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What is open?

Why does open matter?

What does a better approach to open look like?

How do we get there from here?

1 Slides available for download

2 My email address is on last page

CREATING AN OPEN RENAISSANCE

GLENN HAMPSON, OSI
MAY 7, 2021
WSIS

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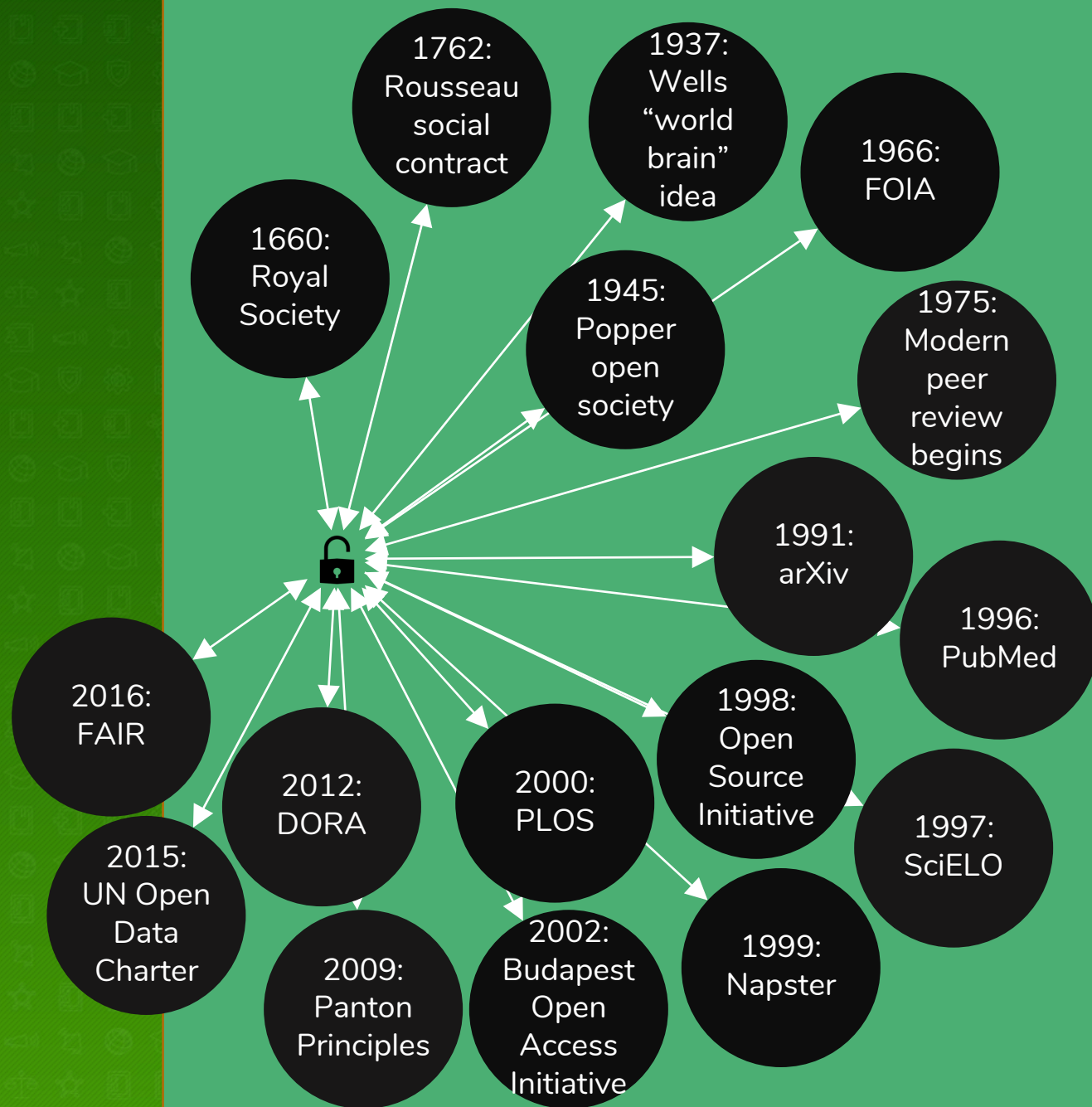
DIFFERENT ORIGINS

Open philosophies have evolved for decades now (even centuries) from many corners of many societies. Some of these philosophies were originally fueled by idealism, others by need or opportunity. There is no starting point for any single philosophy or for open movements in general—this growth has been iterative and cumulative.

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1762: Rousseau social contract

1937: Wells "world brain" idea

1966: FOIA

1660: Royal Society

1945: Popper open society

1975: Modern peer review begins

1991: arXiv

1996: PubMed

2016: FAIR

1998: Open Source Initiative

2000: PLOS

1997: SciELO

2012: DORA

2015: UN Open Data Charter

2009: Panton Principles

2002: Budapest Open Access Initiative

1999: Napster
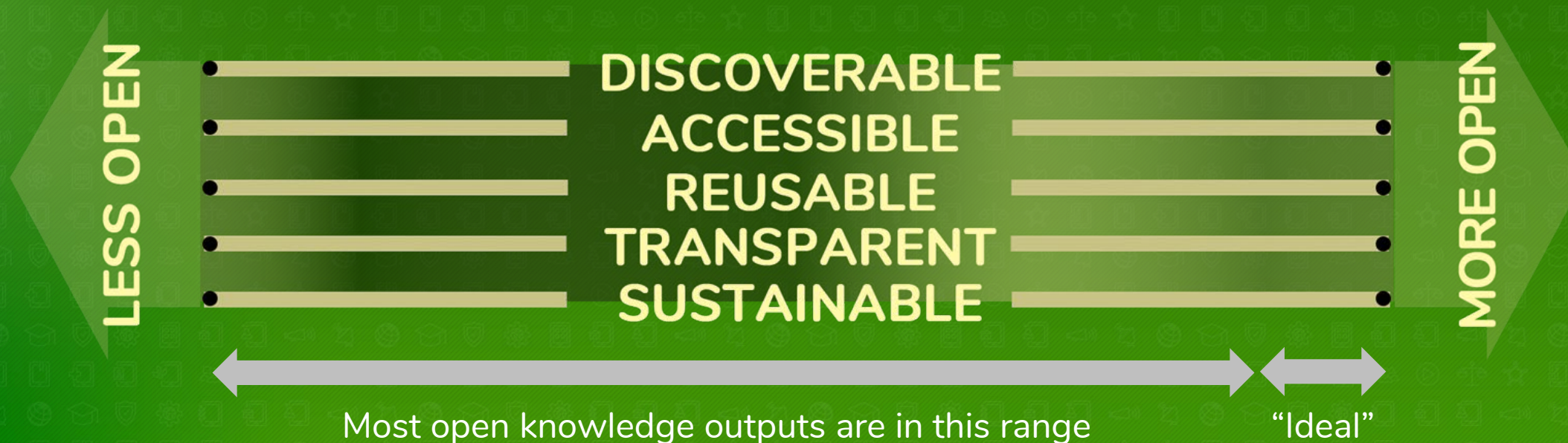
DIFFERENT DEFINITIONS OF "OPEN"

Information exists along a **DARTS OPEN SPECTRUM** of outcomes, defined by discoverability (indexed, identifiers?); accessibility (downloadable, timely and machine-readable?); reusability (technical and licensing barriers?); transparency (confident in provenance and accuracy of this information?); and sustainability (stable long-term solution?).

LESS OPEN

DISCOVERABLE
ACCESSIBLE
REUSABLE
TRANSPARENT
SUSTAINABLE

MORE OPEN

Most open knowledge outputs are in this range   "Ideal"

COMMON DENOMINATORS

What do all these solutions have in common?

1 The goal to make information of various kinds more open

2 The use of certain common approaches (like licensing), and

3 The realization over time that there are no one-size-fits-all definitions, methods or policies.

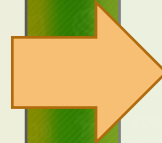▶ Even within an open solutions community of practice like Open Access or Open Data.

WHY DOES OPEN MATTER?

OPEN AS AN "IDEAL"

IF WE DO THIS....

- ▶ **Clearly define and support open**
- ▶ **Make open solutions robust**, inclusive, broad, scalable and sustainable
- ▶ **Resolve connected issues** (e.g., impact factors)
- ▶ **Align incentives** so scholars embrace open because they want to
- ▶ **Make open simple and clear** so scholars know what it means and why they should do it
- ▶ **Create clear standards and guidelines**
- ▶ **Keep the marketplace competitive** so open products remain cutting edge
- ▶ **Integrate open repositories,** not just connect them
- ▶ **Standardize data**

THEN WE GET THIS....

- ▶ **The research ecosystem grows more powerful** (with more data, more connections, and more apps),
- ▶ **Innovation is catalyzed**
- ▶ **Widespread improvements happen in science.**
- ▶ **New fields and discoveries emerge** based on "connecting the dots" (thanks to data and repositories)
- ▶ **Funding efficiency improves**
- ▶ **Discovery accelerates**
- ▶ **The social impacts of science surpass today** (including science literacy, public policy, education, more)

OPEN AS A VECTOR

More immediately, we face many challenges where more information transparency and sharing is needed:

- Critical research (like vaccines and climate change)

- Looming problems (like water and food scarcity)

- Access equity and budget constraints

- Research progress. The US National Academies states that "the openness of data is...critical to the progress of science, stimulating innovation, enhancing reproducibility, and enabling new research questions."*

*NAS. 2018. Open Science by Design. doi: 10.17226/25116

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AND, OPEN AS INEVITABLE

Open solutions are everywhere and pervasive:

- Which isn't to say these solutions are all benevolent (look no further than newspapers)
- But there is broad agreement among the leading thinkers in this space that we are at or near a unique period in history when we might be able to draw on our lessons of experience and work together to build a new and productive future for open where we can unite in common cause to realize the full potential of open.
- **By acting together now, we can also help avoid creating and adopting global open policies that could cause real harm to science and society** (discussed later).

HOW REALISTIC ARE THESE AMBITIONS?

There are enthusiasts and skeptics on both sides. In general, the potential is sufficient to continue to power massive amounts of reform in the scholarly communication space. The question is whether this reform is working, and if not, what does better change look like?

CONTINUED GROWTH OF ALL OPEN

OPEN ACCESS

50% of journal articles published in open access format; 68% of funders require or encourage open access.

OPEN DATA

Data availability required by most publishers. Data repositories critical. Data partnerships increasing, many "non-standard"

OPEN SOURCE

Hugely successful, widespread. 90% of code written by companies, public is "product manager."

OPEN SCIENCE

Increasing pressure from funders and governments to use open lessons and tools improve science

OTHER OPEN

OER and other open all increasing, building on best practices from other open fields

OPEN METHODS & PRACTICES

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BUT THERE'S NO CENTRAL FOCUS

This array of open solutions can use similar methods and practices, but they are mostly similar in name only due to:*

- Many different inputs (definitions, goals, needs, perspectives, etc.)
- Many different emphases and focus points
- Researcher concerns
- Regional inequities and other unintended consequences, and
- Limited scalability and interoperability.

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Exception: Large researcher institutions often do admirable work integrating open access and open data.

Some important common elements

But important differences, too

Many unique inputs

Many unique policies and focus points

Researcher concerns

Manifestos (like DORA, FAIR, Leiden)

Regional inequities

Open methods and licenses

Other unintended consequences

Leadership from groups like RDA, AGU, STM, COAR, Coalition S

Policies are not scalable (but we're scaling anyway)

THE UNIQUENESS PROBLEM

The open solution universe is a herd of unicorns, with wide variation in histories, motives, philosophies, structures, goals, stakeholders, rules, and policies, even within each open solutions community (like open access or open data).
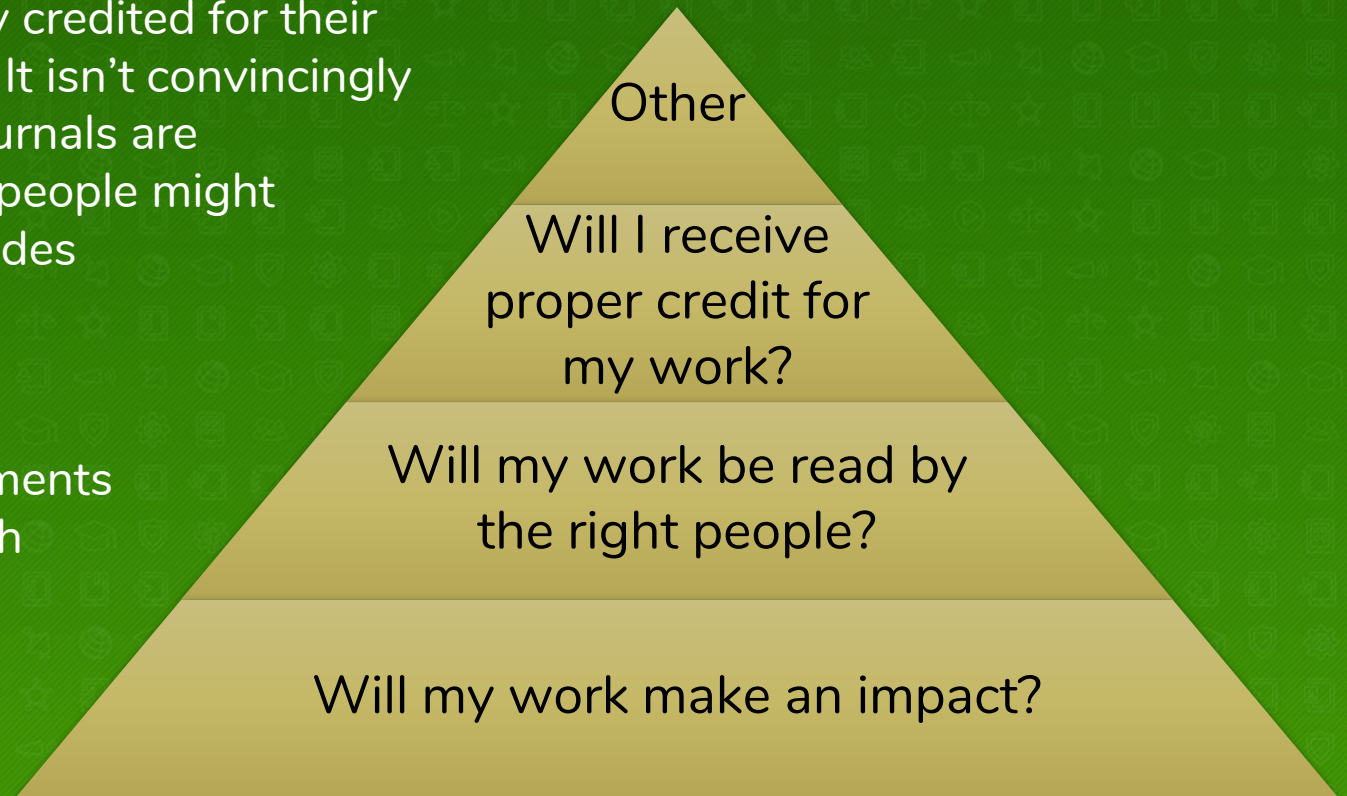
There are common elements (like licenses) but also many differences, which makes it hard to create ambitious, far reaching open policies (when, at the moment, open means different things to different people).
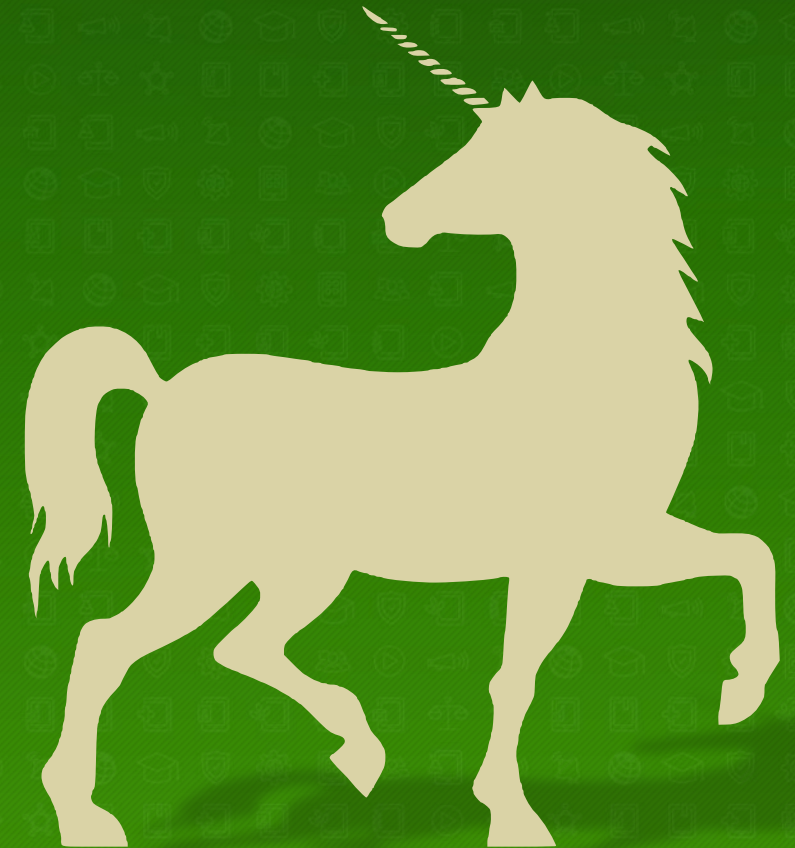
RESEARCHER CONCERNS

Researchers want their work to have an impact in their field and on society. They also want career benefits—to be read by the right people in the right journals, and be properly credited for their work. Open is mostly neutral on all these points. It isn't convincingly great, but it isn't bad either. Most high impact journals are subscription-based, for example, but then more people might download open work. The "other" category includes concerns like how, as a group, researchers:

- don't know much about the details of open
- can be confused by open compliance requirements
- can distrust that their openly licensed research will be used fairly and properly, and
- often worry that their open discoveries will be "scooped."

Other

Will I receive proper credit for my work?

Will my work be read by the right people?
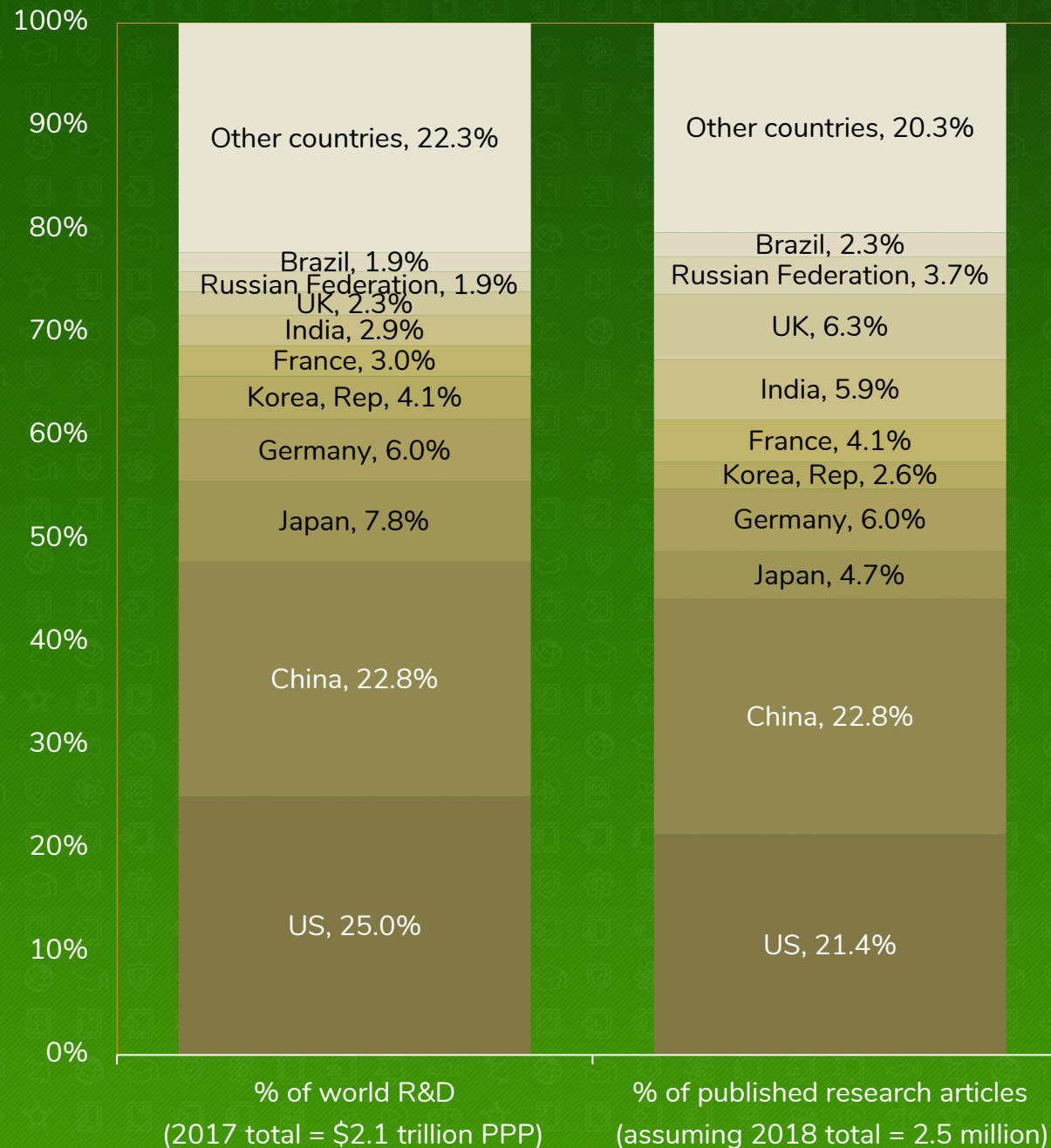
Will my work make an impact?

REGIONAL INEQUITIES

Most research and research publishing happens in the wealthiest countries. Over the past five years, funders in Europe and the US have been aggressively trying to roll out one-size-fits-all "author pays" (APC) policies for the whole world, but **most of the world cannot afford and doesn't want these policies.**

These policies threaten to exacerbate regional inequities by:*

- Fracturing the open movement along ideological and regional fault lines, leaving rich countries with one system and all other countries with something else
- Creating an environment where only the rich can publish in the most widely read journals.

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% of world R&D
(2017 total = $2.1 trillion PPP)

Country	%
Other countries	22.3%
Brazil	1.9%
Russian Federation	1.9%
UK	2.3%
India	2.9%
France	3.0%
Korea, Rep	4.1%
Germany	6.0%
Japan	7.8%
China	22.8%
US	25.0%

% of published research articles
(assuming 2018 total = 2.5 million)

Country	%
Other countries	20.3%
Brazil	2.3%
Russian Federation	3.7%
UK	6.3%
India	5.9%
France	4.1%
Korea, Rep	2.6%
Germany	6.0%
Japan	4.7%
China	22.8%
US	21.4%

OTHER UNITENDED CONSEQUENCES

|	
SUPPLY & DEMAND	• **Predatory publishing** is filling the demand for low-cost open publishing options • **Sci-Hub** is using university login credentials to steal copyrighted materials from publishers and offer this for free
POLICY MISFIRES	• **Numerous policy conflicts** are erupting, particularly between GDPR and open data • **STM-centric solutions** are driving the debate, with no real consideration for policies that work for the arts, humanities and social sciences. • **Preprints** (open access journal articles that generally aren't peer reviewed) are running into credibility problems. As a result, some critical science, as well as critical public policy, is experiencing an infodemic.
POLICY POLLUTION	• **Budget constraints** are causing large libraries to negotiate one-off open "transformative" agreements that may not be financially durable, and that are calcifying our use of APC solutions mentioned previously.

AND THE SCALABILITY BATTLE

Because one-size-fits-all definitions and solutions don't exist, we can't take our limited solutions and try to make them global or unifying. But several global regions, agencies and funders are trying to do this anyway (most notably the EU's Plan S), and the fit is not good.

Researchers and governments everywhere are pushing back against these attempts, pitted against funders and libraries who are financially (and frequently ideologically) motivated to create a single template for reform.
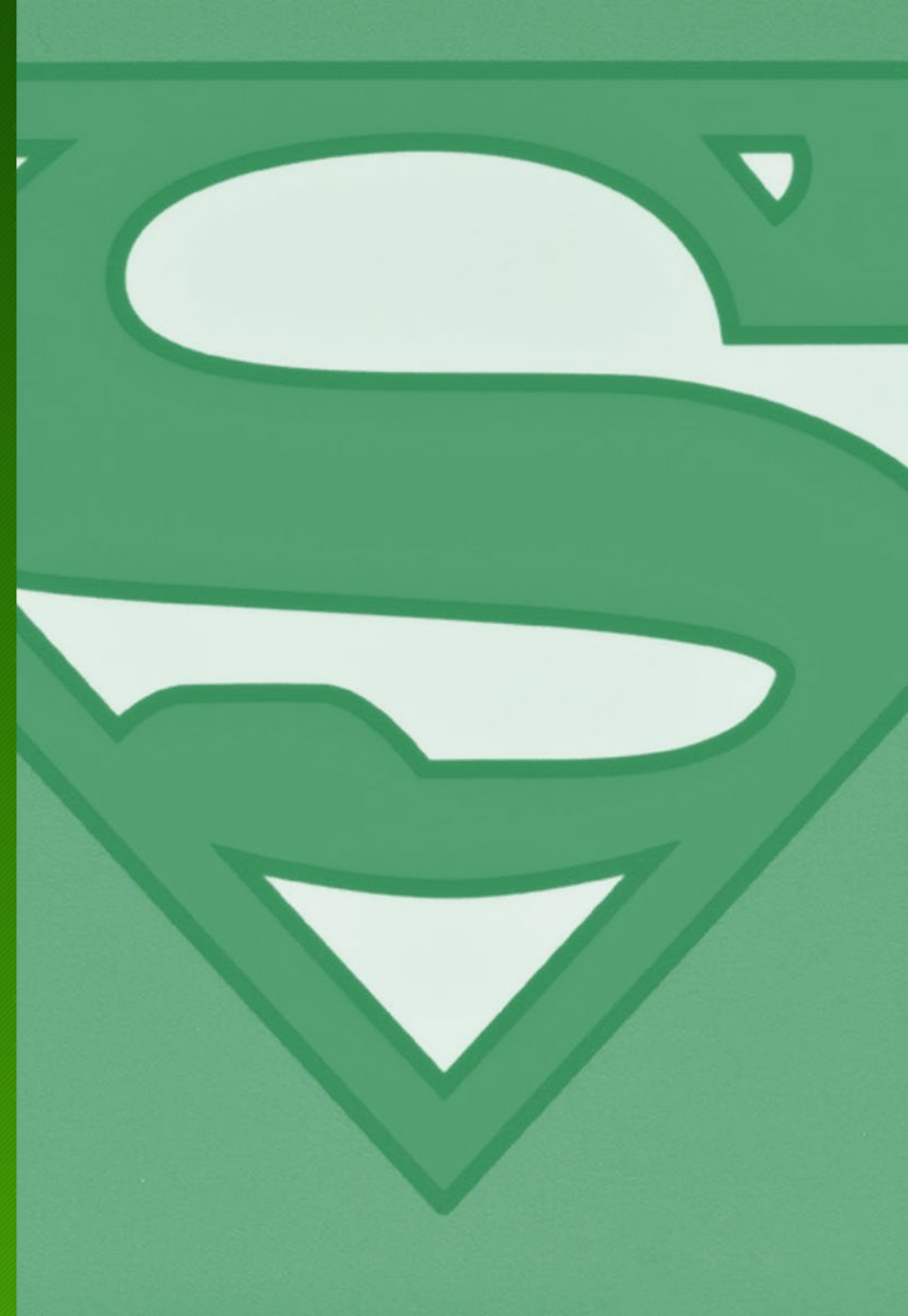
WHAT DOES THIS MEAN?

1 Open movements are creating huge and diverse changes in the information landscape.

2 Many of these changes are good, but there are also significant oversights and consequences

3 We aren't capitalizing on the full potential of open

- Open efforts end up speaking past each other—our definitions and goals aren't the same
- One-size-fits-all reform efforts don't resonate or work with most of the world
- We don't see our common ground needs and perspectives, just the details of our policies and ideologies
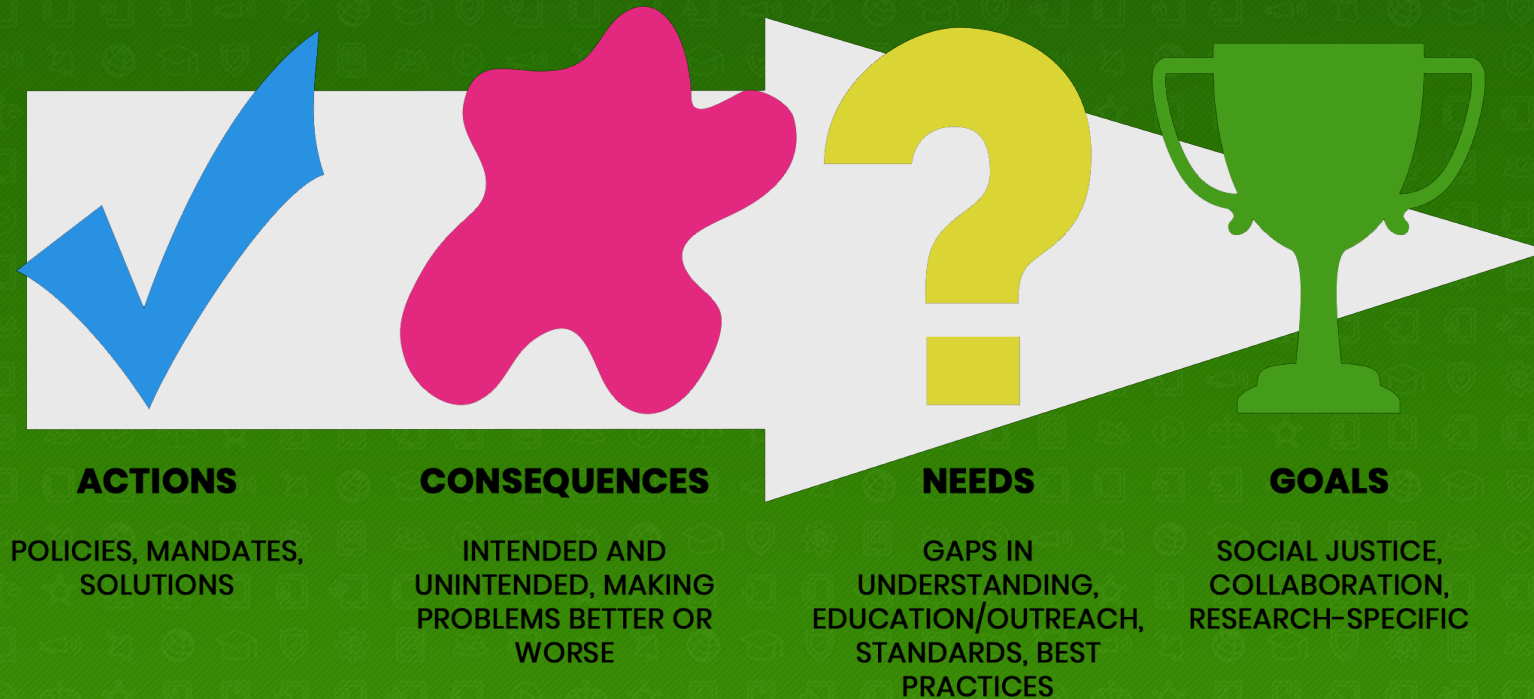
OUR RULES FOR BETTER SOLUTIONS

ASK THE RIGHT QUESTIONS

Instead of focusing on policy details like what kind of licensing is best, we need to ask more big picture questions, like:

- **Who and what?** Is our goal to make everything available to everyone, everything available to some, some things available to everyone, or some things available to some?

- **Why?** Is our goal to help communities of practice succeeded, make research more transparent, give patients better access to information, empower teachers with the newest and best information available to pass along to their students, improve access to knowledge around the globe, or all of the above?

- **How?** Do we build one silo or a network of silos? Do we simplify and incentivize systems for sharing? Do we mandate sharing. allow for a range of open outcomes and licenses, or require only the most liberal licenses? Do we mandate immediate haring or allow researchers time to analyze their data before first?

WORK TOGETHER

There are no "let's let someone else decide" options. Open access, open science, open data, and other movements all have different perspectives and priorities. An open science led effort makes no sense for humanities researchers; an open access led effort makes no sense for open data. And here again, there are no one-size-fits-all answers, and the impacts of our policies will vary by field, region, type of open, and more.

SET REALISTIC EXPECTATIONS

We need to be wary of claims that open solutions are a panacea for all that ails research. They aren't. There are many connected issues that need to be worked on in parallel.

OPEN SOLUTIONS

Embargoes

Funding

Peer review

Predatory

Policy

Access

Integrity

Equity

Reliability

Tenure evaluation

Impact factors

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VALUE EVIDENCE

- **Listen to and build on researcher needs.** Researchers have many concerns about open, and also many workable solutions.

- **Learn from what's actually happening in the open space.** Some of the most successful open models don't fit our narrative of what open is "supposed" to look like (some of these are described later in this presentation).

- **Focus on broad narratives** like good data, common open solutions, and common goals instead of on specific technical and licensing requirements.

AND RESPECT DIVERSITY

We can no sooner pick the "right" answers from this diversity than pick the right colors from the rainbow. Each is important, and each contributes to the greater whole.

Trying to impose a rigid ideological order on this diverse landscape will at best be ineffectual, and at worst fracture the global solution space instead of unite it. Instead, we need a common-sense, collaborative, experience-driven open solutions policy to unite the disparate elements in this space—an approach that listens to all communities, embraces diversity, nurtures growth and innovation

A UNIFYING APPROACH

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OPEN IS NOT A GOAL

1. **Open is a means, not an end.** It is a way to solve problems and improve benefits.

2. **Open is not an ideal**. No open model is ever universally and completely open.

3. **Open has consquences**. If we truly want open to succeed, we cannot ignore the inequities or unintended consequences it causes.

4. **Open evolves.** , It is not a static state that can be defined once and for all time. As open evolves, it creates other realities we need to face.

5. **Openness requires collaboration**. We must work together to create real solutions—then and only then can we unlock the vast potential of open to improve science and society.

RESEARCHERS MATTER

1. **Researchers care** about open insofar as it can help improve the quality, reach and impact of their work.

2. **Researchers are central**. They are the group that generates new knowledge, are arguably the primary consumers of this knowledge, and their ability to access and reuse this knowledge should be the key driver in this effort.

3. **Researcher voices have been underrepresented** in open efforts. Our open efforts to date have mostly involved handing the research community mandates they didn't design.

4. **Researchers have a wide variety of motives** for doing open. By portraying open as a movement where everyone has the same motives, we ignore those who are not motivated, or who are concerned about the real or potential negative consequences of current approaches to open.

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USE FACTS, NOT IDEOLOGY

Before the birth of science, it was normal to construct explanations that conformed with "known truths" instead of simply searching for truth—to pound the square pegs of observation into the round holes of what the church and tradition said must be true. This approach stifled learning and kept Western civilization in the dark for 2,000 years.

Today, we are taking the same approach with open solutions policies. We assume we know all there is to know about open, and are working backward, pounding square peg solutions into the round holes of researcher needs and concerns. In the process, we aren't finding truths and unlocking the real potential of open.
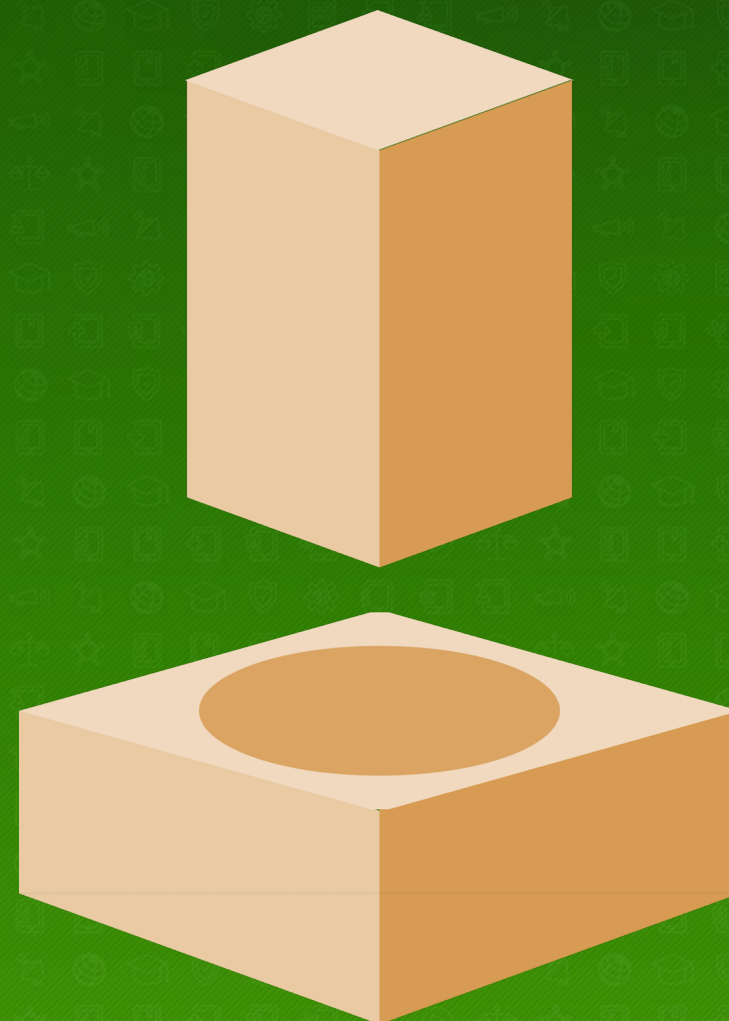
USE A GOALS-BASED APPROACH

A goals-based approach has the potential to unify all the disparate strategies and methods in the open solutions space by identifying the long-term changes our broad community desires for open, and then working backward, together, to map out the actions and policies we need to create this change. By focusing on our common goals, we can work together in a way that maximizes cooperation and minimizes conflict over the many differences in this space. We know the goals-based (Theory of Change) approach works, and is already widely used in business, governments, and the United Nations.
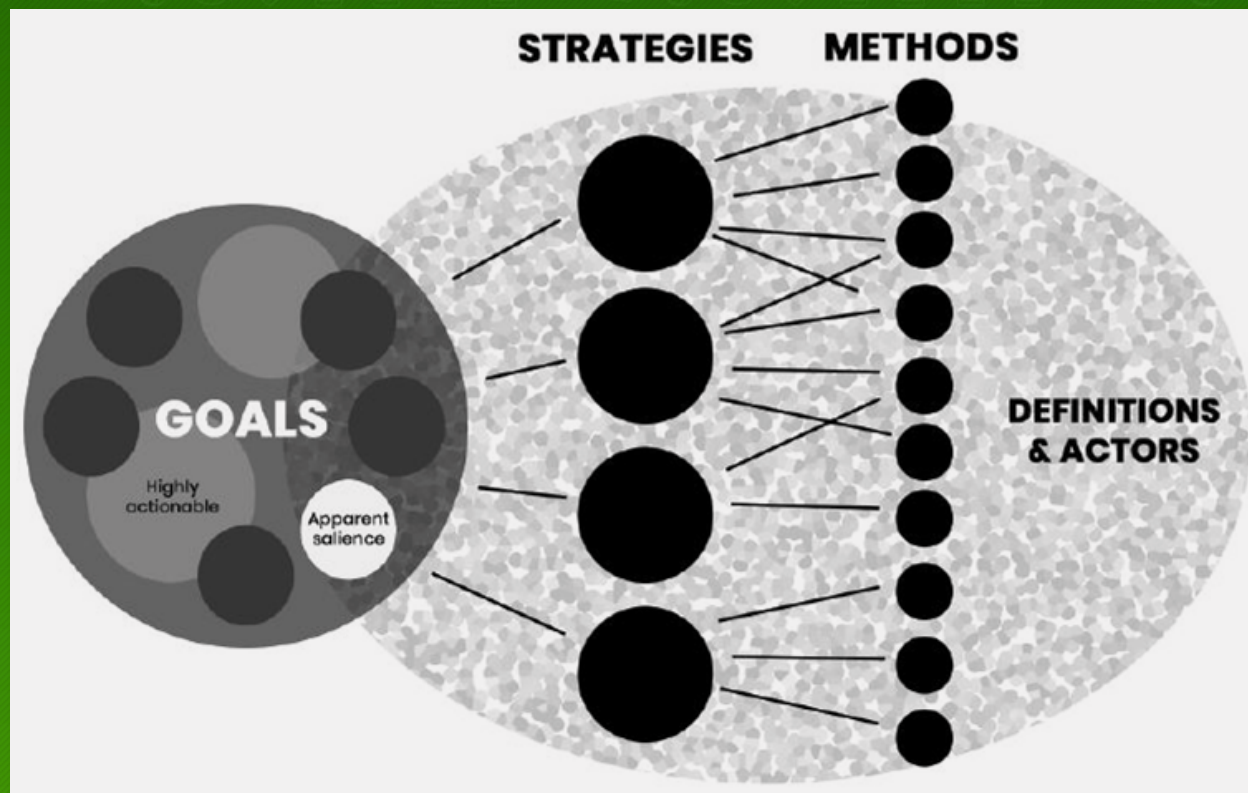
GETTING THERE FROM HERE

ACTION FRAMEWORK

1. **Common goal oriented**
2. Researcher-focused
3. Collaborative
4. Connected
5. Diverse and flexible
6. Informed
7. Ethical and accountable
8. Equitable
9. Sustainable
10. Transparent
11. Understandable and simple
12. Beneficial (in the end, these reforms need to benefit research first and foremost).

GLOBAL TO-DO LIST

1. Convene international meetings to discuss our common goals for open

2. Launch studies to learn more about open

3. Begin a global effort to assess researcher needs

4. Improve researcher involvement in thinking and planning for future open policies

5. Improve working relationships between stakeholders in the open space, build bridges

6. Continue to broadly implement generic measures like FAIR and DARTS

7. Boost investment in open infrastructure that helps everyone everywhere

8. Continue to pilot and assess new open policies

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UNESCO TO-DO LIST

1. Unify the open community behind collective action.

2. Create a simple and broad policy framework for this action—a framework that embraces the diversity in this space and uplifts the global community.

3. Adopt OSI's Plan A as a blueprint for an eventual global policy, prescribing that the international community should:

   - Discover critical missing pieces of the open scholarship puzzle so we can design our open reforms more effectively;

   - Design, build and deploy an array of much needed open infrastructure tools to help accelerate the spread of open;

   - Work together on finding common ground perspective solutions that address key issues and concerns; and

   - Involve the research community and design solutions that better meet the needs of research.

PARALLEL ACTIONS

1. Pick a grand challenge like climate change and pilot an open solutions approach to addressing this (but making this challenge narrow enough to benefit from this approach—for instance, daylighting, integrating and promoting all academic, industrial and government research into the science and technology of large-scale carbon-dioxide and methane removal);

2. Create new zero-embargo compassionate use access portals for patient families and for researchers combating health crises (whether through a new program or by strengthening and expanding the existing Emergency Access Initiative);

3. Create a more robust Research-4-Life program to improve access for lower-resourced regions and institutions; and

4. Consider how to modify current openness programs to improve researcher uptake and engagement.

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TYCHONIS BRAHE
MATHIM: EMINENT: DANI
OPERA OMNIA,
Sive
ASTRONOMIÆ INSTAVRATÆ
PROGYMNASMATA

QVORVM PRIMA DE RESTITVTIONE MOTVVM
Solis & Lunæ, Stellarumq; inerrantium tractat.
SECVNDA AVTEM DE MVNDI ÆTHEREI
Recentioribus Phænomensis agit.

NEXT STOP, THE OPEN REANAISSANCE
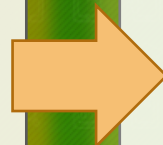
OPEN AS A "IDEAL"

IF WE DO THIS....

- ▶ **Clearly define and support open**
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THEN WE GET THIS....

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- ▶ **New fields and discoveries emerge** based on "connecting the dots" (thanks to data and repositories)
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- ▶ **Discovery accelerates**
- ▶ **The social impacts of science surpass today** (including science literacy, public policy, education, more)

IN CLOSING

Our future has never been more dependent on research. The challenges of transforming research into the Open Age are significant, but so are the potential benefits. We can unify and empower the constellation of different open movements, and at the same time reap the full potential of open, by setting broad common goals, working together to meet researcher needs, and setting aside our ideological preconceptions about what "open" should look like.

Working together, we can create a future for science and society that is beyond parallel—truly, an Open Renaissance that will usher in a new era of discovery for science, and benefit for all of society.

Presentation by Glenn Hampson
Executive Director, Science Communication Institute
Program Director, Open Scholarship Initiative (OSI)

Questions? Email Glenn Hampson
ghampson@nationalscience.org. See also the OSI website at osiglobal.org.

THANK YOU!

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ANNEX

ABOUT OSI

OSI (the Open Scholarship Initiative) is a diverse, inclusive, global network of high-level experts and stakeholder representatives, working together and in partnership with UNESCO to develop broadly accepted, comprehensive, sustainable solutions to the future of open scholarship that work for everyone everywhere. For more information, see osiglobal.org.

- OSI includes about 450 participants, alumni and observers, representing over 250 institutions from 30 countries, and 18 stakeholder groups (see chart, left)

SOURCE FILE

This slide show is a summary of OSI Policy Paper 4, published in January 2021. The full text of this report is available from the OSI website at osiglobal.org. The recommended citation for this work is :

Hampson, G, M DeSart, L Kamerlin, R Johnson, H Hanahoe, A Nurnberger and C Graf. 2021. OSI Policy Perspective 4: Open Solutions: Unifying the meaning of open and designing a new global open solutions policy framework. Open Scholarship Initiative. January 2021 edition. doi: 10.13021/osi2020.2930

OSI POLICY PERSPECTIVES

OPEN SOLUTIONS

UNIFYING THE MEANING OF OPEN AND DESIGNING A NEW GLOBAL OPEN SOLUTIONS POLICY FRAMEWORK

OSI POLICY PERSPECTIVE 4 JANUARY 2021 EDITION OPEN SCHOLARSHIP INITIATIVE

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