

# Making Links

Fundamentals of  
Hypertext and Hypermedia

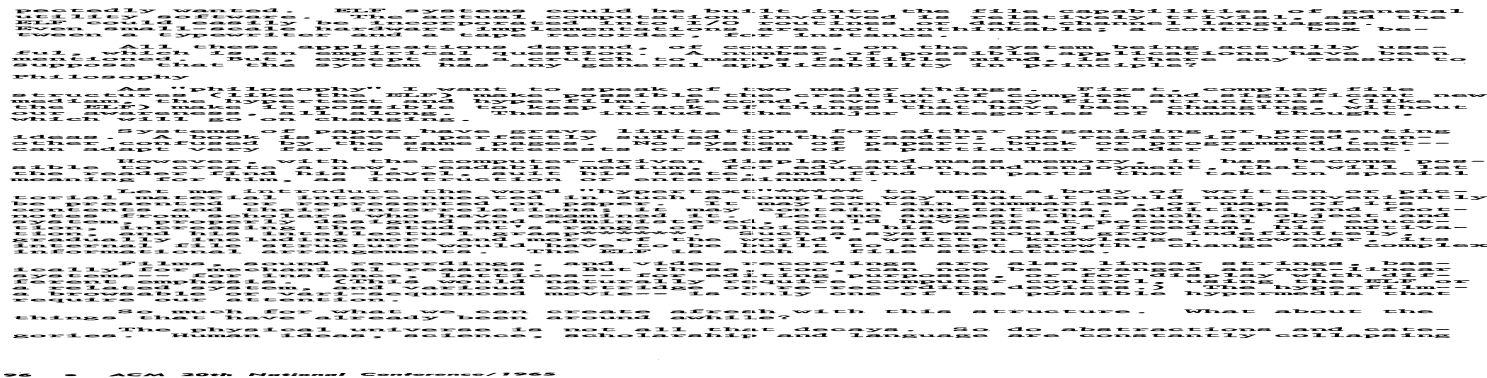
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- 2012-2013

# Overview

- Basic hypertext terminology
- Hypertext writing
- History of hypertext
- Open hypermedia
- Spatial/temporal/conceptual hypermedia
- The future of hypertext

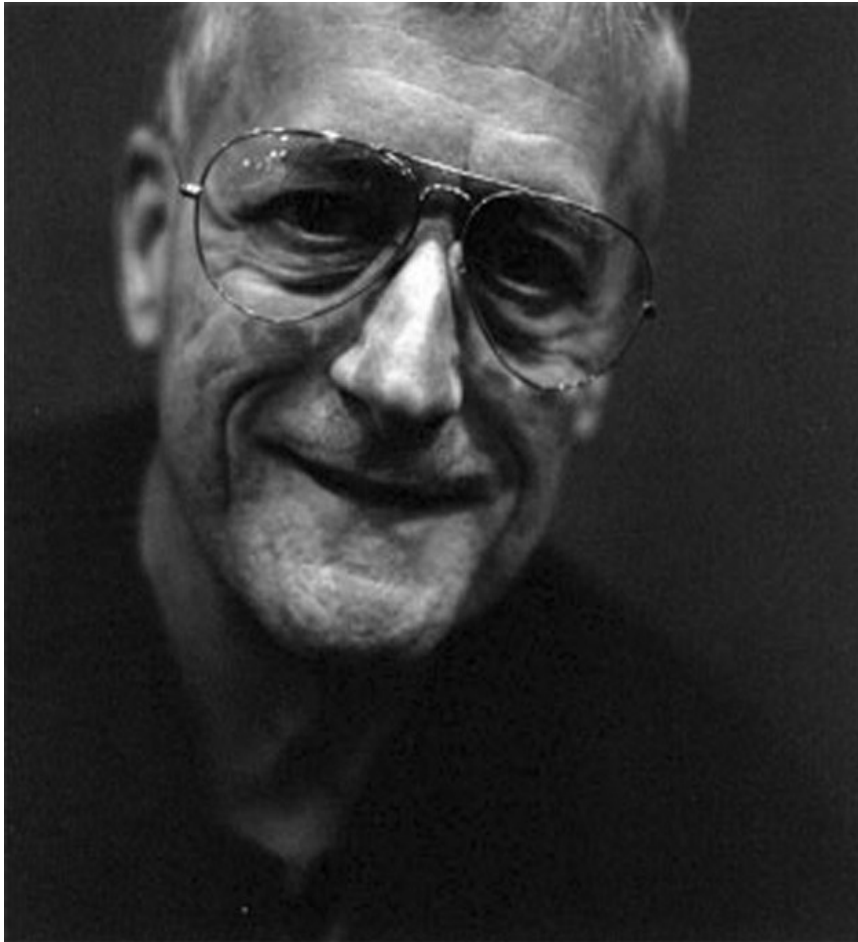
What is hypertext?

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Nelson, T.H. (1965) *A file structure for the complex, the changing and the indeterminate*. Proceedings of the 20th ACM National Conference..

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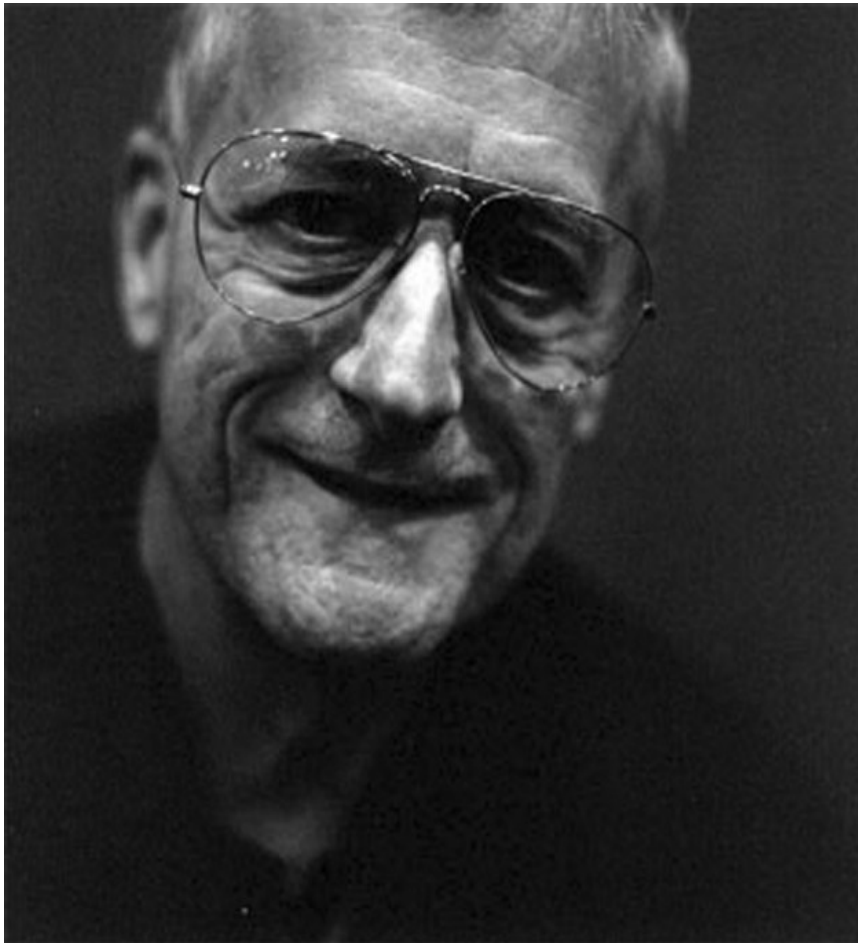


[hypertext is] a combination of natural language text with the computer's capacity for branching, or dynamic display

Nelson, T.H. (1967) "Getting it out of our system": *Information Retrieval: A Critical Review*, Schechter, G. (ed.). Washington, DC: Thompson Books.

# What is Hypertext?

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The reaction of the  
hypertext research  
community to the World  
Wide Web is like finding  
out that you have a fully  
grown child.  
And it's a delinquent.

# What is Hypertext?

“An application which uses associative relationships among information contained within multiple media data for the purpose of facilitating access to, and manipulation of, the information encapsulated by the data.”



# What is Hypertext?

- Non-linear writing
  - Interlinked texts
  - Multiple pathways, multiple reading sequences
- Annotation and commentary
- Association of ideas
- Writing and reading not separated
- Interactive

# What is Hypermedia?

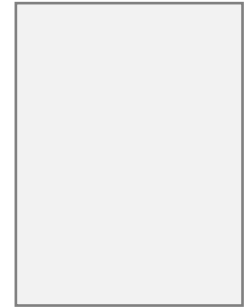
- Hypertext + Multimedia = Hypermedia
  - Multiple media: video, audio, images, emails, databases, spreadsheets

# Hypertext terminology

# Nodes, Links and Anchors

A *node* represents a ‘chunk’ of information that corresponds to a natural ‘semantic unit’

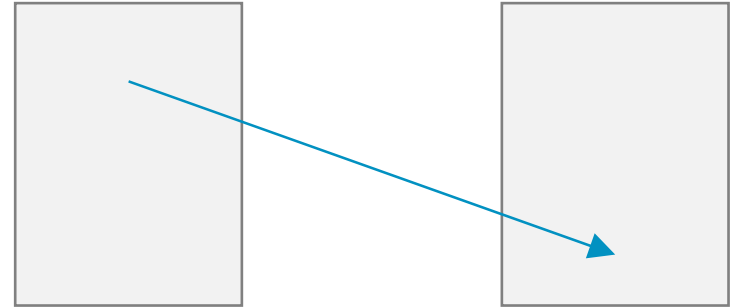
- e.g. screen, page, frame ...
- The act of *chunking* information is part of authoring process



# Nodes, Links and Anchors

A *link* represents an association between nodes

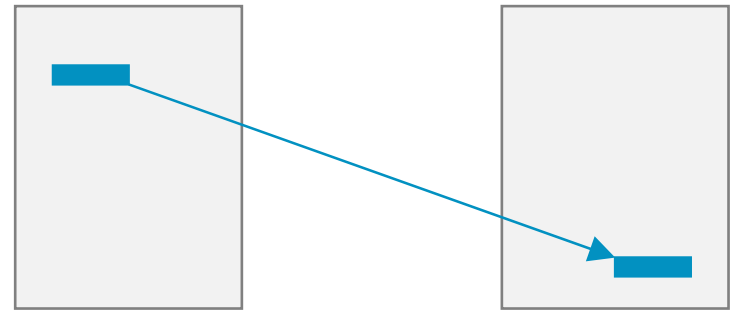
- Machine-supported *fast* inter-node connections



# Nodes, Links and Anchors

An *anchor* represents a link on a node

- e.g. buttons, bolded text, “hotspots”, images ...
- the whole node might be an anchor but should be able to designate a sub-region as a source or destination of a link



# Links on the Web

- Links are part of the source node
  - `<a href="">`
  - *Embedded links (c.f. first class links)*
- Links can only be followed in the forward direction
- Links can only connect a pair of nodes
- Link anchors must be specified explicitly
- Links (usually) contain no additional information

## Embedded vs. First class links

- Links are embedded in web pages
- To create a link from a web page, the web page must be edited
- Only the owner of a web page may create/edit links within it
- Separating links from nodes allows richer linking
  - Multiple different link overlays (*linkbases*)
  - Personalisation, task-orientation, etc



## Bidirectional links

- Not generally possible to see what links to a given web page (without using a global index such as Google)
- Web links can only be followed from the source document (in which the link is embedded) to the destination, not the other way
- Separating links from nodes means that it is as easy to traverse links backwards as forwards

## N-ary links

- Web links connect only two documents together
- With first class links, we can have links that connect many source nodes to many destination nodes

# Generic (functional, dynamic) links

- Web links have explicitly specified anchors
  - Source anchor is the location in which the <a> is embedded
  - Destination anchor is given by the fragment identifier on the URI reference: <http://example.org/index.html#foo>
- Richer location specifiers (locspecs) in anchors
  - Put a link on all occurrences of the word 'hypertext'

# Typed links

- Web links *may* contain some additional information
  - `<a href="" rel="" rev="">`
  - In practice, most Web authors don't use rel/rev
  - In practice, most Web browsers ignore rel/rev
- Links are more than just navigation – underlying associative relationship