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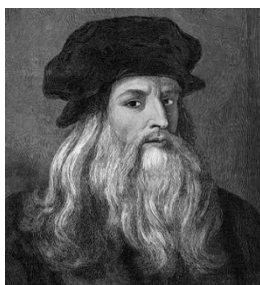
**Encounter, synthesis, immersion
and construction: information and
the gaining of understanding**

*David Bawden
City University London*

information:
interactions
and impact

- information behaviour
- information literacy
- impact

The noblest
pleasure is the joy
of understanding



Understanding

in relation to

- information behaviour
- information literacy
- impact of information
- (information systems and documents)

Understand

- to comprehend; to grasp with the mind; to know the meaning of; to realize; to have knowledge of, or information that; to have been informed; etc.

(Chambers Dictionary)

"There is presently no agreed upon account of what understanding is, which creates difficulties for the precise use of this concept"

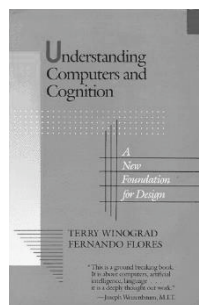
Ryan Smith (University of Arizona: Synthese, 2014)

Something to do with explanation

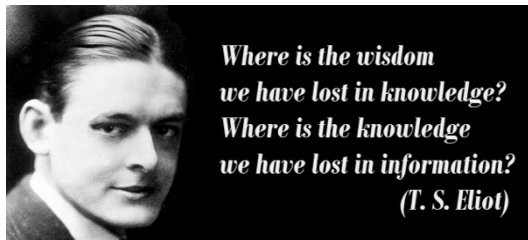
- If someone can explain something to us, we think they understand it
(Wilkenfeld, Plunkett and Lombrozo, Philosophical Studies, 2015)
- Trying to explain something to a group of people is the surest way to know if you understand it
(any lecturer in the audience)

Something to do with knowledge (and information)

"what we understand is based on what we know, and what we already know comes from being able to understand"



- They are well-informed
- You are knowledgeable
- But I understand



- Data
- Information
- Knowledge
- ~~Wisdom~~
- Enlightenment
- Action
- Understanding?



Russell Ackhoff (1989)

Additional
'understanding' layer
between knowledge
and wisdom

Understanding =
appreciation of why
Wisdom = evaluated
understanding



Luciano Floridi

- Knowledge and information are members of the same conceptual family. What the former enjoys and the latter lacks ... is the web of mutual relations that allow one part of it to account for another. Shatter that, and you are left with a ... list of bits of information that cannot help to make sense of the reality they seek to address



David Deutsch

- understanding rather than mere knowing
- about knowing 'why'
- about deep explanations
- about the inner working of things
- about coherence, elegance, simplicity



Jonathan Kvanvig

- understanding requires the grasping of explanatory and other coherence-making relationships in a large and comprehensive body of information. One can know many unrelated pieces of information, but understanding is achieved only when informational items are pieced together



Jeroen de Ridder

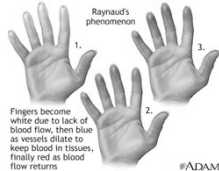
- [understanding is] a kind of 'higher order knowledge', in a network of knowledge with internal coherence and explanatory power



Information systems and understanding

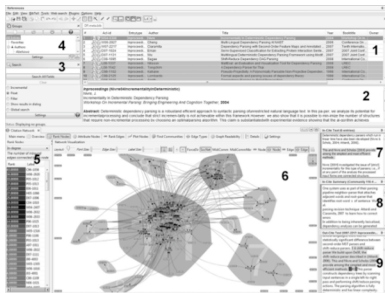
- knowing why
- coherence
- explanation
- coherence
- links
- relations
- networks

Literature-based discovery: Don Swanson

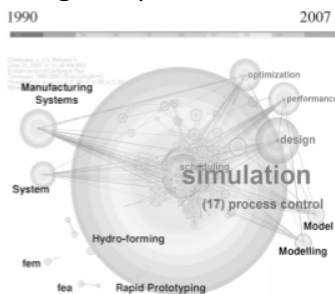


#ADAM

Rapid understanding of scientific paper collections: integrating statistics, text analytics, and visualization



A rapid review method for extremely large corpora of literature



Information behaviour and understanding

'understanding' does not feature explicitly in most theories and models of information behaviour

- Foster's 'consolidation' – "knowing enough"
- sense-making

Gaining understanding

- encountering
- browsing



Browsing: "the art of not knowing what you want until you find it"

Browsing

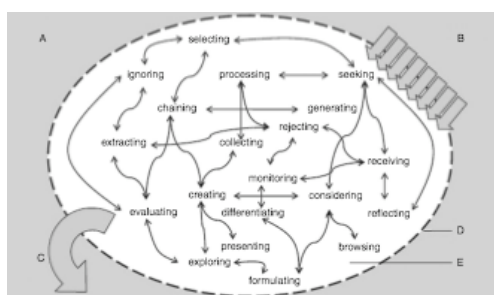
see also Discovering, Encountering, Foraging, Grazing, Navigating, Scanning, Zapping

- purposive
- semi-purposive
- capricious

How to behave to gain understanding

- reflecting
- sitting down and thinking about things
- looking for a good explanation
- seeing how things fit together

Informational balance: Poirier and Robinson

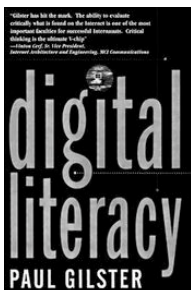


Understanding and information literacy

- 'understanding' does not feature explicitly in most theories and models of information literacy
- evaluation
- critical thinking
- Knowledge construction (Bruce's 7 faces)
- synthesise (SCONUL)

Paul Gilster

- Knowledge Assembly
- combining a 'reliable hoard' of information from diverse sources



Qualitative synthesis

- | | |
|---------------------|------------------------|
| critical review | interpretive synthesis |
| systematic review | evidence synthesis |
| meta-ethnography | concept maps |
| historical analysis | rich pictures |
| conceptual analysis | mapping review |
| content analysis | narrative review |
| discourse analysis | grounded theory |







Immersive understanding

- A fuller form of understanding?
- ubiquitous media
- multisensory interfaces
- interactive narratives



Impact of understanding?

- Is it better to understand than to be knowledgeable, or well-informed?
- If so, how and why?
- How could we show a difference?

The ultimate impact?

Knowledge creators,
such as people, [are]
central to fundamental
physics for the first time
since Copernicus
(David Deutsch, New
Scientist, 2014)



- information is a fundamental and objective physical quantity
- 'constructor theory' recasts the laws of physics in term of information
- 'constructors', the abstract forces that cause all physical changes, are made of information
- explanatory knowledge is the most powerful force in the physical universe

The ultimate impact?

Almost any [part of the universe] would, if the right [explanatory] knowledge ever reached it, instantly and irrevocably burst into a radically different type of physical activity
(David Deutsch, *The beginning of infinity*, 2011)

A full understanding of understanding

would be really good
