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Title
Data, Metadata, and Ted

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Data, Metadata, and Ted

INTERTWINGLED:

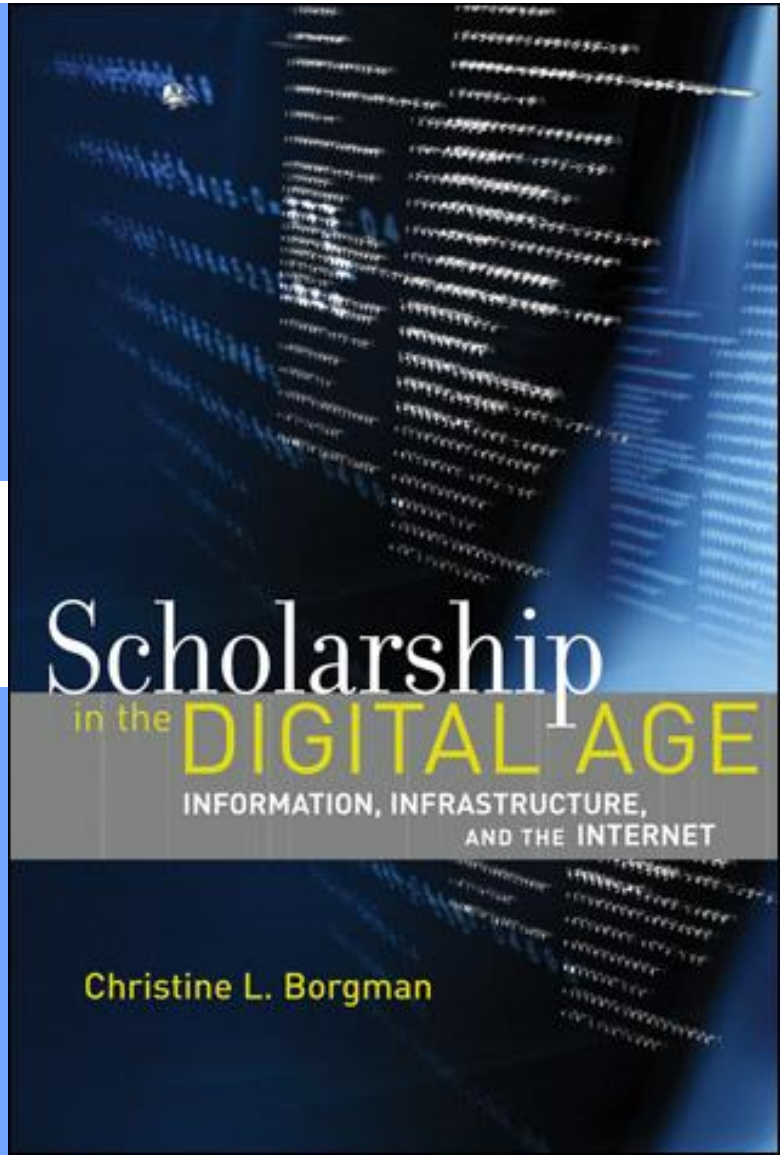
The Work and Influence of Ted Nelson

Chapman College, April 24, 2014

Christine L. Borgman

Professor and Presidential Chair in Information Studies

University of California, Los Angeles



MIT Press, 2007

Ted & Christine's shared office at the Oxford Internet Institute, 2005

HOW DID WE GET TO THE PRESENT MESS?

At last someone tells the computer history that got us here. Compelling and terse, this book is 80% material well known in the field, 10% quirky facts that turned up, and 10% the author's unique perspective.

WHAT THEY SAY ABOUT TED NELSON

Here was a man who dreamed my dreams before I did... *Computer Lib* inspired me as no other book has before or since.

Mitch Kapor, Founder of Lotus

Without a doubt, Ted's work had a significant & remarkable impact on my thinking in those formative years.

Ray Ozzie, Chief Technical Officer, Microsoft

He's an international treasure, a conceptual catalyst extraordinaire, an inventor of things only someone as consistently beyond the traditional, normal, or dreamed-of as Ted could invent. Long may he wave!

Howard Rheingold

Nelson's vision is deep and his writing is by turns poetic, caustic, bitchy and glorious.

Greg Phillips

Ted Nelson, vous êtes Poète et Philosophe.

Catherine Tasca, Minister of Culture, France

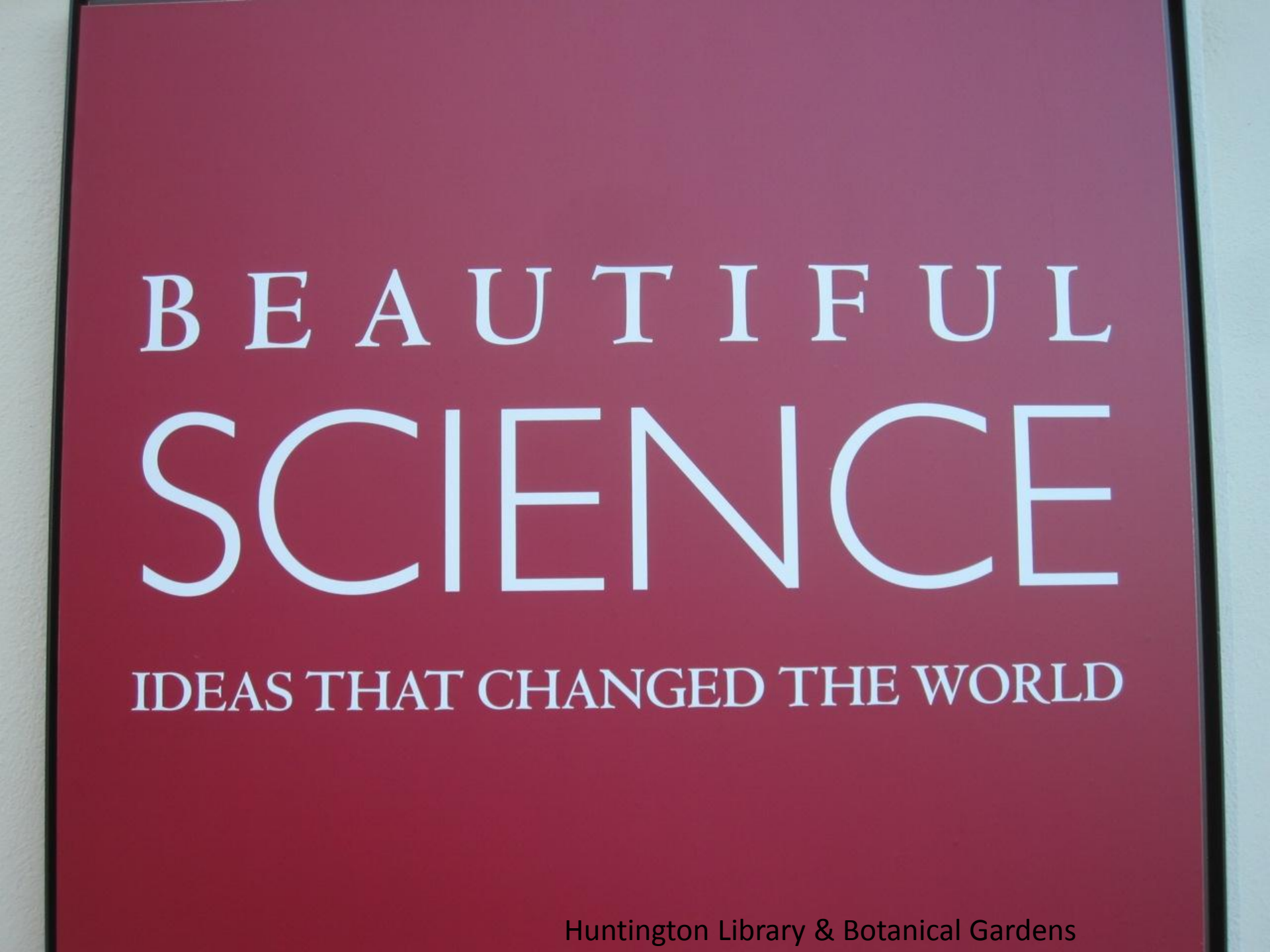
Ted Nelson is a principal dissenter in the computer field. He holds a PhD from Keio (Japan), as well as degrees from Swarthmore and Harvard. In 2001 he was knighted by France as an Officier des Arts et Lettres. Nelson's two main designs, Xanadu® documents and ZigZag® database, potentially offer an entirely different and more comfortable computer world.

Photo by Christine Borgman

TED NELSON HOME PAGE *HYPERLAND.NET* PROJECT XANADU *XANADU.COM*

Back cover, Geeks Bearing Gifts

Mega-genius store, Park City, Utah



Huntington Library & Botanical Gardens

http://upload.wikimedia.org/wikipedia/commons/d/d0/Copyright_Card_Catalog_Files.jpg

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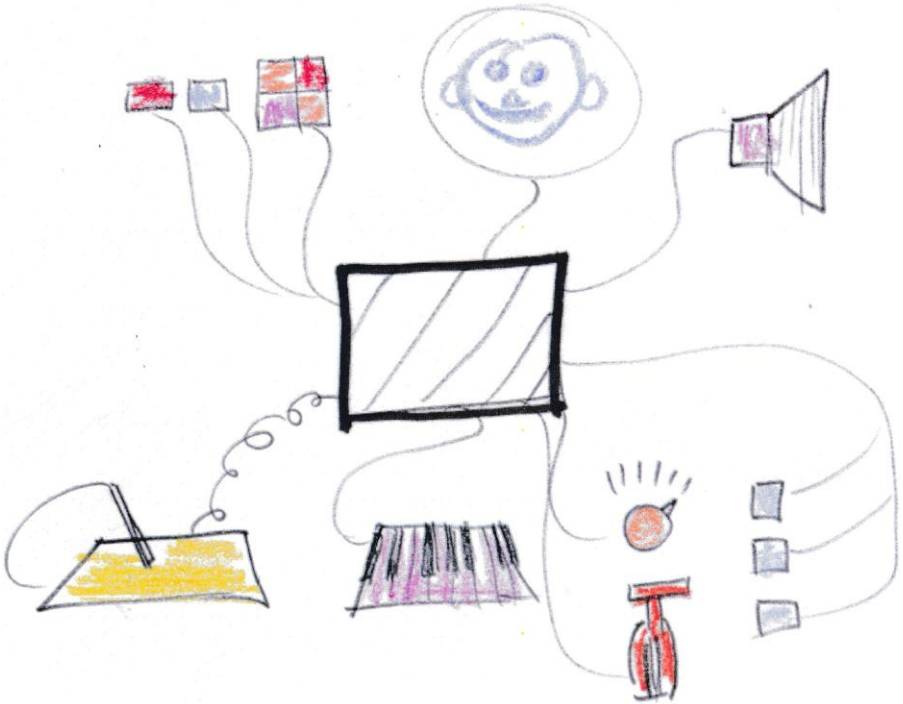
WAS THIS THE FIRST DIAGRAM OF A PERSONAL COMPUTER?



Artwork for a 1968 talk by Ted Nelson (scanned from paper original, which was photographed as a 35mm slide for the talk).

The box in the center is the computer. Above it, OUTPUT— indicator lights, CRT, loudspeaker. Below it, INPUT-- tablet, piano keyboard, postal scale, pushbuttons. (Typing method mischievously omitted to emphasize the rest.)

This was at a time when Honeywell was proposing a "kitchen computer" for recipes, but the term "personal computer" was rarely heard. Nelson does not remember when he first used the term, but it may have been at this talk.

=30=

12 September 2008 | $10
Science
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scientific
11 February 2011 | $10
Science
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What is a document?

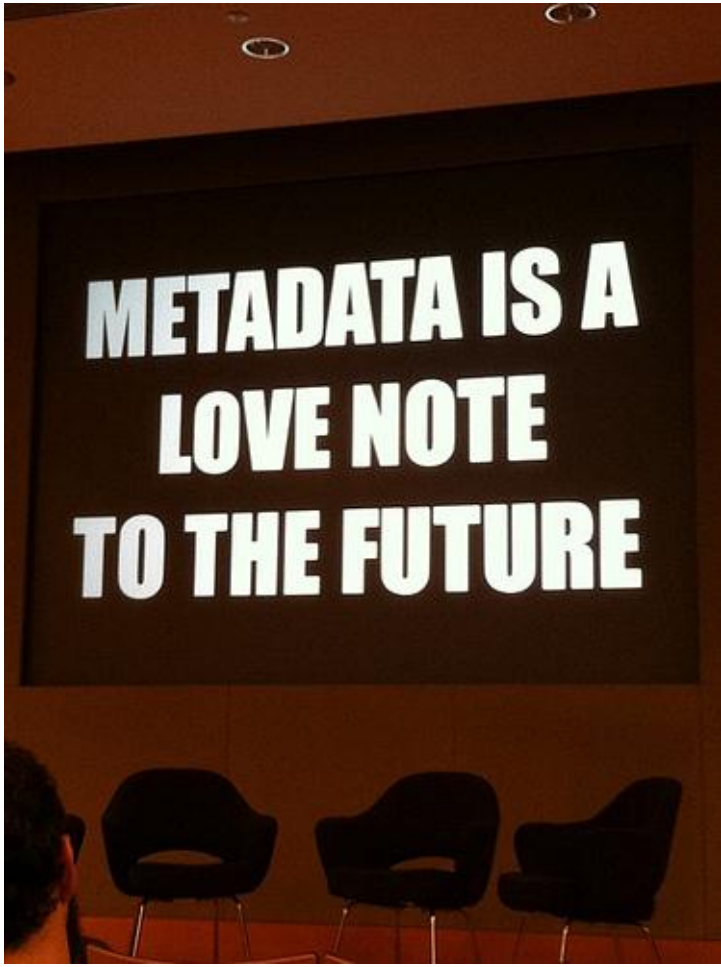
(You don t
see
the links.)

THE WEB OF CONNECTIONS IN SCIENCE

Consider how it works in science, and the day-to-day activities of an individual

Metadata

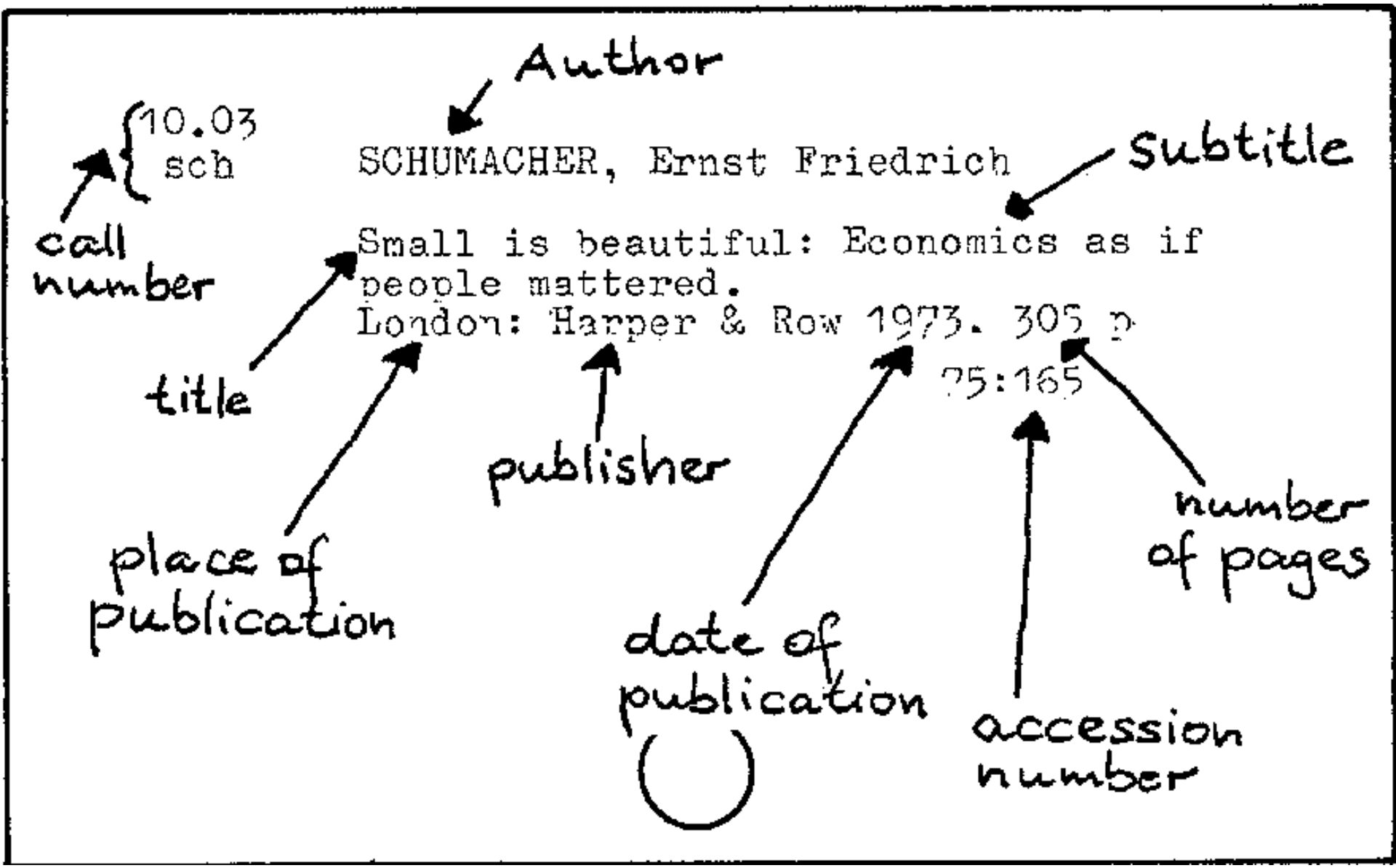
- Metadata is structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage an information resource.*
  - descriptive
  - structural
  - administrative



*National Information Standards Organization 2004

photo by @kissane]

Ted interrogating Dr. Ann O'Brien of Loughborough University about metadata, 2005



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Dubrovnik, Croatia

UNIVERSITY OF OXFORD
DOMI NVS ILLV MINA TIO MEA
PHYSICS
DENYS WILKINSON BUILDING
Visitors
Theoretical Physics
Engineering Science

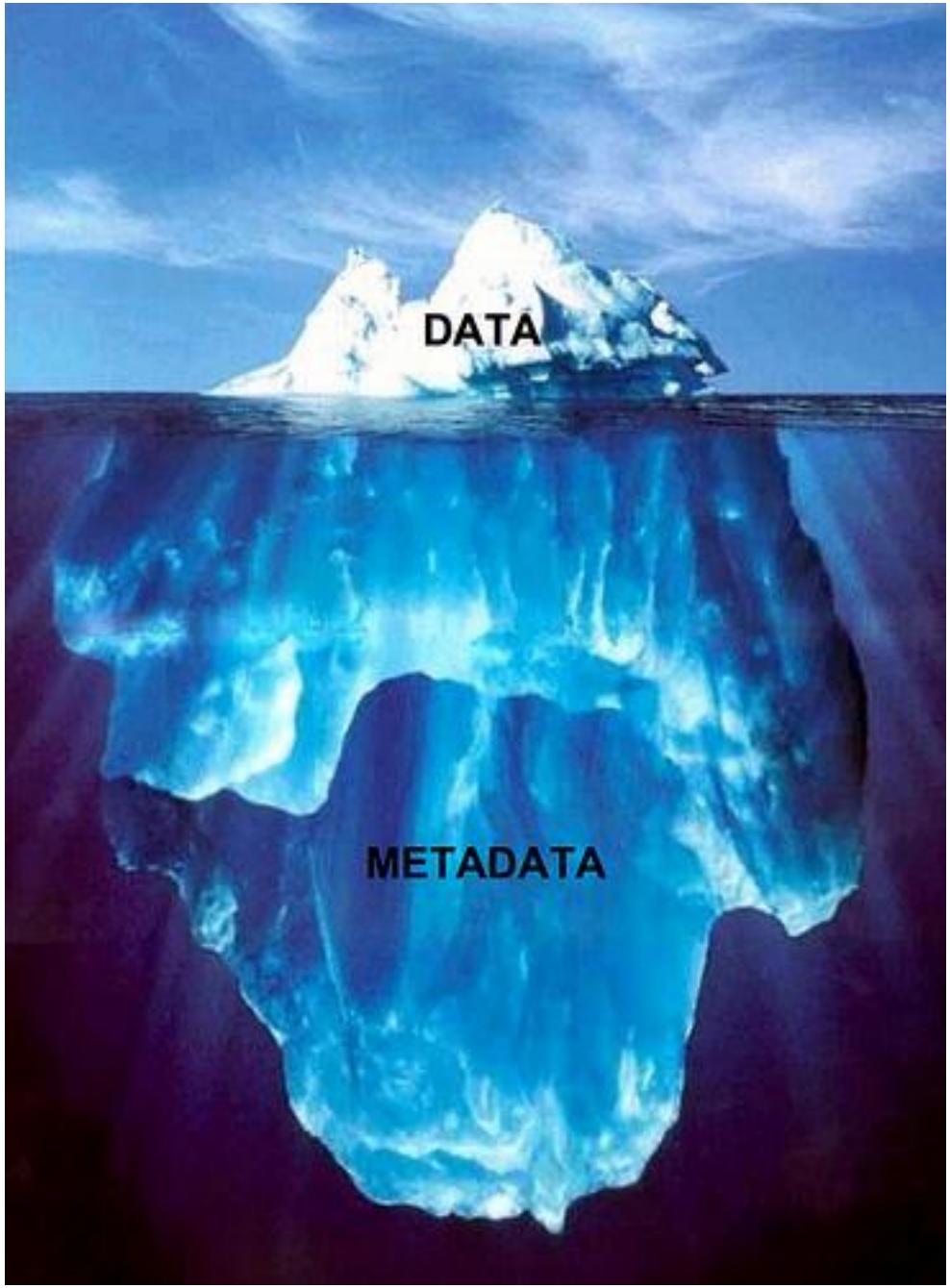
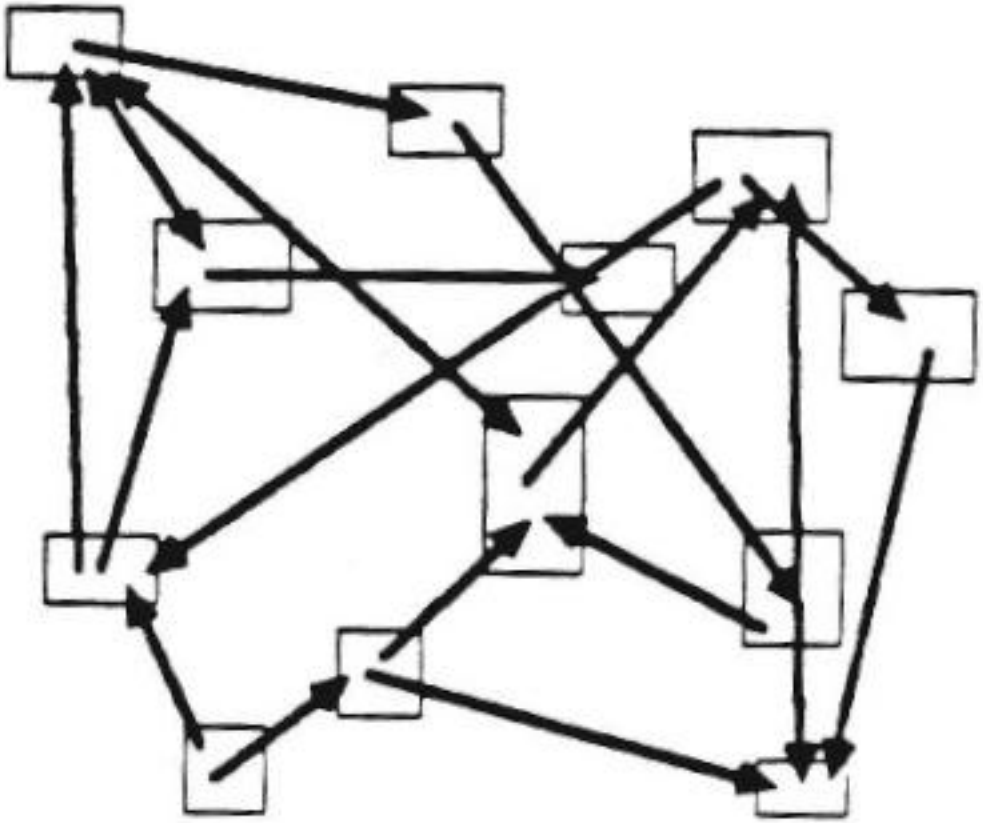
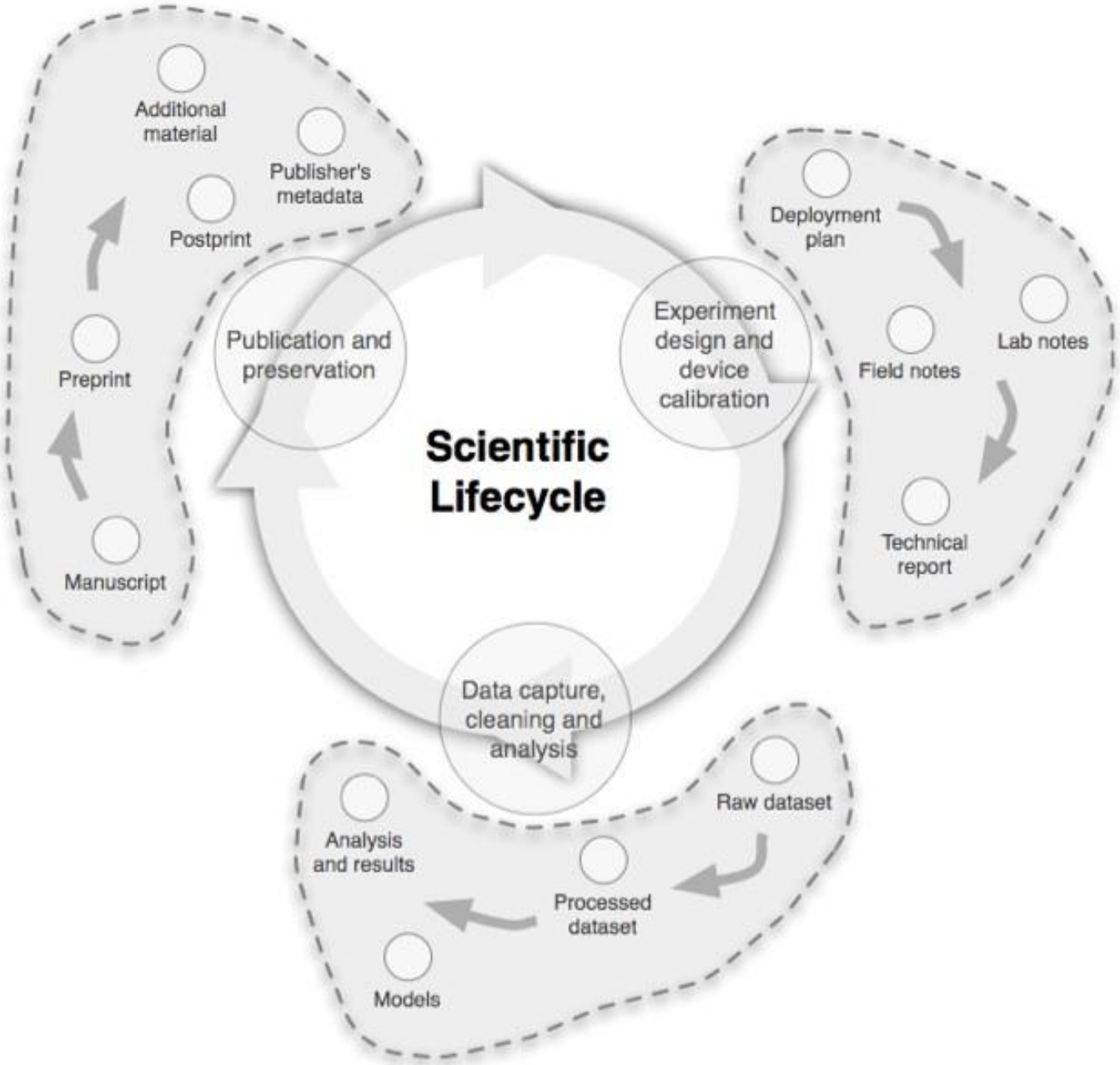


Image from Soumitri Varadarajan blog. Iceberg image © Ralph A. Clevenger. Flickr photo

"ORDINARY" HYPERTEXT



Literary Machines



Pepe, A., Mayernik, M. S., Borgman, C. L. & Van de Sompel, H. (2010). From Artifacts to Aggregations: Modeling Scientific Life Cycles on the Semantic Web. Journal of the American Society for Information Science and Technology, 61(3): 567–582.

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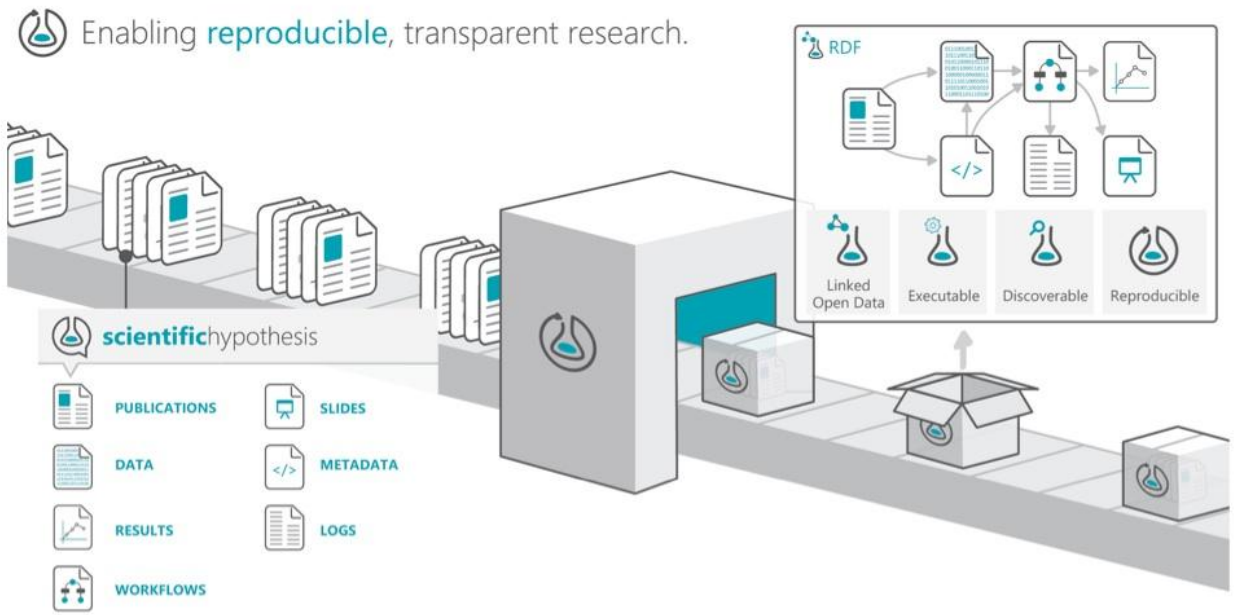

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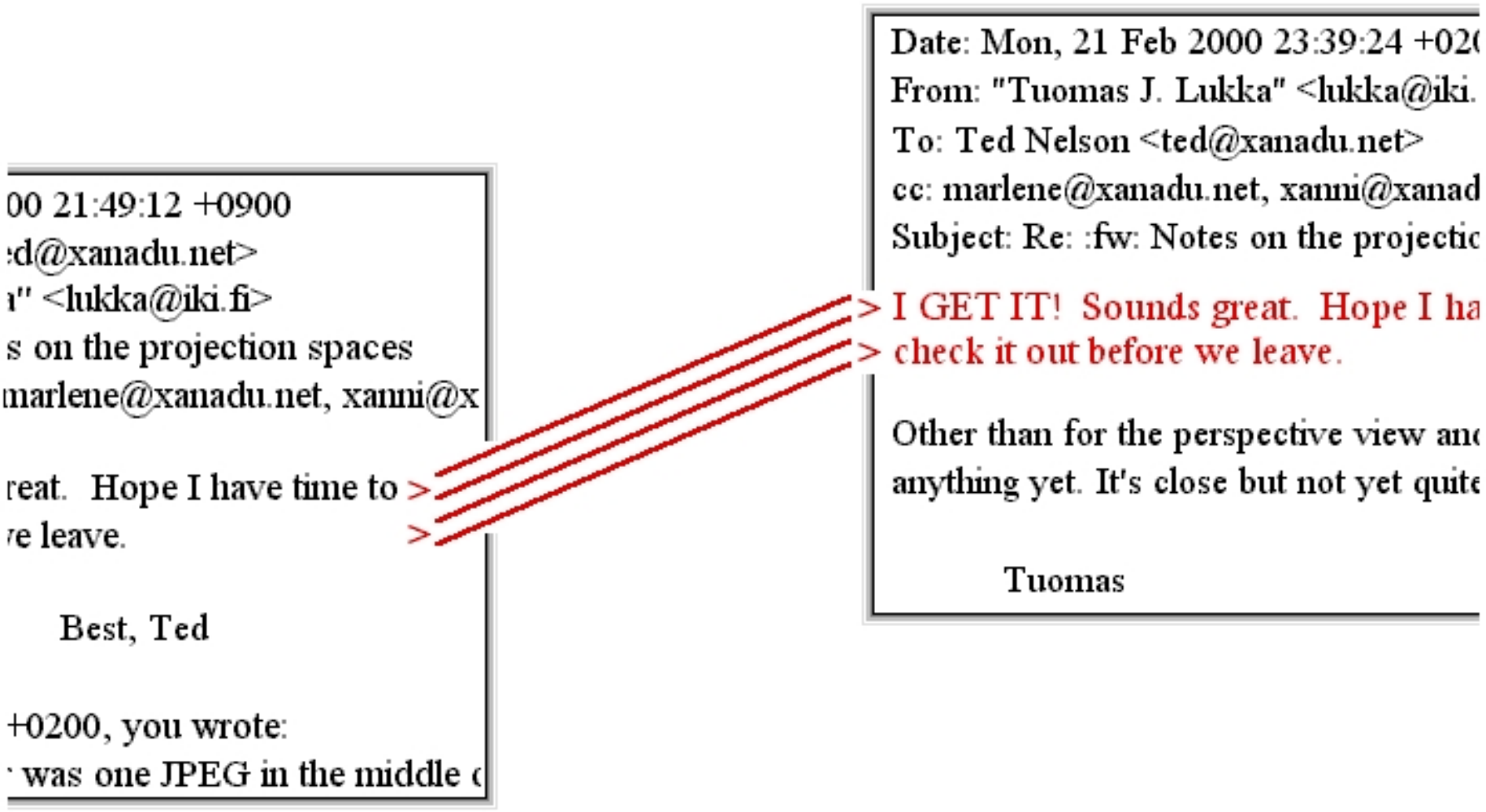
- If you want to contribute content to researchobject.org, see our governance policy.

SEE EXAMPLE ROS

CREATE YOUR OWN ROS

JOIN IN THE COMMUNITY

Transclusions and provenance



Provenance

- Libraries: Origin or source
- Museums: Chain of custody
- Internet: Provenance is information about entities, activities, and people involved in producing a piece of data or thing, which can be used to form assessments about its quality, reliability or trustworthiness.*

*WC3 PROV working group

Bestiary - caption: 'Owl mobbed by smaller birds'

Bestiary - caption: 'Owl mobbed by smaller birds'

Uploaded by The British Library on February 11, 2014

No known copyright restrictions

[?] Bestiary - caption: 'Owl mobbed by smaller birds'

ID: 025709

Title: Bestiary

Provenance:

England (Salisbury?); 1230-1240

Caption: Owl mobbed by smaller birds

Notes: (Miniature) An owl, venturing out in daylight contrary to its usual habit, is mobbed by smaller birds.

Image taken from Bestiary.

Originally published/produced in England (Salisbury?); 1230-1240.

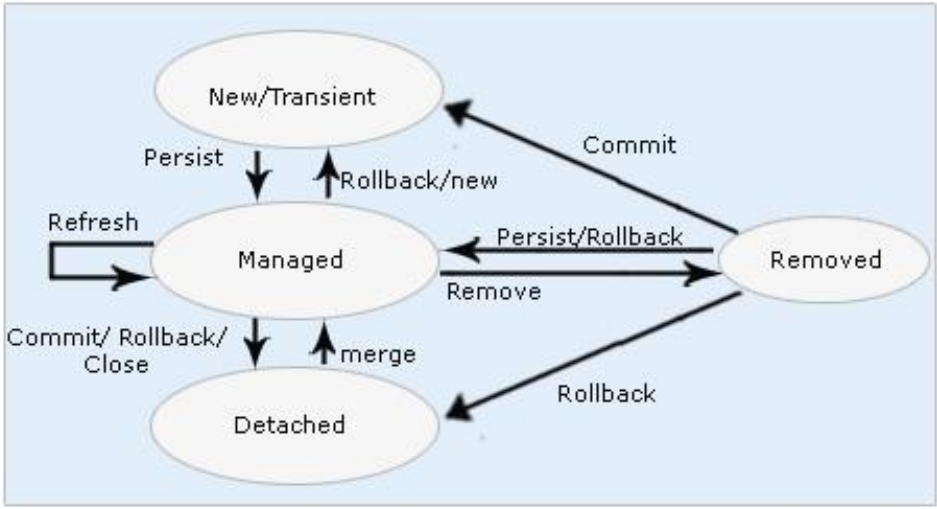
Language: Latin

Source identifier: Harley 4751, f.47

British Library Shelfmark: Harley 4751

Identity and persistence of digital objects

- Identity
  - Identifiers
    - DOI, Handles, URI, PURL…
  - Naming and namespaces
    - Authors/creators: ORCID, VIAF…
    - Generic/specific: registry number…
  - Description
    - Self-describing
    - Metadata augmentation
- Persistence
  - Permanent
  - Long-lived
  - Scratch spaces



Persistence Content

http://web-interview-questions.blogspot.com/2010_06_21_archive.html

What we call "tuning" the system is the development of simple, fair and well-balanced arrangements and pricing that will balance users' incentives for the flexible and reasonable use of the system. (See "Tuning the System," a Chapter 4.)

---

with two different entry dates raise clear-cut questions. Whichever author proves ownership on the basis of outside evidence has the other nailed.

PLURALISM--
AND NEW UNDERSTANDING

What is in such a publishing network may be revised by anyone, reinterpreted, redesigned. Anyone can publish a *new* version of Thomas Aquinas, Ayn Rand, Einstein, or whoever else's writings are on the system, attempting to reach the true and *correct* formulations that always seem to elude the person ahead of you. And no harm is done, no credit lost, to the originals.

PLURALISM!

Anyone may revise anything--
harmlessly

The same applies to explanations. Most scientists and philosophers are not the ones to clarify their own work. The writings of a Niebuhr or a Talcott Parsons need to be considerably clarified by other commentators before most people can understand them.

Very well. With the capacity for any number of compound windowing documents, good explainers-- the Asimovs of tomorrow-- can take what is already there, and add the many clarifications that will bring understanding.

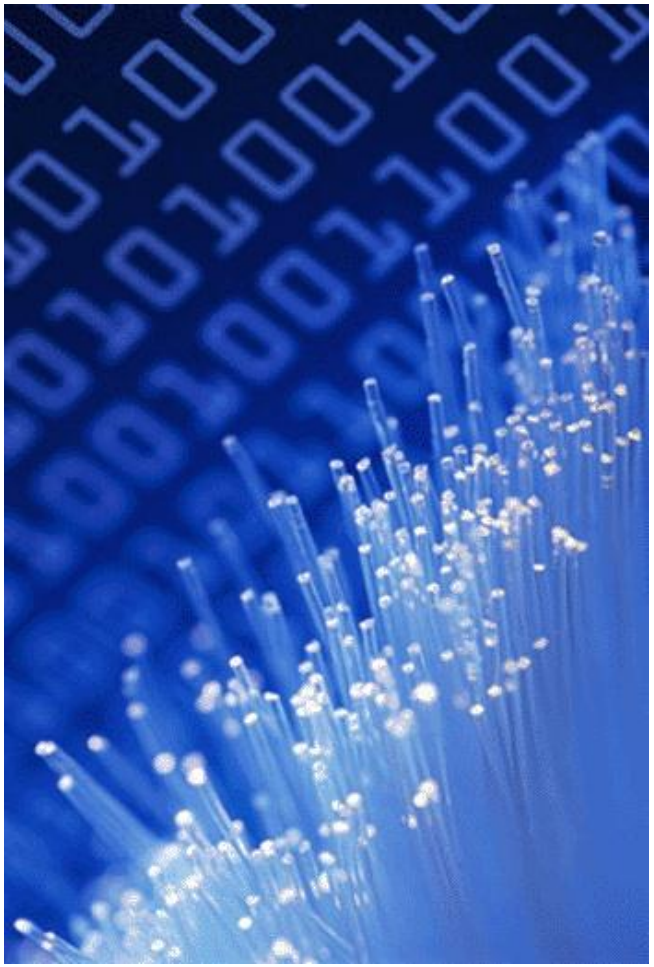
Is this chaos? *Not at all.* Because at any one time, you are within one specific document, the work of a specific author. If this work is windowing to other documents, nevertheless you are not "in" the others, but viewing them through the present author's filter.

ETERNAL REVISION

There is no Final Word. There can be no final version, no last thought. There is always a new view, a new idea, a reinterpretation. And literature, which we propose to electronify, is a system for preserving continuity in the face of this fact.

Using and reusing data

- Social practice
- Usability
- Identity
- Persistence
- Discoverability
- Provenance
- Relationships
- Intellectual property
- Policy



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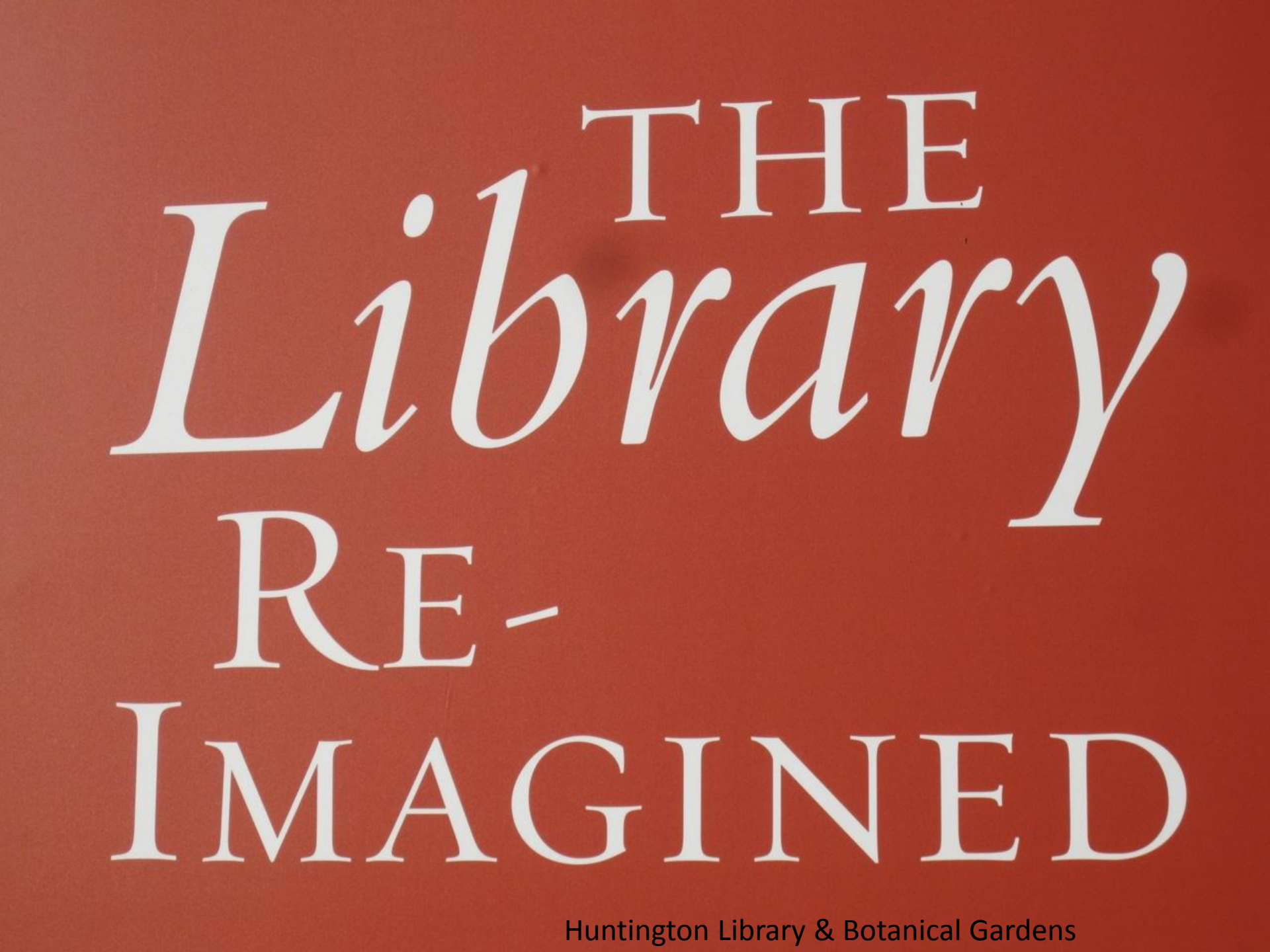
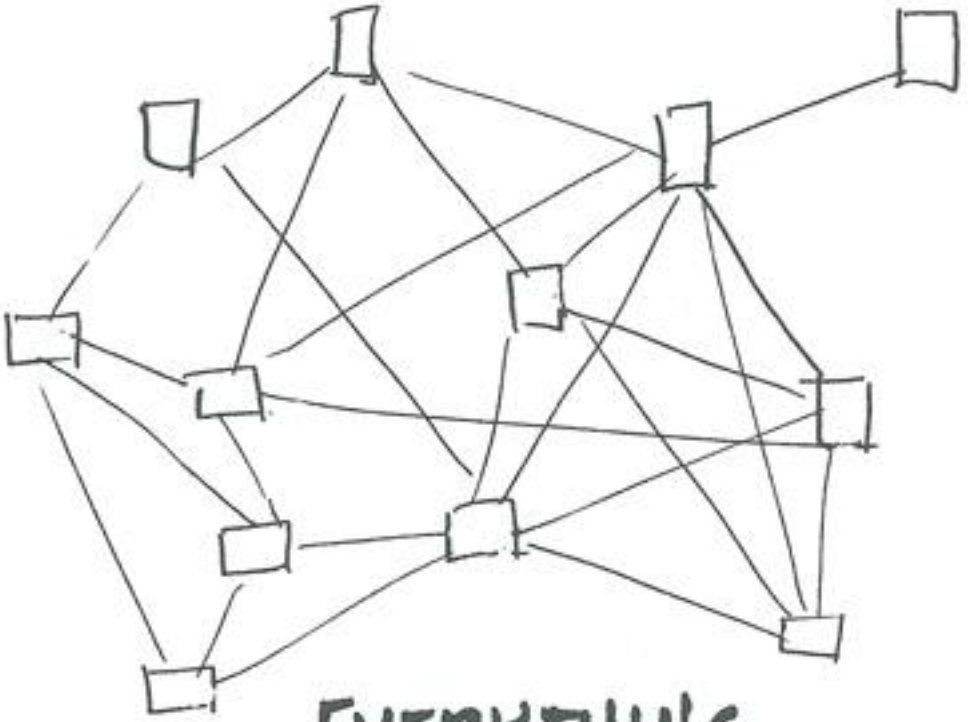


Huntington Library & Botanical Gardens



EVERYTHING
IS DEEPLY INTERTWINGLED.

FRITILLARY
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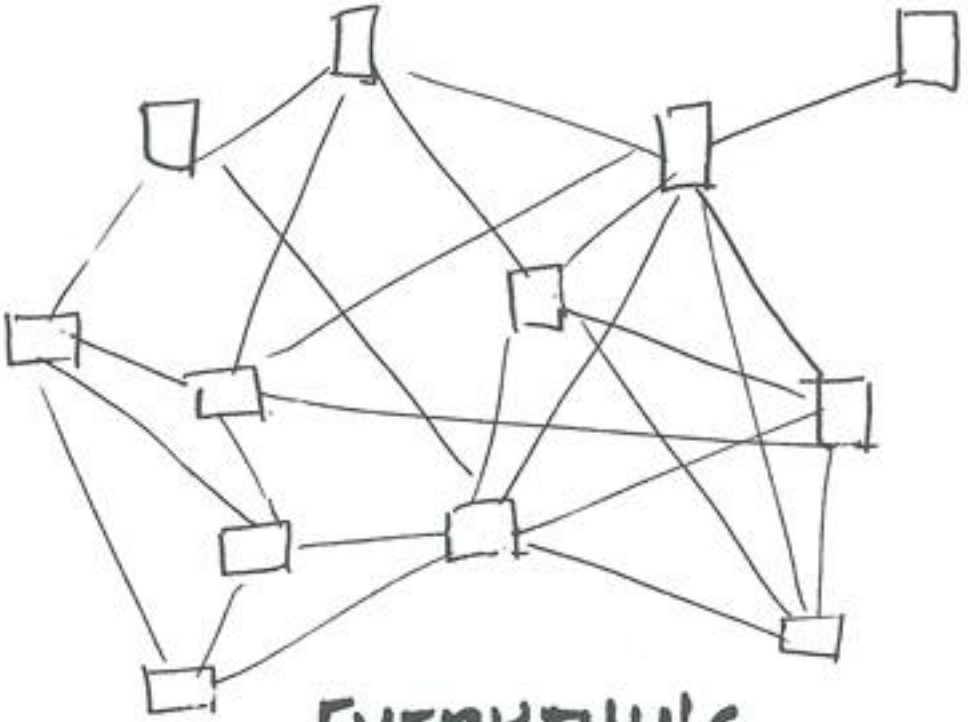
HERE
APRIL 17



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