Implicature of Attributes in the FRBR Model

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Functional Requirements for Bibliographic Records outlines "a framework that identifies and clearly defines the entities of interest to users of bibliographic records, the attributes of each entity, and the types of relationships that operate between entities." Of particular interest is what at first appears to be a hierarchy bibliographic entities defined as "group 1": *work, expression, manifestation,* and *item.* The report aims to rethink library catalogs in a way that will better serve the needs of users, and it gives a clear disclaimer that the conceptual model "does not carry the analysis to the level that would be required for a fully developed data model" [IFLA 1998: 3].

Nevertheless, it is clear that the conceptual model will lay the groundwork for an ontology of the bibliographic universe that could be used by software agents, such as those in Semantic Web applications. Indeed, work is underway to reconcile the FRBR model with the CIDOC Conceptual Reference Model (CRM) [ICOM/CIDOC 2007], an ontology developed by the museum community. The result is a harmonized model called $FRBR_{OO}$ [International 2008], one more promising as a true ontology than the original FRBR model. It refines the FRBR model's entities, attributes, and relationships to give an "object-oriented definition of FRBR" [International 2008: 7]. This includes the introduction of temporal entities, events, and time processes and an analysis of the creation and production processes [International 2008: 11–15].

However, neither the FRBR model nor $FRBR_{OO}$ specifies how an attribute comes to be assigned to its entity. For example, how does a *work, expression,* or *manifestation* acquire its title? Can any of these *titles* change? How are *access restrictions* on an *item* related to *access restrictions* on a *manifestation*? Using for simplicity the original FRBR model rather than $FRBR_{OO}$, this paper proposes a revised FRBR model in which certain attributes of entities in group 1 are inherited by default, first up and then back down the "hierarchy" of group-1 entities. Such an approach yields many inferred attributes missing from the original FRBR model.

This system of implicature could prove useful for machine learning about bibliographic entities, whereby software agents would be able to infer attributes of a group-1 entity based on its relationships to other entities. Furthermore, considering such implicature helps clarify our assumptions about textual versions central to the study of textual heritage.

References

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Импликатура атрибутов в ER-модели «Функциональных требований к библиографическим записям»
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В докладе предлагается расширение ER-модели «Функциональные требования к библиографическим записям» (Functional Requirements for

Bibliographic Records). В предложенной модели некоторые свойства библиографических сущностей могут быть определены по умолчанию через свойства других сущностей. Это позволяет облегчить машинное обучение библиографическим данным, а также может быть полезно при построении предположений о вариантах текста в текстологических исследованиях.