

# Open Annotation Data Model & Specification

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## About Open Annotation (OA)

The W3C Open Annotation Community Group has published an RDF-based data model and ontology for describing annotations of digital resources. This model is designed to facilitate the implementation of interoperable annotation services and tools supporting research and scholarship in the humanities and sciences and to allow researchers to annotate information objects across multiple repositories. At the core of the specification is the idea that annotations are themselves first class Web resources that can be referenced and annotated.

## What are Annotations?

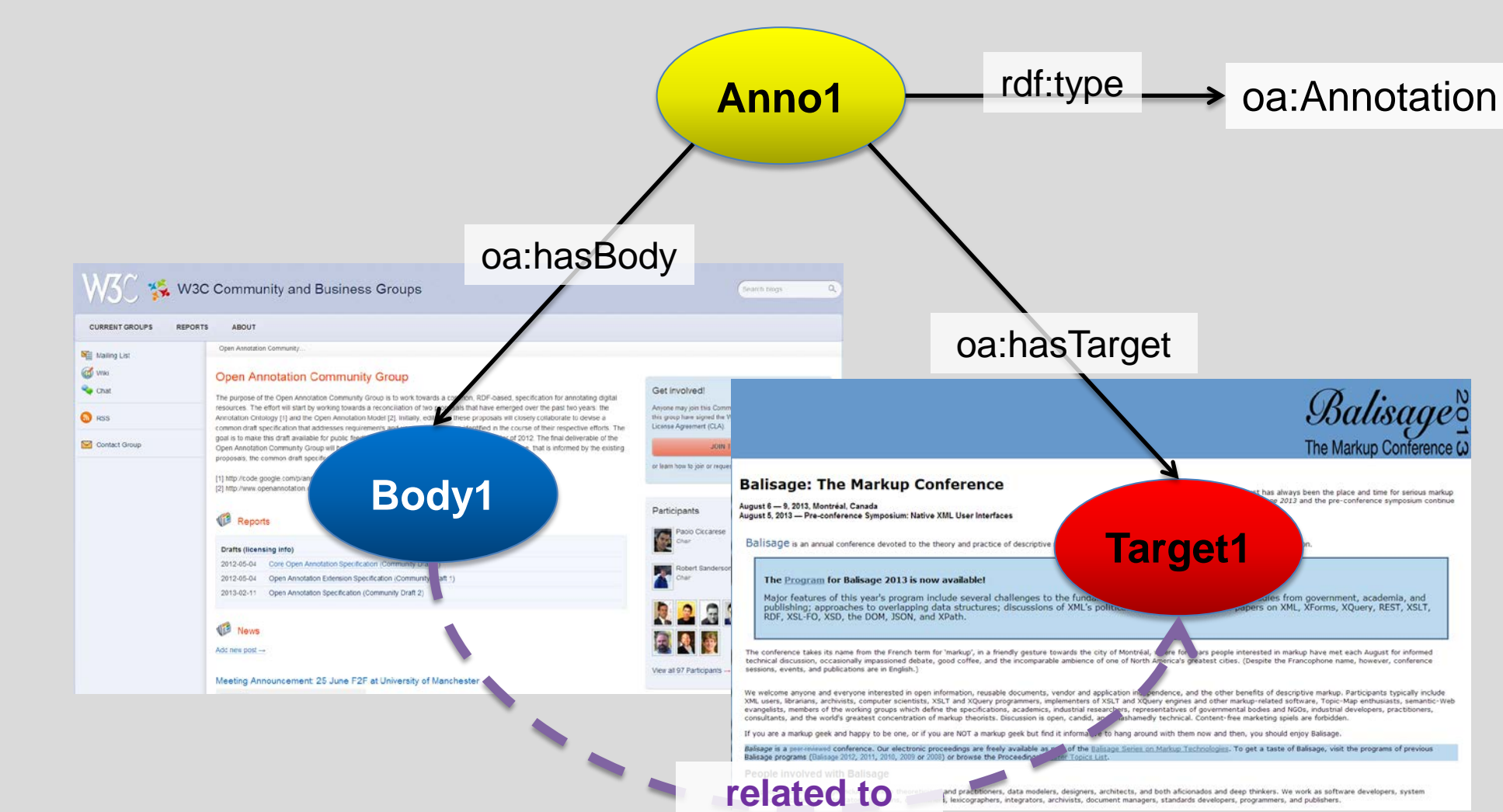
"An Annotation is considered to be a set of connected resources, typically including a body and target, where the body is somehow about the target. The full model supports additional functionality, enabling semantic annotations, embedding content, selecting segments of resources, choosing the appropriate representation of a resource and providing styling hints for consuming clients." [1]

[1] "Open Annotation Data Model." *Open Annotation Data Model*. Ed. Robert Sanderson, Paolo Ciccarese, and Herbert Van de Sompel. 2013. Retrieved from <http://www.openannotation.org/spec/core/>, 27 July 2013.

## Users annotate to:

- **Remember** (through *highlights* and *bookmarks*),
- **Share and Inform** (through *comments*),
- **Improve Discovery** (through *tags*, *georeferences*, and *links*),
- **Organize Resources** (by *classifying* or *identifying*),
- **Interact with one another** (through *discourse*),
- **Create as well as Consume** (by *editing* or *moderating*)

## Core Open Annotation Model



**Annotation:** Provides the conceptual linkage between the body and the target.  
**Body:** A resource with content that is "about" the target resource.  
**Target:** The resource whose content is being discussed.

OA annotations can be serialized in several RDF-compliant formats, e.g., in text/turtle,

```
<ex:MyAnno> a oa:Annotation ;
  oa:hasBody <http://www.w3.org/community/openannotation/> ;
  oa:hasTarget <http://www.balisage.net/> .
```

## Open Annotation Partners

**Open Annotation Community Group (OA)**  
<http://www.w3.org/community/openannotation/>  
 ...over 95 participants and growing

**Annotation Ontology (AO)**  
<https://code.google.com/p/annotation-ontology/>  
**Contributors:**

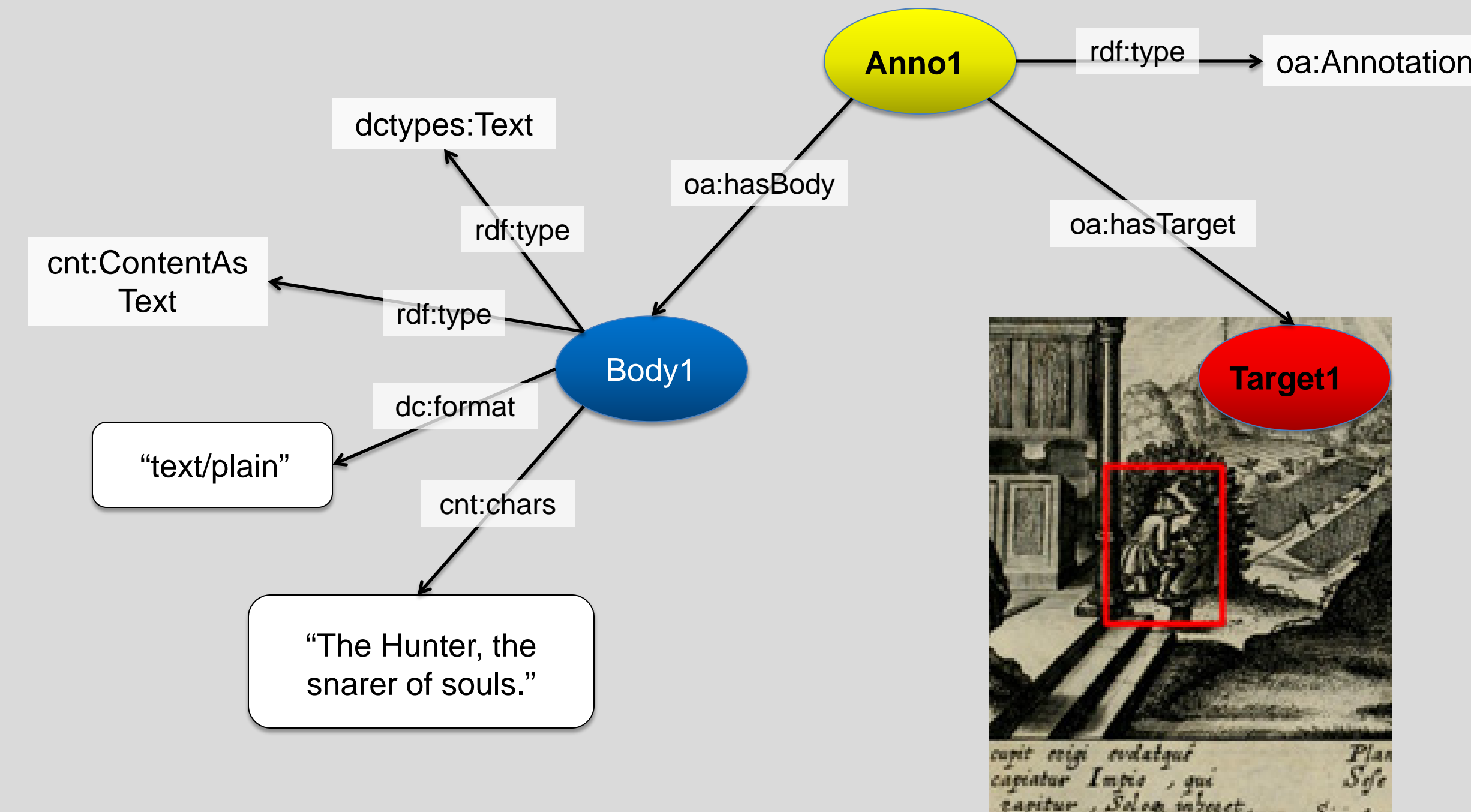
- Harvard University
- University of Bremen
- Massachusetts General Hospital
- University of Bundeswehr
- University of Manchester

**Open Annotation Collaboration (OAC)**  
<http://www.openannotation.org/>  
**Contributors:**

- University of Illinois at Urbana-Champaign
- University of Colorado
- University of Maryland
- Meertens Institute
- The University of Queensland
- Cornell University
- Los Alamos National Laboratory
- New York University
- Brown University
- Stanford University

## The RDF graph describing an annotation is itself a Web Resource

An annotation's body is treated as a separate resource which can be external or included inline (as here). The W3C's Content in RDF Draft Recommendation allows a text body to be embedded directly in the RDF graph describing an annotation.



```
<ex:MyAnno> a oa:Annotation ;
  hasBody <ex:Body1> ;
  hasTarget <ex:Target1> .

<ex:Body1> a dctypes:Text , cnt:ContentAsText ;
  dc:format "text/plain" ;
  cnt:chars "The Hunter, the snarer of souls." .
```

```
<ex:MyAnno> a oa:Annotation ;
  hasBody <ex:Body1> ;
  hasTarget <ex:Target1> .

<ex:Body1> a dctypes:Text , cnt:ContentAsText ;
  dc:format "text/plain" ;
  cnt:chars "The Hunter, the snarer of souls." .

<ex:Target1> a oa:SpecificResource ;
  oa:hasSource <http://hdl.handle.net/10111/EmblemRegistry:E003625> ;
  oa:hasSelector <ex:Selector1> .

<ex:Selector1> a oa:FragmentSelector ;
  dcterms:conformsTo <http://www.w3.org/2008/WebView/Fragments/WVD-media-fragments-spec/> ;
  rdf:value "xywh=878,696,220,160" .

<http://hdl.handle.net/10111/EmblemRegistry:E003625> a dctypes:Image ;
  dc:format "image/jpeg" .
```

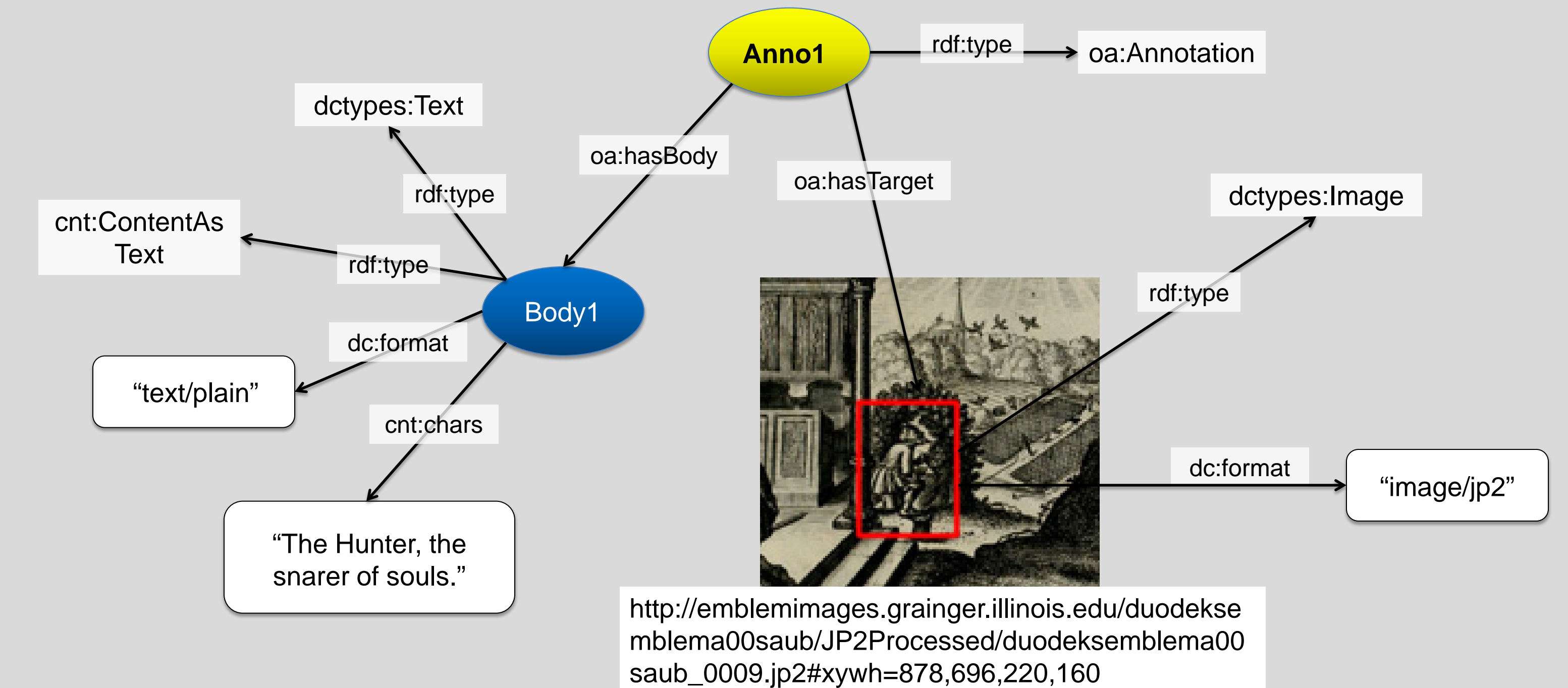
## OA also provides vocabulary for:

- **Annotation Provenance**
- **Annotation Styles** (to support highlighting use cases)
- **Multiple Annotation Bodies and Targets**
- **Temporal and HTTP States of Annotation Bodies and Targets**
- **Scoping of Annotation Bodies and Targets** (to better conserve the original context of the annotation)
- **Multiplicity constructs for Annotation Body and Target content**

## OA Annotations can be Serialized in many formats including

- **JSON-LD** (recommended),
- **RDF/XML**,
- **Turtle**,
- **N3**, etc.

The target of an annotation, also a distinct entity, can be a resource in its entirety, or a segment, version or representation derived from another resource. There are several ways to target a segment of a resource -- such as by using a Fragment URL



```
<ex:MyAnno> a oa:Annotation ;
  hasBody <ex:Body1> ;
  hasTarget <http://emblemimages.granger.illinois.edu/duodekse
    mblema00saub/Jp2Processed/duodekseblema00saub_0009.jp2#xywh=878,696,220,160> .

<ex:Body1> a dctypes:Text , cnt:ContentAsText ;
  dc:format "text/plain" ;
  cnt:chars "The Hunter, the snarer of souls." .

<http://emblemimages.granger.illinois.edu/duodekseblema00saub/
  Jp2Processed/duodekseblema00saub_0009.jp2#xywh=878,696,220,160> a dctypes:Image ;
  dc:format "image/jpeg" .
```

-- such a target can also be expressed using special features of OA vocabulary (Specific Resources defined by **hasSelector**, **hasState**, **hasStyle** and/or **hasSource** properties).

