LCC 6310
The Computer as an Expressive Medium

Lecture 17

Overview

Look at project 4

Discuss the reading

Readings for next week

Project 4

Due: Friday November 2

Hypertext was conceived as a computer-aided form of reading and writing whose structure matches that of the human mind (a tangled web of association), thus enabling humans to make sense of the exponential growth of knowledge experienced in the 20th century. The World-Wide Web, while a rather anemic implementation of hypertext, makes up for these deficiencies by providing us a with a sneak preview of what it might be like to have a truly global repository of knowledge...

Project 4

Due: Friday November 2

But making sense of the world is not just a matter of structure, but of process, of the dynamic construction of meaning. And as we've been discovering together, computation is fundamentally a process medium. What would you do to the web? Create an applet that dynamically does something to one or more web pages (e.g. collage, systematic distortion, re-layout, ironic superposition, etc.).

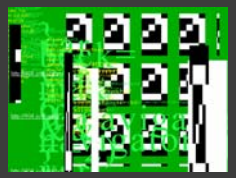
Let's look at some examples...

The Shredder

A bit like a paper shredder in concept, Mark Napier's shredder lets you shred webpages instead...

"The web browser is an organ of perception... It filters and organizes a huge mass of structured information that spans continents, is constantly growing, reorganizing itself, shifting its appearance, evolving. The Shredder presents this global structure as a chaotic, irrational, raucous collage. By altering the HTML code before the browser reads it, the Shredder appropriates the data of the web, transforming it into a parallel web. Content become abstraction. Text becomes graphics. Information becomes art."

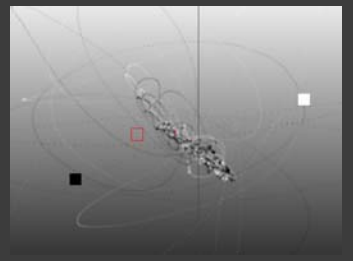
http://www.potatoland.org/shredder/shredder.html



Black and White (CNN)

Mark Napier's Black and White translates a stream of bits from the web into motion. Two marks, one black and one white, chase each other on screen due to mutual attraction and leave trails in their wake. 0 bits move black horizontally, while 1 bits move white vertically.

http://potatoland.com/blackwhite/



Dreamlines

By Leonardo Solaas, 2005

"Dreamlines is a non-linear, interactive visual experience. The user enters one or more words that define the subject of a dream he would like to dream. The system looks in the Web for images related to those words, and takes them as input to generate an ambiguous painting, in perpetual change, where elements fuse into one another, in a process analogous to memory and free association."

http://www.solaas.com.ar/dreamlines/index.htm

Friendster Pachinko

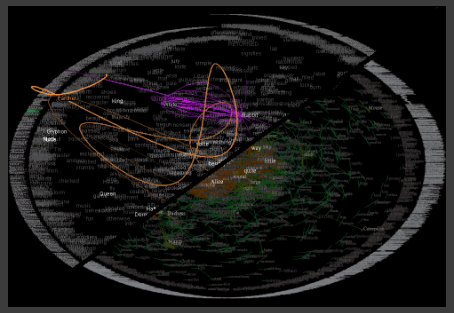
Play pachinko with friendsters rather than balls! Start the game by choosing a friendster, and then all their friendster friends are loaded as ammunition. These friendsters come off the people mover and bounce around until they are killed. If they manage to escape through the tunnel, their friendster friends get loaded as additional ammunition. Quirky and fun!

http://www.tree-axis.com/072904/pachinko.php

TextArc

Brad Paley's TextArc provides a beautiful visual representation and walk through of textual works... try it with Hamlet:

http://www.textarc.org/Hamlet.html



Carnivore

Inspired by the DCS1000 FBI wiretap software known as Carnivore, Alex Galloway's Carnivore is a surveillance tool for data networks. It listens to Internet traffic (email, web surfing, etc.) on a specific local network, then serves this data stream client applications that can turn it into audio-visual experiences of different kinds.

http://r-s-g.org/carnivore/

"Fuel"

A Carnivore client
by Scott Snibbe

Reading

Summary presentation & questions for discussion

Using Computers: A Direction for Design - Winograd & Flores (NMR pp. 551-561)

Winograd & Flores

Winograd is a professor at Stanford. He started in AI (natural language systems) and later moved to HCI & CSCW.

Flores is a Chilean businessman and senator who did research on management and workflow technology for the office at Berkeley.

Together they worked on a groupware system in the early 1990s, based on a conversations-for-action approach.

CSCW

Computer-supported cooperative work (CSCW) is a field of research and design that investigates how people work together in groups and seeks to design computer-systems and networks to enable or facilitate group work.

- Part of the larger HCI field: design, evaluation, implementation, and study of interactive computing systems for human use.

Winograd and Flores present a methodology for CSCW analysis and design that is commonly known as the "language/action" perspective.

Speech Act Theory

John Searle's Speech Acts (1979)

- The meaning of utterances is construed during the course of social communication.
- Knowledge is the result of an interpretation in context.

Language as action – what utterances do

- Promise, request, offer, accept, assert...

Conversations are sequences of actions because by saying things people are understood to be doing things...

A perspective for CSCW

1. Any organization exists as a network of recurrent conversations.
2. These conversations are linked in regular patterns of triggering and breakdown.
3. In creating tools, we are designing new conversations and connections.
4. Computers are a tool for conducting the network of conversations.

"Organizations exist as networks of directives and commissives."

"People in an organization (including, but not limited to managers) issue utterances, by speaking or writing, to develop the conversations required in the organizational network."

Groupware system modeled as "Conversations for Action"...

The Coordinator

"The Coordinator is a system for managing action in time, grounded in a theory of linguistic commitment and completion of conversations. Conversations are essentially temporal, both as a sequence of acts and in the wider context of conversations and action in a community or organization."

The Coordinator

Management Information System (MIS) based on Speech Act Theory

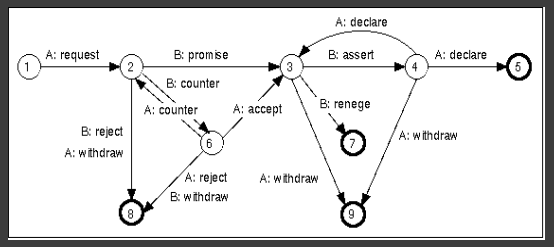
- A tool for interoffice communication (e.g. email) about commitments and scheduling.
- Commitments are tracked. Conflict notification and reminders provided.
- Provides a method for filtering and visualizing status of current ongoing conversations.

"The Coordinator is a system for managing action in time, grounded in a theory of linguistic commitment and completion of conversations. Conversations are essentially temporal, both as a sequence of acts and in the wider context of conversations and action in a community or organization."

The CfA model

The CfA model is represented as the traversal of a state-transition network with arcs representing speech acts and nodes representing dialogue states.

Winograd & Flores 1986, p.64 -The basic "Conversation for Action"



Implementation

Each message belongs to a particular conversation.

User specifies which linguistic action each message serves.

- E.g. Request, Offer, Acknowledge, Commit-to-commit, Interim-report, Promise, Counter-offer, Decline, Report-completion.

User specifies a time frame where appropriate.

- E.g. Respond-by date, Complete-by date, alert date.

Implementation

Menus are generated by a conversational state interpreter.

- Messages are filled with default text to be embellished upon if necessary ("I promise to do your request," "No: I counter-offer").

Time-frames allow the Coordinator to track potential breakdowns and integration with personal calendar.

Conversations can be retrieved by either status (conversational state) and/or time-frame.

Menu examples

```
                    C O N V E R S E

OPEN CONVERSATION FOR ACTION          REVIEW / HANDLE
   Request                              Read new mail
   Offer                                Missing my response
                                        Missing other's response
OPEN CONVERSATION FOR POSSIBILITIES
   Declare an opening                   My promises/offers
                                        My requests
ANSWER                                  Commitments due: 24-May-88

NOTES                                   Conversation records
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Converse Menu (pg.161)

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SPEAKING IN A CONVERSATION FOR ACTION

  Acknowledge          Promise
  Free-Form            Counter-offer
  Commit-to-commit     Decline
  Interim-report       Report-completion
```

Menu generated for responding to a request (pg.161)

Can it work?

The Coordinator system has had lots of critics

- Claim that speech acts don't describe real conversation or interaction well enough for it to work
- What do you think?

Became a Product of Action Technologies, Inc.

- Founded 1983, http://www.actiontech.com

In 1986, a six month study was done with Pacific Bell.

- Not successful - no one used the system.
- Many subjects claimed that the system was fine, but that there was too much structure, and not enough flexibility.

The system has been redesigned to allow more flexibility, but has not yet been widely accepted. Little association left between Winograd & Flores and Action Tech.

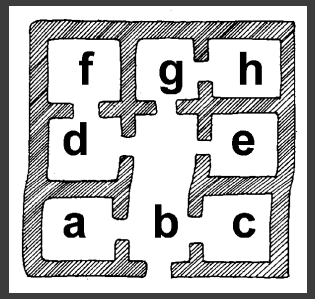
Circularity of design

Winograd & Flores, p. 560

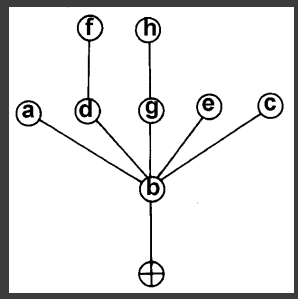
"Our book has focused on the designing of computer-based tools as part of a larger perspective of ontological design. We are concerned with what happens when new devices are created, and with how possibilities for innovation arise. There is a circularity here: the world determines what we can do and what we do determines our world. The creation of a new device or systematic domain can have far-reaching significance - it can create new ways of being that previously did not exist and a framework for actions that would not have previously made sense"

Compare with architecture

E.g. The Social Logic of Space (1990) by Bill Hillier and Julienne Hanson presents a general theory of how people relate to space in built environments...

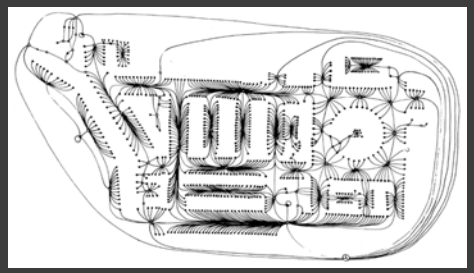


A floor plan



The social logic of the floor plan

A city plan



Social logic of the city plan

Ubicomp design

More recently, Winograd has taken his research in collaborative computing and design into the area of ubiquitous computing

iSpace project at Stanford: designing for fluent interaction in multi-person multi-device environments

[Winograd 2005 lecture at UW]

Assignment 5

Posted online, not graded

A5-01: Modify image collage to, instead of grabbing images, grab headlines from several news sources and display them. This gives you practice in looking at the html source for multiple sites (e.g. New York Times, CNN), determining how a piece of information is represented, and writing the parse code to grab that piece of information.

A5-02: Write an html parser that looks for keywords (you pick the keywords) in the text (not within a tag) of a page and counts how many times different keywords appear. You can imagine that this might be the beginning of an information visualizer that visualizes pages as a function of different keywords that appear.

Readings for next week

For Tuesday next week:

- Concepts: Java for real

For Thursday next week: Theory Readings

- Two students: present readings
- Everyone else: prepare one discussion question for each reading
  - *Process Intensity* - Chris Crawford & *Interactivity, Process Intensity, and Instantial Assets* - Greg Costikyan (linked from class page, for Costikyan scroll down to Tues, May 20, 2003)
  - *Semiotic Considerations* - Michael Mateas (linked from class page)