EraPlanet and KOMEEO
Introduction

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In 1995, Peter Ingwersen (Ingwersen 1996) developed an epistemological map of the interconnections between the various information sciences, placing communication, cognition and systems sciences at the highest level, which he defined as interdisciplinary, while he placed documentation science and librarianship at an applicative level, thus re-proposing the unresolved problem of the relationship between science and technique. This relationship is particularly significant in documentation science in which the applicative content of some theoretical assumptions is an important part of the cognitive process. If, however, each technique is associated with a science that determines its theoretical and conceptual foundations, which the former merely makes operational, which science could archiving, documentation and librarianship rely on?

> *"Ainsi la 'technique documentaire' serait dépendante d'une science, celle que Yves F. Le Coadic appelle la 'documentation' ou la 'science du document', celle que quinze ans plus tôt était pour Robert Escarpit la 'documentologie', celle qui pour beaucoup est aujourd'hui identifiée sous l'expression 'sciences de l'information'."* (Fondin 2002, 122).

Techniques are a set of practical knowledge, of know-how, typical of the trades or arts in which non-formal learning plays a major role and allows one to create or transform objects. Each technique, more or less knowingly, uses methodological and theoretical assumptions, typical of one or more sciences, in a practical manner. These are then translated into operational reality thanks to one's ability, thus giving the finished product a certain originality, which derives from individual characteristics, albeit in the presence of standardized procedures and paths. Artistic craftsmanship is, in this case, the most emblematic example. A goldsmith uses techniques whose theoretical assumptions lie in the physical, chemical and mechanical sciences, not necessarily having full theoretical knowledge but mastering the operational derivation in a customary fashion. Just as a Stradivari violin is not the simple sum of its components, so does each individual skill give added value and originality to this type of product.

The relationship between technique and science is not always univocal but often multiple: one to many. In the documentation sciences, it is undoubtedly true that there are significant technical components and that, consequently, a documentation technique can be identified which includes all the necessary skills to draw up a catalographic record, extract the terms to be used in a taxonomic structure, or reconstruct the original order of an archival fonds. But which science or sciences does it refer to?

If we look at it from another point of view, for a science to be considered such, it is necessary that it identifies one or more objects of study, theories and laws and its own domain lexicon capable of univocally defining the objects in a community of use. The object we refer to in documentation science is the document in its various meanings and constituent elements. If we use Suzanne Briet's definition:

"*Une étoile est-elle un document ? Un galet roulé par un torrent est-il un document ? Un animal vivant est-il un document ? Non. Mais sont des documents le photographies et les catalogues d'étoiles, les pierres d'un musée de minéralogie, les animaux catalogués et exposés dans un zoo*" (Briet 1951, 7), reference sciences are far reaching, but even if we use a much more restrictive and defined one, which identifies the document as "information created, received, and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business" (ISO 2001), certainly, it cannot be claimed that an object of study is unique to a single science.

Moreover, when in 1951 the World Congress of Documentation was held for the first time in Rome, it was noted that:

> "*Ed è una cerchia ben ampia e variata di persone quella che il documentalista è chiamato ad aiutare con la sua tecnica: l'industriale, lo scienziato, il tecnico, il ricercatore di laboratorio, il medico, lo studente, l'ingegnere, il commerciante; in alcuni paesi, come in Francia, il documentaliste è ormai un professionista, in Inghilterra l'information officer è un tecnico, ha già dei corsi da seguire, delle scuole da frequentare, dei diplomi da esibire*" (Pinto 1952, 4).

When, further on, a census of the documentation bodies in Italy was carried out on the basis of a survey conducted by the Centro Nazionale di Documentazione Tecnico Scientifica of the CNR (National Center for Technical and Scientific Documentation of the CNR)[1] almost all of the individuals belonged to large industrial groups or entrepreneurial associations, from Dalmine to the Istituto Siderurgico FInsider to Assofond, the Associazione Nazionale delle Fonderie. In all cases the activity was that of collecting and

1 On the History of the National Center for Scientific Documentation of the CNR see (Guarasci 2011).

making bibliographic and patent material on the specific field of competence available by filing individual documentary units and bibliographic resources according to the method widely tested by the International Bibliographic Institute and propagated in Italy by the abovementioned Centre of the National Research Council.

In the meanwhile at the International Bibliographic Institute the filing was directed towards the creation of the Universal Bibliographic Repertory, the operational realization of a broad theoretical reflection on the universalism of knowledge and on the role of books and documents in Italy, probably also because of the deep aversion to the Universal Decimal Classification "*scarsamente conosciuta, ancor più scarsamente adottata e ciò che più nuoce quasi mai applicata integralmente e fedelmente*" (Ascarelli 1952, 45)[2], what was almost exclusively emphasized was the technical and instrumental aspect that, with the arrival of mass computer science, represented its weakest point and determined its rapid decline, placing the other documentation sciences on contents and methods that often – in the past few decades – have refused any type of contamination in the attempt to defend a delimited specificity.

In some European countries such as France, documental techniques had documentation science as a reference point, the latter has naturally evolved and has borrowed and fused theoretical assumptions coming from information science, along with its cognitive baggage, giving rise to a new Documentation Science. It would be more correct to call it – as some do – documental engineering (Guyot 2012). In other European countries, the emphasis on technique and the strict boundaries between disciplinary fields have often led to the creation of links between those techniques and the sciences appertaining to the application domains, so that the biomedical documentalist is drawn to the sphere of pharmaceutical sciences, the patent documentalist to hard sciences and so on.

If the ultimate goal of "*offrir sur tout ordre de fait et de connaissance des informations documentées*" (Otlet 2015, 6) – stated by Paul Otlet in the Traité – seems to have been completely absorbed by information science, the subsequent specification of the "*parties de la documentation*" which includes – in a synergic and complementary vision – libraries, archives and museums is quite topical for the contamination and the synergies it presupposes about the object of study:

> "*Le document est l'objet d'un Cycle d'opérations réalisant la plus complète division du travail et l'utilisation la plus disperse de ses résultats […] Il devient l'objet d'un travail complémentaire tendant à le juger et à l'apprécier, à en incorporer les données particulières aux données déjà existantes*" (Otlet 2015, 7).

2 On this subject see (Fumagalli 1896).

When, in 2014, the idea of a project for the construction of a European network for the observation of our changing planet slowly took shape (ERA-PLANET, http://www.era-planet.eu/), one of the first critical elements that emerged was precisely the need for a deep synergy among skills to try to overcome the limited availability of multilingual terms to define the Essential Variables within the Societal Benefit Areas with the consequent problematic match between the information requests of users, experts and producers of the data. It was deemed necessary to start from existing terminology and classification structures, make them homogeneous, integrate them and create a comprehensive and interoperable knowledge base.

> "As a multitude of heterogeneous data will be made available through the GEOEssential Knowledge Base infrastructure, it is essential to ensure high standards of discoverability, accessibility, and interoperability. The design of this infrastructure involves the alignment and integration of a set of semantic resources defining the specific domain. The latter is important in order to ensure harmonised access to the vast volume of data produced, turning it into usable information and knowledge, and to guarantee semantic interoperability within the infrastructure. This involves the mapping of existing aligned thematic vocabularies (i.e. glossaries, taxonomies, thesauri and ontologies), along with the integration of further domain-specific terminology obtained through a corpus-based approach. The integration of the abovementioned vocabularies in a knowledge base infrastructure will therefore improve the ability of end-users to explore and exploit EO data. Some of the vocabularies employed are the following: GEMET Thesaurus, INSPIRE Feature Concept Dictionary and Glossary, EARTh Thesaurus" (Folino, Caruso, and Aracri 2018, 2).

After six years of work, the goal has been achieved and this volume brings together the experiences of those who have contributed – in various ways – to making it possible, either through direct participation in the project activities or through the overall theoretical reflection that constitutes the fundamental and inevitable framework of that realization.

It is a reflection on the opportunities and possibilities offered by the operational contamination between documentation science, information science and domain knowledge, united by the attempt to build a new, symbolic, intermediate layer between terminology, documentation science and domain knowledge, capable of representing a cognitive bridge between the techniques and sciences involved. It is not an abstract contamination but a real sharing of choices, methods and techniques. In James Gleick's words, we have tried to stop being "colour blind". When Europeans in the 19th century tried to decode the informative value of the sound of drums, they tried

to transliterate those vibrations into the Latin alphabet, not realizing that the secret was tone because, "drummers could not rely on an intermediate code because African languages did not have an alphabet. The drums metamorphosed the spoken language. […] transliterating the words they heard into the Latin alphabet. They completely neglected tone. In fact, they were colour-blind" (Gleick 2012, 29).

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