

Document quality criteria for Collaborative IR

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Outline

«Collaborative IR» (CIR)

Data quality and document relevance

Lessons for IR +

Proposition for new generation test collections

First steps of research program (RICOM project)

Collaborative IR

Why collaborate?

- to save time
- to benefit from others' skills/knowledge
- because of a common goal

Why collaborate in IR?

- exchange information not handled by system...
 - quality-related information
 - contextualized indexing

Example of collaborative IR setting

In a research center...

Collectors

- collect papers (libraries, Web, ftp, hand-to-hand,...)
- submit papers to a common DB
- comment on papers (topical interest in context, quality,...) > *collaborative indexing*

Searchers

- search the common DB
- add comments on papers they read

Research issues

Which collaborative information to exchange and how?

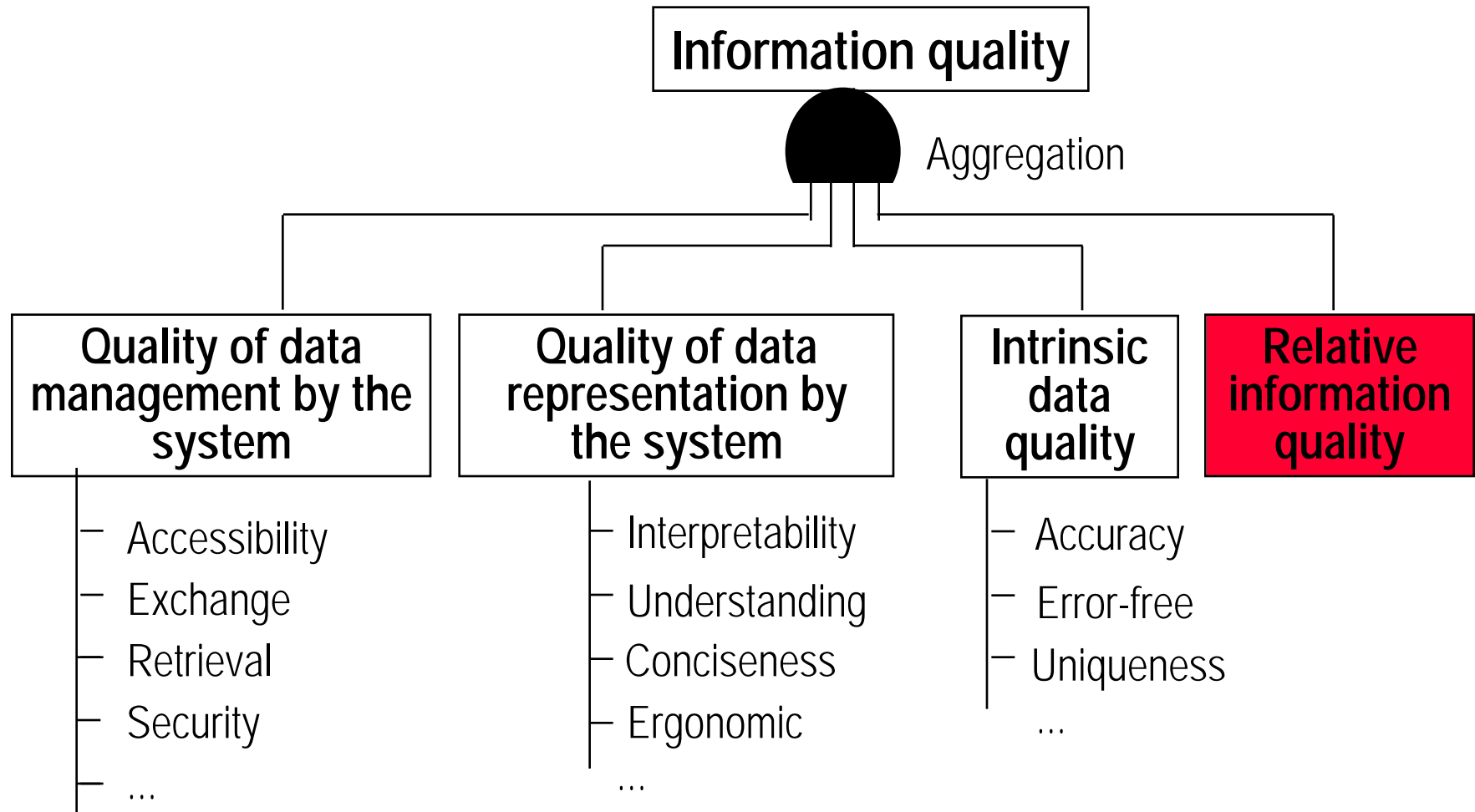
- input quality-related judgements
- search for information using quality-related information

Which collaborative functions to implement and how?

- multiple indexing to be merged (consensus)
- connections between
 - an IRS used for collecting documents and
 - the collaborative indexing function

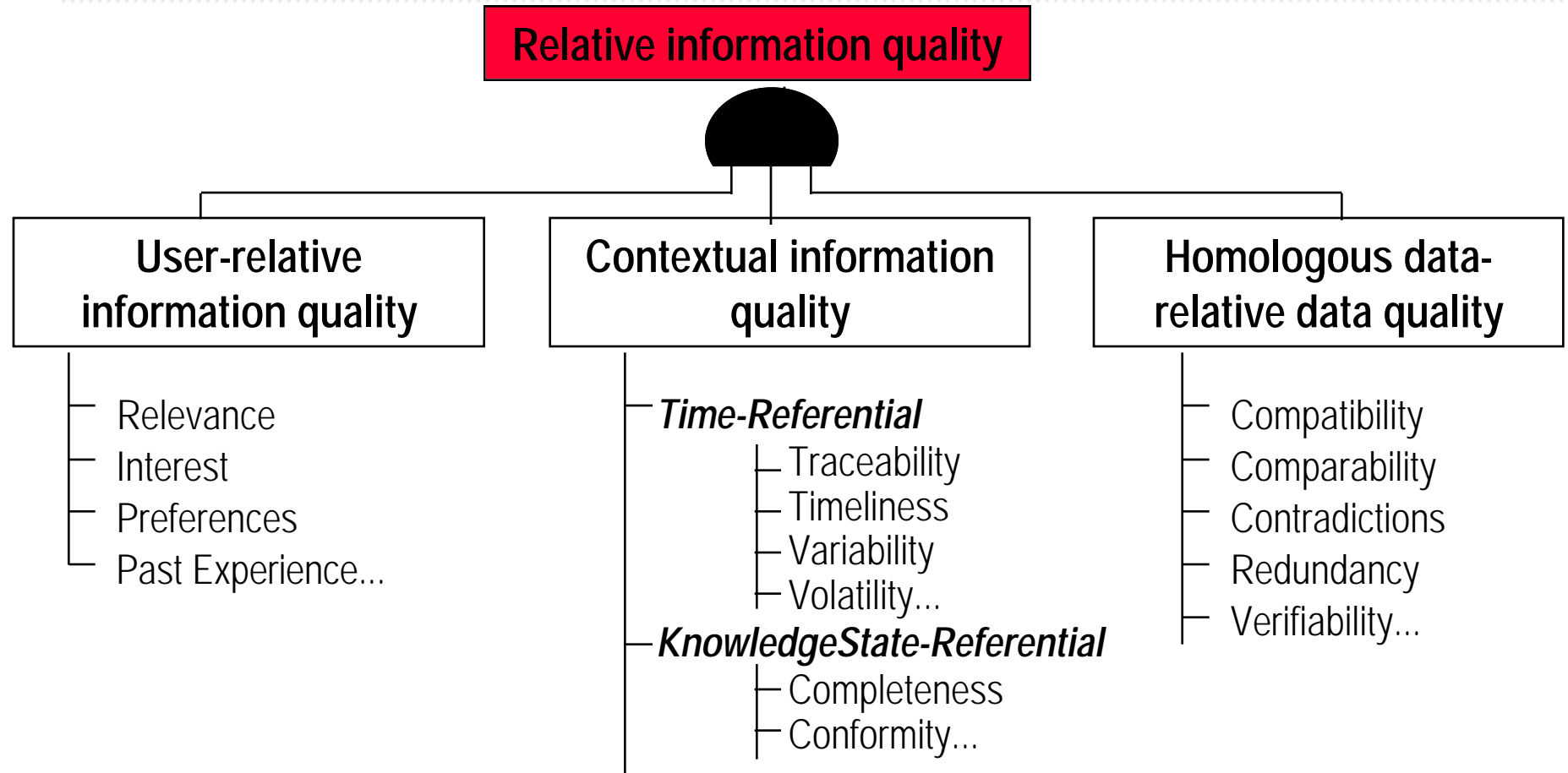
DQ : Aggregation of Categories

Extended Proposition of [Wang 1998] by [Berti1998]



Sub-categories of Relative IQ

Extended Proposition of [Wang 1998] by [Berti1998]



Data quality / Document quality

DQ domain:

- «Relevance is one of the many data quality criteria»
see [Wang 1993]

IR domain:

- «Quality criteria are part of the relevance criteria»
see [Schamber 1993]

Overlapping Properties:

- subjective
- cognitive
- situational
- multidimensional
- dynamic
- measurable

Non-binary evaluation methods in Social Sciences & Psychology

Connotation analysis

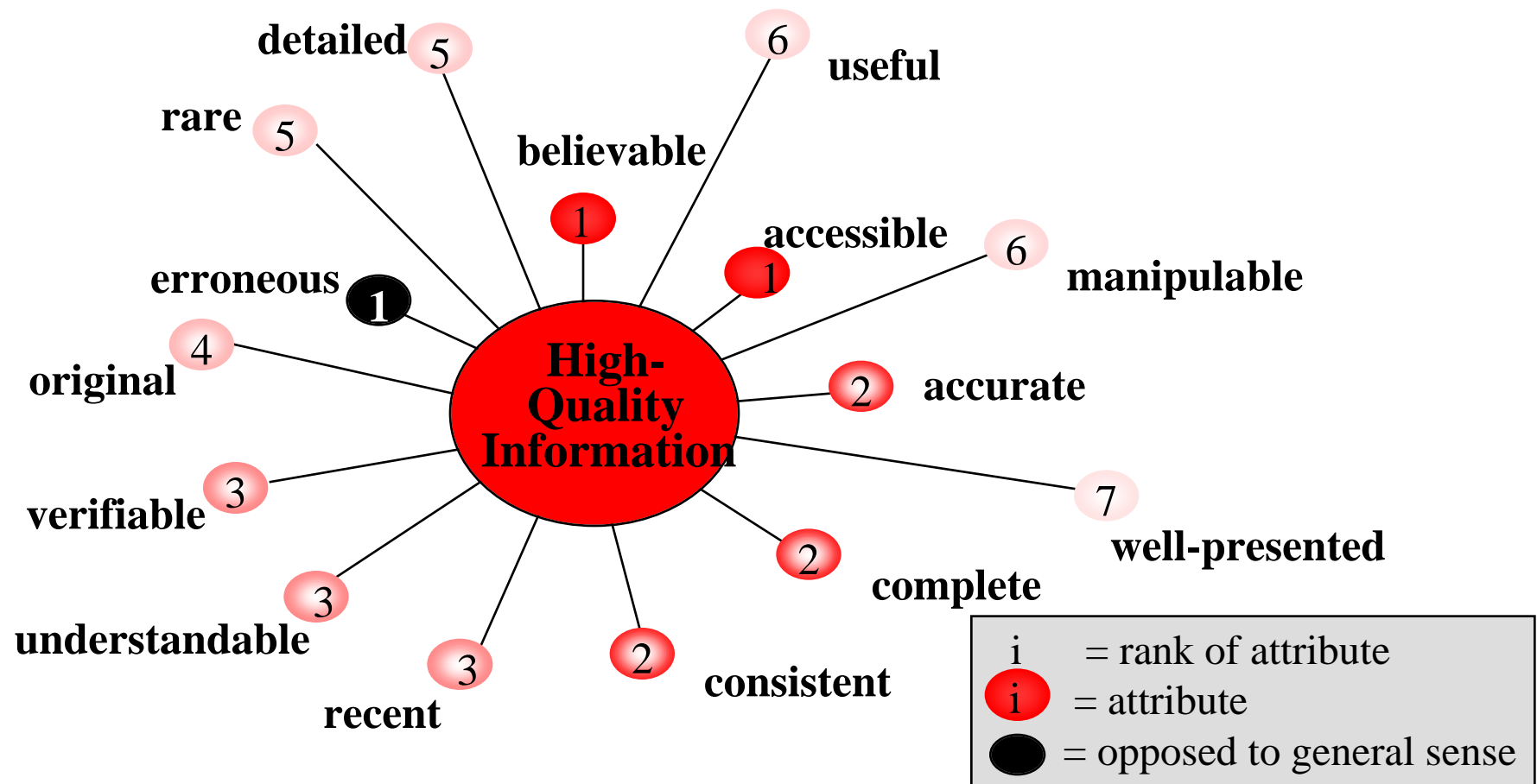
Correspondences Matrix

Trade-off method

Method of symbolic equations

Semantogram

Example of connotation analysis : Attributes Constellation [Berti1998]



Lessons for IR

Conception of IRS

- identify «stereotypes» of relevance in work context
- try to implement the most important ones

Test collections with little agreement

- because of context («relevance factors»)
- no assessment policy
 - possible to state explicit rules ?
 - if stated, applicable by individuals ?

Proposition for Test Collections

- *More context in test queries* (cf. Borlund «simulated work task»)
- *Multidimensional assessments*
- *Account for «**relevance map**» of assessor*

Assessment for d1

.9	Dim 1	.1
.5	Dim2	.3
.5	Dim 3	.7
.2	Dim 4	.5
.1	Dim 5	.6

non relevant

System result for d1

Dim 3	.7
Dim 4	.5

relevant

References

- [Berti 1998] L. Berti, "From Data Source Quality to Information Quality : the Relative Dimension", Proceedings of the 3rd International Conference on Information Quality, MIT, Cambridge, MA, (1998)
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- [Wang 1993] R. Y. Wang, H. B. Kon, S. E. Madnick, "Data Quality Requirements Analysis and Modeling", Proceedings of the Ninth International Conference on Data Engineering, (1993)
- [Wang 1998] R. Y. Wang, "A Product Perspective on Total Data Quality Management", Communications of ACM, 41, 2, (1998)