Open Scientist Handbook • OSH

Commons are the Future Homes for Science

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Open science builds scholarly commons (plural) across the planet

Open science movements agree that the future depends on commons, even when the word is not present. NOTE: the photos in this section are of the California coast, which is in its entire length a public commons.

“We see a future in which scientific information and scholarly communication more generally become part of a global, universal and explicit network of knowledge; where every claim, hypothesis, argument—every significant element of the discourse—can be explicitly represented, along with supporting data, software, workflows, multimedia, external commentary, and information about provenance. In this world of networked knowledge objects, it would be clear how the entities and discourse components are related to each other, including relationships to previous scholarship; learning about a new topic means absorbing networks of information, not individually reading thousands of documents. Adding new elements of scholarly knowledge is achieved by adding nodes and relationships to this network. People could contribute to the network from a variety of perspectives; each contribution would be immediately accessible globally by others. Reviewing procedures, as well as reputation management mechanisms, would provide ways to evaluate and filter information.”-[FORCE11 Manifesto](#)

“For the first time ever, the Internet now offers the chance to constitute a global and interactive representation of human knowledge, including cultural heritage and the guarantee of worldwide access”(Preface to the [Berlin Declaration on Open](#)

[Access to Knowledge in the Sciences and Humanities](#), 2003; Accessed April 13, 2020).

“Scholarly communication should expand the knowledge commons. Scientific knowledge is critical for the development of society. As scientific knowledge is intangible in nature, its use by one person does not preclude its use by another person. On the contrary, knowledge tends to grow when it is shared. Therefore, no barriers should be established to restrict the use and reuse of research results. Scientific knowledge should be a public good and as such part of the knowledge commons, in order to enable everyone in society to benefit from this knowledge.”- Principle #12, Innovation, [Vienna Principles](#)

Starting points toward commoning in open science

In the following, “commons,” “academy commons,” “scholarly commons,” and “science commons” refer to any commons created to house academic shared-pool resources—including networks set up for online conversations—and governed by a community that uses these for their research.

Many thanks to the Alfred P. Sloan Foundation for supporting this work on the scholarly commons.

- Science is intensely personal. Scientists are already engaged in their own struggle with the unknowns of nature through infinite play. Science—their intellectual disease—is fortunately incurable, and likely pandemic.
- Science is already social. Just in the US, several thousand workshops a year evidence the scientific need/desire to build collective knowledge.
- Science is cultural. Self-governed science communities can use intentional cultural practices to help scientists prepare to work together in virtual organizations with

shared norms and resources.

- Commoning communities open up arenas for online collaboration. Online conversation-driven collectives supported by virtual communities on internet platforms can replace expensive in-person workshops and massive annual meetings, and enable scientists to share knowledge and solve problems today across the globe.
- These communities need to consider themselves as commons to replace institutions that have been twisted by the three dimensions of external goods and influence (hierarchy, intellectual property, and neoliberal economics). Commons can address the many intellectual property wrongs that plague the academy today.
- Each commons needs to work locally, attuned to its local situation within science domains and academic institutions.
- The academy needs to harness the internet and technology platforms to knit together localized science/data commons into a global web of open shared resources and collective intelligence.

Scholarly commons are...

Intentional communities (plural) formed around the shared use of open scholarly resources (a type of common-pool resource). Commoners work together as a community to optimize the use of the open resources they share. Scholarly commons are resource-near communities. They have an immediate and professional stake in the open resources they need to use for their research. The whole community assumes a stewardship role toward these resources. These groups are self-defining and self-governing, each with their own emergent rules.

Since scholarly commons are usually built upon open public resources, anybody on the planet can access them. When these are digital resources, they are not diminished by overuse. However, these resources cannot be sustained without the commons, or some other economy. These commons represent the social/cultural destination for any number of open-science efforts.

Scholarly commoners are...

Members of these intentional communities, with the freedoms and responsibilities that their communities provide and demand. Commoners work for the benefit of the whole community and for the sustainability of its open, shared scholarly resources. An individual commoner may belong to several commons. It is the role and the goal of commoners to help these open, shared resources flourish.

Membership is implicit in a commons, and represents an active agreement to respect and celebrate the shared principles of the group. Membership will also require some attention commitment to governance and service.

Scholarly commoning is...

The practice (and an attitude) that commoners bring to the scholarly commons. It begins with [a logic of abundance](#), and depends on an active culture of sharing. Commoning is the activity to build and sustain the commons through shared practice (thanks to Cameron Neylon for this wording). Scholarly commoning is also imbued with an ethos of scholarship/science (however defined). Scholarly commoning informs how science can be accomplished through the use of open, shared resources (open ideas, open data, open software, open workflows, open-access publishing with open review, etc.) inside commons, instead of through other types of economies.

Let's now explore in some depth what commons look like and how they work toward "science done right."

Commons start with people: a community of commoners.

To paraphrase Peter Linebaugh: "there is no commons without commoners."

Commoners contribute to and help govern their commons in many ways. They contribute a wide range of research-related objects and data; they ensure that these are sharable and discoverable through the use of appropriate metadata; they create "cerebration" events (See: [Knowing and Conversation](#)) to share ideas and scholarly objects, they collaborate in the development and use of appropriate standards and stewardship efforts; they acknowledge the efforts of others in their work; they promote the commons and commoning as a mode of scholarly effort.

Because commons are owned and led by their communities, volunteers are given the responsibility to envision, build, and govern these as destinations for the future of open

science and scholarship. All commoners will benefit from the impacts that their commons will make on the academy's research and communication capabilities. Volunteer leaders will also gain satisfaction that their time and efforts will grow these resources for the benefit of all and the advancement of knowledge.

"Before every great idea is a crazy idea."

Jono Bacon (2009)

"The world's cognitive surplus is so large that small changes can have huge ramifications in aggregate."

Clay Shirky (2010)

These commons are open to all participants who accept their principles

Commons can support a diversity of skills and knowledge without privileging any. All commoners will find a home for their knowledge and their interests. As a norm, participation in any scholarly commons is not restricted on the basis of accreditation, professional standing or reputation, or any other criteria except willingness to contribute and uphold the principles of the commons. Content and behavior are the only criteria for moderation within a commons.

Commons are intellectual "rooms" (See: [Science happens elsewhere](#)) that value active sharing and collaboration. Commoners serve these requirements in different ways across the spectrum of occupations and career paths. A commons does not require a specific volume or genre of contribution, a particular professional, educational, or social background, affiliation, certification, or status.

The reach of the global commons network is not restricted to participants from any single sector or region. This network provides a home for the work of full professors,

citizen-scientists, entrepreneurs, and bloggers. It recognizes the comment, the scholarly monograph, the dataset, the discussion, and the commercial product or service. It provides a home and recognition for programmers, statisticians, bench scientists, and literary critics. It welcomes the most narrowly focused specialist work and the broadest popularization. Above all, it encourages commoners to collaborate and share their specializations and interests.

Each commoner gets more value than they give as they grow their scholarly commons (note: any scholar may belong to more than one of these). The return on investment (ROI) for the commoner demonstrates how a commons as a whole is more valuable than any of its pieces. One part of this equation is due to the “power of pull”, which amplifies the value of participation, and also the utility of each object being shared in the network.

Commons are self-identified by interests, disciplines, experiences, data sources and uses, and research goals. Commoners across the planet will be linked as their local commons builds networks with other commons to expand the “room” they share to animate their conversations and creativity.

“Definitions belong to the definers, not the defined” Toni Morrison.

Science commons welcome and encourage participants of all backgrounds

Fierce equality means that every commons welcomes and encourages participants of all genders, social, regional, ethnic, linguistic, and disciplinary backgrounds. It also

recognizes that disagreement is an inherent part of research communication, including disagreement as to fundamental principles and theories.

A commons is an ecosystem that is defined by the interactions of each and every commoner who participates in jointly building and governing it. Just like every other ecosystem, a commons cannot be a monoculture; instead, it needs diversity in order to survive and thrive. While many scholarly disciplines differ in their culture of how to generate, treat and store their scholarly objects, their commons must be open to all of them.

In a similar way, scholarly commons can not only rely on the expertise of scholars employed at top-tier research universities. Instead, they need to be open and accessible to commoners that don't fit the academic stereotypes, or indeed never were in academia. Creating scholarly objects and performing scholarly activities is not limited to the core academic scholarly community. This means that commons must be open to diverse research questions and answers, including those proposed by non-professionals.

Through its self-governance, a commons uses vigilance with regard to hidden and structural biases and impediments and humility and open-mindedness with regard to the life-experiences of others. Because a commons is a shared agreement, the onus for ensuring equality and diversity of access is on the commoners themselves.

As commoners build self-governance, they should consider statements on inclusivity and language policy, because these encourage critical reflection on structural impediments. Exclusion of participation based primarily on formal degrees and academic rank is discouraged. When such criteria are used, alternative routes to participation should be provided.

Fierce Equality among objects for the pooled resource collection

Commons accept all contributed objects that adhere to their guidelines on an equal basis regardless of form

In order to improve the breadth and pace of knowledge generation, a commons will accept any contributed object that adheres to its guidelines. Because commons are grounded by [a logic of abundance](#) and a goal of reuse, they do not serve as gatekeepers or pretend to know the ultimate knowledge-value of any of their shared objects.

This means that there is no test of value, impact, significance, relevance, or endorsement that can be used to determine what belongs within a commons. Blog postings are as eligible as scholarly monographs. Highly cited papers are as welcome as preprints. Ground-breaking studies are as welcome as replication studies.

Once an object is in a commons, it is available for additional services. For example, commons services could be implemented to help commoners search for objects. Early versions of objects can be peer-reviewed. Objects can earn citations. Objects may be further curated or aggregated into collections by other commoners based on their expertise. Data objects can be evaluated for provenance and various qualities that improve their use and reuse.

Some services will not be provided inside a commons. For example, others in the academy may want to add metrics or rankings to objects in a commons. Commons have no objection to these services, however all forms of metrics should be built on transparent and open standards so that they may be reproduced and understood. Rankings will be made external to a commons and will not be housed inside the commons.

John Wilbanks: *“Going back to the beginning of science: it used to belong to all of us.”*

Smaldino and McElreath (2016): *“when a measure becomes a target, it ceases to be a good measure.”*

“We reaffirm the principle that only the intrinsic merit of the work, and not the title of the journal in which a candidate’s work is published, will be considered in appointments, promotions, merit awards or grants.”-[Bethesda Statement on Open Access Publishing](#), 2003; Accessed April 9, 2020.

“Do not use journal-based metrics, such as Journal Impact Factors, as a surrogate measure of the quality of individual research articles, to assess an individual scientist’s contributions, or in hiring, promotion, or funding decisions.”-[DORA](#); Accessed April 9, 2020.

Science commons have no intrinsic hierarchies, rankings, or reward systems

All participants and all research objects that conform to the principles of the commons are equally appropriate and available for dissemination and reuse. Attribution systems and formats are driven by the demands of transparency and the intrinsic nature of research, rather than the requirements of any reward system. Intellectual humility (See: [Kindness, Culture, and Caring](#)) is expected in these commons as internal good and a norm for science, crowding out bullshit prestige.

All contributors are acknowledged on an equal basis (meaning there is no intrinsic difference between authorial and other acknowledgements); all forms of dissemination are accepted on an equal basis (meaning there is no hierarchy among genres or formats). Commoners are expected to match the form of dissemination to the needs of the research output rather than the demands of a reward system. None of this is compatible with systems that create hierarchies among types or forms of contribution or encourage dissemination in one format over another.

The fundamental premises of a science commons are incompatible with “scooping”, because the commons does not require these ideas to be new or unique as a condition of entry, even though the commons tracks when and where ideas and objects enter the commons.

“...[I]f we could solve the problem of open access within the university—that is to say, prove that the economic equation of doing research, reviewing it, and making it freely available for everyone works, then we could prove that the tyranny of the margin need not operate everywhere.” (Kelty 2014)

“Our mission of disseminating knowledge is only half complete if the information is not made widely and readily available to society.”-[Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities](#); Accessed April 9, 2020.

“Computer analysis of content in all formats, that is content mining, enables access to undiscovered public knowledge and provides important insights across every aspect of our economic, social and cultural life.”-[Hague Declaration on Knowledge Discovery in the Digital Age](#); Accessed April 9, 2020.

“When intellectual property law allows content to be read and analysed manually by humans but not by their machines, it has failed its original purposes.”-[Hague Declaration on Knowledge Discovery in the Digital Age](#); Accessed April 9, 2020.

A commons is open by default, with a culture of demand sharing

Openness for demand sharing is the core norm for a commons. Its resources are intentionally and reflexively open and entirely free to use, read, reuse, and remix by humans and machines, unless there is a compelling reason to restrict access, e.g., personal health information. Scholarly commoning starts with openness as a norm, and supports activities that explore open scholarship fully. Demand sharing is the main activity in a commons.

Commons can use standards and guidelines developed by other organizations (e.g., [OKFN Open Definition](#), [Budapest Open Access Initiative](#) guidelines, and the [Open Source Initiative definition](#)) to inform their core definition of open content and access. Openness will be reinforced through the use of licenses that support the sharing of outcomes, such as knowledge gained by mining commons resources, research undertaken using commons resources, and software derived from commons code.

Commons will support a variety of open licenses. In their daily practice, commoners heed the requirements of these licenses and add their own content through them. Open includes promoting machine access to resources and metadata. Openness includes the right to deposit as well as to access, read, analyze, cite, quote, and mine. Where privacy is important to protect the rights of data providers or subjects, commons will make best-practice efforts to secure these data.

Demand sharing necessitates a radical rethink by stakeholders in their relationship with research assets produced by ‘their’ researchers, using ‘their’ funding, published within ‘their’ publications. The openness of commons allows the development of external services that can be more closed, proprietary, or involve ranking and selection: e.g. aggregation and indexing services, as long as they do not devalue the commons.

“In many instances IPRs [intellectual property rights] appear to be privatizing and commoditizing—“enclosing”—socially useful knowledge that, if widely shared, could result in more affordable and accessible medicines, scientific research, educational resources and climate technologies. In recognition of this reality, EU policy ought to empirically examine whether existing policies are sanctioning

severe opportunity costs. By recognizing contemporary technological and economic realities, EU policies could unleash moves towards more affordable health systems, wider uptake of green technologies, a more open, participatory creative culture, and more responsive democratic governance” ([The EU and the Commons](#) 2015; Accessed April 12, 2020).

Any person, organization or other entity can make scholarly work public.

As long as the criteria for open sharing are met—as determined by each commons through their governance—making a work publicly available is considered publishing a work. Additional requirements to add value for reuse (metadata, provenance, reproducibility, etc.) increase in value in a demand-sharing science culture, where outputs can be mined, mixed, and repurposed. Any person, organization or other entity (including publishing companies or entities that currently act as such, e.g. scholarly societies) will be welcomed by commons for providing services that help the publication, preservation, dissemination and assessment of scholarly work, as long as these services and the outputs they produce comply with the demand-sharing principles of the commons.

As commons content is stewarded by commoners within the commons, exclusive rights to this cannot be sold within or without the commons. Fees for additional services designed to maintain shared resource availability can be managed within the commons. Fees for access outside of the commons, and outside of the larger networked commons endeavor can be used to fund commons expenses, but cannot restrict access to content inside the commons. Operational principles for those who provide infrastructure for a global scholarly commons network are laid out in Bilder et al (2015).

Science commons explicitly reject the current model of publishing scholarly works which emphasizes the release of works only when they have undergone the peer review process. In a commons, a published work may be a version of a work that gets subsequently refined, similar to the way that open source software is released and then refined. Additional layers of curation, peer review and editing will be performed on works as needed for purpose. Note that these comments, discussions, annotations are themselves scholarly objects.

“Building a small ecosystem of capped returns is all well and good, but it won’t make much of a difference in the grand scheme of things. This idea has the most potential for impact if it becomes the new norm and displaces indefinite returns significantly – maybe entirely.” P2P Wiki

“Effective institutions at all levels require continuous engagement, because they all unravel over time.” (Benkler 2015)

“A country, after all, is not something you build as the pharaohs built the pyramids, and then leave standing there to defy eternity. A country is something that is built every day out of certain basic shared values.” Pierre Trudeau.

“Communal values must be taught, and renewed, continuously.” (Peter Linebaugh 2014)

Sustaining scholarly commons: There is global commitment and participation in long-term viability and preservation.

A global community is needed to actively grow and sustain science commons in the long-term. The shared-pool resources of hundreds of commons across the planet will need, and should command public funding for maintenance and growth. Each state has a stake and role in preserving and promoting the active knowledge available through commons repositories hosted in their territories, for the benefit of all science.

Commons will not flourish without the participation of commoners within the commons and also as citizens of their polities, promoting commons norms and values across societies. Commoning as a feature of scholarly work needs to be taught at all levels, practiced in everyday work, discussed and improved through reflexive innovations, and celebrated across the globe.

“An economics of abundance seek out these kinds of strategies of providing for our needs; it is not an economics that assumes that abundance exists, but one that analyzes modes of scarcity generation..., and that points out ways to counteract them” (Hoeschele 2010).

“It seems like if we could re-frame the way we think about these problems, and find new abstractions, new places to stand and see the issues we might be able to break through at least some of those that seem intractable today. How might we recognise the unexpected places where it is possible to create abundance?” (Neylon [2015](#)); Accessed April 9, 2020.

All activities and outputs that take place within commons have a permanent home in these commons and are available to the public.

All content and services in scholarly commons will be publicly shared. All resources are openly available and may not be removed. There is, of course, a differential built into the amount of prior learning that enables various uses for commons resources. Mostly this is a built-in feature of the complexity of the research endeavor, and the extreme complexity and emergent qualities of the current state of research in any field. A chess club may be open to all, however, the skills needed to play well with the most advanced members become available mainly through long-time learning and practice. Similarly, optimal use of scholarly commons resources very often requires years of training/learning. See also: Against Exclusion: open is open to all.

Currently, academic research is surrounded and interpenetrated by an economic logic that manufactures scarcity as a means to grow arbitrary value and improve profit margins. The academy needs to grow its own digital economy. And for this, it needs to

capture the value that researchers invest into it. One part of this exchange value will come from the expansion of internet-enabled services, another from the increase of its digital resources, and a third from the contributions of scholarly talent and funding sources.

While it is tempting to try and capture more value for pooled resources inside a commons by creating a differential use license that restricts use outside of the commons, there are more effective means available for this purpose. Commons can create or participate in civic trusts, set up like land trusts are today, which hold key aspects of the property rights for commons resources, and can negotiate with other commons and with external interests for the use of these resources (See: [McDonald 2015](#); Accessed April 10, 2020). Cultural practices that support demand sharing within commons can also be effective in reducing behaviors such as extracting resources from the commons or seeking advantages by working with external interests.

“With ‘subtractive’ resources such as fisheries, for instance, one person’s use reduces the benefits available to another. High subtractability is usually a key characteristic of common-pool resources. Most types of knowledge have, on the other hand, traditionally been relatively nonsubtractive. In fact, the more people who share useful knowledge, the greater the common good” (Hess and Ostrom 2009).

Demand Sharing means that the use of commons resources cannot devalue these

The logic of scholarly commons starts with the notion of abundance. One mission of scientific commons is to manage a full range of science objects, without needing to reject some because of an arbitrary constraint on capacity or a responsibility to judge

their value. The aim then is to maximize the usefulness and usage of these objects by supporting discoverability, mining, sharing, and reuse. Unlike natural resources (a fishery, a forest, etc.) the digital objects in scholarly communication are anti-rivalrous. Their use by one member does not devalue their use by another. Overconsumption is not a concern. The optimal state for the global network of scientific commons is one that supports as much consumption of their resources as is technically possible (See: [Abundance](#)).

In any one commons, the active sharing of resources, and the added opportunities for creative conversations and “cerebrations,” produces a great variety of outcomes and records, and new generations of results that had been enabled by the commons, and that get returned to start new cycles of knowledge building and knowing. Every commons anchors deeply into shared infinite play. Each commons reaches out to other commons to expand the horizon of [the infinite play of science](#). In some ways, each commons is self-sustaining: a crucible of activity and joy that fuels itself.

Do-ocracy: “Responsibilities attach to people who do the work, rather than elected or selected officials.” P2P wiki.

There is an expectation of service by Commoners to support research and scholarship in the Commons.

Commons will establish their own forms of do-ocracy. This is a generalizable feature of self governance for any scholarly commons. Leadership will be gathered from the edges, where new working groups will be building and expanding the collection and its services. Effective group leaders will find that their service opens up new doors for greater service (no good deed goes unpunished). A reputation for accomplishing significant work will form the basis for participation in leadership roles.

Scholarly commons build on a tradition of service; scientists have been gifting their research results to the republic of science for centuries now. The types of activities that constitute service are expected to be enlarged and their capacity for documentation enriched, e.g., participation in online conversation forums. As a general rule, individual scholars and teams will always receive more value from their commons than they contribute. This primary surplus of value is not just due to the network effects of commons, but also from the added opportunities for serendipitous interactions. The value proposition that each vibrant commons represents can be expressed explicitly on an individual, institutional, functional, disciplinary, national and global basis.

“Single loop organizations fix problems... Double loop organizations fix problems and fix the situations that caused the problems” ([Shirky](#) 2011; Accessed April 12, 2020).

“[P]rofessions have specific ‘internal goods’. They include truthfulness, analytical skill, and buying into the professional’s fiduciary duty to their client in the wider context of behaving with integrity to all. To acquire such internal goods of practice—or ‘goods of excellence’, as he subsequently termed them—MacIntyre [1984] argues that one must practice at least three virtues: justice, courage and honesty. When practising one’s profession, one can’t make up one’s own facts. And a good argument is one that would persuade the best of one’s colleagues, not just one’s own side. Thus, just as Francis Bacon proposed—sublimely—regarding the growth of science, that we cannot command nature except by obeying it, so the professional must master and obey the imperatives of their discipline to gain

access to the agency it offers. This idea of engaging with an external or objective order implies justice, which is secured only by allowing correctness within the practice to trump ego or power. This, in turn, implies equal treatment for equal merit within the terms of the practice” ([Gruen](#); Accessed April 14, 2020).

Commons become community-based value-generators for the work of their members.

The way forward requires an effort that spans the entire practice of scholarship, from intellection to publication. Researchers face the task of redesigning the scholarly workflow, while they inject these new modes of doing research and publication into the broader academy. The life of a scholar is rigorous and difficult, but also includes opportunities for personal and collective fulfillment. As commons spread across the academy, these will generate *local communities* that do two important tasks for each member: the communities cascade collective meaning into scholarly practice at the team level, and they support cultures of caring and kindness, and trustful events and friendships. They hold shared, internal virtues (goods) as binding on their members. As MacIntyre (1984) reminds us: “[T]he essential function of the virtues is clear. Without them, without justice, courage and truthfulness, practices could not resist the corrupting power of institutions.”

Virtues and normative practices in a commons are promoted to stimulate behaviors that support the production and dissemination of the best scholarship and science. They encourage respect for the principles of these commons, and they discourage behaviors and practices that inhibit participation. They apply to all stages of and participants in the research cycle. They respect and support non-standard research outputs (such as datasets, software, methods, null-results, ideas) and para-scholarly activity (e.g. leadership, community service, peer review, and adjudication).

Researchers across the globe will have wide variety of local issues to bring to their commons. The academy today is broken in various ways that reflect cultural issues locally. Each organization and discipline faces their own version of these dysfunctions. While all solutions are ultimately local, every commons creates helping practices that can be shared laterally across the planet.

“What I call software collapse is what is more commonly referred to as software rot: the fact that software stops working eventually if is not actively maintained. The rot/maintenance metaphor is not appropriate in my opinion because it blames the phenomenon on the wrong part. Software does not disintegrate with time. It stops working because the foundations on which it was built start to move. This is more like an earthquake destroying a house than like fungi or bacteria transforming food, which is why I am trying out the term collapse” ([Hinsen](#) 2017: Accessed April 13, 2020).

“How do we ensure that the system is run “humbly”, that it recognises it doesn’t have a right to exist beyond the support it provides for the community and that it plans accordingly?” (Bilder et al 2015).

Scholarly commons exist outside of specific technologies, funding sources, and business models

Scholarly commons accommodate, facilitate, stimulate and adapt to any developments and technologies that promote their goals, and enable their practices. Because the needs of commoners and the means to meet these will be emergent, commons must remain nimble and able to pivot. Commoners are stewards over their shared-pool resources. They treat these with the same quotient of caring that they bring to one another. Commoners are maintainers as well as innovators.

Commons can also fail. They can lose the capacity to own and steward the shared pooled resources they need; this will happen should their resources become “enclosed” by another organization (e.g., when these are sold to a for-profit concern). Or, a

commons can fail to sustain their governance model and lose the necessary volunteer support and membership. When a commons fails, it is important that pooled resources remain in the civic trust, so that a new commons can be generated as needed to manage these. A single [civic trust](#) (Accessed June 12, 2020) can hold the property rights for one or many commons, each of which has access to the shared resource. This also reduces the transactional value of the commons, since the commons owns mainly the right of access (including mixing and mining, etc.), and the trust owns a portfolio of other rights. The trust guards against enclosure of the commons' resources, a major cause of failure.

Other ideas/questions about commoning in the academy:

- A single object—say a dataset—in one open repository can be claimed as a resource by more than one commons, as long as each commons supports their own dark archive, or points to a collective dark archive, in case of data loss.
- Scholarship needs to be fearless in its infinite play. One role of academic tenure was to protect this condition. In the face of the neoliberal market, tenure has failed in this role. Hundreds of thousands of scholars will never achieve tenure. Can the commons provide this protection?

- Someone noted that many science data objects are “uncommon” objects that require knowledge and knowhow to use and share. Scholarly commons also maintain knowledge and knowhow along with its shared resources. Commoners are maintainers too.

Moving ahead

The real question is how to rescue (or re-place) current academic institutions using commons-based societies and economics. The commons is not an alt-academy, it needs to refactor existing organizations, where possible, and spin up new ones as required. How can we help move this process forward? If commoning is the “WD40” to release science from the sclerotic hold of its 19th Century institutions (See: Is my learned society obsolete?), internet-based technology is the duct tape needed to help these hundreds and thousands of commons communities work in concert across the globe. The internet holds the future of science. Shared resource platforms, such as Zenodo <<https://zenodo.org/>> can operate at a global scale when needed, and support thousands of small teams as required. For commoning to gain traction in the academy, we must explore commoner-owned online platform cooperatives (Smichowski 2016) as a generative practice for open science.

The first step is culture change: we need to unleash a more profound understanding of the circumstances of scholarly commoning by building up new open practices, informed by fierce equality and demand sharing. These efforts will be localized and applied as needed to yank local institutions away from hierarchy, intellectual property *wrongs*, and the pull of the margin that preempts ethical decisions and norms.

A text with some history

This above text originated from an early-draft document entitled *Principles of the Commons*, put together by various contributions to Force 11 working groups over the past six years. That draft version of the Principles of the Scholarly Commons was based on the [workshop Re-imagining Scholarship held by FORCE11 in Madrid, Feb 2016](#) and further refinement by the [Scholarly Commons Working Group](#). The original Google Document for this was the product of contributions by several people. You can check in on the current work of this endeavor here:

<<https://www.force11.org/group/scholarly-commons-working-group-wp2principles/principles-scholarly-commons-open-comments>>. Hop on and add your ideas.

NOTE AGAIN This text has been highly revised and edited to introduce the central tenets of academy commons and commoning for this Handbook. The text no longer expresses the specific recommendations nor the wording of the Force 11 document.

Bibliography: Open Scientist Handbook References