“We are of two different kinds,” the older waiter said. He was now dressed to go home. “It is not only a question of youth and confidence although those things are very beautiful. Each night I am reluctant to close up because there may be some one who needs the cafe.”

“Hombre, there are bodegas open all night long.”

“You do not understand. This is a clean and pleasant cafe. It is well lighted. The light is very good and also, now, there are shadows of the leaves.”

Hemingway, “A Clean, Well-Lighted Place”
A Story, an Image, and a Link Walked into a Bar

Mark Bernstein

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a story, an image, and a link
walk into a bar

- They don’t get along
- We know this from experience and observation
- But it makes sense to have them together
  - they aren’t a lion, a witch, and a wardrobe, or a fish & bicycle
- I want to explore WHY they don’t get along, and how they might be partially reconciled
a story, an image, and a link: three bar fights

- narrative vs. spatial hypertext
  - boxes and arrows
- story vs. image
  - timelines, dashboards, and dynamics
- story vs navigation
  - on hypertext narrative
boxes and arrows:
links, structure, space
visual dimensions

Fill material
Color
Name Font
Name Color
Name Bold
Border Style
Border Width
Border Color
Shadow Distance
Shadow Color
Shadow Blur

Shape
Width
Height
Xpos
Ypos
Badge
spatial structures
what does this mean?
and how does it mean it?

• no legend
• no convention
• not (really) a composite
• yet we “know” what is meant
what can spatial hypertext say?

Piles
Horizontal lists
Vertical lists
Tables
Composites
can we do more?
Natural Forms in Spatial Hypertext

a conjecture
Louis A. Sullivan
A System of Architectural Ornament

boxes and arrows
the (bounding) box is fundamental
...but space is not a box

Louis A. Sullivan
Schlessinger & Mayer
Chicago
evolving skyscraper ornament from the leaf
Too Late!

for example
We get several new dimensions

- LeafDirection
- Shape
  - LeafBase
  - LeafTip
- LeafBend

Organic forms help let small differences read as small differences; boxes make pixel misalignments seem huge.

exercise for reader: curved, calligraphic stems
a new role for the spatial parser?
GLYPHS CHANGE AUTOMATICALLY
ACCORDING TO NEIGHBOURING LETTERS

WATCH THIS

affordable

precedent: OpenType
conclusion 1/3

yes: space, linkage, and structure have a lot to discuss.
Tinderbox

a visual glossary

Tinderbox

Twig
Note

Title

Text

Shape, Xpos, Height....

an extensible attribute-value list

prototype inheritance
Container

a collection

all the properties of a note

Sort

OnAdd action
Alias

a pointer to a note

intrinsic properties: position, ID, Container, Height, Width

other properties are the property of the original note
Agent

persistent query

collection aliases to notes that match the agent's Query

Sort, OnAdd
Adornment
appears only in maps
adds a meaning or label to a region of space
“smart” adornments gather notes that fit their query
OnAdd
other interesting things

- Prototype inheritance
  - People have less difficulty than I expected
- Template-based export
  - Powerful, flexible, challenging
- OnAdd, Agents, Rules
  - lots of places to hang actions
  - semantics are interesting (default vs constraint)
timelines, dashboards, dynamics
THIRTY-EIGHT THOUSAND FIVE

An exhaustive compendium of travel and activity in 2008, including:
366 days of walking, 545 subway trips, 107 taxis, 12 flights, 19 buses,
three car service journeys, two forays, 38 chariots, four days of skiing,
20 days of driving, 46 trips with other drivers, 64 visits to the gym,
three pools, an ocean, one hayride, and 62 hours of Grand Theft Auto IV.

HUNDRED AND TWENTY-FOUR

FOUR

ONE

SEVEN

FOUR

SEVEN

Michael Clayton

Dashboards Nicholas Feltron
Dashboards

- Summarize lots of data
- Provide access to the data
- Show information in context
- Pick out outliers and show trends
Dashboards and Spatial Hypertext collect data there and summarize it here.
The Map Is Also A Dashboard
The Map Is Also A Dashboard
a timeline seems a straightforward extension of the dashboard to temporal issues
handy orientation guide: who knew whom?
also, “cast of characters” for litigation support

Great demo, and occasionally useful
low information density

we can do this with spatial hypertext tools, but only if we give up spatial hypertext

bee docs timeline
the picture captures a moment: how do we represent a process?
This is a familiar puzzle for the painter

Jacques-Louis DAVID
Oath of the Horatii (1784-1785)
Tell me a story

Images and events carry their own narrative energy.

We want to know what happens next.
we want an action
we have a moment

William Holman Hunt
The Awakening Conscience
1853, Tate Gallery
we **don’t** even have a moment here, the action is **what we failed** to do

no motion

even more narrative

William Lindsay Windus, *Too Late*

Tate Britain
decoding the image creates narrative
(who is she looking at? and if that’s a mirror....)

Edouard Manet
A Bar at the Folies-Bèrgeres
Courtauld Institute Galleries
gesture can create narrative
but it’s hard to see how spatial hypertext can use this

Anna Lea Merrit,
Love Lock’d Out
Tate Britain
If we know (or can show, e.g. through symbols or the language of flowers) what will happen later, we can create narrative without depicting action.

This can also work between paintings, even when the paintings aren’t presented together. (Note how Mary’s response in each painting responds to familiar images)

Montage and interplay of image and memory.

John Collier
Dante Gabriel Rossetti (detail)
Henry Osawa Tanner
collage and montage can suggest narrative but (as in the timeline) we use all the space to suggest what unfolds in time

Sir George Claussen
The Girl At The Gate
Tate Britain
We can show action

VKB’s VCR controls

but it seems easier to show the action of creating the document than to show the action the document depicts

Julian Opie, Monique Smiling
We can show action

remember the limitations of naïve spatial representation

Google Maps of “beauty” or “nucleophilic substitution”

Is there a place for everything?

Marcel Duchamp, *Nude Descending A Staircase #2*
image and story tend to argue
but their perpetual quarrel tends to dominate the room

Conclusion 2/3: narrative and spatial hypertext compete for the picture plane.

Max Klinger, The Dead Mother
A Related Issue

representing uncertainty and untruth

important in legal applications (and elsewhere)

Scott Prior, 
Nanny and Rose
on hypertext narrative
A link and a story walk into a bar.

why links destabilize story

why stretchtext failed

how we can fix it
Reading Hypertext

I reread lots of terrific papers in the course of compiling a new anthology about Reading Hypertext.

(Want a set of bound galleys? Ask me)
Much of this work is insufficiently known.

In particular, the apparent quarrel between narrative and the link has generated terrific confusion.
there will be a Result
there will be a Formalism
(though not a very good one)
but we need a detour through theory
Three Layers

- **Story**
  - “what happened”

- **Plot**
  - the sequence in which we explain what happened

- **Presentation**
  - what we see on the page or the screen
Hypertext & Consequences
we want hypertext to do what we can’t do in print

- The fraudulent hypertext
  - lots of links
  - but whatever link you choose, you go to the same place

- How can we know?
  - only through rereading

propo(\text{position 1: hypertextuality is perceived through rereading and reflection.})
If our choice of links is to prove more than superficially consequential, links must either affect the story or the plot.

**Story**

choose your own adventure
Hamlet on the Holodeck

**Plot**

afternoon, a story
It’s That Kind Of Movie

the problem with changing the story

Historians can’t change the story.

Some stories don’t change.

It’s not all about you.

Elna Borch
Death and the Maiden
Ny Carlsberg Glyptek
My Friend Hamlet

more problems with changing the story

Many stories interest us because events happen as they did

- Hamlet could have gone back to school
- Juliet should have had a long talk with her mother
- Winston Churchill might have been killed by a taxi in 1931

The world is full of unhappy sons, precocious daughters, and wayward taxis.

Max Klinger
Dramas
Changing the Plot

Bolter and Joyce, HT87

Changing tone, pacing, point of view
Starting and ending at different points
Embedding in new frames

• The Longest Day
• The Big Red One
• Saving Private Ryan
• Band Of Brothers
Little Red Riding Hood

(Arne-Thomson 303)

A wolf deceives a girl into climbing into bed with him. (Early lessons re social software)

When do we tell the reader that the wolf has run ahead and eaten grandma?

Early: horror

Late: comedy, romance, melodrama

Afterward: Rashomon, “The Babysitter”
Describe four things that happen, forming a sequence

- Next, we link back to a previously-visited node
- Where can we go now?
for example...

Preston Sturges, *The Lady Eve*

A guy and a gal walk into a bar.

He is wealthy, and is returning from a long stint of postdoc field work.

She is beautiful, and is a con artist.
for example...

Preston Sturges, *The Lady Eve*

As is his nature, he falls in love.
As is hers, she swindles him out of a large sum of money.
A wealthy and handsome boy, returning from an isolated outpost, embarks on a ship and encounters a beautiful girl who, it happens, is a con artist.

They meet. As is his nature, he falls in love. As is hers, she swindles him out of a large sum of money.

He discovers that he was been swindled; the lovers quarrel. She discovers that she has fallen in love with him. They part, and do not see each other for a long time.

The estranged lovers meet again, It is like they had never parted.

Where do we go from here?
What Happens Now?

four link primitives

- A wealthy and handsome boy, returning from an isolated outpost, embarks on a ship and encounters a beautiful girl who, it happens, is a con artist.

- They meet. As is his nature, he falls in love. As is hers, she swindles him out of a large sum of money.

- He discovers that he was been swindled; the lovers quarrel. She discovers that she has fallen in love with him. They part, and do not see each other for a long time.

- The estranged lovers meet again. And then: ...

- **Recursus** We follow the cycle again (literally, or with variations, or metaphorically, or ...)

- **Timeshift** We proceed to a new node that follows naturally from what has gone before (they get married; and then...)

- **Renewal** We proceed to a new node that takes off in a new direction (a German submarine appears off the port bow...)

- **Annotation**
SO...

We want to vary plot
Our tools are the 4 link primitives
recursus • timeshift • renewal • annotation

We now seem to understand hypertext narrative
But there was one thing they had forgotten

Print stays itself; electronic text replaces itself. (Joyce)

proposition 2: the four fundamental links in narrative are recursus, timeshift, renewal, and annotation.
Print stays itself; electronic text replaces itself.

Stretchtext

no navigation (or at least no departure)
context remains present
no slippery cycles

(The real objection might have been recursus, and the real target either modernism or postmodernism)
GUIDE replacement button

\[ ABC \iff ADEFC \]

If Y follows X in some reading, then Y will follow X in every reading in which they both appear. Thus not only must we forego cycles, we must always adhere to the same narrative sequence.
Stretchtext Constrains Plot as well as Story

GUIDE replacement button

ABC ↔ ADEFC

proposition 3: conventional stretchtext greatly restricts plot variation
More Notation

Conventional stretchtext (GUIDE, outliners)

\[ A \Rightarrow AB \]

Chunks/lexia/scoping

\[ AB \quad CD \Rightarrow A_{\text{B}} X \quad CD \]

Open a new window or text stream (Trellis)

\[ A \Rightarrow A+B \]
Generalized Stretchtext

\[ \text{ABC [DEF]} \Rightarrow \text{ADEC [BF]} \]

A pool of hidden nodes
Links may promote hidden nodes, and demote visible nodes
- expander
- replacer
- choice
- jump

Add predicates, and we have a stretchtext system that is formally equivalent to Storyspace while retaining the textual stability of stretchtext.
generalized stretchtext

Implemented as a javascript library: a lesson I learned at the last IVICA.

Mark Bernstein
On Hypertext Narrative
Proceedings Hypertext 2009
generalized
stretchtex
Write with Tinderbox
(nice front end while you’re building your own)
phew!
our business is varying plot, not story
text stays itself;
electronic text replaces itself
stretchtext keeps us from varying plot
Generalized stretchtext lets us vary plot without arrivals and departures.