

ESTUDOS AVANÇADOS EM CIÊNCIA DA INFORMAÇÃO: PESQUISA EM METADADOS E WEBSEMÂNTICA

Aula 04 – Esquemas de metadados

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2 sem 2019



UnB,
sua **linda**
meu orgulho é você

Referências

- 24/09 – Esquemas de metadados
 - Referências
 - ZENG, Marcia Lei, QIN, Jian. **Metadata**. Chicago: Neal-Schuman/American Library Association. 2016. 2nd edition. 555p. Disponível na BCE. Capítulo 5.
 - Jane Greenberg (2005) Understanding Metadata and Metadata Schemes, **Cataloging & Classification Quarterly**, 40:3-4, 17-36

PART I:
INTELLECTUAL FOUNDATIONS

Understanding Metadata and Metadata Schemes

Jane Greenberg

SUMMARY. Although the development and implementation of metadata schemes over the last decade has been extensive, research examining the sum of these activities is limited. This limitation is likely due to the massive scope of the topic. A framework is needed to study the full extent of, and functionalities supported by, metadata schemes. Metadata schemes developed for information resources are analyzed. To begin, the author presents a review of the definition of metadata, metadata functions, and several metadata typologies. Next, a conceptualization for metadata schemes is presented. The emphasis is on semantic container-like metadata schemes (data structures). The last part of this paper introduces the MODAL (Metadata Objectives and principles, Domains, and Architectural

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[Haworth co-indexing entry note]: "Understanding Metadata and Metadata Schemes." Greenberg, Jane. Co-published simultaneously in *Cataloging & Classification Quarterly* (The Haworth Information Press, an imprint of The Haworth Press, Inc.) Vol. 40, No. 3/4, 2005, pp. 17-36; and: *Metadata: A Cataloger's Primer* (ed: Richard P. Smiraglia) The Haworth Information Press, an imprint of The Haworth Press, Inc., 2005, pp. 17-36. Single or multiple copies of this article are available for a fee from The Haworth Document Delivery Service [1-800-HAWORTH, 9:00 a.m. - 5:00 p.m. (EST). E-mail address: docdelivery@haworthpress.com].

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Quem é a autora?

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Biography

Jane Greenberg is the Alice B. Kroeger Professor and Director of the Metadata Research Center (<http://cci.drexel.edu/mrc/>) at the College of Computing & Informatics, Drexel University. Her research activities focus on metadata, knowledge organization/semantics, linked data, data science, and information economics. She serves on the advisory board of the Dublin Core Metadata Initiative (DCMI) and the steering committee for the NSF Northeast Big Data Innovation Hub (NEBDIH). She is a principal investigator (PI) on the NSF Spoke initiative, 'A Licensing Model and Ecosystem for Data Sharing,' and the lead PI the Metadata Capital Initiative (MetaDataCAPT'L) and the Helping Interdisciplinary Vocabulary Engineering (HIVE) linked data project. She is also a co-PI for Drexel's NSF Industry/University Collaborative Research Center (NSF-I/UCRC), Center for Visualization and Decision Informatics (CVDI). Her research has been funded by the NSF, NIH, IMLS, Microsoft Research, National Library of Medicine, Library of Congress, OCLC Online Computer Library Center, among other organizational and private sponsors. She has received numerous awards and honors for her research and leadership; most recently she was recognized as a 2016 ELATE at Drexel® Fellow and in 2014, and a Data Science Fellow at the National Consortium for Data Science, Chapel Hill, North Carolina.

O problema

- Há uma grande dificuldade de se estudar esquemas de metadados devido a sua enorme variedade e ênfases funcionais muito distintas;
- Ainda que seja assim, é necessário se propor algumas categorias de análise que sejam genéricas o suficiente para se compreender e comparar os esquemas, tornando-o assim um objeto de pesquisa;
- O artigo propõe o framework de estudo de esquemas de metadados chamado MODAL (Metadata Objectives and principles, Domain and Architectural Layout);
- O artigo dá grande ênfase na importância de se compreender a função dos metadados – seus requisitos funcionais.
 - Para que servem?
 - O que pretendem resolver?
 - Que perguntas pretendem responder?

Tipos de metadados

TABLE 1. Metadata Typologies and Functionalities

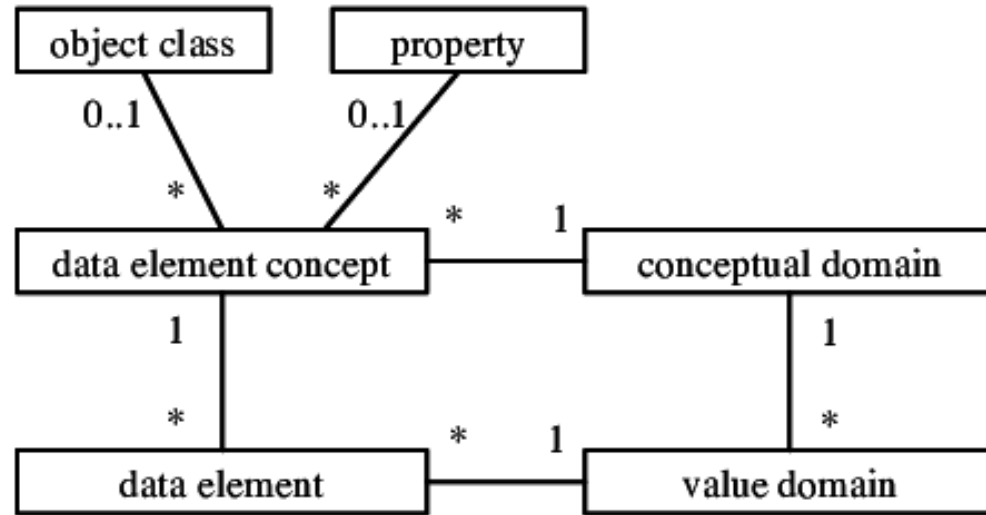
Lagoze et al. (1996):			Gilliland-Swetland (2000): Typology of 5 types of metadata	Greenberg (2001): Typology of 4 types of metadata (2 sub-types of Use metadata)	Caplan (2001): Typology of 4 types of metadata
Typology of 7 types of metadata	Metadata Functions "This type of metadata facilitates":	Element examples*			
Identification/ description metadata	RESOURCE DISCOVERY/ INFORMATION RETRIEVAL	Creator (Author), Title, Subject	Descriptive metadata	Discovery metadata	Descriptive metadata
Administrative metadata	RESOURCE MANAGEMENT	Price, Condition	Administrative and Preservation metadata	Administrative metadata	Administrative metadata
Terms and conditions metadata	RESOURCE USAGE	Rights, Reproduction restrictions	Administrative, Preservation, and Use metadata	Technical Use, Intellectual Use, and Administrative metadata	Administrative and linking metadata
Content ratings metadata	RESOURCE USE BY APPROPRIATE AUDIENCES	Audience	Use metadata	Technical Use and Intellectual Use metadata	Administrative and linking metadata
Provenance metadata	RESOURCE AUTHENTICATION AND OTHER PROVENANCE-RELATED ACTIVITIES	Creator, Source	Administrative and Use metadata	Authenticity and Administrative metadata	Administrative metadata
Linkage/ relationship metadata	RESOURCE LINKING WITH RELATED RESOURCES	Relation, Source	Administrative metadata	Authenticity and Administrative metadata	Linking metadata
Structural metadata	RESOURCE HARDWARE AND SOFTWARE NEEDS	Compression ratio	Technical and Use metadata	Technical Use metadata	Structural metadata

*Individual metadata elements can be multi-functional. For example, "source" metadata facilitates resource authentication and resource linking, and can be classed as both "Provenance metadata" and "Linkage/relationship metadata" following Lagoze et al.'s typology (for a discussion on metadata element multifunctionality see Greenberg, J. (2001)).

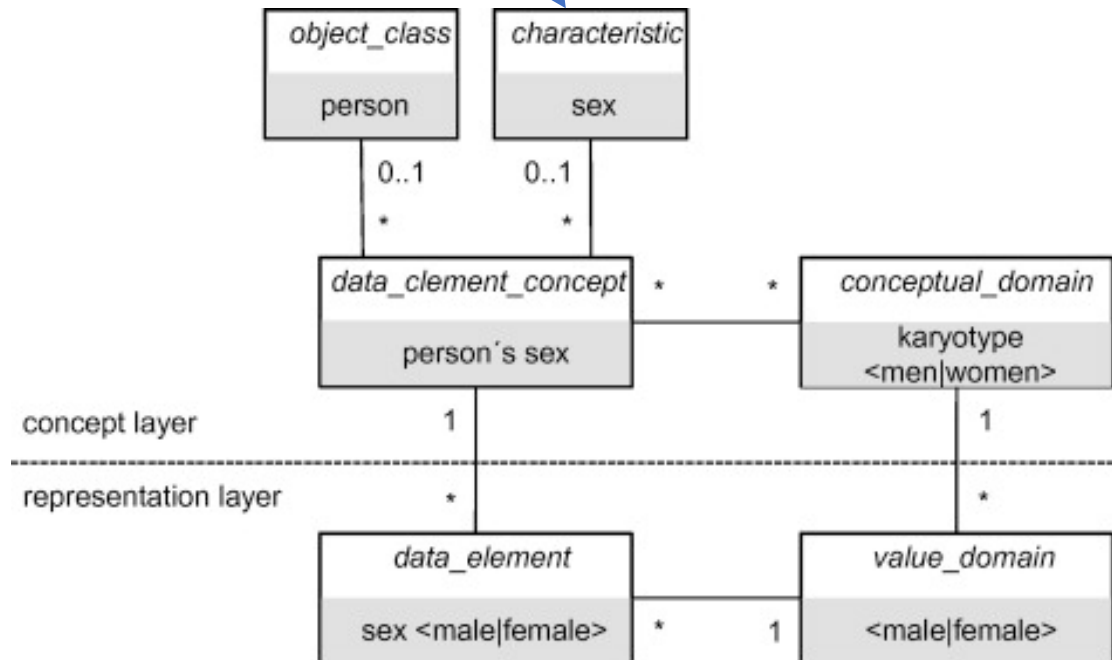
O que é um esquema?

- Um esquema é algo produzido por experts numa área para representar sua experiência em como esse algo deve ser modelado;
- É construído por métodos empíricos:
 - Mapear metadados de um padrão para outro;
 - Contar quantas instituições ou iniciativas utilizam determinados campos de metadados para avaliar padrões;
 - Contar o número de elementos usados ou não usados nos diferentes padrões;
 - Analisar a força da relação entre os elementos de diferentes padrões de metadados.
- O conceito de esquema de metadados é definido por uma norma ISSO 11179
 - <http://metadata-standards.org/11179/>

ISO 11179



exemplo



Conceituando “esquema de metadados”

- 3 características:
 - Representa uma coleção de elementos de metadados utilizados para suportar uma função ou uma série de funções relacionadas a um objeto informacional;
 - Representa uma coleção de elementos, formando uma estrutura unificada, na qual os valores de dados serão incluídos. Os valores podem ou não ser controlados;
 - Representa uma coleção de elementos de dados com seus atributos formalizados em uma especificação (ou um dicionário de dados).

Especificações de esquemas de metadados

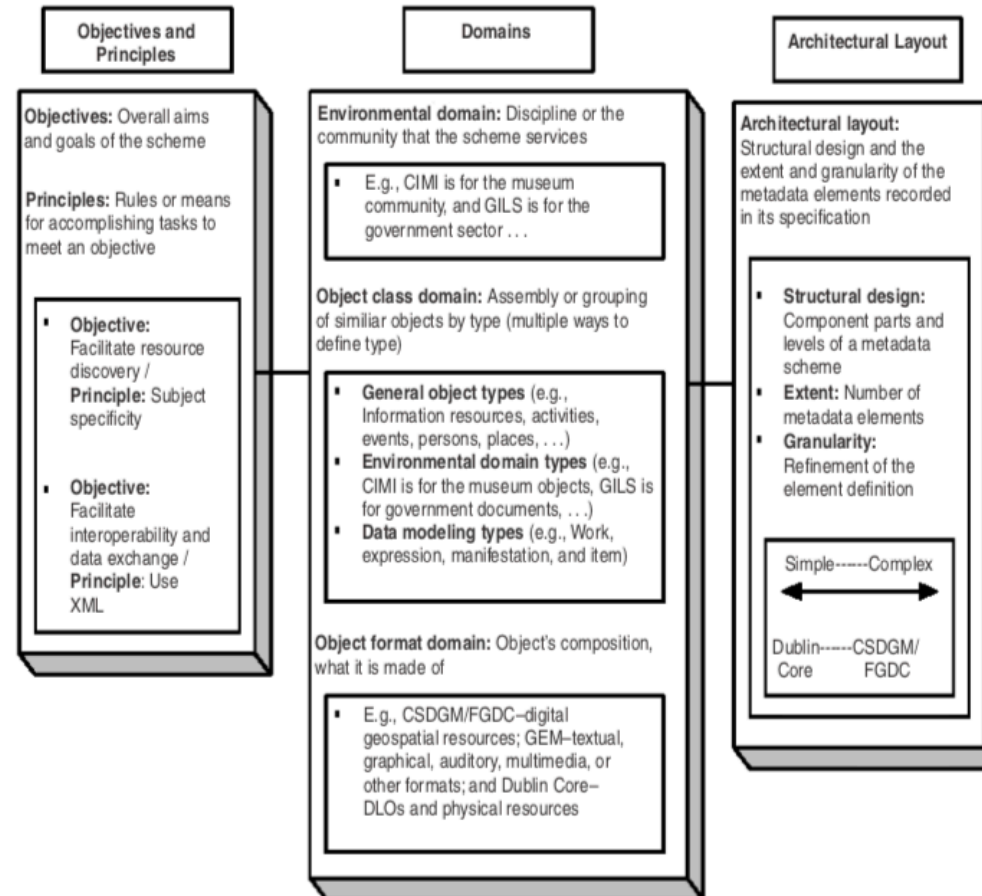
- Definem a relação entre os elementos de metadados
- Identificam os valores de conteúdos aceitáveis ou sistemas de valores de conteúdos (linguagens documentárias) a serem usadas no esquema;
- Fornecem orientação sintática. Exemplo: sobrenome antes de nome, formato de data, etc...
- Declaram a cardinalidade de cada metadado: quantas vezes um metadado pode ou deve aparecer na descrição dos dados
- Permite o refinamento da definição dos elementos de metadados a partir do uso de qualificadores.

Exemplo

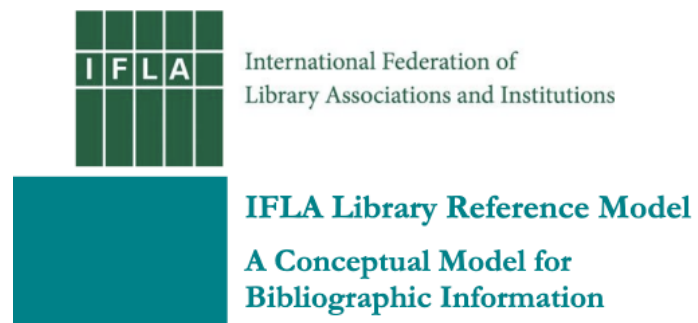
- Dublin Core
 - <https://www.dublincore.org/specifications/dublin-core/dcmi-terms/>

Framework MODAL

FIGURE 1. The MODAL Framework for Metadata Objectives and Principles, Domains, and Architectural Layout



Exemplos da evolução dos objetivos e princípios



Pat Riva, Patrick Le Bœuf, and Maja Žumer

Consolidation Editorial Group
of the IFLA FRBR Review Group

Definition of a conceptual reference model to provide a framework for the analysis of non-administrative metadata relating to library resources

August 2017

Revised after world-wide review
Endorsed by the IFLA Professional Committee

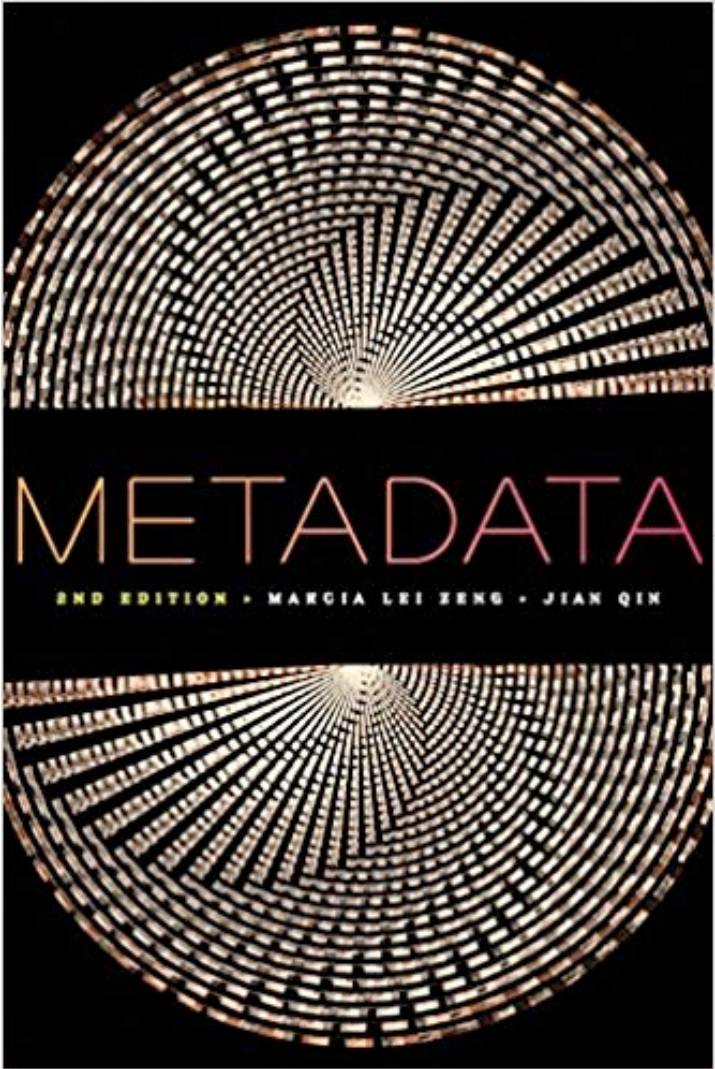
As amended and corrected through
December 2017

Table 3.1 User Tasks Summary	
Find	To bring together information about one or more resources of interest by searching on any relevant criteria
Identify	To clearly understand the nature of the resources found and to distinguish between similar resources
Select	To determine the suitability of the resources found, and to be enabled to either accept or reject specific resources
Obtain	To access the content of the resource
Explore	To discover resources using the relationships between them and thus place the resources in a context

https://www.ifla.org/files/assets/cataloguing/frbr-lrm/ifla-lrm-august-2017_rev201712.pdf

Arquitetura - exemplos

- VRA Core 4.0:
 - https://www.loc.gov/standards/vracore/VRA_Core4_Outline.pdf
- Dublin Core:
 - <https://www.dublincore.org/specifications/dublin-core/dcmi-terms/>
- Mapeamento de Arquitetura:
 - https://www.alastore.ala.org/sites/default/files/MDC_DC-MODS-VRA_Mapping_Table.pdf



METADATA

Marcia Lei Zeng || Jian Qin

[HOME](#)[ABOUT](#)[QUICK PATH+](#)[ACKNOWLEDGEMENT](#)

This is the companion website for textbook
Metadata 2nd Edition (2016)
by Marcia L.ei Zeng and Jian Qin. ISBN:978-1-55570-965-5.
Created 2016-02-28; Updated every month.
[The website is best viewed through Firefox and Safari browsers.] Readings & Exercises are provided for each chapter.
Additional materials shared with instructors can be requested by e-mailing editionsmarketing@ala.org . [Download sample](#): Chapter 1 (pdf)

TABLE OF CONTENTS

PART I. FUNDAMENTALS OF METADATA

- Chapter 1. Introduction
- Chapter 2. Understanding Metadata Vocabularies
- Chapter 3. Creating Metadata Descriptions

VIEW "ABOUT PART I" &
TABLE OF CONTENTS

PART II. METADATA VOCABULARY BUILDING BLOCKS

- Chapter 4. Metadata Structures and Semantics
- Chapter 5. Metadata Schemas

VIEW "ABOUT PART II" &
TABLE OF CONTENTS

PART III. METADATA SERVICES

- Chapter 6. Metadata Services
- Chapter 7. Metadata Quality Measurement & Improvement
- Chapter 8. Achieving Interoperability

VIEW "ABOUT PART III" &
TABLE OF CONTENTS

PART IV. METADATA OUTLOOK IN RESEARCH

- Chapter 9. Metadata Research Landscape

VIEW "ABOUT PART IV" &
TABLE OF CONTENTS

PART V. METADATA STANDARDS

- Chapter 10. Current Standards

APPENDICES

- Appendix A. Metadata Standards -- metadata schemas, application profiles, and registries
- Appendix B. Value Encoding Schemes and Content Standards
- Appendix C. Glossary (see [Appendix C. Glossary](#))

Metadata 2nd ed.
ISBN:978-1-55570-965-5
©2016 -- present, Marcia Lei Zeng and Jian Qin
Website designed and created by Marcia Zeng for educational purpose.

<http://www.metadataetc.org/book-website2nd/index.html>

Chapter 5. Metadata Schemas

Links to sources

Exercises

Readings

Takeaways

Chapter 5 section titles

5.1 Background

5.2 Resource Identification

5.3 Namespaces

5.4 Schema Encoding

5.4.1 Relational Schema

5.4.2 XML Schema

5.4.3 Schema Encoding in Mixed Namespaces

5.5 Encoding Examples of Metadata Standards

5.5.1 Dublin Core Encoding Schemas

5.5.2 EAD XML Schema

5.5.3 DLESE Metadata Framework XML Schemas

5.6 Summary

<http://www.metadataetc.org/book-website2nd/pages/chapter5.html>

Exemplos de esquemas

- Dublin Core
 - XML - <https://www.dublincore.org/schemas/xmls/>
 - RDF - <https://www.dublincore.org/schemas/rdfs/>