

Open Science in Africa and for Africans: addressing the challenges



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Keynote for WACREN 2022
Open Science in Africa

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Educational, Scientific and
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Apologies that I cannot be with you in Abidjan...



Abidjan, 2019

Open Memories: Dakar 2004



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Despite what I
am going to say
today, I do
believe in the
value of Open
Science!



Outline

- Keynote to provoke discussion and debate
- Six key inter-related challenges
 - Whose interests does Open Science really serve?
 - The rise of individualism: is it too late for communal science?
 - Which models of publication best serve Africa?
 - How valuable are Open Data, and for whom?
 - The dangers of Scientism?
 - Who pays?
- Ways forward and challenges to be resolved



University of Ghana, 2019

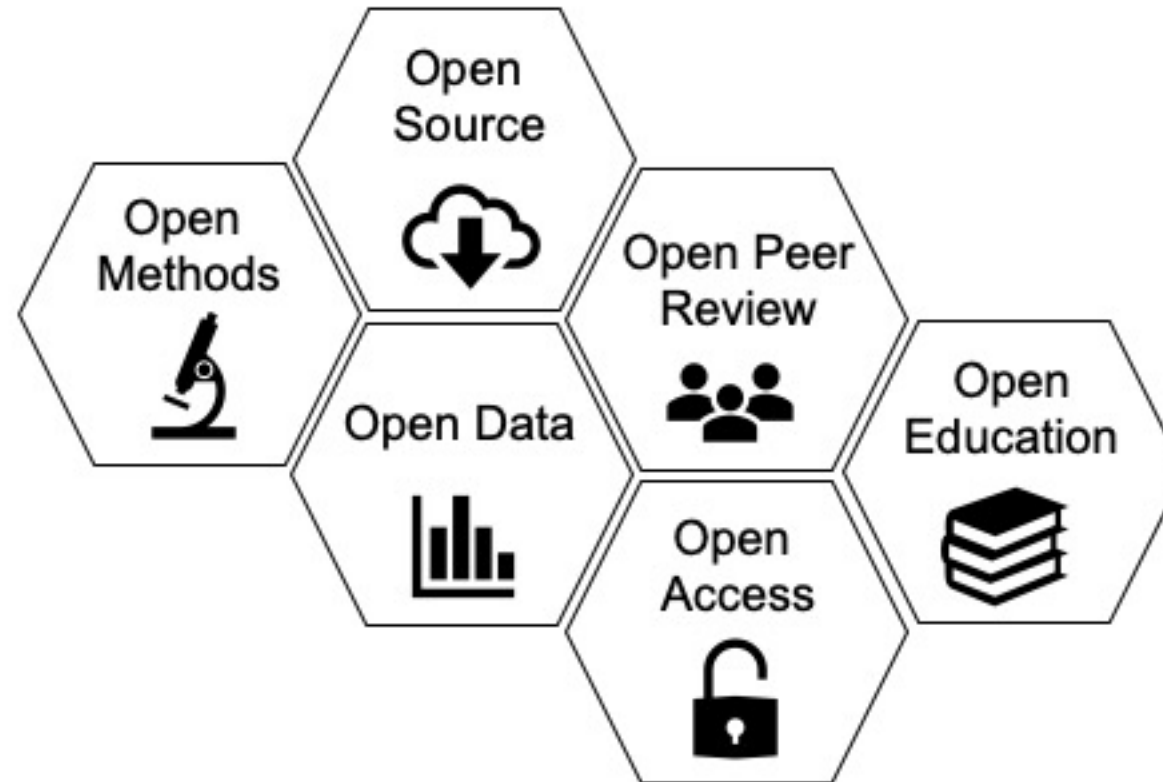
Open Science: many definitions...

An approach to the scientific process that focuses on spreading knowledge as soon as it is available using digital and collaborative technology. Expert groups, publications, news and events (EU)

Let's not spend
time on these –
I only have 20
minutes

“An inclusive construct that combines various movements and practices aiming to make multilingual scientific knowledge openly available, accessible and reusable for everyone, to increase scientific collaborations and sharing of information for the benefits of science and society, and to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community”
(UNESCO, 2021)

A simple, widely-accepted model for what Open Science is



1. Whose interests does Open Science really serve?

- If you don't have access to, or cannot use "Open Science", can you really benefit from it?
 - But COVID-19 suggests that when there is the will, Open Science can indeed have a positive impact for all
- Is it mainly a means through which the rich and powerful continue to maintain their positions?
 - Those with power, gaining free access to data and science without paying for it?
 - A form of neo-imperialism exploiting African people?
- For example, companies profiting from persuading governments to give them Open Data?



Makerere University, 2008

2. The rise of individualism: is it too late for communal science?

- Has there been a shift from a more communal form of science 40 years ago to a more individualistic one now?
 - Yet much research now relies on communal approaches to solve major global challenges
- Individual success depends on publications in “top journals” and large research grants?
- What are the implications for Open Science?
 - What are the rewards systems in place for academics in Africa?



Université Cheikh Anta Diop, 2009

3. Which models of publication best serve Africa?

- Often argued that in the traditional model, those who could not afford to purchase journals could not have access to knowledge
 - But not quite as simple (or true) as many would like to believe.
- Pay to publish models of many Open journals are at least as discriminatory
 - If you don't have a large grant to cover publication costs...
- Good publishers provide added value
- “African journals for African science”
 - But is this really the right way forward?
- What models of licensing?
 - Creative Commons not without problems



University of Sierra Leone, 2009

4. How valuable are Open Data – and for whom?

- Open Data only of value to those who can use them in their own interests?
- Are the poorest and most marginalised really empowered through advocacy for Open Data?
 - Not unless they are able to analyse the data themselves
 - AI and Big Data analytics as a form of exploitation and control
- Difficult to know the “qualities” of data unless one has created them oneself
- Training scientists in Africa to use models developed elsewhere
 - Training in how to use software in [GitHub](#)
 - Would we also want to encourage African models for African people?



KNUST, 2003

5. The dangers of Scientism?

- Scientism: scientists' unquestionable belief in the power of scientific knowledge and techniques
 - Yet science does not have all the answers
 - We need the humanities and the social sciences to answer questions that scientists cannot address
- If there are dangers in scientism: are there therefore dangers in "Open Science"?
- Yet UNESCO (2021) includes all scholarly enquiry within Open Science
 - "all...aspects of scholarly practices, including...the humanities"
- How are individual creative thinkers to be paid for their thoughts and creations?
 - Are we really going to prohibit royalties for music, art, academic/creative writing?
 - Where are the boundaries in Africa



Jomo Kenyatta University, 2002

6. Who pays?

- Surprising how “free” is not as widely used in Open Science discourse as it is in FLOSS
 - Richard Stallman’s 4 Freedoms
 - Use, study, share, modify
- Nothing is financially free
 - We need to recognise and reward the real costs
- Who pays for the new and important science?
 - Governments, companies (including philanthropy), researchers themselves (self-exploitation)...
- “How will I earn enough if I don’t sell my lecture notes”?
 - Researchers (and teachers) should be paid appropriately
 - Time for an end to massification of universities, and recognising the true importance of technical training



University of Maseno, 2007

Ways forward

- Open Science increasingly becoming the norm
 - [EU](#) and [UKRI](#)
- But whose interests does this serve?
 - New private sector entities wanting to monetise “science”
 - How can Africans really benefit?
- African Open Science, or Open Science for Africans in a global science economy?
- The future has to include provision of excellence in research training
 - International collaboration can play a significant part in this
- Open Science must never be an excuse for poor quality science



CSC intake from Nigeria, 2013

Hopefully some time for discussion...



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