### 294: E55 Type relations

The SdS edits. The original text is highlighted in Yellow to make it easier to follow the differences.

The Properties do not currently have inverses, so I have suggested revised property names as a separate section at the end. If these are adopted then the AP30 and AP31 subproperty statements will need adjusting.

**OLD**

#### AP29 appears in

Domain: E55 Type  
Range: E4 Period  
Subproperty:   
Quantification: many-to-many (0,n:0,n)

Scope note: This property associates a kind of object (documented as an instance of E55) to an instance of E4 Period for indicating that objects of this kind have been generated within this period. The generation of such objects may be the result of human, biological, geological or other processes.

This property makes a weak statement with regards to the distribution of the class of object in the archaeological record, but also in geological or paleontological observations: If the genesis of an object of this type can plausibly be assumed to fall within the genesis of the context in which it was found, then the statement made with this property would support reasoning, ceteris paribus, that the genesis period of the find context forms part of or overlaps with one of the instance of E4 Period in which the respective object type has appeared.

Stronger claims can be made using ‘typical for’ and ‘restricted to’ properties.

**NEW**

#### AP29 appears in

Domain: E55 Type  
Range: E4 Period  
Subproperty:   
Quantification: many-to-many (0,n:0,n)

Scope note: This property associates a kind of object (documented as an instance of E55 Type) with an instance of E4 Period indicating that objects of this kind have been brought into existence during this period. The genesis of such objects may be the result of human, biological, geological or other processes.

This property makes a weak statement about the distribution of the associated object kind in the archaeological record: that is, if the genesis of an object of the type can plausibly be assumed to fall within the genesis of the context within which it was found, then this property supports reasoning, *ceteris paribus*, that the genesis period of the context forms part of, or overlaps with, one of the instances of E4 Period in which the respective object type has appeared. Such weak statements may also be useful in the context of geological or paleontological observations.

Stronger claims can be made using the properties *AP30 restricted to* and *AP31 typical for*.

**OLD**

#### AP30 restricted to

Domain: E55 Type   
Range: E4 Period  
Subproperty: appears in  
Quantification: many-to-many (0,n:0,n)

Scope note: This property associates a kind of object (documented as an instance of E55) to an instance of E4 Period for indicating that objects of this kind have exclusively been generated in this period.

This property makes a strong statement concerning the distribution of the kind of object in the observation record: If the genesis of an object of this type can plausibly be assumed to fall within the genesis of the context in which it was found, then the statement made with this property would support reasoning, ceteris paribus, that the genesis period of the find context actually forms part of the related instance of E4 Period, or at least overlaps with it.

In contrast, objects from previous periods may appear in a context because they are still in use, and objects from later periods may have been pushed into an older context.

Weaker claims can be made using the properties ‘typical for’ and ‘appears in’.

In First Order Logic:

[…]

AP30(x,y) ∧ AP30(x,z) ⇒ P132(y,z)

**NEW**

#### AP30 restricted to

Domain: E55 Type   
Range: E4 Period  
Subproperty: *AP29 appears in*  
Quantification: many-to-many (0,n:0,n)

Scope note: This property associates a kind of object (documented as an instance of E55 Type) with an instance of E4 Period indicating that objects of this kind have been generated exclusively in this period.

This property makes a strong statement concerning the distribution of the associated object kind in the observed record: If the genesis of an object of this type can plausibly be assumed to fall within the genesis of the context in which it was found, then the statement made with this property would support reasoning, *ceteris paribus*, that the genesis period of the find context actually forms part of the related instance of E4 Period, or at least overlaps with it.

In contrast, objects from previous periods may appear in a context because they are still in use, and objects from later periods may have been displaced into an older context.

Weaker claims can be made using the properties *AP29 appears in* and *AP31 typical for*.

In First Order Logic:

[…]

AP30(x,y) ∧ AP30(x,z) ⇒ P132(y,z)

**OLD**

#### AP31 typical for

Domain: E55 Type   
Range: E4 Period  
Subproperty: AP29 appears in  
Quantification: many-to-many (0,n:0,n)

Scope note: This property associates a kind of object (documented as an instance of E55 Type) to an instance of E4 Period for indicating that objects of this kind have been generated in this period in significantly higher numbers and wider distribution, than in other periods.

This property makes a moderate statement concerning the distribution of the kind of object in the observation record: If a sufficient number of objects of this type are found in some context, and their genesis can plausibly be assumed to fall within the genesis of the find context, then the statement made with this property would support reasoning, ceteris paribus, that the genesis period of the find context is likely to forms part of the related instance of E4 Period, or at least overlaps with it. “Sufficient number” means that the density of objects of this kind in the find context is compatible with the general density this kind of object had in the respective period in comparable contexts and deposition history.

A stronger claim can be made using ‘restricted to’ while a weaker claim is made using ‘appears in'.

**NEW**

*AP31 typical for*

Domain: E55 Type   
Range: E4 Period  
Subproperty: *AP29 appears in*  
Quantification: many-to-many (0,n:0,n)

Scope note: This property associates a kind of object (documented as an instance of E55 Type) with an instance of E4 Period indicating that objects of this kind have been generated in this period in significantly greater numbers and in wider distributions, than in other periods.

This property makes a moderate statement concerning the distribution of the associated object kind in the observed record: If a "sufficient number" of objects of this type are found in a context, and their genesis can plausibly be assumed to fall within the genesis of the find context, then the statement made with this property would support reasoning, *ceteris paribus*, that the genesis period of the find context is likely to form part of the related instance of E4 Period, or at least overlap with it. “Sufficient number” means that the density of objects of this kind in the find context is compatible with the general density that this kind of object had during the associated period in contexts of a comparable nature and deposition history.

A stronger claim can be made using *AP30 restricted to* while a weaker claim would use *AP29 appears in*.

Add inverses to the properties

**OLD**

#### AP29 appears in

**NEW**

#### AP29 appears in (contains)

**OLD**

#### AP30 restricted to

**NEW**

#### AP30 restricted to (exclusively contains)

**OLD**

*AP31 typical for*

**NEW**

*AP31 typical for (typically contains)*