

open access and the  
transformation of science  
the time is ripe

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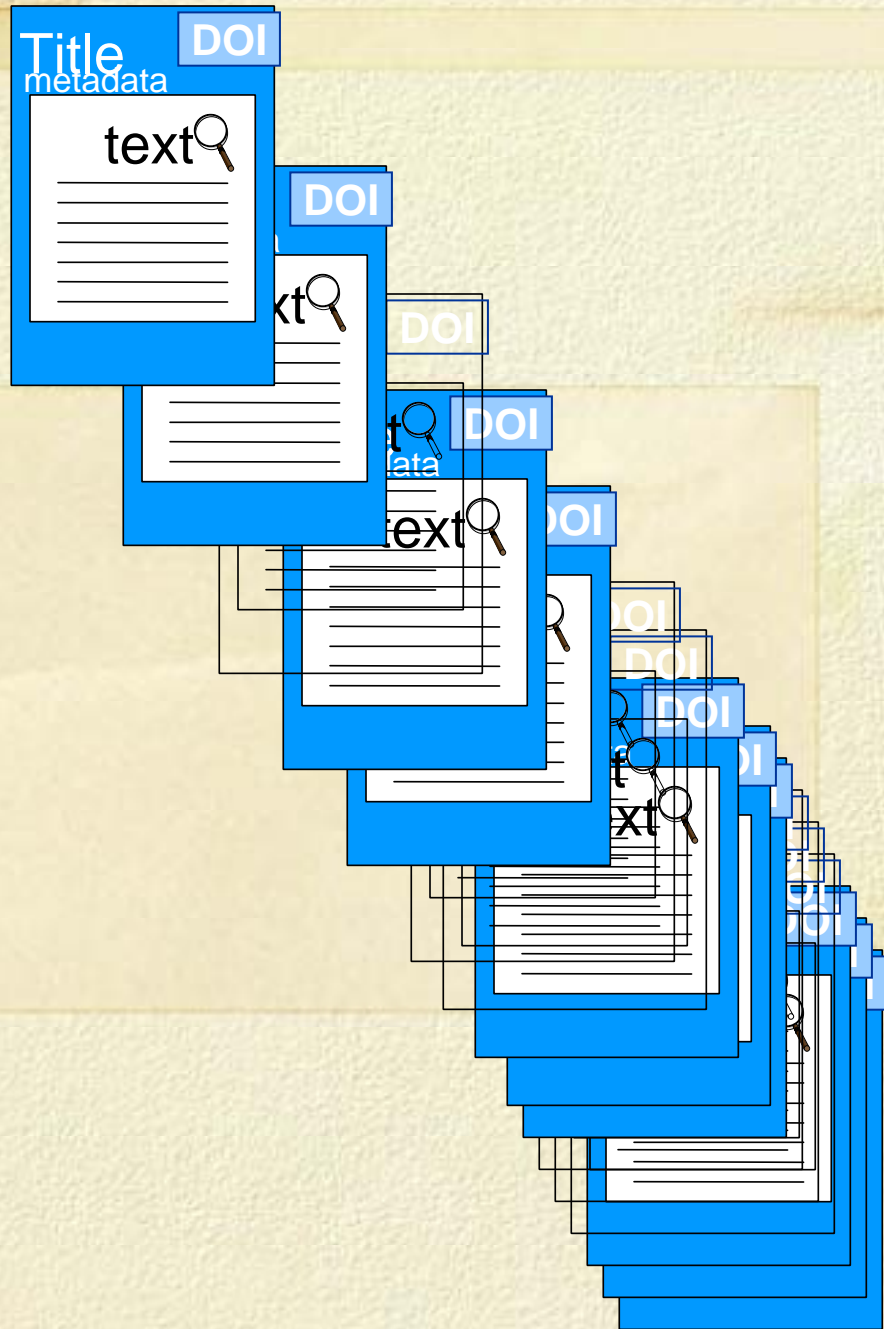
open:  
enlightened  
开明



virtually no  
institution has  
access to all  
relevant  
literature

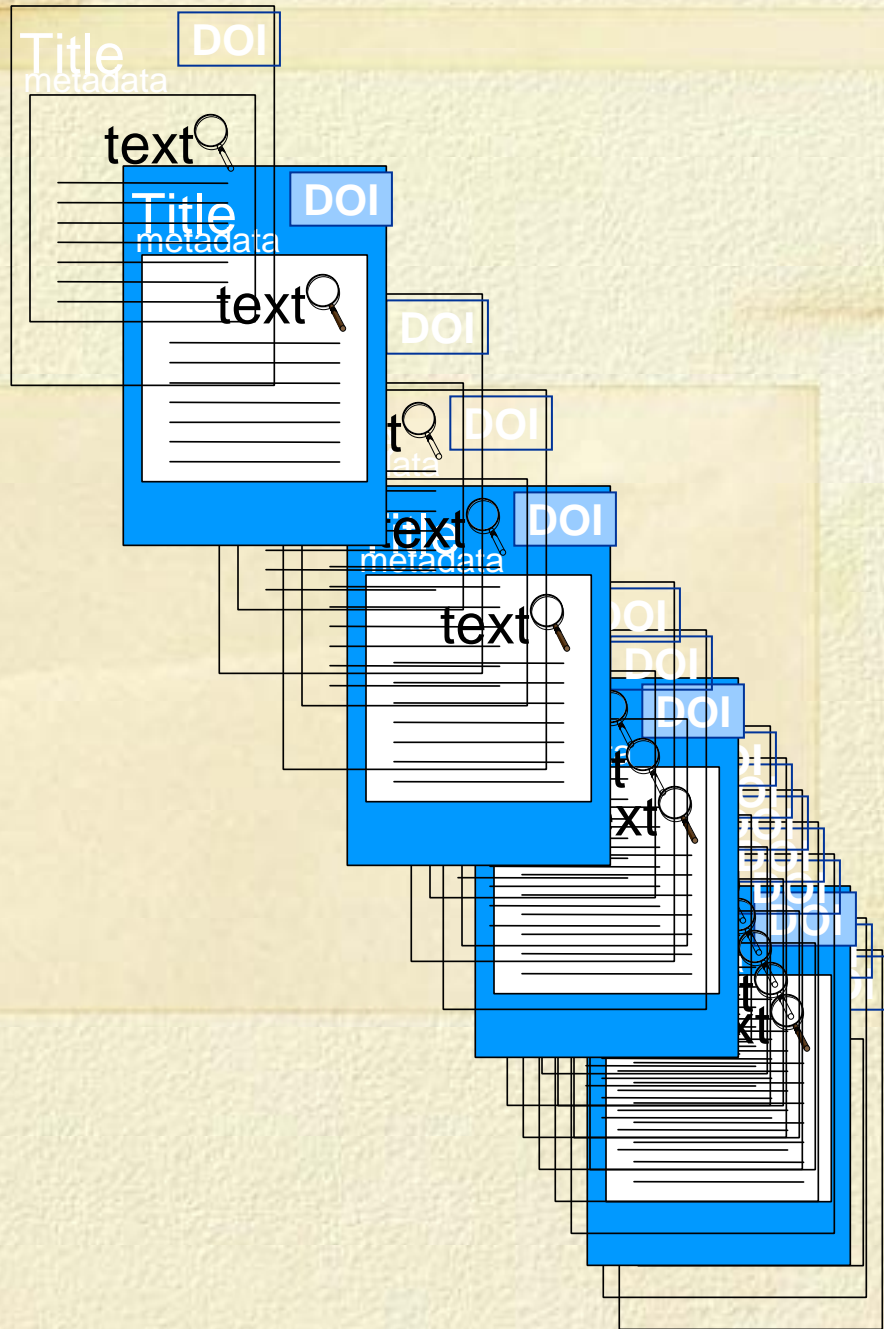


in richer  
countries  
maybe:

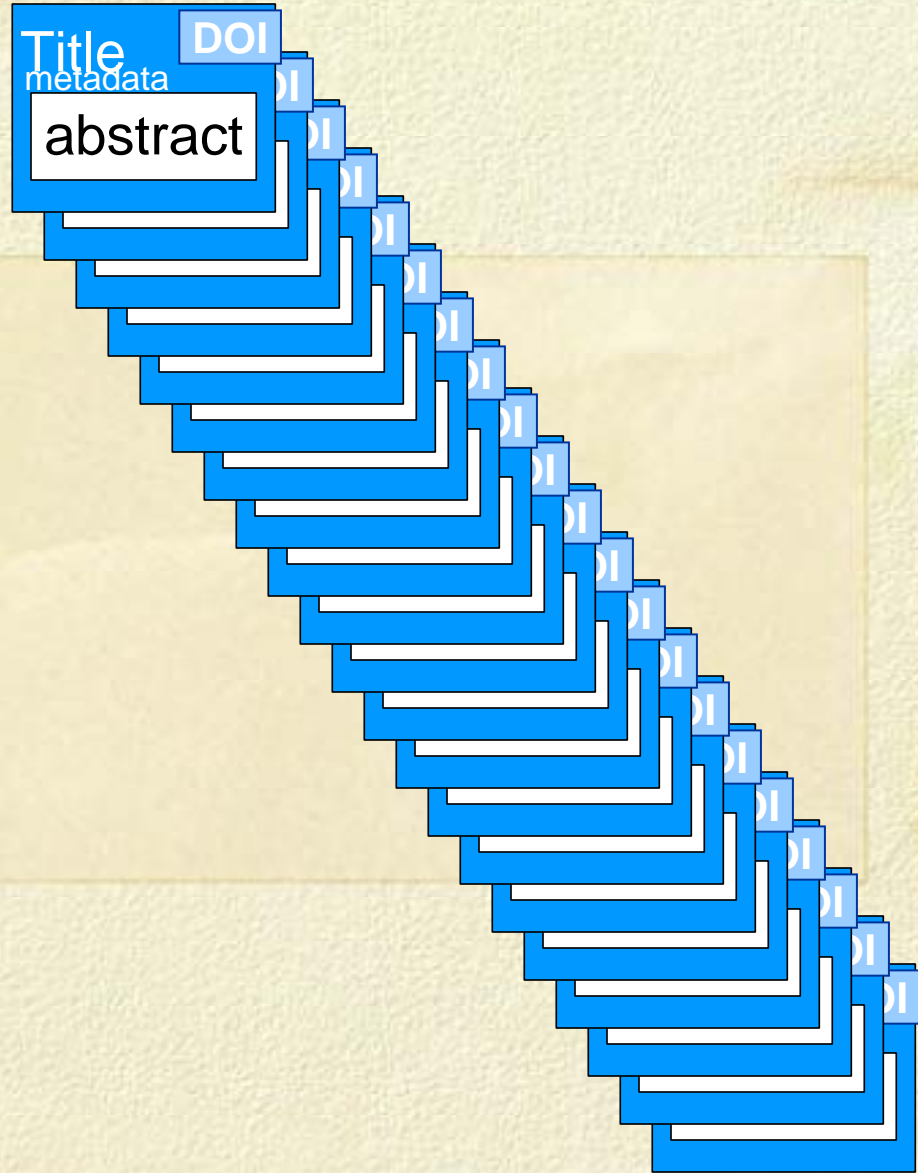




in poorer  
countries  
maybe:



in poorest  
countries  
maybe:



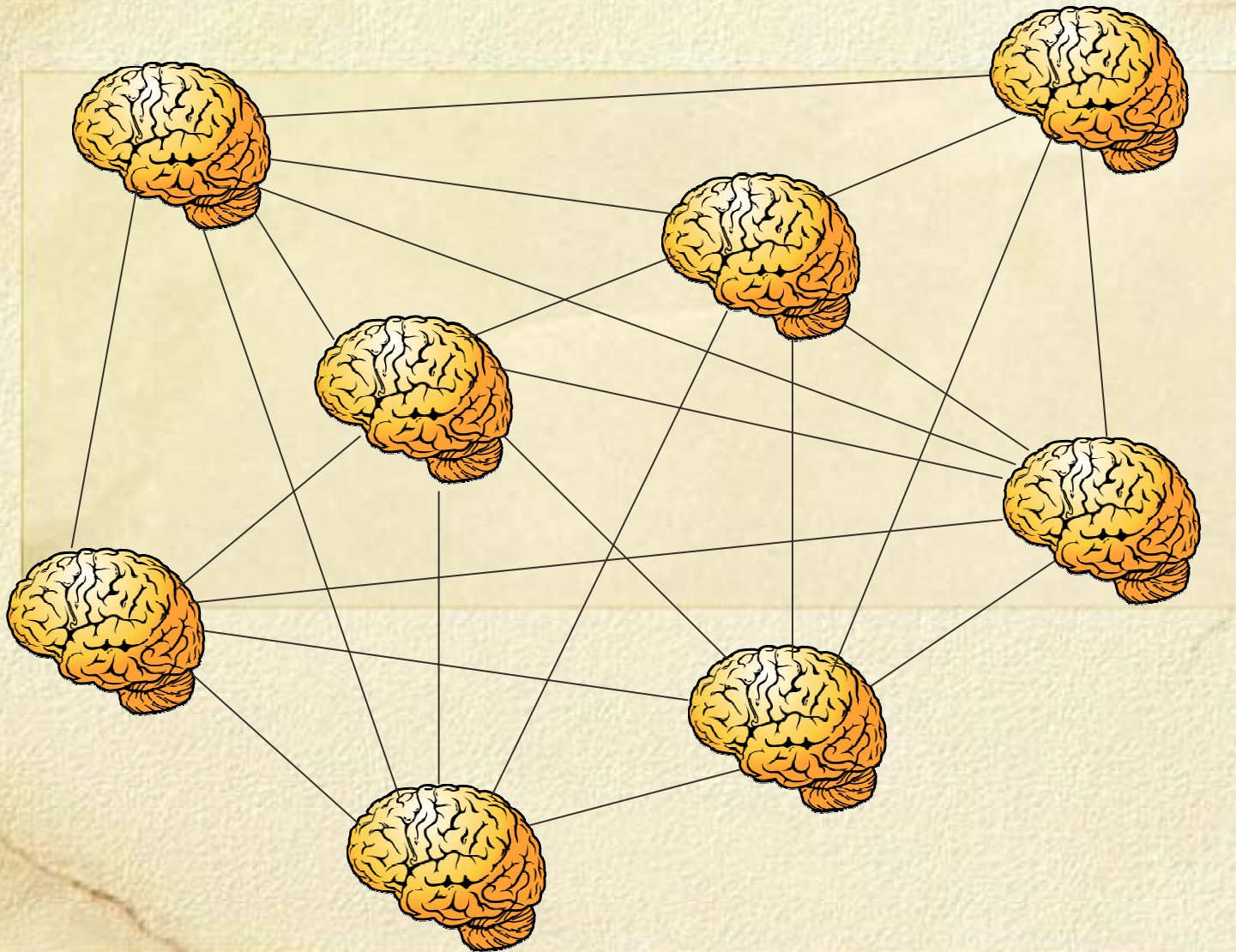


# open access

in poorest  
countries and  
in the richest:



isn't science communication the connective tissue between the world's inquisitive minds?

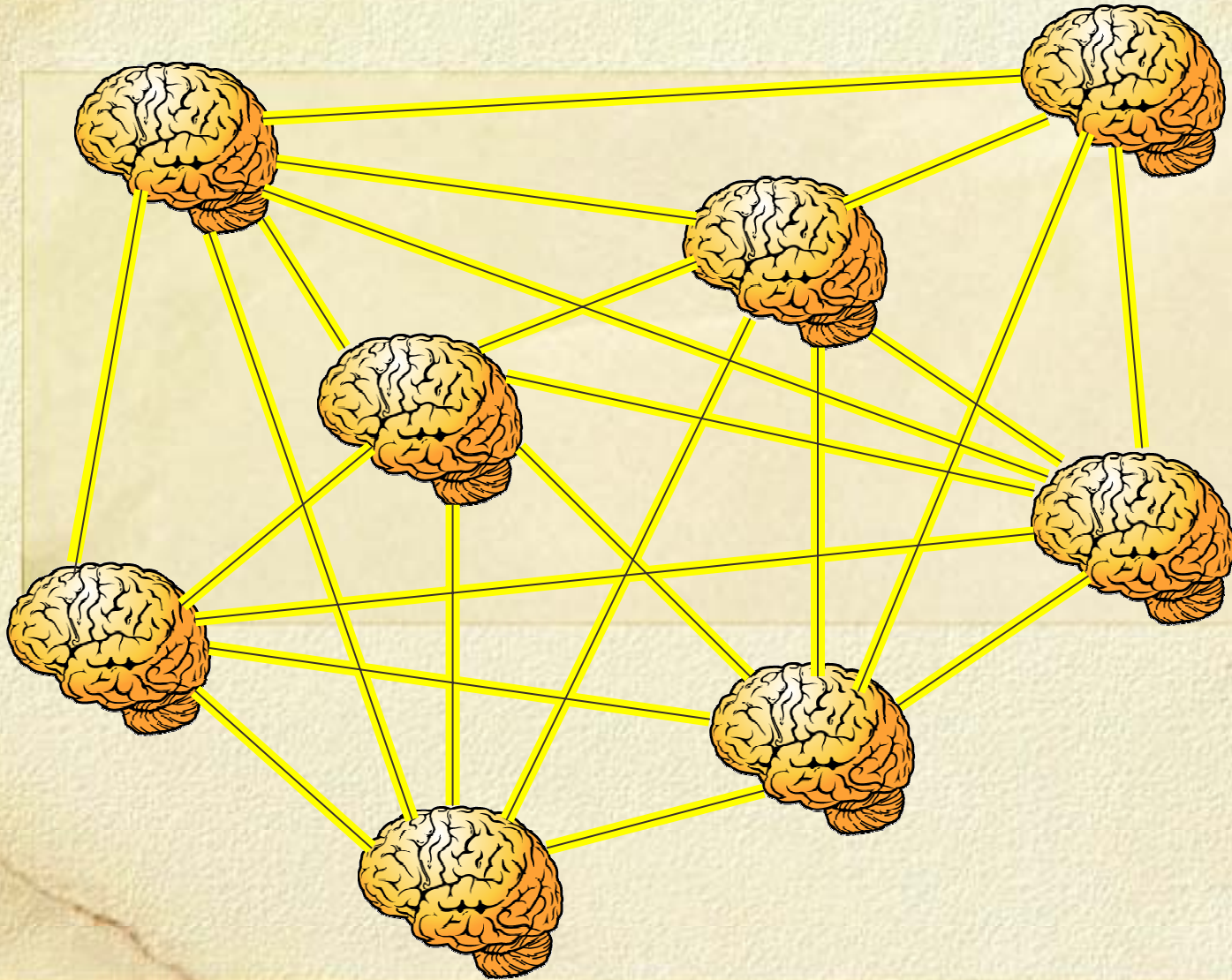




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distributed, collective, intelligence; more than the sum of its parts; only possible with optimal communication





open access publishers don't  
just publish science

*they make science*

*public*

公开



to publish is to 'make public';  
to 'give out'

出版 to publish

出 to go out / to come out



# a scientific article:

**That zincing feeling: the effects of EDTA on the behaviour of zinc-binding transcriptional regulators.**

**Nyborg JK, Peersen OB.**

Department of Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO 80523-1870, USA. Jennifer.Nyborg@colostate.edu

Zinc-binding proteins account for nearly half of the transcription regulatory proteins in the human genome and are the most abundant class of proteins in the human proteome. The zinc-binding transcriptional regulatory proteins utilize Zn<sup>2+</sup> to fold structural domains that participate in intermolecular interactions. A study by Matt et al. in this issue of the Biochemical Journal has examined the transcription factor binding properties of the zinc-binding module C/H1 (cysteine/histidine-rich region 1) found in the transcriptional co-activator proteins CBP (CREB-binding protein) and p300. Their studies revealed that EDTA treatment of native C/H1 leads to irreversible denaturation and aggregation. Of particular concern is their finding that unfolded C/H1 participates in non-specific protein-protein interactions. The implications of these results are significant. EDTA is a very potent zinc-chelating agent that is used ubiquitously in protein interaction studies and in molecular biology in general. The potentially detrimental effects of EDTA on the structure and interactions of zinc-binding proteins should be taken into account in the interpretation of a sizeable number of published studies and must be considered in future experiments.

Biochem J. 2004 Aug 1;381(Pt 3):e3-4.



## typical copyright line:

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what should be a typical  
copyright line:

© The Author. Please copy this article as much as possible and disseminate it further as widely as possible. Just cite the author properly when you do.



publishing should ensure maximum dissemination of research articles

*because it is in the interest of:*

- ✓ the author
- ✓ the reader
- ✓ the institute
- ✓ the funder
- ✓ science
- ✓ society as a whole



# open access publishing

- ✓ *because:*
- ✓ the environment has fundamentally changed
- ✓ it is technically feasible
- ✓ it satisfies great needs
- ✓ it brings broad benefits
- ✓ **it makes sense!**



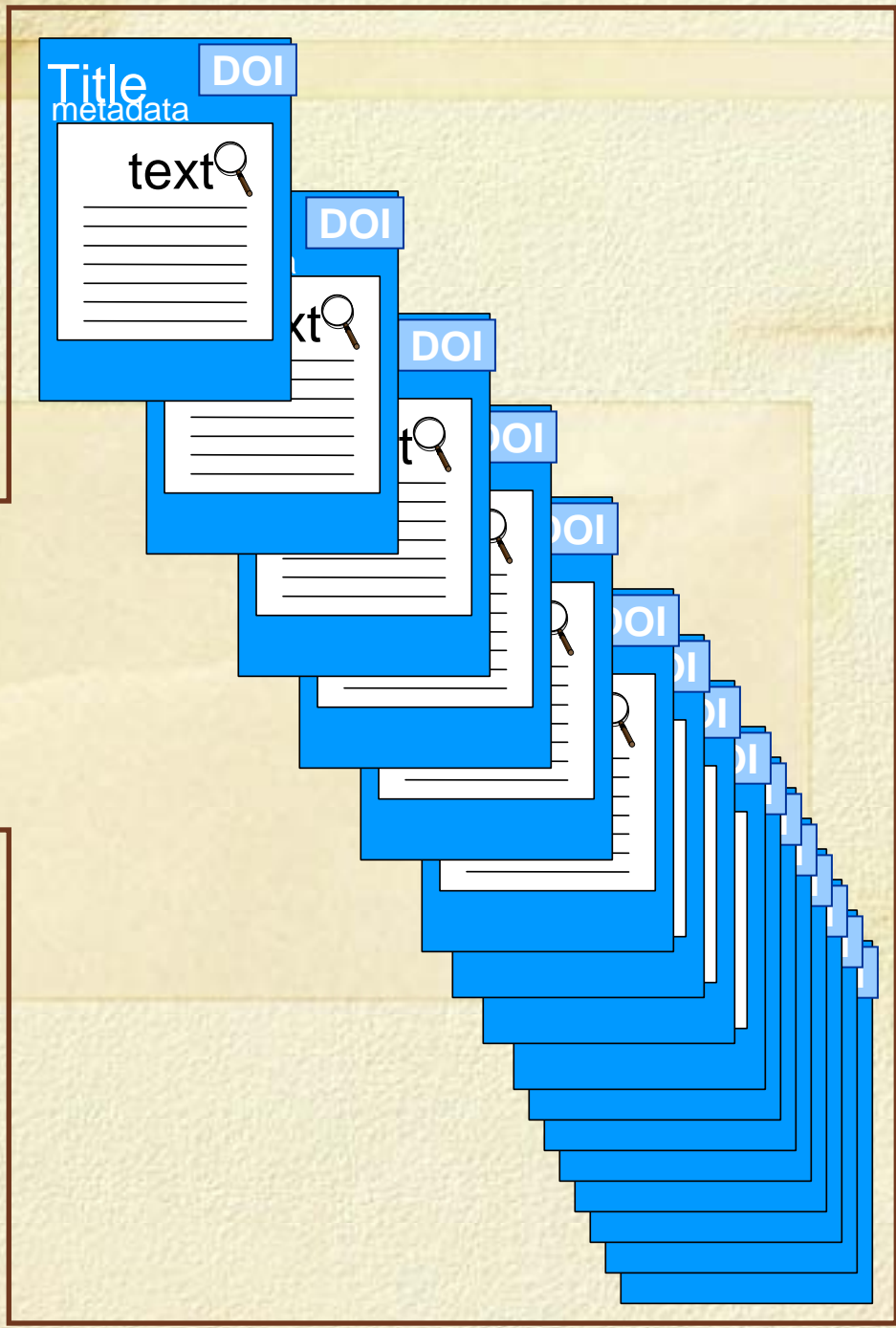
# access: just the beginning

- ✓freely distribute further
- ✓use for textmining, meta-analysis
- ✓use for data-mining
- ✓freely comment
- ✓use for new applications (e.g. concept disambiguation)

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Meta-  
analysis





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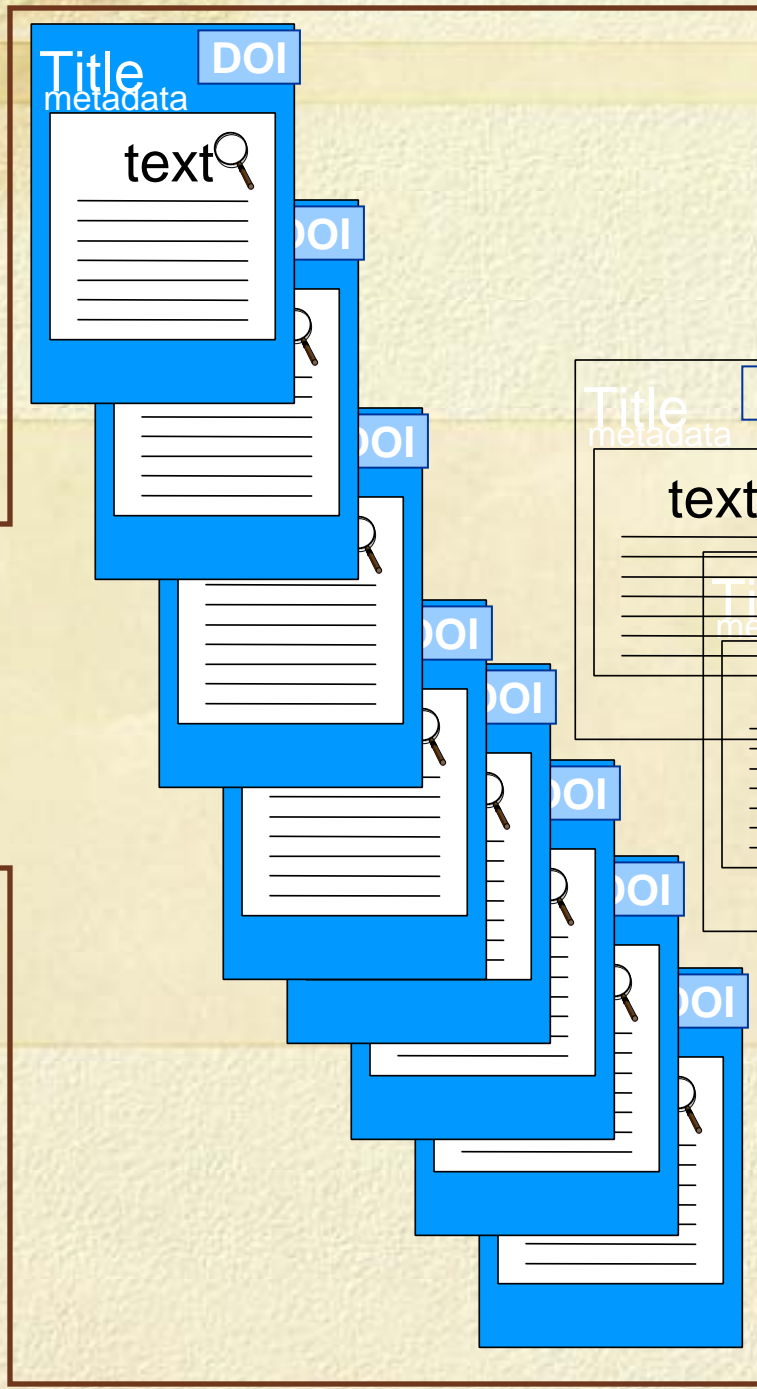




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Meta-  
analysis  
s

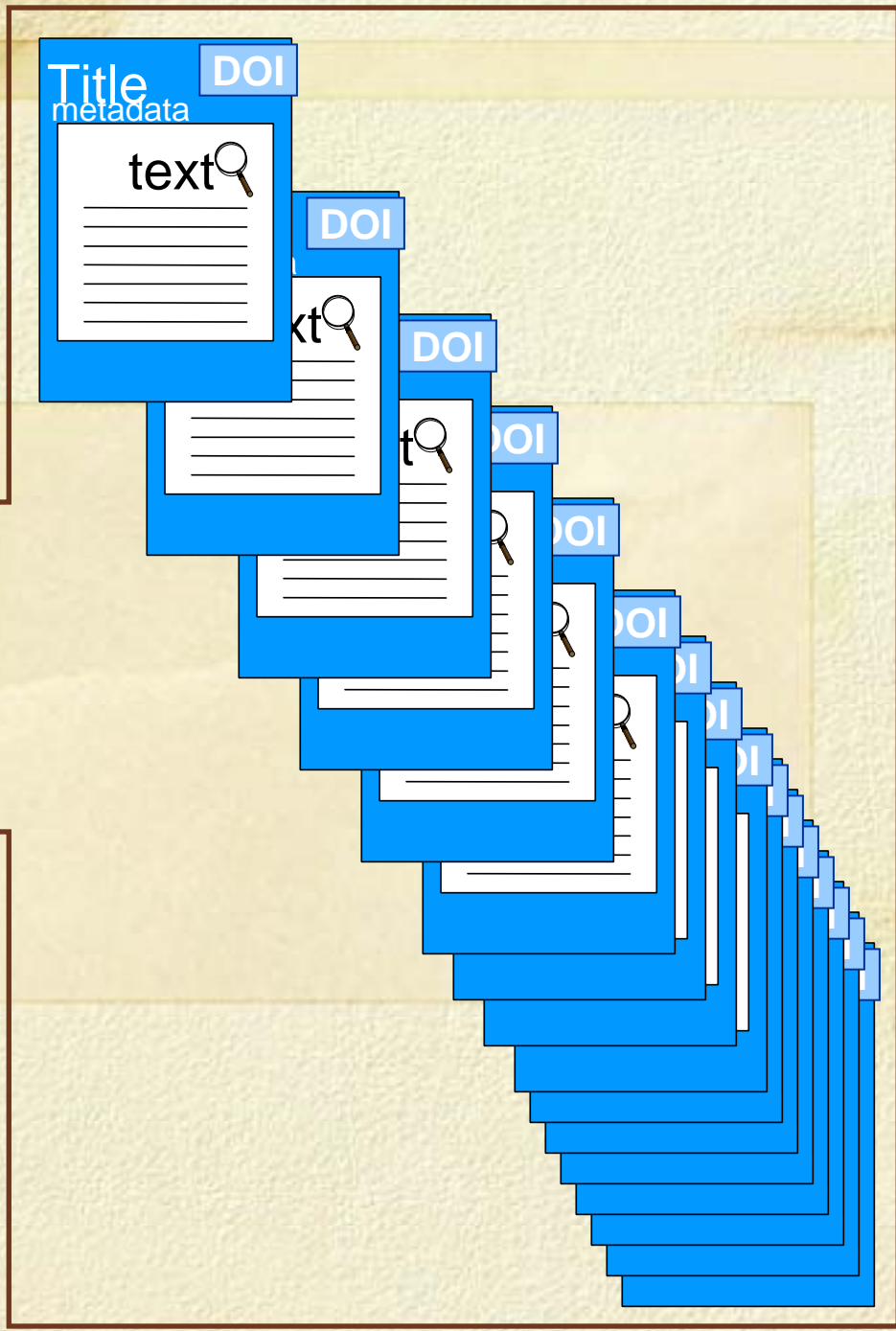


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open access

Meta-  
analysis





世界畜产品贸易

Used keywords

English 中文

Keywords influencing the result list; relative importance can be adjusted; "top" means "has to be in"

	low	med	high	top
<input checked="" type="checkbox"/> Households	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="checkbox"/> Animal products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="checkbox"/> Quarantine	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
<input checked="" type="checkbox"/> Hygiene	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
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<input checked="" type="checkbox"/> Exports	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/> Trade barriers	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
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<input checked="" type="checkbox"/> Imports	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/> Income	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/> Energy sources	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/> Standards	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
<input checked="" type="checkbox"/> Plants	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
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<input checked="" type="checkbox"/> Domestic production	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Henry Rzepa (Sept 2004):

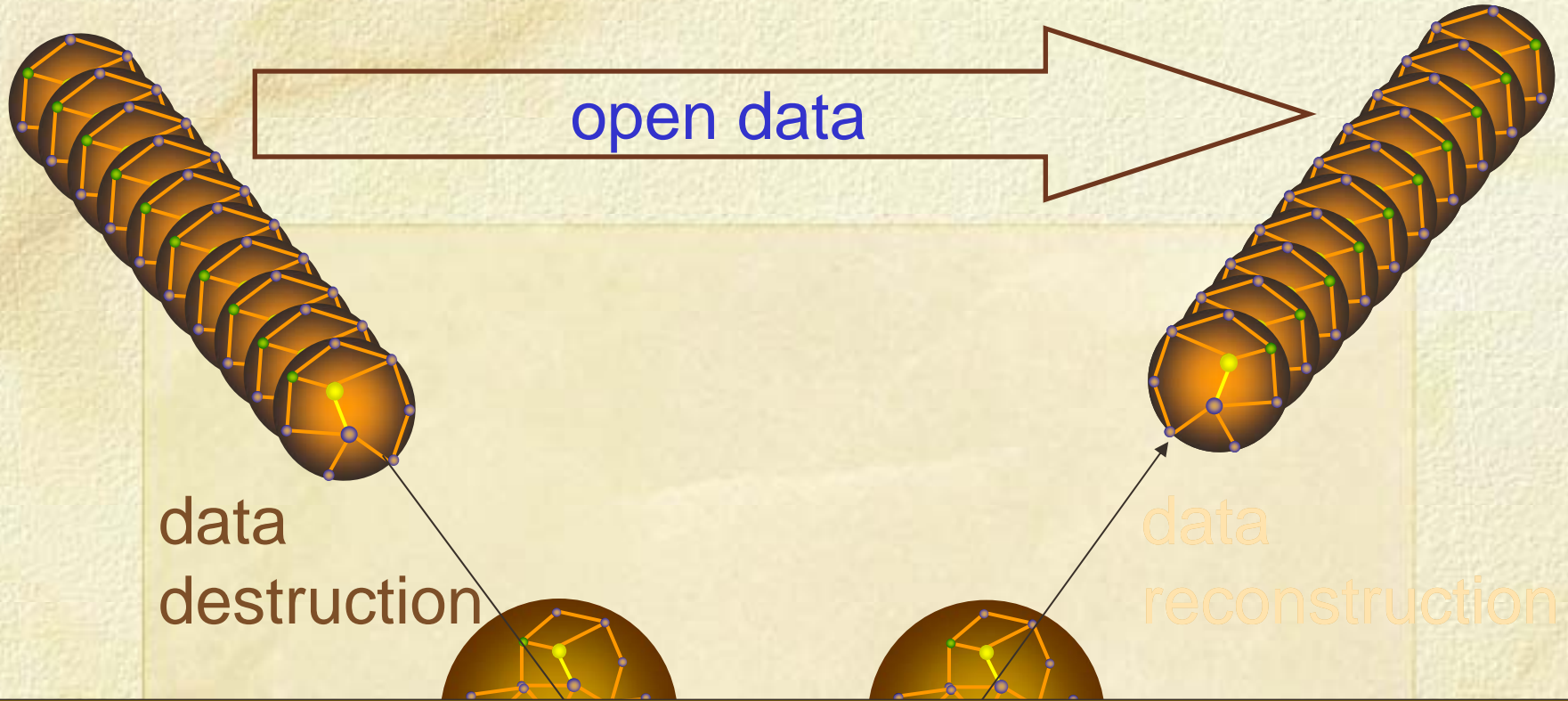
“...more important is that the original (author prepared) article was actually written in HTML/XML, and hence much data was included in this original. To prepare it for the journal production process, we convert this to Word, from which the journal then produces proofs; during this process of course, much of the value of the original data is lost.”

[AMERICAN-SCIENTIST-OPEN-ACCESS-FORUM@LISTSERVER.SIGMAXI.ORG](mailto:AMERICAN-SCIENTIST-OPEN-ACCESS-FORUM@LISTSERVER.SIGMAXI.ORG)



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data  
destruction

open data

data  
reconstruction

after: Barend Mons

## open data

**nature** guide to authors:

*“Papers reporting protein or DNA sequences and molecular structures will not be accepted without an accession number to [an] appropriate, identified, **publicly available** database in general use in the field that gives **free access** to researchers from the date of publication”* (emphasis added)



## comments

british medical journal (bmj.com):

Send us your response to:

PAPERS:

Russell M Viner and Tim J Cole **Adult socioeconomic, educational, social, and psychological outcomes of childhood obesity: a national birth cohort study**

BMJ 2005; 330: 1354 [Abstract] [Full text]

## protein names....

Name and origin of the protein	
Protein name	<b>Annexin A5</b>
Synonyms	<b>Annexin V</b> <b>Lipocortin V</b> <b>Endonexin II</b> <b>Calphobindin I</b> <b>CBP-I</b> <b>Placental anticoagulant protein I</b> <b>PAP-I</b> <b>PP4</b> <b>Thromboplastin inhibitor</b> <b>Vascular anticoagulant-alpha</b> <b>VAC-alpha</b> <b>Anchorin CII</b>
Gene name	<b>ANXA5</b> or <b>ANX5</b> or <b>ENX2</b> or <b>PP4</b>
From	<a href="#">Homo sapiens (Human)</a> [TaxID: <a href="#">9606</a> ]
Taxonomy	<a href="#">Eukaryota</a> ; <a href="#">Metazoa</a> ; <a href="#">Chordata</a> ; <a href="#">Craniata</a> ; <a href="#">Vertebrata</a> ; <a href="#">Euteleostomi</a> ; <a href="#">Mammalia</a> ; <a href="#">Eutheria</a> ; <a href="#">Primates</a> ; <a href="#">Catarrhini</a> ; <a href="#">Hominidae</a> ; <a href="#">Homo</a> .



## another big problem... TLA

### **Epidermal growth factor receptor**

EI, DER, Egf, Elp, flb, top, EGFR, EGFr, EgfR, egfr, C-erb, D-Egf, Degfr, EGF-R, EK2-6, Egf-r, Elp-1, HD-33, dEGFR, D-EGFR, Elp-B1, c-erbB, dEGFR1, CG10079, CT28361, DER/top, DmHD-33, Ellipse, Torpedo, top/DER, top/flb, DER/EGFR, I(2)57Ea, Elp-B1RB1, I(2)05351, I(2)09261, I(2)57EFa, I(2)57DEFa, DER flb, EGF Receptor, Torpedo/Egfr, Ellipse torpedo, faint little ball.

## homonyms... e.g. PSA

**P**rostate **S**pecific **A**ntigen

**P**Soriatic **A**rthritis

alpha-2,8-**P**oly**S**ialic **A**cid

**P**oly**S**ubstance **A**buse

**P**icryl **S**ulfonic **A**cid

**P**olymeric **S**ilicic **A**cid

**P**artial **S**ensory **A**gnosia

**P**oultry **S**cience **A**ssociation



open access publishing:  
'author' pays

open access publishing:  
**'author' pays**



*offspring* of subscription model

*assume:*

journal costs \$100,000 to run (with some profit);

it has 100 articles;

each article costs \$1000



*offspring* of subscription model

1000 subscriptions @ \$100 – individual subs; no sharing

500 subscriptions @ \$200 – library sharing

100 subscriptions @ \$1000 – consortium sharing

one subscription @ \$100,000 – world sharing



world sharing? unrealistic prospect!

or is it?

100 articles @ \$1000 article

charge

open access: world  
sharing



# what open access can do for authors

*everything traditional journals can; and more:*

- ✓ recognition – visibility
- ✓ improve impact
- ✓ imply innovative attitude
- ✓ secure grants



## what authors can do for open access

- ✓ submit to open access journals
- ✓ best articles – help gain credibility
- ✓ compare downloads – visibility – citations
- ✓ register interest
- ✓ talk about open access
- ✓ start new open access journal
- ✓ self-archive – institutional open repository



but...  
we are realistic...



men pay most attention  
to what is their own –  
less to what is common

Aristotle

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yet we must act now



“He who stands on a hill with his mouth open will wait a long time for a roast duck to drop in.”

孔子 (*Confucius; apocryphal?*)

science has many  
disciplines  
*but little discipline*



what institutions can do for open access

introduce just a little discipline:

organise article processing payment

establish institutional open  
repositories

require deposit – self-archiving

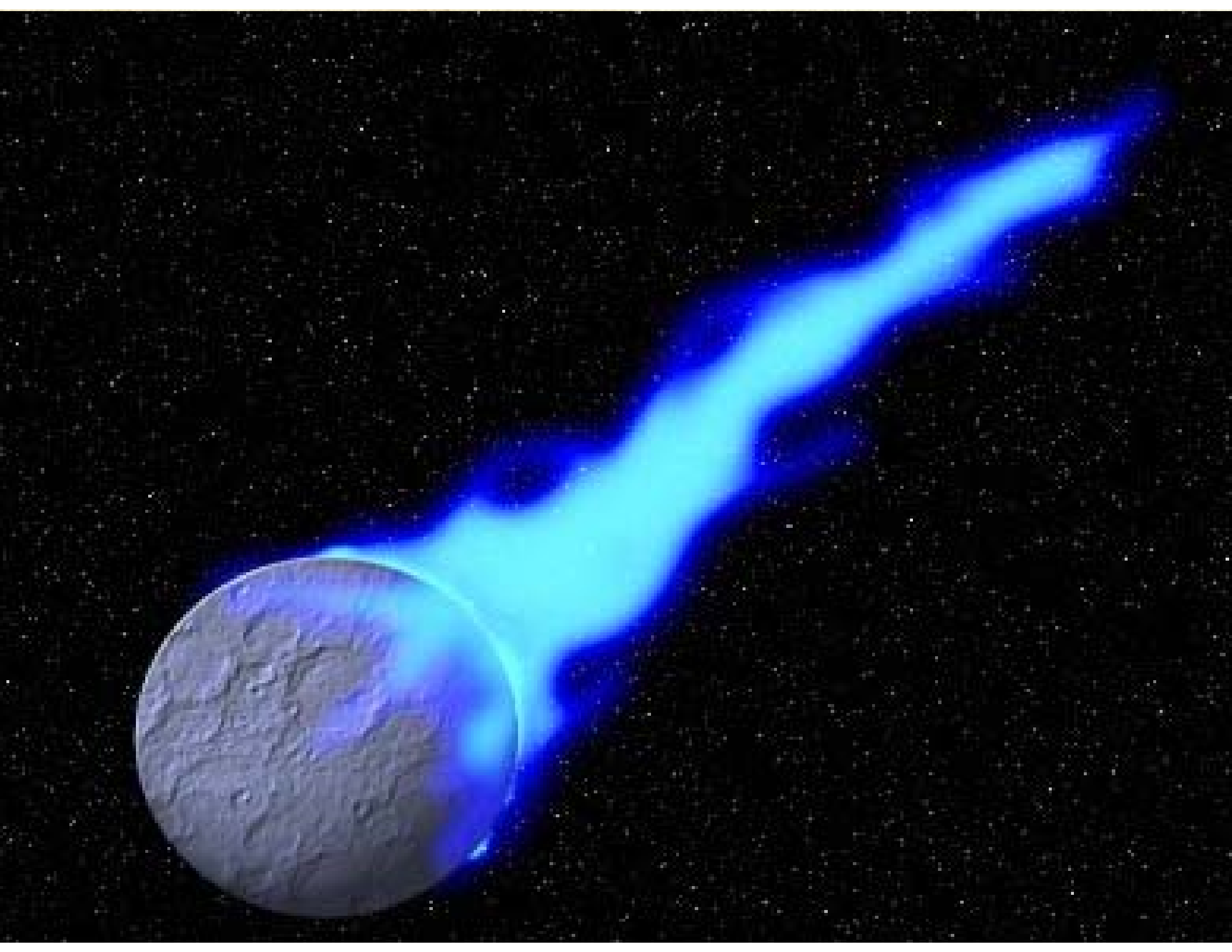
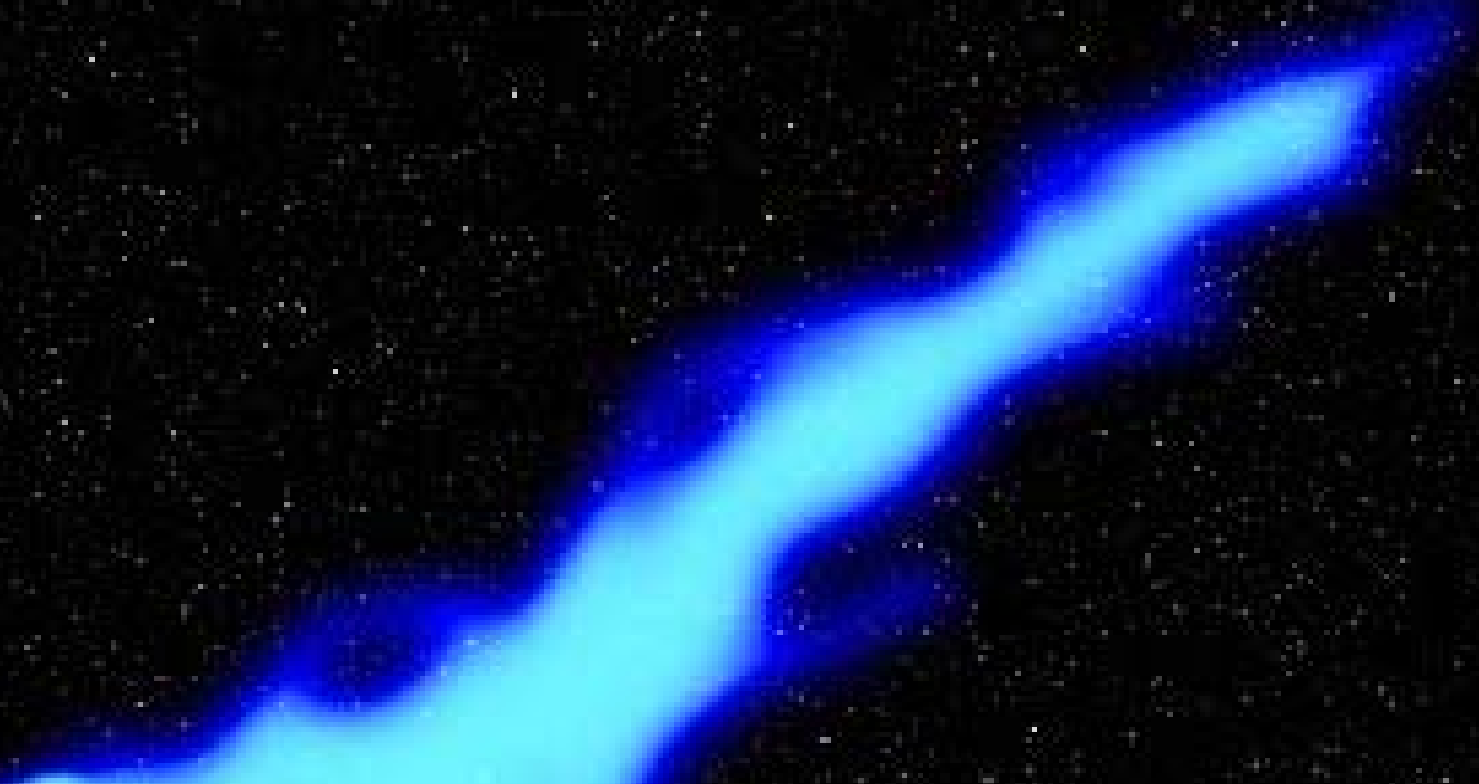


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# climate change





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Jan Velterop 北京 中国 June 2005



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谢谢