

“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

www.eastgate.com markBernstein.org

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



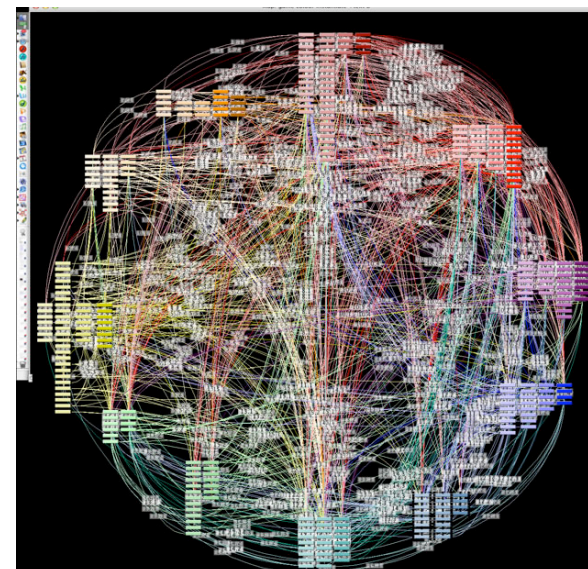
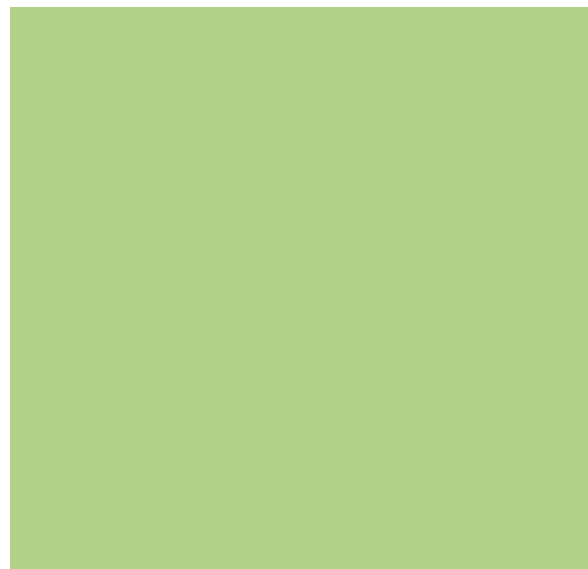
a story, an image, and a link: three bar fights

- ▶ 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



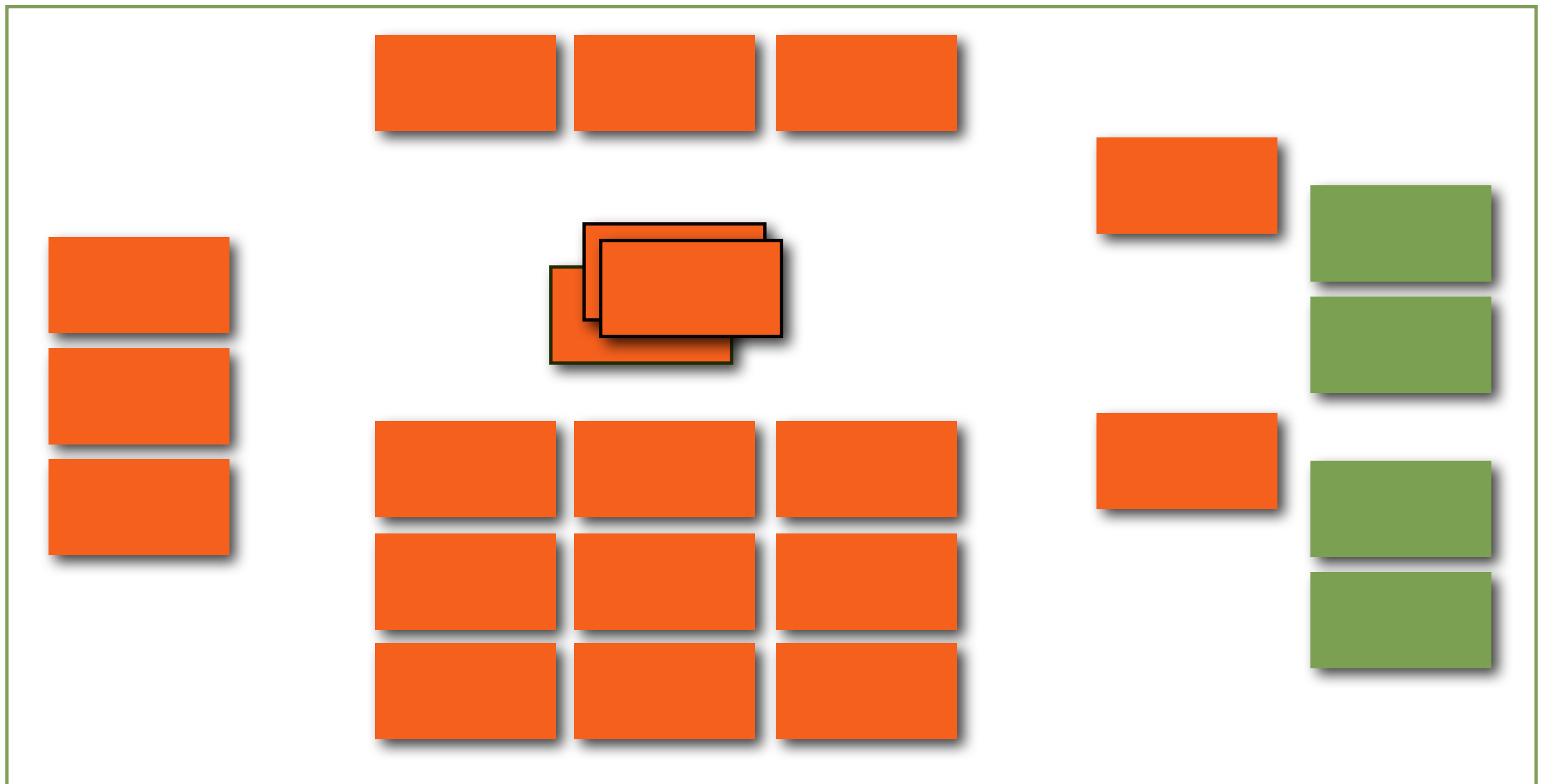
visual dimensions

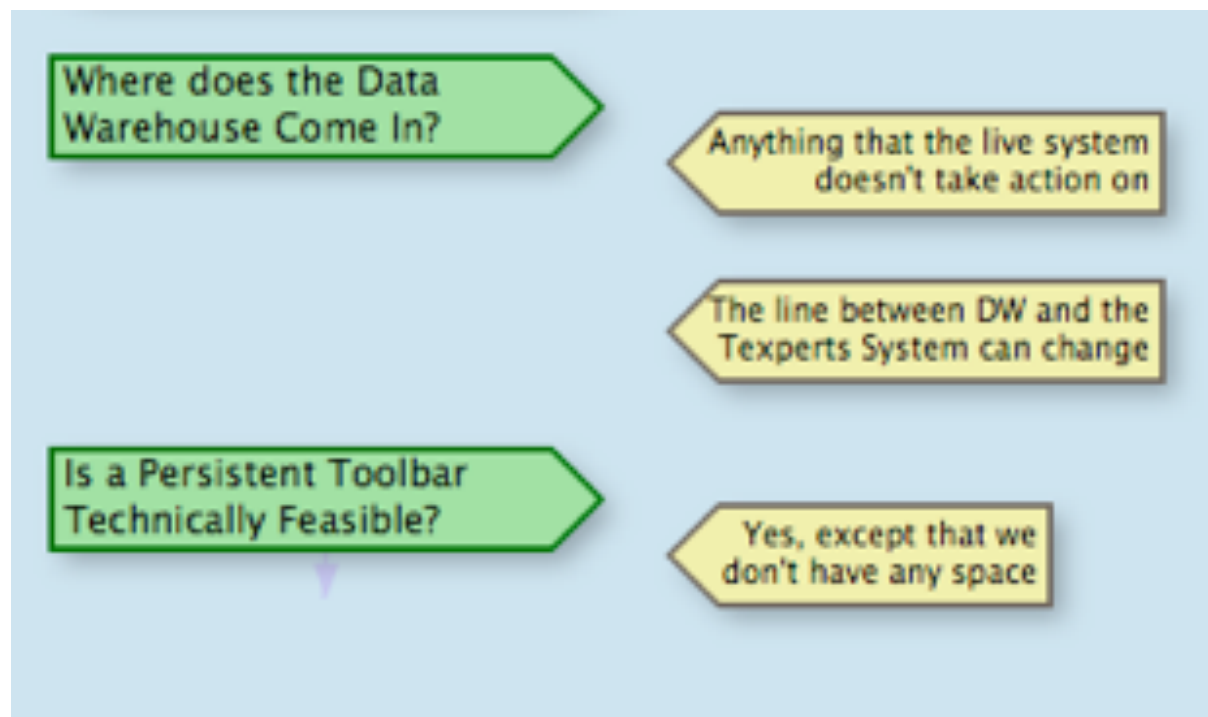
Fill material
Color
NameFont
NameColor
NameBold
BorderStyle
BorderWidth
BorderColor
ShadowDistance
ShadowColor
ShadowBlur



Shape
Width
Height
Xpos
Ypos
Badge

spatial structures



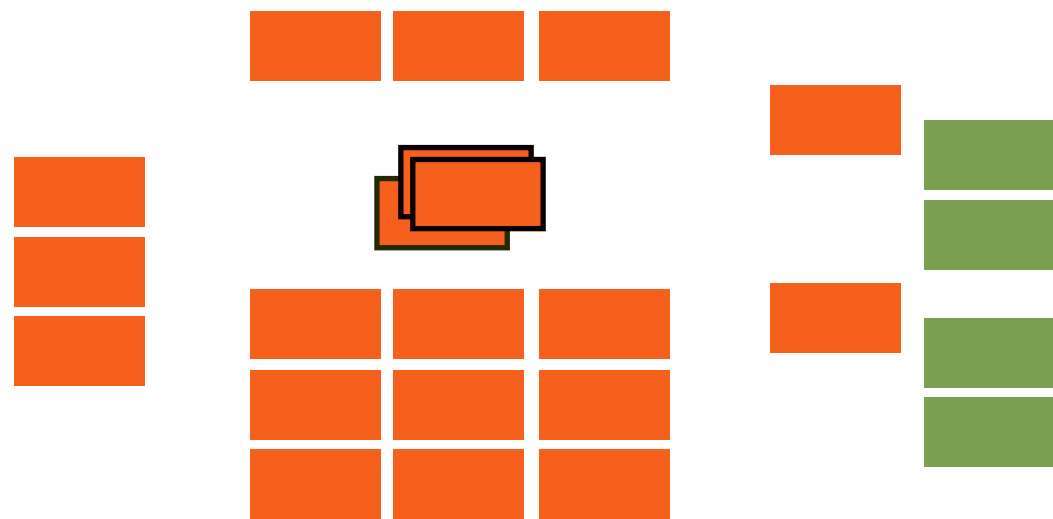


what does **this**
mean?

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

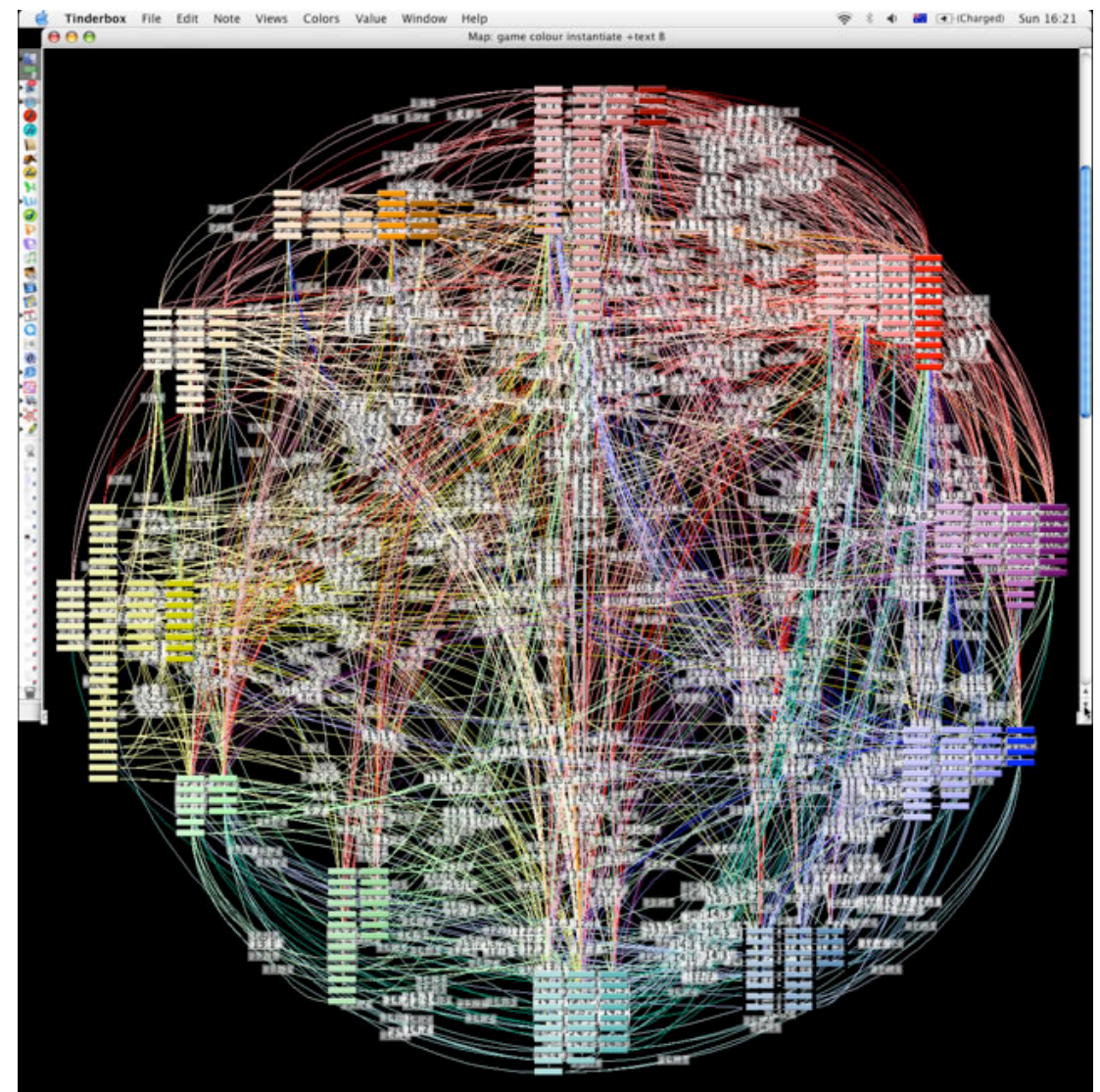
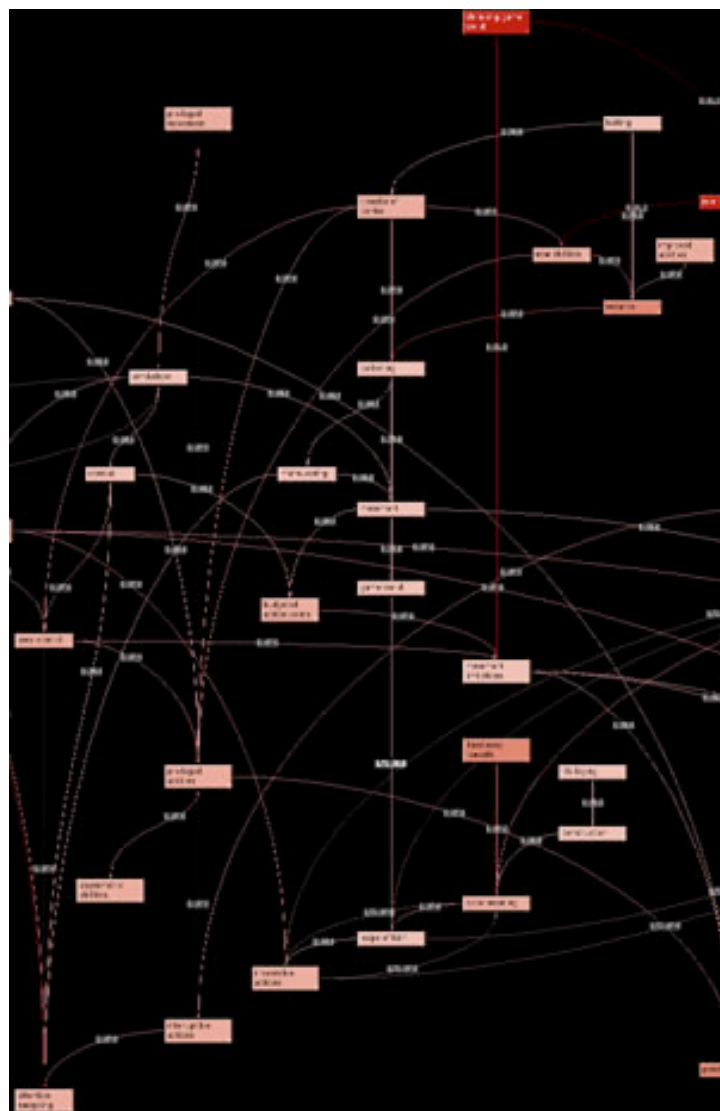
Horizontal lists

Vertical lists

Tables

Composites

can we do more?

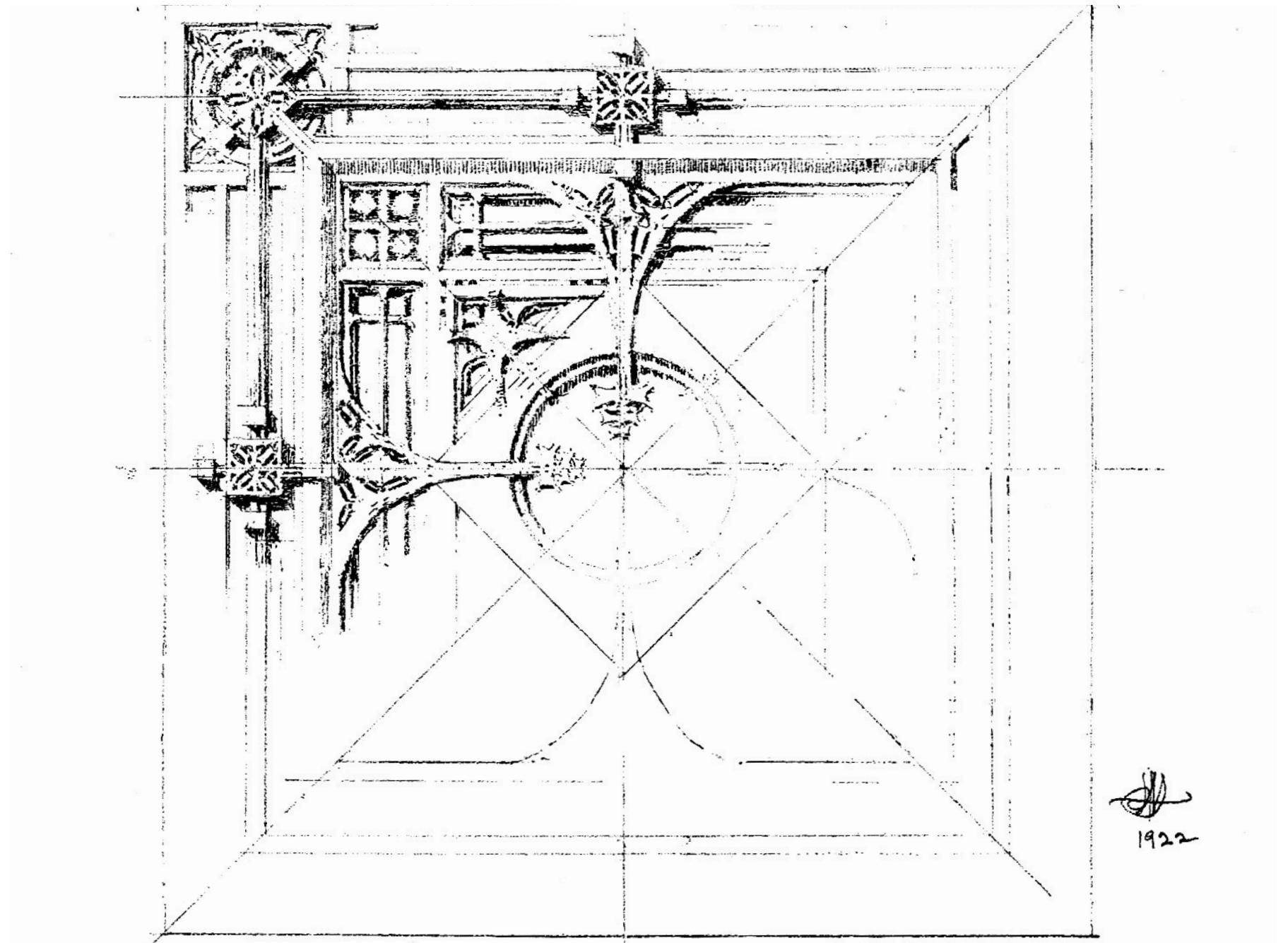


Natural Forms in Spatial Hypertext

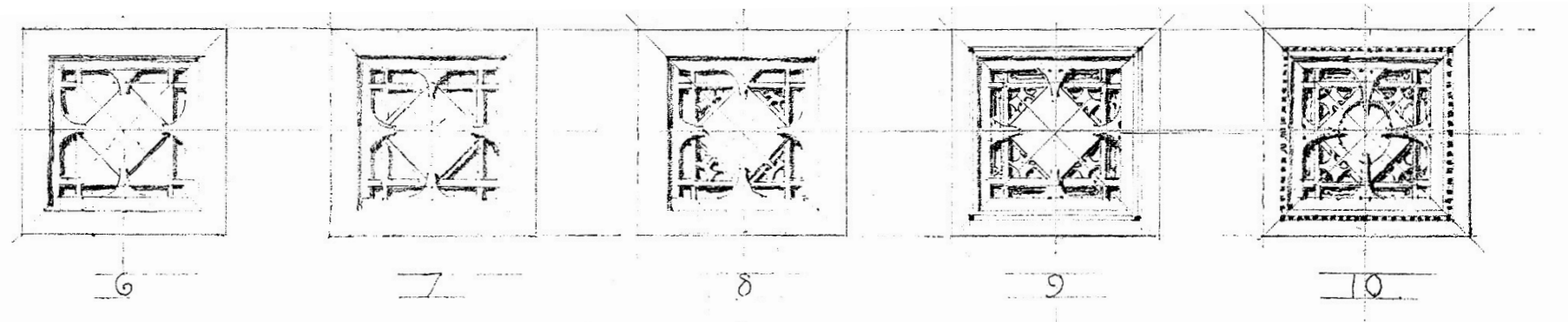
a conjecture



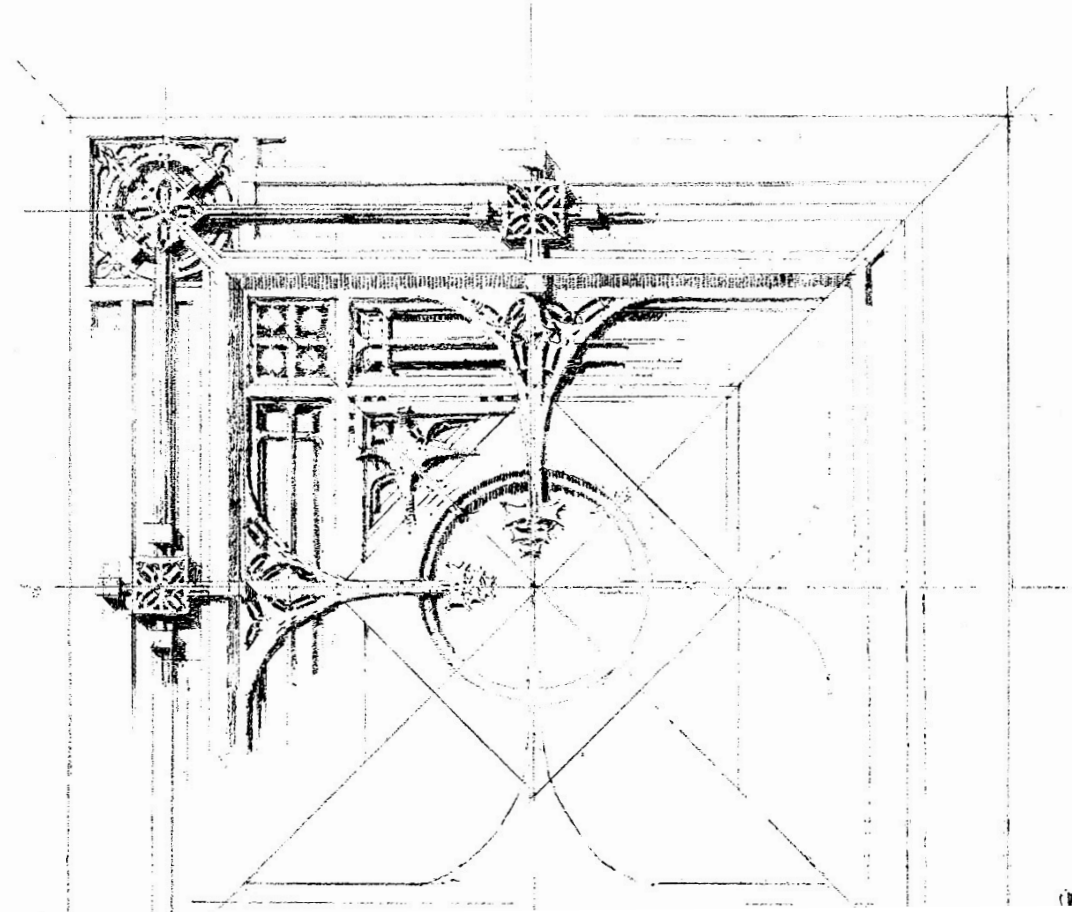
Louis A. Sullivan
**A System of
Architectural
Ornament**



boxes and arrows



WHICH ILLUSTRATE MAN'S INITIAL CONTROL OVER MATERIALS AND THEIR DESTINY.

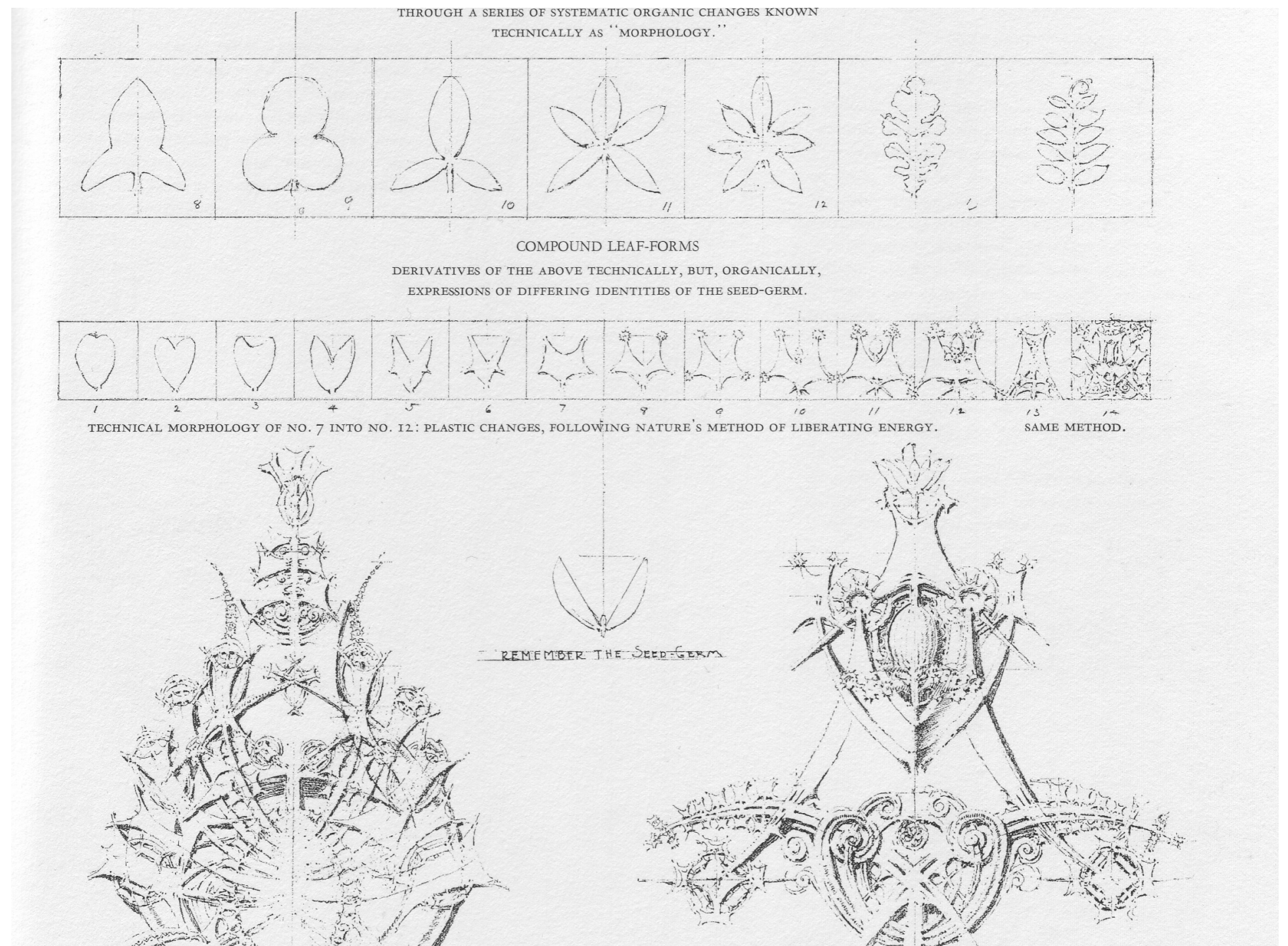


the (bounding) box **is** fundamental

Louis A. Sullivan
Schlessinger & Mayer
Chicago



...but space is not a box



evolving skyscraper ornament
from the leaf



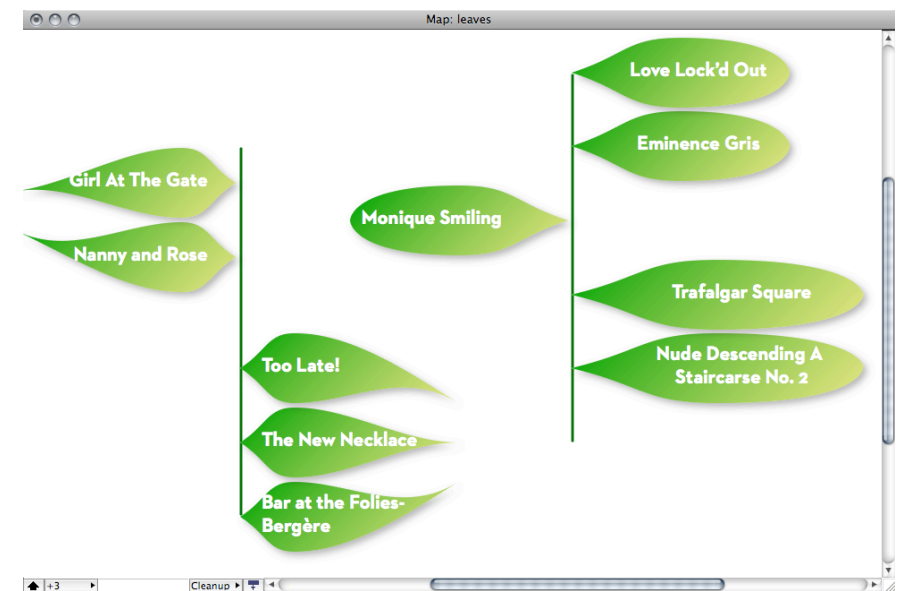
Too Late!

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*

Nanny and Rose

Too Late!

The New Necklace

**Bar at the Folies-
Bergère**

3

Cleanup

a new role for the spatial parser?

GLYPHS CHANGE AUTOMATICALLY
ACCORDING TO NEIGHBOURING LETTERS



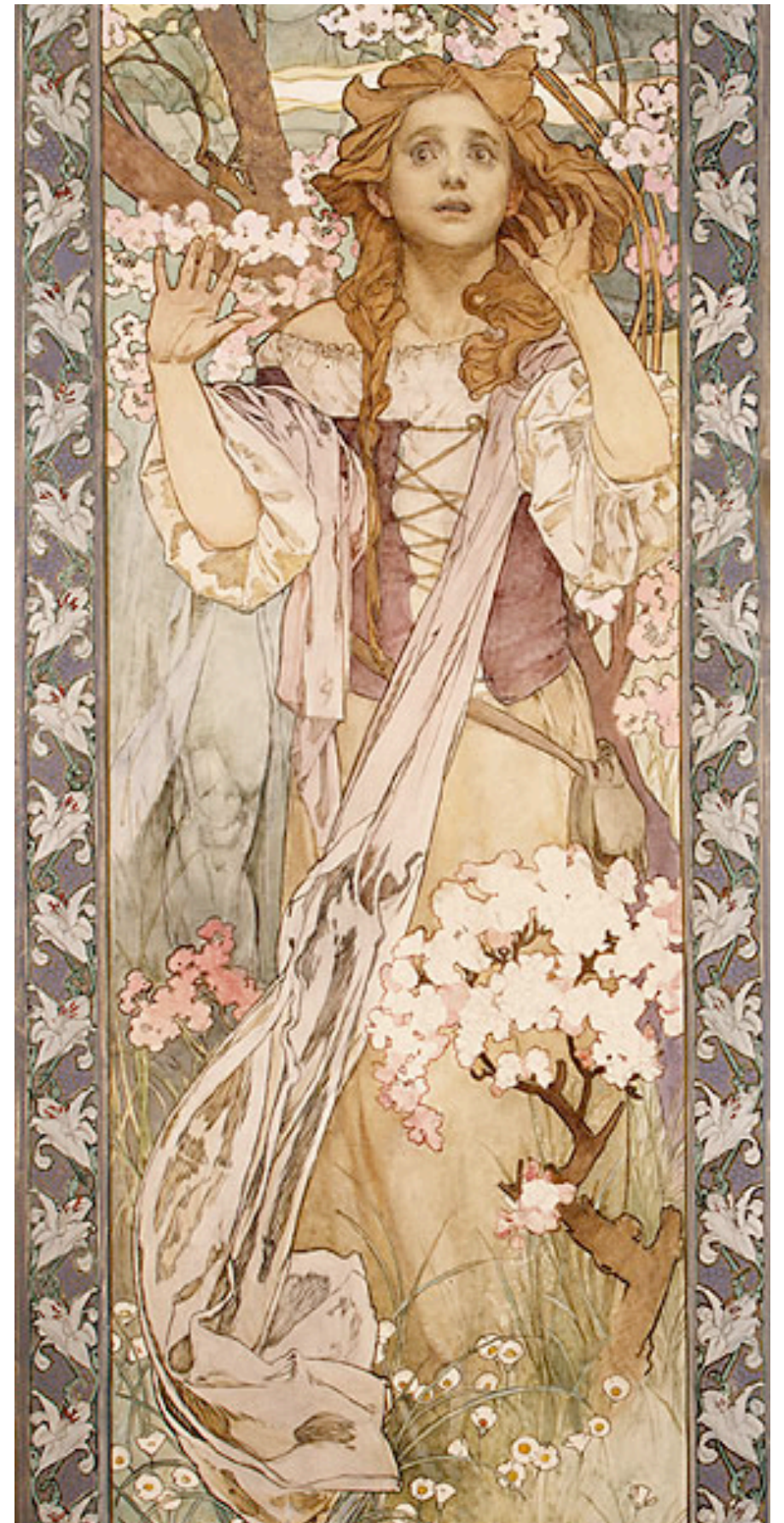
affordable

Parachute
PF Champion Script® Pro

precedent: OpenType

conclusion 1/3

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



Tinderbox

a visual glossary



Tinderbox



Twig

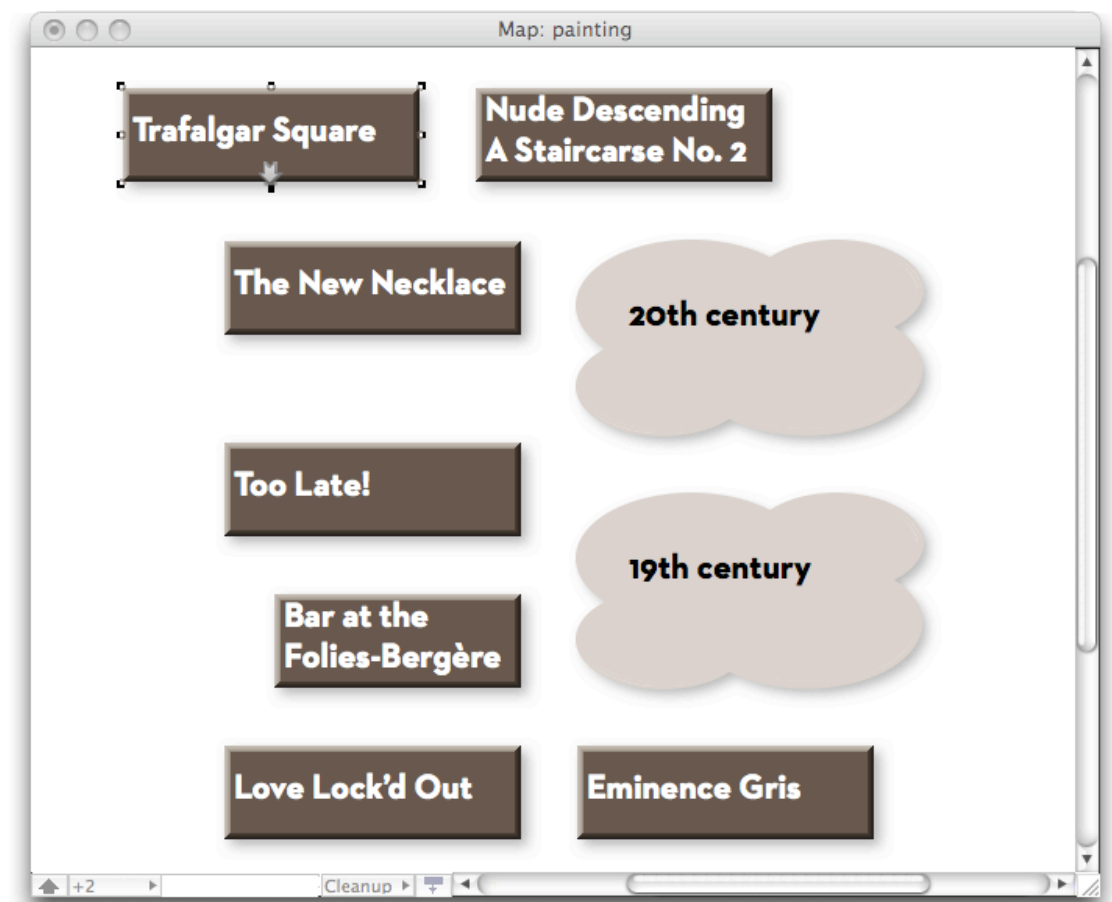
Note

Title

Text

Shape, Xpos, Height....

an extensible attribute-value list
prototype inheritance



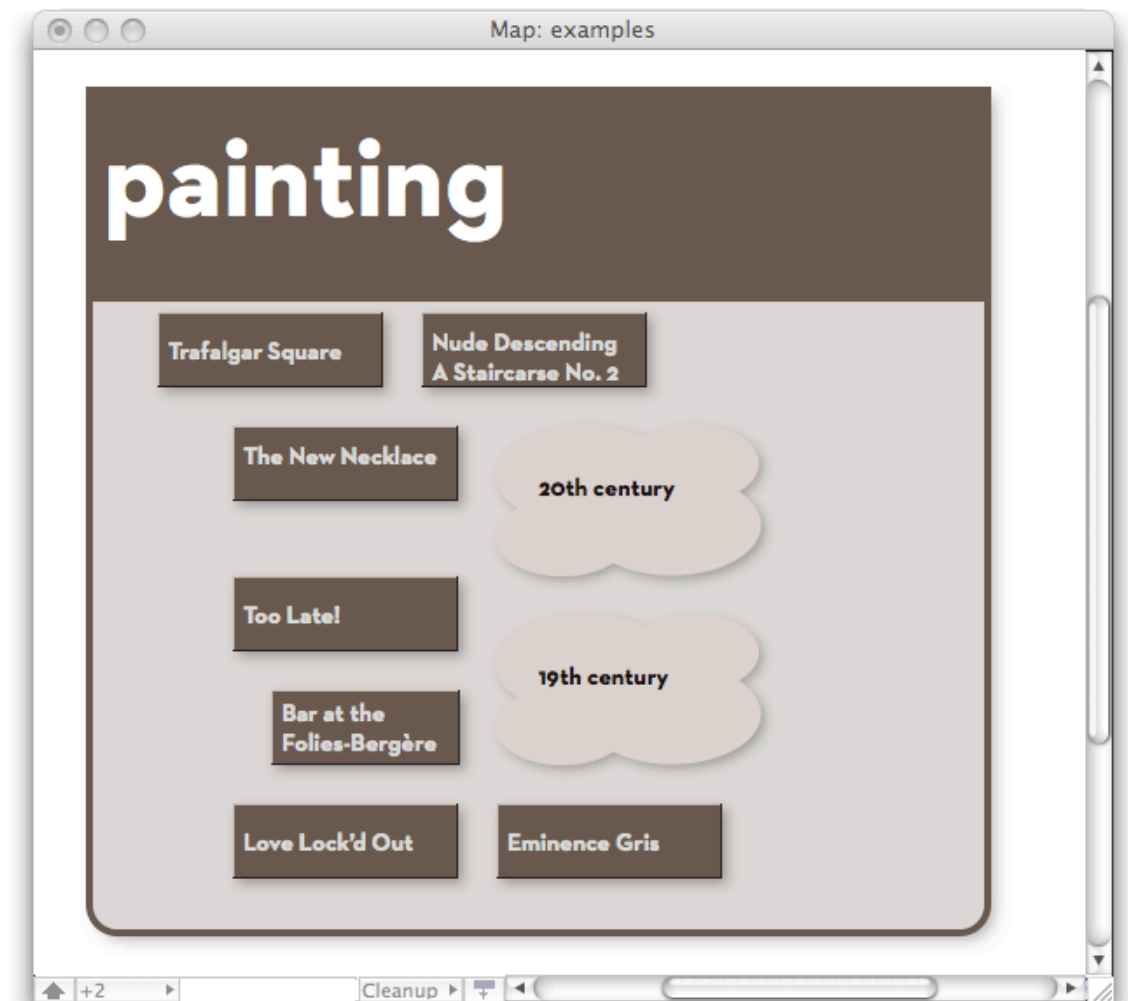
Container

a collection

all the properties of a note

Sort

OnAdd action

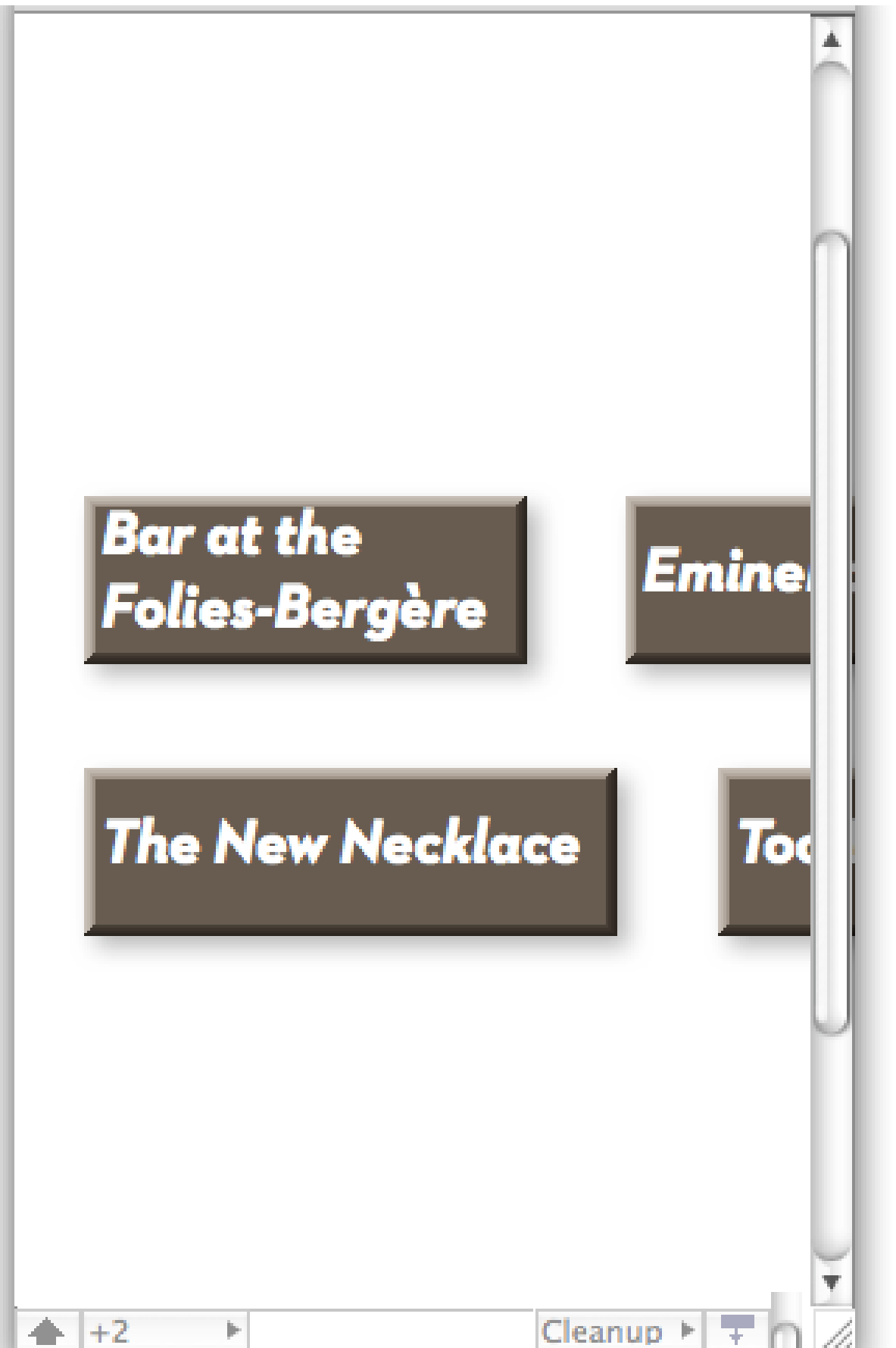


Alias

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



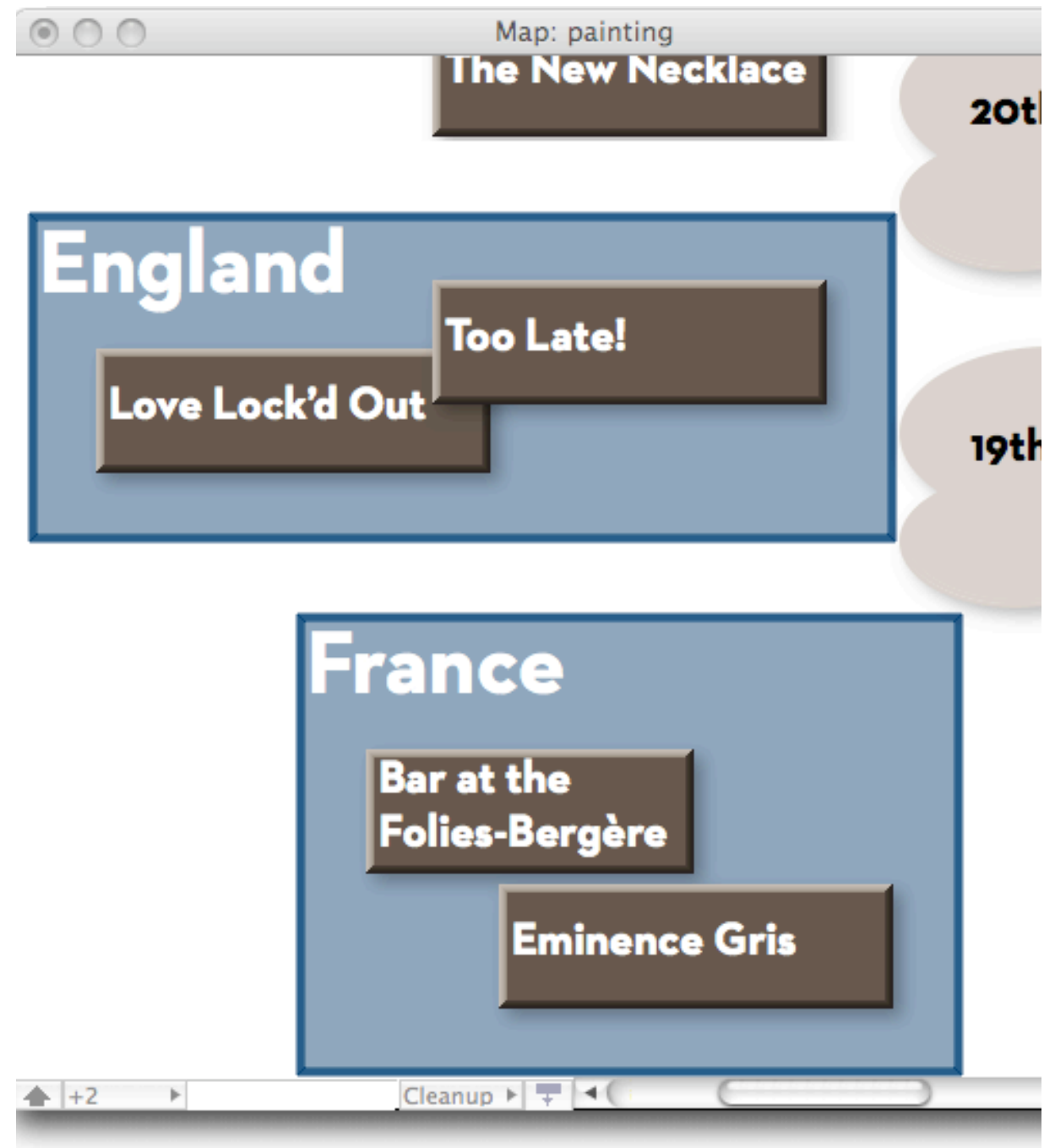
Adornment

appears only in maps

adds a meaning or label to a region of space

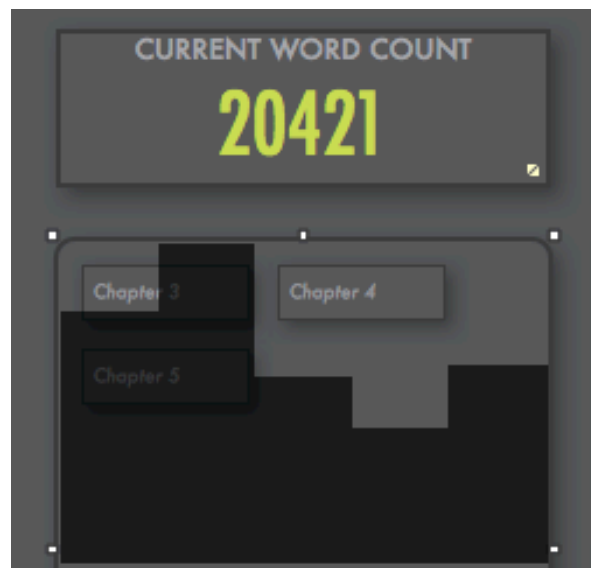
“smart” adornments gather notes that fit their query

OnAdd

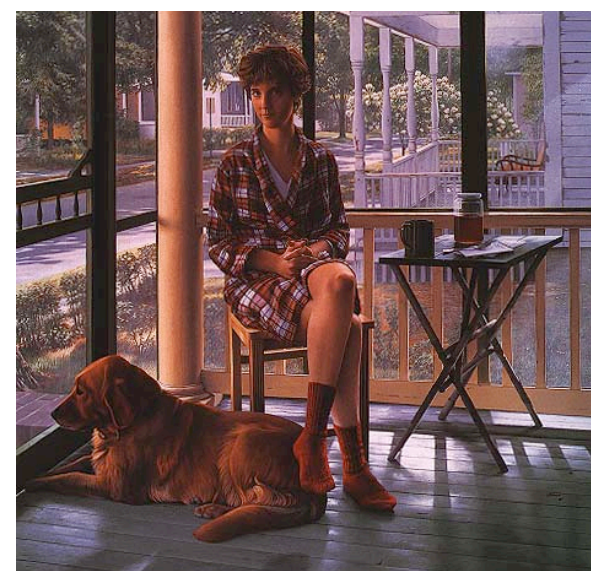


other interesting things

- ▶ 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



CUMULATIVE MILES TRAVELED IN 2008

THIRTY-EIGHT THOUSAND FIVE

*INCLUDES 1,016 MILES TRAVELED WITHIN THE VIDEO GAME GRAND THEFT AUTO IV.

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 ferries, 38 chairlifts, 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.

AVERAGE SPEED

4.39

MILES PER HOUR

PEDOMETERS PURCHASED

THREE

11.7

BARCELONA, SPAIN: JUNE 21

TRAVEL: AVERAGE MILES PER DAY

835

11

EXCLUDING VIDEO GAME MILEAGE: 7 MILES PER DAY

MOST MILES WALKED IN ONE DAY

MILES WITH MOUSTACHE

179

SUBWAY MISHAPS

3

MISSED STOPS: 2
WRONG DIRECTION: 1

AVERAGE MILES WALKED PER DAY



AIRLINE PRICE PER MILE

\$0.05

DRIVING PRICE PER MILE

\$0.15

SUBWAY PRICE PER MILE

\$0.93

GYM PRICE PER MILE

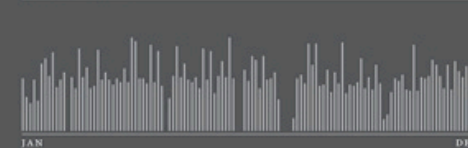
\$5.26

HUNDRED AND TWENTY-FOUR*

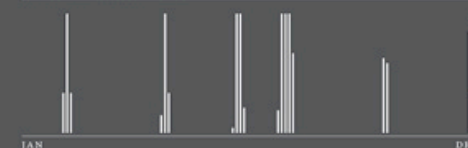
HOURS AT WORK: 46%



HOURS FREE: 44%



HOURS ON VACATION: 10%



AVERAGE TEMPERATURE (°F)

54.7°

LOWEST TEMPERATURE (°F)

7°

PARK CITY, UT: FEBRUARY 5

SICK DAYS

FOUR

BEST MOVIE

MICHAEL CLAYTON

MICHAEL J. FOX SIGHTINGS

ONE

HIGHEST TEMPERATURE (°F)

96°

NEW YORK: JUNE 9, JUNE 10 & JULY 19

PROPER HOUSE CLEANINGS

SEVEN

TRIPS TO THE CINEMA

14

PURCHASED CLOTHING ORIGINS

11

CANADA (1 ITEM), CHINA (5 ITEMS), ENGLAND (1 ITEM), ITALY (1 ITEM), KOREA (1 ITEM), LAOS (1 ITEM), MAURITIUS (3 ITEMS), MEXICO (1 ITEM), TUNISIA (1 ITEM), USA (5 ITEMS), VIETNAM (1 ITEM)

SPORTING ACTIVITIES

23

4 DAYS SKIING
1 SUPERBOWL PARTY
1 NIGHT OF POKER
2 BOWLING GAMES
1 HOCKEY GAME
6 DAYS SWIMMING
8 MATCHES WII TENNIS

MUSEUM VISITS

SEVEN

BIRTHDAY PARTIES ATTENDED

20

AVERAGE BIRTHDAY PARTY AGE

31

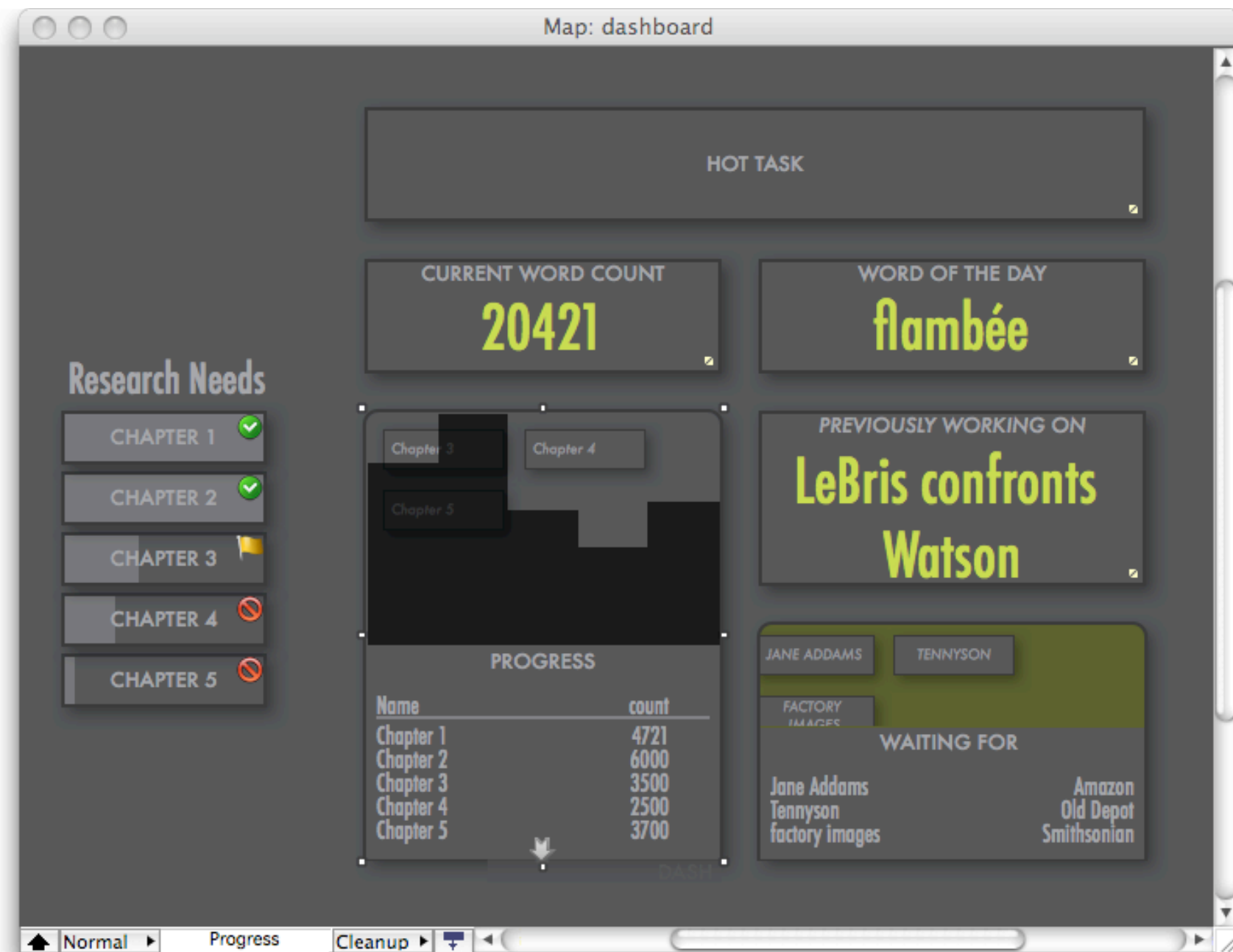
YOUNGEST: LUCIA, 1
OLDEST: PHIL, 40

Dashboard Nicholas Feltron

Dashboards

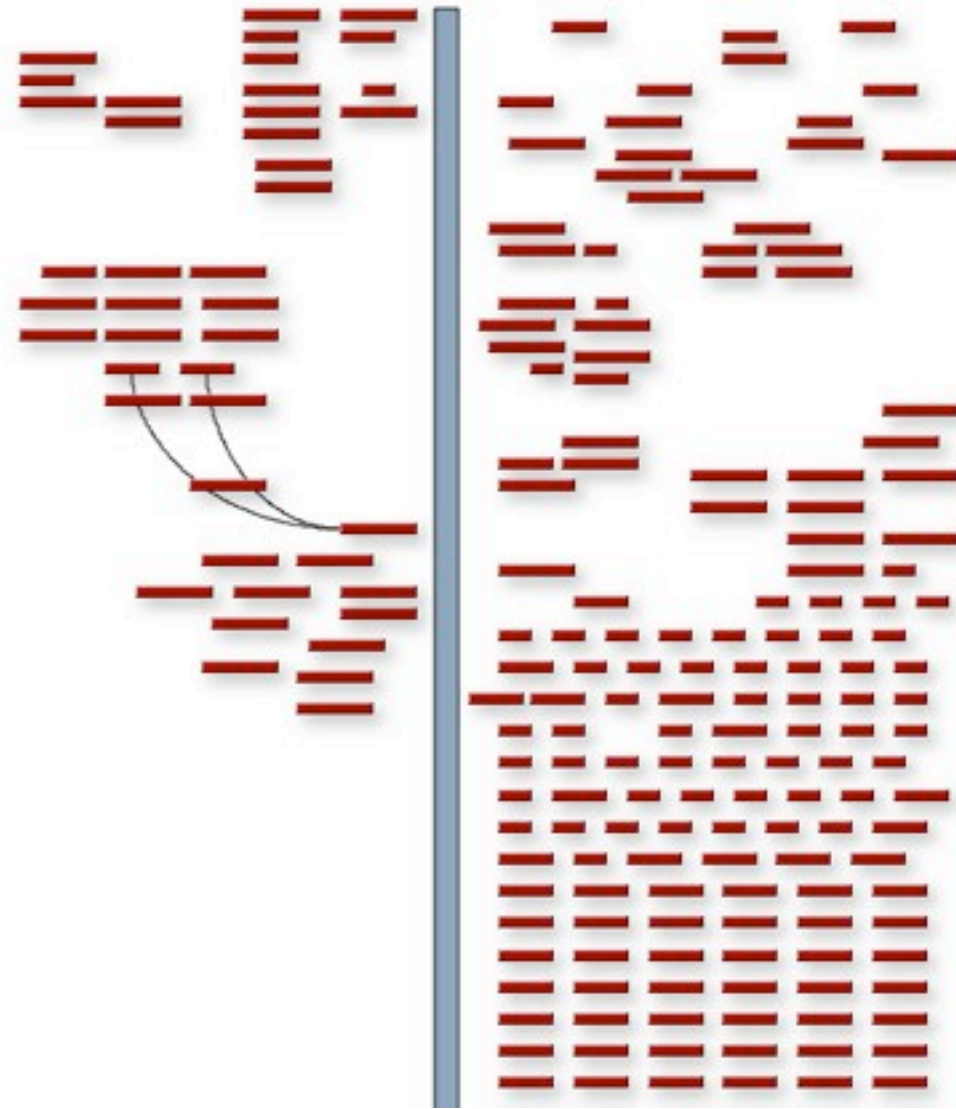
- ▶ Summarize lots of data
- ▶ Provide access to the data
- ▶ Show information in context
- ▶ Pick out **outliers** and show **trends**





Dashboards and
Spatial Hypertext

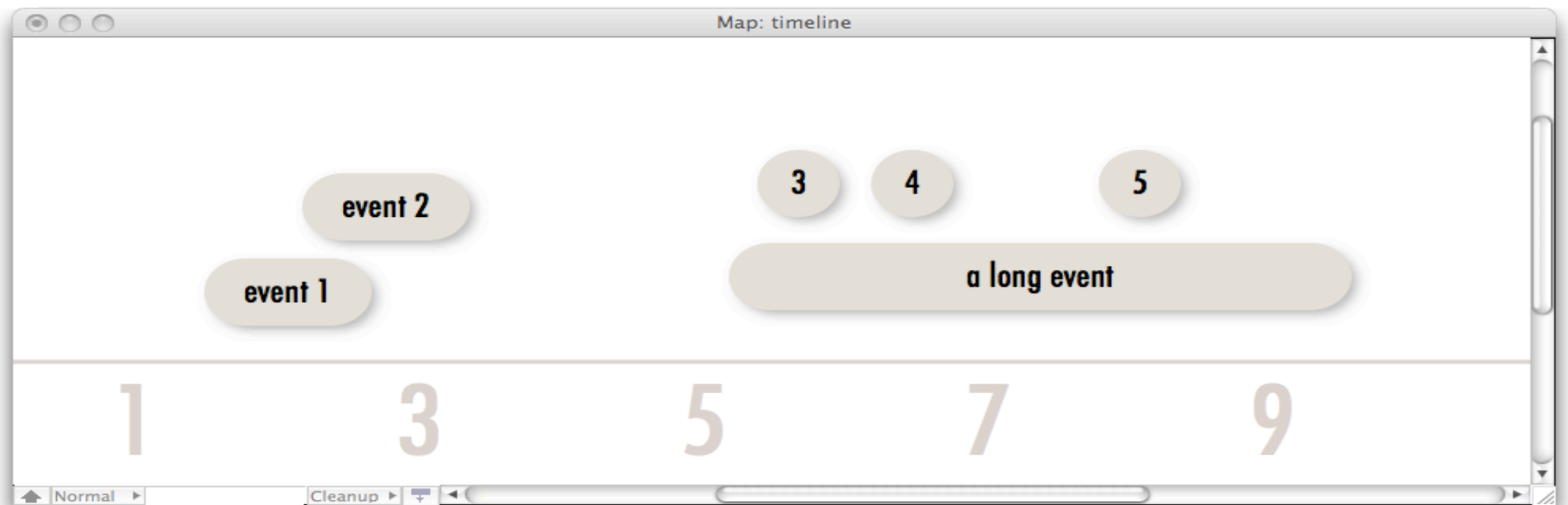
collect data **there**
summarize it **here**



The Map Is Also A Dashboard



The Map Is Also A Dashboard



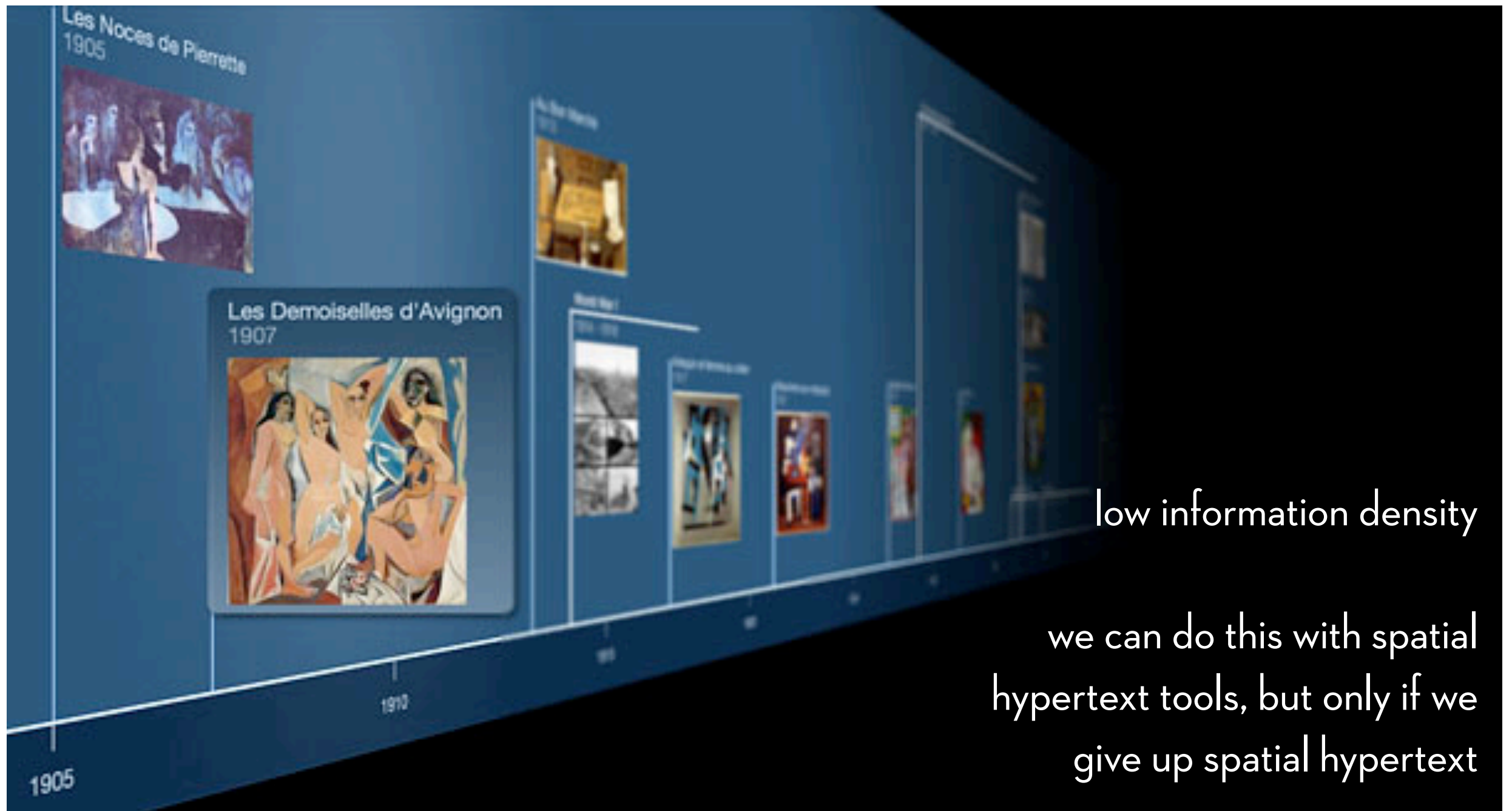
Timeline

a timeline seems a straightforward extension
of the dashboard to temporal issues



Great demo,
and occasionally useful

handy orientation guide: who knew whom?
also, “cast of characters” for litigation support

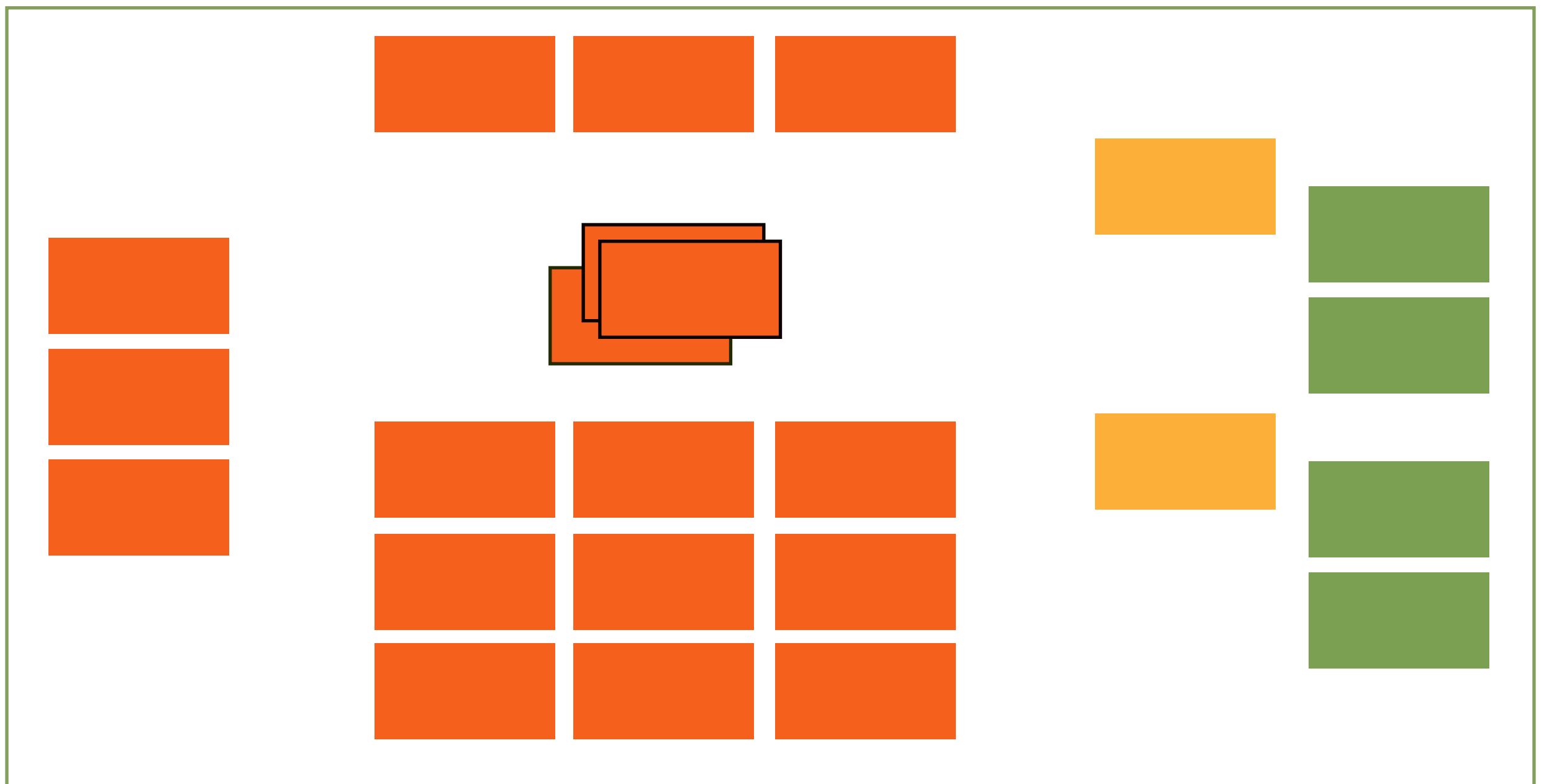


low information density

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**?





Jacques-Louis DAVID
Oath of the Horatii (1784-1785)

This is a familiar puzzle for the painter

Tell me a story

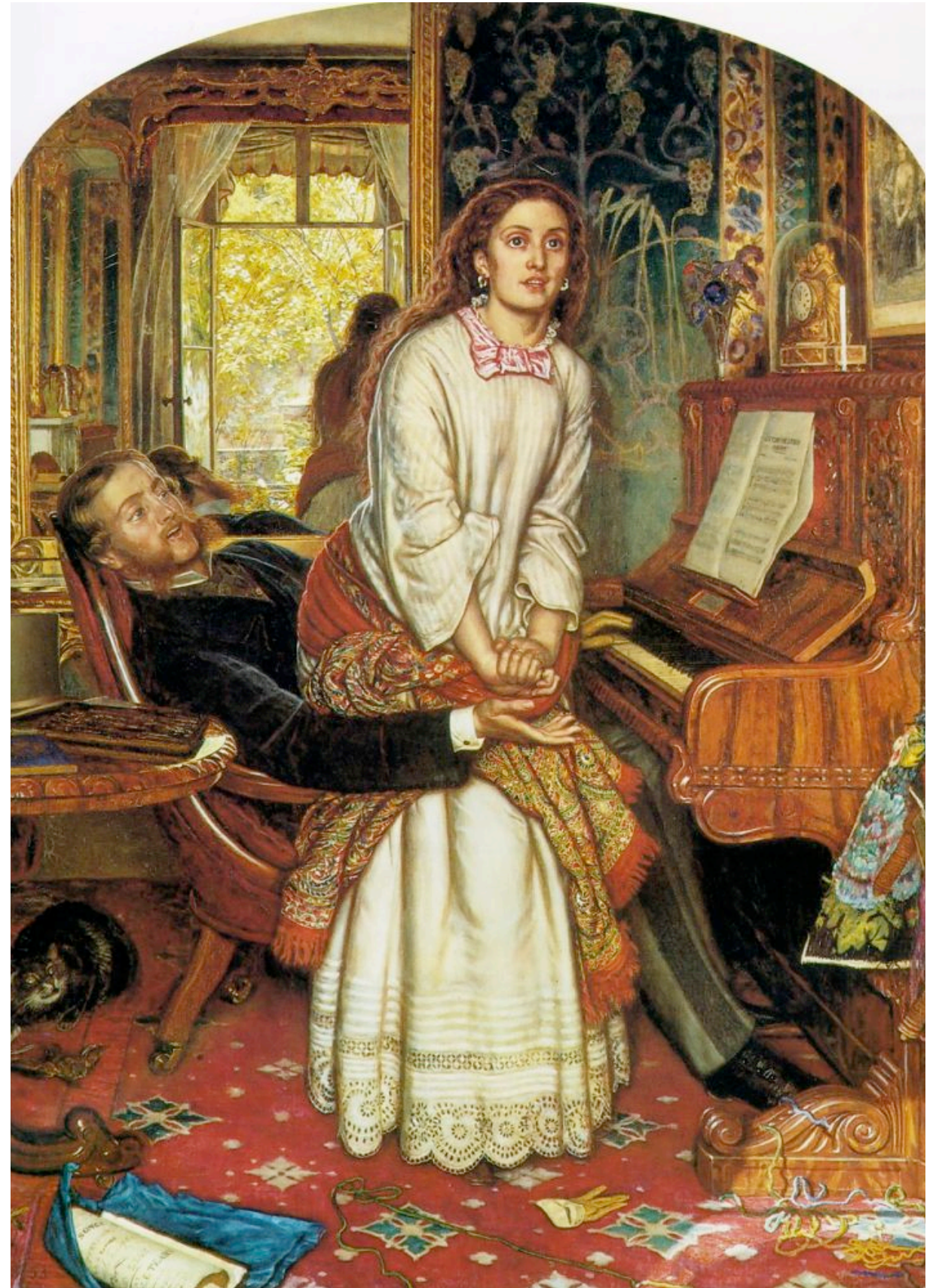
Images and events carry their own narrative energy.

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-Bèrgères

Courtauld Institute Galleries

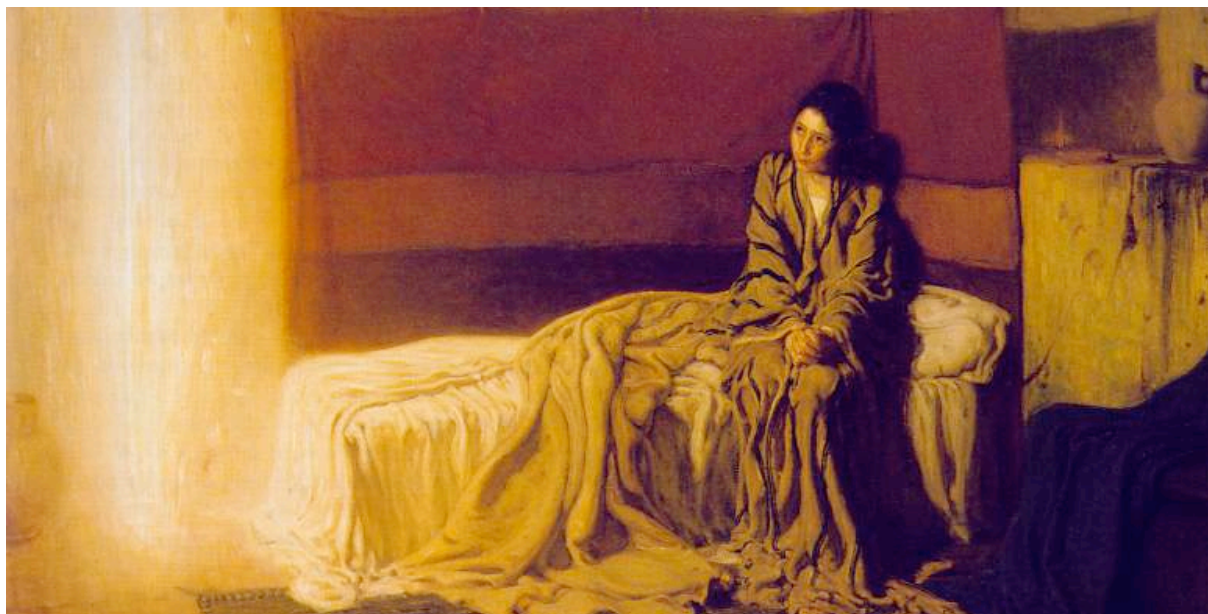
gesture can create
narrative

but it's hard to see how spatial
hypertext can use this

Anna Lea Merrit,
Love Lock'd Out
Tate Britain



context can create narrative



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 Clausen
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



Jean-Léon Gérôme,
L' Eminence Gris



image and story tend to argue

Chiho Aoshima
Gloucester Road



the have always thrived together

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

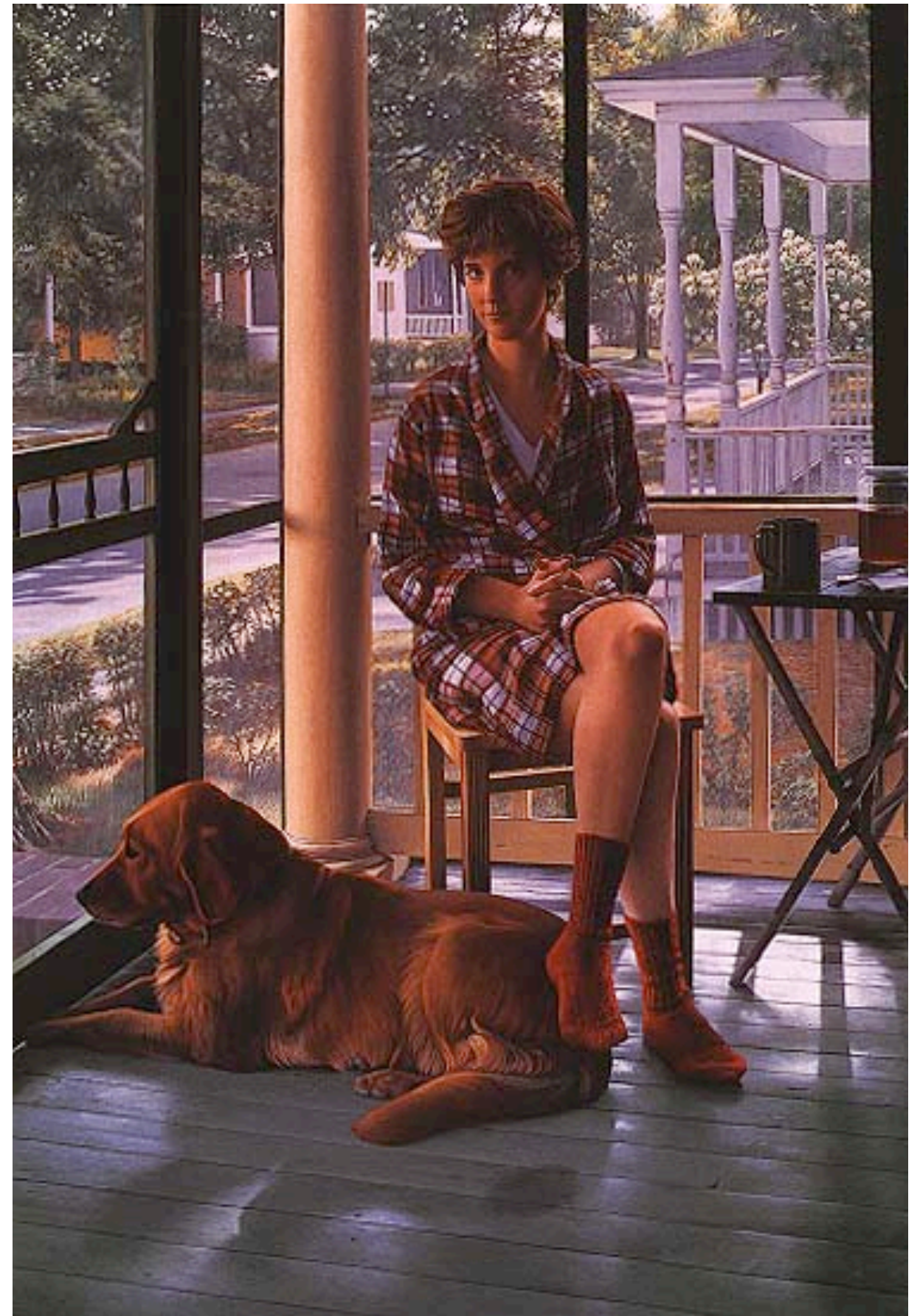


A Related Issue

representing uncertainty and
untruth

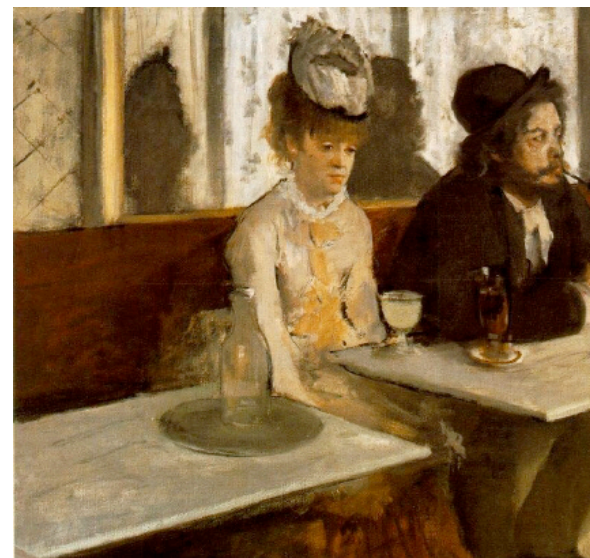
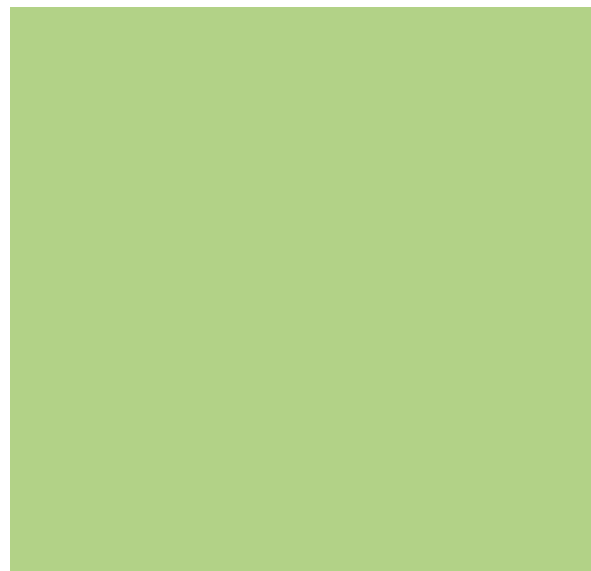
important in legal applications
(and elsewhere)

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)

Reading Hypertext

Mark Bernstein
Diane Greco

Reading Hypertext

Much of this work is insufficiently known.

In particular, the apparent quarrel between narrative and the link has generated terrific confusion.

Reading Hypertext

1. Into The Weeds	1
Mark Bernstein	
2. Why are we still talking like this?	15
Diane Greco	
3. La Maison Hypertext	19
Charles A. Perfetti	
4. Piecing together and tearing apart: finding the story in <i>afternoon</i>	21
Jill Walker	
5. A Cognitive Model	35
N. J. Lowe	
6. "How Do I Stop this Thing?" Closure and Indeterminacy in Interactive Narratives	59
J. Yellowlees Douglas	
7. Reconfiguring Writing	89
George P. Landow	
8. The Lyrical Quality of Links	99
Susana Pajares Tosca	
9. A Pragmatics of Links	103
Susana Pajares Tosca	
10. Stitching Together Narrative, Sexuality, Self: Shelley Jackson's <i>Patchwork Girl</i>	119
George P. Landow	
11. These Waves Of Bugs	129
Anja Rau	
12. Cinematic paradigms for hypertext	137
Adrian Miles	
13. Nonce Upon Some Times: Rereading Hypertext Fiction	149
Michael Joyce	
14. Returning In Twilight: J oyce's <i>Twilight</i>, a <i>Symphony</i>	165
Dave Ciccoricco	
15. Hypertext Structure Under Pressure	193
David Kolb	
16. Reading Spatial Hypertext	213
Catherine C. Marshall	
17. Hypertext Teaching	223
Adrian Miles	
18. Hypertext with Consequences: Recovering a Politics of Hypertext	239
Diane Greco	
19. What the Geeks Know: Hypertext and the Problem of Literacy	251
Stuart Moulthrop	

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

proposition 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.

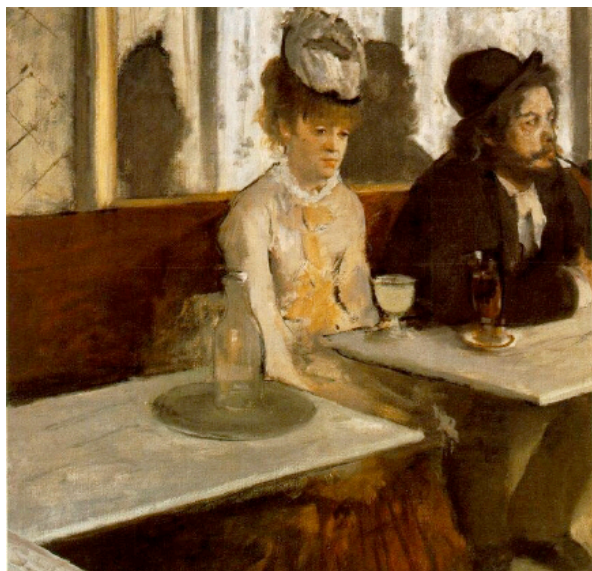
Story

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 Glyptotek



My Friend Hamlet

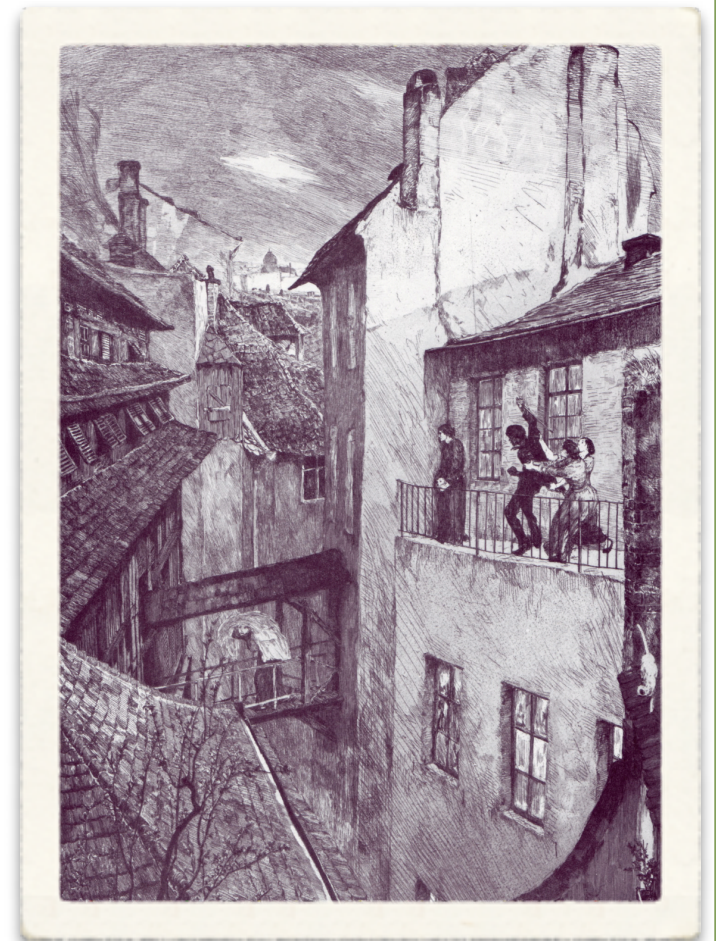
more problems with changing the story

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

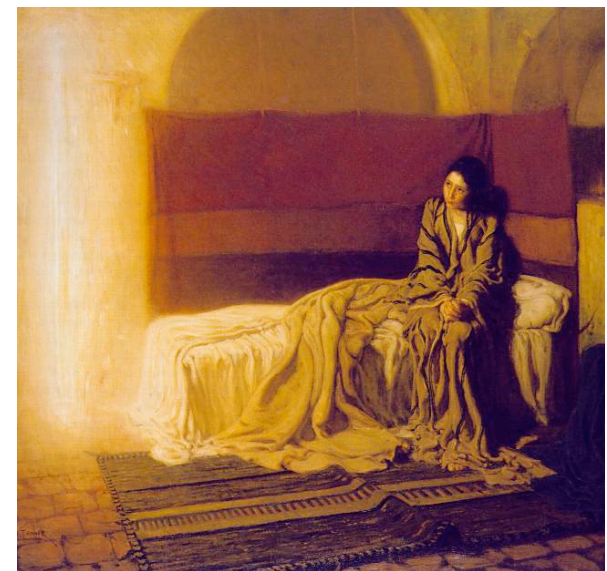
Bolter and Joyce, HT87

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

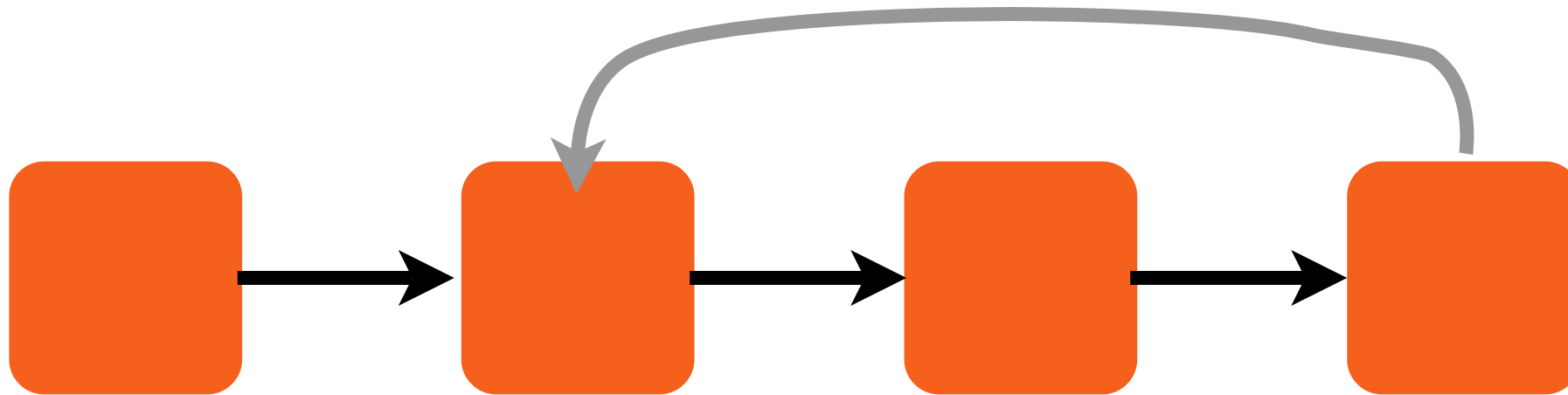
Afterward: Rashomon, “The Babysitter”



Nonce Upon Some Times

Joyce

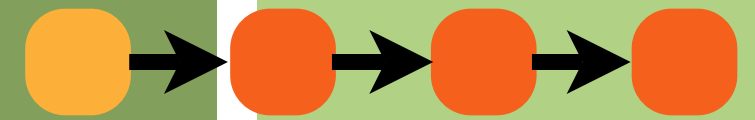
- Describe four things that happen, forming a sequence



- 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.

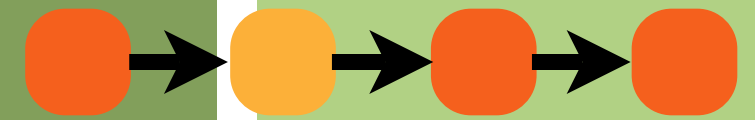
He is wealthy, and is
returning from a
long stint of postdoc
field work.

She is beautiful, and
is a con artist.



for example...

Preston Sturges, *The Lady Eve*



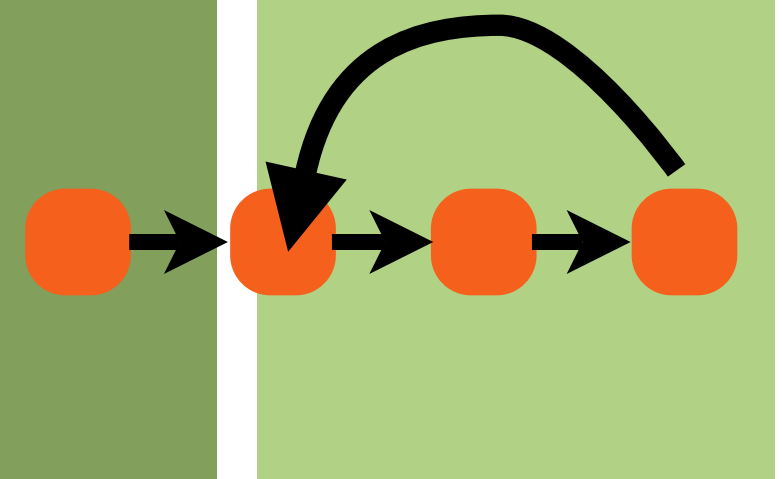
As is his nature, he
falls in love.

As is hers, she
swindles him out of
a large sum of
money.



Nonce Upon Some Times

Joyce



- ▶ 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.

BUT THERE WAS ONE THING THEY HAD FORGOTTEN...

The Cure

Zellweger, Gould, Mangen

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)

Why The Cure Didn't Cure

GUIDE replacement button

ABC \Leftrightarrow 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 \Leftrightarrow ADEFC

proposition 3: conventional
stretchtext greatly restricts
plot variation

More Notation

Conventional stretchtext (GUIDE, outliners)

$$\underline{A} \Rightarrow AB$$

Chunks/lexia/scoping

$$\underline{AB} \ CD \Rightarrow A \underline{B} X \ CD$$

Open a new window or text stream (Trellis)

$$\underline{A} \Rightarrow A+B$$

Generalized Stretchtext

ABC [DEF] \Rightarrow 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 stretchtext

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.