Open science for publications and data
Chances and risks for research integrity

Michèle LEDUC

Physicist, Research Director emeritus at CNRS

Member of COMETS *(Ethics Committee of CNRS)*

Member of CoFIS (*French Council for Research Integrity*)

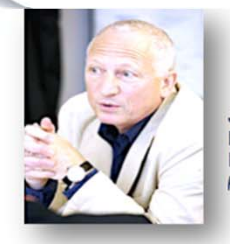
Jean-Gabriel GANASCIA

Professor at Sorbonne University, Paris

President of COMETS

6th World Conference on Research Integrity Hong Kong 2019

Members of COMETS



Jean-Gabriel GANASCIA
Président du COMETS
Informaticien
Prof. UPMC, Paris

Philippe ASKENZY
Économiste
Prof. ENS et DR CNRS

Patrice DEBRE
Expert en immunologie
Prof. APHP (UPMC/INSERM)

Jean-Paul DELAHAYE
Mathématicien et informaticien
Prof. émérite Univ. Lille

Didier GOURIER
Chimiste
Prof. Ecole Chimie-ParisTech

Catherine JEANDEL
Océanographe, Géochimiste
DR CNRS LEGOS,
Univ. Toulouse

Michèle LEDUC
Physicienne
DR émérite CNRS,
ENS, Paris

Frédérique LEICHTER-FLACK
Philosophe, spécialiste d'éthique
et littérature comparée,
Univ. Paris X

Lucienne LETELLIER
Biophysicienne
DR émérite CNRS
Univ. Paris Saclay

Antoinette MOLINIE
Anthropologue
DR CNRS, Univ. Paris X

Rémy MOSSERI
Physicien
DR CNRS, UPMC, Paris

Nathalie NEVEJANS
Juriste, droit privé
MCF, Univ. Arras

Jean-Pierre POUSSIN
Juriste, Magistrat honoraire
Cour des Comptes
Aix en Provence

Missions

Think over research practices

Define principles about individual behaviour and collective attitudes

Offer recommendations for the researchers's community and for their institutions

Open Science – umbrella term

A recent entreprise at the international level

A strong will to open the results of science to

- The whole scientific community
- The media
- The citizens

In agreement with the **UNESCO Recommendation on Science and Scientific Researchers** (nov.2017)

Open Science: an in depth new policy

At the European level

Budapest Open Access Initiative (2003)

Open science recommended for EC funded research since 2012

Already on use for several EC programs and at ERC

In France

Opening of scientific results obtained with public funding :

COMPULSORY soon

National Plan for Open Science (2018) with allocation of funds

New horizons at the time of internet…

Publications in open access

- OA « green »: deposit preprints
- OA « gold »: author paying the APC (*Author Processing Charges*)
- New: bibliodiversity (Epi-journals, scientific blogs, etc…) *when scientists become their own publishers…*

Research data

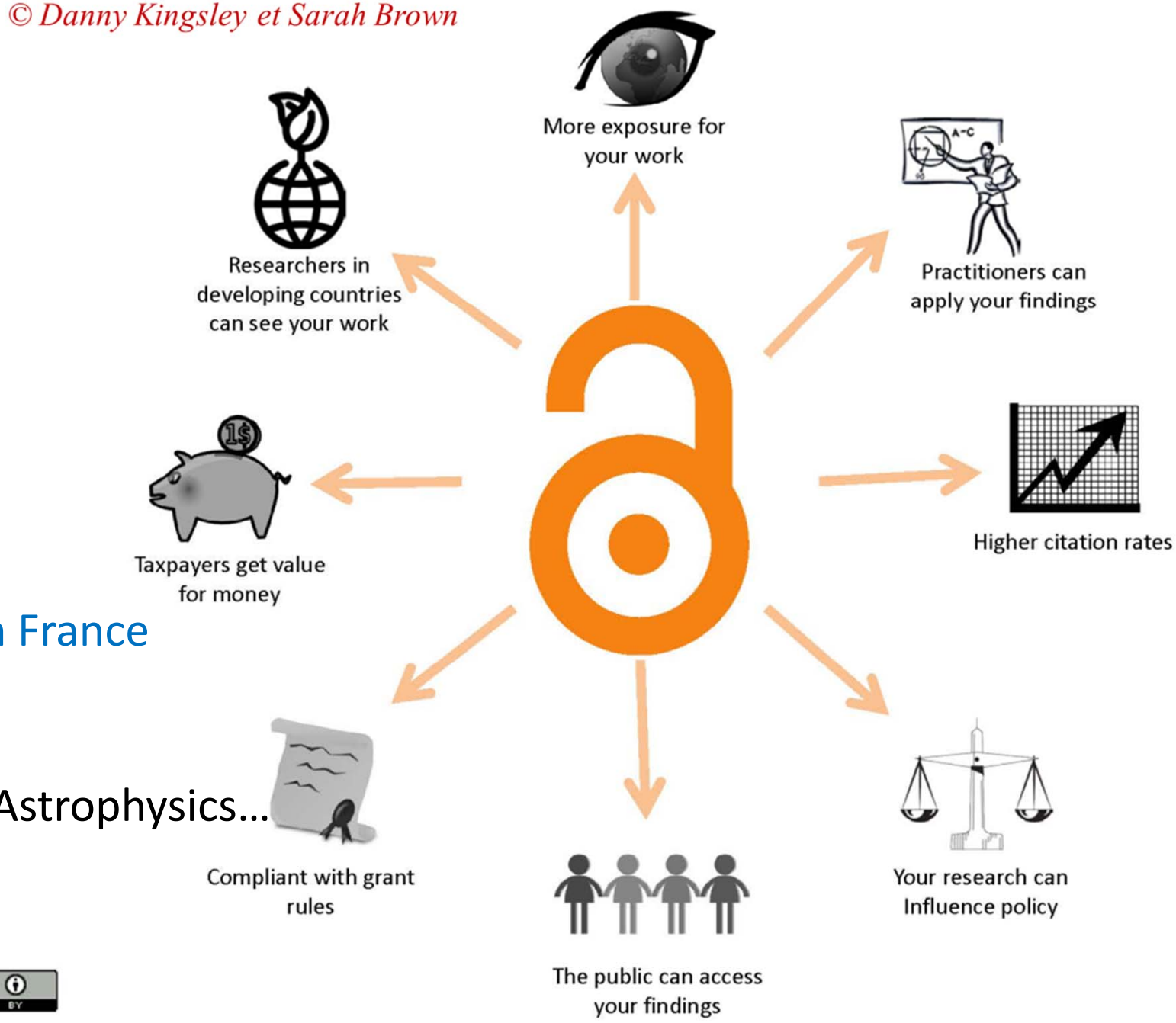
- Data bases (raw data or usually already treated for general use)
- Large Big Data Platforms (free or paying access)

Algorithms and computation codes

Opportunities /risks for Ethics & RI

Open access of publications

Highly ethical



Global today: 20% in open access in France

Prepublications on archives:

Common in Physics, Maths, Astrophysics…

Recent in life science

Newly appearing in SHS

Open access of publications:
Opportunities for Ethics and Research Integrity

Information reaching all laboratories in the world

Fast exchanges and multi-group research facilitated

More fair attribution of a discovery

Better respect of intellectual properties

New opportunities for better peer review (open, transparent…)

Interactive discussion before validation

Access to all results

Open access of publications: Opportunities for Ethics and Research Integrity

Informations released that everyone can criticize

Better control of misconducts

Decrease of plagiarism and frauds

Open access of publications:
Opportunities for Ethics and Research Integrity

Results of research are **restituted to citizens** who contributed to the funding

Scientific research output no longer abandonned
in the hands of the **major private publishers**

For publishers:
A highly profitable market

The production *(research)* and the evaluation *(peer-review)*
of these « commercial goods »
result from the work of the researchers themselves !

Open access of publications:
Tensions and risks for Ethics and Research Integrity

With the **« gold »** model of publications:
inequalities between groups

- Advantages to well-doted teams (having contracts) can pay expensive APC
- Disadvantages for domains outside the main stream

The « gold » model mitigated by Plan S in Europe (adopted by ERC and 14 Funding Agencies)

The danger of Predatory publishers

- Offer at very reduced APC
  (Article Publishing Charge)
- No reliable scientific committee
- No impact factor

Problems for research **evaluation** of researchers (recruitement and carrier) and of projects (based on publications)

Risks of promoting sloppy or wrong science

Open access of publications
Methods of evaluation have to change

Quality and integrity of the reviewing process

Transparency of the reviewers comments

Open process (Open peer review ? Collective reviewing ?)

Other methods (preprint, opinion of all readers….)

Criteria of evaluation

From a quantitative (bibilometric) to more qualitative ones

New criteria (« rewards and skills » of OSPP), new metrics

DORA initiative

Open access of publications
Bibliodiversity strongly encouraged

Epi-journals

Open Archives (*for instance HAL, BioRchiv, etc.)*

- Archives of submitted articles
- Archives of accepted articles with no embargo ?
- Archives of preprints accepting comments of readers ?

Pre-Peer Review (PPR) edition models

Danger : fragmentation of the scientific edition world

Open Science and Research Freedom/Responsibility

- Open science brings the scientists and the public closer
  (*participative and citizen science*)

- Some research areas raise worrying challenges
  (*nanosciences, synthetic biology, artificial intelligence,…)*

Researchers and citizens have to exchange more openly
(*informations, opinions, uncertainties, thinking methods ideas…)*

The guide of COMETS 2017

« Integrity and responsibility
in research:
a guide »

*Available in **French and English** version*

http://www.cnrs.fr/comets/spip.php?article91

www.cnrs.fr

Thank you for remarks

Science sans conscience n'est que ruine de l'âme

Rabelais, Gargantua et Pantagruel, 1532