E19.2015
Representation and Interaction Design

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Overview

- Semiotics/Semiology (of Visuals)
- Design Patterns
- Visual Language
- Design Activity
Information Design

Semiotics/Semiology
Semiotics/Semiology Defined

The study of signs and symbols, both individually and grouped into sign systems. It includes the study of how meaning is constructed and understood. (Wikipedia)
Basic Semiotic Elements (Peirce)

- A sign represents, (in the broadest possible sense)
- is something interpretable as saying something about something
- not necessarily symbolic, linguistic, or artificial
Basic Semiotic Elements (Peirce)

An **object** (or semiotic object)

- is a subject matter of a sign and an interpretant.
- can be anything discussable or thinkable, a thing, event, relationship, quality, law, argument, etc., or be fictional.
Basic Semiotic Elements (Peirce)

An interpretant (or interpretant sign)

- is the sign's more or less clarified meaning or ramification, a kind of form or idea of the difference which the sign's being true or undeceptive would make
- is the sign’s effect on the mind
- results from a process of interpretation
- the sign stands for the object to the interpretant
Information Design

Example

[Diagram showing a simulation interface with controls for pressure, temperature, and heating time, along with a graph plotting heat energy against temperature.]
Example

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**Information Design**

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**Example**

- **Pressure**: 1.00 atm
- **Temperature (K)**
  - Chlorine: 172.0 K
  - Bromine: 101.1 K
  - Iodine: 238.7 K

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Heat: **OFF**

Heating time: 0.0 (s)

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Heat Energy (kJ)
General Semiotic Functions

- Presentational (construct or construe presentation of reality, situation, ...)
- Orientational (orient meaning toward audience, take stance)
- Organizational (relations among its constituent parts)
Information Design

Typology of Signs
Typology of Signs

- Icon
- Index
- Symbol
Information Design

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**Icons**
- Convey ideas of the things they represent simply by imitating them

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**Indices**
- Show something about things, on account of their being physically connected with them
- Obtain meaning from temporal or spatial proximity or causality

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**Symbols**
- General signs, abstract, arbitrary
- Associated to meaning by usage
Example
Practical Relevance of sign types
How can the type of sign used to represent key concepts in educational materials affect learning?
Information Design

Design Patterns
Design Patterns (Alexander)

- Structural and behavioral features that improve the "habitability" of a user interface
- Are connected to one another in form of a network
- Capture core of solutions to typical design tensions
- Form pattern languages
- Patterns form profound solutions when they overlap
Design Patterns for Interfaces

- structural and behavioral features that improve the "habitability" of a user interface
- make UI more usable, easier to understand, or more beautiful
- can be a description of best practices within a given design domain
- capture common solutions to typical design tensions
Information Design

Visual Language
Information Design

Visual Language

- Vocabulary of elements used in a design
- Define shapes, colors, fonts
Design Activity

Instructional Information Design Task

New perspective: Consider signs and design patterns
- Which signs should be used to represent information?
- Which patterns can you identify in your design?
- Goal: Identify design patterns shared by all groups in the class

Design an interface for a learning tool that:
- allows users to browse blogs of groups of people
- displays entries by topic, time uploaded, or popularity
- allows adding private or public notes for each entry