

A Model of the User's Psychological State as a Framework for Understanding the Nexus of What's Desirable and What's Possible in the Future of Online Reference

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Today's Talk

- First: a brief comparison of Google's Vision and Credo's Vision of the User and the System that supports the User
- How is Reference information different than other content?
- Credo's Use of Personas
- The Modes of Reference
- Interlinking of Entries – Relatedness in Credo
- 5 categories of Relatedness: People, Places, Events, Works, and Institutions
- Where could this take us?



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Vision from Google's Director of Research

“In 50 years the scene will be transformed. Instead of typing a few words into a search engine, people will discuss their needs with a digital intermediary, which will offer suggestions and refinements. The result will not be a list of links, but an annotated report (or a simple conversation) that synthesizes the important points, with references to the original literature. People won't think of "search" as a separate category - it will all be part of living.”

Peter Norvig, **Google's Director of Research**, From issue 2578 of New Scientist magazine, 18 November 2006, page 50.



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Google's Vision and Librarian's response



Terry Winograd, interview by Rick Carr, "Next frontier for search engines," *Morning Edition*, National Public Radio, April 16, 2004.
Amy Hartman, email to Bob Edwards, "Listener Comments," *Morning Edition*, National Public Radio, April 19, 2004.



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« [2005-04-29 Spike activity](#) | [Main](#) | [Mental health and human rights](#) »

April 30, 2005

'Mind reading machine' for sale on eBay:

More futuristic eBay tomfoolery: "hello, i am selling what i believe to be a [mind reading machine](#) built by Dr. J. S. Strauss in the year 2282".

It is difficult to write anything about the auction page that even partially captures its kooky brilliance.

Although you may be interested to know that apart from getting a mind reading machine from the future, you also get a "picture of a young lady in a waterfall" thrown in.

Something tells me that despite solving some fundamental problems in cognitive science by the year 2282, neuroscientists may still be spending a little too much time in the lab.

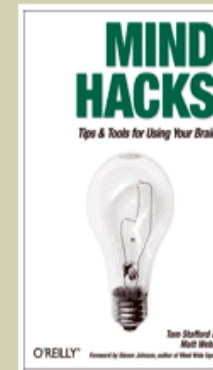
[Link](#) to eBay page *MIND READING MACHINE ?for minds? like time machine: i found it in my attic wrapped in a bed sheet* (via [anomalist](#))



—[Vaughan](#).

Posted at April 30, 2005 08:00 AM

Neuroscience and psychology tricks to find out what's going on inside your brain.



Mind Hacks is a book by Tom Stafford and Matt Webb. [Find out more](#), or buy it:

→ [at Amazon](#) (34% off)

→ [at Amazon UK](#) (30% off)

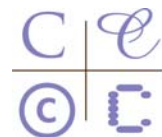
SECTIONS

- [Authors](#)
- [Chapters](#)
- [Attention](#)
- [Hearing and Language](#)
- [Inside the Brain](#)
- [Integrating](#)
- [Moving](#)
- [Other People](#)
- [Reasoning](#)
- [Remembering](#)

Why are reference librarians so much better?

- The librarian can draw on a rich set of contextual information even before the patron or student appears with a question.
 - Robert Taylor (1968) identifies 5 'filters' narrowing the librarians' attempt to fit resources to need:
 - likely subjects
 - likely motives and objectives of inquirer
 - personal characteristics of inquirer
 - relationship of the inquirer to the institution
 - probable level or characteristics of acceptable answers
- Question for those developing self-service, online reference systems:
 - Can any of these factors be used to allow reference librarians to customize the self-service reference experience of their patrons?

Robert S. Taylor, "Question-Negotiation and Information Seeking in Libraries," *College and Research Libraries* 29 (1968): 178-194.



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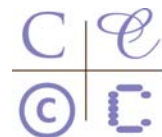
The Nexus Between Two Unknowns

What I'd
like to know?

Robert Taylor's 5 elements of context:

1. likely subjects
2. likely motives and objectives of inquirer
3. personal characteristics of inquirer
4. relationship of the inquirer to the institution
5. probable level or characteristics of acceptable answers

What there
is to know?



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What's Different about Reference

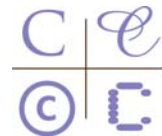
- No reasonable library would be without a reference room—even a digital library
- It invites the patron into the library
- It's a place to get a quick fact or to get unstuck
- It's a place to come back to in order to get one's bearings
- It's a guide to more effective use of the whole library
- It includes a broad set of content types each begging their own user interface elements



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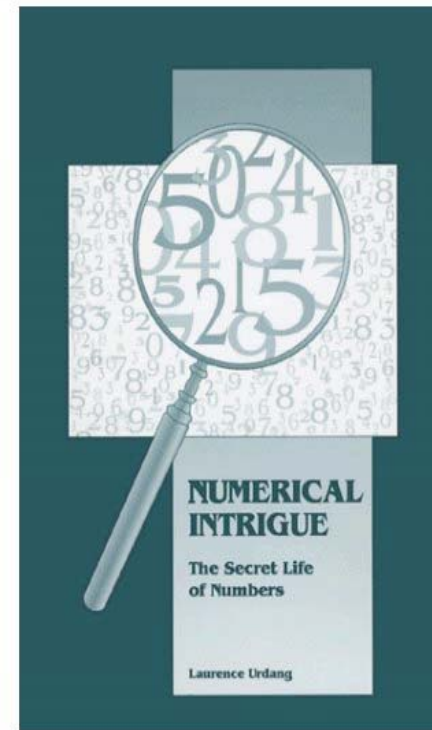
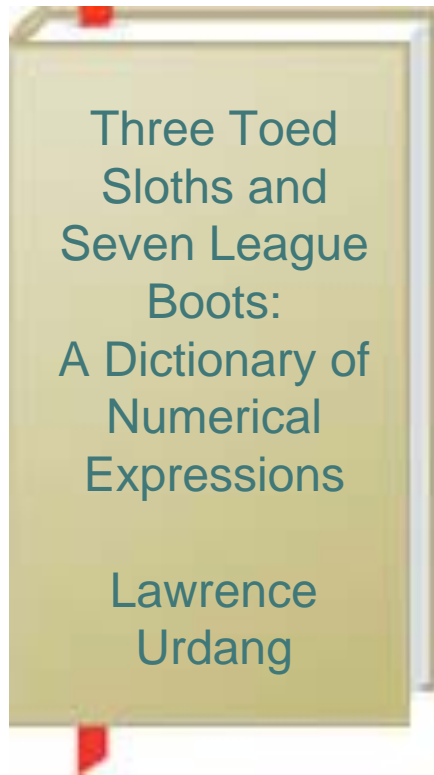
Types of Reference Content

- General Encyclopedias
- Subject Encyclopedias
- Language Dictionaries
 - Mono-lingual
 - Bi-Lingual
 - With Definitions
 - Word to Word Bi-linguals
 - Tri-Lingual
- Almanacs
- Atlases
- Statistical Tables
- Biographical Dictionaries
- Bibliographic Works
- Quotations and Speeches
- Handbooks
- Enchiridions
- Guides
- Vademecums
- Chronologies
- Ephemerides
- Standards
- Directories



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What I know about ISBNs – Not much!



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- > Enchiridions
- > **Guides**
- > Vademecums
- > **Chronologies**
- > Ephemerides
- > Standards
- > Directories



Credo Personas

➤ **2nd year Liberal Arts College Student**

- At Williams College
- Hasn't decided yet whether she will major in humanities or social sciences
- Is taking lots of the survey courses in psychology, sociology, literature, and political science

➤ **Distance Learning Student**

- 32 years old—working for 10 years
- He took 3 years of college and is now finishing his B.A.
- Is married with two kids and does distance learning courses in the evenings and on weekends

➤ **Reference Librarian**

- In a public library in an urban area
- Many of the patrons include students going to the local highschool and nearby universities



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Information Seeking Behaviors

- ▶ Doctors
- ▶ Lawyers
- ▶ Students
- ▶ Teachers
- ▶ Researchers



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User Modes of Reference

- 8 “modes”
- Each represents a different set of goals and elements of satisfaction, the “psychological and goal state of the user”.
- In particular, modes reveal a different tolerance for false negatives and false positives, ranging from:
 - extreme annoyance to
 - utter delight and fascination (serendipity).
- Importance of sources can flip from none to essential
- Users shift easily from one mode to another often without any self-awareness of having done so.



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User Modes of Reference

DIVERSION

**Games
and
Puzzles**

DISCOVERY

**Guided
Exploration**

**Unguided
Exploration**

**Stuck and
needs help**

FACT-FINDING

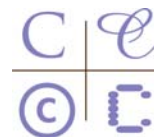
**Quick
Answer**

**Definitive
Answer**

**Detailed Bibliographic
Research Projects**

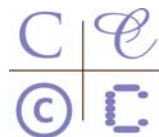
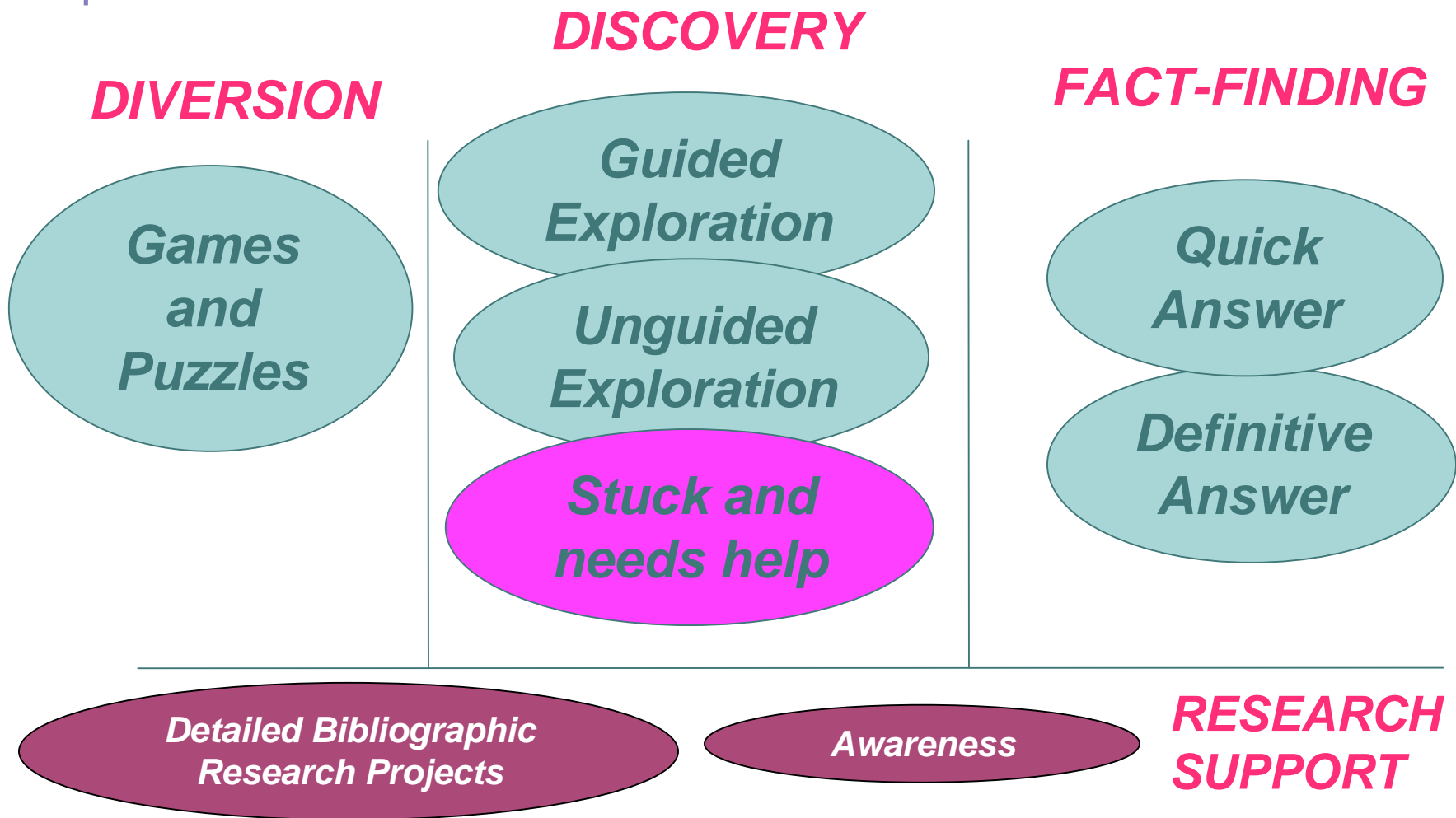
Awareness

**RESEARCH
SUPPORT**



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User Modes of Reference



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Interlinking of Entries – Relatedness in Credo

5 categories of Relatedness:

- People
- Places
- Events
- Works
- Institutions



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Diversity of Related Entries

xreferences

- [Whistler, James Abbott McNeill \(1834 - 1903\)](#)
Bloomsbury Biographical Dictionary of Quotations
- [Whistler, James Abbott McNeill \(1834 - 1903\)](#)
The Bloomsbury Guide to Art
- [Whistler, James Abbott McNeill \(1834 - 1903\)](#)
The Hutchinson Encyclopedia, Helicon
- [Whistler, James \(Abbott\) McNeill 1834 – 1903](#)
Chambers Biographical Dictionary
- [Artists](#)
Bloomsbury Thematic Dictionary of Quotations

[view all xreferences](#) (22)

Referring to:

- 2 Quotation resources for quotes by or about James Whistler
- 1 Subject Guide for Art
- 1 Biographical Dictionary
- 1 General Encyclopedia



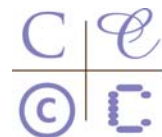
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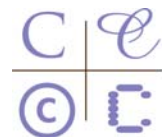
Some of the things I dream about

- ↔ Subject Encyclopedia entry as a 'launch-pad'
- ↕ "Craigslist for Subject Encyclopedias"
- ↔ Finders for People, Places, Works, Institutions, and Events
- What famous people were born within 2 years and 1 mile of Charles Dickens?
- ↑ Subject Encyclopedia as a 'lens'
- ↕ 'Dual Book Comparison'
- ↔ Automatic suggestion device built on subject encyclopedias
- ↔ Generalized Chronology Presentation
- ↳ Contrarian idea generator, or "compare and contrast"
- ↔ Games and Diversions that draw people into the Credo Content



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Thank you

- It's very clear to me that the best things in online reference have yet to be invented.
- And that Google won't be the only facility in our users' world which they'll find valuable.
- And some of the best of the future tools will be designed with the benefits that can be obtained by drawing upon the local expert [a librarian] in what a particular group of users would benefit most from.



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