DOREMUS

DOing REusable MUSical data

Arnold SCHOENBERG
Le style et l'idée
Arnold Schönberg
Verklärte Nacht

http://www.doremus.org

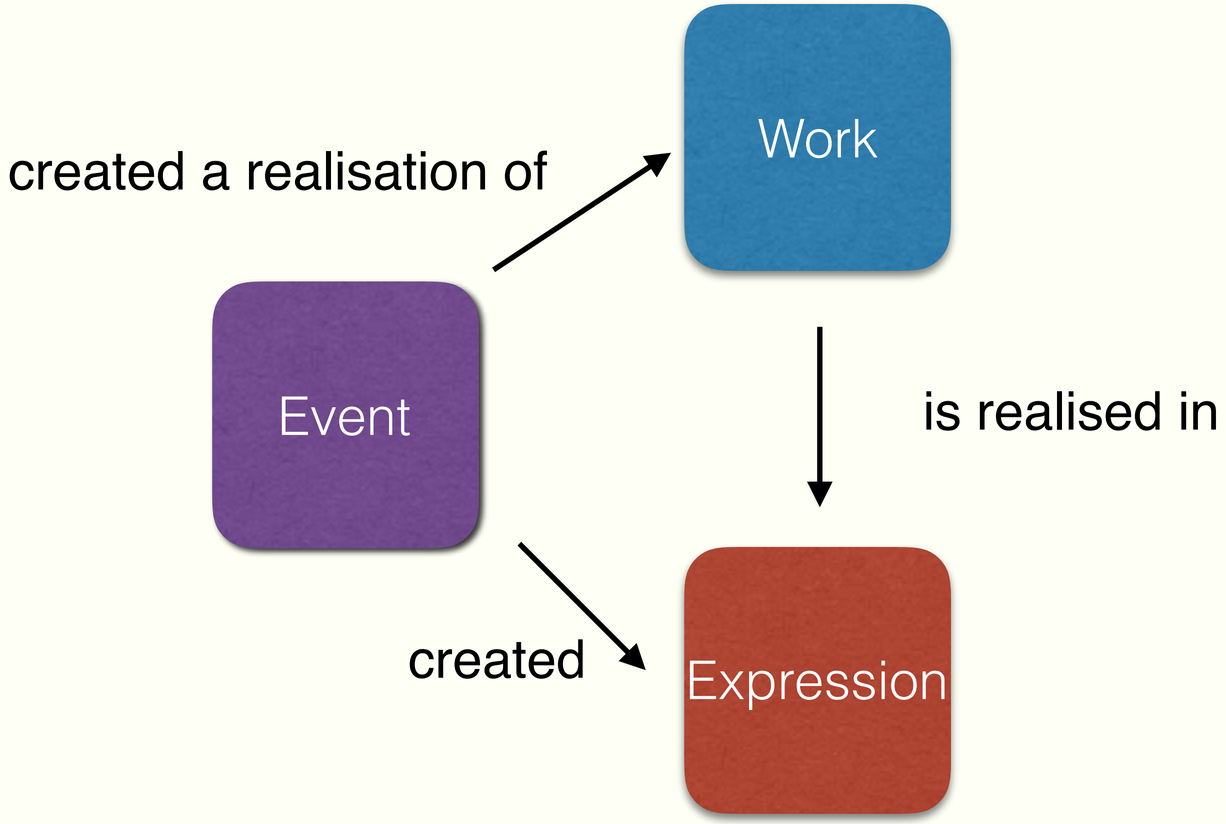
PROJET FINANCÉ PAR L'ANR - PROJECT FUNDED BY THE ANR
ANR

DOREMUS

DOing
REusable
MUSical data

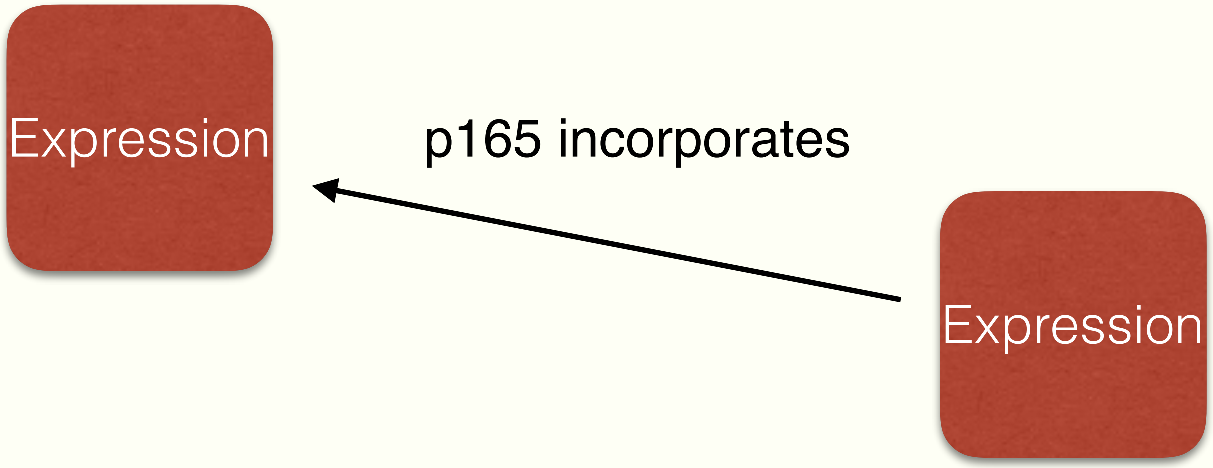
The DOREMUS model, structures

The building blocks (1/3)
Event - Work - Expression


Work
created a realisation of
Event
is realised in
created
Expression

An activity creates an Expression, which is the realisation of a Work

The building blocks (2/3)
Incorporation of Expressions


Expression
p165 incorporates
Expression

An Expression can incorporate another Expression

The building blocks (3/3)
basic properties

- p1 is identified by : identification / appellation
- p2 has type : categorisation
- p3 has note : extensive description
- p16 used specific object : objects in a broad sense: an Expression can be an “object”
- p67 refers to : reference to any CRM Entity

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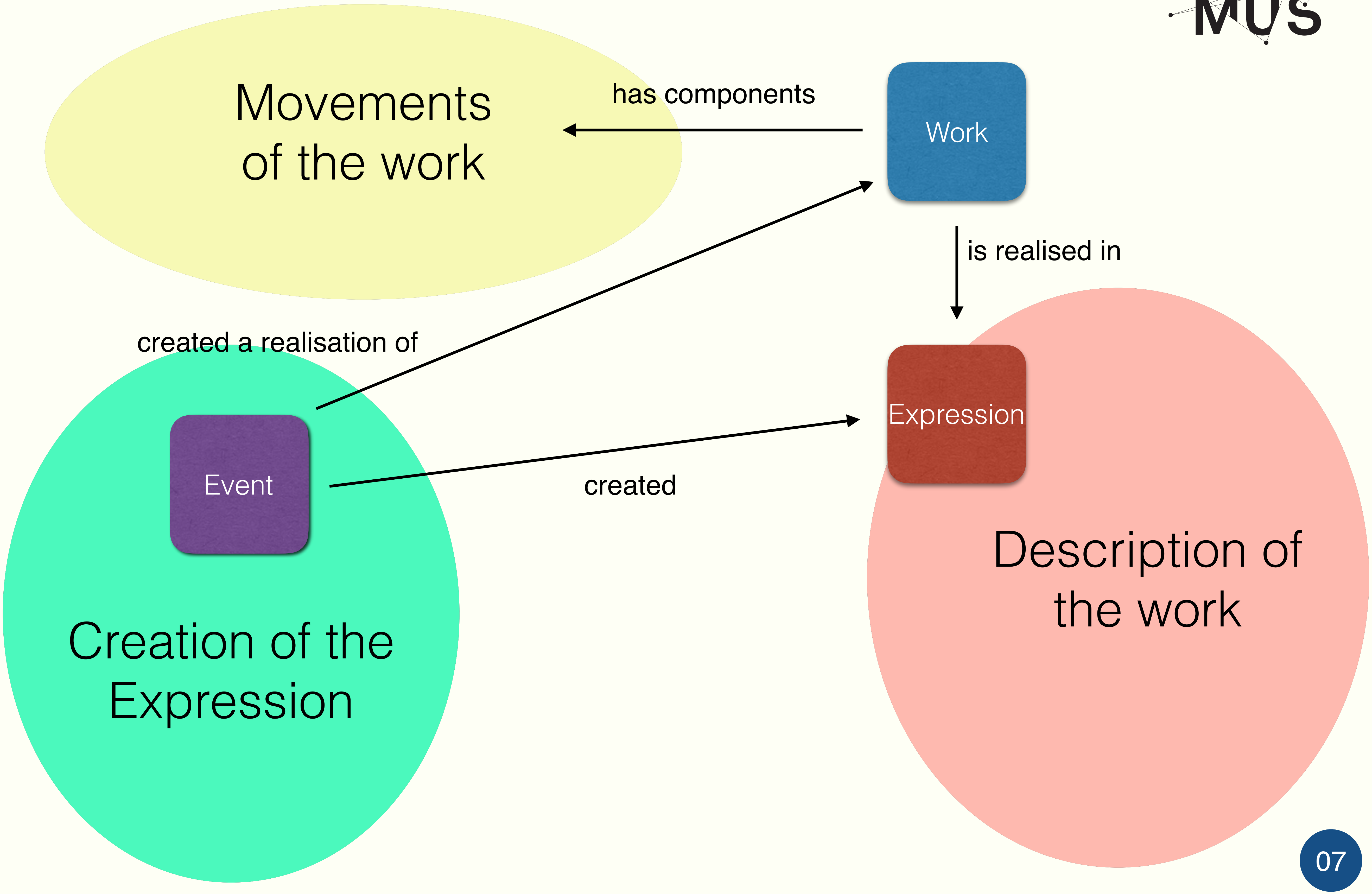
Describing works in DOREMUS

Describing a simple work



Movements of the work

has components

Work

is realised in

created a realisation of

Expression

Event

created

Description of the work

Creation of the Expression

Let’s come back to Beethoven’s Concerto nr. 5

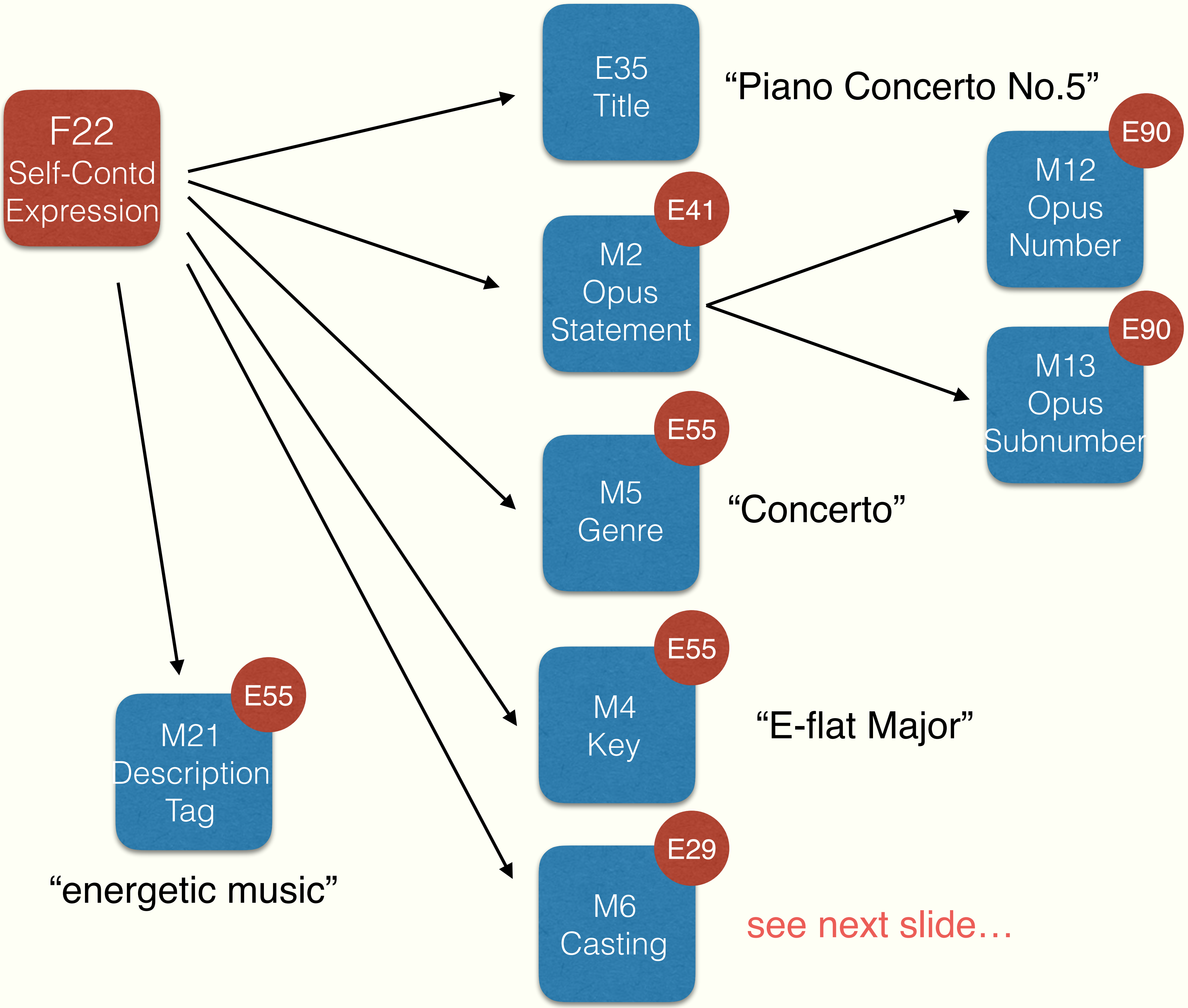
Piano Concerto No. 5
in E-flat Major, Op. 73,
“Emperor”
(1809)
gettyimages

We have a title, which contains a notion of genre, an order number, a key, an opus number, a “nickname”, an intended medium of performance.

Apart from the general concept of title, all the other concepts are new.
We created classes and properties for them in DOREMUS because they are the basis of any description of classical music.

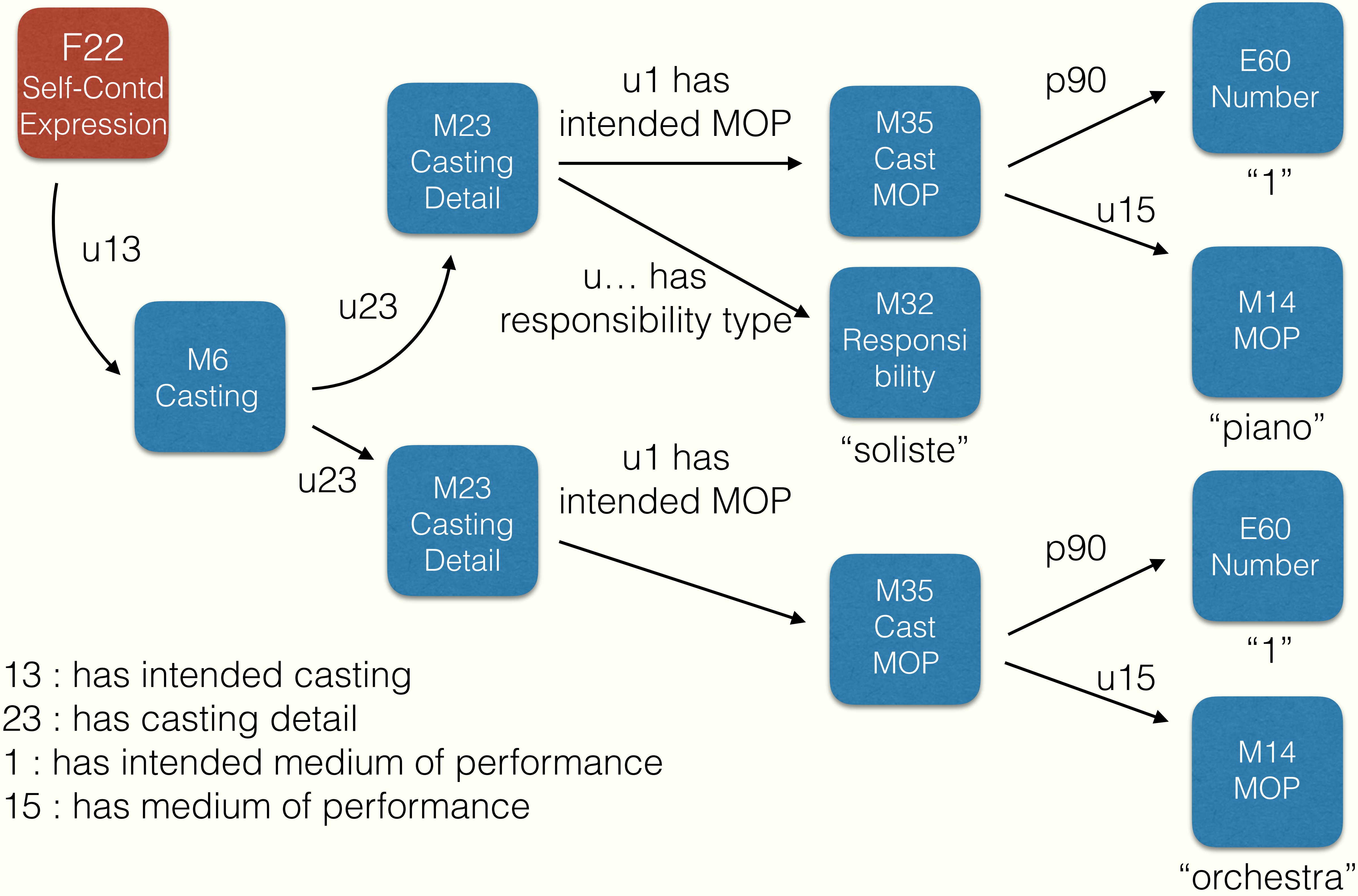
We also created other classes and properties for non classical musics.

Description of a work, 1


F22
Self-Contd
Expression
E35
Title
"Piano Concerto No.5"
E41
M2
Opus
Statement
E90
M12
Opus
Number
"73"
E90
M13
Opus
Subnumber
" "
E55
M5
Genre
"Concerto"
E55
M4
Key
"E-flat Major"
E29
M6
Casting
E55
M21
Description
Tag
"energetic music"

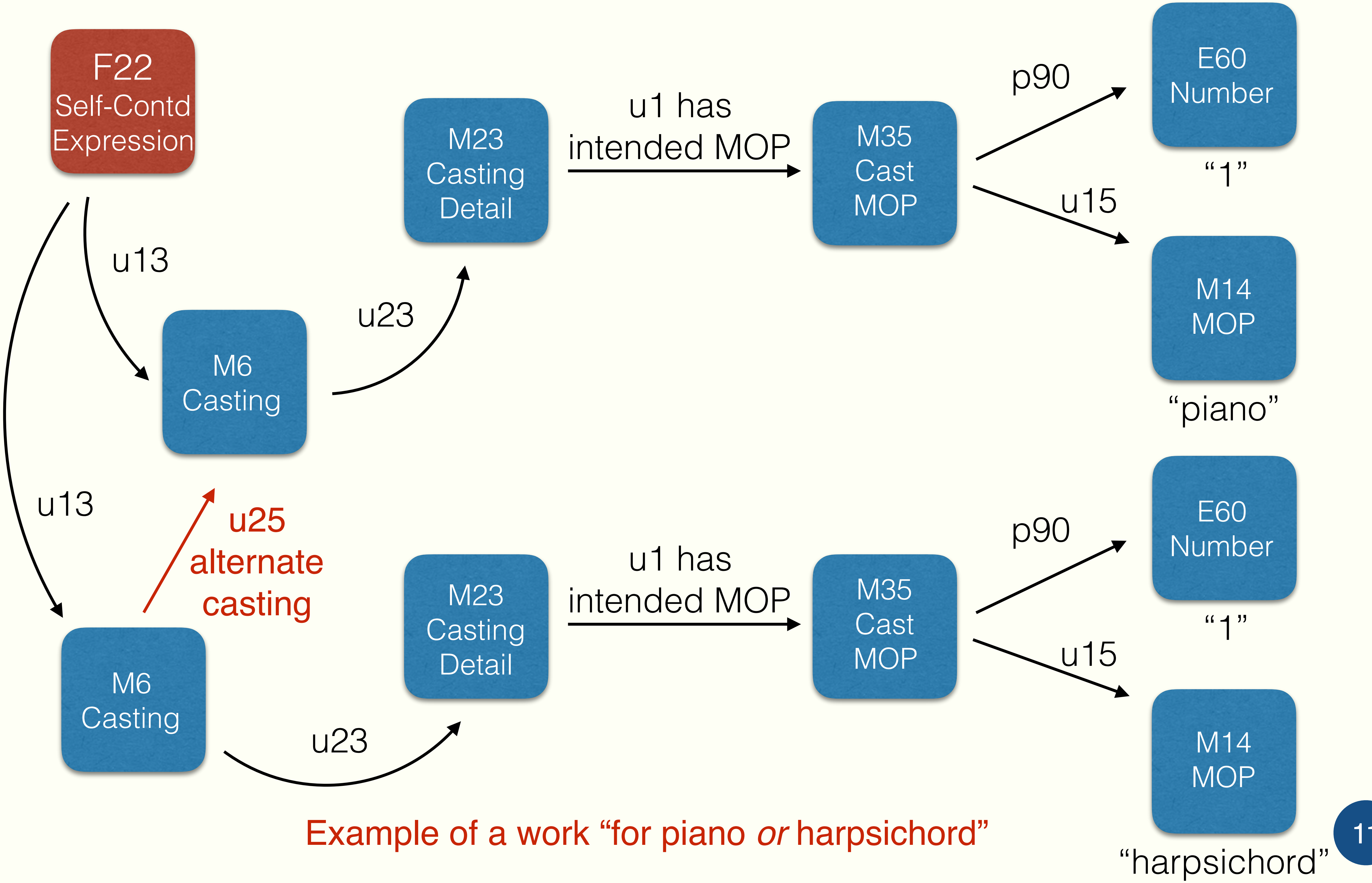
see next slide…

Description of a work, 2
Instrumental & Vocal Distribution


F22
Self-Contd
Expression
u13
M6
Casting
u23
M23
Casting
Detail
u1 has
intended MOP
M35
Cast
MOP
p90
E60
Number
"1"
u15
M14
MOP
"piano"
u… has
responsibility type
M32
Responsi
bility
"soliste"
u23
M23
Casting
Detail
u1 has
intended MOP
M35
Cast
MOP
p90
E60
Number
"1"
u15
M14
MOP
"orchestra"

u13 : has intended casting
u23 : has casting detail
u1 : has intended medium of performance
u15 : has medium of performance

Description of a work, 3
Alternate Distribution



F22 Self-Contd Expression

M6 Casting

M23 Casting Detail

M35 Cast MOP

E60 Number

"1"

M14 MOP

"piano"

M6 Casting

M23 Casting Detail

M35 Cast MOP

E60 Number

"1"

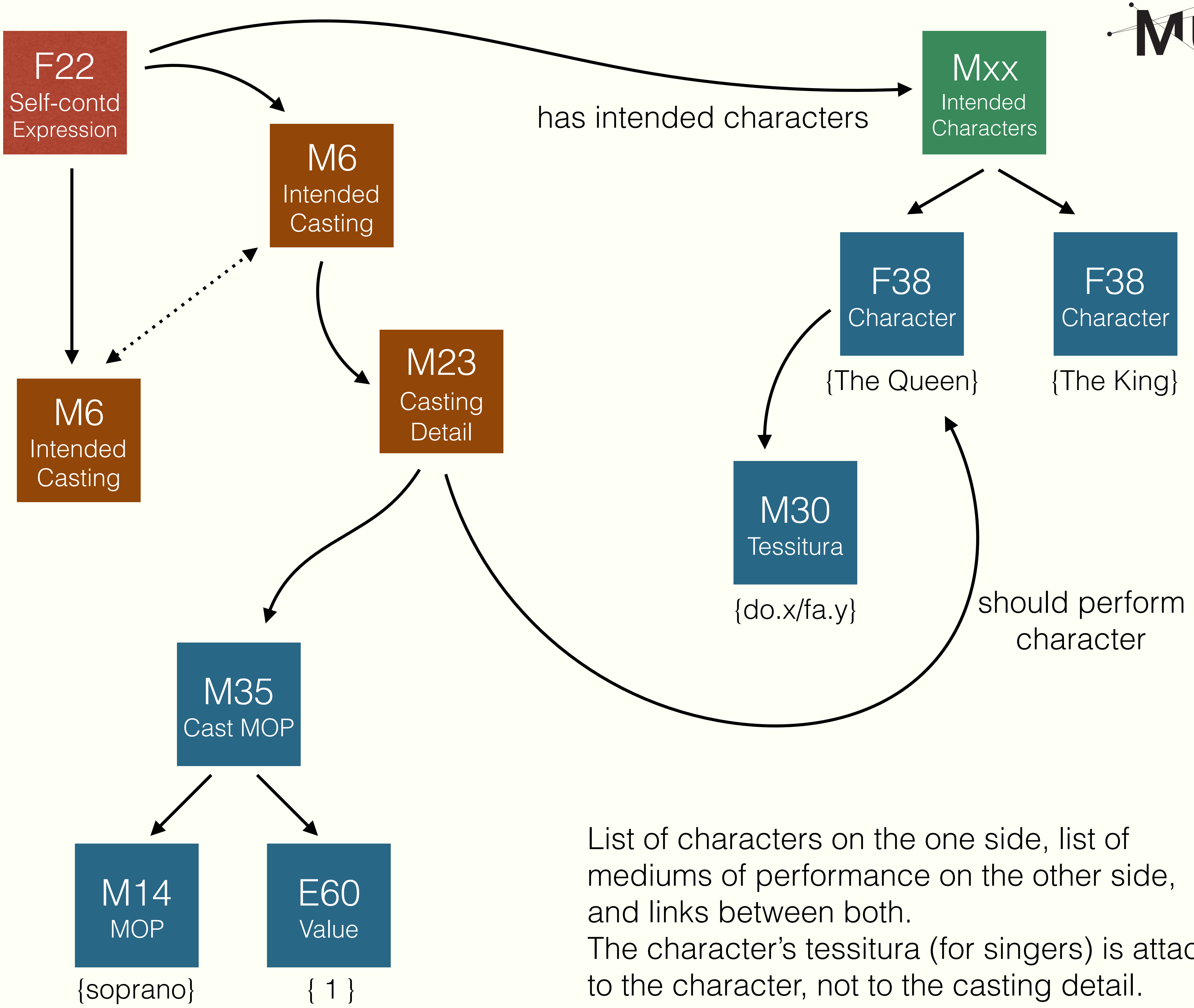
M14 MOP

"harpsichord"

u13
u13
u23
u23
u25 alternate casting
u1 has intended MOP
u1 has intended MOP
p90
p90
u15
u15

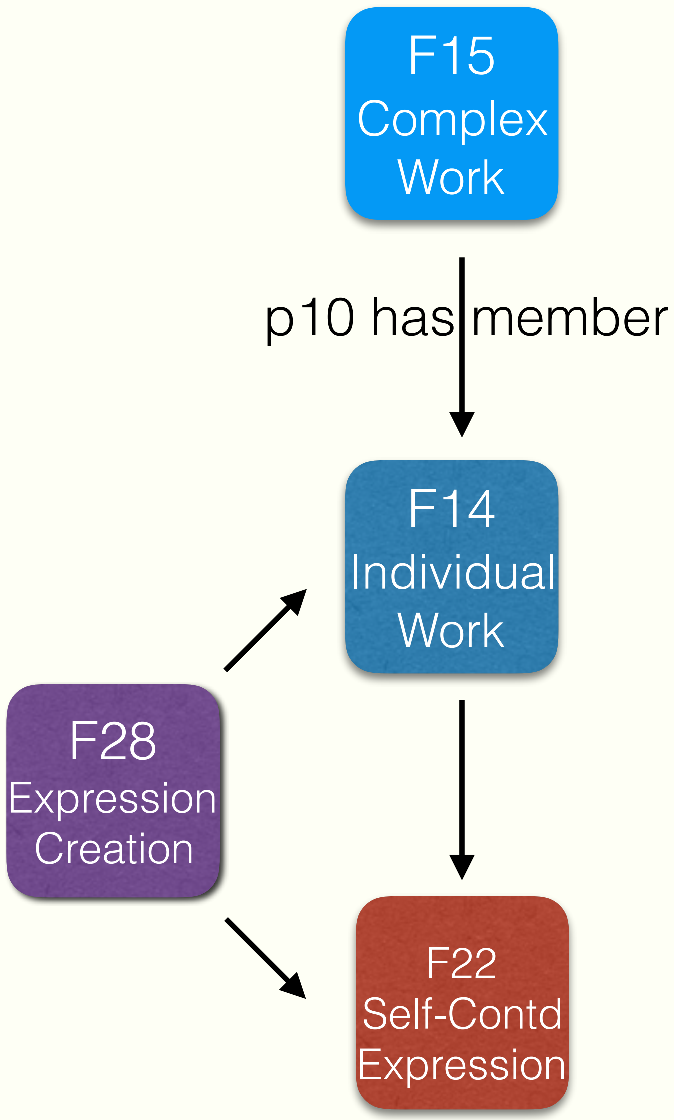
Example of a work "for piano *or* harpsichord"

Description of a work, 4
Intended Characters


F22
Self-contd
Expression
M6
Intended
Casting
has intended characters
Mxx
Intended
Characters
F38
Character
{The Queen}
F38
Character
{The King}
M6
Intended
Casting
M23
Casting
Detail
M30
Tessitura
{do.x/fa.y}
should perform
character
M35
Cast MOP
M14
MOP
{soprano}
E60
Value
{ 1 }

List of characters on the one side, list of mediums of performance on the other side, and links between both.
The character's tessitura (for singers) is attached to the character, not to the casting detail.

Describing a work as a member of a complex work


F15
Complex
Work

p10 has member

F14
Individual
Work

F28
Expression
Creation

F22
Self-Contd
Expression

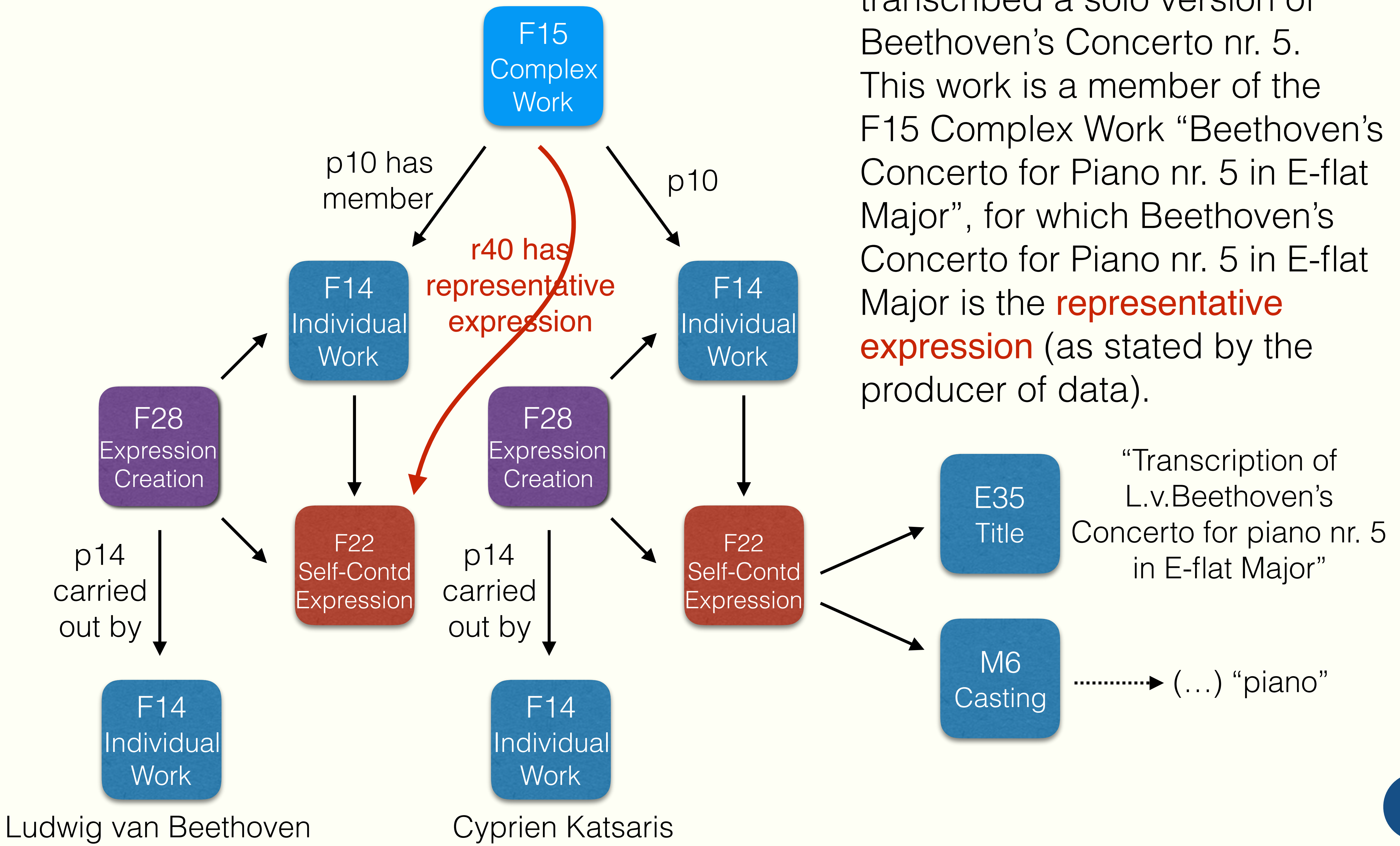
Arranging another work, whether one’s own or another composer’s work, is such a basic form of composition that in Doremus any F14 Individual Work is by default a member of an F15 Complex Work.

The boundaries of a Complex Work have to do with the dominance of a concept.
Arrangements by other composers can be members of the Complex Work as long as the initial concept is still dominant.
By contrast, a simple citation of work A in work B does not make the latter a member of the Complex Work A because the initial concept is not dominant.

F15 Complex Work is the class that best embodies the FRBR concept of Work.

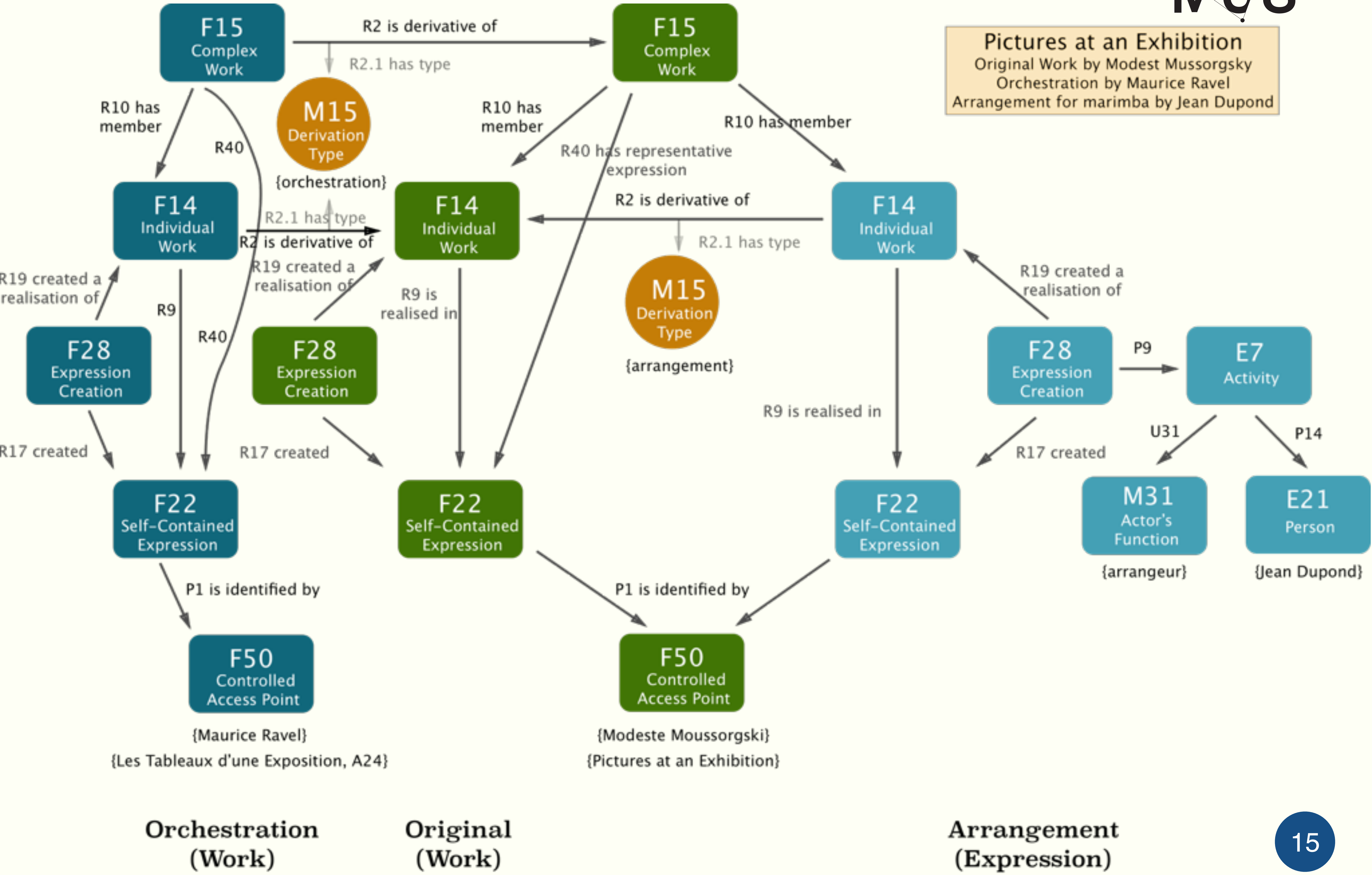
Describing multiple expressions of a work

The pianist Cyprien Katsaris transcribed a solo version of Beethoven's Concerto nr. 5. This work is a member of the F15 Complex Work "Beethoven's Concerto for Piano nr. 5 in E-flat Major", for which Beethoven's Concerto for Piano nr. 5 in E-flat Major is the representative expression (as stated by the producer of data).

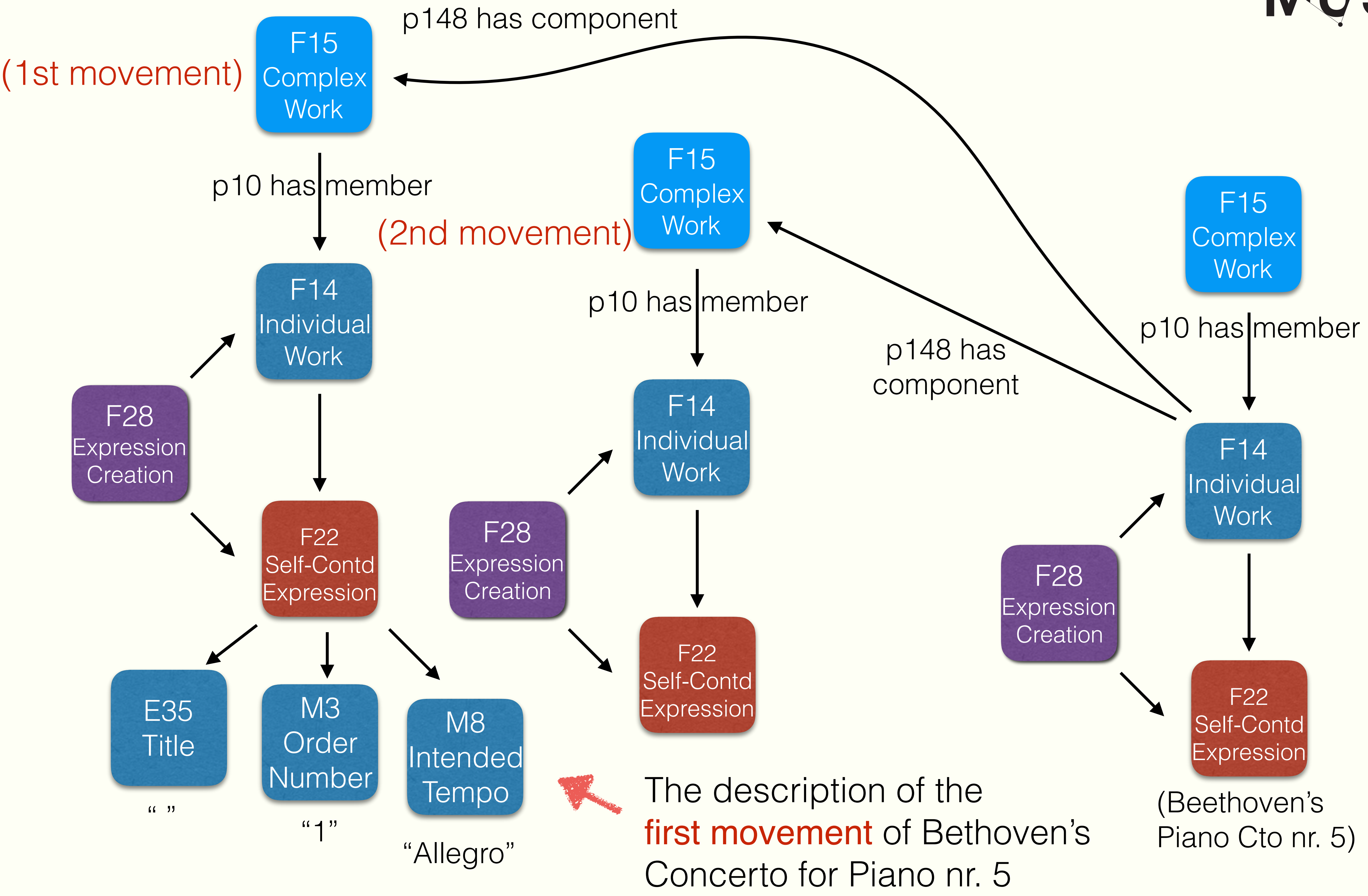

F15 Complex Work
p10 has member
p10
r40 has representative expression
F14 Individual Work
F14 Individual Work
F28 Expression Creation
F28 Expression Creation
F22 Self-Contd Expression
F22 Self-Contd Expression
p14 carried out by
p14 carried out by
F14 Individual Work
F14 Individual Work
Ludwig van Beethoven
Cyprien Katsaris
E35 Title
"Transcription of L.v.Beethoven's Concerto for piano nr. 5 in E-flat Major"
M6 Casting
(…) "piano"

Describing arrangements

Pictures at an Exhibition
Original Work by Modest Mussorgsky
Orchestration by Maurice Ravel
Arrangement for marimba by Jean Dupond

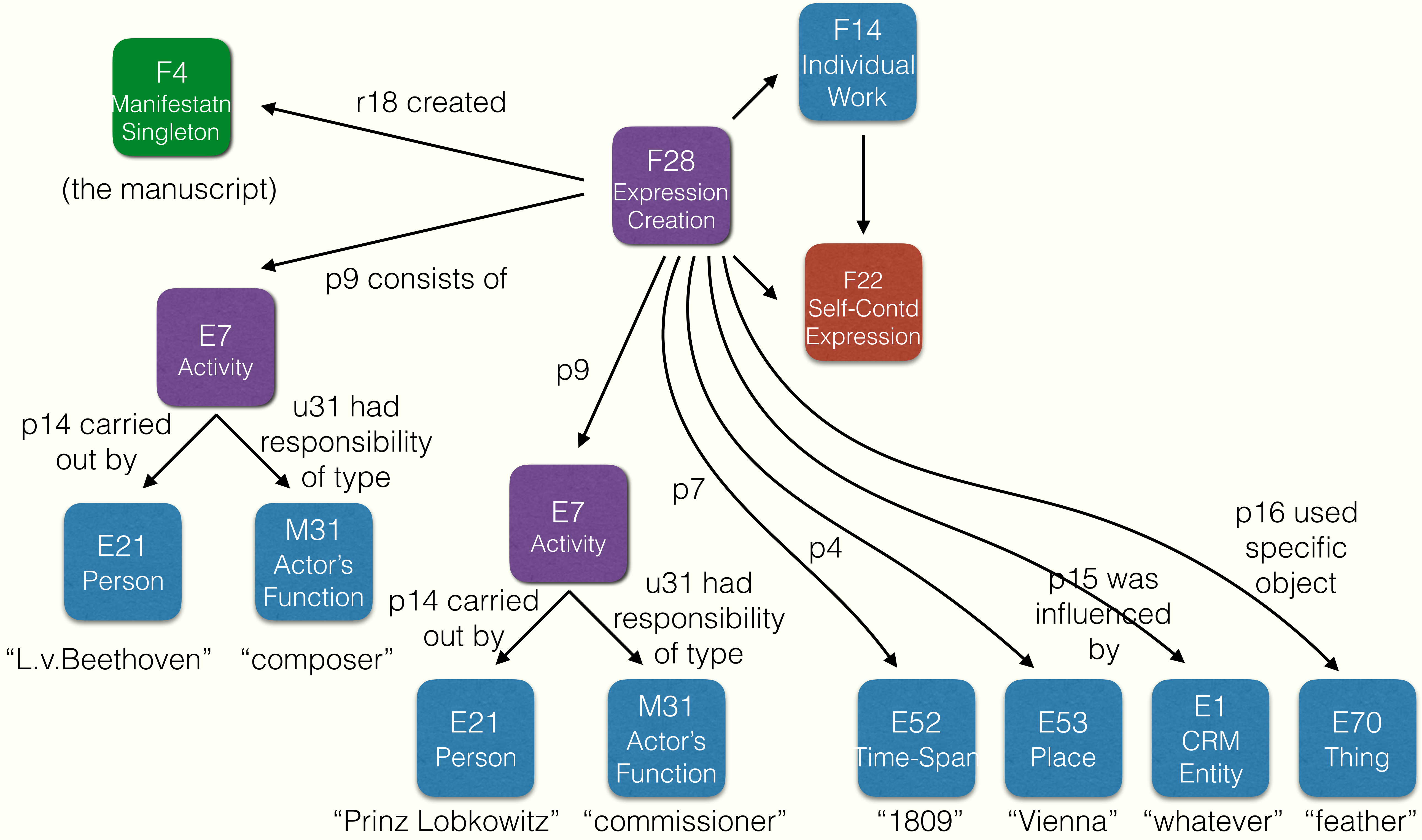

F15 Complex Work
R2 is derivative of
F15 Complex Work
R2.1 has type
M15 Derivation Type
{orchestration}
R10 has member
R40
R10 has member
R10 has member
R40 has representative expression
F14 Individual Work
R2.1 has type
R2 is derivative of
F14 Individual Work
R2 is derivative of
F14 Individual Work
R2.1 has type
M15 Derivation Type
{arrangement}
R19 created a realisation of
R19 created a realisation of
R19 created a realisation of
R9
R40
R9 is realised in
R9 is realised in
F28 Expression Creation
F28 Expression Creation
F28 Expression Creation
P9
E7 Activity
R17 created
R17 created
R17 created
U31
P14
F22 Self-Contained Expression
F22 Self-Contained Expression
F22 Self-Contained Expression
M31 Actor's Function
{arrangeur}
E21 Person
{Jean Dupond}
P1 is identified by
P1 is identified by
F50 Controlled Access Point
{Maurice Ravel}
{Les Tableaux d'une Exposition, A24}
F50 Controlled Access Point
{Modeste Moussorgski}
{Pictures at an Exhibition}
Orchestration (Work)
Original (Work)
Arrangement (Expression)

Describing a work’s components


(1st movement)
F15 Complex Work
p148 has component
p10 has member
(2nd movement)
F15 Complex Work
F15 Complex Work
F14 Individual Work
p10 has member
p148 has component
p10 has member
F28 Expression Creation
F14 Individual Work
F14 Individual Work
F22 Self-Contd Expression
F28 Expression Creation
F28 Expression Creation
F22 Self-Contd Expression
F22 Self-Contd Expression
E35 Title
“ ”
M3 Order Number
“1”
M8 Intended Tempo
“Allegro”
(Beethoven’s Piano Cto nr. 5)

The description of the first movement of Bethoven’s Concerto for Piano nr. 5

Describing the Expression creation


F4
Manifestatn
Singleton
(the manuscript)
r18 created
F28
Expression
Creation
F14
Individual
Work
F22
Self-Contd
Expression
p9 consists of
E7
Activity
p14 carried out by
u31 had responsibility of type
E21
Person
M31
Actor's
Function
"L.v.Beethoven"
"composer"
p9
E7
Activity
p7
p4
p15 was influenced by
p16 used specific object
p14 carried out by
u31 had responsibility of type
E21
Person
M31
Actor's
Function
E52
Time-Span
E53
Place
E1
CRM
Entity
E70
Thing
"Prinz Lobkowitz"
"commissioner"
"1809"
"Vienna"
"whatever"
"feather"

Describing a simple work

(a recap of the previous slides)

DOing
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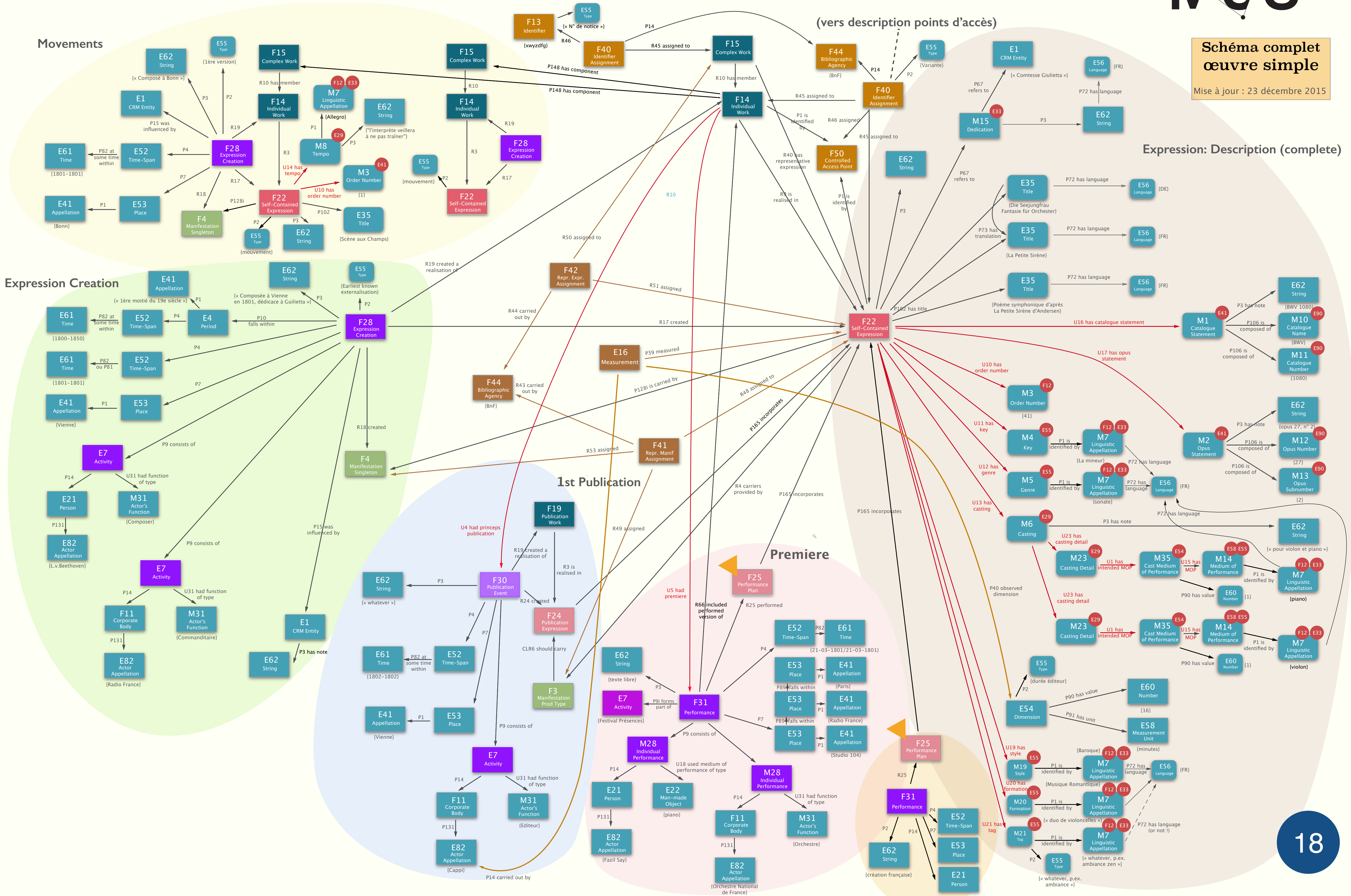
MUSical data

DOREMUS

Schéma complet œuvre simple

Mise à jour : 23 décembre 2015

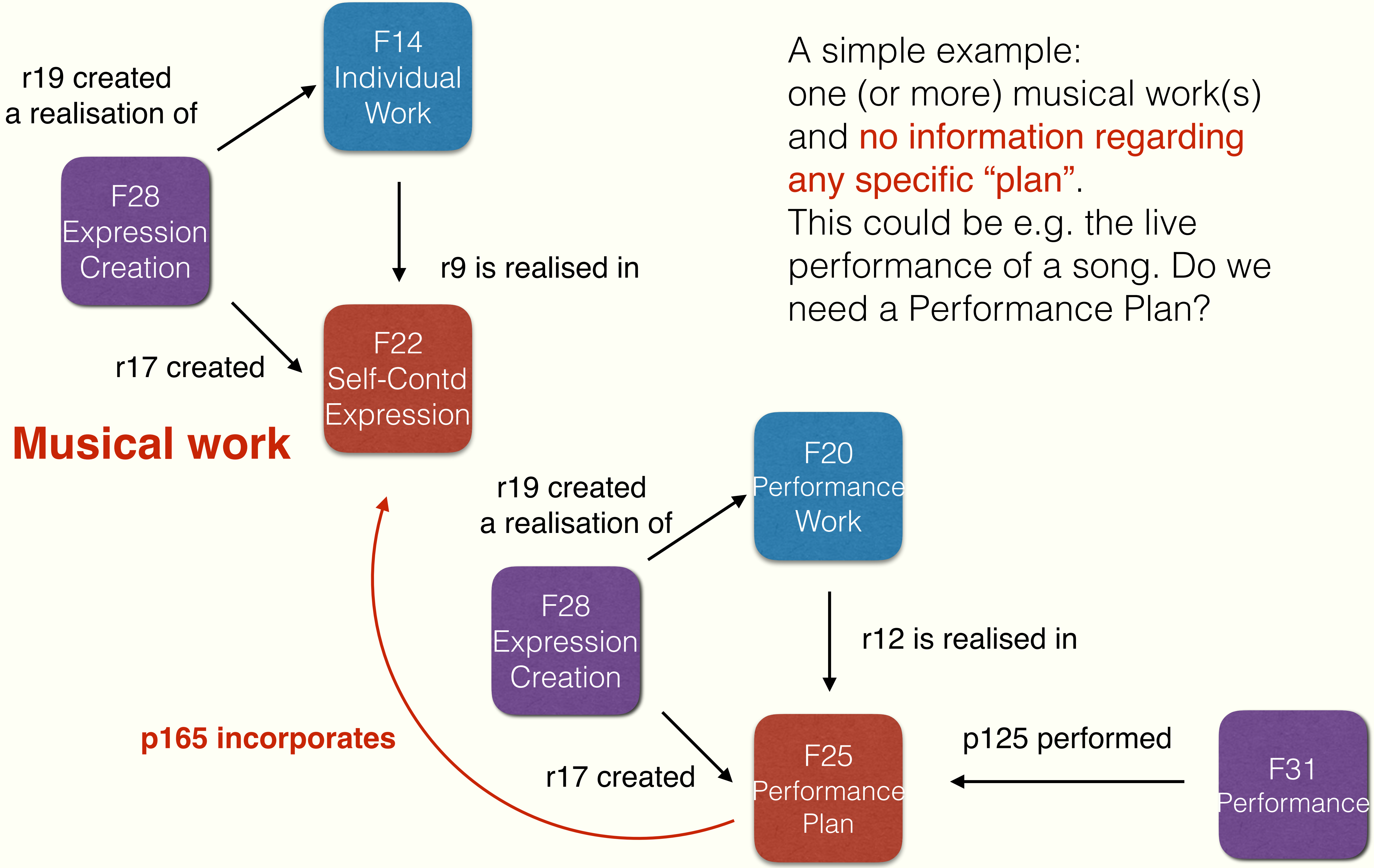

Movements
Expression Creation
1st Publication
Premiere
Expression: Description (complete)
(vers description points d'accès)
F15 Complex Work
F14 Individual Work
F28 Expression Creation
F22 Self-Contained Expression
F4 Manifestation Singleton
F13 Identifier
F40 Identifier Assignment
F44 Bibliographic Agency
F50 Controlled Access Point
F42 Repr. Expr. Assignment
F41 Repr. Manif Assignment
E16 Measurement
F19 Publication Work
F30 Publication Event
F24 Publication Expression
F3 Manifestation Prod Type
F25 Performance Plan
F31 Performance
M28 Individual Performance
E7 Activity
F11 Corporate Body
M31 Actor's Function
E82 Actor Appellation
E21 Person
E22 Man-made Object
E61 Time
E52 Time-Span
E53 Place
E41 Appellation
E4 Period
E62 String
E55 Type
E35 Title
E56 Language
E1 CRM Entity
M1 Catalogue Statement
M10 Catalogue Name
M11 Catalogue Number
M2 Opus Statement
M12 Opus Number
M13 Opus Subnumber
M3 Order Number
M4 Key
M5 Genre
M6 Casting
M7 Linguistic Appellation
M8 Tempo
M15 Dedication
M23 Casting Detail
M35 Cast Medium of Performance
M14 Medium of Performance
E54 Dimension
E60 Number
E58 Measurement Unit
M19 Style
M20 Formation
M21 Tag
[1ère version]
[« Composé à Bonn »]
(1801–1801)
[Bonn]
[Allegro]
["l'interprète veillera à ne pas traîner"]
[mouvement]
[Scène aux Champs]
[1]
[xwyzdfg]
[« N° de notice »]
[BnF]
[Variante]
[« Comtesse Giulietta »]
[FR]
[DE]
[Die Seejungfrau Fantaisie für Orchester]
[La Petite Sirène]
[Poème symphonique d'après La Petite Sirène d'Andersen]
[BWV 1080]
[1080]
[opus 27, n° 2]
[27]
[2]
[La mineur]
[sonate]
[« pour violon et piano »]
[piano]
[violon]
[durée éditeur]
[16]
[minutes]
[Baroque]
[Musique Romantique]
[« duo de violoncelles »]
[« whatever, p.ex. ambiance zen »]
[« 1ère moitié du 19e siècle »]
[« Composée à Vienne en 1801, dédicace à Guilietta »]
[Earliest known externalisation]
(1800–1850)
(1801–1801)
[Vienne]
[Composer]
[L.v.Beethoven]
[Commanditaire]
[Radio France]
(1802–1802)
[« whatever »]
[Editeur]
[Cappi]
[texte libre]
[Festival Présences]
[Fazil Say]
[Orchestre]
[Orchestre National de France]
[21-03-1801/21-03-1801]
[Paris]
[Radio France]
[Studio 104]
[création française]
R10 has member
P148 has component
R19 created a realisation of
R17 created
R18 created
R3 is realised in
P14 carried out by
P9 consists of
U31 had function of type
P131 is identified by
P72 has language
P102 has title
P3 has note
P1 is identified by
P2 has type
P4 has time-span
P7 took place at
P82 at some time within
P67 refers to
P73 has translation
U16 has catalogue statement
U17 has opus statement
U10 has order number
U11 has key
U12 has genre
U13 has casting
U23 has casting detail
U1 had intended MOP
U15 has MOP
U14 has tempo
U18 used medium of performance of type
U19 has style
U20 has formation
U21 has tag
U4 had princeps publication
U5 had premiere
R66 included performed version of
R25 performed
P165 incorporates
R4 carriers provided by
P128i is carried by
P15 was influenced by
P39 measured
P40 observed dimension
P90 has value
P91 has unit
R45 assigned to
R46 assigned
R40 has representative expression
R50 assigned to
R51 assigned
R53 assigned
R44 carried out by
R43 carried out by
R48 assigned to
R49 assigned
CLR6 should carry
P10 falls within
P106 is composed of
P89 falls within

Describing complex performances in DOREMUS

As mentioned in the previous presentations,
the modelling of performances includes
an intermediary step, the “performance plan”.

Why is this?

Performances (1/3)



r19 created a realisation of

F14 Individual Work

F28 Expression Creation

r9 is realised in

r17 created

F22 Self-Contd Expression

Musical work

r19 created a realisation of

F20 Performance Work

F28 Expression Creation

r12 is realised in

p165 incorporates

r17 created

F25 Performance Plan

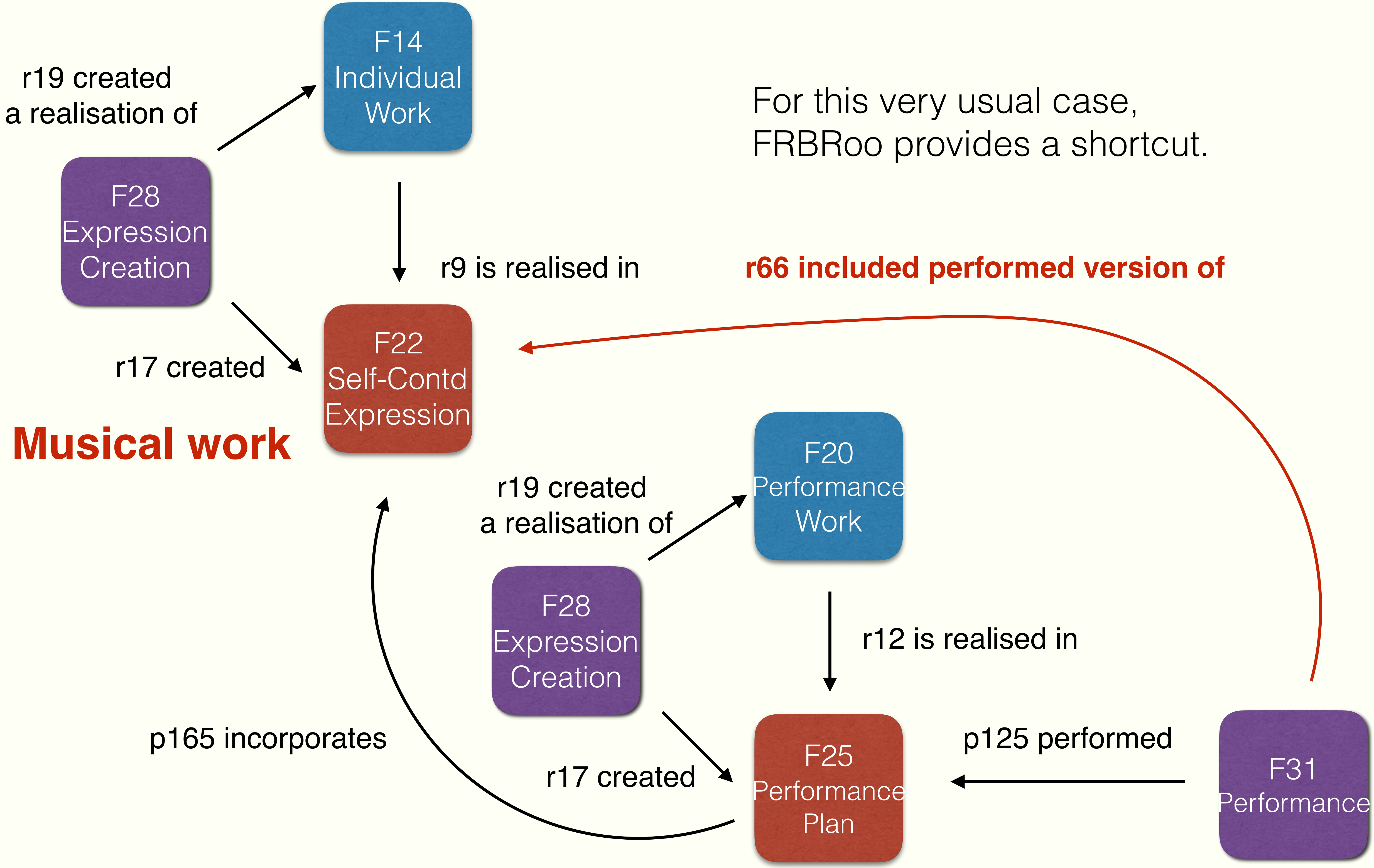
p125 performed

F31 Performance

A simple example:
one (or more) musical work(s) and no information regarding any specific “plan”.
This could be e.g. the live performance of a song. Do we need a Performance Plan?

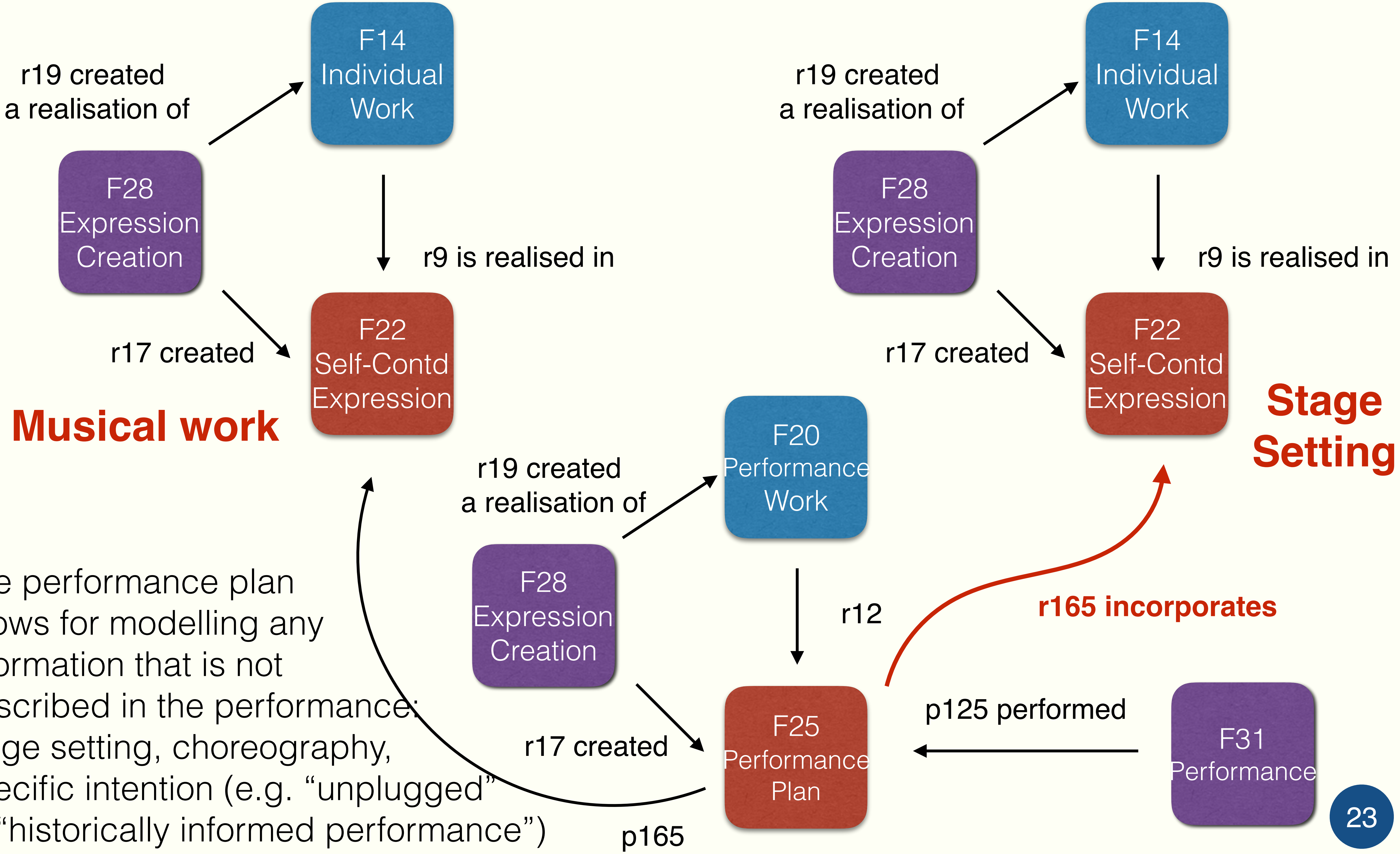
Performances (2/3)

For this very usual case, FRBRoo provides a shortcut.


r19 created
a realisation of
F14
Individual
Work
F28
Expression
Creation
r9 is realised in
r66 included performed version of
r17 created
F22
Self-Contd
Expression
r19 created
a realisation of
F20
Performance
Work
F28
Expression
Creation
r12 is realised in
p165 incorporates
r17 created
F25
Performance
Plan
p125 performed
F31
Performance

Musical work

Performances (3/3)



Musical work

F28 Expression Creation
r19 created a realisation of
F14 Individual Work
r9 is realised in
r17 created
F22 Self-Contd Expression

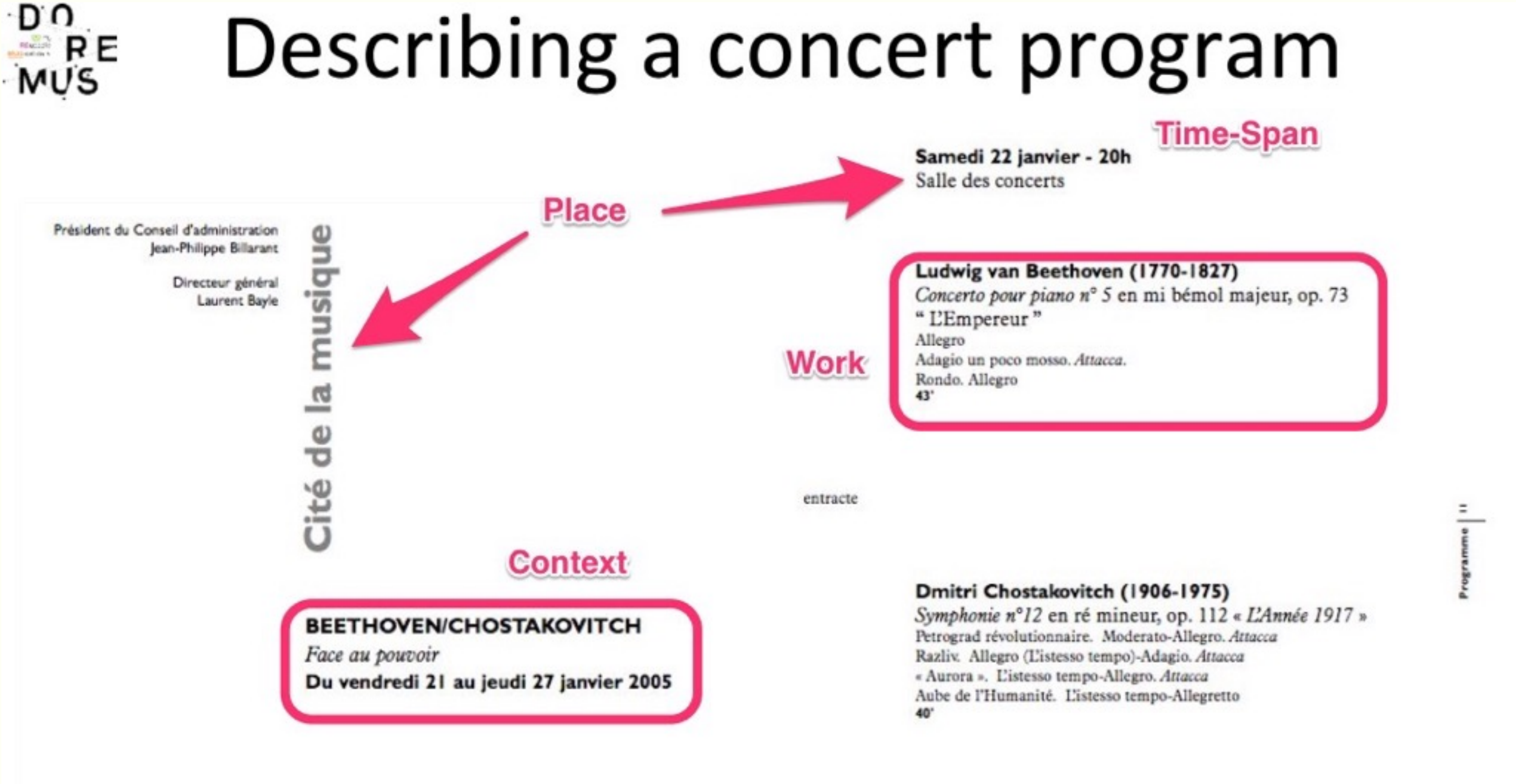
Stage Setting

F28 Expression Creation
r19 created a realisation of
F14 Individual Work
r9 is realised in
r17 created
F22 Self-Contd Expression

F28 Expression Creation
r19 created a realisation of
F20 Performance Work
r12
r17 created
F25 Performance Plan
p165
r165 incorporates
p125 performed
F31 Performance

The performance plan allows for modelling any information that is not described in the performance: stage setting, choreography, specific intention (e.g. “unplugged” or “historically informed performance”)

Remember Beethoven’s Concerto #5 ?
Let’s convert it into a graph !



Describing a concert program

Time-Span

Samedi 22 janvier - 20h
Salle des concerts

Place

Président du Conseil d'administration
Jean-Philippe Billarant

Directeur général
Laurent Bayle

Cité de la musique

Work

Ludwig van Beethoven (1770-1827)
Concerto pour piano n° 5 en mi bémol majeur, op. 73
“ L'Empereur ”
Allegro
Adagio un poco mosso. *Attacca.*
Rondo. Allegro
43'

entracte

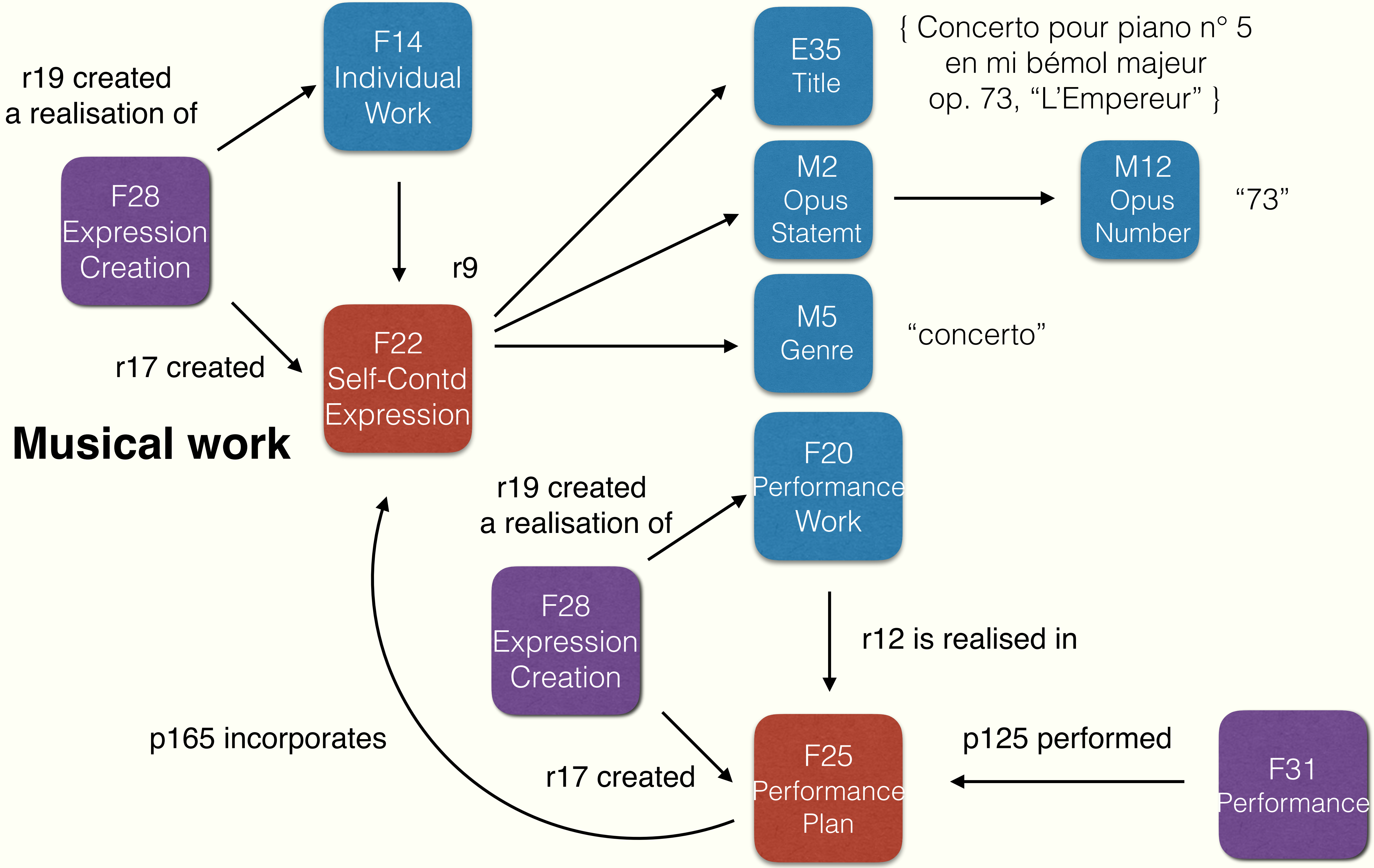
Context

BEETHOVEN/CHOSTAKOVITCH
Face au pouvoir
Du vendredi 21 au jeudi 27 janvier 2005

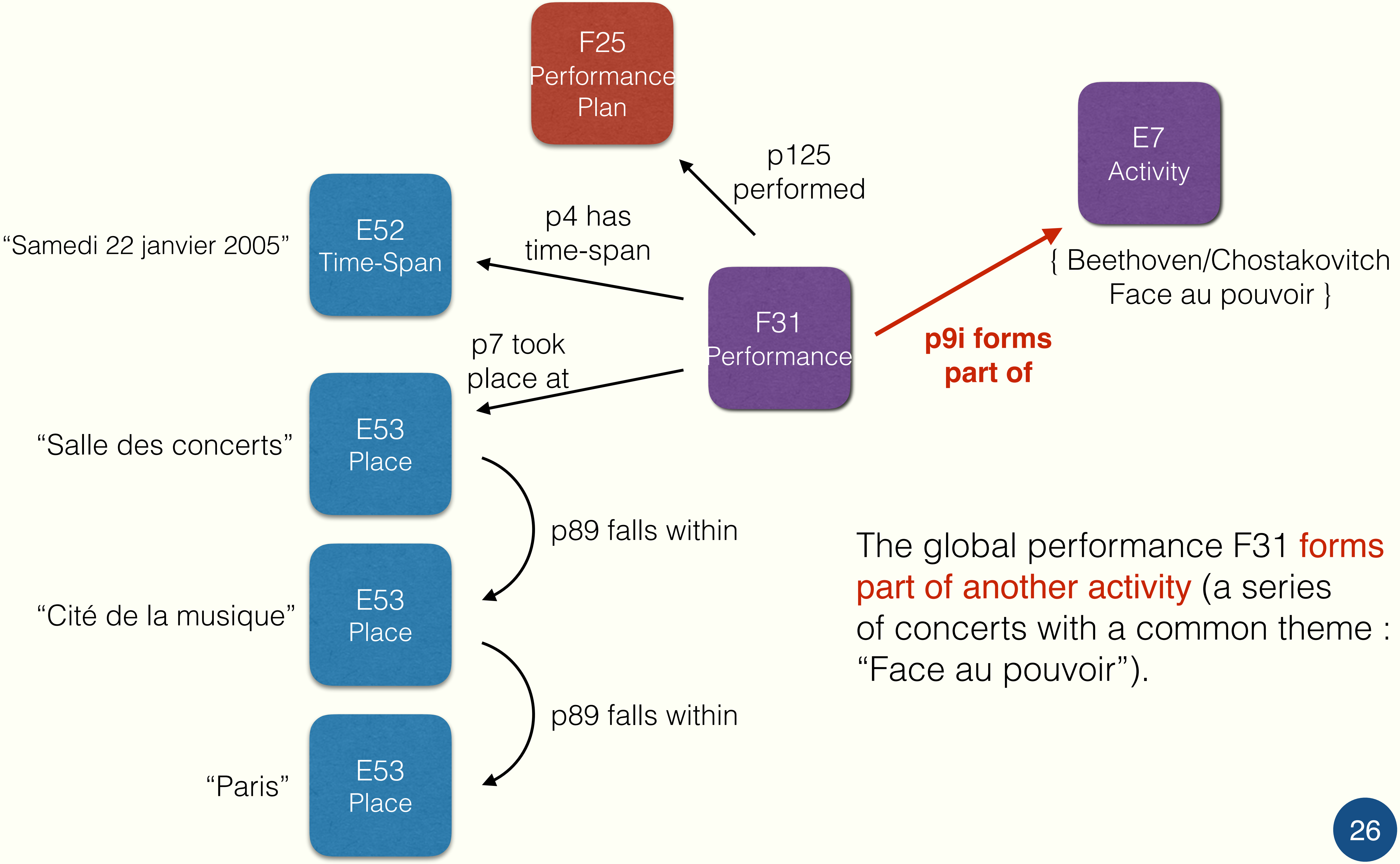
Dmitri Chostakovitch (1906-1975)
Symphonie n°12 en ré mineur, op. 112 « *L'Année 1917* »
Petrograd révolutionnaire. Moderato-Allegro. *Attacca*
Razliv. Allegro (L'istesso tempo)-Adagio. *Attacca*
« Aurora ». L'istesso tempo-Allegro. *Attacca*
Aube de l'Humanité. L'istesso tempo-Allegretto
40'

Programme | 11

Complex Performances: Beethoven's Concerto #5


r19 created
a realisation of
F14
Individual
Work
F28
Expression
Creation
r9
r17 created
F22
Self-Contd
Expression
Musical work
E35
Title
{ Concerto pour piano n° 5
en mi bémol majeur
op. 73, "L'Empereur" }
M2
Opus
Statemt
M12
Opus
Number
"73"
M5
Genre
"concerto"
r19 created
a realisation of
F20
Performance
Work
F28
Expression
Creation
r12 is realised in
p165 incorporates
r17 created
F25
Performance
Plan
p125 performed
F31
Performance

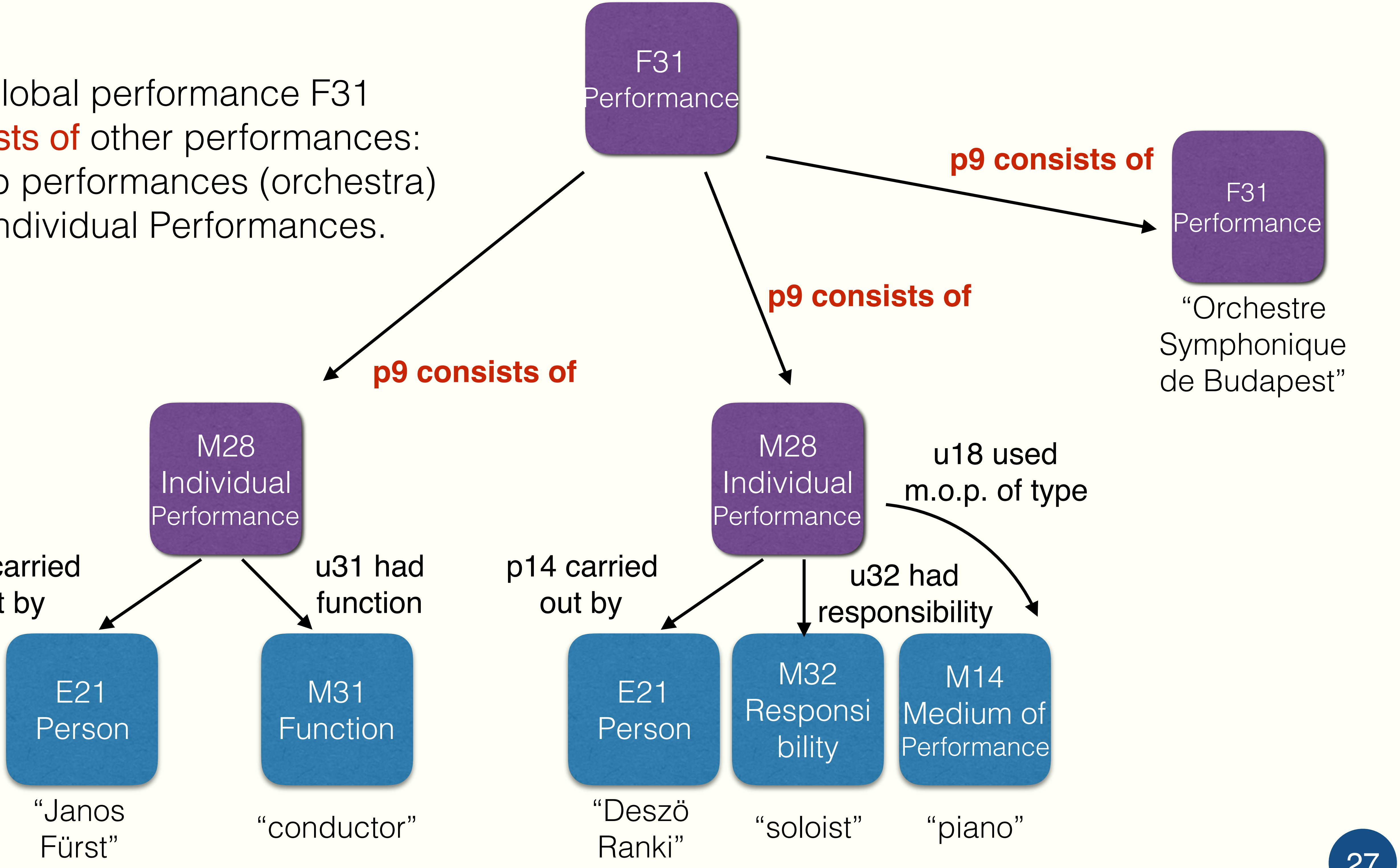
Complex Performances: Beethoven's Concerto #5


F25
Performance
Plan
p125
performed
E7
Activity
E52
Time-Span
"Samedi 22 janvier 2005"
p4 has
time-span
F31
Performance
{ Beethoven/Chostakovitch
Face au pouvoir }
p9i forms
part of
p7 took
place at
"Salle des concerts"
E53
Place
p89 falls within
"Cité de la musique"
E53
Place
p89 falls within
"Paris"
E53
Place

The global performance F31 forms part of another activity (a series of concerts with a common theme : "Face au pouvoir").

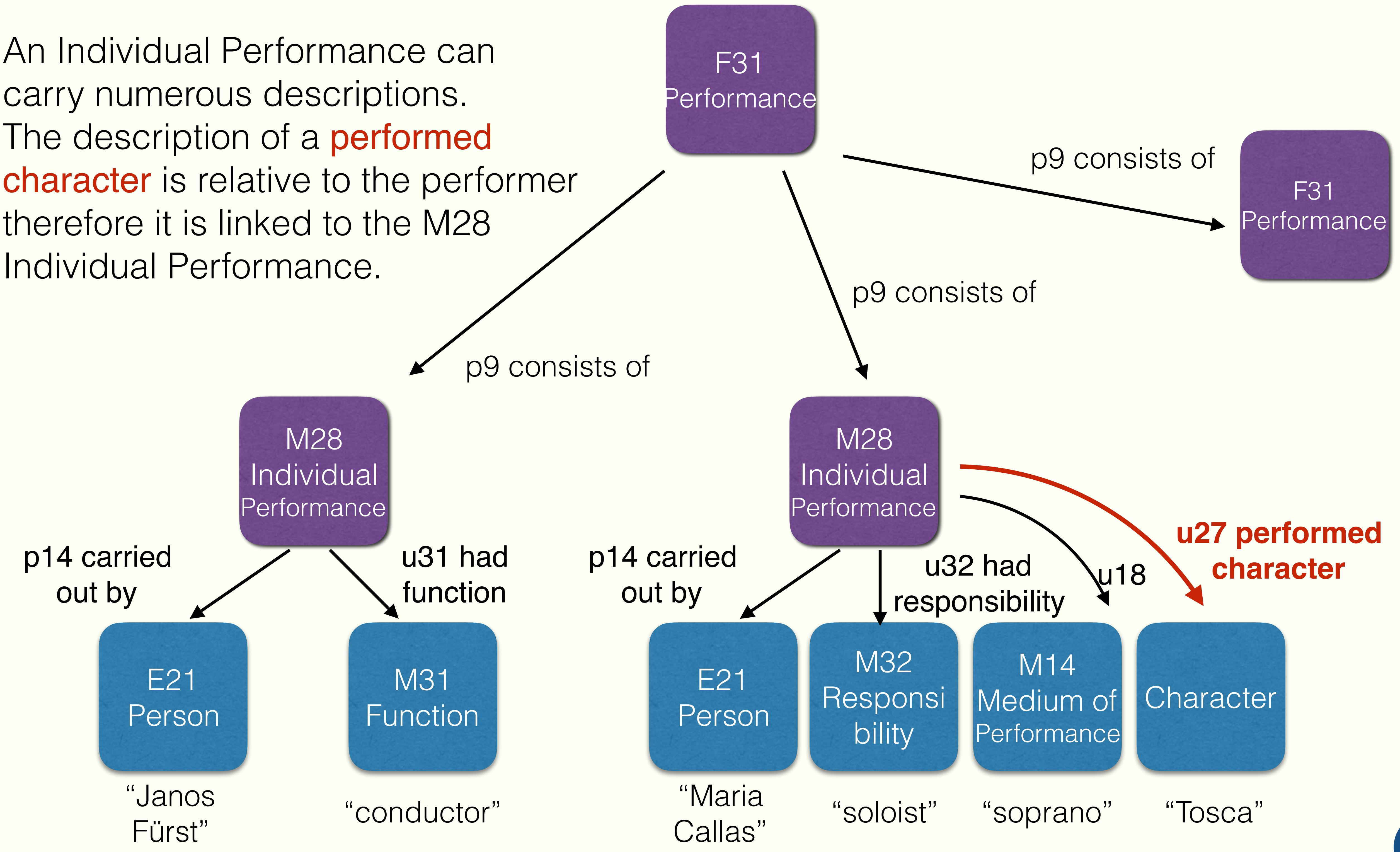
Complex Performances: Beethoven's Concerto #5

The global performance F31 consists of other performances: Group performances (orchestra) and Individual Performances.


F31 Performance
p9 consists of
F31 Performance
"Orchestre Symphonique de Budapest"
p9 consists of
p9 consists of
M28 Individual Performance
p14 carried out by
u31 had function
E21 Person
"Janos Fürst"
M31 Function
"conductor"
M28 Individual Performance
u18 used m.o.p. of type
p14 carried out by
u32 had responsibility
E21 Person
"Deszö Ranki"
M32 Responsibility
"soloist"
M14 Medium of Performance
"piano"

Complex Performances: Beethoven’s Concerto #5

An Individual Performance can carry numerous descriptions. The description of a performed character is relative to the performer therefore it is linked to the M28 Individual Performance.



F31 Performance

p9 consists of

F31 Performance

p9 consists of

p9 consists of

M28 Individual Performance

p14 carried out by

u31 had function

E21 Person

“Janos Fürst”

M31 Function

“conductor”

M28 Individual Performance

p14 carried out by

u32 had responsibility

u18

u27 performed character

E21 Person

“Maria Callas”

M32 Responsibility

“soloist”

M14 Medium of Performance

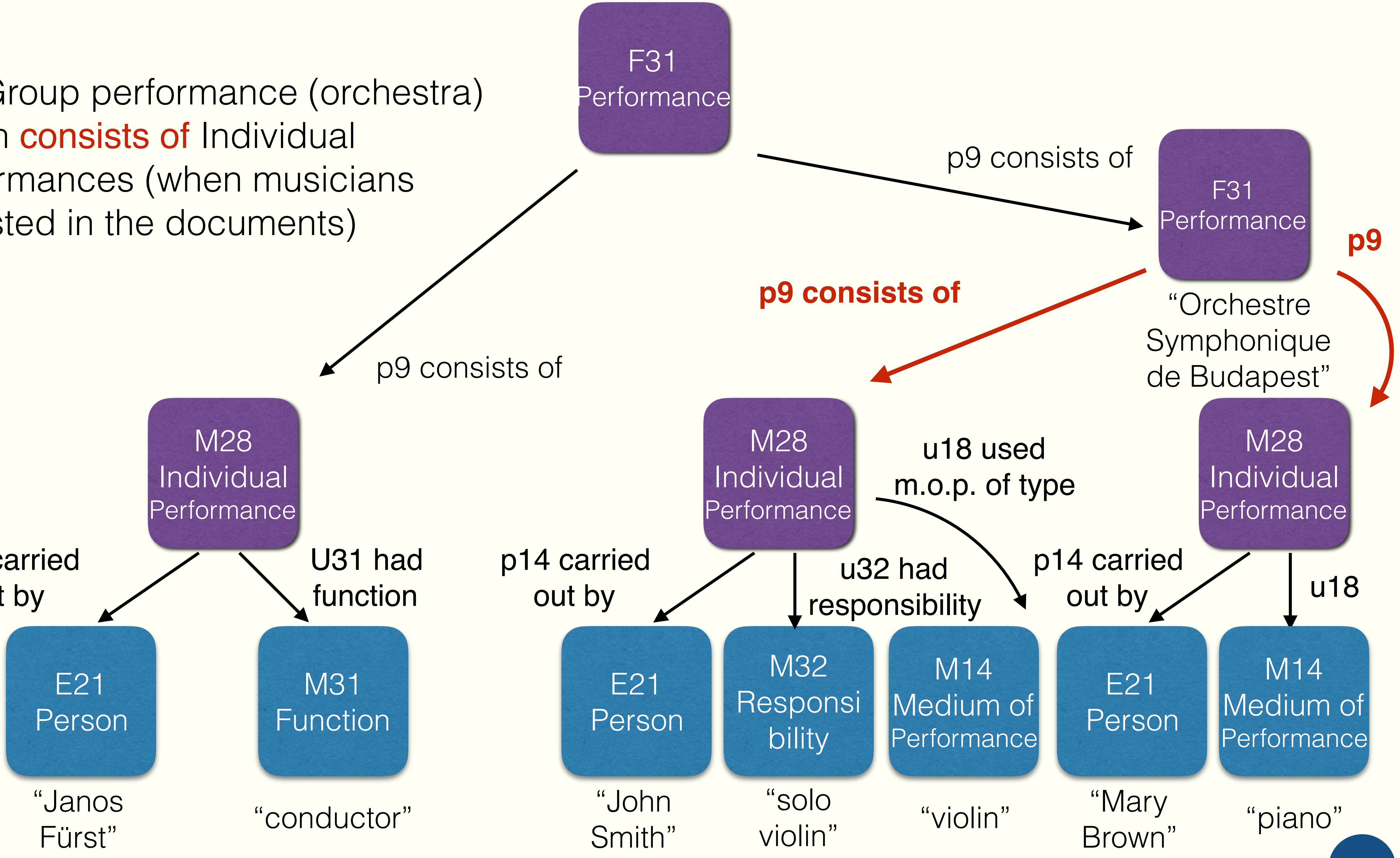
“soprano”

Character

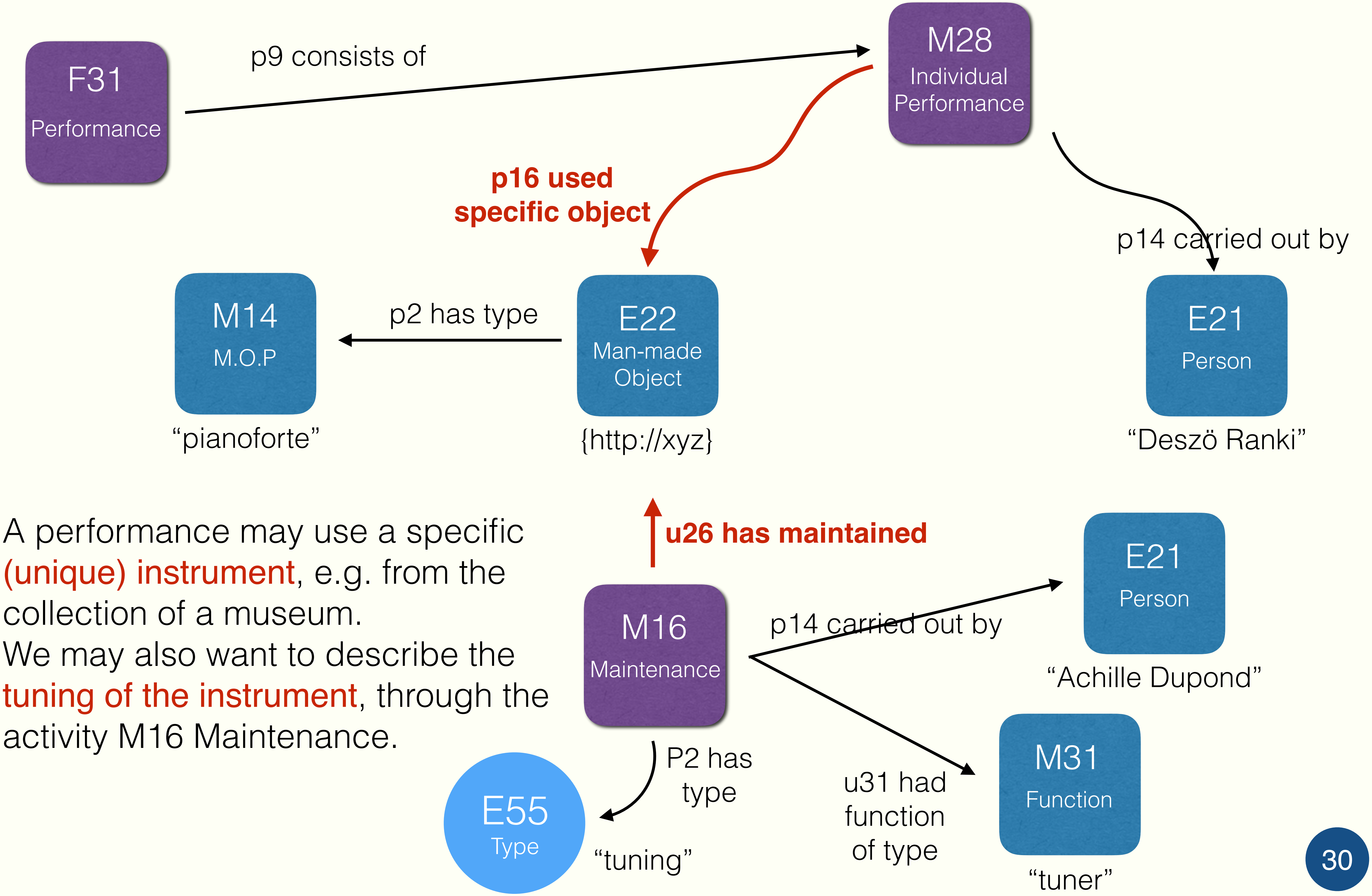
“Tosca”

Complex Performances: Beethoven’s Concerto #5

The Group performance (orchestra) in turn consists of Individual Performances (when musicians are listed in the documents)


F31
Performance
p9 consists of
F31
Performance
p9
p9 consists of
“Orchestre Symphonique de Budapest”
p9 consists of
M28
Individual
Performance
M28
Individual
Performance
u18 used m.o.p. of type
M28
Individual
Performance
p14 carried out by
U31 had function
p14 carried out by
u32 had responsibility
p14 carried out by
u18
E21
Person
M31
Function
E21
Person
M32
Responsibility
M14
Medium of Performance
E21
Person
M14
Medium of Performance
“Janos Fürst”
“conductor”
“John Smith”
“solo violin”
“violin”
“Mary Brown”
“piano”

Specific Instrument, Maintenance



F31
Performance

p9 consists of

M28
Individual Performance

p16 used specific object

p14 carried out by

M14
M.O.P
“pianoforte”

p2 has type

E22
Man-made Object
{http://xyz}

E21
Person
“Deszö Ranki”

u26 has maintained

M16
Maintenance

p14 carried out by

E21
Person
“Achille Dupond”

P2 has type

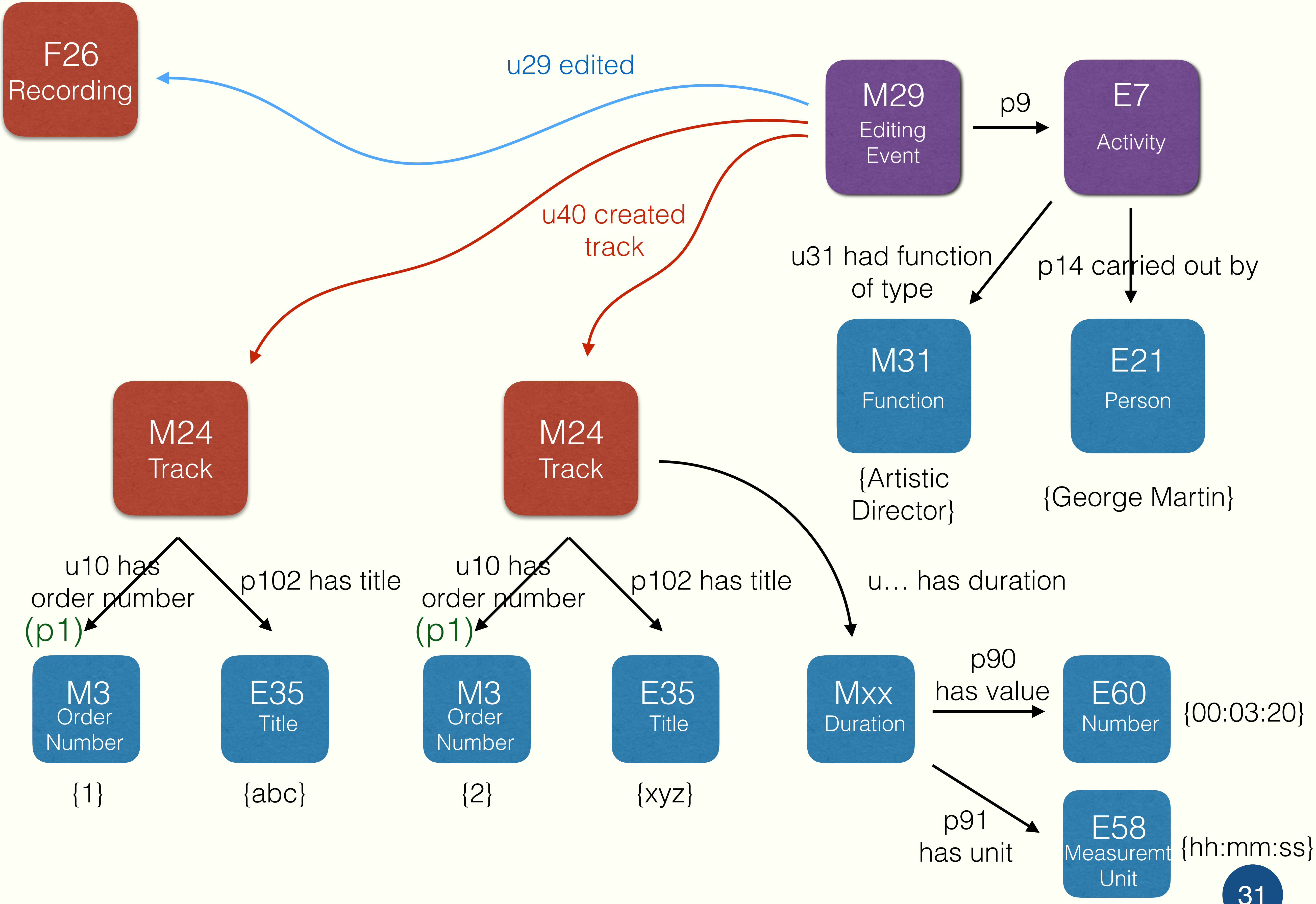
E55
Type
“tuning”

u31 had function of type

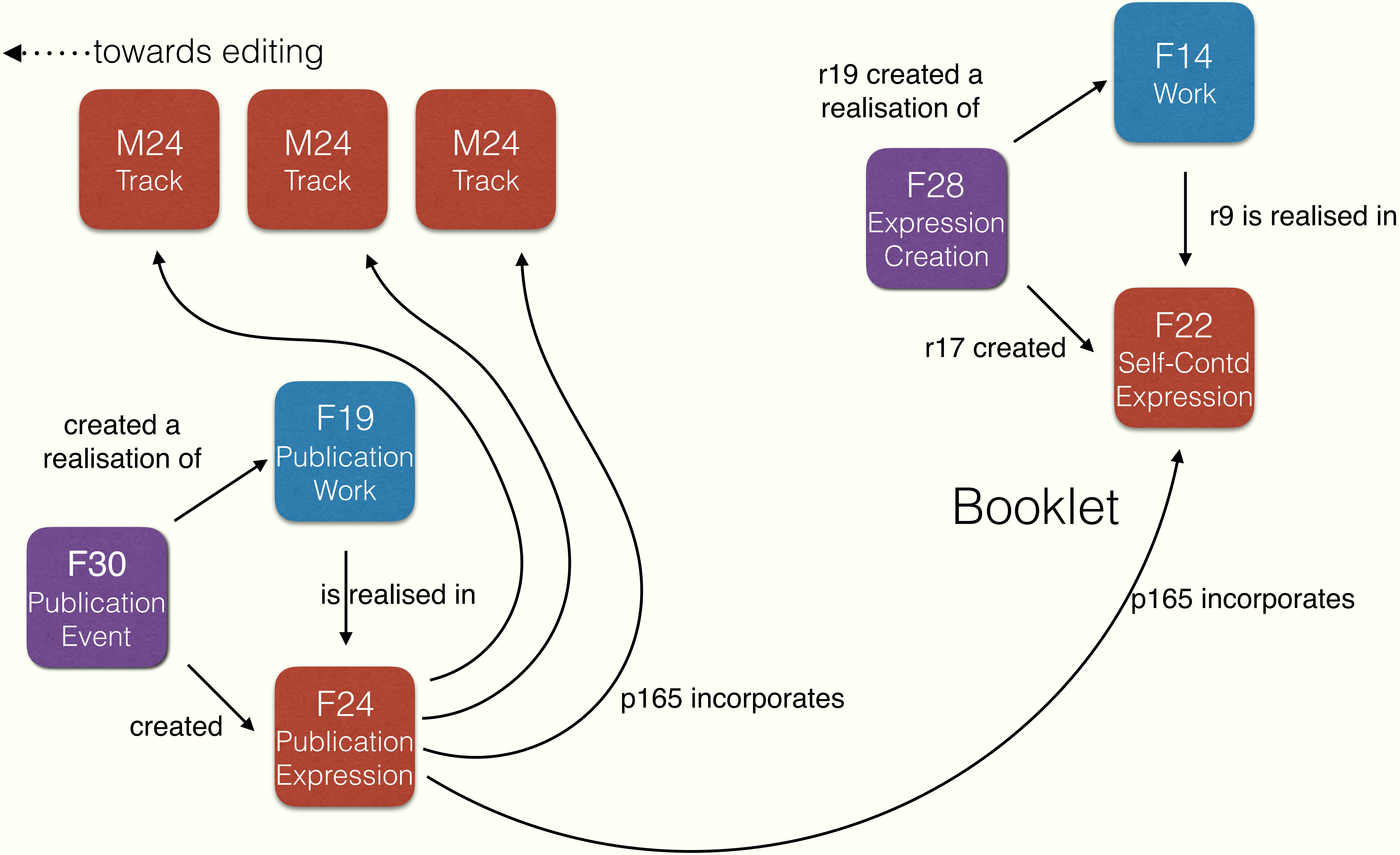
M31
Function
“tuner”

A performance may use a specific (unique) instrument, e.g. from the collection of a museum.
We may also want to describe the tuning of the instrument, through the activity M16 Maintenance.

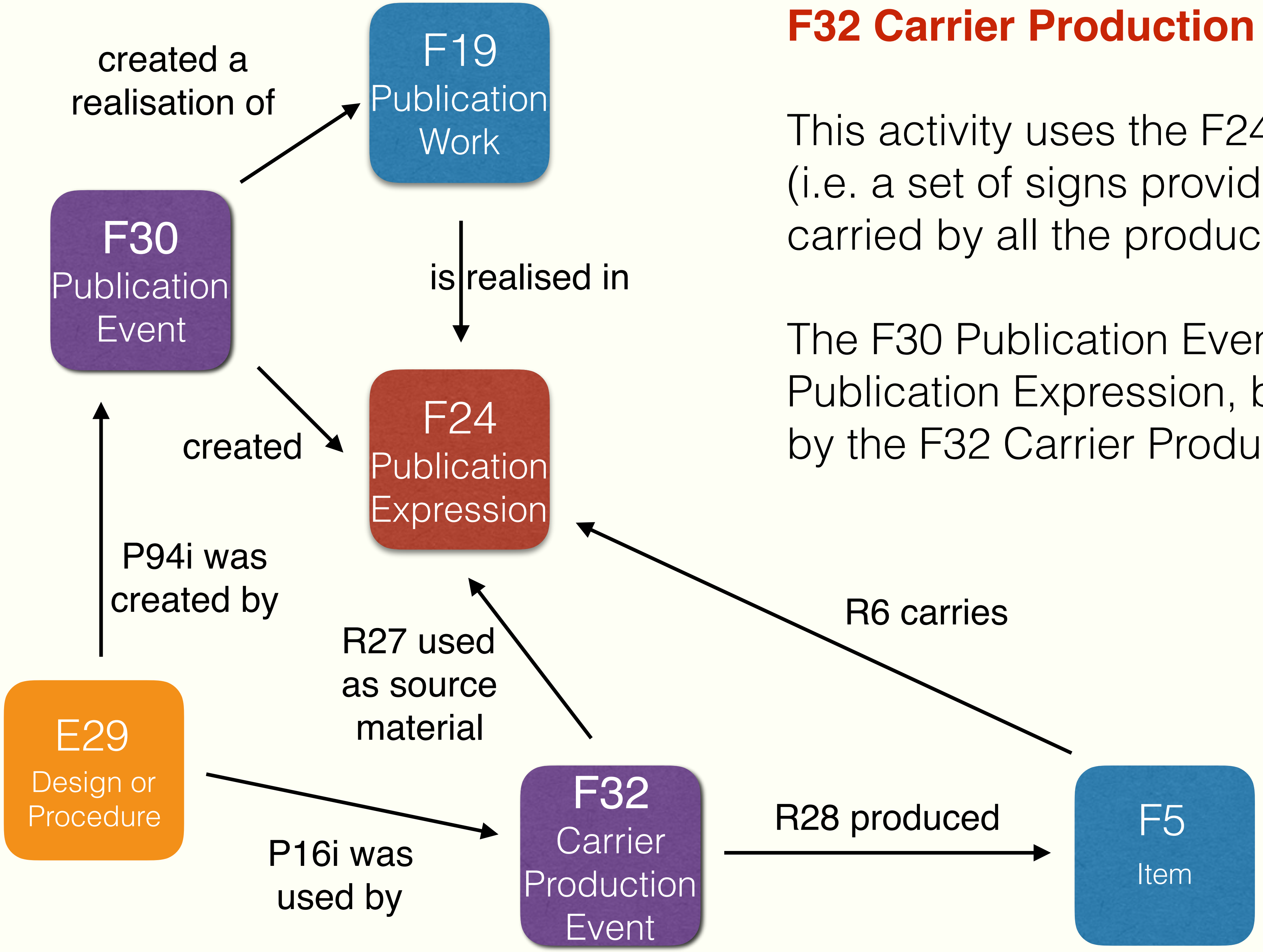
Editing


F26
Recording
u29 edited
M29
Editing
Event
p9
E7
Activity
u40 created
track
u31 had function
of type
p14 carried out by
M31
Function
{Artistic
Director}
E21
Person
{George Martin}
M24
Track
M24
Track
u10 has
order number
(p1)
p102 has title
u10 has
order number
(p1)
p102 has title
u… has duration
M3
Order
Number
{1}
E35
Title
{abc}
M3
Order
Number
{2}
E35
Title
{xyz}
Mxx
Duration
p90
has value
E60
Number
{00:03:20}
p91
has unit
E58
Measuremt
Unit
{hh:mm:ss}

Publishing, 1: Publication expression


towards editing
M24 Track
M24 Track
M24 Track
r19 created a realisation of
F14 Work
F28 Expression Creation
r9 is realised in
r17 created
F22 Self-Contd Expression
created a realisation of
F19 Publication Work
Booklet
F30 Publication Event
is realised in
p165 incorporates
created
F24 Publication Expression
p165 incorporates

Publishing, 2 : Item



created a realisation of

F19 Publication Work

F30 Publication Event

is realised in

created

F24 Publication Expression

P94i was created by

R27 used as source material

R6 carries

E29 Design or Procedure

P16i was used by

F32 Carrier Production Event

R28 produced

F5 Item

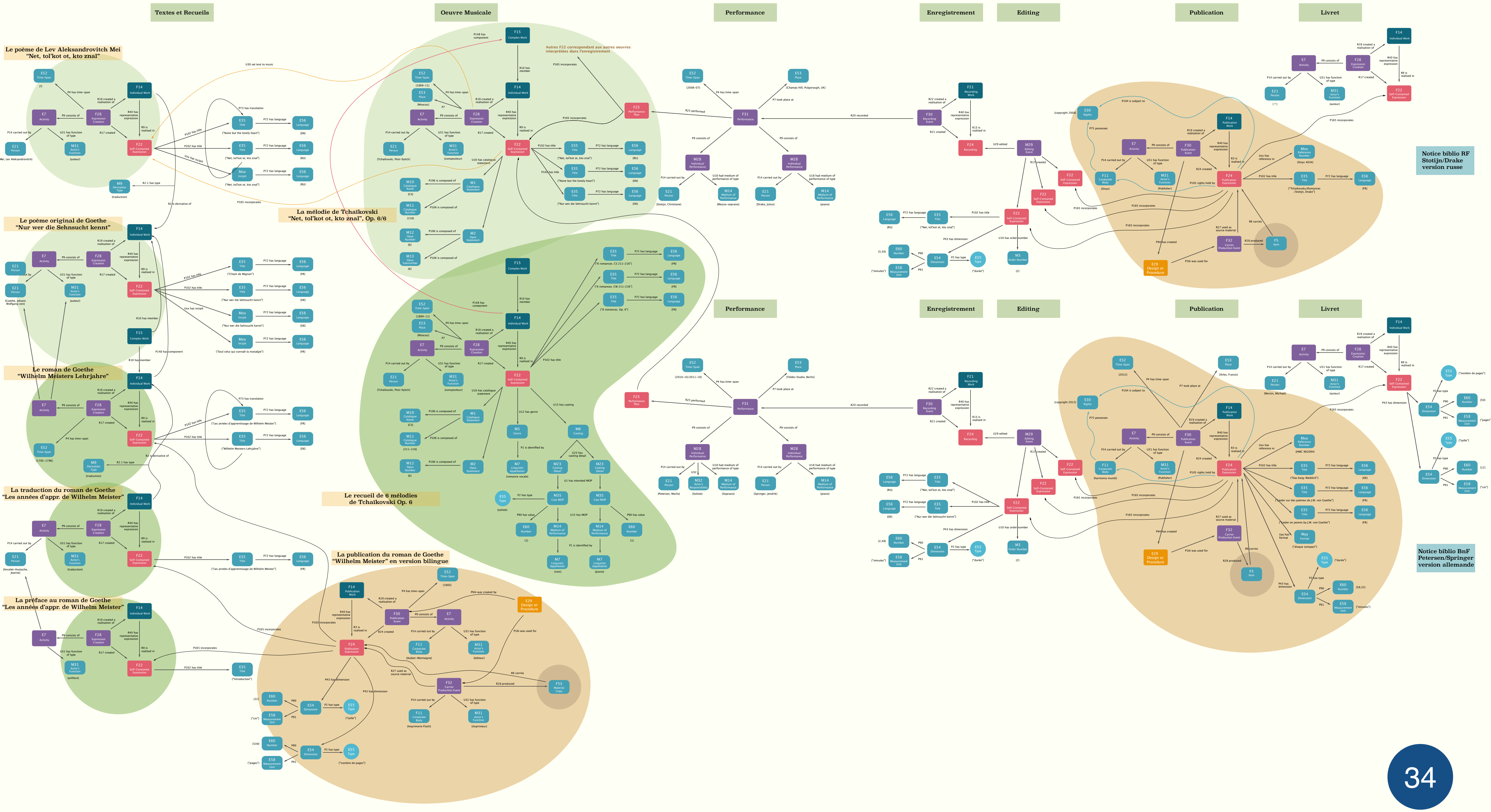
The item is produced by a production activity: **F32 Carrier Production Event**.

This activity uses the F24 Publication Expression, (i.e. a set of signs provide by the publisher, to be carried by all the produced items).

The F30 Publication Event created not only the Publication Expression, but also a procedure, used by the F32 Carrier Production Event

All together now:
“Nur wer die Sehnsucht kennt”

DOing
REusable
MUSical data


Textes et Recueils
Oeuvre Musicale
Performance
Enregistrement
Editing
Publication
Livret
Le poème de Lev Aleksandrovitch Mei “Net, tol’kot ot, kto znal”
Le poème original de Goethe “Nur wer die Sehnsucht kennt”
Le roman de Goethe “Wilhelm Meisters Lehrjahre”
La traduction du roman de Goethe “Les années d’appr. de Wilhelm Meister”
La préface au roman de Goethe “Les années d’appr. de Wilhelm Meister”
La mélodie de Tchaïkovski “Net, tol’kot ot, kto znal”, Op. 6/6
Le recueil de 6 mélodies de Tchaïkovski Op. 6
La publication du roman de Goethe “Wilhelm Meister” en version bilingue
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Notice biblio BnF Petersen/Springer version allemande