Exploring Evolutionary Biologists' Use and Perceptions of Semantic Metadata for Data Curation

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INTRODUCTION

The information and library science (ILS) community often studies the way people find, seek, or even browse information, but what about the way people organize and assign metadata to their own data? To gain a better understanding of how users deal with metadata in their own work, an exploratory study using Dryad's target audience (evolutionary biologists) was conducted. Within the scientific community, evolutionary biology is considered a "small science", its subject coverage is broad and very diverse – making it an exciting area to research.

STUDY DESCRIPTION

Method: Exploratory, ethnographically inspired, free-flowing interviews.

Interview Length: 15 minutes to 1 hour and 25 minutes.

Interview Focus: Interviews addressed the following topics:

- type of data collected
- organizational style and motivation
- perception of sub-domain organizes trends
- organizational style preference and rational underlying that preference

Participant Description: 7 Evolutionary Biologists

- 5 male and 2 female
- lab and field foci
- various age and experience levels
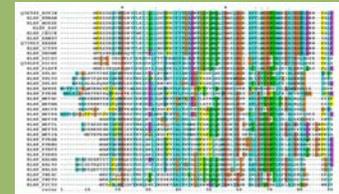- all have published works

Sub-Domains Represented:

- botany
- genetics
- paleobotany
- zoology

FINDINGS: EVOLUTIONARY BIOLOGISTS AND DATA TYPES

Beyond images, books, or photographs, evolutionary biologists collect, organize, and assign metadata to a diverse set of data objects. Below are some examples of the types of data objects they collect.
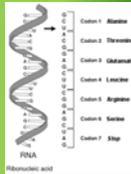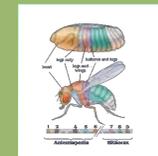

Herbarium samples
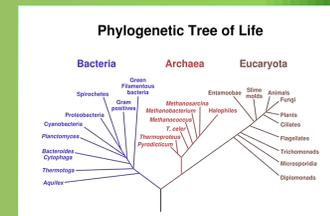

Gene sequence alignments

Primate life histories

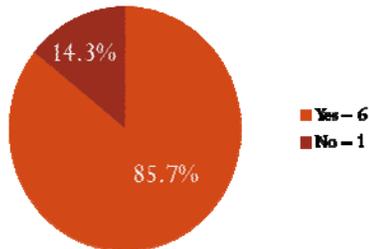Gene and gene pair data

Insect measurements and growth data

Plant fossils

Phylogenetic trees
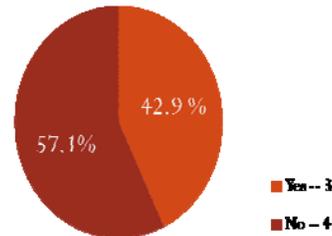
FINDINGS: METADATA AND THE EVOLUTIONARY BIOLOGIST

Do researchers use metadata?
- 14.3%
- 85.7%
- Yes – 6
- No – 1

Does the research question impact the way metadata is organized?
- 42.9 %
- 57.1%
- Yes -- 3
- No – 4

STATUS OF ANALYSIS AND FUTURE ACTIVITIES

While none of the researchers interviewed use a knowledge organization scheme created by the information and library science community for their own work, most researchers do use more personalized organization schemes that are similar to schemes used by people within their own sub-domains.

This information indicates that understanding what and how users organize their own information may be helpful for ILS professionals when designing metadata schemes or building library systems or repositories.

Based on this data, future work includes:

- Comparing the organization and metadata practices found in this study to traditional knowledge organization schemes used in the ILS community.

- Designing future, more focused studies to gain insight into the relationship of personal information management and traditional knowledge organization schemes.

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WHERE DISCOVERIES BEGIN

DRYAD

NESCent
National Evolutionary Synthesis Center
http://www.nescent.org