Jean-Claude Gardin and the search for interdisciplinary methodologies and reliable tools for the knowledge organization practices

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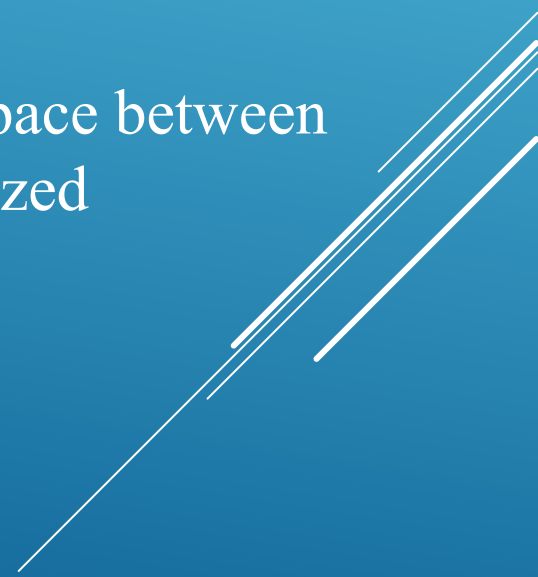
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Some introductory questions...

Paul Otlet's concept of Documentation as a more scientific approach to information organzation, as well as a first step to Information Science.

The development of techniques and methodologies for the documentary continuum (not circle!) in order to promote the widest access to information as possible.

Knowledge organization (KO) as a mediating space between the contexts of production and use of the socialized knowledge.

JEAN CLAUDE GARDIN (1925-2013)

JEAN-CLAUDE GARDIN IS AN IMPORTANT PIONEER TO THE EPISTEMOLOGICAL DIMENSION OF KO BY MEANS OF THE DEVELOPMENT OF AN INTERDISCIPLINARY (LOGIC/LINGUISTIC) METHODOLOGY.

"ANALYSE DOCUMENTAIRE" –, AND THE SEARCH OF RELIABLE TOOLS THAT COULD BUILD SOLID BRIDGES BETWEEN THE DOCUMENT, THE DOCUMENTARY SYSTEM, AND THE USER: THE "LANGUAGES DOCUMENTAIRES".

IN THIS SENSE, GARDIN WAS ESPECIALLY CONCERNED ON "THE CONTENT EXPRESSION OF SCIENTIFIC PAPERS IN THE MANNER OF DOCUMENTALISTS" (GARDIN, 1970, P. 630)

Jean-Claude Gardin (1925-2013)

• Archéologue de terrain et théoricien, il a participé en <u>Afghanistan</u> aux fouilles de sites de la <u>Bactriane</u> antique, tout en contribuant à systématiser les méthodes d'analyse et de classification documentaire des données scientifiques

• 1958 - créateur du Centre d'Analyse Documentaire pour l'Archéologie de l'École des Hautes Études en Sciences Sociales

• 1964 – créateur du SYNTOL, un système d'exploitation automatisée des découvertes archéologiques (Syntagmatic Organization Language).

• 1970 - créateur du Centre de Recherches Archéologiques au <u>CNRS</u>

• 2002 - membre fondateur de l'Association Européenne d'Archéologie des Techniques) de la Maison de l'Archéologie et de l'Ethnologie de l'Université de Nanterre.

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Information production → KO → Information use

Emphasis: Information contents (Subject)

Subject representation tools (KOS) –
Langage documentaire (LD)

Subject representation products (indexes, catalogues) –
Information documentaire

Subject analysis procedures (???) –
Analyse documentaire - AD

Europe – 60s: Quest for methodologies for the <u>process</u> of analysis of document contents by means of logical and linguistic processes

Gardin's search for scientificity as a result of explicit interdisciplinary activivity - Analyse Documentaire (AD)

THE NEED OF USING MORE OBJECTIVE AND RIGOROUS SEMANTIC ANALYSIS METHODS THAN THE TRADITIONAL INSTRUMENTS THAT GUIDED THE EMPIRICAL INTERPRETATION IN HUMANITIES (TALAMO, 2015).

THE NEED TO EXPLAIN THE PROCEDURES, OR MECHANISMS, INVOLVED IN SUBJECT INFORMATION TREATMENT

THE SET OF PROCEDURES THAT ARE CONDUCTED WITH THE OBJECTIVE OF EXPRESSING THE CONTENT OF SCIENTIFIC DOCUMENTS UNDER FORMATS MEANT TO MAKE IT EASIER TO RETRIEVE INFORMATION – EMPHASIS ON THE PROCESS

AD for Gardin

L'expression désigne, on le sait, un ensemble de procédures pour exprimer le contenu des documents scientifiques sous des formes destinées à en faciliter le dépistage ou la consultation. **(Gardin, 1981)**

- The need to analytical rigor in concept identification and selection procedures → leitmotif in Gardin's work

- Subject representations are derived from the conjunction between rigorous AD procedures and consistent LDs.

- Procedures + tools = products (that can only be evaluated if we know how the procedures were done and which tools were used **("Visit our kitchen")**

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AD

○ Importance of **semantics** in relation to syntax

○ Linguistic comprehension of texts ☾ goal: mechanization of AD (+ logic, automatic translation, artificial intelligence and terminology)

○ AD is considered by Gardin as "the most **industrial** variant of text analysis"

○ "Industrial" (collective): a large amount of information that needs to be available to collectivities of users

○ AD as a manifestation of semantic analysis of the content of scientific texts "à la manière des documentalistes" (GARDIN, 1970).

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AD and LD

The result of AD is the generation of paraphrases (Documentary information)

The LDs are important to order the parapharases and to make them available – and meaningful - to the user communities.

AD and LD are responsible for the relationships that can be established between the original text and its representation (indexing, classification, subject heading).

The relation between the original text and its representation followed Gardin throughout his career and he discussed the theme not only thinking about information systems, but also thinking about the various methods of text analysis (SMIT, 2015)

AD as a method

○ Explicit procedures of document reading, content extraction and content selection (AD procedures need to be clear both to the information professional and to the user)

○ Search for efficiency and making the process more economical with the possibility to treat a much larger volume of documents

○ Introduction of statistics and informatics

○ Concern on the user satisfaction (validation)

LD as a tool (metalanguage)

- High investment in linguistics

- Natural language $\neq$ artificial language = metalanguage = LD as *a system or code whose terms should necessarily correspond to a sufficiently detailed definition to prevent doubts regarding its meaning* (Gardin, 1968; Lara, 2015).

- No tool is neutral but must be appropriate vis-à-vis the proposed objectives

LD as a tool (metalanguage)

LD = LEXICON (IDEALLY A CONTROLLED VOCABULARY) + PARADIGMATIC RELATIONS + SYNTAGMATIC RELATIONS (GARDIN, 1966, 1970, 1973)

LD HAS THE FUNCTION TO SINGULARIZE OR DIFFERENTIATE DOCUMENTS THROUGH COMPARISON BETWEEN A FORMULATION IN NATURAL LANGUAGE AND EQUIVALENT EXPRESSIONS IN A METALANGUAGE

THIS METALANGUAGE HAS A NORMALIZING FUNCTION, OPERATING SEMANTICALLY WHEN TREATING HOMONYMS, HOMOTAXIAS, HOMOGRAPHIES, POLYSEMIES ETC. (GARDIN, 1970).

SYNTOL (SYNTAGMATIC ORGANIZATION LANGUAGE, 1962)

SYNTOL IS NOT AN INDEXING LANGUAGE, BUT A GENERAL SYSTEM OF AUTOMATIC DOCUMENTATION AIMING THE AUTOMATIC INDEXING OF TEXTS, COMPOSED BY AN ORGANIZED LEXICON (THAT IS, CONTROLLED AND ORGANIZED TERMS IN A PARADIGMATIC MANNER) AND A QUITE ELABORATED SYSTEM OF SYNTAGMATIC RELATIONS TO ESTABLISH THE INTERCONNECTION BETWEEN THE TERMS IN THE CASE OF MORE COMPLEX ISSUES. (…) TODAY, IT SEEMS SIMPLE TO ASSOCIATE WHAT WAS PROPOSED AT THAT TIME WITH CURRENT ONTOLOGIES; BUT ITS PRECURSOR CHARACTER, WITH A STILL EMERGING TECHNOLOGY, CANNOT BE IGNORED. (SMIT, 2015)

Further challenges derived from Gardin's work
(Smit, 2015)

RECOGNIZE DOCUMENTATION AS A LINGUISTIC STAGE OF SCIENTIFIC WORK, BY ESTABLISHING TERMINOLOGY AND DISCUSSING THE RELATIONS AMONG TERMS, ACCORDING TO FIELDS OF KNOWLEDGE.

DEVELOP EVALUATION SYSTEMS OF THE PRODUCTS IN OUR WORK THAT COMBINE THE STUDIES ON USER SATISFACTION AND ASSESSMENTS ON REPRESENTATION OF OUR PRODUCTS IN RELATION TO REPRESENTED TEXTS.

INVEST ON ONTOLOGIES AS A CONTRIBUTION TO THE INDUSTRY OF SCIENTIFIC TEXTS PUBLICATIONS IN ORDER TO MAKE THEM SEARCHABLE.

TEMMA RESEARCH GROUP

○ Created in 1986 by Johanna Smit (PhD directed by Gardin, 1977) at University of São Paulo – USP , with members from both USP and São Paulo State University - UNESP

○ Kept the Gardin's heritage

○ Concern with the expliciteness of AD procedures and the theoretical and methodological bases in distinct areas of specialization or document typologies (libraries, museum, archives, diplomatics, ethics, society, communicability of products, etc.)

○ During three decades TEMMA Group had been working on the applicability and current nature of the AD ideas professed by Gardin, stemming from a more complex (semantic) notion of a document, regardless of the technological context in which it is inserted.

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Some conclusions…

GARDIN'S PUBLICATIONS MAKE A DIFFERENCE IN ACADEMIC AND PROFESSIONAL TRAINING IN INFORMATION SCIENCE, AS IT ENSURES THE UNDERSTANDING OF THE FUNDAMENTALS OF AN ACTIVITY WHICH IS OFTEN SEEN AS MERELY INSTRUMENTAL (LARA, 2015).

GARDIN, BY EMPHASIZING THE SEMANTIC DIMENSION OF ANALYSES, DEVELOPED A COMPARATIVE VIEW OF THE ADOPTED PROCEDURES, E.G. CONTENT ANALYSES, STRUCTURAL ANALYSES, SEMIOLOGICAL ANALYSES, LITERARY ANALYSES AND ANALYSE DOCUMENTAIRE.

ENSEMBLE DE DÉFINITIONS COURAMMENT ADMISES, DANS UN GROUPE HUMAIN DONNÉ." THIS REINFORCES THE IDEA OF SCIENTIFIC SEMIOLOGY AND ITS SYMBOLIC UNITS (TALAMO, 2015) AND RECOGNIZES THE PLURAL NATURE OF SCIENTIFIC DOMAINS AS DISCOURSIVE COMMUNITIES

Some conclusions

MERCI BEAUCOUP!

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