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**Applicability of the nano-publication concept for
fostering Open Access in developing and
transition countries**



Fifth Belgrade International Open Access Conference

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Introduction



Nano-publication is

- ✓ a very short declaration
- ✓ connecting two concepts
- ✓ by means of a third
- ✓ and providing metadata about this relation.



Introduction



Trojans (concept 1)



are transmitted by (concept 3)

exe files (concept 2)



in PC computers

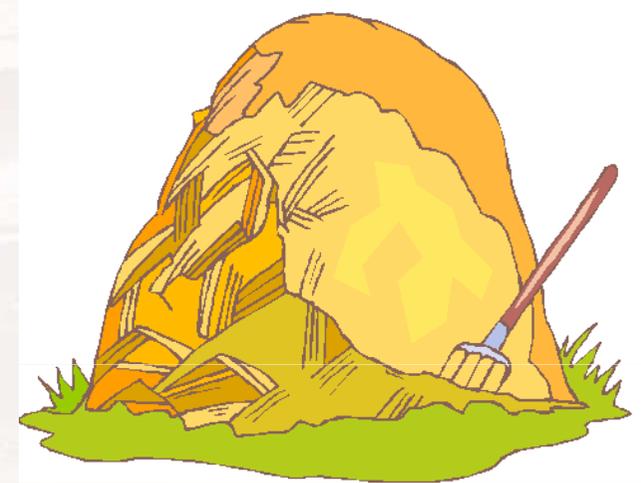


Introduction



Nano publications:

- A tool for publishing datasets



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Introduction



Nano publications:
-An OA tool



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Defining nano-publications



```
<nanopublication id="0">  
<assertion>  
<subject>NG_000007.3:g.70628G>A</subject>  
<predicate>has variant frequency</predicate>  
<object>0.25%</object>  
</assertion>  
<condition>Sardinian</condition>  
<provenance>  
<dateofcreation>March 24, 2011</dateofcreation>  
...  
<evidenceType>empirical</evidenceType>  
<authorID>Giardine et. al.</authorID>  
<curatorID>unresolved</curatorID>  
...  
</provenance>  
</nanopublication>
```

www.nanopub.org/XML/xml_ethnicity.txt

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Defining nano-publications



Five steps in creation of nano-publications:

1. Ambiguity coming from usage of different terms and identifiers that refer to a concept.



Mapping the terms and identifiers to concepts and by this elimination of ambiguity.

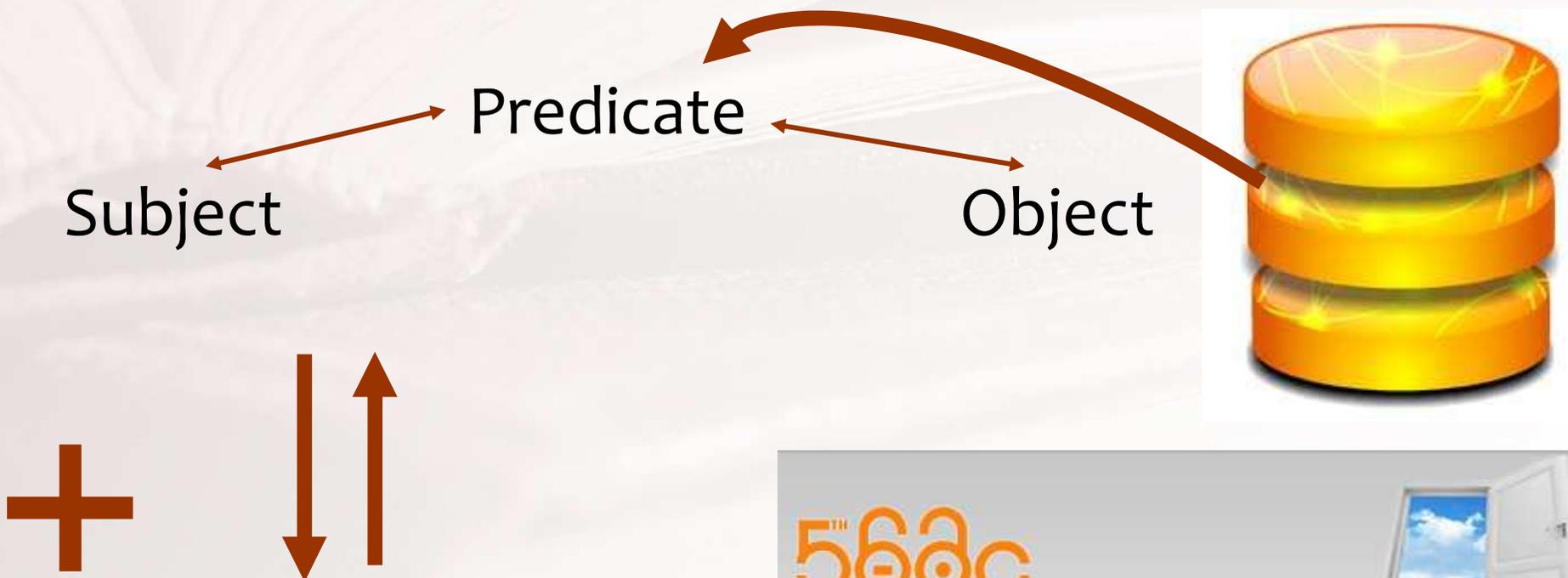


Defining nano-publications

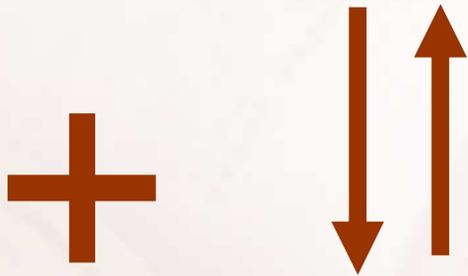


Five steps in creation of nano-publications:

2. Statements creation from concepts .



Defining nano-publications



3. Making boundaries for the statements i.e. providing the range of validity, specifying authority and adding other important metadata about the statement so that it makes sense for a community using it.



Defining nano-publications



Five steps in creation of nano-publications:

4. Bringing annotated statements to the level of proper publications that can be cited and credited.



- Curated statements
- Observational statements
- Hypothetical statements



Curated statements



Curated statements are building blocks of ontologies and are intrinsically statements that are “as true as it gets in science”.

They should be described by metadata containing data on originator of the triple statement and its curator facilitating incentives for those two categories.



Observational statements



Observational statements include factual statements originating in the literature or in datasets. The more observational statements become annotated and published in format of nano-publication the more knowledge will be accountable efficiently.



Hypothetical statements



Hypothetical statements represent triplets of yet undiscovered statements that by virtue of reasoning or data mining or inference from existing texts have high probability of being true.

When confirmed or “discovered” by other statements that originate in experimental results the authors of hypothetical statements may get credit for their prediction along with authors confirming it.



Defining nano-publications



Five steps in creation of nano-publications:

5. Making nano-publications really useful.



When converted to annotated triplets most of the data becomes redundant making the remaining triplets really useful for researchers since they are now easily discoverable by machine aided search and retrieval.



Defining nano-publications



Nano-publications are based on open standards such as RDF and XML.

Open PHACTS Nanopublication Guidelines v1.81



Nano-publications in developing and transition countries



Nano-publications have the potential to be an important driver of scientific research in first world countries which are ample in resources that allow for production of datasets in areas like life sciences.

Can nano-publications also play a significant role in fostering communication and usage of OA resources in scientific communities of developing and transitional countries?



Nano-publications in developing and transition countries



Scientific communities and librarians of developing and transitional countries can engage in several activities and operations based on freely available datasets that may start to emerge with wider usage of nano-publications.

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Nano-publications in developing and transition countries



1.

- Creating and editing of concepts regarding the members of their own community in databases such as ConceptWiki.
- Adding to mapping efforts that lead to creation of unambiguously resolving of terms and identifiers into unique concepts.
- *A posteriori* mapping of terms and identifiers in already published texts.

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Nano-publications in developing and transition countries



2. & 3.

- Exposure of triplet statements from datasets that are freely available.
- Annotation of triplet statements that were either produced by those creating annotation or by someone else.



Nano-publications in developing and transition countries



4.

- Creation of hypothetical statements building on available datasets.

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Nano-publications in developing and transition countries



5.

- Analysis of statements and removal of redundancies along with clustering and linking of statements that are not redundant and by this upgrading the existing semantic Web .

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Nano-publications and humanities and social sciences in developing and transition countries



In developing and transitional countries humanities and social sciences scholars are still numerous (when compared to statistics of the first world countries) and are especially hard hit by widening gap in skills and knowledge compared to their peers in first world countries.

Nano-publications may have an important role in humanities and social sciences based on examples provided by (Chambers, 2011).



Nano-publications in developing and transition countries and ethical issues



All mentioned activities are very promising if fair use is applied i.e. if ethical standards of scientific conduct are respected.

System of regulations and control need to be established.

Imposing too much control and regulation in area that builds on OA principles may stall the process to a standstill.

Therefore we propose a balanced approach and employment of self-regulatory mechanisms.



Nano-publications in developing and transition countries and ethical issues



In general we propose usage of Web 2.0 technologies for dissemination of results in area of nanopublishing because by their own virtue these technologies provide transparent environment that is likely to expose any misbehaviour.

ConceptWiki where quality is intrinsically ensured by properties of Wiki technology that enables seamless internal control of those involved in the process of creation and editing of concepts.

Mandatory blogging of results may add to transparency of nanopublishing process.



Nano-publication fostering OA in developing and transitional countries?



Strong incentives may exist for usage of nano-publications in developing and transitional countries.

All concepts and technologies involved with nano-publications are open sourced and compliant with OA initiative.

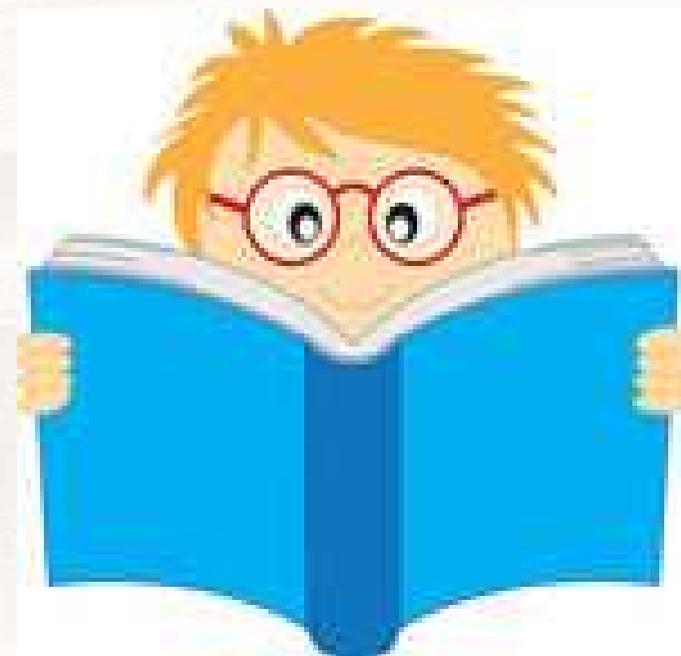


Nano-publication fostering OA in developing and transitional countries?



By familiarizing with different open source technologies and ideas that are intrinsic for nano-publications they may become specific driver of OA.

Usage of nano-publications ensures dissemination of RDF, XML, URI, UUID, ConceptWiki, etc. that ground basis for flourishing of OA initiatives.



Nano-publication fostering OA in developing and transitional countries?



We propose special support for nano-publication initiatives in order to foster usage of OA materials in conjunction with nanopublishing in developing and transitional countries.



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THANK YOU!

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