

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/8/phon-inferred>

Other visualisation : [Ontology source](#) - [WebVowl](#)

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Classes

[action](#) [agent](#) [analogic photo](#) [antique photo](#) [author](#) [bag](#) [camera](#) [city](#) [collection](#) [collective](#) [collective agent](#) [concept](#) [d s l r](#) [description](#) [digital camera](#) [digital photo](#) [genre](#) [information object](#) [information realization](#) [instant camera](#) [item](#) [lens](#) [list](#) [list item](#) [location](#) [long series](#) [mirrorless](#) [modern photo](#) [nation](#) [object](#) [person](#) [phone camera](#) [photo](#) [photo series](#) [photographic medium](#) [physical agent](#) [physical place](#) [place](#) [popular camera](#) [portrait](#) [s l r](#) [series item](#) [short series](#) [social agent](#) [subject](#)

[action](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#Action>

has super-classes

[has participant](#)^{op} [some agent](#)^c

[agent](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#Agent>

has super-classes

[object](#)^c

[has location](#)^{op} [some entity](#)^c

has sub-classes

[author](#)^c , [person](#)^c , [physical agent](#)^c , [social agent](#)^c , [subject](#)^c

is in domain of

[acts for](#)^{op} , [conceptualizes](#)^{op} , [is agent included in](#)^{op} , [is agent involved in](#)^{op}

is in range of

[acts through](#)^{op} , [includes agent](#)^{op} , [involves agent](#)^{op} , [is conceptualized by](#)^{op}

has members

[dorothea lange](#)ⁱⁿ , [earth](#)ⁱⁿ , [florence owens thompson](#)ⁱⁿ , [n a s a](#)ⁱⁿ , [nameless family](#)ⁱⁿ , [travel1](#)ⁱⁿ

analogic photo^c

[back to ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#AnalogicPhoto>

is equivalent to

[medium](#)^{op} **some** { [film](#) }

has super-classes

[photo](#)^c

[medium](#)^{op} **some** { [film](#) }

has members

[the migrant mother](#)ⁿⁱ

is disjoint with

[concept](#)^c, [description](#)^c, [social agent](#)^c, [digital photo](#)^c

antique photo^c

[back to ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#AntiquePhoto>

has super-classes

[photo](#)^c

is disjoint with

[concept](#)^c, [description](#)^c, [social agent](#)^c, [modern photo](#)^c

author^c

[back to ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Author>

has super-classes

[agent](#)^c

is in domain of

[shot](#)^{op}

is in range of

[author](#)^{op}, [shot by](#)^{op}

has members

[dorothea lange](#)ⁿⁱ, [n a s a](#)ⁿⁱ, [voyager1](#)ⁿⁱ

bag^c

[back to ToC](#) or [Class ToC](#)

IRI: <http://www.ontologydesignpatterns.org/cp/owl/bag.owl#Bag>

has super-classes

[collection](#)^c

has sub-classes

[list](#)^c

is in domain of

[has item](#)^{op}

is in range of

[item of](#)^{op}

has members

[family portrait](#)ⁿⁱ

is disjoint with

[item^c](#), [list item^c](#), [series item^c](#)

camera^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Camera>

has super-classes

[gear^c](#)

has sub-classes

[digital camera^c](#), [instant camera^c](#), [popular camera^c](#), [s l r^c](#)

is in range of

[camera^{op}](#)

has members

[4x5 graflexⁿⁱ](#), [i s sⁿⁱ](#)

city^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#City>

has super-classes

[place^c](#)

[location^c](#)

collection^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.ontologydesignpatterns.org/cp/owl/collectionentity.owl#Collection>

has sub-classes

[bag^c](#), [genre^c](#), [list^c](#)

is in domain of

[has member^{op}](#), [size^{dp}](#)

is in range of

[genre^{op}](#), [is member of^{op}](#)

has members

[astro photographyⁿⁱ](#), [family portraitⁿⁱ](#), [glamourⁿⁱ](#), [landscapeⁿⁱ](#), [portraitⁿⁱ](#), [space photographyⁿⁱ](#)

is disjoint with

[item^c](#), [list item^c](#), [series item^c](#)

collective^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#Collective>

has super-classes

[has member^{op}](#) [only agent^c](#)

collective agent^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#CollectiveAgent>

has super-classes

[acts through](#)^{op} [some agent](#)^c

[concept](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#Concept>

is disjoint with

[information object](#)^c, [analogic photo](#)^c, [antique photo](#)^c, [digital photo](#)^c, [modern photo](#)^c, [photo](#)^c, [portrait](#)^c

[d s l r](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#DSLr>

has super-classes

[digital camera](#)^c

[description](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#Description>

is disjoint with

[information object](#)^c, [analogic photo](#)^c, [antique photo](#)^c, [digital photo](#)^c, [modern photo](#)^c, [photo](#)^c, [portrait](#)^c

[digital camera](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#DigitalCamera>

has super-classes

[camera](#)^c

has sub-classes

[d s l r](#)^c, [mirrorless](#)^c, [phone camera](#)^c

[digital photo](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#DigitalPhoto>

is equivalent to

[medium](#)^{op} [some](#) { [digital](#) }

has super-classes

[photo](#)^c

[medium](#)^{op} [some](#) { [digital](#) }

has members

[pale blue dot](#)ⁿⁱ

is disjoint with

[concept](#)^c, [description](#)^c, [social agent](#)^c, [analogic photo](#)^c

[genre](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Genre>

has super-classes

collection ^c
is in range of
genre ^{op}
has members
astro photography ⁿⁱ , glamour ⁿⁱ , landscape ⁿⁱ , portrait ⁿⁱ , space photography ⁿⁱ
is disjoint with
item ^c , list item ^c , series item ^c

information object ^c	back to ToC or Class ToC
IRI: http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#InformationObject	
has super-classes	
information entity ^c	
social object ^c	
has sub-classes	
photo ^c	
is in domain of	
date ^{dp} , expresses ^{op} , expresses concept ^{op} , height ^{dp} , is about ^{op} , is realized by ^{op} , name ^{dp} , title ^{dp} , width ^{dp} , year ^{dp}	
is in range of	
is concept expressed by ^{op} , is expressed by ^{op} , is reference of ^{op} , realizes ^{op}	
has members	
dorothea lange ⁿⁱ , jupiter ⁿⁱ , neptune ⁿⁱ , pale blue dot ⁿⁱ , saturn ⁿⁱ , the migrant mother ⁿⁱ , uranus ⁿⁱ , venus ⁿⁱ	
is disjoint with	
concept ^c , description ^c , social agent ^c	

information realization ^c	back to ToC or Class ToC
IRI: http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#InformationRealization	
has super-classes	
realizes ^{op} some information object ^c	
is in domain of	
realizes ^{op}	

instant camera ^c	back to ToC or Class ToC
IRI: http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#InstantCamera	
has super-classes	
camera ^c	

item ^c	back to ToC or Class ToC
IRI: http://www.ontologydesignpatterns.org/cp/owl/bag.owl#Item	
has super-classes	
thing ^c	
item content ^{op} exactly 1	
has sub-classes	

<div> <div> list item^C </div> <div> is in domain of <div> item content^{OP}, item of^{OP} </div> </div> <div> is in range of <div> has item^{OP} </div> </div> <div> has members <div> fp1ⁿⁱ, fp2ⁿⁱ, fp3ⁿⁱ, fp4ⁿⁱ, fp5ⁿⁱ, fp6ⁿⁱ </div> </div> <div> is disjoint with <div> bag^C, collection^C, list^C, genre^C, long series^C, photo series^C, short series^C </div> </div> </div>	
<div> <div> lens^C </div> <div> <div>back to ToC or Class ToC</div> </div> </div> <div> IRI: http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Lens </div> <div> has super-classes <div> gear^C </div> </div> <div> is in range of <div> lens^{OP} </div> </div> <div> has members <div> 1500mm n aⁿⁱ, 200mm w aⁿⁱ </div> </div>	
<div> <div> list^C </div> <div> <div>back to ToC or Class ToC</div> </div> </div> <div> IRI: http://www.ontologydesignpatterns.org/cp/owl/list.owl#List </div> <div> has super-classes <div> bag^C collection^C </div> </div> <div> has sub-classes <div> photo series^C </div> </div> <div> is in domain of <div> has first item^{OP}, has last item^{OP} </div> </div> <div> is in range of <div> first item of^{OP}, last item of^{OP} </div> </div> <div> has members <div> family portraitⁿⁱ </div> </div> <div> is disjoint with <div> item^C, list item^C, series item^C </div> </div>	
<div> <div> list item^C </div> <div> <div>back to ToC or Class ToC</div> </div> </div> <div> IRI: http://www.ontologydesignpatterns.org/cp/owl/list.owl#ListItem </div> <div> has super-classes <div> item^C item content^{OP} exactly 1 </div> </div> <div> has sub-classes <div> series item^C </div> </div> <div> is in domain of <div> first item of^{OP}, last item of^{OP}, next item^{OP}, previous item^{OP} </div> </div> <div> is in range of </div>	

[has first item](#)^{op}, [has last item](#)^{op}, [next item](#)^{op}, [previous item](#)^{op}

has members

[fp1](#)ⁿⁱ, [fp2](#)ⁿⁱ, [fp3](#)ⁿⁱ, [fp4](#)ⁿⁱ, [fp5](#)ⁿⁱ, [fp6](#)ⁿⁱ

is disjoint with

[bag](#)^c, [collection](#)^c, [list](#)^c, [genre](#)^c, [long series](#)^c, [photo series](#)^c, [short series](#)^c

location^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Location>

has super-classes

[entity](#)^c

[physical place](#)^c

has sub-classes

[city](#)^c, [nation](#)^c

is in range of

[location](#)^{op}

has members

[california](#)ⁿⁱ, [solar system](#)ⁿⁱ

long series^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#LongSeries>

has super-classes

[photo series](#)^c

is disjoint with

[item](#)^c, [list item](#)^c, [series item](#)^c, [short series](#)^c

mirrorless^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Mirrorless>

has super-classes

[digital camera](#)^c

modern photo^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#ModernPhoto>

has super-classes

[photo](#)^c

has members

[pale blue dot](#)ⁿⁱ, [the migrant mother](#)ⁿⁱ

is disjoint with

[concept](#)^c, [description](#)^c, [social agent](#)^c, [antique photo](#)^c

nation^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Nation>

has super-classes[place^c](#)[location^c](#)**object^c**[back to ToC](#) or [Class ToC](#)**IRI:** <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#Object>**has super-classes**[entity^c](#)[has location^{op}](#) **some** [entity^c](#)**has sub-classes**[agent^c](#)**is in domain of**[acts for^{op}](#), [conceptualizes^{op}](#), [is agent included in^{op}](#), [is agent involved in^{op}](#)**is in range of**[acts through^{op}](#), [is conceptualized by^{op}](#)**has members**[dorothea langeⁿⁱ](#), [earthⁿⁱ](#), [florence owens thompsonⁿⁱ](#), [n a s aⁿⁱ](#), [nameless familyⁿⁱ](#), [voyager1ⁿⁱ](#)**person^c**[back to ToC](#) or [Class ToC](#)**IRI:** <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#Person>**has super-classes**[agent^c](#)**has members**[florence owens thompsonⁿⁱ](#)**phone camera^c**[back to ToC](#) or [Class ToC](#)**IRI:** <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#PhoneCamera>**has super-classes**[digital camera^c](#)**photo^c**[back to ToC](#) or [Class ToC](#)**IRI:** <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Photo>**has super-classes**[still image^c](#)[information object^c](#)**has sub-classes**[analogic photo^c](#), [antique photo^c](#), [digital photo^c](#), [modern photo^c](#), [portrait^c](#)**is in domain of**[camera^{op}](#), [date^{dp}](#), [height^{dp}](#), [lens^{op}](#), [medium^{op}](#), [name^{dp}](#), [shot by^{op}](#), [shot with^{op}](#), [subject^{op}](#), [title^{dp}](#), [width^{dp}](#), [year^{dp}](#)**is in range of**[contains photo^{op}](#), [shot^{op}](#)**has members**

[dorothea lange](#)ⁿⁱ, [jupiter](#)ⁿⁱ, [neptune](#)ⁿⁱ, [pale blue dot](#)ⁿⁱ, [saturn](#)ⁿⁱ, [the migrant mother](#)ⁿⁱ, [uranus](#)ⁿⁱ, [venus](#)ⁿⁱ

is disjoint with

[concept](#)^c, [description](#)^c, [social agent](#)^c

[photo series](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#PhotoSeries>

has super-classes

[series](#)^c

[list](#)^c

has sub-classes

[long series](#)^c, [short series](#)^c

is in domain of

[has photo](#)^{op}

is in range of

[in series](#)^{op}

has members

[family portrait](#)ⁿⁱ

is disjoint with

[item](#)^c, [list item](#)^c, [series item](#)^c

[photographic medium](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#PhotographicMedium>

is equivalent to

{ [digital](#), [film](#) }

has super-classes

[storage medium](#)^c

{ [digital](#), [film](#) }

is in range of

[medium](#)^{op}

has members

[digital](#)ⁿⁱ, [film](#)ⁿⁱ, [film](#)ⁿⁱ, [gelatin silver print](#)ⁿⁱ

[physical agent](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#PhysicalAgent>

has super-classes

[agent](#)^c

[physical place](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#PhysicalPlace>

has super-classes

[physical object](#)^c

has sub-classes

[location](#)^c, [place](#)^c

is in range of

[location](#)^{op}

has members

[california](#)ⁿⁱ, [solar system](#)ⁿⁱ

[place](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#Place>

is equivalent to

[location](#)^c

has super-classes

[entity](#)^c

[physical place](#)^c

[is location of](#)^{op} **min** 1

has sub-classes

[city](#)^c, [nation](#)^c

has members

[california](#)ⁿⁱ, [solar system](#)ⁿⁱ

[popular camera](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#PopularCamera>

is equivalent to

[used to shoot](#)^{op} **min** 4 [photo](#)^c

has super-classes

[camera](#)^c

has members

[i s](#)ⁿⁱ

[portrait](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Portrait>

has super-classes

[photo](#)^c

has members

[the migrant mother](#)ⁿⁱ

is disjoint with

[concept](#)^c, [description](#)^c, [social agent](#)^c

is also defined as

[named individual](#)

[s l r](#)^c

back to [ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#SLR>

has super-classes

[camera](#)^c

series item^c

[back to ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#SeriesItem>

has super-classes

[list item^c](#)

is in domain of

[contains photo^{op}](#), [in series^{op}](#), [next in series^{op}](#), [previous in series^{op}](#)

is in range of

[has photo^{op}](#), [next in series^{op}](#), [previous in series^{op}](#)

has members

[fp1ⁿⁱ](#), [fp2ⁿⁱ](#), [fp3ⁿⁱ](#), [fp4ⁿⁱ](#), [fp5ⁿⁱ](#), [fp6ⁿⁱ](#)

is disjoint with

[bag^c](#), [collection^c](#), [list^c](#), [genre^c](#), [long series^c](#), [photo series^c](#), [short series^c](#)

short series^c

[back to ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#ShortSeries>

has super-classes

[photo series^c](#)

is disjoint with

[item^c](#), [list item^c](#), [long series^c](#), [series item^c](#)

social agent^c

[back to ToC](#) or [Class ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#SocialAgent>

has super-classes

[agent^c](#)

is disjoint with

[information object^c](#), [analogic photo^c](#), [antique photo^c](#), [digital photo^c](#), [modern photo^c](#), [photo^c](#), [portrait^c](#)

subject^c

[back to ToC](#) or [Class ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Subject>

has super-classes

[agent^c](#)

is in range of

[subject^{op}](#)

has members

[earthⁿⁱ](#), [florence owens thompsonⁿⁱ](#), [nameless familyⁿⁱ](#)

Object Properties

[acts for](#) [acts through](#) [author](#) [camera](#) [conceptualizes](#) [contained in item](#) [contains photo](#)
[different from](#) [directly follows](#) [directly precedes](#) [expresses](#) [expresses concept](#) [first item of](#)
[follows](#) [genre](#) [has first item](#) [has item](#) [has last item](#) [has location](#) [has member](#) [has photo](#)

[in series](#) [includes agent](#) [involves agent](#) [is about](#) [is agent included in](#) [is agent involved in](#)
[is concept expressed by](#) [is conceptualized by](#) [is expressed by](#) [is genre of](#) [is location](#)
[is location of](#) [is member of](#) [is realized by](#) [is reference of](#) [is subject of](#) [item content](#) [item of](#)
[last item of](#) [lens](#) [location](#) [medium](#) [next in series](#) [next item](#) [precedes](#) [previous in series](#)
[previous item](#) [realizes](#) [realizes information about](#) [shot](#) [shot by](#) [shot with](#) [stores photo](#)
[subject](#)

acts for^{op}

[back to ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#actsFor>

has domain

[agent^c](#)

[object^c](#)

[has location^{op}](#) **some** [entity^c](#)

acts through^{op}

[back to ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#actsThrough>

has range

[agent^c](#)

[object^c](#)

[has location^{op}](#) **some** [entity^c](#)

author^{op}

[back to ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#author>

has characteristics : transitive

has super-properties

[associated with^{op}](#)

has sub-properties

[shot by^{op}](#)

has range

[author^c](#)

has sub-property chains

[shot^{op}](#) **o** [in series^{op}](#)

camera^{op}

[back to ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#camera>

has super-properties

[shot with^{op}](#)

has domain

[photo^c](#)

has range

[camera^c](#)

[conceptualizes^{op}](#)[back to ToC](#) or [Object Property ToC](#)IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#conceptualizes>**has domain**[agent^c](#)[object^c](#)[has location^{op}](#) **some** [entity^c](#)[contained in item^{op}](#)[back to ToC](#) or [Object Property ToC](#)IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#containedInItem>**is inverse of**[contains photo^{op}](#)[contains photo^{op}](#)[back to ToC](#) or [Object Property ToC](#)IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#containsPhoto>**has super-properties**[item content^{op}](#)**has domain**[series item^c](#)**has range**[photo^c](#)**is inverse of**[contained in item^{op}](#)[different from^{op}](#)[back to ToC](#) or [Object Property ToC](#)IRI: <http://www.w3.org/2002/07/owl#differentFrom>**has characteristics** : symmetric**has sub-properties**[next in series^{op}](#), [previous in series^{op}](#)**is inverse of**[different from^{op}](#), [different from^{op}](#)[directly follows^{op}](#)[back to ToC](#) or [Object Property ToC](#)IRI: <http://www.ontologydesignpatterns.org/cp/owl/sequence.owl#directlyFollows>**has super-properties**[follows^{op}](#)**has sub-properties**[next item^{op}](#)**has domain**[thing^c](#)**has range**

<div><div><div>thing^c</div></div><div><div>is inverse of</div><div><div>directly precedes^{op}</div></div></div></div>	
<div><div>directly precedes^{op}</div><div>back to ToC or Object Property ToC</div></div>	
<div><div>IRI: http://www.ontologydesignpatterns.org/cp/owl/sequence.owl#directlyPrecedes</div><div><div>has super-properties</div><div><div>precedes^{op}</div></div><div><div>has sub-properties</div><div><div>previous item^{op}</div></div><div><div>has domain</div><div><div>thing^c</div></div><div><div>has range</div><div><div>thing^c</div></div><div><div>is inverse of</div><div><div>directly follows^{op}</div></div></div></div></div></div></div></div>	
<div><div>expresses^{op}</div><div>back to ToC or Object Property ToC</div></div>	
<div><div>IRI: http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#expresses</div><div><div>has domain</div><div><div>information entity^c</div><div><div>information object^c</div><div><div>social object^c</div><div><div>is expressed by^{op} some information object^c</div></div></div></div></div></div></div>	
<div><div>expresses concept^{op}</div><div>back to ToC or Object Property ToC</div></div>	
<div><div>IRI: http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#expressesConcept</div><div><div>has domain</div><div><div>information entity^c</div><div><div>information object^c</div><div><div>social object^c</div><div><div>is expressed by^{op} some information object^c</div></div></div></div></div></div></div>	

[first item of^{op}](#)

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/cp/owl/list.owl#firstItemOf>

has super-properties

[item of^{op}](#)

has domain

[list item^c](#)

has range

[list^c](#)

is inverse of

[has first item^{op}](#)

[follows^{op}](#)

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/cp/owl/sequence.owl#follows>

has characteristics : transitive

has sub-properties

[directly follows^{op}](#)

has domain

[thing^c](#)

has range

[thing^c](#)

is inverse of

[precedes^{op}](#)

[genre^{op}](#)

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#genre>

has characteristics : transitive

has super-properties

[associated with^{op}](#)

has range

[collection^c](#)

[genre^c](#)

is inverse of

[is genre of^{op}](#)

has sub-property chains

[in series^{op}](#) [o](#) [genre^{op}](#)

[has first item^{op}](#)

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/cp/owl/list.owl#hasFirstItem>

has characteristics : functional

has super-properties

has item ^{op} has domain list ^c has range list item ^c is inverse of first item of ^{op}	
has item ^{op} IRI: http://www.ontologydesignpatterns.org/cp/owl/bag.owl#hasItem has characteristics : asymmetric, irreflexive has super-properties has member ^{op} has sub-properties has first item ^{op} , has last item ^{op} , has photo ^{op} has domain bag ^c has range item ^c is inverse of item of ^{op}	back to ToC or Object Property ToC
has last item ^{op} IRI: http://www.ontologydesignpatterns.org/cp/owl/list.owl#hasLastItem has characteristics : functional has super-properties has item ^{op} has domain list ^c has range list item ^c is inverse of last item of ^{op}	back to ToC or Object Property ToC
has location ^{op} IRI: http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#hasLocation has super-properties associated with ^{op} has sub-properties location ^{op} has domain entity ^c has range	back to ToC or Object Property ToC

<div>entity^c</div> <div>is inverse of</div> <div>is location of^{op}</div>	
<div>has member^{op}</div> <div>back to ToC or Object Property ToC</div> <div>IRI: http://www.ontologydesignpatterns.org/cp/owl/collectionentity.owl#hasMember</div> <div>has sub-properties</div> <div>has item^{op}</div> <div>has domain</div> <div>collection^c</div> <div>has range</div> <div>thing^c</div> <div>is inverse of</div> <div>is member of^{op}</div>	
<div>has photo^{op}</div> <div>back to ToC or Object Property ToC</div> <div>IRI: http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#hasPhoto</div> <div>has characteristics : asymmetric, irreflexive</div> <div>has super-properties</div> <div>has item^{op}</div> <div>has domain</div> <div>photo series^c</div> <div>has range</div> <div>series item^c</div> <div>is inverse of</div> <div>in series^{op}</div>	
<div>in series^{op}</div> <div>back to ToC or Object Property ToC</div> <div>IRI: http://www.semanticweb.org/dnbias/ontologies/2023/0/photOntology#inSeries</div> <div>has characteristics : asymmetric, irreflexive</div> <div>has super-properties</div> <div>part of^{op}</div> <div>item of^{op}</div> <div>has domain</div> <div>series item^c</div> <div>has range</div> <div>photo series^c</div> <div>is inverse of</div> <div>has photo^{op}</div> <div>has sub-property chains</div> <div>precedes^{op} ◦ in series^{op}</div>	

[includes agent](#)^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#includesAgent>

has range

[agent](#)^c

[involves agent](#)^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#involvesAgent>

has range

[agent](#)^c

is inverse of

[is agent involved in](#)^{op}

[is about](#)^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#isAbout>

has domain

[information entity](#)^c

[information object](#)^c

[social object](#)^c

[is expressed by](#)^{op} [some information object](#)^c

[is agent included in](#)^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#isAgentIncludedIn>

has domain

[agent](#)^c

[object](#)^c

[has location](#)^{op} [some entity](#)^c

[is agent involved in](#)^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#isAgentInvolvedIn>

has super-properties

[is participant in](#)^{op}

has domain

[agent](#)^c

[object](#)^c

[has location](#)^{op} [some entity](#)^c

has range

[event](#)^c

is inverse of

[involves agent](#)^{op}

is concept expressed by^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#isConceptExpressedBy>

has range

[information entity](#)^c

[information object](#)^c

[social object](#)^c

[is expressed by](#)^{op} **some** [information object](#)^c

is conceptualized by^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#isConceptualizedBy>

has range

[agent](#)^c

[object](#)^c

[has location](#)^{op} **some** [entity](#)^c

is expressed by^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#isExpressedBy>

has range

[information entity](#)^c

[information object](#)^c

[social object](#)^c

[is expressed by](#)^{op} **some** [information object](#)^c

is genre of^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#isGenreOf>

has characteristics : transitive

has super-properties

[associated with](#)^{op}

is inverse of

[genre](#)^{op}

is location^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#isLocation>

has super-properties

[associated with](#)^{op}

[is location of](#)^{op}

has domain

[entity](#)^c

has range

[entity](#)^c

is inverse of[location^{op}](#)**is location of^{op}**[back to ToC](#) or [Object Property ToC](#)**IRI:** <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#isLocationOf>**has super-properties**[associated with^{op}](#)**has sub-properties**[is location^{op}](#)**has domain**[entity^c](#)**has range**[entity^c](#)**is inverse of**[has location^{op}](#)**is member of^{op}**[back to ToC](#) or [Object Property ToC](#)**IRI:** <http://www.ontologydesignpatterns.org/cp/owl/collectionentity.owl#isMemberOf>**has sub-properties**[item of^{op}](#)**has domain**[thing^c](#)**has range**[collection^c](#)**is inverse of**[has member^{op}](#)**is realized by^{op}**[back to ToC](#) or [Object Property ToC](#)**IRI:** <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#isRealizedBy>**has domain**[information entity^c](#)[information object^c](#)[social object^c](#)[is expressed by^{op}](#) [some information object^c](#)**is inverse of**[realizes^{op}](#)**is reference of^{op}**[back to ToC](#) or [Object Property ToC](#)**IRI:** <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#isReferenceOf>**has range**[information entity^c](#)[information object^c](#)[social object^c](#)

is expressed by ^{op} some information object ^c	
is subject of ^{op}	back to ToC or Object Property ToC
IRI: http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#isSubjectOf	
has super-properties associated with ^{op}	
is inverse of subject ^{op}	
item content ^{op}	back to ToC or Object Property ToC
IRI: http://www.ontologydesignpatterns.org/cp/owl/bag.owl#itemContent	
has sub-properties contains photo ^{op}	
has domain item ^c	
has range not (item ^c)	
item of ^{op}	back to ToC or Object Property ToC
IRI: http://www.ontologydesignpatterns.org/cp/owl/bag.owl#itemOf	
has characteristics : asymmetric, irreflexive	
has super-properties is member of ^{op}	
has sub-properties first item of ^{op} , in series ^{op} , last item of ^{op}	
has domain item ^c	
has range bag ^c	
is inverse of has item ^{op}	
last item of ^{op}	back to ToC or Object Property ToC
IRI: http://www.ontologydesignpatterns.org/cp/owl/list.owl#lastItemOf	

has super-properties

[item of](#)^{op}

has domain

[list item](#)^c

has range

[list](#)^c

is inverse of

[has last item](#)^{op}

[lens](#)^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#lens>

has super-properties

[shot with](#)^{op}

has domain

[photo](#)^c

has range

[lens](#)^c

[location](#)^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#location>

has characteristics : functional

has super-properties

[associated with](#)^{op}

[has location](#)^{op}

has domain

[entity](#)^c

has range

[entity](#)^c

[physical object](#)^c

[physical place](#)^c

[location](#)^c

is inverse of

[is location](#)^{op}

[medium](#)^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#medium>

has super-properties

[is stored on](#)^{op}

[shot with](#)^{op}

has domain

[photo](#)^c

has range

[photographic medium](#)^c

is inverse of

[stores photo](#)^{op}[next in series](#)^{op}[back to ToC](#) or [Object Property ToC](#)IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#nextInSeries>**has characteristics** : functional**has super-properties**[next item](#)^{op}[different from](#)^{op}**has domain**[series item](#)^c**has range**[series item](#)^c**is inverse of**[previous in series](#)^{op}[next item](#)^{op}[back to ToC](#) or [Object Property ToC](#)IRI: <http://www.ontologydesignpatterns.org/cp/owl/list.owl#nextItem>**has characteristics** : functional**has super-properties**[directly follows](#)^{op}**has sub-properties**[next in series](#)^{op}**has domain**[list item](#)^c**has range**[list item](#)^c**is inverse of**[previous item](#)^{op}[precedes](#)^{op}[back to ToC](#) or [Object Property ToC](#)IRI: <http://www.ontologydesignpatterns.org/cp/owl/sequence.owl#precedes>**has characteristics** : transitive**has sub-properties**[directly precedes](#)^{op}**has domain**[thing](#)^c**has range**[thing](#)^c**is inverse of**[follows](#)^{op}

[previous in series^{op}](#)[back to ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#previousInSeries>

has characteristics : functional

has super-properties

[previous item^{op}](#)

[different from^{op}](#)

has domain

[series item^c](#)

has range

[series item^c](#)

is inverse of

[next in series^{op}](#)

[previous item^{op}](#)[back to ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/cp/owl/list.owl#previousItem>

has characteristics : functional

has super-properties

[directly precedes^{op}](#)

has sub-properties

[previous in series^{op}](#)

has domain

[list item^c](#)

has range

[list item^c](#)

is inverse of

[next item^{op}](#)

[realizes^{op}](#)[back to ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#realizes>

has super-properties

[associated with^{op}](#)

has domain

[information realization^c](#)

[realizes^{op}](#) **some** [information object^c](#)

has range

[information entity^c](#)

[information object^c](#)

[social object^c](#)

[is expressed by^{op}](#) **some** [information object^c](#)

is inverse of

[is realized by^{op}](#)

realizes information about^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#realizesInformationAbout>

has sub-property chains

[realizes](#)^{op}  [is about](#)^{op}

shot^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#shot>

has super-properties

[associated with](#)^{op}

has domain

[author](#)^c

has range

[photo](#)^c

is inverse of

[shot by](#)^{op}

shot by^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#shotBy>

has super-properties

[author](#)^{op}

has domain

[photo](#)^c

has range

[author](#)^c

is inverse of

[shot](#)^{op}

shot with^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#shotWith>

has sub-properties

[camera](#)^{op}, [lens](#)^{op}, [medium](#)^{op}

has domain

[photo](#)^c

is inverse of

[used to shoot](#)^{op}

stores photo^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#storesPhoto>

has super-properties

[stores](#)^{op}

used to shoot^{op}

is inverse of

medium^{op}

subject^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#subject>

has super-properties

associated with^{op}

has domain

photo^c

has range

subject^c

is inverse of

is subject of^{op}

Data Properties

[date](#)

[height](#)

[name](#)

[size](#)

[title](#)

[width](#)

[year](#)

date^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#date>

has super-properties

created^{dp}

has domain

still image^c

information entity^c

information object^c

social object^c

photo^c

is expressed by^{op} some information object^c

has range

date time

height^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#height>

has domain

still image^c
information entity^c
[information object](#)^c
social object^c
[photo](#)^c
[is expressed by](#)^{op} **some** [information object](#)^c

has range

float

name^{dp}[back to ToC](#) or [Data Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#name>

has equivalent properties

[title](#)^{dp}

has super-properties

[title](#)^{dp}
[title](#)^{dp}

has sub-properties

[title](#)^{dp}

has domain

still image^c
information entity^c
[information object](#)^c
social object^c
[photo](#)^c
[is expressed by](#)^{op} **some** [information object](#)^c

size^{dp}[back to ToC](#) or [Data Property ToC](#)

IRI: <http://www.ontologydesignpatterns.org/cp/owl/bag.owl#size>

has domain

[collection](#)^c

has range

integer

title^{dp}[back to ToC](#) or [Data Property ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#title>

has equivalent properties

[name](#)^{dp}

has super-properties

[title](#)^{dp}
[name](#)^{dp}

has sub-properties

[name](#)^{dp}

has domain

still image^c
information entity^c

float

positive integer

used to shoot^{op} [pale blue dot](#)

200mm w aⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#200mm-WA>

belongs to

[gear](#)^c

[lens](#)^c

has facts

used to shoot^{op} [pale blue dot](#)

4x5 graflexⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#4x5Graflex>

belongs to

[camera](#)^c

[gear](#)^c

has facts

used to shoot^{op} [the migrant mother](#)

astro photographyⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#AstroPhotography>

belongs to

[collection](#)^c

[genre](#)^c

is same as

[space photography](#)

has facts

associated with^{op} [family portrait](#)

associated with^{op} [n a s a](#)

associated with^{op} [voyager1](#)

associated with^{op} [fp1](#)

associated with^{op} [fp2](#)

associated with^{op} [fp3](#)

associated with^{op} [fp4](#)

associated with^{op} [fp5](#)

associated with^{op} [fp6](#)

[is genre of](#)^{op} [family portrait](#)

[is genre of](#)^{op} [fp1](#)

[is genre of](#)^{op} [fp2](#)

[is genre of](#)^{op} [fp3](#)

[is genre of](#)^{op} [fp4](#)

[is genre of](#)^{op} [fp5](#)

[is genre of](#)^{op} [fp6](#)

californiaⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#California>

belongs to

[entity](#)^c
[physical object](#)^c
[physical place](#)^c
[place](#)^c
[location](#)^c

has facts

[associated with](#)^{op} [dorothea lange](#)
[associated with](#)^{op} [florence owens thompson](#)
[associated with](#)^{op} [nameless family](#)
[associated with](#)^{op} [the migrant mother](#)
[is location of](#)^{op} [florence owens thompson](#)
[is location of](#)^{op} [nameless family](#)
[is location of](#)^{op} [the migrant mother](#)
[is location](#)^{op} [florence owens thompson](#)
[is location](#)^{op} [nameless family](#)
[is location](#)^{op} [the migrant mother](#)

[digital](#)ⁿⁱ[back to ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/photOntology#Digital>

belongs to

[storage medium](#)^c
[photographic medium](#)^c

has facts

[stores](#)^{op} [pale blue dot](#)
[stores photo](#)^{op} [pale blue dot](#)
[used to shoot](#)^{op} [pale blue dot](#)

[dorothea lange](#)ⁿⁱ[back to ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#DorotheaLange>

belongs to

[still image](#)^c
[agent](#)^c
[entity](#)^c
[information entity](#)^c
[information object](#)^c
[object](#)^c
[social object](#)^c
[author](#)^c
[photo](#)^c

has facts

[associated with](#)^{op} [dorothea lange](#)
[associated with](#)^{op} [the migrant mother](#)
[shot](#)^{op} [the migrant mother](#)
[title](#)^{dp} ["Dorothea Lange"^^string](#)
[name](#)^{dp} ["Dorothea Lange"^^string](#)
[title](#)^{dp} ["Dorothea Lange"^^string](#)

earthⁿⁱ[back to ToC](#) or [Named Individual ToC](#)IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Earth>**belongs to**[agent](#)^c[entity](#)^c[object](#)^c[subject](#)^c**has facts**[associated with](#)^{op} [n a s a](#)[associated with](#)^{op} [pale blue dot](#)[associated with](#)^{op} [solar system](#)[associated with](#)^{op} [voyager1](#)[has location](#)^{op} [solar system](#)[is subject of](#)^{op} [pale blue dot](#)[location](#)^{op} [solar system](#)family portraitⁿⁱ[back to ToC](#) or [Named Individual ToC](#)IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#FamilyPortrait>**belongs to**[series](#)^c[bag](#)^c[collection](#)^c[list](#)^c[photo series](#)^c**has facts**[has item](#)^{op} [fp1](#)[has item](#)^{op} [fp2](#)[has item](#)^{op} [fp3](#)[has item](#)^{op} [fp4](#)[has item](#)^{op} [fp5](#)[has item](#)^{op} [fp6](#)[has member](#)^{op} [fp1](#)[has member](#)^{op} [fp2](#)[has member](#)^{op} [fp3](#)[has member](#)^{op} [fp4](#)[has member](#)^{op} [fp5](#)[has member](#)^{op} [fp6](#)[has first item](#)^{op} [fp1](#)[has last item](#)^{op} [fp6](#)[associated with](#)^{op} [astro photography](#)[associated with](#)^{op} [family portrait](#)[associated with](#)^{op} [n a s a](#)[associated with](#)^{op} [space photography](#)[associated with](#)^{op} [voyager1](#)[associated with](#)^{op} [fp1](#)[associated with](#)^{op} [fp2](#)[associated with](#)^{op} [fp3](#)[associated with](#)^{op} [fp4](#)[associated with](#)^{op} [fp5](#)

[associated with](#)^{op} [fp6](#)
[author](#)^{op} [n a s a](#)
[author](#)^{op} [voyager1](#)
[genre](#)^{op} [astro photography](#)
[genre](#)^{op} [space photography](#)
[has photo](#)^{op} [fp1](#)
[has photo](#)^{op} [fp2](#)
[has photo](#)^{op} [fp3](#)
[has photo](#)^{op} [fp4](#)
[has photo](#)^{op} [fp5](#)
[has photo](#)^{op} [fp6](#)

filmⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://purl.org/spar/fabio/film>

belongs to

[storage medium](#)^c
[photographic medium](#)^c

is same as

[gelatin silver print](#), [film](#)

has facts

[stores](#)^{op} [the migrant mother](#)
[stores photo](#)^{op} [the migrant mother](#)
[used to shoot](#)^{op} [the migrant mother](#)

filmⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/photOntology#Film>

belongs to

[storage medium](#)^c
[photographic medium](#)^c

is same as

[film](#), [gelatin silver print](#)

has facts

[stores](#)^{op} [the migrant mother](#)
[stores photo](#)^{op} [the migrant mother](#)
[used to shoot](#)^{op} [the migrant mother](#)

florence owens thompsonⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#FlorenceOwensThompson>

belongs to

[agent](#)^c
[entity](#)^c
[object](#)^c
[person](#)^c
[subject](#)^c

has facts

[associated with](#)^{op} [california](#)

[associated with](#)^{op} [dorothea lange](#)
[associated with](#)^{op} [the migrant mother](#)
[has location](#)^{op} [california](#)
[is subject of](#)^{op} [the migrant mother](#)
[location](#)^{op} [california](#)

fp1ⁿⁱ

[back to ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#fp1>

belongs to

[item](#)^c
[list item](#)^c
[series item](#)^c

has facts

[part of](#)^{op} [family portrait](#)
[item content](#)^{op} [jupiter](#)
[item of](#)^{op} [family portrait](#)
[is member of](#)^{op} [family portrait](#)
[first item of](#)^{op} [family portrait](#)
[next item](#)^{op} [fp2](#)
[directly follows](#)^{op} [fp2](#)
[follows](#)^{op} [fp2](#)
[follows](#)^{op} [fp3](#)
[follows](#)^{op} [fp4](#)
[follows](#)^{op} [fp5](#)
[follows](#)^{op} [fp6](#)
[associated with](#)^{op} [astro photography](#)
[associated with](#)^{op} [family portrait](#)
[associated with](#)^{op} [n a s a](#)
[associated with](#)^{op} [space photography](#)
[associated with](#)^{op} [voyager1](#)
[associated with](#)^{op} [fp1](#)
[associated with](#)^{op} [fp2](#)
[associated with](#)^{op} [fp3](#)
[associated with](#)^{op} [fp4](#)
[associated with](#)^{op} [fp5](#)
[associated with](#)^{op} [fp6](#)
[contains photo](#)^{op} [jupiter](#)
[genre](#)^{op} [astro photography](#)
[genre](#)^{op} [space photography](#)
[next in series](#)^{op} [fp2](#)
[in series](#)^{op} [family portrait](#)
[different from](#)^{op} [fp2](#)

fp2ⁿⁱ

[back to ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#fp2>

belongs to

[item](#)^c
[list item](#)^c
[series item](#)^c

has facts

[part of](#)^{op} [family portrait](#)
[item content](#)^{op} [pale blue dot](#)
[item of](#)^{op} [family portrait](#)
[is member of](#)^{op} [family portrait](#)
[next item](#)^{op} [fp3](#)
[previous item](#)^{op} [fp1](#)
[directly follows](#)^{op} [fp3](#)
[directly precedes](#)^{op} [fp1](#)
[follows](#)^{op} [fp3](#)
[follows](#)^{op} [fp4](#)
[follows](#)^{op} [fp5](#)
[follows](#)^{op} [fp6](#)
[precedes](#)^{op} [fp1](#)
[associated with](#)^{op} [astro photography](#)
[associated with](#)^{op} [family portrait](#)
[associated with](#)^{op} [n a s a](#)
[associated with](#)^{op} [space photography](#)
[associated with](#)^{op} [voyager1](#)
[associated with](#)^{op} [fp1](#)
[associated with](#)^{op} [fp2](#)
[associated with](#)^{op} [fp3](#)
[associated with](#)^{op} [fp4](#)
[associated with](#)^{op} [fp5](#)
[associated with](#)^{op} [fp6](#)
[contains photo](#)^{op} [pale blue dot](#)
[genre](#)^{op} [astro photography](#)
[genre](#)^{op} [space photography](#)
[next in series](#)^{op} [fp3](#)
[previous in series](#)^{op} [fp1](#)
[in series](#)^{op} [family portrait](#)
[different from](#)^{op} [fp1](#)
[different from](#)^{op} [fp3](#)

fp3ⁿⁱ[back to ToC](#) or [Named Individual ToC](#)IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#fp3>**belongs to**

[item](#)^c
[list item](#)^c
[series item](#)^c

has facts

[part of](#)^{op} [family portrait](#)
[item content](#)^{op} [venus](#)
[item of](#)^{op} [family portrait](#)
[is member of](#)^{op} [family portrait](#)
[next item](#)^{op} [fp4](#)
[previous item](#)^{op} [fp2](#)
[directly follows](#)^{op} [fp4](#)
[directly precedes](#)^{op} [fp2](#)
[follows](#)^{op} [fp4](#)
[follows](#)^{op} [fp5](#)
[follows](#)^{op} [fp6](#)

[precedes^{op} fp1](#)
[precedes^{op} fp2](#)
[associated with^{op} astro photography](#)
[associated with^{op} family portrait](#)
[associated with^{op} n a s a](#)
[associated with^{op} space photography](#)
[associated with^{op} voyager1](#)
[associated with^{op} fp1](#)
[associated with^{op} fp2](#)
[associated with^{op} fp3](#)
[associated with^{op} fp4](#)
[associated with^{op} fp5](#)
[associated with^{op} fp6](#)
[contains photo^{op} venus](#)
[genre^{op} astro photography](#)
[genre^{op} space photography](#)
[next in series^{op} fp4](#)
[previous in series^{op} fp2](#)
[in series^{op} family portrait](#)
[different from^{op} fp2](#)
[different from^{op} fp4](#)

fp4ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#fp4>

belongs to

[item^c](#)
[list item^c](#)
[series item^c](#)

has facts

[part of^{op} family portrait](#)
[item content^{op} saturn](#)
[item of^{op} family portrait](#)
[is member of^{op} family portrait](#)
[next item^{op} fp5](#)
[previous item^{op} fp3](#)
[directly follows^{op} fp5](#)
[directly precedes^{op} fp3](#)
[follows^{op} fp5](#)
[follows^{op} fp6](#)
[precedes^{op} fp1](#)
[precedes^{op} fp2](#)
[precedes^{op} fp3](#)
[associated with^{op} astro photography](#)
[associated with^{op} family portrait](#)
[associated with^{op} n a s a](#)
[associated with^{op} space photography](#)
[associated with^{op} voyager1](#)
[associated with^{op} fp1](#)
[associated with^{op} fp2](#)
[associated with^{op} fp3](#)
[associated with^{op} fp4](#)
[associated with^{op} fp5](#)

[associated with^{op} fp6](#)
[contains photo^{op} saturn](#)
[genre^{op} astro photography](#)
[genre^{op} space photography](#)
[next in series^{op} fp5](#)
[previous in series^{op} fp3](#)
[in series^{op} family portrait](#)
[different from^{op} fp3](#)
[different from^{op} fp5](#)

fp5ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#fp5>

belongs to

[item^c](#)
[list item^c](#)
[series item^c](#)

has facts

[part of^{op} family portrait](#)
[item content^{op} uranus](#)
[item of^{op} family portrait](#)
[is member of^{op} family portrait](#)
[next item^{op} fp6](#)
[previous item^{op} fp4](#)
[directly follows^{op} fp6](#)
[directly precedes^{op} fp4](#)
[follows^{op} fp6](#)
[precedes^{op} fp1](#)
[precedes^{op} fp2](#)
[precedes^{op} fp3](#)
[precedes^{op} fp4](#)
[associated with^{op} astro photography](#)
[associated with^{op} family portrait](#)
[associated with^{op} n a s a](#)
[associated with^{op} space photography](#)
[associated with^{op} voyager1](#)
[associated with^{op} fp1](#)
[associated with^{op} fp2](#)
[associated with^{op} fp3](#)
[associated with^{op} fp4](#)
[associated with^{op} fp5](#)
[associated with^{op} fp6](#)
[contains photo^{op} uranus](#)
[genre^{op} astro photography](#)
[genre^{op} space photography](#)
[next in series^{op} fp6](#)
[previous in series^{op} fp4](#)
[in series^{op} family portrait](#)
[different from^{op} fp4](#)
[different from^{op} fp6](#)

fp6ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

<p>IRI: http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#fp6</p> <hr/> <p>belongs to</p> <ul style="list-style-type: none"> item^c list item^c series item^c <p>has facts</p> <ul style="list-style-type: none"> part of^{op} family portrait item content^{op} neptune item of^{op} family portrait is member of^{op} family portrait last item of^{op} family portrait previous item^{op} fp5 directly precedes^{op} fp5 precedes^{op} fp1 precedes^{op} fp2 precedes^{op} fp3 precedes^{op} fp4 precedes^{op} fp5 associated with^{op} astro photography associated with^{op} family portrait associated with^{op} n a s a associated with^{op} space photography associated with^{op} voyager1 associated with^{op} fp1 associated with^{op} fp2 associated with^{op} fp3 associated with^{op} fp4 associated with^{op} fp5 associated with^{op} fp6 contains photo^{op} neptune genre^{op} astro photography genre^{op} space photography previous in series^{op} fp5 in series^{op} family portrait different from^{op} fp5 <hr/>	
<p>gelatin silver printⁿⁱ</p> <hr/> <p>IRI: http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#GelatinSilverPrint</p> <hr/> <p>belongs to</p> <ul style="list-style-type: none"> storage medium^c photographic medium^c <p>is same as</p> <ul style="list-style-type: none"> film, film <p>has facts</p> <ul style="list-style-type: none"> stores^{op} the migrant mother stores photo^{op} the migrant mother used to shoot^{op} the migrant mother <hr/>	<div> back to ToC or Named Individual ToC </div>
<p>glamourⁿⁱ</p> <hr/>	<div> back to ToC or Named Individual ToC </div>

belongs to[agent](#)^c[entity](#)^c[object](#)^c[author](#)^c**has facts**[associated with](#)^{op} [jupiter](#)[associated with](#)^{op} [n a s a](#)[associated with](#)^{op} [pale blue dot](#)[associated with](#)^{op} [voyager1](#)[shot](#)^{op} [jupiter](#)[shot](#)^{op} [pale blue dot](#)**nameless family**ⁿⁱ[back to ToC](#) or [Named Individual ToC](#)**IRI:** <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#NamelessFamily>**belongs to**[agent](#)^c[entity](#)^c[object](#)^c[subject](#)^c**has facts**[associated with](#)^{op} [california](#)[associated with](#)^{op} [dorothea lange](#)[associated with](#)^{op} [the migrant mother](#)[has location](#)^{op} [california](#)[is subject of](#)^{op} [the migrant mother](#)[location](#)^{op} [california](#)**neptune**ⁿⁱ[back to ToC](#) or [Named Individual ToC](#)**IRI:** <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Neptune>**belongs to**[still image](#)^c[information entity](#)^c[information object](#)^c[social object](#)^c[photo](#)^c**has facts**[camera](#)^{op} [i s s](#)[contained in item](#)^{op} [fp6](#)[shot with](#)^{op} [i s s](#)**pale blue dot**ⁿⁱ[back to ToC](#) or [Named Individual ToC](#)**IRI:** <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#PaleBlueDot>**belongs to**[still image](#)^c[entity](#)^c

[information entity](#)^c
[information object](#)^c
[social object](#)^c
[digital photo](#)^c
[modern photo](#)^c
[photo](#)^c

has facts

[is stored on](#)^{op} [digital](#)
[associated with](#)^{op} [earth](#)
[associated with](#)^{op} [n a s a](#)
[associated with](#)^{op} [solar system](#)
[associated with](#)^{op} [voyager1](#)
[has location](#)^{op} [solar system](#)
[author](#)^{op} [n a s a](#)
[author](#)^{op} [voyager1](#)
[camera](#)^{op} [i s s](#)
[contained in item](#)^{op} [fp2](#)
[lens](#)^{op} [1500mm n a](#)
[lens](#)^{op} [200mm w a](#)
[location](#)^{op} [solar system](#)
[medium](#)^{op} [digital](#)
[shot by](#)^{op} [n a s a](#)
[shot by](#)^{op} [voyager1](#)
[shot with](#)^{op} [i s s](#)
[shot with](#)^{op} [1500mm n a](#)
[shot with](#)^{op} [200mm w a](#)
[shot with](#)^{op} [digital](#)
[subject](#)^{op} [earth](#)
[created](#)^{dp} ["1990"^^positive integer](#)
[created](#)^{dp} ["1990-02-14T00:00:00"^^date time](#)
[date](#)^{dp} ["1990-02-14T00:00:00"^^date time](#)
[year](#)^{dp} ["1990"^^positive integer](#)

portraitⁿⁱ[back to ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Portrait>

belongs to

[collection](#)^c
[genre](#)^c

is disjoint with

[concept](#), [description](#), [social agent](#)

has facts

[associated with](#)^{op} [dorothea lange](#)
[associated with](#)^{op} [the migrant mother](#)
[is genre of](#)^{op} [the migrant mother](#)

is also defined as

[class](#)

saturnⁿⁱ[back to ToC](#) or [Named Individual ToC](#)

IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#Saturn>

belongs to[still image](#)^c[information entity](#)^c[information object](#)^c[social object](#)^c[photo](#)^c**has facts**[camera](#)^{op} [i s s](#)[contained in item](#)^{op} [fp4](#)[shot with](#)^{op} [i s s](#)**solar system**ⁿⁱ[back to ToC](#) or [Named Individual ToC](#)**IRI:** <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#SolarSystem>**belongs to**[entity](#)^c[physical object](#)^c[physical place](#)^c[place](#)^c[location](#)^c**has facts**[associated with](#)^{op} [earth](#)[associated with](#)^{op} [n a s a](#)[associated with](#)^{op} [pale blue dot](#)[associated with](#)^{op} [voyager1](#)[is location of](#)^{op} [earth](#)[is location of](#)^{op} [pale blue dot](#)[is location](#)^{op} [earth](#)[is location](#)^{op} [pale blue dot](#)**space photography**ⁿⁱ[back to ToC](#) or [Named Individual ToC](#)**IRI:** <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#SpacePhotography>**belongs to**[collection](#)^c[genre](#)^c**is same as**[astro photography](#)**has facts**[associated with](#)^{op} [family portrait](#)[associated with](#)^{op} [n a s a](#)[associated with](#)^{op} [voyager1](#)[associated with](#)^{op} [fp1](#)[associated with](#)^{op} [fp2](#)[associated with](#)^{op} [fp3](#)[associated with](#)^{op} [fp4](#)[associated with](#)^{op} [fp5](#)[associated with](#)^{op} [fp6](#)[is genre of](#)^{op} [family portrait](#)[is genre of](#)^{op} [fp1](#)[is genre of](#)^{op} [fp2](#)

[is genre of^{op} fp3](#)[is genre of^{op} fp4](#)[is genre of^{op} fp5](#)[is genre of^{op} fp6](#)[the migrant motherⁿⁱ](#)[back to ToC](#) or [Named Individual ToC](#)IRI: <http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#TheMigrantMother>**belongs to**[still image^c](#)[entity^c](#)[information entity^c](#)[information object^c](#)[social object^c](#)[analogic photo^c](#)[modern photo^c](#)[photo^c](#)[portrait^c](#)**has facts**[is stored on^{op} film](#)[is stored on^{op} gelatin silver print](#)[is stored on^{op} film](#)[associated with^{op} california](#)[associated with^{op} dorothea lange](#)[associated with^{op} florence owens thompson](#)[associated with^{op} nameless family](#)[associated with^{op} portrait](#)[associated with^{op} the migrant mother](#)[has location^{op} california](#)[author^{op} dorothea lange](#)[camera^{op} 4x5 graflex](#)[genre^{op} portrait](#)[location^{op} california](#)[medium^{op} film](#)[medium^{op} gelatin silver print](#)[medium^{op} film](#)[shot by^{op} dorothea lange](#)[shot with^{op} film](#)[shot with^{op} gelatin silver print](#)[shot with^{op} 4x5 graflex](#)[shot with^{op} film](#)[subject^{op} florence owens thompson](#)[subject^{op} nameless family](#)[created^{dp} "1936"^^positive integer](#)[created^{dp} "1936-03-01T00:00:00"^^date time](#)[title^{dp} "Madre Migrante"@it](#)[title^{dp} "Madre Migrante"^^string](#)[title^{dp} "Migrant Mother"@en](#)[date^{dp} "1936-03-01T00:00:00"^^date time](#)[height^{dp} "28.3"^^float](#)[name^{dp} "Madre Migrante"@it](#)[name^{dp} "Madre Migrante"^^string](#)[name^{dp} "Migrant Mother"@en](#)

Annotation Properties

is rule enabled	
is rule enabled ^{ap}	back to ToC or Annotation Property ToC
IRI: http://swrl.stanford.edu/ontologies/3.3/swrla.owl#isRuleEnabled	

General Axioms

General Subclass Definition	back to ToC
{ digital , film } is subclass of	
storage medium ^c	
General Subclass Definition	back to ToC
{ digital , film } is subclass of	
photographic medium ^c	
General Subclass Definition	back to ToC
medium ^{op} some { digital } is subclass of	
social object ^c	
General Subclass Definition	back to ToC
medium ^{op} some { digital } is subclass of	
digital photo ^c	
General Subclass Definition	back to ToC
medium ^{op} some { digital } is subclass of	
photo ^c	
General Subclass Definition	back to ToC
medium ^{op} some { digital } is subclass of	
is expressed by ^{op} some information object ^c	
General Subclass Definition	back to ToC

[medium^{OP}](#) **some** { [film](#) } is subclass of

[analogic photo^C](#)

General Subclass Definition

[back to ToC](#)

[medium^{OP}](#) **some** { [film](#) } is subclass of

[photo^C](#)

SWRL rules

Rule #1

[back to ToC](#)

[photo^C](#)(?x) , [subject^{OP}](#)(?x,?y) , [person^C](#)(?y) -> [portrait^C](#)(?x)

Rule #2

[back to ToC](#)

[photo^C](#)(?x) , [location^{OP}](#)(?x,?l) , [subject^{OP}](#)(?x,?y) -> [location^{OP}](#)(?y,?l)

Rule #3

[back to ToC](#)

[photo^C](#)(?x) , [year^{DP}](#)(?x,?y) , greaterThanOrEqual(?) -> [modern photo^C](#)(?x)

Rule #4

[back to ToC](#)

[photo^C](#)(?x) , [year^{DP}](#)(?x,?y) , lessThan(?) -> [antique photo^C](#)(?x)

Rule #5

[back to ToC](#)

[photo series^C](#)(?s) , [year^{DP}](#)(?s,?y) , [has photo^{OP}](#)(?s,?p) , [contains photo^{OP}](#)(?p,?x) -> [year^{DP}](#)(?x,?y)

Rule #6

[back to ToC](#)

[photo series^C](#)(?x) , [has photo^{OP}](#)(?x,?p1) , [has photo^{OP}](#)(?x,?p2) , [has photo^{OP}](#)(?x,?p3) , [different from^{OP}](#)(?p1,?p2) , [different from^{OP}](#)(?p2,?p3) , [different from^{OP}](#)(?p1,?p3) -> [long series^C](#)(?x)

Namespace Declarations

[back to ToC](#)

default namespace
http://www.semanticweb.org/dnbias/ontologies/2023/8/phon-inferred#

8
http://www.semanticweb.org/dnbias/ontologies/2023/8/

DUL

<http://www.ontologydesignpatterns.org/ont/dul/DUL.owl#>

bag

<http://www.ontologydesignpatterns.org/cp/owl/bag.owl#>

collectionentity

<http://www.ontologydesignpatterns.org/cp/owl/collectionentity.owl#>

core

<http://purl.org/vocab/frbr/core#>

fabio

<http://purl.org/spar/fabio/>

list

<http://www.ontologydesignpatterns.org/cp/owl/list.owl#>

owl

<http://www.w3.org/2002/07/owl#>

phon

<http://www.semanticweb.org/dnbias/ontologies/2023/0/phon#>

photOntology

<http://www.semanticweb.org/dnbias/ontologies/2023/0/photOntology#>

rdf

<http://www.w3.org/1999/02/22-rdf-syntax-ns#>

rdfs

<http://www.w3.org/2000/01/rdf-schema#>

sequence

<http://www.ontologydesignpatterns.org/cp/owl/sequence.owl#>

swrl

<http://www.w3.org/2003/11/swrl#>

swrla

<http://swrl.stanford.edu/ontologies/3.3/swrla.owl#>

swrlb

<http://www.w3.org/2003/11/swrlb#>

terms

<http://purl.org/dc/terms/>

untitled-ontology-19

<http://www.semanticweb.org/dnbias/ontologies/2023/0/untitled-ontology-19#>

xsd

<http://www.w3.org/2001/XMLSchema#>

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