Open Source Tech for Scholarly Communication

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Collaborative
Knowledge
Foundation

Scholarly Communication
has issues

What

is communicated

When

it's communicated

How

it's communicated

Where

the communication goes

Who

receives the communication

What

is communicated

When

it's communicated

The Research Process

Publish results

Analyze findings

Gather information

Research & design

Ask questions

Publish results

Analyze findings

Gather information

Research & design

Ask questions

The Research Process

The Research Process

**A manuscript can't tell
this whole story**

Proposal

Protocol

Software

Results

Data

Workflow

Gold stars for publications only!

How

it's communicated

A WEEKLY ILLUSTRATED JOURNAL OF SCIENCE

"To the cold ground
Of Nature trusts the mind which builds for eye."—WORDSWORTH

THURSDAY, NOVEMBER 4, 1869

NATURE: APHORISMS BY CORTHE

NATURE! We are surrounded and embraced by her: powerless to separate ourselves from her, and powerless to penetrate beyond her.

Without asking, or warning, she snatches us up into her circling dance, and whisks us on until we are tired, and drop from her arms. She is ever shaping new forms: what is, has never yet been; what has been, comes not again. Everything is new, and yet nought but the old.

We live in her midst and know her not. She is incessantly speaking to us, but betrays not her secret. We constantly act upon her, and yet have no power

all-comprehending ideas, which no searching can find out.

Mankind dwell in her and she in them. With all men she plays a game for love, and rejoices the more they win. With many, her moves are so hidden, that the game is over before they know it.

That which is most unnatural is still Nature; the stupidest philistinism has a touch of her genius. Whoso cannot see her everywhere, sees her nowhere rightly.

She loves herself, and her innumerable eyes and affections are fixed upon herself. She has divided herself that she may be her own delight. She causes an endless succession of new capacities for enjoyment to spring up, that her insatiable sympathy may be assuaged.

She rejoices in illusion. Whoso destroys it in himself and others, him she punishes with the sternest tyranny. Whoso follows her in faith, him she takes as a child to her bosom.

Her children are numberless. To none is she altogether miserly; but she has her favourites, on whom she squanders much, and for whom she makes great sacrifices. Over greatness she spreads her shield.

She tosses her creatures out of nothingness, and tells them not whence they came, nor whither they go. It is their business to run, she knows the road. Her mechanism has few springs—but they never wear out, are always active and manifold.

The spectacle of Nature is always new, for she is always renewing the spectators. Life is her most exquisite invention; and death is her expert contrivance to get plenty of life.

She wraps man in darkness, and makes him for ever long for light. She creates him dependent upon the earth, dull and heavy; and yet is always shaking him until he attempts to soar above it.

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Author
Writes

Editor
checks

Peers
review

Author
revises

Journal
publishes

From a publishing tech perspective...

Submission

Production

Delivery

Submission

- Author uploads manuscript & adds metadata
- Editor checks manuscript
- & assigns reviewers
- Reviewers provide feedback

Problems

- Long revision cycles
- Few in-browser editing capabilities
- Communication often external to system

Problems

- Separate systems
- Typesetting often offshore
- Expensive & time consuming

Submission

Production

- Production tracking system to produce, convert, & prepare content
- Typesetting vendors who prepare manuscript for print & convert documents into XML & PDF

Problems

- Separate system
- Many different options means integration is difficult
- Expensive and time-consuming

Production

Delivery

- Convert to HTML
- Display on web
- Make available for printing
- Search, version maintenance
- Syndication to PubMed, Scopus, Google, ...

Submission

Production

Delivery

You're
welcome.

Submission

Production

Delivery

Submission Proc

Submission

Production

Delivery

The effects of print persist...

Submission

Production

Delivery

Submission

Production

Delivery

Submission

Production

Delivery

Submission

Production

Delivery

Submission

Production

Delivery

Legacy print means...

Expensive

Very slow

Static outputs

Duplicate databases

No interoperability

Less innovation

Where the communication goes

Manuscripts
Data
Code
Networks

Where

the communication

isn't going

**PUBLIC
DOMAIN**

Who

receives the communication

Tool
providers

Commercial
publishers

Libraries

A scenic view of a forested valley seen through two coin-operated binoculars mounted on a railing. The binoculars are in the foreground, and the valley is in the background. The text "A vision for scholarly communication" is overlaid on the image.

A vision for scholarly communication

The background of the slide features two vintage-style binocular viewers mounted on a dark metal railing. The viewers are silver and black, with a classic design. They are positioned on either side of a central text box. The background shows a vast, hazy landscape of rolling hills and dense green forests under a soft, overcast sky. The text is centered within a semi-transparent white rectangular box.

Cheaper
Faster
Interoperable
Innovative
More open
Sharing all outputs
early & often

Better

scholarly communication research

- ✓ Reproducible
- ✓ Transparent
- ✓ Open
- ✓ Available
- ✓ Faster & earlier

Connected outputs

Jennifer Lin:
[http://blog.crossref.org/
2016/08/the-article-nexus.html](http://blog.crossref.org/2016/08/the-article-nexus.html)

Living documents

Cheaper
Faster
Interoperable
Innovative
More open
Sharing all outputs
early & often

Too
hard!

There's a history of tech changing culture.

A shared vision...

Collaborative
Knowledge
Foundation

eLIFE

Stencila

bioRxiv

**How do we
get there?**

Build

**open source
modular
for flexibility
together**

Open Source Software

Source code available

Licensed so that others can study, change
and distribute to anyone and for anything

Developed in a public, collaborative manner

OSS $\neq$ Free

Firefox
Linux
GitLab

Google
Facebook
GitHub

OSS $\neq$ **Free**

**Most publishing technology
is neither
OSS nor Free**

Expensive
Very slow
Static outputs
Duplicate databases
No interoperability
Less innovation

Open Source Software

Can be...

Reliable | Affordable | Profitable | Reusable

Open Source Software

Successful Examples

Internet

- TCP/IP (governing protocols)

- 75% adoption of OS browsers (Chrome, Firefox)

- 50% of websites delivered by Apache web server

- 70% of sites use WordPress, Joomla or Drupal as a CMS

Phones

- Android, iOS (built on OS Darwin operating system) dominates

Cloud hosting services

- OpenStack has 17% market share against Amazon, Microsoft and Google

Open Source Software

Can be...

Reliable | Affordable | Profitable | Reusable

Is best when it's...

Collaborative | Community-driven

Commercial publishers

University presses

Funders

Libraries

Tool providers

Authors

Collaborative | Community-driven

Collaborative Knowledge Foundation

Coko: we build open source solutions
to transform research communication

<http://coko.foundation>

**Collaborative
Knowledge
Foundation**

No **one** platform can solve all the problems.

We need an **ecosystem** of tools and software.

We should build **modular & interoperable** things.

The **community** must create and own solutions.

PubSweet

Coko's component-based framework
for building publishing platforms

Open source | Modular | Flexible

Built with the **community**

PubSweet

PubSweet

Open, modular
architecture

PubSweet Publishing Framework

Micropublications: brief communications

PubSweet Publishing Framework

A new mutation with a polycystin phenotypic spectrum in *Caenorhabditis elegans*

Allyson Whittaker¹, Gary Schindelman¹, Shahla Gharib¹, and Paul W. Sternberg¹

¹. Division of Biology and Biological Engineering, Caltech, Pasadena CA 91125

Description:

lov-1 and *pkd-2*, which encode the *C. elegans* orthologs of human polycystin-1 and -2, are necessary for three particular aspects of male mating behavior. In a screen for male mating defective mutants with similar spectrum of mating defects, we identified a mutation that apparently defines a new locus, *lov-3*.

We isolated the *sy682* mutation in an ethyl-methane sulphonate (EMS)-screen of *Caenorhabditis elegans* strain PS1395 [genotype: *plg-1(e2001d); him-5(e1490)*] for mutant males that do not mate efficiently and hence do not form plugs on hermaphrodites (Liu et al, 2017). *sy682* is defective in the males' response to contact with hermaphrodite and in vulval location (Table 1). The vulval location defect is failing to stop at the vulva. These two phenotypes are associated with *lov-1* (Barr, 1999) and *pkd-2* loss-of-function mutations (Barr et al. 2001; Whittaker et al., 2017). *sy682* maps to the X chromosome and thus is distinct from *lov-1* and *pkd-2*, so it defines a likely new locus, *lov-3*.

Genotype	Phenotype	
	response	vulval location
+/+	47/59	57/57
<i>sy682/sy682</i>	12/61	25/44

Table 1. Phenotypic analysis of *sy682* mutation. Response, response to contact with hermaphrodite; proportion of males that responded to initial contact with a hermaphrodite. Vulval location, the proportion of males that located the vulva on the first attempt. See Barr & Sternberg (1999) for details.

Reagents

Strains:

PS4770: *plg-1(e2001d); him-5(e1490); sy682*

PS6219: *plg-1(e2001); him-5(e1490); sy682. sy682* backcrossed 1x

PS1395: *plg-1(e2001d); him-5(e1490)*

References

Barr MM, Sternberg PW. A polycystic kidney-disease gene homologue required for male mating behaviour in *C. elegans*. Nature. 1999 Sep 23;401(6751):386-9. PubMed PMID: 10517638.

Barr MM, DeModena J, Braun D, Nguyen CQ, Hall DH, Sternberg PW. The *Caenorhabditis elegans* autosomal dominant polycystic kidney disease gene homologs *lov-1* and *pkd-2* act in the same pathway. Curr Biol. 2001 Sep 4;11(17):1341-6. PubMed PMID: 11553327.

Liu, K; Hajdu-Cronin, Y; Chen, A; Schindelman, G; Whittaker, A; Gharib, S; Sternberg, PW. (2017): Screening for *C. elegans* male copulation-defective mutants by the mating plug phenotype. Micropublication: biology. Dataset. <https://doi.org/10.17912/W2SSgK>

Whittaker, A; Schindelman, G; Gharib, S; Sternberg, PW. (2017): *sy680* is a novel allele of *pkd-2*. Micropublication: biology. Dataset. <https://doi.org/10.17912/W2SwgM>

Funding:

Howard Hughes Medical Institute, with whom PWS was an Investigator.

PDF

Back to Phenotype data

Editoria: book publishing

UNIVERSITY OF
CALIFORNIA PRESS

University of California
CDL
California Digital Library

PubSweet Publishing Framework

Production Editor: unassigned TEAM MANAGER

Migrating in to Financial Markets

UPLOAD MULTIPLE WORD FILES EXPORT BOOK

FRONTMATTER

+ ADD COMPONENT

a1_Bakker_title ...
 UPLOAD WORD To Clean > To Edit > To Review > To Style

a2_Bakker_toc ...
 UPLOAD WORD To Clean > To Edit > To Review > To Style

a3_Bakker_ack ...
 UPLOAD WORD To Clean > To Edit > To Review > To Style

xPub: a collection of PubSweet components for manuscript submission, review, & revision

xPub

Authoring

Submission

Conversion

Editorial
tools

Peer
review

Revision

PubSweet Publishing Framework

DISPLAY

- Title
- Subtitle
- Epigraph: Prose
- Epigraph: Poetry
- Source Note
- Heading 1
- Heading 2
- Heading 3

TEXT

- General Text
- General Text Cont'd
- Extract: Prose
- Extract: Poetry
- Bibliography Entry
- Source Note

The blame game: An investigation of grammatical aspect and blame judgments

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Notes

- This headline was based on <http://metro.co.uk/2017/07/31/punching-customer-was-pushed-back-into-the-queue-after-being-told-to-get-the-hell-out-of-the-store/>

The blame game: An investigation of grammatical aspect and blame judgments

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Abstract

Imperfective aspect (i.e. Mark was punching John) is interpreted by the language processing

Metadata

peer review: open

1 supplementary file:

Assign Reviewers

Decision Italic Bold t_x t^x T_t

Enter your decision...

Accept Revise Reject

SUBMIT

Attach file

Build

**open source
modular
for flexibility
together**

Submission

Production

Delivery

Submission

Production

Delivery

Commercial publishers

University presses

Funders

Libraries

Tool providers

Authors

Collaborative | Community-driven

PubSweet Publishing Framework

xPub Community

xPub

Authoring

Submission

Conversion

Editorial
tools

Peer
review

Revision

PubSweet Publishing Framework

**Collaborative
Knowledge
Foundation**

Authors

Libraries

Commercial
publishers

Funders

Tool
providers

University
presses

Having other people build components to solve the problems you are facing is a great benefit of a common infrastructure.

...but also knowing that what you're building is useful to more than just your team really adds energy and purpose to our teams of developers and designers.

—Paul Shannon, eLife

An improvement for one becomes an improvement for all.

Individual communities can focus on core areas of expertise — peer review, hosting, discovery — knowing that their innovations will improve the entire system.

The result is more creativity, a more diverse set of solutions, and, ultimately, faster progress.

—Andrew Smeall, Hindawi

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A vision for scholarly communication

The Open Ecosystem

Services

Hosting

3rd Party
Peer
Review

Copy-ed
iting

Pop-up
Publishin
g

Tools

DAT

INK

Stencila

Substan
ce library

Texture

Wax

Collabor-
ation

xSweet

Open
Review

Science
Fair

Platforms

OJS

Coko's
Editoria

Coko's xPub

eLife
Libero

CERN's
Invenio

Scholarly communication
should be a public good

website	carlystrasser.net
email	carlystrasser@gmail.com
twitter	@carlystrasser
Coko	coko.foundation @cokofoundation

GORDON AND BETTY
MOORE
FOUNDATION

SHUTTLEWORTH
FOUNDATION