BIBFRAME Use: Vocabulary, Conversion, Reconciliation

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BIBFRAME Ontology Patterns
• Titles
• Events
• Subjects
• Relations
• Roles/Contributions
BIBFRAME Titles
Consider this title

• Private Eyeballs -- golden treasury of bad taste
parsed into Main Title and Subtitle

bf:title [
  a bf:Title ;
  bf:mainTitle   "Private Eyeballs" ;
  bf:subtitle    "golden treasury of bad taste"
].
bf:title [ 
    a bf:Title; 
    bf:mainTitle "Private Eyeballs"; 
    bf:subtitle "golden treasury of bad taste" ].
...or ..... just express it as a label

bf:title [
  rdfs:label "Private Eyeballs -- golden treasury of bad taste"].
....or both

bf:title [ 
  bf:mainTitle "Private Eyeballs" ; 
  bf:subtitle "golden treasury of bad taste" ; 
  rdfs:label "Private Eyeballs -- golden treasury of bad taste"] .
Now, consider this title

bf:title [  
    bf:mainTitle "Sonatas" ]
.... And the label

bf:title [
  bf:mainTitle "Sonatas" ;
  rdfs:label
  "Sonatas, piano, no. 13, op. 27, no.1, E major. 1986." ]
Sonatas, piano, no. 13, op. 27, no.1, E major. 1986.

Where did all this come from?
Sonatas, piano, no. 13, op. 27, no. 1, E major. 1986.
The bf:Title resource

bf:title
  bf:mainTitle “Sonatas” ;
  rdfs:label “Sonatas, piano, no. 13, op. 27, no. 1, E major. 1986.” ;

Properties of the Work

bf:musicNumber "no. 13, op. 27, no. 1" ;
bf:musicKey “E major” ;
bf:originDate “1986” ;
bf:musicMedium “piano” .
Subtitles
Suppose we want to:

- Indicate the order of subtitles
- Indicate the source of a subtitle
Multiple subtitles
Consider this title:

"Asia-Pacific rebalance 2025 : capabilities, presence, and partnerships : an independent review of U.S. defense strategy in the Asia-Pacific"
"Asia-Pacific rebalance 2025 : capabilities, presence, and partnerships : an independent review of U.S. defense strategy in the Asia-Pacific"
bf:title [ 
  bf:mainTitle "Asia-Pacific rebalance 2025 :" ; 
  bf:subtitle “capabilities, presence, and partnerships :” 

How do you determine the order of the subtitles?
How do you determine the order of the subtitles?

- BIBFRAME does not attempt to solve this problem, because a very low percentage of bibliographic titles have multiple subtitles.
• BIBFRAME does not attempt to solve this problem, because a very low percentage of bibliographic titles have multiple subtitles.

• However it is an important feature for certain special collections.
So ....

an object property is defined in an external ontology, supporting multiple subtitles–

ex:subtitle

and class: ex:Subtitle
Before ....

bf:title [
  bf:mainTitle "Asia-Pacific rebalance 2025 :"] ;

  bf:subtitle “capabilities, presence, and partnerships :”

  bf:subtitle “an independent review of U.S. defense strategy in the Asia-Pacific"
] .
Express each subtitle twice

bf:title [  
  bf:mainTitle  "Asia-Pacific rebalance 2025 :” ;  

  bf:subtitle  “capabilities, presence, and partnerships :”  
ex:subtitle  :subtitle1;  

ex:subtitle  :subtitle2.
:subtitle1 [  
    a ex:Subtitle ;  
    rdfs:label "capabilities, presence, and partnerships :"
] .

:subtitle2 [  
    a ex:Subtitle  
    rdfs:label "an independent review of U.S. defense strategy in the Asia-Pacific"
] .
bf:subtitle “capabilities, presence, and partnerships :”
ex:subtitle :subtitle1;

Each subtitle is supplied twice.
Once via bibframe bf:subtitle, a datatype property;
once via ex:subtitle, which is an object property.

If you don’t care about the order of the subtitles, and don’t support ex:subtitle, then as long as you support bf:subtitle you’ll be able to process the subtitle.
Now that you have it expressed as an object property, assign a rank to each

:subtitle1
   a ex:Subtitle ;
   rdfs:label "capabilities, presence, and partnerships:" ;
   xyz:rank "first"

:subtitle2
   a ex:Subtitle
   rdfs:label "an independent review of U.S. defense strategy in the Asia-Pacific" ;
   xyz:rank "last" ] .
Indicate the source of a subtitle
consider this title

“Penguin atlas of media and information - key issues and global trends”
The Penguin atlas of media and information: key issues and global trends / Mark Balnaves, James Donald and Stephanie Hemelryk Donald.


128 pages : color illustrations, chiefly color maps ; 25 cm.

Subtitle from cover.

Source of subtitle supplied in a note.
How do we indicate the Source ("cover") of the subtitle here?
bf:title [
  bf:mainTitle "Penguin atlas of media and information" ;
  bf:subtitle “key issues and global trends” ;
  ex:Subtitle [rdfs:label “key issues and global trends” ;
    bf:note [rdfs:label “from cover”] ] ]
But this isn’t very linked-data friendly
A more linked-data friendly approach ...

bf:title [  
  bf:mainTitle "Penguin atlas of media and information" ;  
  bf:subtitle "key issues and global trends" ;  
  ex:Subtitle [rdfs:label "key issues and global trends" ;  
    ex:titleSource ex:cover ]  
]
bf:title [  
  bf:mainTitle "Penguin atlas of media and information" ;  
  bf:subtitle "key issues and global trends" ;  
  ex:Subtitle [rdfs:label "key issues and global trends" ;  
    ex:titleSource ex:cover ]
]
Indicate a title “type”
Swimming Hole
by Jerrold Beim
Pictures by Louis Darling
The book has two titles ....

<w1>
  a bf:Work ;
“Swimming Hole” and “Swimming”

<w1>
  a bf:Work ;


:title2 [rdfs:label "Swimming" ].
A cover title and a spine title

<w1>
  a          bf:Work ;
</w1>


:title2 [rdfs:label "Swimming"].
<w1>
  a bf:Work ;

:title1 [ 
  a bf:Title, ex:Cover ;
  rdfs:label "Swimming Hole" ].

:title2 [ 
  a bf:Title ; ex:Spine ;
  rdfs:label "Swimming" ].

ex:Cover and ex:Spine both defined to be Subclasses of bf:Title
Indicate which is the “preferred” title
Define property:

ex:hasPreferredTitle
ex:hasPreferredTitle :title1 .
indicate that this is the title supplied by the author
:title1
  a bf:Title, ex:AuthorsTitle
  rdfs:label "Swimming Hole" .
Inverse Properties
<w1>
a                  bf:Work ;

bf:title :title1

:title1


[ rdfs:label "Swimming Hole" ].
Abbreviated Title
Consider this title

“Journal of Dental Research”
.... The work has two titles..

<w1>
    a  bf:Work ;
</w1>
<w1>
a  bf:Work ;
:title1 [
a  bf:Title ;
  bf:mainTitle “Journal of Dental Research” ] .

<w1>
  a  bf:Work  ;

:title1
  a  bf:Title  ;
  bf:mainTitle  “Journal of Dental Research”  .

:title2
  a  bf:Title  bf:AbbreviatedTitle  ;
  bf:mainTitle  “J Dent Res”  ] ;

Subclass  of  bf:Title
Title Types external to BIBFRAME

- af:RepositoryTitle
- af:CreatorsTitle
- af:DescriptiveTitle
- af:TranslatedTitle
- af:OriginalTitle
- af:ExhibitionTitle
- af:FormerTitle
- ex:conciseTitle
- ex:distinctiveTitle
- ex:PreferredTitle
Title Source

- :CommonlyKnownTitle
- :DevisedTitle
- :ReferenceSourceTitle
- :AnnouncedTitle
- :ContainerSpineTitle
- :ContainerTitle
- :CreditsTitle
- :EmbeddedMetadataTitle
- :MediaSurfaceTitle
- :MenuTitle
- :TitleScreenTitle
BIBFRAME Events
• There is a concert.
• The concert is recorded.
• A book is written about the concert.
• There is a concert. The concert is an Event.
• The concert is recorded. The recording is a Work.
• A book is written about the concert.
  – The book is a Work and the concert is its subject.
Brief digression: BIBFRAME Subjects
Person as subject

```
bf:subject [
    a bf:Person ;
    rdfs:label “John Wilkes Booth” ]
```
bf:subject [  
a    bf:Work ;
    rdfs:label “John Wilkes Booth” ] .
Place as subject

bf:subject [  
a  bf:Geographic ;  
rdfs:label “France” ] .
If no known class fits ...
bf:subject [  
    a bf:Topic ;  
    rdfs:label "History" ] .
Event as subject

bf:subject [  
a               bf:Event ;  
• There is a concert.
• The concert is recorded.
• A book is written about the concert.
• There is a concert. The concert is an Event.
• The concert is recorded. The recording is a Work.
• A book is written about the concert.
  – The book is a Work and the concert is its subject.
These two properties created expressly for the event model.
Property pmo:createdFor

- pmo: Performed Music Ontology
Work \bf{relatedTo} Event
Work

pmo:createdFor

Event

Subproperty of

bf:relatedTo
Example: a motet celebrating the inauguration of a pope
Additional pmo properties

• hasEventName

• hasInspiration

• hasPerformance  *Event that is the performance of a Work. Subproperty of eventContentOf*

• recordingOf  *Subproperty of eventContentOf*
Additional pmo Classes

• pmo:Concert

• pmo:Performance

• pmo:Festival

All subclasses of bf:Event
... and further subclassed:

- **Concert**
  - BenefitConcert
  - ConcertSeries
  - ConcertTour

- **Performance**
  - CommandPerformance
  - FirstPerformance
  - LivePerformance
  - OpenMicPerformance
  - RecordingSession
  - Rehearsal
  - Audition

- **Festival**
  - MusicFestival
Rare Materials: CustodialEvent

- ex:CustodialEvent
  - ex:Accessioning
  - ex:Auction
  - ex:Request
  - ex:ClaimOfOwnership
  - ex:Deposit
  - ex:Destruction
  - ex:Donation
  - ex:Inheritance
  - ex:Loan
  - ex:Loss
  - ex:Offer
  - ex:Recovery
  - ex:Repatriation
  - ex:Sale
  - ex:Theft
  - ex:Transfer
Relationships
relatedTo

<WorkA> relatedTo <WorkB>
More Specifically ...

<WorkA> bf:continuedBy <WorkB>

Subproperty of bf:relatedTo
However, you might want to supply the date that the “continuation” took place
Introducing class bflc:Relationship, property bflc:relationship and property bflc:relation

<WorkA>

bflc:relationship [ 
    a bflc:Relationship ;
    bflc:relation  bf:continuedBy ;
    bflc:target  <WorkB> ;
    bf:date      "10232017" ;
]


<WorkA>

bflc:relationship [ a bflc:Relationship ; bflc:relation bf:continuedBy ; bflc:target <WorkB> ; bf:date "10232017" ; ]

You can’t express the date using the pattern: <WorkA> bf:continuedBy <WorkB>
other use cases supported by the relationship pattern.

- Graceful degradation.

You could say

(1) `<WorkA> ex:xyz <WorkB>

Or you could say:

(2) `<WorkA> bflc:relationship [
    bflc:target `<WorkB>` ;
    bflc:relation ex:xyz ]

Assume the client receiving this rdf does not recognize the namespace ex:
Using (1), the client will not make any sense of this.
Using (2) it will at least know that WorkB is a resource related to WorkA, even though it won’t know the exact relation.
other use cases supported by the relationship pattern.

• **Graceful degradation.**

You could say

(1)  `<WorkA>  ex:xyz  <WorkB>`

Or you could say:

(2)  `<WorkA>  bflc:relationship [  
                 bflc:target  <WorkB> ;  
                 bflc:relation  ex:xyz ]`

Assume the client receiving this rdf does not recognize the namespace `ex:`.
Using (1), the client will not make any sense of this. Using (2) it will at least know that `WorkB` is a resource related to `WorkA`, even though it won't know the exact relation.
no URI to express relationship

<WorkA> bflc:relationship [
  bflc:target <WorkB> ;
  bflc:relation [rdfs:label "name of relation"]]

Roles/Contributions
First, brief review of how roles were modeled in BIBFRAME 1.0
Roles In BIBFRAME 1.0

<work> relators:aut <person>

Says: “this work has an author, and that author is this person”
Example (still 1.0)

<http://bibframe.example.org/work/2014012522>

relators:ill

<http://id.loc.gov/rwo/agents/n79021035> .
<http://bibframe.example.org/work/2014012522>

relators:ill

<http://id.loc.gov/rwo/agents/n79021035>

Illustrator

castle full of cats

Ruth Sanderson
bf1: role is modeled as a relation

bf2: as a Contribution
(BF 1) **relation**: relates a person to a Work:

“Ruth Sanderson *is the illustrator of* ‘Castle full of cats’”

(BF 2) **contribution**: modelled more as an activity

“Ruth Sanderson *illustrated* ‘Castle full of cats’”
What’s the difference?
if you can say:
“Ruth Sanderson illustrated ‘Castle full of cats’”

Then you can say:
“Ruth Sanderson illustrated ‘Castle full of cats’ in 2015”

Or even:
“Ruth Sanderson illustrated ‘Castle full of cats’ in 2015, in New York”
bf:Contribution

<http://bibframe.example.org/work/2014012522>

bf:contribution [  
  a      bf:Contribution ;  
  bf:role <http://id.loc.gov/vocabulary/relators/ill> ;  
  bf:agent <http://id.loc.gov/rwo/agents/n79021035> ]
Add date and place of contribution

<http://bibframe.example.org/work/2014012522>

bf:contribution [
    bf:role <http://id.loc.gov/vocabulary/relators/ill> ;
    bf:agent <http://id.loc.gov/rwo/agents/n79021035> ;
    bf:date "2015" ;
    bf:place <http://id.loc.gov/vocabulary/geographicAreas/n-us-ny> ;
]

....vs. role

<http://bibframe.example.org/work/2014012522>

relators:ill

<http://id.loc.gov/rwo/agents/n79021035>
You can’t (easily) make these sort of statements, like when or where, about this relation
And similar to the relationship model, suppose you have no URI to express the role ......

bf:contribution [  
  bf:role [rdfs:label "illustrator"] ;  
  bf:agent .........  
]
Extensions

- **ArtFrame** *Columbia University.*
  Art objects - paintings, photographs, sculptures, ceramics . . .

- **Cartographic** *Harvard*
  printed maps, atlases, geospatial datasets . . .

- **Moving Image** *Harvard*

- **Performed Music** *Stanford, MLA, ARSC, LC, and the PCC*
  modeling of performers, medium of performance, and events

- **Rare Materials** *Cornell*
  model the complexity of rare materials, particularly item-level description, provenance, physical description. Partnering with ArtFrame.

- **Bibliotek-o** *LD4P*