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

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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
Where is the wisdom we have lost in knowledge? Where is the knowledge we have lost in information?

(T. S. Eliot)
- Data
- Information
- Knowledge
- Wisdom
- Enlightenment
- Action
- Understanding?
Russell Ackhoff (1989)
Additional ‘understanding’ layer between knowledge and wisdom
Understanding = appreciation of why
Wisdom = evaluated understanding
• 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
• understanding rather than mere knowing
• about knowing ‘why’
• about deep explanations
• about the inner working of things
• about coherence, elegance, simplicity
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
[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
The University of Aberdeen
www.abdn.ac.uk/
Information about the university - faculties and departments, undergraduate and postgraduate prospectuses, admissions and bursaries, contact details, job ...

Aberdeen - Wikipedia, the free encyclopedia
https://en.wikipedia.org/wiki/Aberdeen
Aberdeen received Royal Burgh status from David I of Scotland (1124–53), transforming the city economically. The city's two universities, the University of ...
Aberdeen (disambiguation) - Aberdeen FC - University of Aberdeen - Aberdeenshire

Aberdeen City and Shire - Scotland | VisitScotland
www.visitscotland.com/destinations-maps/aberdeen-city-shire/
Aberdeen City and Shire is adored by the Royal Family, and is a region with a maritime heritage which offers lively events and a selection of thrilling activities.

Aberdeen City Council: The official website
www.aberdeen.gov.uk/
Offering a wide range of information and services for residents, businesses and visitors. Aberdeen is a thriving, cosmopolitan port in the North-east of Scotland.

Aberdeen FC
wwwafc.co.uk/
The Official website of Aberdeen Football Club with the latest news, fixtures, ticket and merchandise information.
one of eight `super cities’ spearheading the UK’s economy, marking it as the only city in Scotland to receive this accolade.\[10\]

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Literature-based discovery: Don Swanson

Migraines

Raynaud’s phenomenon

1. Fingers become white due to lack of blood flow, then blue as vessels dilate to keep blood in tissues, finally red as blood flow returns

2.

3.
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
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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