

Thoughts on FRBR and Moving Images



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Kelley McGrath
University of Oregon

I'd like to talk about some things that have come up for me as I've thought about how FRBR might apply to moving images.

OLAC Work-Centric Moving Image Discovery Interface Prototype

<http://olac-demo.herokuapp.com>

- FRBR
- Structured data
- Facets



I'm going to talk about this in the context of some of the issues that arose during the design of a prototype end-user discovery interface that was built by Online Audiovisual Catalogers, better known as OLAC. In addition to using FRBR concepts, the prototype also relies on having more structured data than we have in our current MARC records and the facets that structured data makes possible. The site is not being actively maintained and when I went to get some screenshots for this presentation, it was behaving a little oddly. It's mainly useful as a demonstration of a concept.

<http://olac-demo.herokuapp.com/>

Prototype is FRBR-Inspired

"Many people want to evaluate a conceptual model such as FRBR using true or false criteria... A much more useful way to evaluate models is to ask whether they are successful at fulfilling their purpose"
—Allyson Carlyle



I call the prototype FRBR-inspired because, although the FRBR framework was the basis for our organization of the data, we tweaked the model in various ways that we thought made our interface work better for moving images. Allyson Carlyle wrote an article that I like about FRBR as a conceptual model.* She says that conceptual models should be evaluated not based on whether they are true or false, but rather on whether they succeed in meeting the purpose for which they were designed. Sometimes it seems to me that we spend too much time trying to fit things into the FRBR model as written. If FRBR isn't meeting our needs, maybe it's better to adjust the model rather than adjusting our goals to fit into the model.

*Carlyle, Allyson. "Understanding FRBR as a Conceptual Model." Library Resources & Technical Services 50.4 (2006): 264–273.

Prototype is Work-Centric

4. Shichinin no samurai (1954)

Alternate Title: [Seven Samurai](#)
Director: [Kurosawa, Akira, 1910-1998](#)
Language: [Japanese](#)
Country: [Japan](#)
Genres: [Feature](#); [Fiction](#); [Drama](#);

A key characteristic of the prototype is that it is work-centric. There's only one record per work and the results list is a list of works. This contrasts with the typical library catalog that contains records for manifestations. To give an example of why this is important, let me tell you the story of an irate public library patron in Indiana. This gentleman had been patiently waiting on the hold list for a popular DVD for months only to come into the library and find a copy of this very title on the shelves. It turned out that the library had both a widescreen and a full screen copy and all the holds had been placed on the widescreen one, which came up first in the search results. Of course, many patrons won't want a full screen version of a film that was originally released with a different aspect ratio, but this particular patron just wanted to watch the movie.

Common Patron Requests

- Titles
 - Names and Roles
 - Original Date
 - Original Language
 - Country of Production
 - Source Work
 - Genre
 - Topic or Subject
 - Characters
 - Setting
- Limit By Movie or Program:
- Genre: [Fiction \(96\)](#) [Feature \(62\)](#) [Television \(62\)](#) [Drama \(49\)](#)
- Original Date: [2000s \(55\)](#) [1990s \(22\)](#) [1950s \(13\)](#) [1960s \(11\)](#) [1980s](#)
- Original Language: [English \(107\)](#) [None \(10\)](#) [Japanese \(8\)](#) [French \(3\)](#) [Ger](#)
- Country: [United States \(90\)](#) [United Kingdom \(15\)](#) [Canada \(13\)](#)
- Director: [Unspecified \(25\)](#) [Toynton, Ian \(7\)](#) [Buckley, Norman \(3\)](#)

Thinking about many common patron requests, it is easy to see that they are about the original movie or work. Some of these are also questions that current library catalogs fail to effectively answer. Library catalogs make it a lot easier to find the date and place of publication of a DVD than the date and country of production of the original movie, even though most people are more interested in the original movie.

Backend Improvements

- More **efficient** workflows
- More **accurate** and **complete** metadata
- More **consistent** metadata
- Easier to create descriptions of new manifestations

I'm just going to take a slight detour to point out that, in addition to direct user-facing improvements, work-centric descriptions can provide many indirect benefits to users by decreasing time and cost investments in metadata and enabling more effort to be shifted to increasing data quality.

Potential of Work-Centric Data

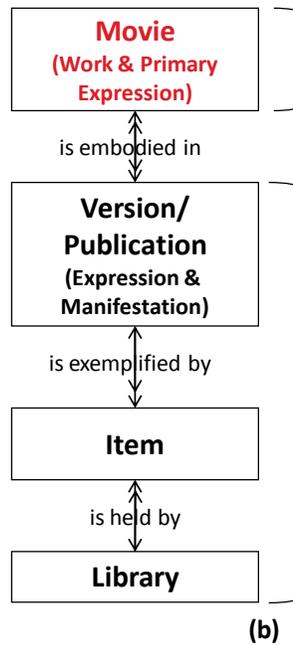
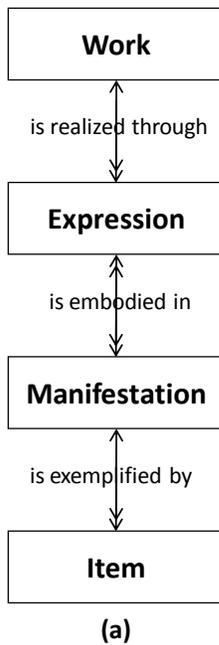
Shared discovery interface optimized for film and video

- What's in my local library or libraries?
- What's out there in the universe of libraries?

Data for linking and repurposing

- Bridge between MARC records and other datasets
- Pre-populate record for manifestations

A pool of collaboratively-maintained work-centric structured data can potentially improve access to moving images via many paths. This data could be used to populate a global shared discovery interface for moving images, something like a combination of the Internet Movie Database and WorldCat. This work-centric data could also be a bridge between MARC records for manifestations and non-library sources of information about moving images, such as Wikipedia or the Internet Movie Database and other film databases. While we're still using MARC, this data could also be used to pre-populate records for new video manifestations with information about the Work.



Displayed as "Limit By Movie or Program" facets

Displayed as "Limit By Version" facets

Data Model for Prototype

This slide shows the main parts of the data model behind our prototype alongside the traditional FRBR group 1 entities. I'd like to talk about the top one, which is labeled Work/Primary Expression.

OLAC Work/Primary Expression

- **Important and unchanging facts about the Work and its history**
- **Things we would want to note in conjunction with any future Expression or version**

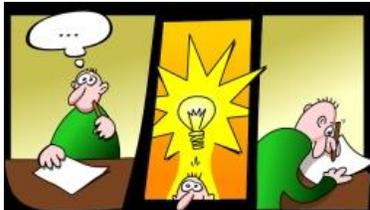
FRBR work + a reference expression

When OLAC initially started investigating the application of FRBR to moving images, there was a desire to have a top-level entity that looked something like an Internet Movie Database record. If you look at IMDb or other film reference works, they combine what FRBR would call work attributes with attributes of the original expression, such as language.

Archetypal FRBR Work

“A distinct intellectual or artistic creation”

- **Abstract entity**
- **No single material object one can point to as the work**



Lone creator has an idea and produces a text

The archetypal FRBR work is created by a single individual through a sequential process that looks something like this cartoon. The abstract work is the light bulb above the creator's head and the subsequent internal elaboration on this. The work is then put into words or musical notes or some other form of communication in order to create the first expression and manifestation.

Who Creates a Moving Image?

- no creator?
- the person with the kernel of an idea who sold the concept to the studio?
- the screenwriter?
- the director as auteur?
- the TV news producer?
- the improvisational stand-up comic
- the lecturer speaking to a stationary camera?



Moving images are almost always much more collaborative affairs. Major motion pictures involve large numbers of people who make different types of contributions.

So who is the creator? RDA generally says there's no creator. But then where did the moving image come from? From the random typing of a monkey? It seems like there must be some intention somewhere.

The abstract, light bulb idea image on the previous slide suggests that perhaps the person who pitched the initial idea for a feature film to the studio is the creator even if that person had nothing more to do with film.

Other than a solo filmmaker, the only role RDA lists in the creator category is screenwriter. This seems to be a result of a conflation of the screenwriter's relationship with the printed script and with the moving image. Not all moving images have scripts and the degree to which moving images with scripts adhere to them varies widely. Surely there is more to a rich visual work like a moving image than can be conveyed by any string of words.

The director is often considered to be the creative force behind a film. On the other hand, people do talk about writer's films and actor's films in contrast to director's films. A former colleague once interviewed a film studies professor who said that films are usually primarily the vision of one person, but who that person is varies and can't be tied to one role.

Once you move away from feature films, the director may be less important or non-existent. Producers are key to TV news, not directors. It's also easy to imagine a scenario where an unmoving camera is pointed at a comedian or a speaker with no one else involved.

Moving Images & RDA Roles

WORK	EXPRESSION
CREATORS	CONTRIBUTORS
author	animator
screenwriter	art director
filmmaker	composer (expression)
	costume designer
ASSOCIATED ENTITIES	editor of moving image work
director	performer
director of photography	stage director
producer	
production company	

RDA has a peculiar vision of the roles associated with moving images. Filmmaker and screenwriter are put in the creator category. A handful of major roles are considered to be associated with the work. All the other roles involved in making a moving image are considered to be contributors to the expression.

This vision is odd from a film-centric perspective where almost all those roles seem like they should be connected to the work. Certainly a film can be re-cut by a different editor, but it's hard to imagine what it would mean to remake *Gone with the Wind* with a different costume designer.

Expressions & Performance

Performances in the FRBR report

- Not explicitly linked to a FRBR level
- Examples:
 - performances as **expressions**
 - **Western classical music**



w1 J. S. Bach's *Six suites for unaccompanied cello*
e1 performances by Janos Starker recorded partly in 1963 and completed in 1965
e2 performances by Yo-Yo Ma recorded in 1983

I'd like to talk briefly about the relationship between performers and moving images. RDA considers all performers to be contributors to an expression. So far as I can tell, the FRBR report doesn't explicitly link the role of performer to a particular group 1 entity. It's true that all the examples involving performers and performances are shown as being at the expression level. However, they are also all examples of performances of Western classical music. As I understand it, in the tradition of Western classical music, the idea is that there is a fixed, written score, which is meant to be performed many times by different musicians. In these performances, the performers interpret the score, but do not deviate from it. The composer who wrote the score is considered the creator.

Moving Images & Performance

- **Script** is usually a **starting point**, not a static text to be interpreted



- Intended to be **performed only once**; linked to the recording process
- **Collaborative creation** where actors co-create what viewers eventually see

This model has been projected onto all kinds of performances even when it's not clear that it's appropriate. Even for music, it's harder to fit this model of performer as realizer of a pre-existing work when you start talking about jazz or even pop. There are even more significant differences between the performance of something like a symphony and the kind of performance that is involved in creating a feature film. A film script is usually only meant to be performed once and is bound up with the act of recording the performance. A screenplay is not an unalterable, static thing and the final film may bear little resemblance to the original script.

For an extreme example of where it makes no sense to associate a performer with an expression, consider the lecturer or stand-up comic in front of an unmoving camera from the previous slide. How can you say that the person in front of the camera is not creating the work when they are the sole source of their words and body movements?

CEN Cinematographic Work

- Conceptualized as a **concrete entity**
- Result of a **complex process** involving **multiple contributors**
- Creation of work **inseparable from the resulting "fixed" or "expressed" object** that typically combines a visual part (the moving image), and a textual part (the soundtrack or intertitles)
- Includes **both the intellectual or artistic content and the process of realization** in a cinematographic medium

Based on Cinematographic Works Standard EN 15907

Returning to this idea of merging the work and primary expression, several international groups that work with moving images have taken a similar, although not quite the same, approach. The European Commission on Standards charged a task force with creating a metadata standard to support the exchange of filmographic information. The result was the Cinematographic Works Standard,* which in turn has been incorporated into the standards of the European Film Gateway and is also being used as the basis for the new version of the cataloging rules of FIAF, the International Federation of Film Archives. The description on this slide is mostly taken from a draft of the FIAF rules. You can see how this model also merges some information that belongs to the Expression in the orthodox FRBR model into the Work.

* http://www.filmstandards.org/cen/CEN-TC372_N0180_Final%20Text%20EN%2015907.pdf (not the current, official version, but freely-available online)

Approach to Moving Image Works

“the **commonality of content** between and among the various expressions of the work”

- Contain **attributes shared** by all versions
- **New versions** can only meaningfully be described in relation to the **original** expression
- Emphasize **collaborative** creation
- Consider **creation** and **realization** to be **intertwined** and inseparable

Both models are more interested in defining Works in terms of the commonality of content among all the versions of a work rather than as an abstract entity. They also emphasize collaborative creation and the inseparability of the creation and realization of a moving image.

Versions

Language:

original; soundtrack;
subtitles; captions

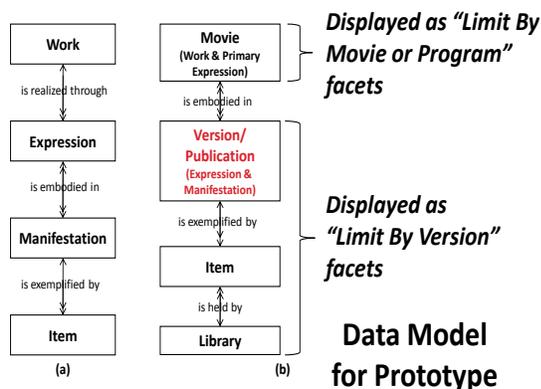


Format:

16 mm. film; VHS; DVD;
Blu-ray; WMV



Of course, people don't just care about works. They want to get resources in forms that they can use. Expressions and manifestations are important. When I was in college I took a Japanese lit in translation class. One day the professor decided to show a film. He just assumed that the film would have English subtitles, but, in fact, it didn't. The movie was Abe's *Woman in the Dunes*. If you know this story, you know there's not a lot of action. This made for a long two hours. The professor clearly needed a different expression. For moving images, format is incredibly important. Without the right equipment, a video is just an expensive paperweight. The patron needs an appropriate manifestation.



Returning to the diagram of the data structure underlying the prototype, you can see that information about the particular manifestation is bundled with the expression or expressions that it contains (see page 3 for a larger version of the diagram.)

Limit By Version:

At Library:
B (1)

Format:
DVD (1) [remove]

Publication Date:
2000s (1)

Spoken Language:
English (1)

Subtitle/Caption Language:
English (1)
French (1)
Portuguese (1)
Spanish (1)

Version: Blending of Expression & Manifestation

- **No separation between expression-in-hand and manifestation in presentation or backend data modeling**
- **Some problems on the backend but the model works for most expressions in the public interface**

The blended data about the expression- or expressions-in-hand and the manifestation is combined with information about the location of particular items and is displayed to users in a separate set of facets from the work facets. These are all characteristics that help users select and obtain resources. On the whole, this worked well, although I have since come to the conclusion that it probably isn't the best approach on the backend. I want to talk briefly about why this seemed like an appealing and parsimonious way to model the data.

“Nameable” expressions

Associated, reusable grouping:
Date, editor, duration, reviews

- **restored version:** 1998 cut restored to Welles' vision based on a memo to the studio
- **theatrical version:** original version seen by audiences in 1958
- **preview version:** created prior to the theatrical version and incorporating some of Orson Welles' requests



It seems to me that there are two types of moving image expressions. The first is what I think of as a "nameable" expression and is what most people think of when they think of a FRBR expression. This sort of expression is an artistically or intellectually distinct version of a movie that is associated with a collection of data. Examples of nameable expressions would be theatrical releases, director's cuts, airplane versions and so on. The constellation of data describing them might include things like a duration, an editor, or a date and they can have their own histories and reviews. In these cases, it makes sense to me to have a separate expression record.

“Mix-and-Match” Expressions

1. **Discrete, independent data points**
2. **Exponential number of combinations**
3. **Need to re-verify for every manifestation**



- Language: soundtrack, subtitles
- Accessibility: captions, audio description
- Aspect ratio: widescreen, full screen
- Commentary tracks

However, most of the moving image expressions in a typical library are what I think of as "mix-and-match" expressions. Think of the options on a typical DVD of a major motion picture. There are usually multiple spoken and subtitle language options, possibly captions or audio descriptions. There might be a widescreen and a full screen version on one disc. Typically, these options can be selected by the viewer independently of each other. So I can pick any combination of soundtrack, subtitles and captions. Each combination is a different experience. If you consider each combination to be a different expression, you can see how the number of expressions adds up quickly. Of course a dubbed soundtrack does have other data associated with it, just like a nameable expression. It has a date of creation, a translator and a cast. However, typically this information is not easily known and not of much interest to users. There are exceptions, such as a Miyazaki film that has been dubbed with the voices of famous English-speaking actors or a DVD of a Japanese movie that has alternate English subtitle tracks translated by different scholars. But these are outliers.

In general, it did not seem to us that there was any advantage to creating an expression record for each individual option. Even if we got really ambitious and made an expression record for each combination of options, there would be no time savings from re-using these. Since all the individual values are independent, they each have to be re-verified for every new manifestation.

Manifestation or Expression?



**Criterion Collection:
Publisher as proxy for
expression**

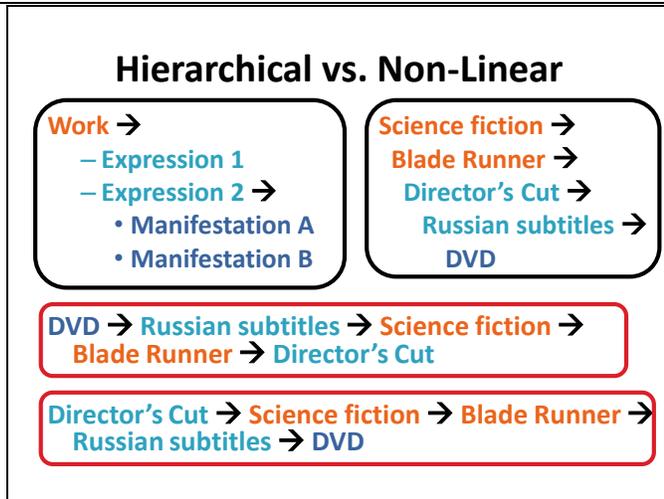


Star Wars:

[http://en.wikipedia.org/wiki/
List of changes in Star Wars re-releases](http://en.wikipedia.org/wiki/List_of_changes_in_Star_Wars_re-releases)

Another reasons why it made sense to us to collapse the expression-in-hand and the manifestation in the public interface is that the boundary between them is not always solid. There are many moving image expressions that do not identify themselves as expressions in ways that are recognized by the cataloging rules. Identifying some expressions requires contextual background and expertise that can't be expected of the typical cataloger. An example of this would be Criterion Collection DVDs. Criterion makes significant efforts to produce the best quality presentation of a given film that they can. For the viewer, a Criterion edition of a classic film would be much different than one produced by a bargain-rate publisher that suffers from such problems as people partially beheaded by bad cropping. Effectively, the publication statement for Criterion Collection communicates the existence of a particular expression.

Movies may also be "improved" for release on DVD. A well-known example of this are the differences among video editions of *Star Wars*. Dedicated fans have the time and energy to identify and track the differences in the publications, as you can see by this link to the Wikipedia page listing changes among re-releases. Catalogers, on the other hand, cannot be expected to do this kind of research.



The most common FRBR interfaces that you see are very hierarchical. User have to pick a work first and then they can see the expressions. After they select an expression, they are able to choose a manifestation. Our flatter, faceted interface enables a non-linear approach to the FRBR group 1 entities. User can easily pick their limits, such as DVDs with Russian language subtitles, first. They can then browse just the works and expressions that are useable for them. It is even possible to come up with use cases where someone might want to start with expression level characteristics and browse all the director's cuts by categories such as genre or director.

How to Get There From Here?



Can't start over so we need to extract value from our existing data

Currently trying to identify and normalize relevant data in MARC bibliographic records

Is there a path that will take us from where we are now to a FRBR-inspired future? Clearly we can't just start over from scratch. Currently, we are working on some projects to automate the extraction and standardization of data about moving image works from MARC bibliographic records for re-use in a more structured, FRBR-based form.

**OLAC Movie & Video Credit
Annotation Experiment**

Help us out at



<http://olac-annotator.org/>



Thank you!

One of the things we're doing is trying to teach a computer to identify names and roles in statements from film credits, such as "Alfred Hitchcock presents" or "directed by Tim Burton." We are crowdsourcing the creation of a pool of correct answers. We are asking people to mark up English language credits and translate credits from other languages. Please give us a hand at <http://olac-annotator.org/>
