wind: nw 47 kph
Feels Like: -28°
Precipitation: 0.0 cm
Pressure: 1,035 mb
Visibility: 14.5 km
UV Index: 0
Social Influence / Persuasion

Typology of Computer-Supported Influence

Reviewing Student Projects

Assignment 4
Class 4 – Oct 1

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Assignment 4

• Define Behavior Change using **Template**

• **Story Board** of your Project Idea
  • Sequence of Images (or Animation)
  • Exemplify / Illustrate your Envisioned Urban Intervention
Student Projects

- Demo
  - Computer Animation
  - Video
  - Animated Visuals

- User Study
  - Recruit Participants
  - Experiencing Demo
  - Questionnaire / Interview