Graduate School of Library and Information Science
Spring 2016

Representing and Organizing Information Resources

(LIS590)

Section RO Tuesday 9:00–11:50am LIS Building, Room 341

Instructor

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Required Texts

Reading assignments are listed below on the course calendar and bibliography. There is no textbook to purchase for this class.

Library Resources

Library resources and information are available at the following online addresses:

- University of Illinois Library: http://www.library.illinois.edu/
- Library and Information Science Virtual Library: http://www.library.illinois.edu/lsx/
- Journal and Article Locator: http://search.grainger.uiuc.edu/linker/
- LIS Librarian (email: lislib@library.illinois.edu, phone: 217-333-3804)

Course Description

Emphasizes concepts and methods of organizing information resources across different settings and systems, or within one particular setting. The course extends the basic conceptual foundation provided in LIS 501 by providing further reading, analysis, discussion, and practice related to one or several major traditions of information organization in different environments (e.g., libraries, museums, archives, Internet, and within a single organization).

Pre- and Co-requisites

Students are strongly urged to complete LIS501 before enrolling in this course.

Course overview and welcome

I am very happy to welcome you to LIS590-RO, and to express my strong desire to make this a useful and productive course for you. Many of you are enrolling soon after completing the required core class on information organization and access. Despite the generality of my course's title and description, you have chosen to join RO rather than one of its more specialized IO/KR siblings. Job ads in our professions read like laundry lists of specialized skills, even at the best of times. Even more so in times of economic stress, I think your choice of a principles class shows courage and a recognition of the importance of taking the long view of your professional career. I congratulate you, and promise that I will work hard to justify your faith.

Descriptive standards and practices are undergoing reforms, both for familiar library resources and other types not traditionally associated with our stewardship. We see new cataloging principles being proposed, and harsh criticisms leveled against metadata standards widely viewed as new and promising only a short time ago. Responding, adapting, and even helping to frame these kinds of reforms will be a part of your working life for the rest of your career. Rather than delving into the particulars of the current debates, this course aims to equip you to form your own views in debates current and future. This will be accomplished through the construction of a conceptual framework into which problems of resource description and organization can be situated and understood. Along the way, you will work on hands-on exercises that connect these concepts to practical problems. But you should view these exercises not as skills to be developed, but as vehicles for improving your understanding of principles and concepts.

Learning Objectives

Your instructor hopes to learn more about your objectives for this course. His own objectives include the following:

- Disentangle levels of abstraction that are commonly blurred and confounded in the professional literature and discussion of resource organization and description.
- Build a conceptual framework that will help equip students for more specialized IO/KR classes, and prepare them for inevitable future changes to descriptive standards and practices.
- Confront the complexities arising from our colleagues' conflicting philosophical commitments, and understand the very practical implications these basic world views have on our professional lives.
- Engage in resource description exercises that will help make the concepts we read about and discuss more concrete, and provoke us to think about them more deeply.

This Syllabus

The official syllabus for this course is the SGML version located at http://tinyurl.com/LIS590RO. Expressions of the syllabus in other formats are derived from the SGML version. The current SGML version should be consulted to resolve any inconsistencies among other renditions.

Statement of Inclusion

The following expression is adopted from the Chancellor's Commitment Statement of November 2012:

As the state's premier public university, the University of Illinois at Urbana-Champaign's core mission is to serve the interests of the diverse people of the state of Illinois and beyond. The institution thus values inclusion and a pluralistic learning and research environment, one which we respect the varied perspectives and lived experiences of a diverse community and global workforce. We support diversity of world views, histories, and cultural knowledge across a range of social groups including race, ethnicity, gender identity, sexual orientation, abilities, economic class, religion, and their intersections.

Inclusiveness as a topic in LIS590-RO

The models and theories we cover in this class frame the way we understand resources, our professional roles with respect to their stewardship, and the access and preservation problems to which our efforts are directed. Under the right circumstances they can help make our services more inclusive, as we've seen, for example, with the digital encoding of writing systems and attention to web content accessibility issues. But knowledge organization systems can also marginalize, as reforms of library subject and medical classifications have shown. The assignment and project requirements described below provide flexibility for students to relate broader course objectives to their own learning goals, interests, and current or prior professional experience. Your instructor invites you to consider among those options exploring issues such as:

- The needs of underserved communities
- Preservation of cultural heritage
- Institutional bigotry in classification systems
- Wealth and power distribution impacts on standards development

The readings and discussion topics for our class meetings are selected with the aim of encouraging reflection and discussion, but those choices are not socially or culturally neutral. Where we may be missing opportunities to align the class content and conduct with the values expressed in the inclusion statement, students are encouraged to call classmate and instructor attention to those issues.

Disability Statement

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources and Educational Services (DRES) as soon as possible. To contact DRES you may visit 1207 S. Oak St., Champaign, call 217-333-4603 (V/TTY), or e-mail a message to disability@uiuc.edu.

Basis for Grading and Evaluation

The most important standards for success in a class like this one are the educational goals that students bring to the class. Your instructor hopes that the activities, assignments, and presentations planned for this semester will be instrumental in your achieving the goals you set for yourself. Each exercise and assignment has been selected to provide an experience that will foster your own learning. Do not think that grading and evaluative feedback are meant as assessments of your success or failure in the class: they are provided as an incentive to engage with the material to the best of your ability, and as a diagnostic to ensure you're getting the benefits that the assignments should provide.

For students enrolled for four units, final grades will be calculated as follows:

- Graded homework assignments 40%
- Term Project: 30%
- Class Participation: 30%

For students enrolled for two units, final grades will be calculated as follows:

- Graded homework assignments 70%
- Class Participation: 30%

Evaluative and constructive feedback

Students are entitled to both evaluative and constructive feedback on the assignments. Evaluative feedback reports how well a completed assignment satisfied the requirements for a grade. Constructive feedback provides more detailed criticism of the work, and suggestions for improvement.

On Adapting the Work of Others

Criteria for grading homework assignments include (but are not limited to) creativity and the amount of original work demonstrated in the assignment. However, students are permitted to use and adapt the work of others, provided that the following guidelines are followed:

- Use of other people's material must not infringe the copyright of the original author, nor violate the terms of any licensing agreement. Know and respect the principles of fair use with respect to copyrighted material.
- Students must scrupulously attribute the original source and author of whatever material has been adapted for the assignment. Summarize the changes or adaptations that have been made. Make plain how much of the assignment represents original work.

Submitting Assignments to the Instructor

All assignments must be submitted in machine readable form. The instructor will discuss detailed requirements for file naming, packaging, and submission for each assignment.

Graded Assignments

There will be seven graded homework assignments. Each one requires a short essay one to five pages in length, with most of the content in expressed in natural language, and some in a formal language or standardized notation. The assignments are:

- Resource domain/genre description (due January 26)
- Ten resources for description (due February 9)
- Five resource properties (due February 23)
- Preliminary resource description in RDF (due March 15)
- Property codomains and coded symbols (due March 29)
- Entity identification and property domains (due April 12)
- Updated resource description (due May 3)

Assignment 1: resource domain/genre description

This assignment is due January 26.

In the next assignment, you will select ten (cultural or natural) resources of your choice for analysis and description. Before doing so, give some critical thought to the domain and/or genre from which you will select them. Write a 1–3 page justification, focusing on the characteristics of the domain or genre that you believe will make our later exercises instructive for you. These characteristics might include:

- Your personal familiarity with and interest in the domain/genre.
- Reasons people other than you have in locating and using resources of this kind. Competing or conflicting interests are often a good sign.
- Problems with or limitations of current approaches to describing or classifying these kinds of resource.
- Complexity of the resource (n.b., familiar resources are often more complex than meets the eye).

Please note that a domain or genre is not a topic. If you select President Abraham Lincoln (1809–1865) as the domain for this assignment, then for the next assignment you'll need to identify ten different deceased U.S. presidents, each of whom was named Abraham Lincoln, and each of whom lived from 1809 to 1865. Examples of more promising domains include:

- Journal articles in zoology
- Your grandmother's postcard collection
- Eighth century Byzantine coins
- Prime numbers
- Board games
- Ethnographic data
- Young adult novels
- Mollusc shells

The aim of this assignment is to help you relate the topics in our readings and discussions to concrete examples that you can explore in the homework assignments.

Assignment 2: ten resources for description

This assignment is due February 9.

Select ten cultural or natural resources, all drawn from the same domain, type, or genre. In later assignments, you will analyze them with respect to their properties, the relations they stand in with respect to each other, and their identity conditions. For this assignment, write a brief, one paragraph natural language description of each one. If your choice of domain/genre in the last assignment was a mistake, include a discussion of the new domain or genre. Let your choice of the ten be guided by those characteristics you considered in assignment 1. In the interests of making your later assignments more instructive, choose resources that collectively exhibit diversity, highlight complexities, and push against the limitations and problems of current descriptive practice.

The aim of this assignment is to choose a small number of specific resources that can serve as the focus for your thinking about and applying the description and organization issues we discuss this semester.

Assignment 3: Five resource properties

This assignment is due February 23.

Choose five properties or relations that will serve as a basis for the organization and description of your ten resources. Most or all of your resources should have some value on that property (or stand in the relation to another resource). But not every resource needs to exhibit the property or stand in the relation. Some guidelines for choosing properties/relations include:

- Features that are of interest or concern to the communities who have a stake in the resource or its use.
- Properties that have *discriminatory power* for your resources (i.e., those which highlight contrasts or divide the resources into categories.
- Features that offer interesting or instructive descriptive problems

The aims of this assignment are to consider resource properties and relations independently of how they are expressed or encoded in descriptive records, and to consider the importance of properties' discriminatory power and interest to users in a specific context.

Assignment 4: Preliminary resource description: property values

This assignment is due March 15.

Create valid RDF descriptions for your resources in terms of the properties that you have identified. For this assignment use the turtle serialization for RDF (see the RDF Primer), and annotate the descriptions using natural language comments.

The aim of this assignment is to create a focus for more thorough analysis of your properties in later assignments.

Assignment 5: Property Codomains and coded symbols

This assignment is due March 29.

For each of the five properties or relations you identified in assignment 3, give a precise, natural language account of that property's codomain. That is to say, write a short description (in careful English) of what kinds of things would serve as values on that property or relation for entities in the property domain.

Next propose one or more strategies for denoting or encoding elements of each codomain, or expressing surrogates for those elements.

The aim of this assignment is to consider expression or surrogation choices independent of any particular descriptive standard or artificial language.

Assignment 6: Entity Identification and Property Domains

This assignment is due April 12.

For each of the five properties or relations you identified in assignment 3, give a precise, natural language account of that property's domain. That is to say, write a short description (in careful English) of what kind of things can have that property.

Next write a brief analysis of how the domains of these properties relate to each other, and make an attempt to propose identity conditions for each type of thing.

The aim of this assignment is to attempt a discrimination among levels of analysis for your resources, similar to the proposals we've considered for works, texts, and documents.

Assignment 7: Description record syntax

This assignment is due May 3.

Create an updated, syntactically conforming expression of the resource-property-value assignments from assignment 4 into a notation of your choice. "Syntactically conforming" means a well-formed expression that is governed by some grammar or schema. Choice (or invention) of the particular grammar or schema should be documented in a few short paragraphs that include a discussion of the choice/design as it relates to the resources, their properties, and the audience for the encoded records. If you chose an existing syntactic schema or specification, include links or directions to its formal definition and documentation. If you invent one of your own, include the definitions as a separate attachment.

Examples of acceptable notations include (but are not limited to) the following:

- colloquial XML conforming to a DTD or XML schema.
- RDF serialized in XML, or N3/Turtle.
- strings conforming to a regular or context-free grammar

The aims of this assignment are to gain practice in the selection and use of precise descriptive notation.

Attendance and Class Participation

The class participation grade is based on consistent attendance, contribution to in-class and/or online discussions, and providing assistance to classmates outside of class. Please alert the instructor if a classmate has been of help to you outside of class. Class participation also includes a required (but not graded) nomination of three ICES questions for the final course evaluation. The instructor will provide a link to the ICES question catalog.

Term Project

Students enrolled for four units must complete a term project on a topic approved by the course instructor. The term project is a work of academic writing, approximately ten to twenty pages in length, exploring a problem or issue in resource description (e.g., identity, derivation, intentionality, etc.). Students are encouraged (not required) to frame the project as a case study growing out of the earlier homework assignments, but situated with respect to a broader and more general review and analysis of the focal problem. Project proposals are due no later than March 8, but students are encouraged to open a dialogue with the instructor and with classmates well in advance of that date.

COURSE CALENDAR

Part I: **Introduction to the class** *January 19*

Professional identity. Change and reform in technology and practice.

Readings: Syllabus

Part II: **Resources: concrete and ideal** *January 26*

Types, tokens, properties and relations.

Readings: Jubien 1997, ch. 2–3

Resource domain/genre description: Due 11:55pm, CST.

Part III: **Resources: social objects and social facts** *February 2*

Readings: Smith, 2012; Ferraris, 2011

Part IV: **The nature of description** *February 9*

DCMI model, RDF

Readings: Powell et al., 2004; Tauberer, 2008

Ten resources for description: Due 11:55pm, CST.

Part V: **Schemas and Syntax** *February 16*

Validation, XML, RDF

Readings: Kelly, 2006; RDF Primer

Part VI: **Bibliographic Entities** *February 23*

Works, texts, editions, items

Readings: Svenonius, ch 3; IFLA, 1998 ch. 1–5; Smiraglia, 2001 ch. 1–2

Five resource properties: Due 11:55pm, CST.

Part VII: **Identity and Identifiers** *March 1*

URIs, handles, the identity relation

Readings: Jubien ch. 4, Thompson, 2010

Part VIII: **Data representation and expression** *March 8*

Data, metadata, data sets

Readings: Wickett, et al., 2012; Thomer, et al., 2012

Project Proposal: Due 11:55pm, CST.

ICES question nominations: Due 11:55pm, CST.

Part IX: **Standards and Reference Models** *March 15*

Descriptive and normative agendas

Readings: Spring, 2010; Dubin, et al., 2013.

Preliminary resource description in RDF: Due 11:55pm, CST.

Part X: **No class meeting: Spring Break** *March 22*

Part XI: **Artificial Languages** *March 29*

Sense, reference, interpretation

Readings: Bach, 1989 chapters 1–2

Property codomains and coded symbols: Due 11:55pm, CST.

Part XII: **Concepts and Ideas** *April 5*

Puzzles of thought, proposed solutions

Readings: Sainsbury and Tye, chapters 1, 2, and 3.

Part XIII: **Subject Languages** *April 12*

concepts, syndetic structure

Readings: Iyer 1995, ch.5; SKOS Primer

Entity identification and property domains: Due 11:55pm, CST.

Part XIV: **Assignment domain discussions** *April 19*

Part XV: **Assignment domain discussions** *April 26*

Part XVI: **Wrap-up and Project Presentations** *May 3*

Description record syntax: Due 11:55pm, CST.

Term project: Due May 10 at 5:00 PM, Central Daylight Time

READING ASSIGNMENTS

[Bach, 1989a] Bach, E. (1989a). Lecture 1: Background and Beginning. In *Informal Lectures on Formal Semantics*, pages 1–17. SUNY Press, Albany, NY.

[Bach, 1989b] Bach, E. (1989b). Lecture 2: Worlds Enough and Time. In *Informal Lectures on Formal Semantics*, pages 19–32. SUNY Press, Albany, NY.

[Dubin et al., 2013] Dubin, D., Senseney, M., and Jett, J. (2013). What it is vs. how we shall: complementary agendas for data models and architectures. In *Proceedings of Balisage: The Markup Conference 2013*, volume 10 of *Balisage Series on Markup Technologies*, Montral, Canada.

[Ferraris, 2011] Ferraris, M. (2011). Social Ontology and Documentality. In Sartor, G., Casanovas, P., Biasiotti, M., and Fernndez-Barrera, M., editors, *Approaches to Legal Ontologies: Theories, Domains, Methodologies*, volume 1 of *Law, Governance and Technology Series*, pages 83–97. Springer Netherlands, Dordrecht.

[International Federation of Library Associations, 1998] International Federation of Library Associations (1998). *Functional Requirements for Bibliographic Records: Final Report*, volume 19 of *UBCIM PublicationsNew Series*. K. G. Saur, Mnchen.

[Isaac and Summers, 2009] Isaac, A. and Summers, E. (2009). SKOS Simple Knowledge Organization System Primer. W3C Working Group Note, World Wide Web Consortium.

[Iyer, 1995] Iyer, H. (1995). Structural Models of Classification. In *Classificatory Structures*, volume 2 of *Textbooks for Knowledge Organization*, pages 88–96. INDEKS Verlag, Frankfurt/Main.

[Jubien, 1997a] Jubien, M. (1997a). Identity. In *Contemporary Metaphysics: An Introduction*, pages 63–76. Blackwell, Cambridge MA.

[Jubien, 1997b] Jubien, M. (1997b). Numbers. In *Contemporary Metaphysics: An Introduction*, pages 24–35. Blackwell, Cambridge MA.

[Jubien, 1997c] Jubien, M. (1997c). Platonism. In *Contemporary Metaphysics: An Introduction*, pages 36–62. Blackwell, Cambridge MA.

[Kelly, 2006] Kelly, S. (2006). Making Mistakes with XML. *Developer.com*.

[Manola et al., 2007] Manola, F., Miller, E., Beckett, D., and Herman, I. (2007). RDF Primer: Turtle version. W3C Note in Development, World Wide Web Consortium.

[Powell et al., 2007] Powell, A., Nilsson, M., Naeve, A., Johnston, P., and Baker, T. (2007). DCMI Abstract Model. DCMI Recommendation, Dublin Core Metadata Initiative.

[Sainsbury and Tye, 2012a] Sainsbury, R. M. and Tye, M. (2012a). Overview of an Originalist Theory of Concepts. In *Seven Puzzles of Thought and How to Solve Them*, pages 40–57. Oxford University Press, Oxford, UK.

[Sainsbury and Tye, 2012b] Sainsbury, R. M. and Tye, M. (2012b). The Puzzles. In *Seven Puzzles of Thought and How to Solve Them*, pages 1–19. Oxford University Press, Oxford, UK.

[Sainsbury and Tye, 2012c] Sainsbury, R. M. and Tye, M. (2012c). Roads Not Taken. In *Seven Puzzles of Thought and How to Solve Them*, pages 20–39. Oxford University Press, Oxford, UK.

[Smiraglia, 2001a] Smiraglia, R. P. (2001a). The Concept of the Work in Anglo-American Cataloging. In *The Nature of 'A Work': Implications for the Organization of Knowledge*, pages 15–33. Scarecrow Press, Lanham, MD.

[Smiraglia, 2001b] Smiraglia, R. P. (2001b). What is the nature of a work? In *The Nature of 'A Work': Implications for the Organization of Knowledge*, pages 1–13. Scarecrow Press, Lanham, MD.

[Smith, 2012] Smith, B. (2012). How to do things with documents. *Rivista di estetica*, 52(50):179–198.

[Spring, 2010] Spring, M. B. (2010). What Have We Learned about Standards and Standardization?. *Homo Oeconomicus*, 27(4):501 – 517.

[Svenonius, 2000] Svenonius, E. (2000). Bibliographic Entities. In *The Intellectual Foundation of Information Organization*, pages 32–51. MIT Press, Cambridge, MA.

[Tauberer, 2008] Tauberer, J. (2008). What is RDF and what is it good for?

[Thomer et al., 2012] Thomer, A. K., Baker, K. S., Sacchi, S., and Dubin, D. (2012). Completeness, coverage & equivalence in scientific data records. *Proceedings of the American Society for Information Science and Technology*, 49.

[Thompson, 2010] Thompson, H. S. (2010). What's a URI and why does it matter? *Ariadne*, (65).

[UIUC Center for Teaching Excellence, 2001] UIUC Center for Teaching Excellence (2001). *ICES Item Catalog*.

[Wickett et al., 2012] Wickett, K. M., Sacchi, S., Dubin, D., and Renear, A. H. (2012). Identifying content and levels of representation in scientific data. *Proceedings of the American Society for Information Science and Technology*, 49.