

# Networks, Links & Topics

*Classifying and collaborating in the Web*

Dan Brickley, [<danbri@few.vu.nl>](mailto:danbri@few.vu.nl)  
Vrije Universiteit, Amsterdam.

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The Hague, 19 Sept 2011.

# Overview

- Three notions of ‘network’ (or ‘graph’).
- Three notions of ‘information’.
- Linked Data & Linked Information.
- Where does ‘subject classification’ fit?

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# SIX DEGREES



THE SCIENCE OF A CONNECTED AGE

DUNCAN J. WATTS

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Albert-László Barabási

# LINKED

The New Science of Networks

How Everything is Connected to Everything Else and What it Means for Science, Business and Everyday Life

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"Connected could change your life forever."  
— DANIEL GILBERT, author of *Stumbling on Happiness*

NICHOLAS A. CHRISTAKIS, MD, PhD  
AND JAMES H. FOWLER, PhD



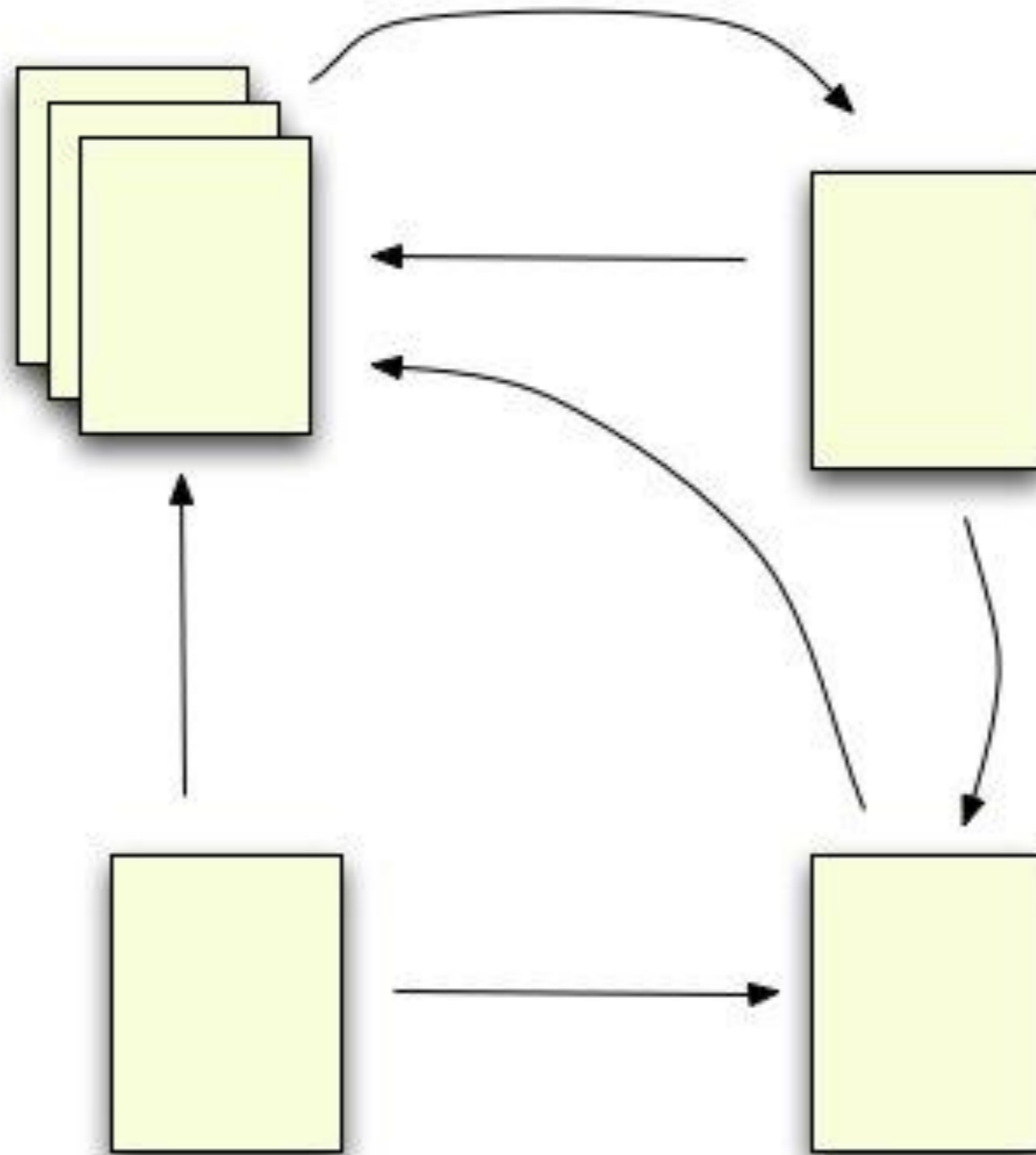
# Connected

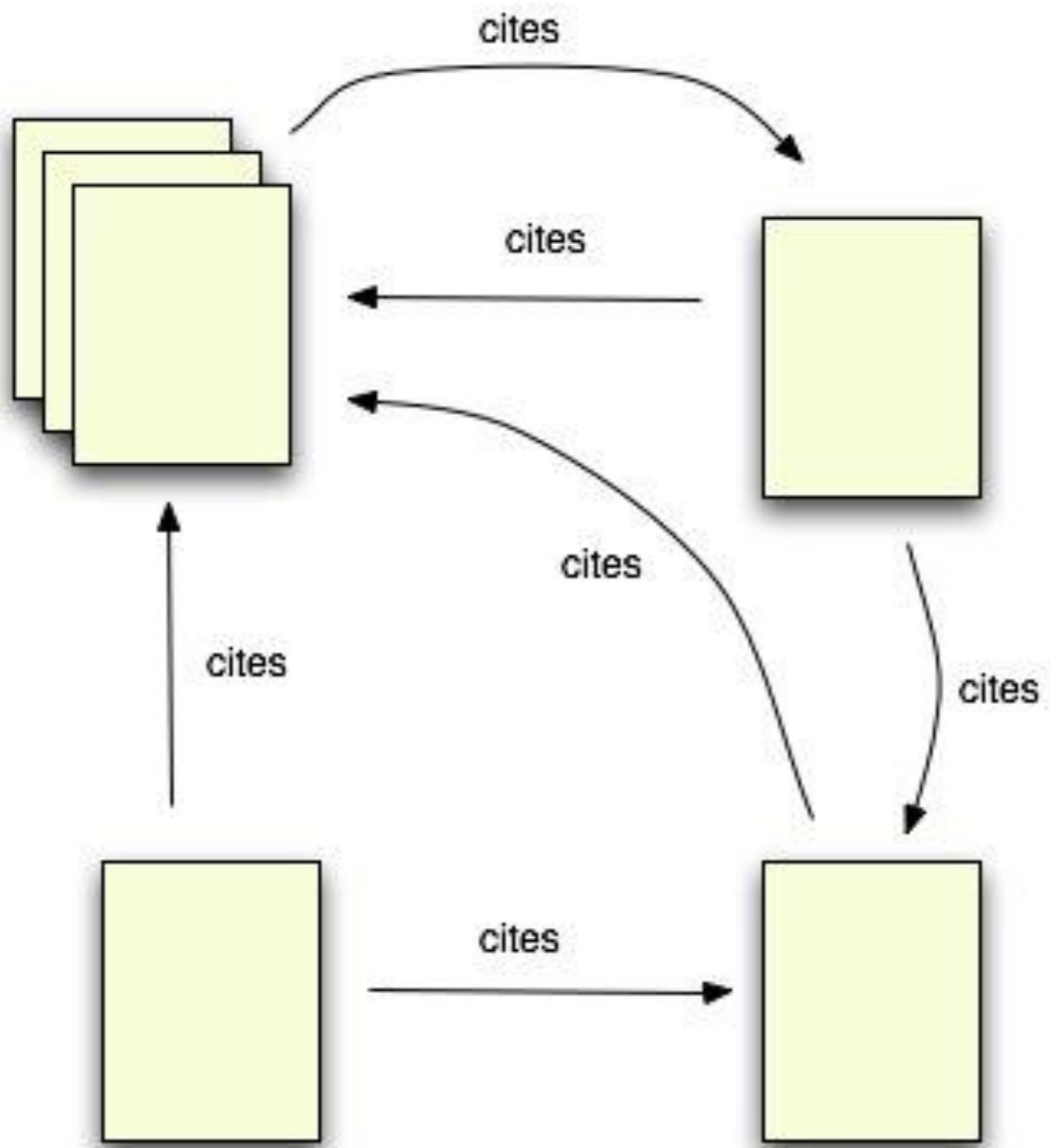
The Surprising Power of Our Social Networks  
and How They Shape Our Lives

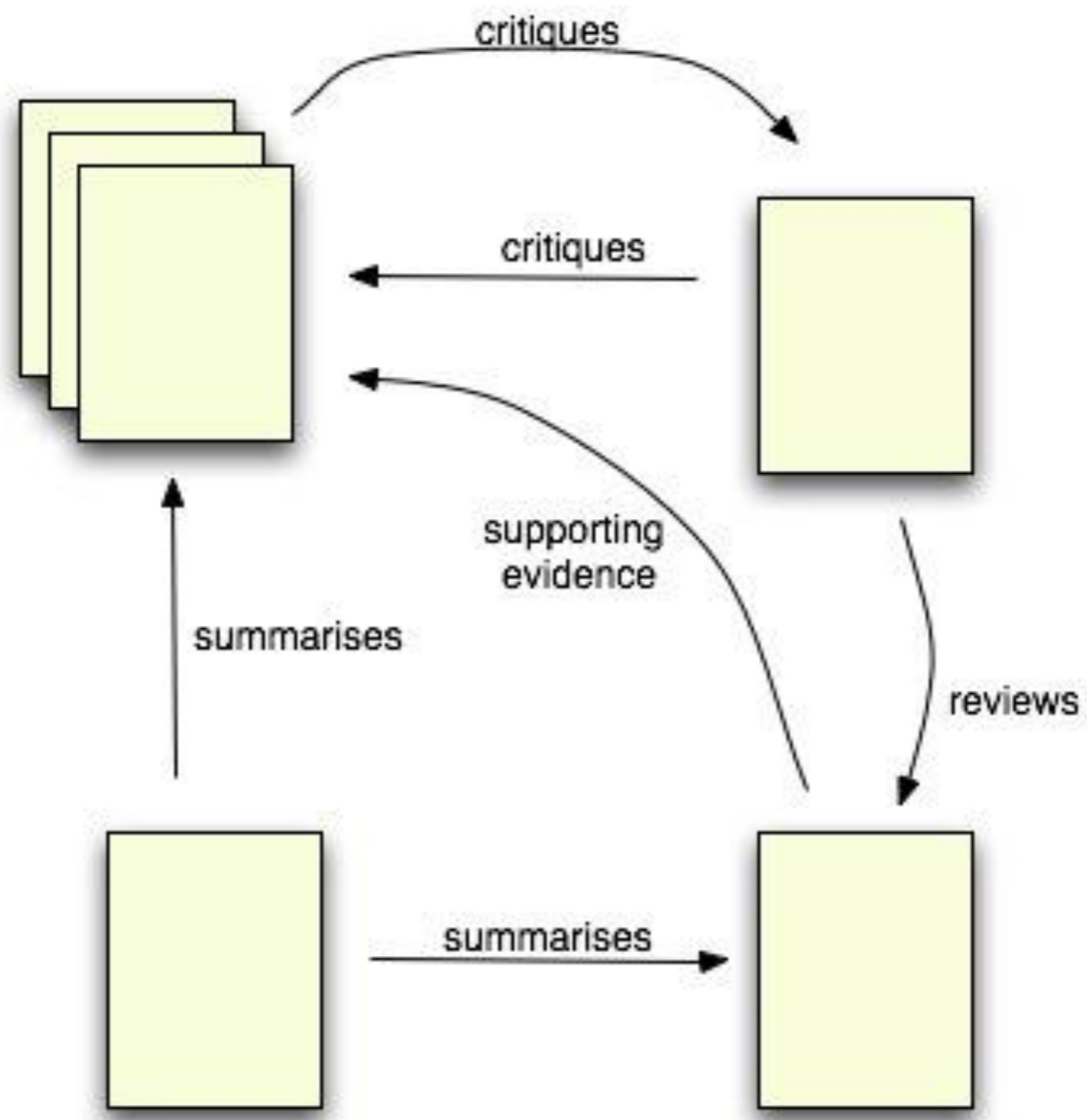
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3.

# “Hypertext Graph”



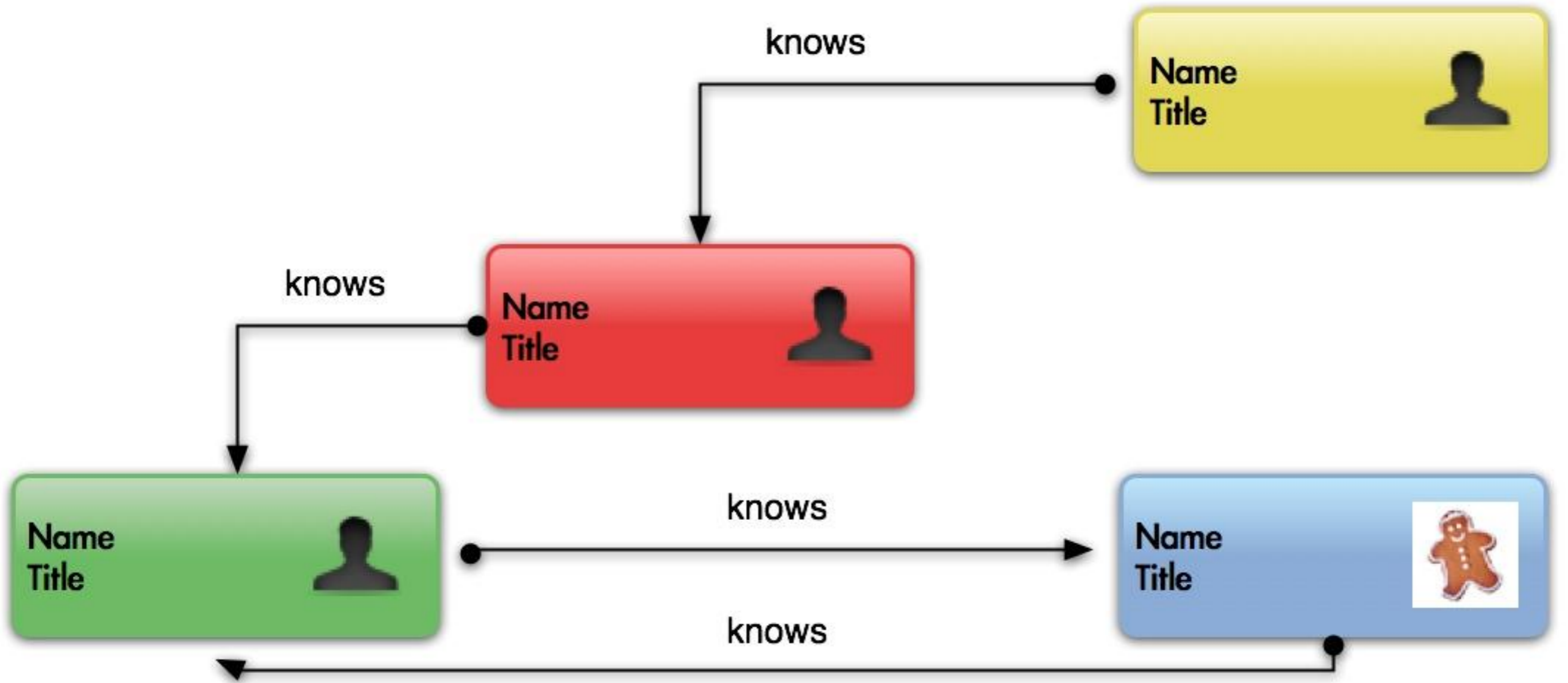


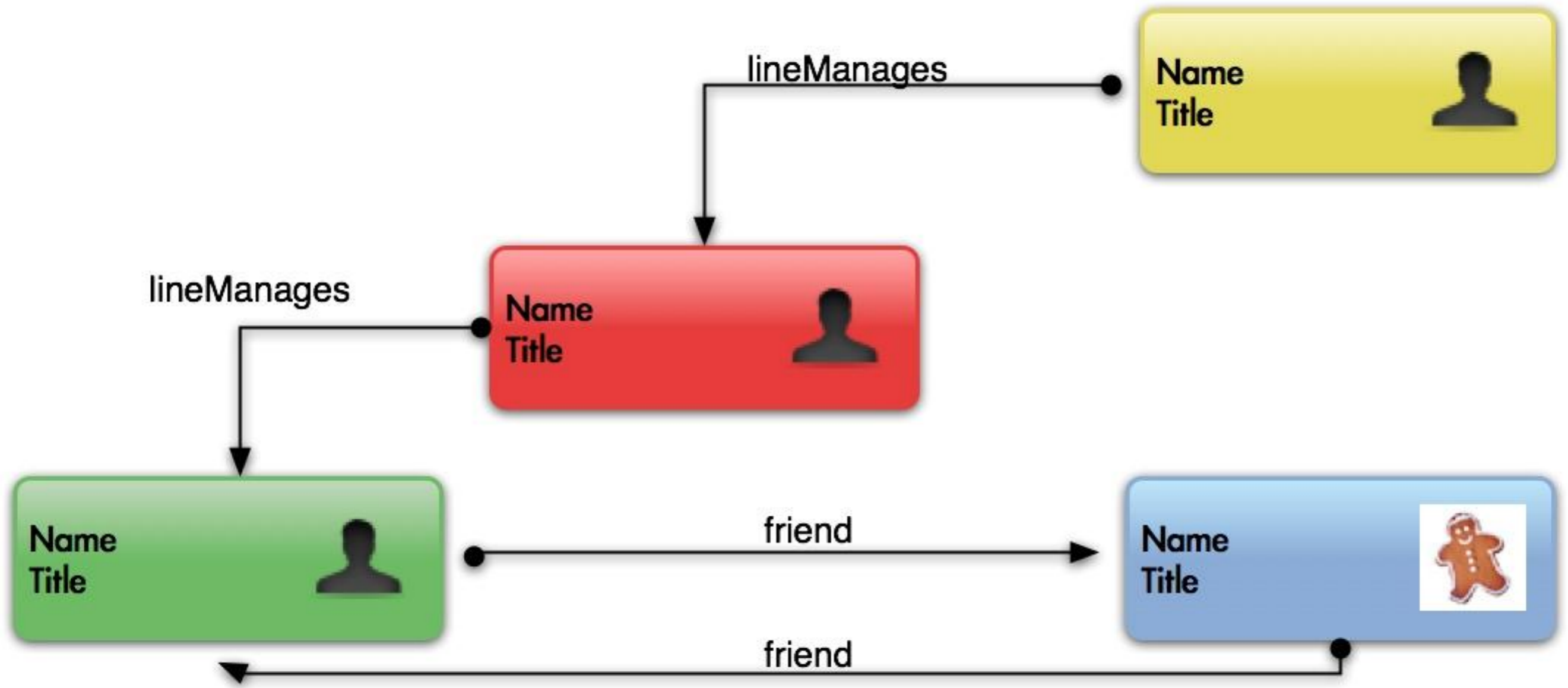






“Social Graph”





Recap:

*Hypertext Graph: Linked documents*

*Social Graph: Linked people*

# Factual Graph

- or “Semantic Network”, “Data Graph”
- you’ll also hear “Semantic Web”, “Linked Data”, RDF, OWL, “triples”, “quads”, and other terms...
- descriptive, open-ended, domain-neutral
- it can describe hypertext graphs, social graphs, ... any graphs

biographer

Bruce Chatwin

In Patagonia

wrote

wrote

The Songlines

primaryTopic

coverArt

primaryTopic

Bruce Chatwin:  
A Biography

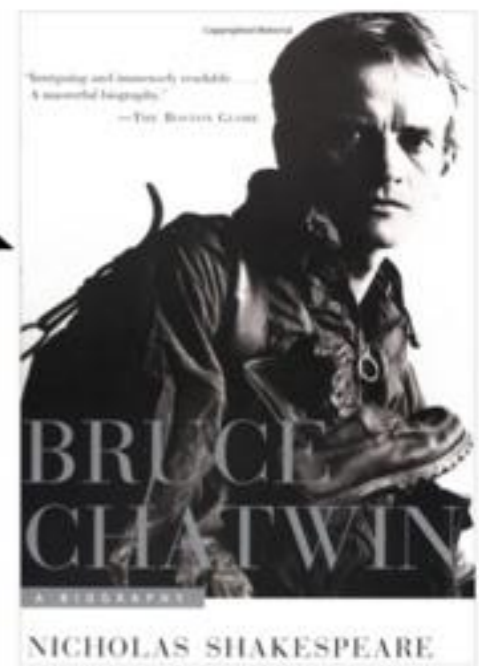


[http://en.wikipedia.org/wiki/Bruce\\_Chatwin](http://en.wikipedia.org/wiki/Bruce_Chatwin)

coverArt

wrote

Royal Society  
of Literature



Nicholas Shakespeare

fellow



# Linked Data

*Factual Graphs + Hypertext Graphs = Linked Data*

- Share Factual Graphs using Hypertext Graphs
- e.g. as RDF documents in the Web
- each gives a partial description, and ‘further reading’ links (for machines... for people...)



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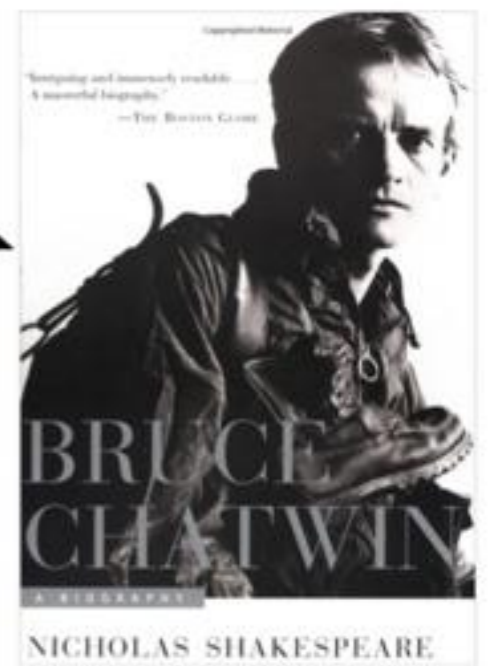


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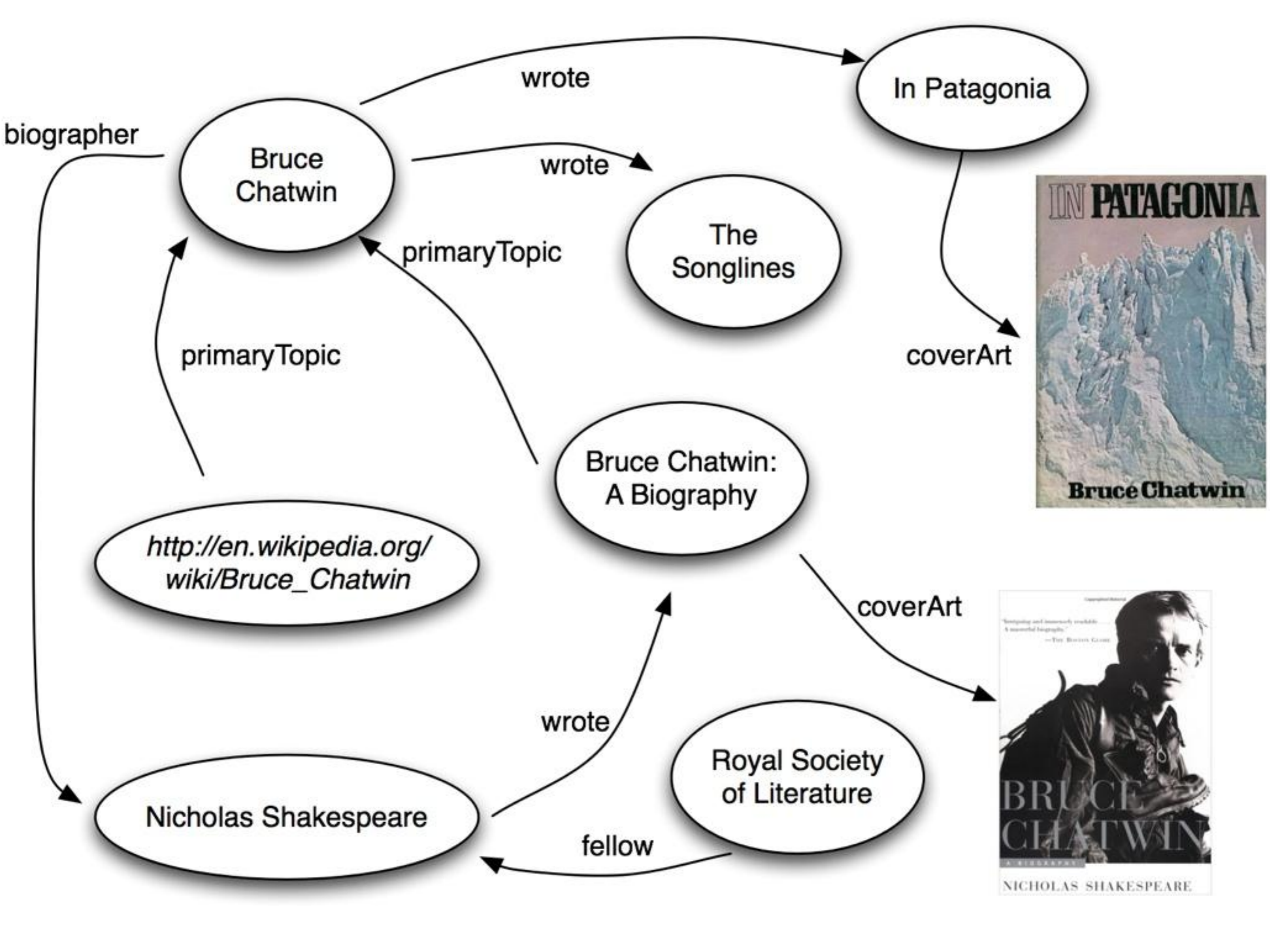


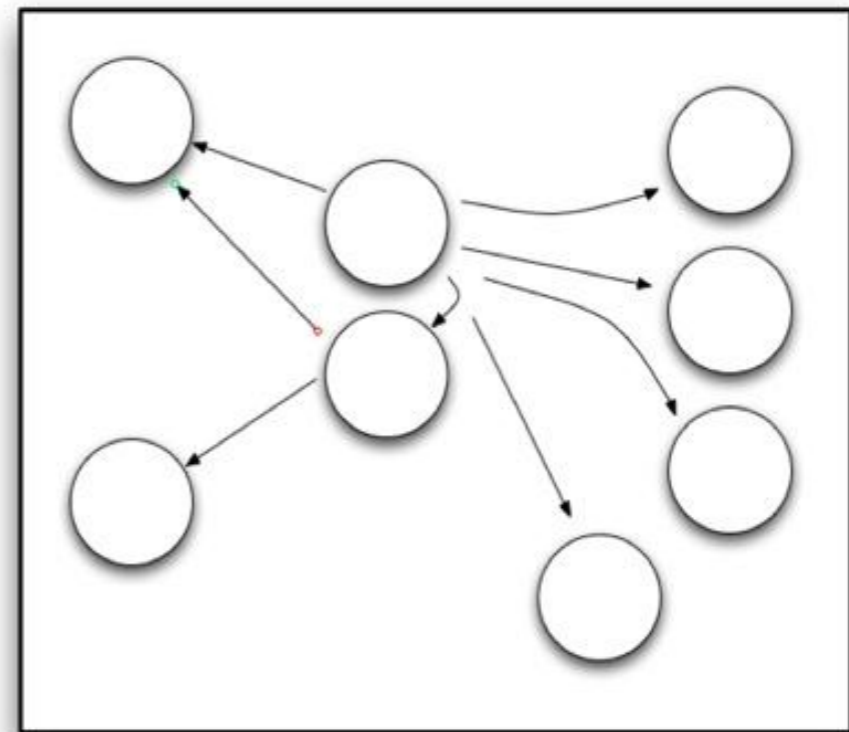
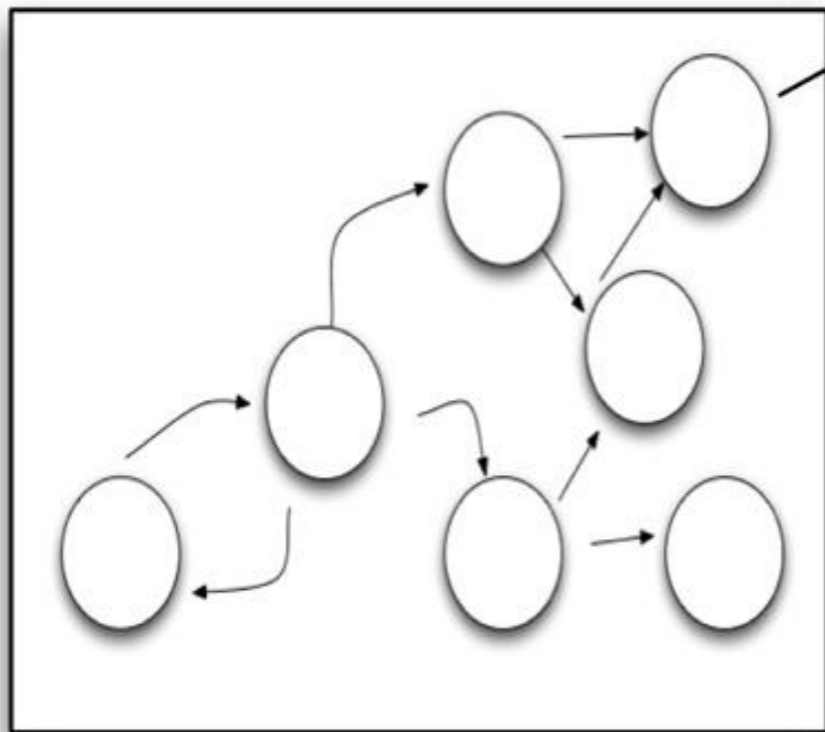
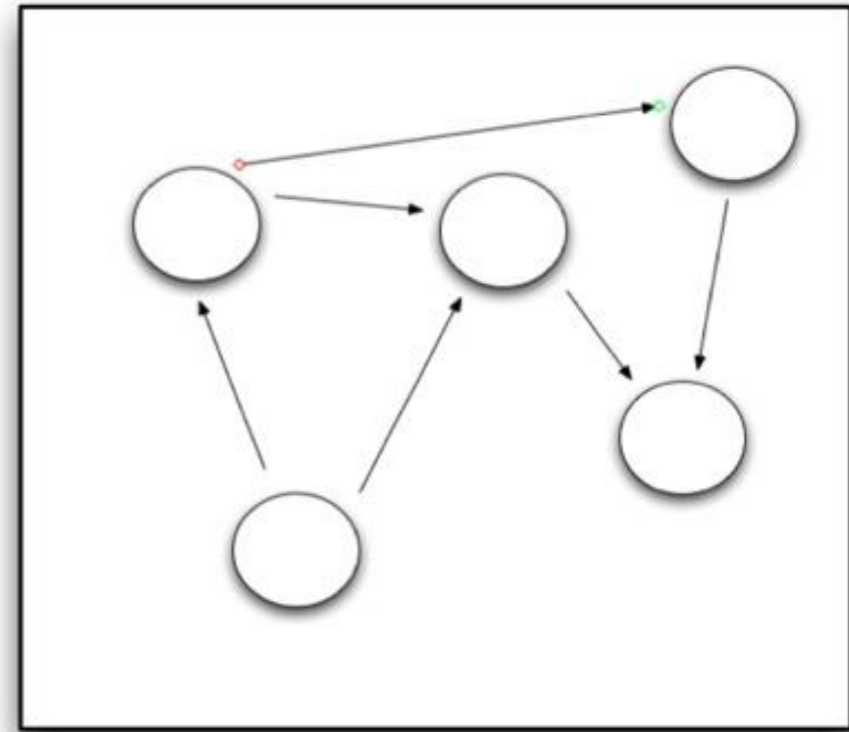
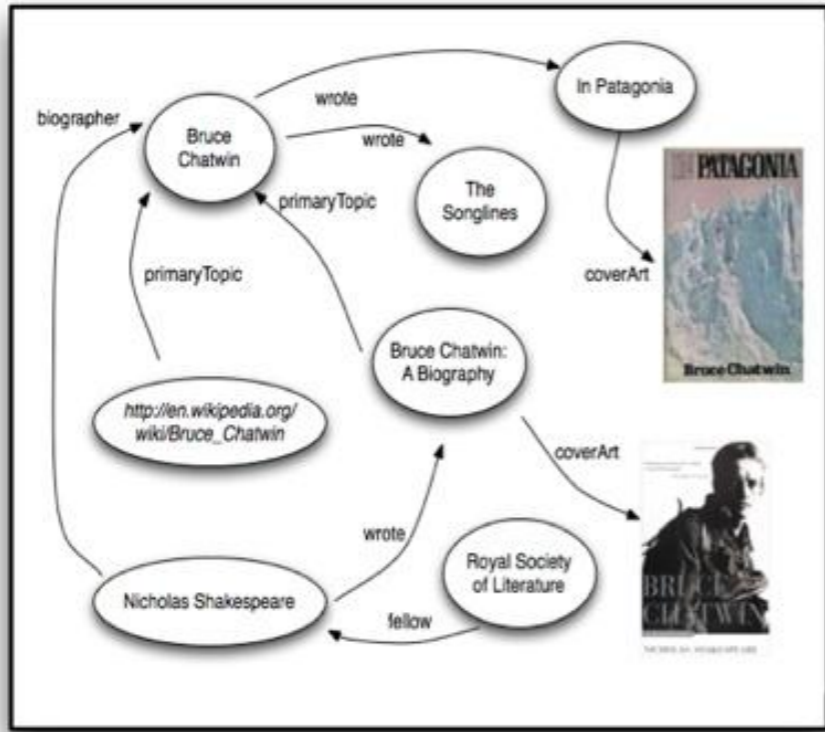
wrote

Royal Society  
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Nicholas Shakespeare







	A	B	C	D
1	SUBJECT	PREDICATE	OBJECT	SOURCE
2	wiki:Bruce_Chatwin	wrote	wiki:In_Patagonia	Dan
3	wiki:Bruce_Chatwin	nationality	British	DBPEDIA
4	wiki:Bruce_Chatwin	genre	History, travel, fiction	DBPEDIA
5	wiki:Bruce_Chatwin	biographer	wiki:Nicholas_Shakesp	Dan
6	wiki:In_Patagonia	subject	wiki:Patagonia	DBPEDIA
7	loc:n50036212	altLabel	Chatwin, C. Bruce (Charles Bruce), 1940- 1989	LOC
8	loc:n50036212	altLabel	Chatwin, Charles Bruce, 1940-1989	LOC
9	viaf:110567910	sameAs	wiki:Bruce_Chatwin	VIAF
10	viaf:110567910	sameAs	<a href="http://libris.kb.se:218894">libris.kb.se:218894</a>	VIAF
11	viaf:110567910	sameAs	gnd:11886128X	VIAF
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# Friend of a Friend (FOAF)

- Linked Data = Hypertext Factual Graphs
- FOAF = Linked Data + Social Graph
- Brings together three notions of information network: hypertext, factual and social.

# FOAF examples

- “Pat Hayes” and “Dan Brickley” are members of the RDF Core WG (& which closed in 2004)
- the person with homepage at danbri.org/ has a workplaceHomepage of [www.vu.nl/](http://www.vu.nl/)
- Dan knows Guus, Aida and Tom.
- Pat is an expert in the topic <http://id.loc.gov/authorities/subjects/sh85-086421> labeled “Model Theory”. (and Dan isn't.)



# Where are we?

- We're describing social graphs, using factual graphs, published and shared as hypertext graphs.
- Mildly confusing but fairly straightforward.
- How does subject classification fit in?



# “Information” x3

- Factual information: logical claims (RDF), generalisations(OWL), also statistics, geospatial, spreadsheets, ...
- Documents and artifacts; books, CDs, photos, videos, texts, literature, Web pages, ...
- “In people’s head” - skills, abilities, ...

# Linked Data in Context

- Linked Data addresses roughly 1/3 of the ‘Information linking’ problem: publishing and aggregating simple factual claims.
- Info in document form is **not going away**, ever.
- Info “in people’s heads” is invaluable (world population approaching 7 billion heads).

# Mistakes to avoid

- “Docs bad, data good” thinking.
- idea that “Semantic Web” *replaces* “Doc Web”.
- That ontologies are always better (richer, cleaner, more useful) than earlier subject-based approaches.
- That posting factual claims in the Web is our core shared business.
- That all data in the Web must be in RDF.

# Three uses of RDF

- To share simple factual data directly in the Web.
- As metadata, to describe other useful information.
- Describing people, their lives, experience and works.

# Linked Information

- An integrated approach, linking networks of documents, databases and people to ‘share what we know’ in the Web.
- Common approaches to describing topics, people, places and things, with supporting factual information.
- SKOS and subject classification at its heart.



# Questions?