

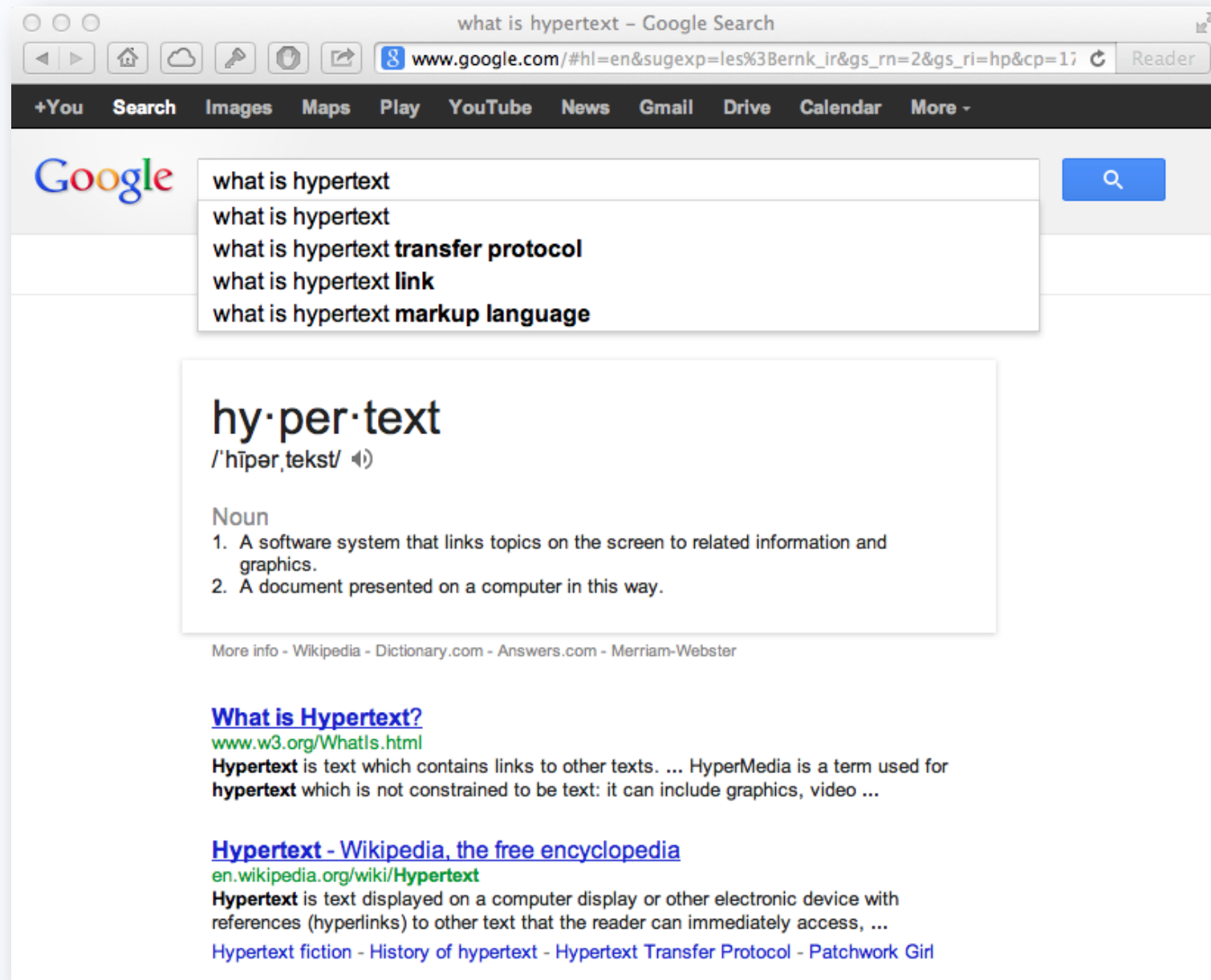


University of
Southampton

Hypertext

COMP3227 Web Infrastructure

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what is hypertext - Google Search

www.google.com/#hl=en&sugexp=les%3Bernk_ir&gs_rn=2&gs_ri=hp&cp=17 Reader

+You Search Images Maps Play YouTube News Gmail Drive Calendar More -

Google what is hypertext what is hypertext what is hypertext transfer protocol what is hypertext link what is hypertext markup language

hy·per·text
/'hɪpər,tɛkst/

Noun

1. A software system that links topics on the screen to related information and graphics.
2. A document presented on a computer in this way.

More info - Wikipedia - Dictionary.com - Answers.com - Merriam-Webster

What is Hypertext?
www.w3.org/WhatIs.html
Hypertext is text which contains links to other texts. ... HyperMedia is a term used for **hypertext** which is not constrained to be text: it can include graphics, video ...

Hypertext - Wikipedia, the free encyclopedia
en.wikipedia.org/wiki/Hypertext
Hypertext is text displayed on a computer display or other electronic device with references (hyperlinks) to other text that the reader can immediately access, ...
[Hypertext fiction - History of hypertext - Hypertext Transfer Protocol - Patchwork Girl](#)

What is Hypertext?

Let me introduce the word "hypertext"***** to mean a body of written or pictorial material interconnected in such a complex way that it could not conveniently be presented or represented on paper. It may contain summaries, or maps of its contents and their interrelations; it may contain annotations, additions and footnotes from scholars who have examined it. Let me suggest that such an object and system, properly designed and administered, could have great potential for education, increasing the student's range of choices, his sense of freedom, his motivation, and his intellectual grasp*****. Such a system could grow indefinitely, gradually including more and more of the world's written knowledge.

Nelson, T.H. (1965) A file structure for the complex, the changing and the indeterminate.

Proceedings of the 20th ACM National Conference..

What is Hypertext?

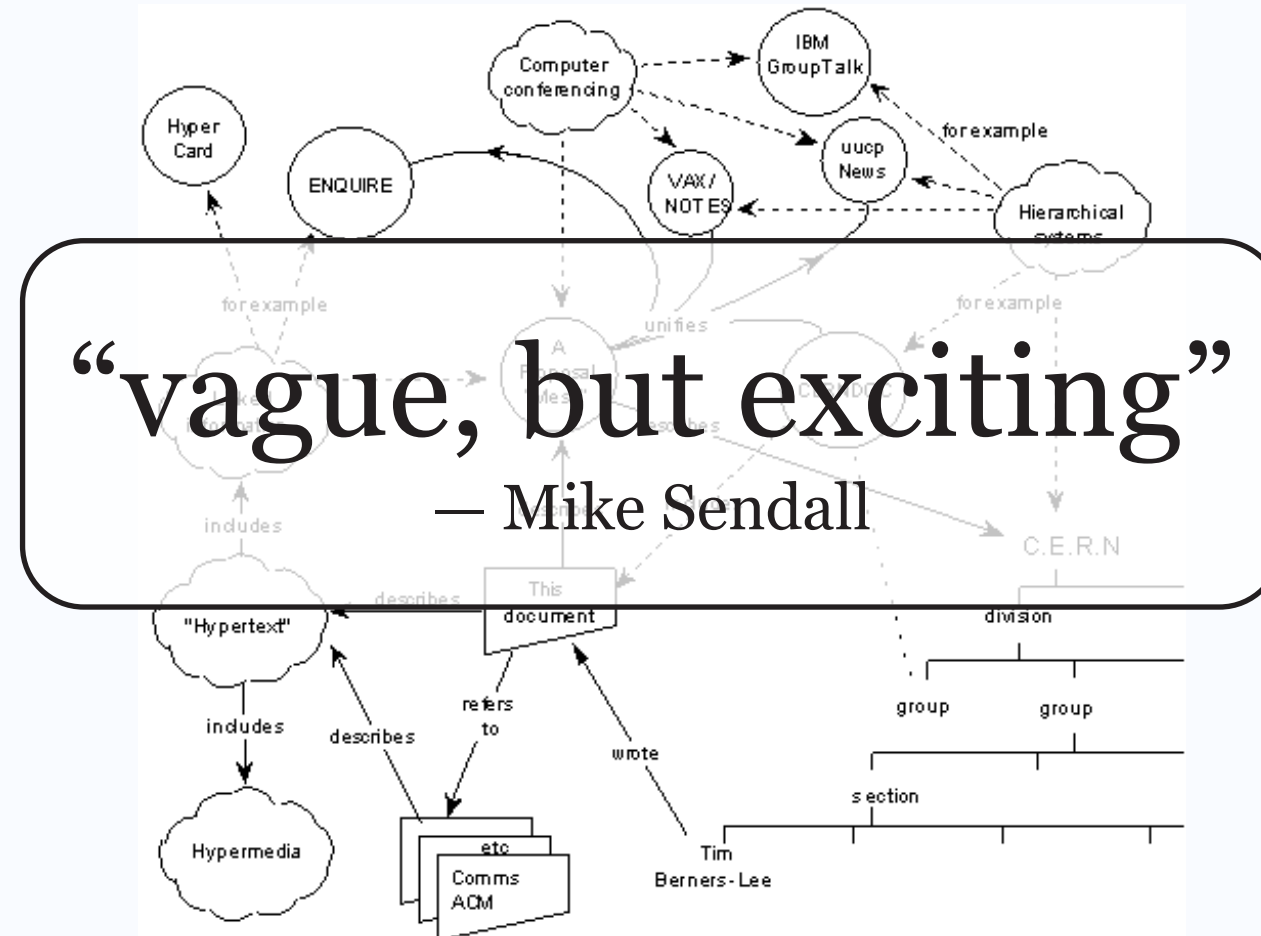
[hypertext is] a combination of natural language text with the computer's capacity for branching, or dynamic display

What is Hypertext?



By “hypertext” I mean
non-sequential writing

What is Hypertext?



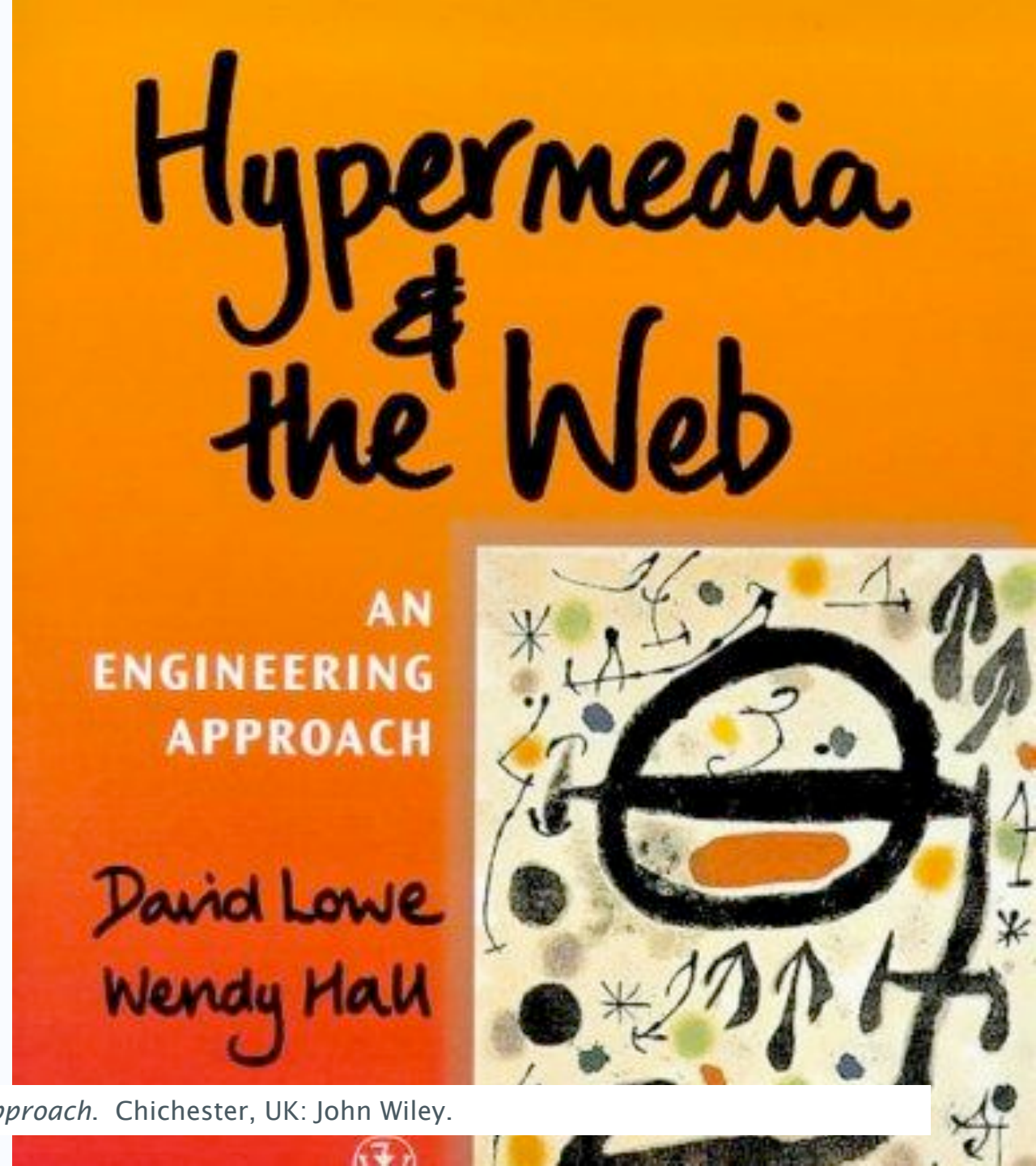
What is Hypertext?

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
- Not limited to text - hypermedia

Hypertext Terminology

Nodes, Links, Anchors and Endpoints

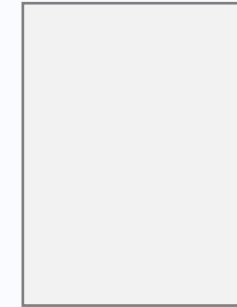
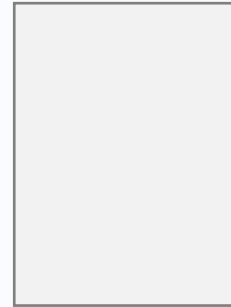
Lorem ipsum dolor
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lacinia dictum.

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bibendum ligula, et
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Nodes, Links, Anchors and Endpoints

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

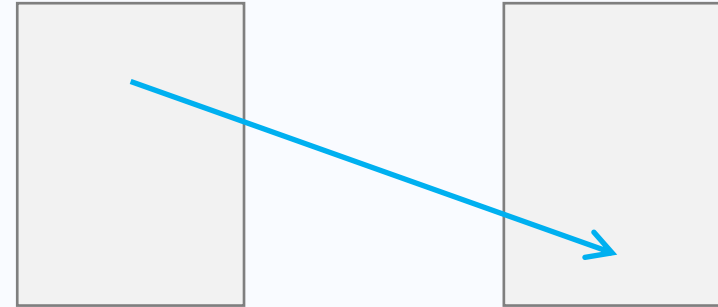
- e.g. screen, page, frame, lexia...
- The act of chunking information is part of authoring process



Nodes, Links, Anchors and Endpoints

A link is an association between nodes

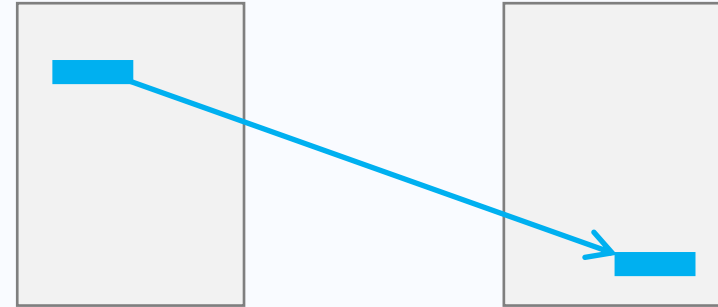
May be navigable



Nodes, Links, Anchors and Endpoints

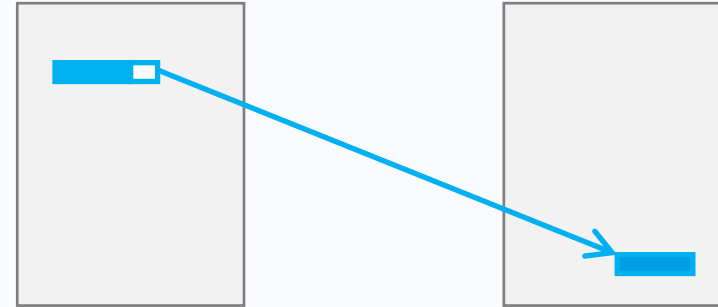
An anchor is the representation of a link on a node

- 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



Nodes, Links, Anchors and Endpoints

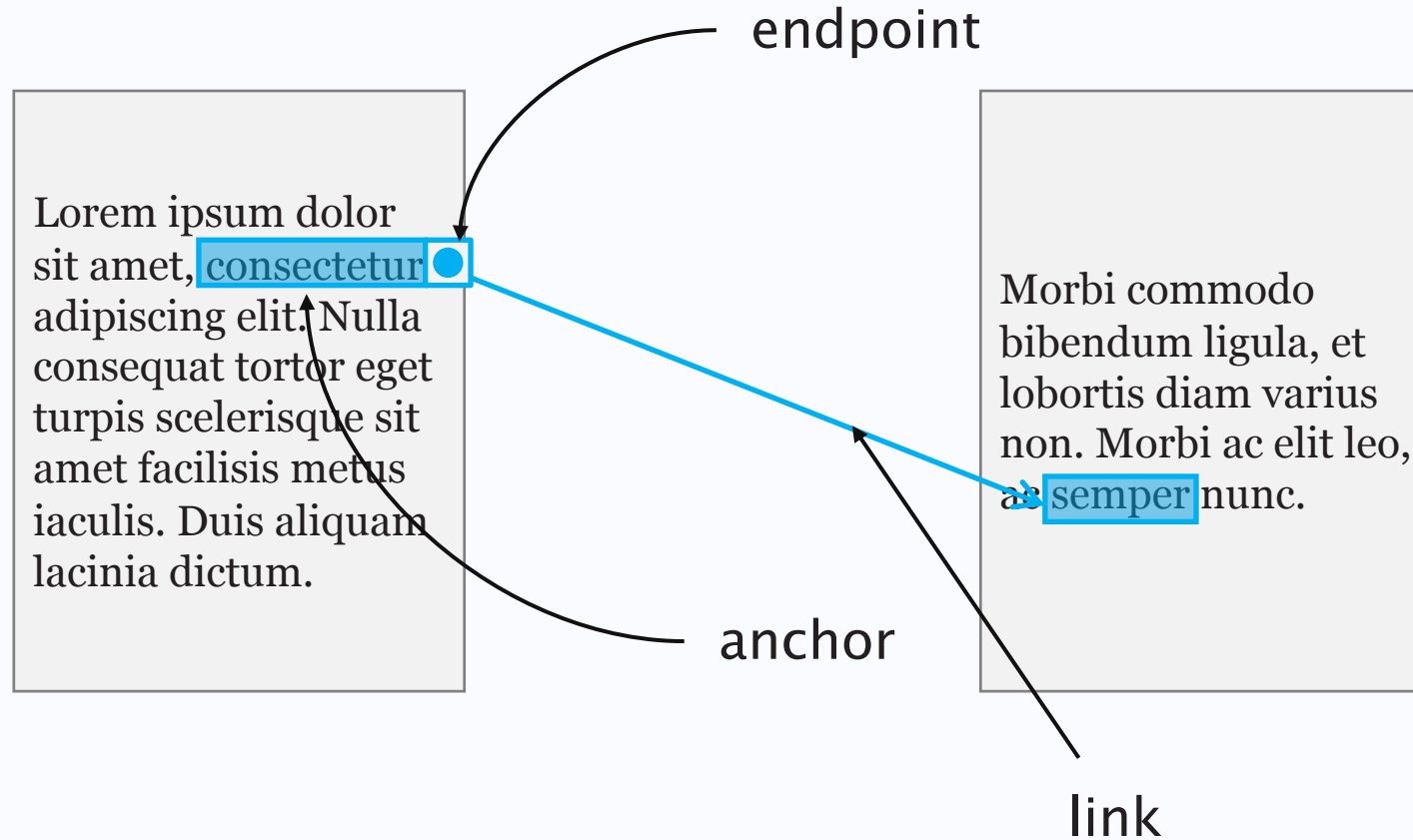
An endpoint is a component of a link that references an anchor on a node



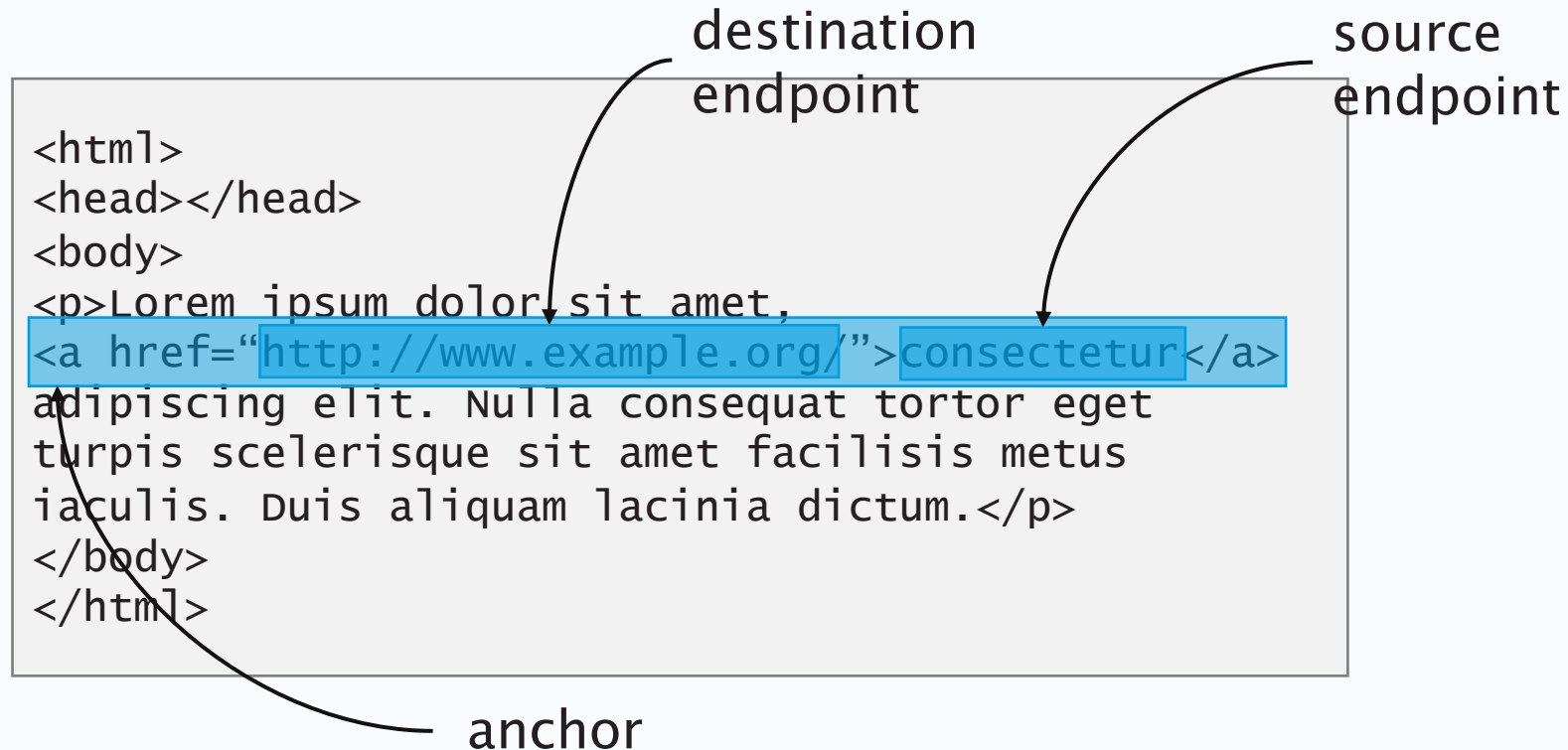
Links on the Web

- Links are part of the source node
 - ``
 - 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 Links



Embedded Links in HTML



Embedded vs. First class links

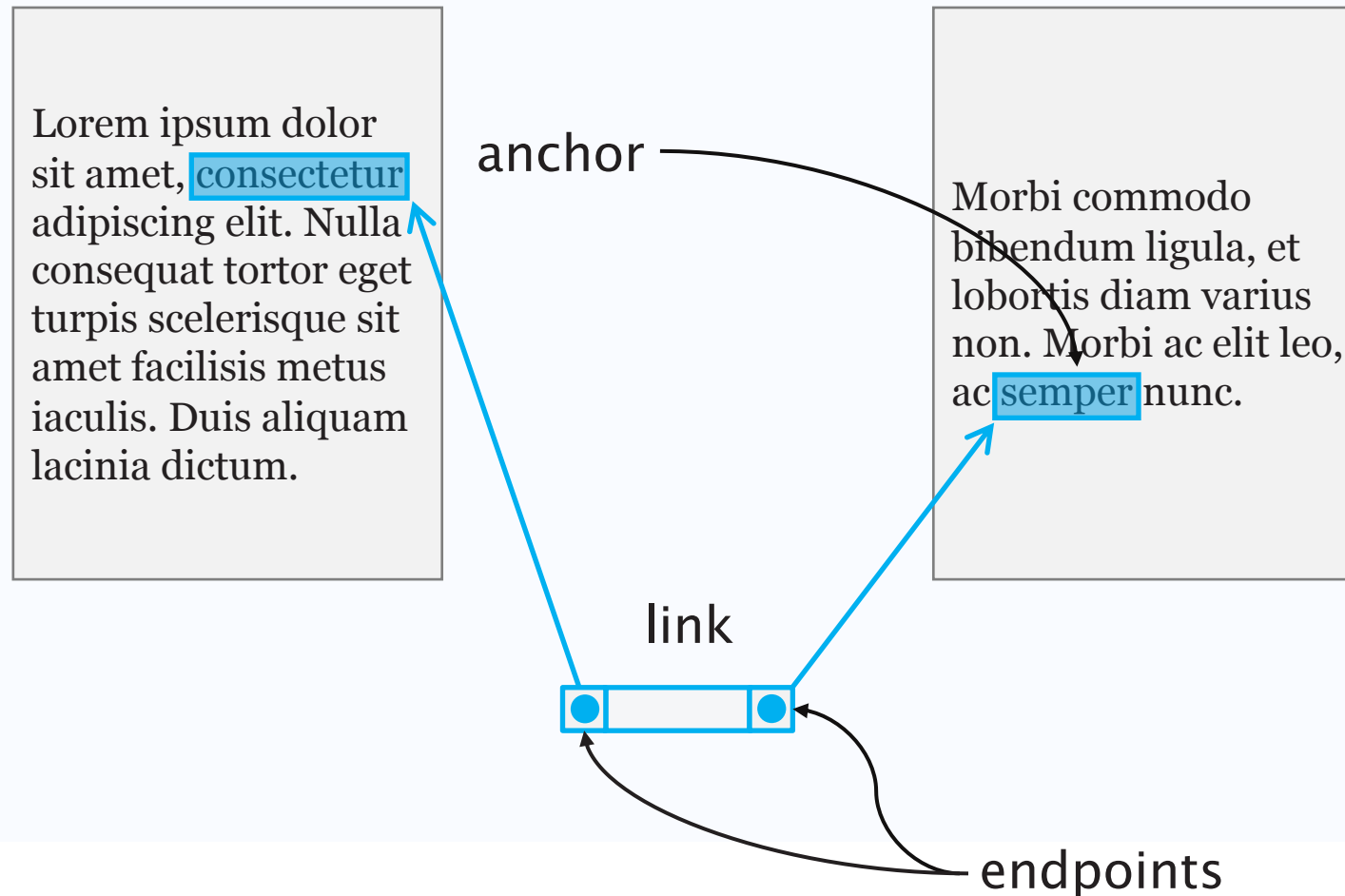
Links are embedded in web pages

- 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 (first class links) allows richer linking:

- Multiple different link overlays (linkbases)
- Personalisation, task-orientation, etc

First Class Links



Bidirectional Links

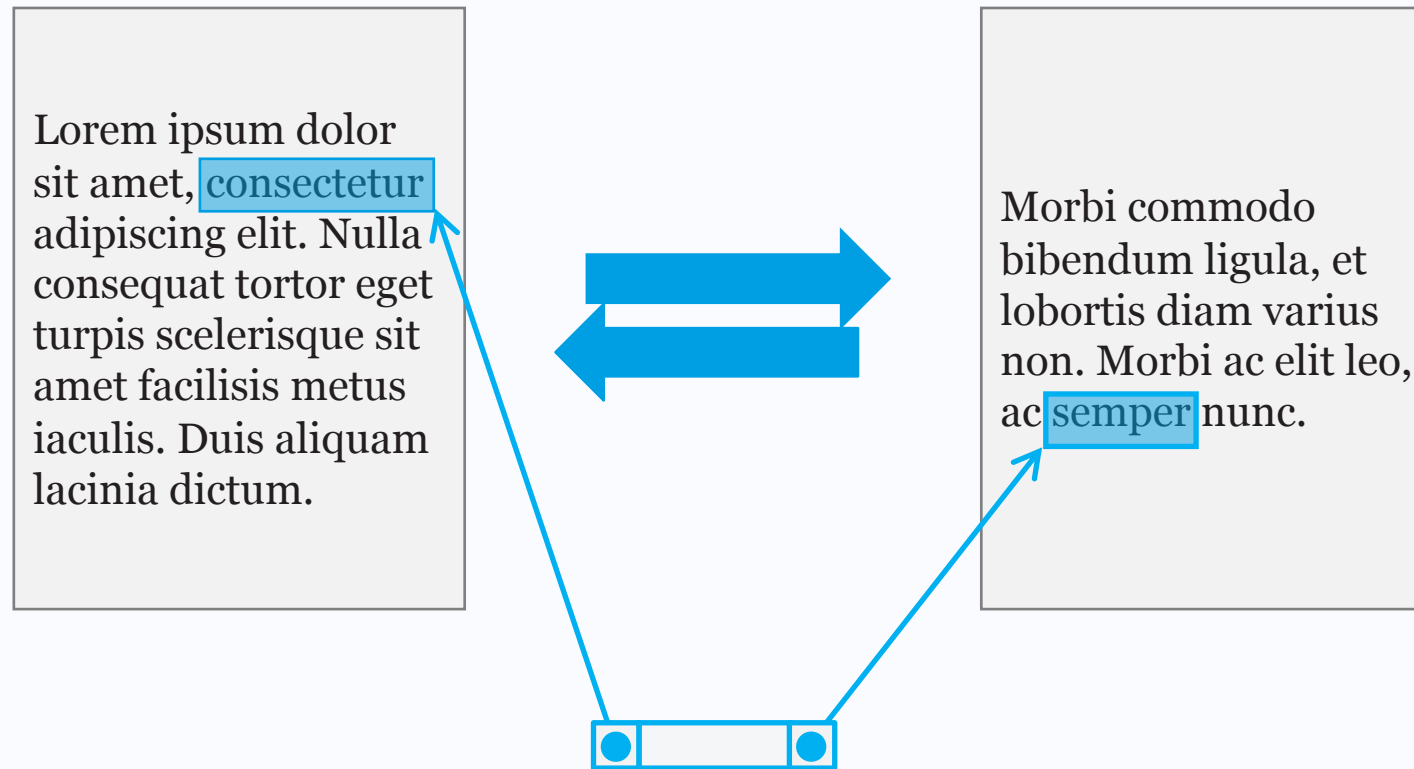
On the Web, not easy to see what links to a page

- Links are embedded, so can only be followed from the source document to the destination, not the other way
- Can use a global index such as Google, but this raises issues of scalability

With first class links:

- As easy to traverse links backwards as forwards
- Endpoints may be annotated as source/destination/bidirectional
- How do we find links that can be applied to a given document?

Bidirectional Links



N-ary Links

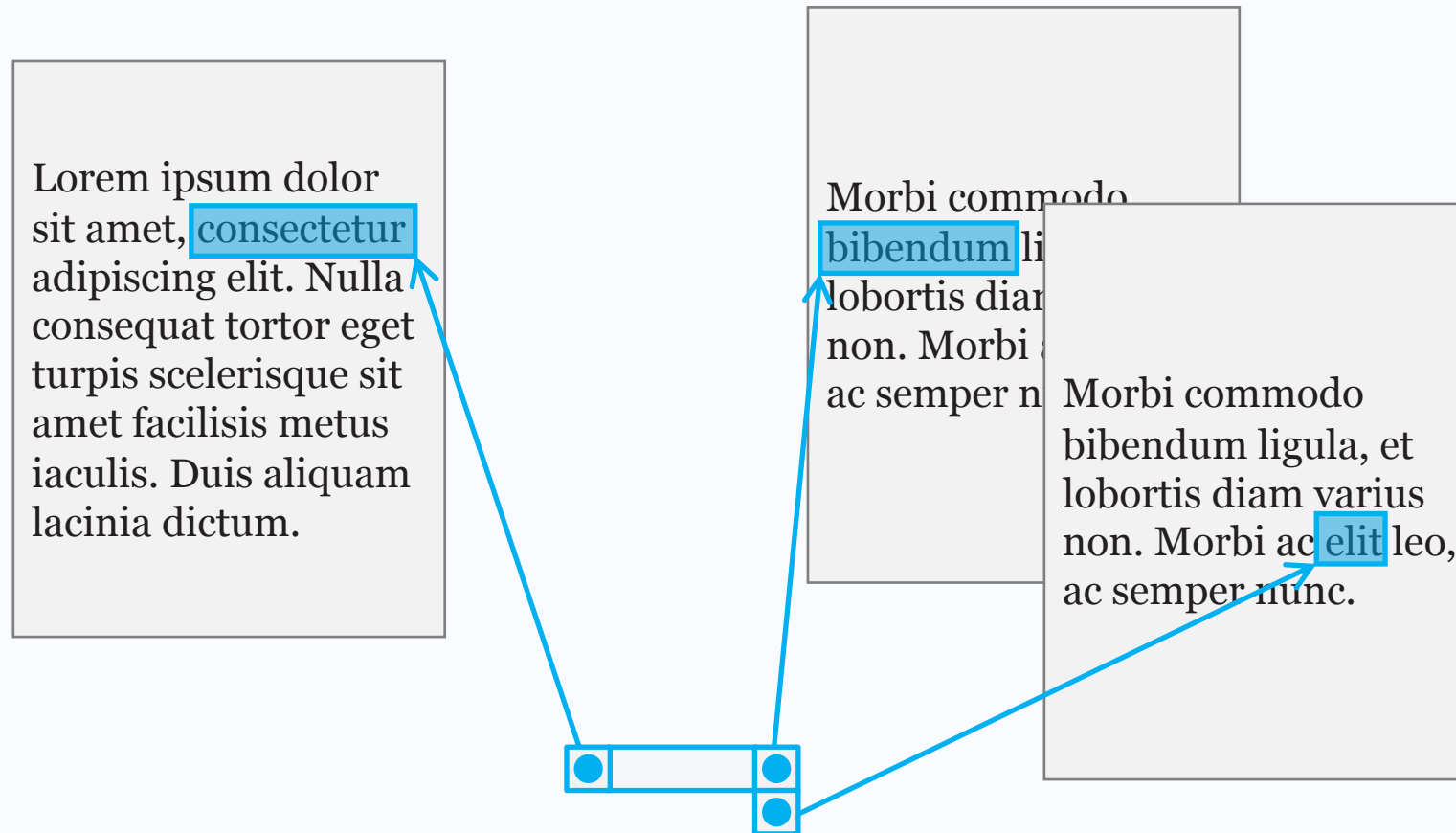
Web links connect only two documents together

- Only one href attribute allowed on an <a> tag

First class links can connect many nodes together

- Many sources
- Many destinations
- Many of both

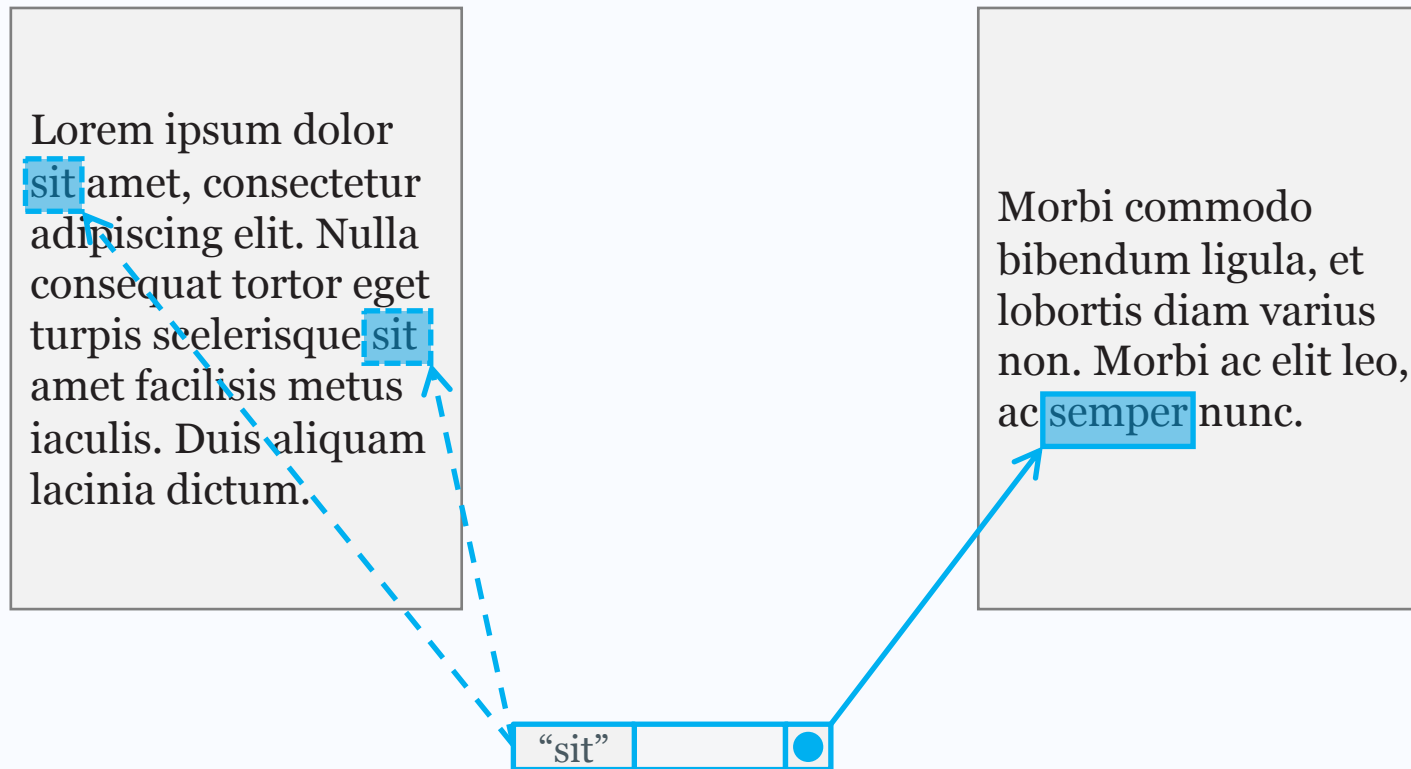
N-ary Links



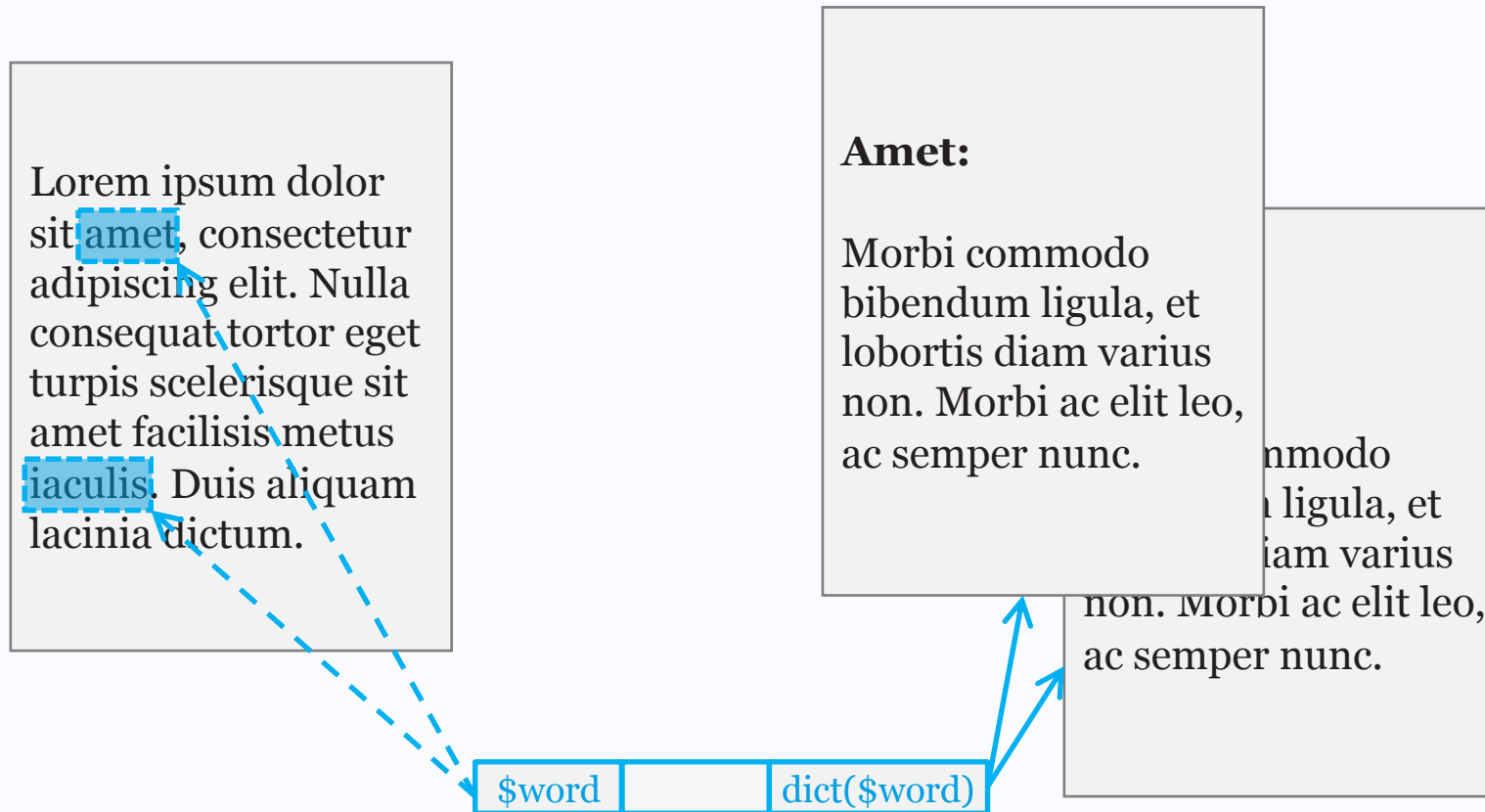
Generic (functional, dynamic) links

- 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 endpoints
 - Put a link on all occurrences of the word ‘hypertext’

Generic Links



Functional Links



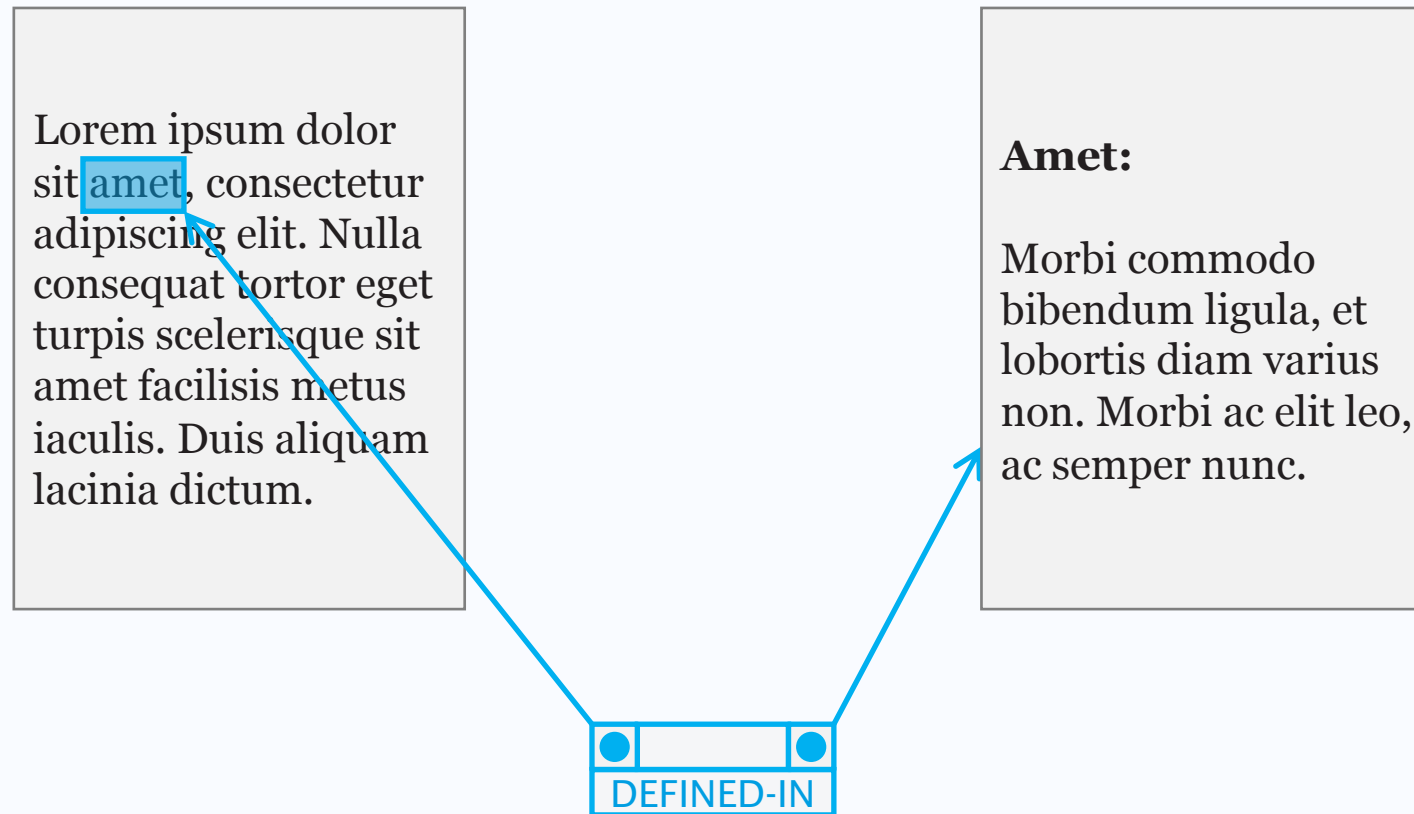
Typed links

Web links may contain some additional information

- ``
 - rel: the role of the relation from the source to the destination
 - rev: the role of the relation from the destination to the source (the reverse relation)
- 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

Nodes, Links and Anchors



Summary

Hypertext is more than just the Web!

The Web has a fairly impoverished approach to links:

- No first class links
- No bidirectional links
- No n-ary links
- No generic links
- No functional links
- Link types are present, but rarely used

Next Lecture:
Architecture of the World Wide Web