OSI's global, multi-stakeholder perspective on the global future of scholarly communication

Finding common ground

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The opinions and forecasts in this presentation represent the views of the author and are not an official representation of the views of OSI or OSI members or their institutions.

OSI & SciELO are networks working to improve science and science communication <mark>in order to benefit the global public good*</mark>
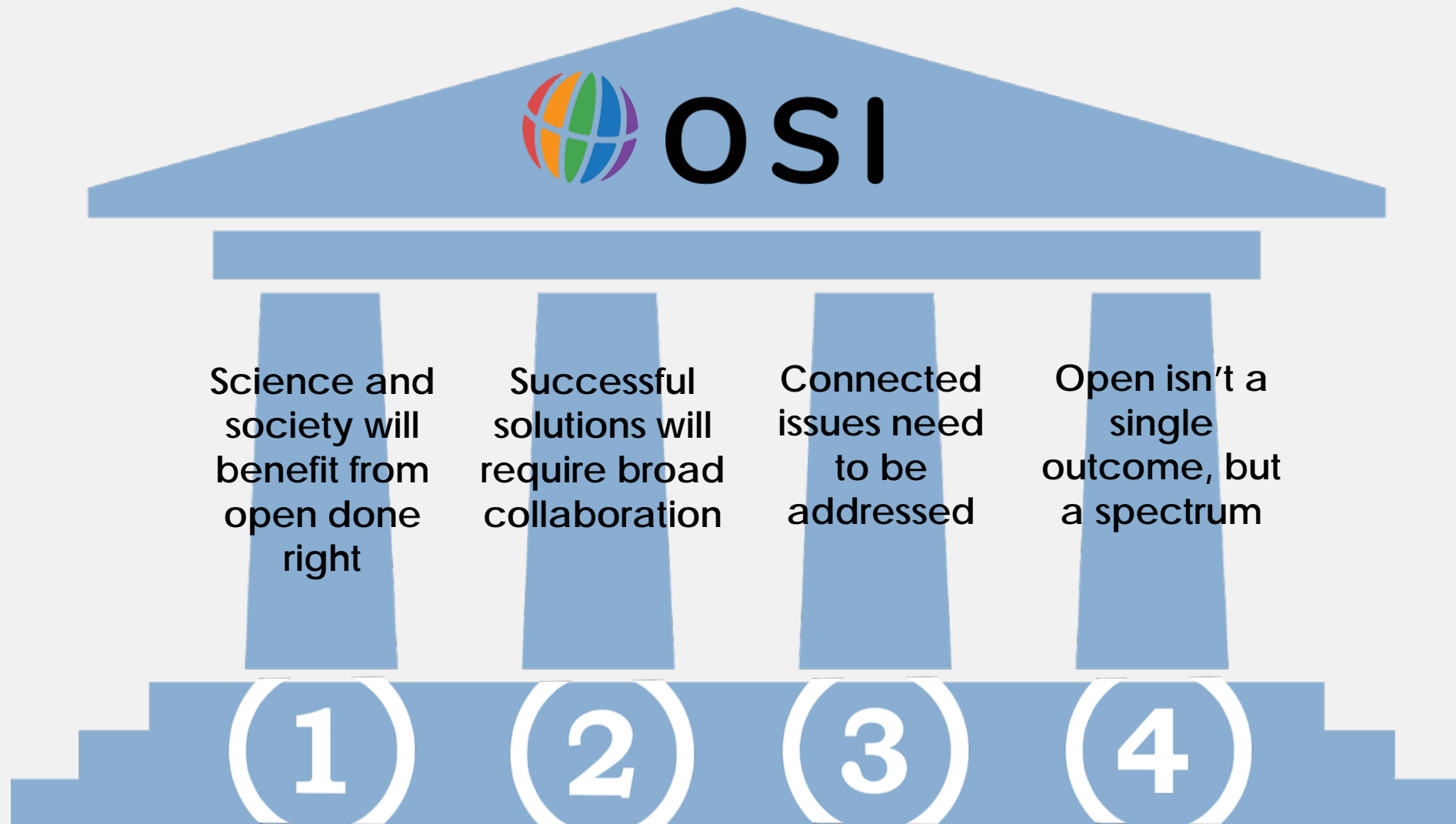

OSI (the Open Scholarship Initiative) is a diverse, inclusive, global network of high-level experts and stakeholder representatives, working together and in partnership with UNESCO to develop broadly accepted, comprehensive, sustainable solutions to the future of open scholarship that work for everyone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

- About 400 participants, representing 250 institutions (including SciELO), 24 countries, and 18 stakeholder groups (see chart, left)

* See annex for discussion

OSI's common ground (our 4 pillars)

1 Science and society will benefit from open done right

2 Successful solutions will require broad collaboration

3 Connected issues need to be addressed

4 Open isn't a single outcome, but a spectrum

(3) Connected issues

Impact factors

Global equity

Working for science

Predatory publishers

Culture of communication

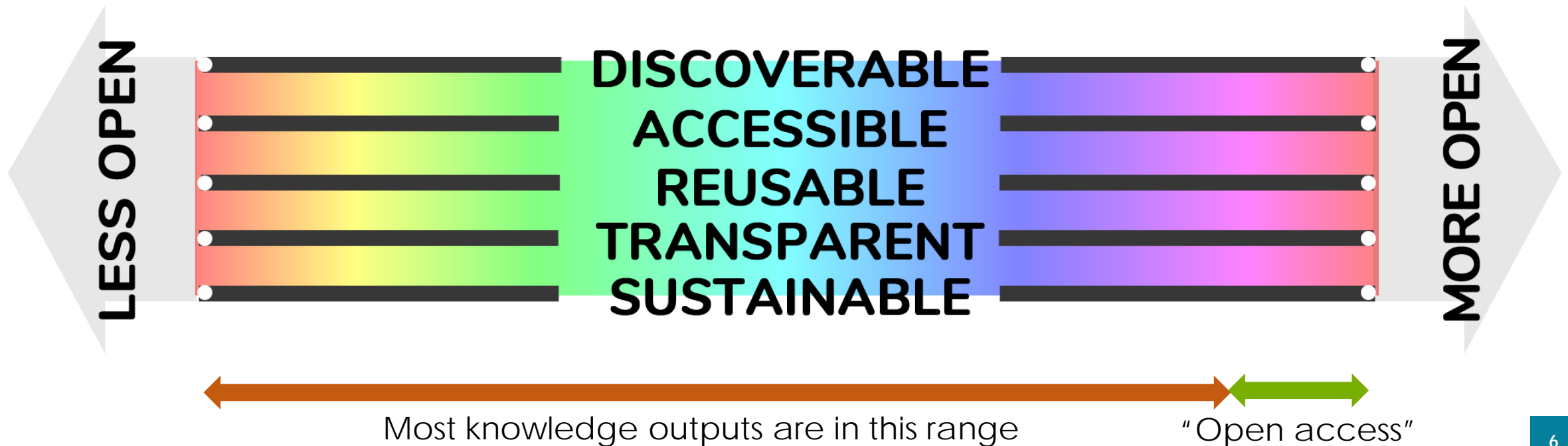Many others (transparency, peer review, repositories, sustainability, more)

(4) Open isn't a single outcome (or even defined)

Open is used casually, often without firm definition, in a wide variety of ways, from open education, to open code, open data, open source, open science, open courses, open society, bronze open, and open access. It's a noun, a verb, a process, an expression, a concept, a brand...it's an open spectrum (DARTS).

LESS OPEN

DISCOVERABLE
ACCESSIBLE
REUSABLE
TRANSPARENT
SUSTAINABLE

MORE OPEN

Most knowledge outputs are in this range   "Open access"

OSI's common insights

1. Open isn't defined…
2. …or free
3. …or easy
4. …or disconnected
5. Publishing is critical
6. We all have similar concerns
7. We need more information…
8. …and accountability
9. …and trust
10. OSI can help
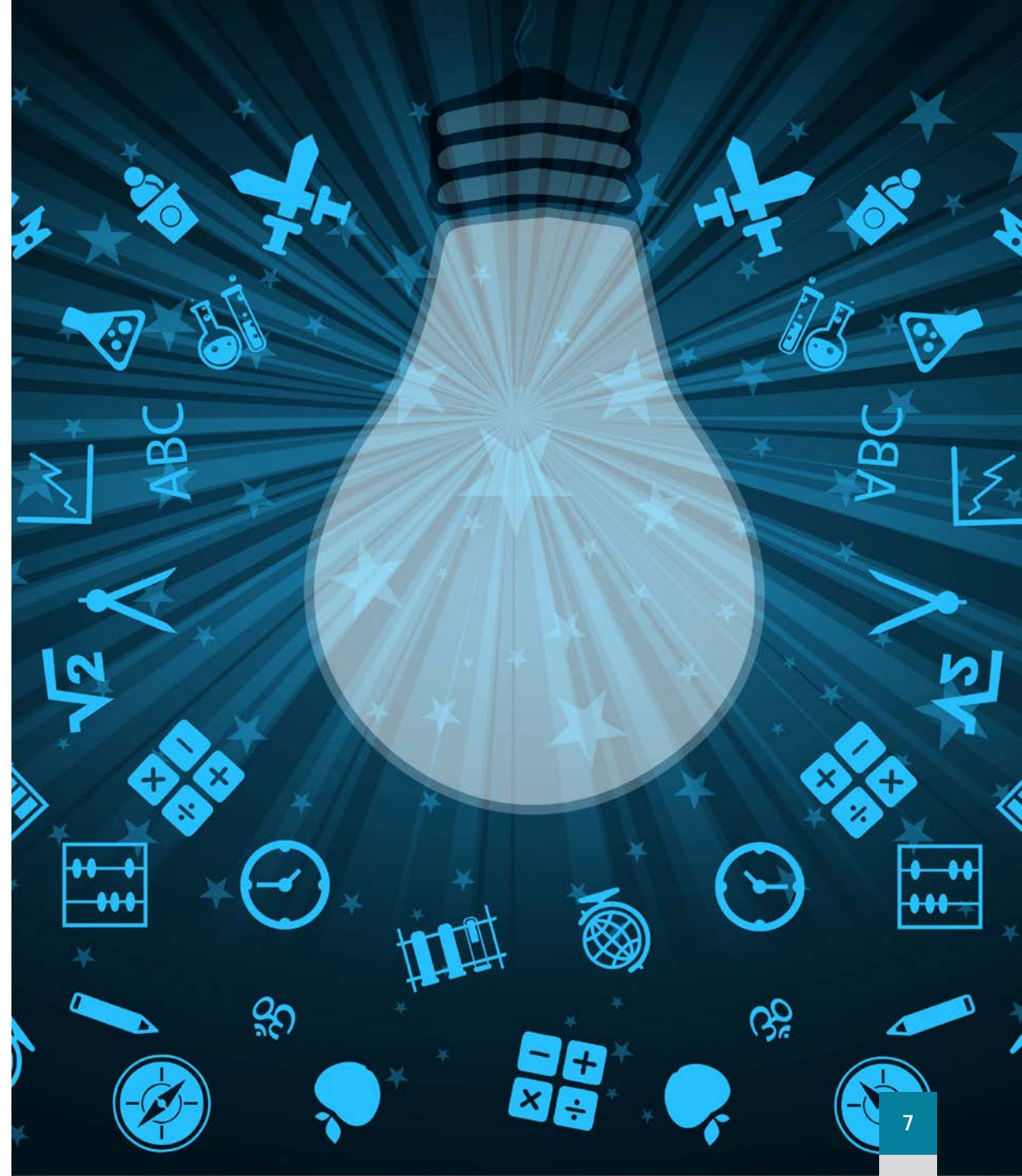
Key Advice

Work together (this means everyone, including publishers)

Work on all pieces of the puzzle so we can clear a path for open to succeed

Discover missing pieces of information to ensure that our efforts are grounded in fact

See the big picture — the common ground

And watch the road instead of the map. Our community's map to the future is old...

The rich history of internet innovation has taught us a many important lessons. Here are just 5 that can be incorporated into our thinking:*

1. **"Information doesn't want to be free. Information wants to be valuable."** (Stewart Brand) There are many different ways to maximize the value of information. Free works, but it isn't the only way.

2. **Words matter.** The inventors of open source originally called their work "free" until they realized that "free" meant different things to different people.(Sound familiar?)

3. **Go big or go home.** Get lots of users *first. Then* worry about filtering.

4. **Solve a problem really, really well.** What's the problem we're try to solve? And then, what approach will it take to become indispensable?

5. **A well-regulated marketplace is crucial**. Markets need rules, standards, and level playing fields to attract participants.
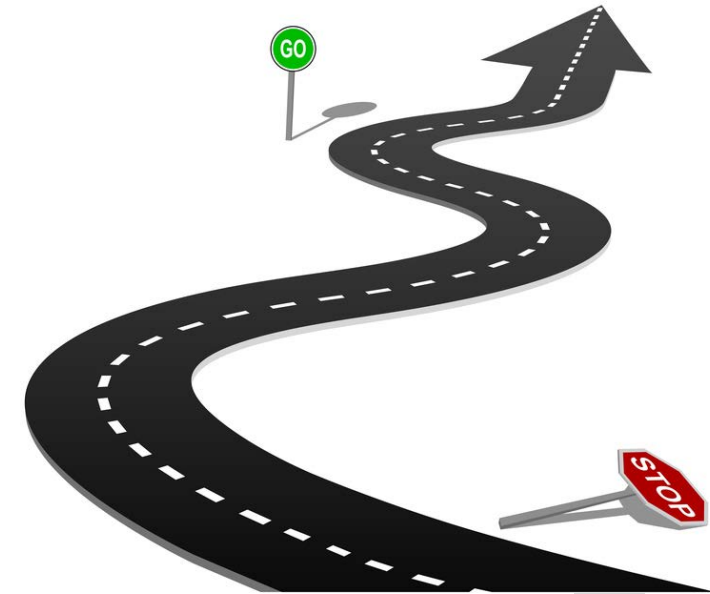
The Future?

With and without OSI (or something similar)

The next 15 years, with OSI (or something similar)

PICK THE LOW HANGING FRUIT: Work together on common ground solutions to the easiest and most pressing issues. Build confidence.

TACKLE THE TOUGH ISSUES: Replace the impact factor, improve promotion & tenure systems, and raise the bar (significantly) for data inclusion and interoperability and repository function.

OPEN RENAISSANCE: Universal open is achieved, including archives and data. Integrated repositories and standardized data create new fields of science based on connecting the dots. Research spending efficiency improves, and discovery accelerates.

Baseline growth (with or without OSI)

100% open
90%
80%
70%
60%
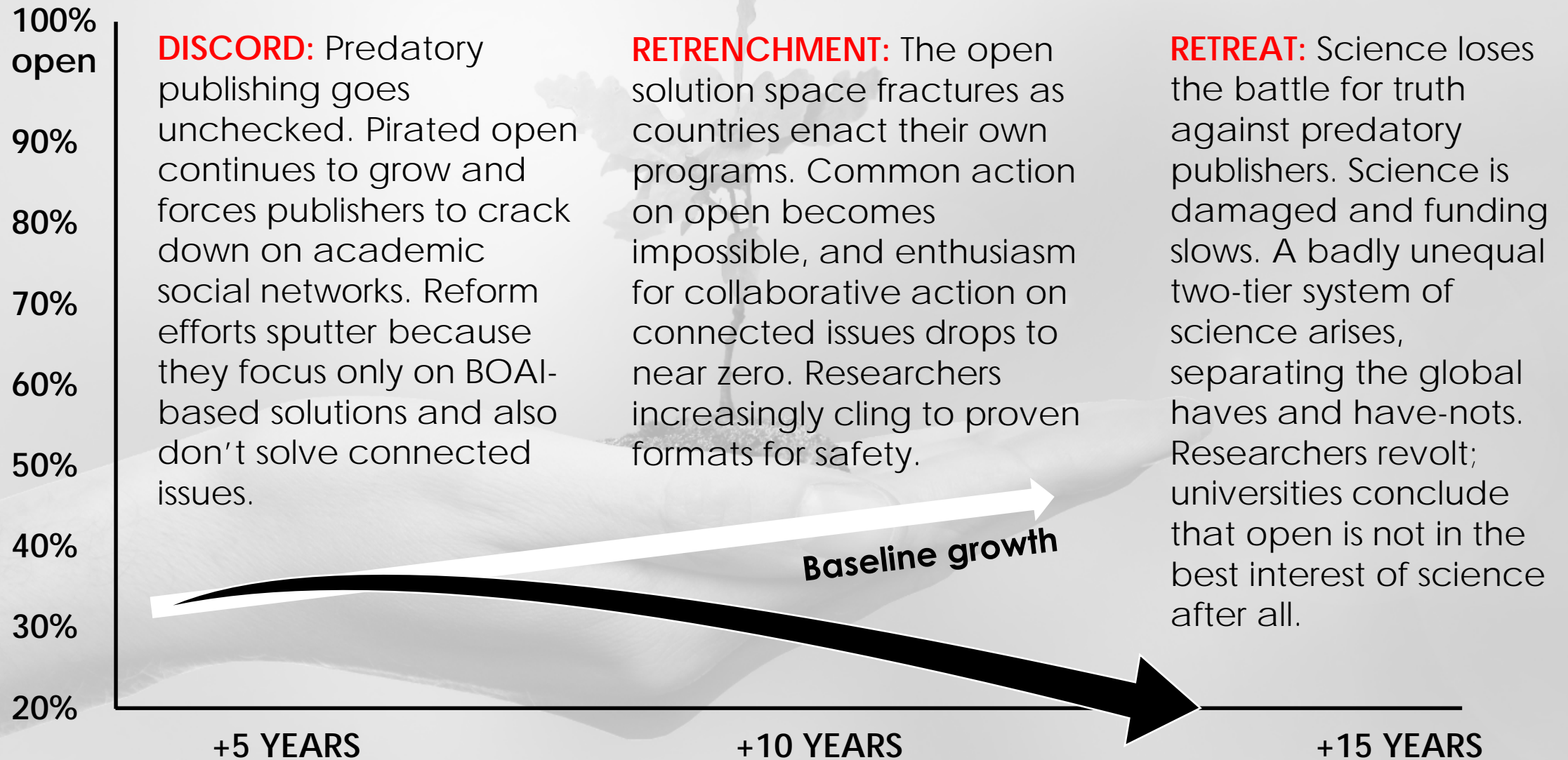50%
40%
30%
20%

+5 YEARS   +10 YEARS   +15 YEARS

The Open Rennaisance

- **Open science is clearly defined and supported** Open is the standard science output format
- **Open solutions are robust**, inclusive, broad, scalable and sustainable
- **Almost all science information is discoverable** The global access gap is nonexistent
- **Solutions for the humanities** are built-in
- **Connected issues** are resolved
- **Incentives are aligned** so scholars embrace open because they want to
- **Open is simple and clear** so scholars know what it means and why they should do it
- **Predatory publishing is defeated** so it no longer threatens science
- **Standards and global guidelines** are clear for all journals, which helps the marketplace
- **The marketplace remains competitive** so open products remain cutting edge
- **Repositories are integrated,** not just connected
- **Data standardization** is widespread and robust

- **Many kinds of improvement happen to science,** including less bias and better transparency
- **The research ecosystem grows exponentially more powerful** (with more data, more connections, and more apps), which further catalyzes innovation and improvements in science. New fields and directions emerge based on "connecting the dots" (thanks to data and repositories), funding efficiency improves, and discovery accelerates.
- **The social impacts of science surpass today** (including science literacy, public engagement with science, and science input into public policy)
- **Most science knowledge becomes a global public good, and society reaps the benefits**

The next 15 years, without OSI (or similar)

DISCORD: Predatory publishing goes unchecked. Pirated open continues to grow and forces publishers to crack down on academic social networks. Reform efforts sputter because they focus only on BOAI-based solutions and also don't solve connected issues.

RETRENCHMENT: The open solution space fractures as countries enact their own programs. Common action on open becomes impossible, and enthusiasm for collaborative action on connected issues drops to near zero. Researchers increasingly cling to proven formats for safety.

RETREAT: Science loses the battle for truth against predatory publishers. Science is damaged and funding slows. A badly unequal two-tier system of science arises, separating the global haves and have-nots. Researchers revolt; universities conclude that open is not in the best interest of science after all.

100% open
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Baseline growth

+5 YEARS
+10 YEARS
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Better 1 or 2? We need to build the future of open scholarship *together* instead of apart (even if this means compromise)

Let's open up the possibilities and allow innovation to happen — not spin our wheels prejudging who can compete and on what terms. Let's listen to each other, learn from each other, work with each other, help the marketplace evolve (fairly on all sides), and together, let's find a way to maximize the *value* of open and help create a rich and rewarding future for science and society.

And as we do all this, let's remember our common ground:

Open cannot be the reason we are all here. It's just a means to an end, not our final destination.

The science communication challenges of today will be solved and replaced with new challenges we can't even envision yet and that have nothing to do with open — evolving educational models, changing roles for universities, an increasing role for artificial intelligence and machine learning and so much more. **Our focus needs to be on what we are trying to do for knowledge and society, and how we can get there from here, even if this means changing our positions on what kinds of strategies are "right" and "wrong." Our common devotion to this challenge is our incredibly rich common ground. We should embrace this, and begin working together. The future is waiting.**

How you can help

osiglobal.org

Participate

We need more leaders from academia, research, publishing, philanthropy, government, business, and other sectors who want to help shape the future of scholarly communication. If you're interested, let us know (info@osiglobal.org).

Support

Host a meeting, help connect us to decision makers in your government, provide funding, and more. OSI has a small and efficient budget---every little bit goes a long way. See the OSI website for details (osiglobal.org/support).

Implement

Help pilot new programs, collaborate with other universities and institutions on new approaches, help educate your institution about what's happening in this space and more.
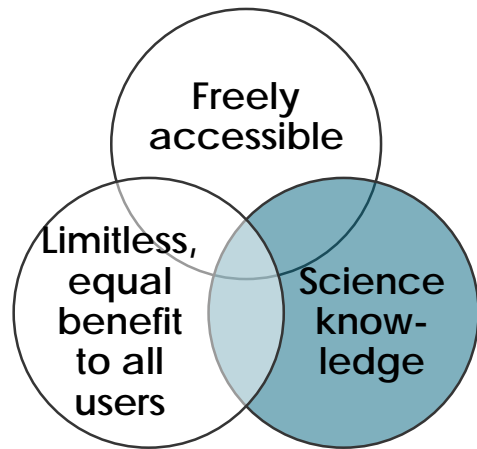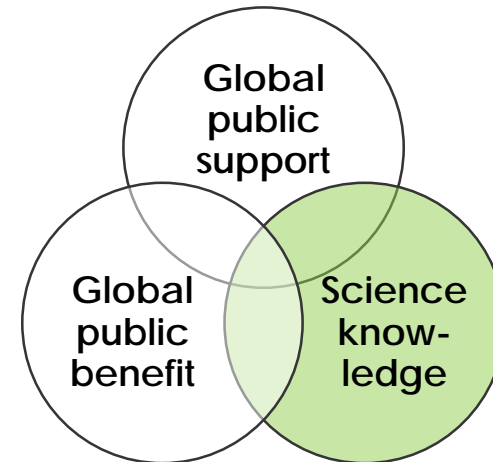
Annex

Stuff that didn't fit into my 15 minutes
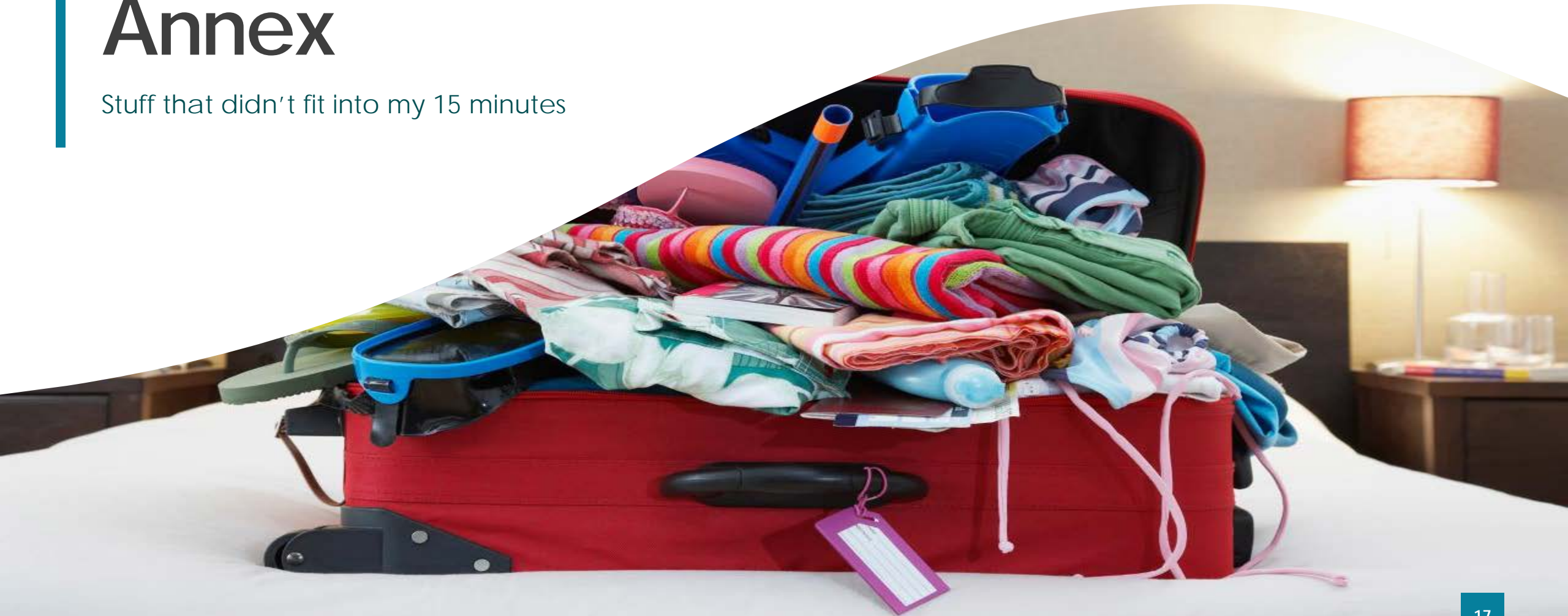
Science knowledge is a "public good." <mark>However</mark>…

Science knowledge is a global public good since it has no boundaries. But the way we communicate this (in books and journals, for instance) has many boundaries (like copyright, price and language). Being a public good requires being, physically and not just intellectually, freely and equally accessible and beneficial to everyone. **Open access helps us bridge this gap between our aspirations and economic reality**, and is a way of pushing more science knowledge into the "global public good" space, providing there aren't any unintended consequences such as reducing the reliability of published information (which reduces benefit).
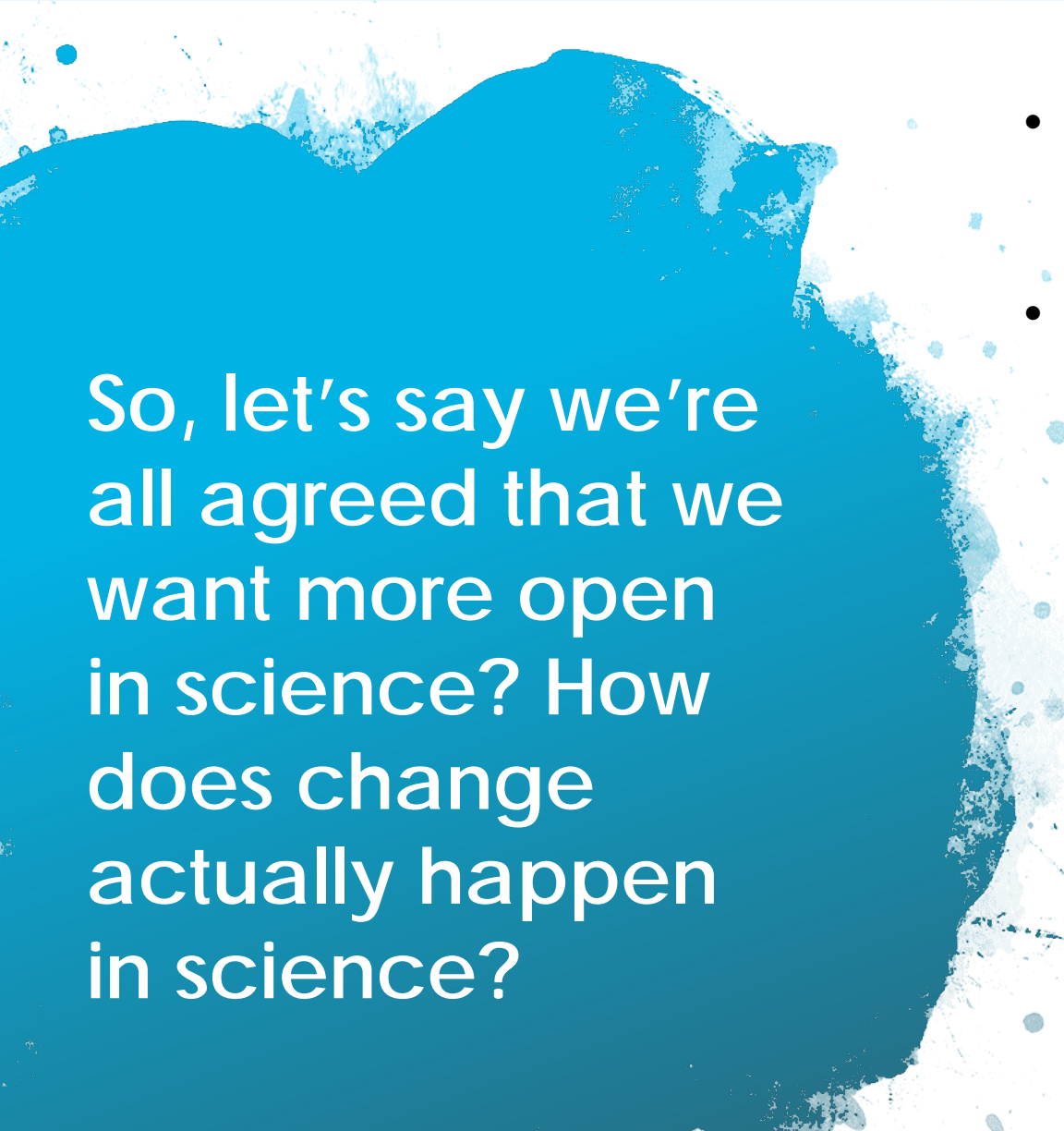
Freely accessible

Limitless, equal benefit to all users

Science know-ledge

Not a public good

Global public support

Global public benefit

Science know-ledge

THE Astrological Journal March/April 2018 £5.95

Not a public good

In the sense that it's "good for the public," or "belongs to the public," science knowledge should have public support (not necessarily financial), public benefit, and also meet exacting standards of the science community. That is, processes, methods and facts need to be accepted by other scientists; definitions and standards need to be agreed upon; IP rights need to be respected; sharing, transparency and replicability expectations need to be met; and moral-ethical guidelines adhered to. Open has a critical role here in trying to improve science so that more knowledge can enter the public goods arena.

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So, let's say we're all agreed that we want more open in science? How does change actually happen in science?

- **Internally-driven change is met with skepticism** and challengers are forced to prove their merit of their ideas. This is how science advances and improves.

- **Externally-driven change is different.** There is no global science agency that can make broad changes to science as needed. In order to stick, changes need to be explored by a well-informed, global community (such as OSI) and enacted as a community (including broader society) after long deliberation. Recent and ongoing challenges include:

  - Dealing with funding cuts (re-prioritizing)
  - Addressing bias (both in terms of study design and the institution of science)
  - Protecting the rights of study subjects
  - Improving tech transfer
  - Justifying spending for outcomes that don't obviously benefit the public
  - Communicating science to the public more effectively
  - Eliminating fraud
  - Improving replicability
  - **Improving public access to research results and data**

Science isn't a meritocracy. It's a community that relies on merit, but also on norms, standards, expectations, and high-functioning, well-trodden communication channels.

The DARTS open spectrum

- **DISCOVERABLE**: Can this information be found online? Is it indexed by search engines and databases, and hosted on servers open to the public? Does it contain adequate identifiers (such as DOIs)?
- **ACCESSIBLE**: Once discovered, can this information be read by anyone free of charge? Is it available in a timely, complete, and easy-to-access manner (for instance, is it downloadable or machine-readable, with a dataset included)?
- **REUSABLE**: Can this information be modified? Disseminated? What conditions (both legal and technical) prevent it from being repurposed or shared at will?
- **TRANSPARENT**: What do we know about the provenance of this information? Is it peer reviewed? Do we know the funding source (are conflicts of interested identified)? What do we know about the study design and analysis?
- **SUSTAINABLE**: Is the open solution for this information artifact sustainable? This may be hard to know---the sustainability of larger, more established solutions may evoke more confidence than new, small, or one-off solutions.

Open isn't a single outcome, unless you mean BOAI-compliant open (but even then opinions vary slightly). What about other kinds of open that are dominating current growth — bronze, public access, etc.? Should we call this open as well (not open access, but open)? Can we put it somewhere on a spectrum of open outcomes, because it may be open in several significant respects (e.g., free and easily accessible) but deficient in other respects (e.g., traditional copyright is attached)?

Here's our working definition of the open spectrum: "The open spectrum is the full range of different types of possible open outcomes for information, from completely closed artifacts to open access information and everything in-between. The DARTS Framework, developed by OSI participants, holds that the openness of information exists along five dimensions: discoverability, accessibility, reusability, transparency, and sustainability. The result is a broad spectrum of open states. The more easily discoverable, freely accessible, unrestrictedly reusable an information artifact (such as a book, a journal article, a dataset, or piece of code) the more open it is. The spectrum encourages more openness in scholarly and scientific communication, while also recognizing that open exists in various stages and that in some cases, optimally open may not mean maximally open."

Action plan (2018-19)

Issue briefs	OSI has accumulated a wealth of knowledge on a wide variety of important scholarly communication topics. Most briefs will be summaries of key topics (such as defining open) for sharing with the stakeholder community; some briefs may end up being policy recommendations endorsed by UNESCO.
Studies	We know a lot about this field, but we also need to learn a lot more. Here are the studies we're working on or considering.
Projects	We're planning on rolling out several projects that will help improve the scholarly communication landscape.
Joint efforts	Scholarly communication is a big ecosystem. It takes many players to make change. Here's what we're working toward.
Events	OSI is organizing or participating in several meetings over the next few years to help get the ball rolling in key areas.
Resource lists	Need to know who's working on what and where? Here's a starter set of scholarly communication resources.

Studies needed

Embargoes: How long is ideal?

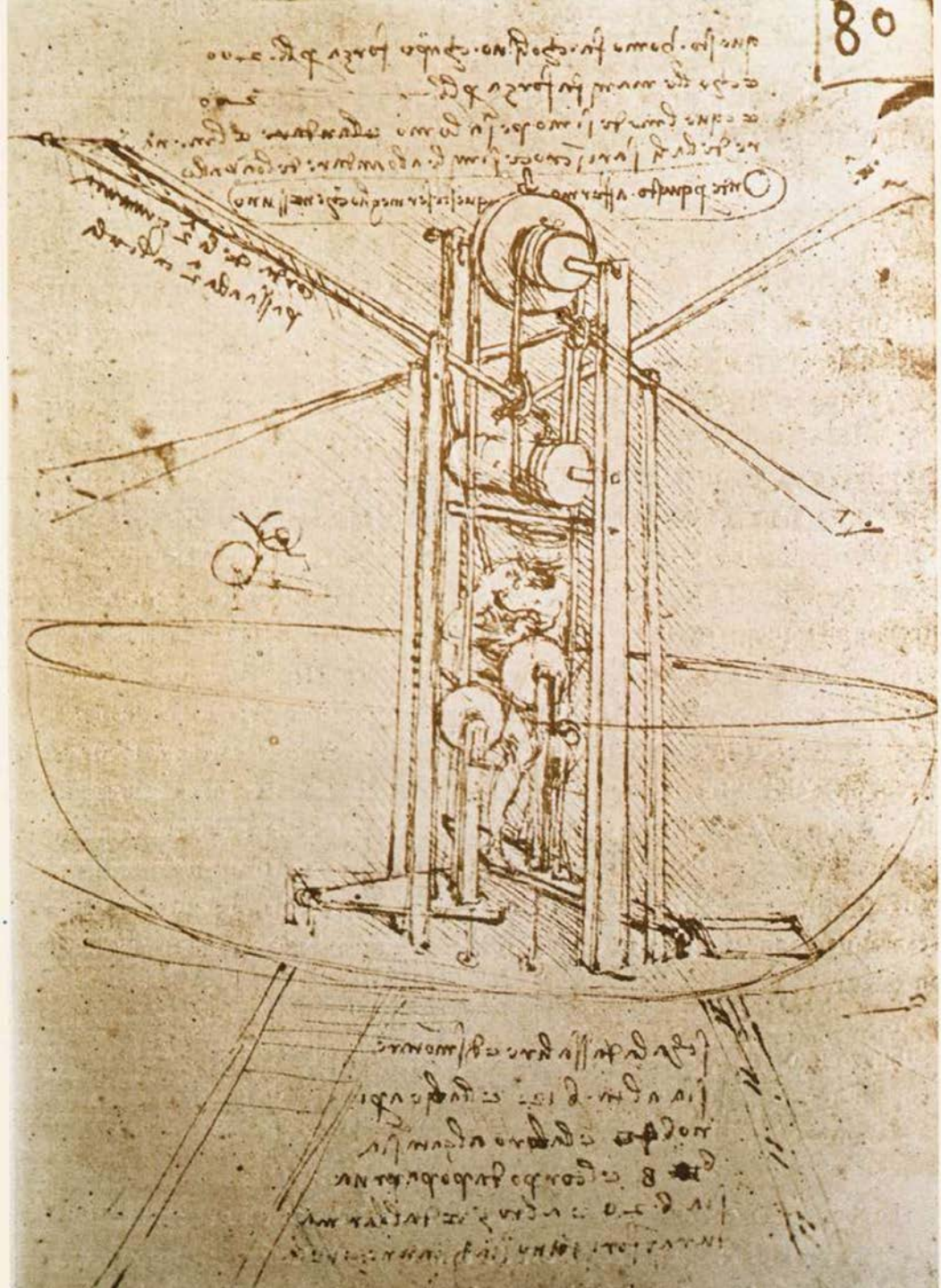Modeling the global flip impact

Can we measure open impact?

Publishers profit margins

How fast is predatory growing, who's driving it and why?

Can/should we merge open concepts and efforts?

How much open is needed per field (e.g., is CC-BY always necessary everywhere)?
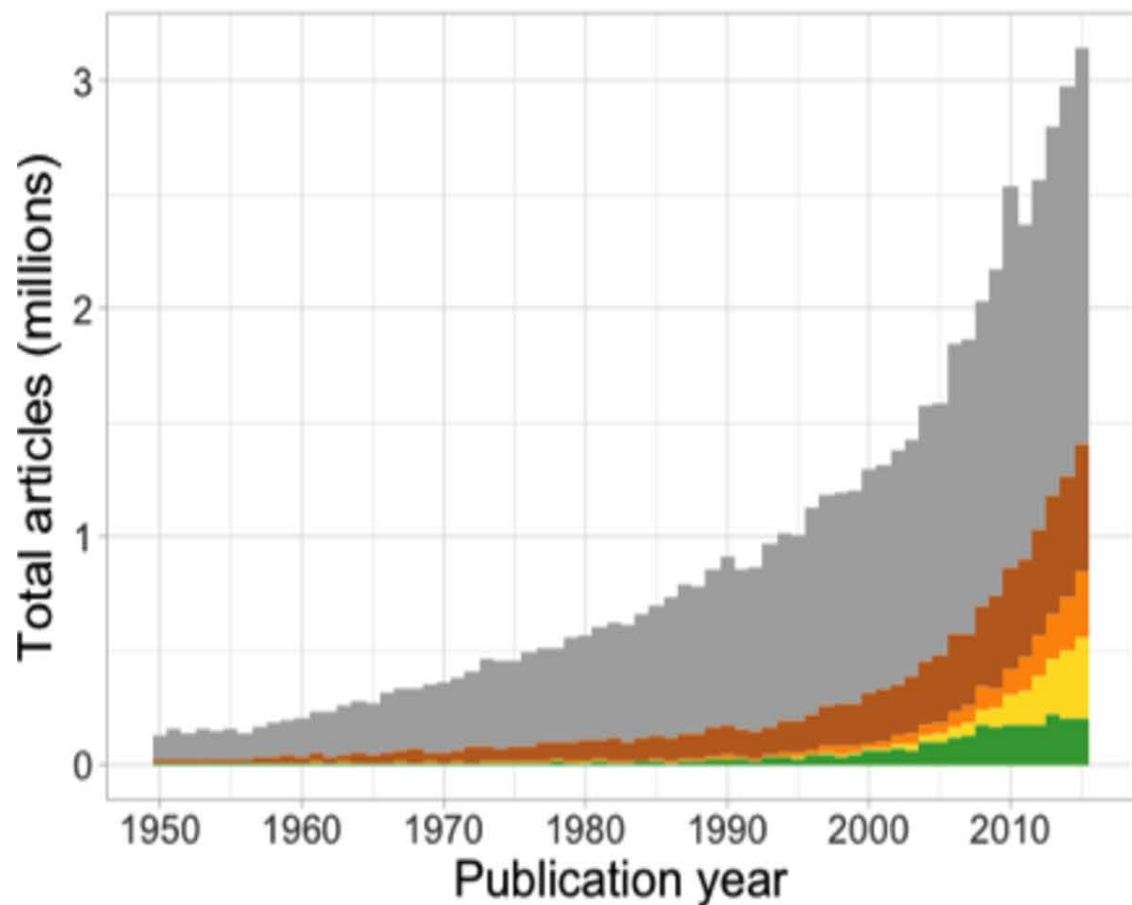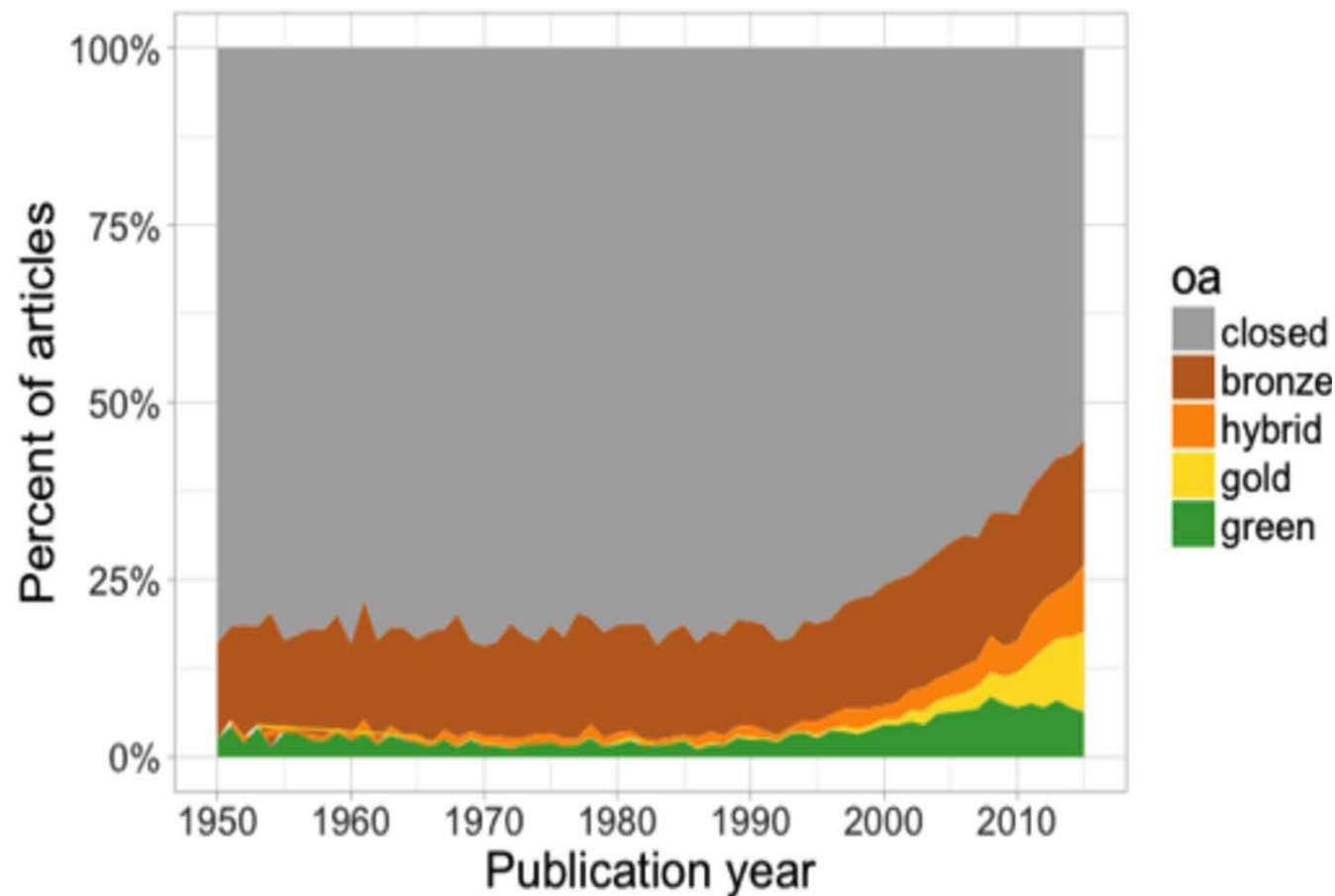
More

A. Source: Piwowar & Priem 2017

B.

oa
- closed
- bronze
- hybrid
- gold
- green

How fast is open growing? 28% of everything, 55% of new stuff annually and growing*

* Of all types of open (Archambault 2018

THANK YOU