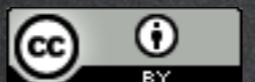


Open science, open-source, and open data: Collaboration as an emergent property?

Cyberinfrastructure for
Collaborative Science

A workshop at NESCent, Durham, NC, May 18-20

Hilmar Lapp and Todd Vision, NESCent



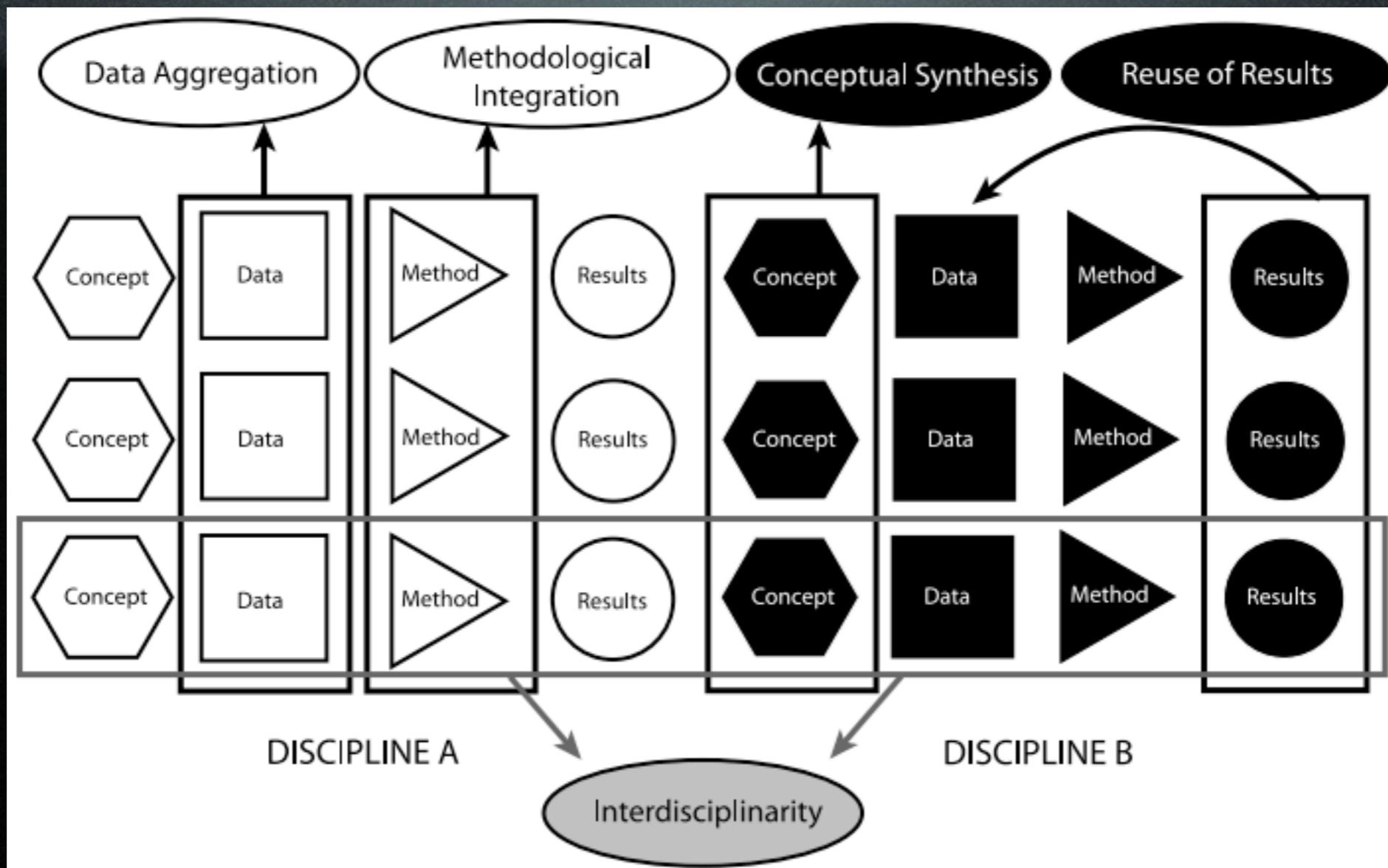
“Openness is the new flower power”

“We create the scholarship. We create the meta-data. We create the tools. We can reclaim and reinvent the way that scientific scholarship is created and disseminated.”

Peter Murray-Rust



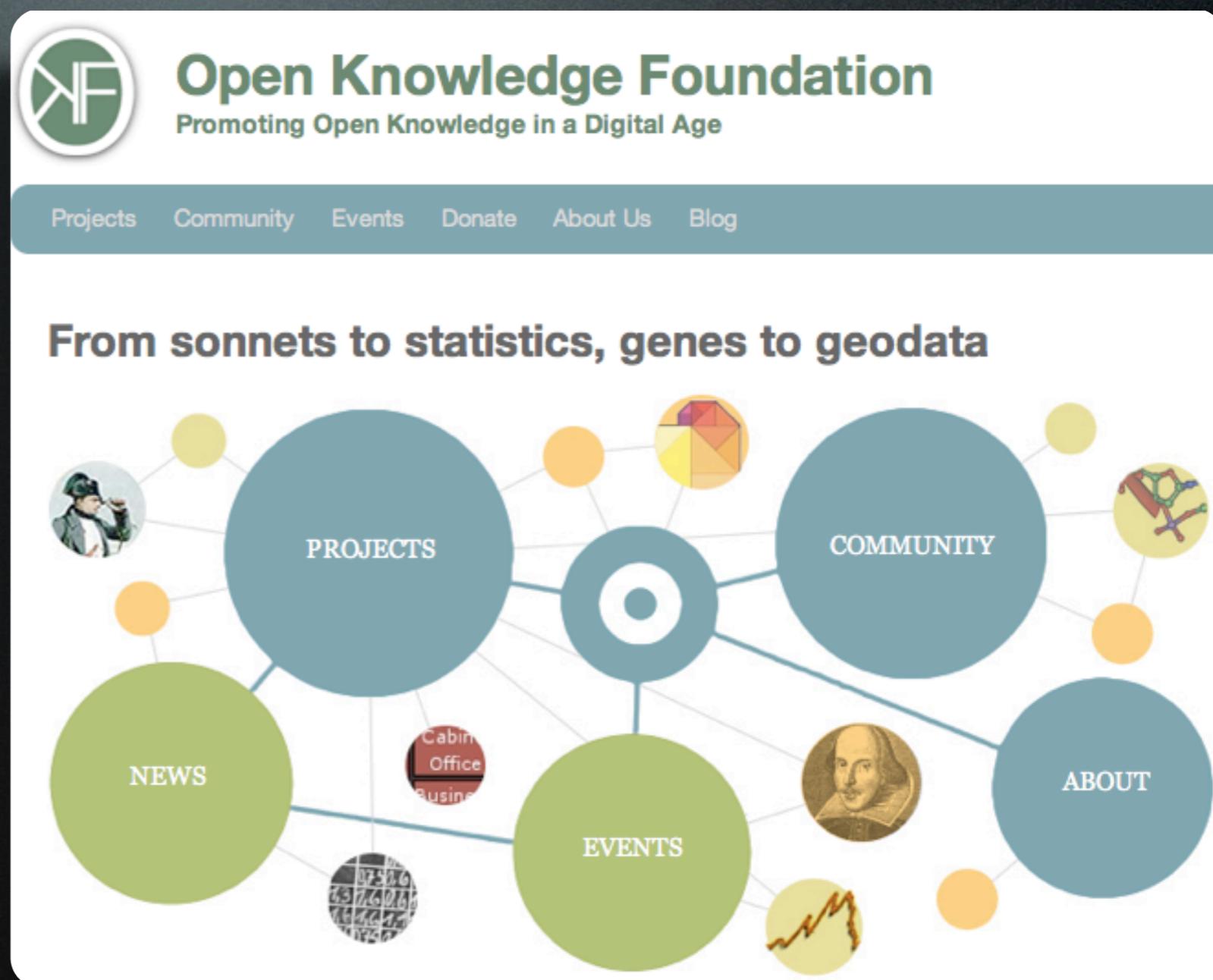
E-access and interoperability are enabling factors



Sidlauskas et al (2010)

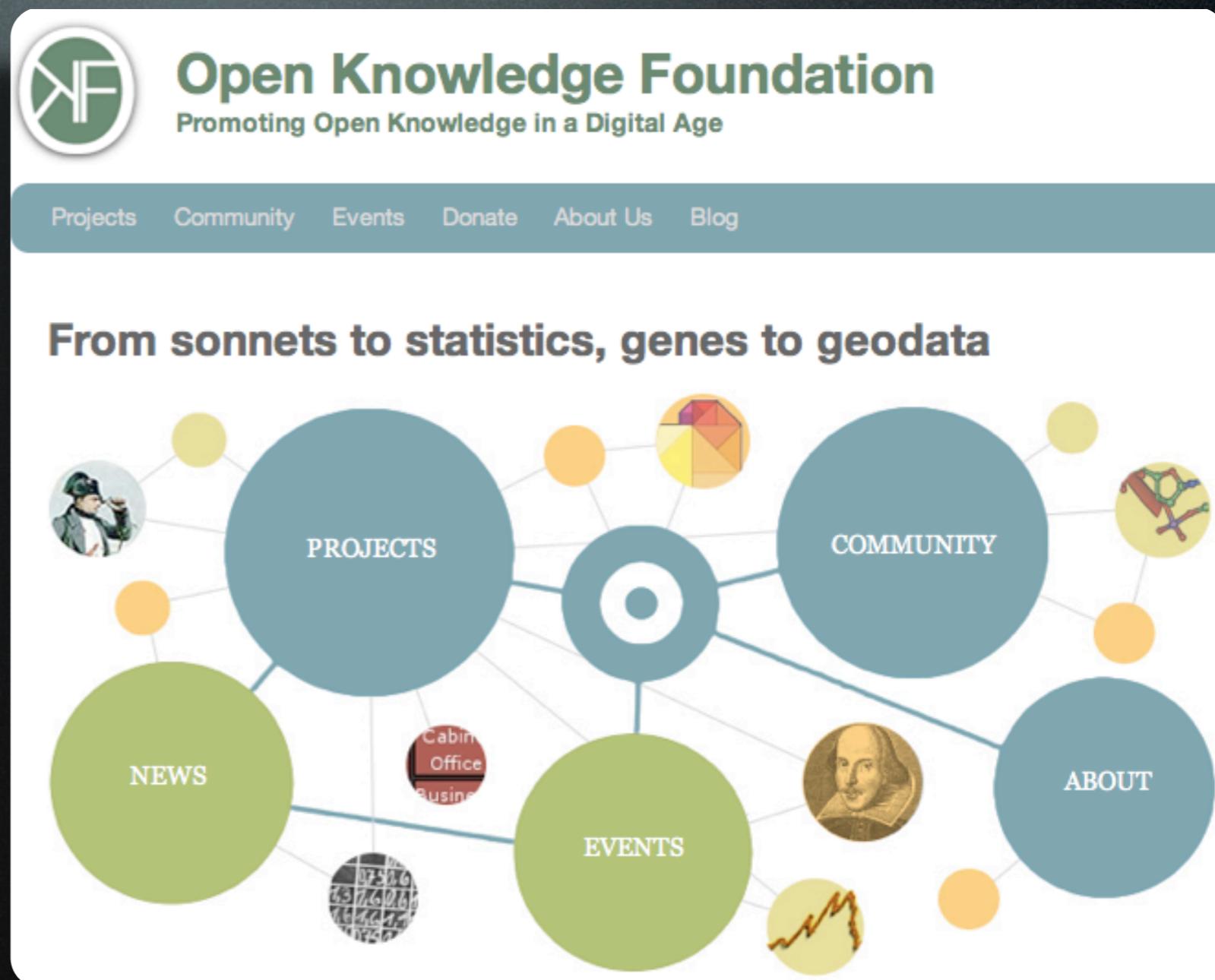
What does “open” mean?

“A piece of content or data is open if anyone is free to use, reuse, and redistribute it – subject only, at most, to the requirement to attribute and share-alike.”



What does “open” mean?

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Open Notebook Science

An experiment within the DataONE Summer Internship Program

Project: Study of Data Citation Practices and Data Management Plans

Formal and informal outputs

Some of the main research products so far. Statistical analysis and manuscript preparation are continuing. Links to be posted.

- Synthesis poster [\(abstract\)](#) on data citation policies, practices and implications: "Data citation in the Wild" presented at IDCC 2010

Nic Weber's project on data citation and sharing policy

- Open notes on data citation and sharing policy
- Nic's ASIS&T poster (link to be added to text and graphic after ASIS&T embargo)
- Datasets
 - Funder policies
 - Data repository policies
 - Journal policies

Sarah Judson's project on data citation practices

- Open notes on data citation practices
- Snapshot of data collection on data sharing

Valerie Enriquez's project on tracking reuse of repository data

- Open notes on tracking reuse of repository data
- Analysis of 116 ORNL DAAC citations, from ORNL 2009-2010 review
- Flowchart for tracking data reuse stems from Valerie's work
- Summary of the difficulties using ISI Web of Science to track DOIs, also inspired by Valerie's work
- Manuscript draft-in-progress



TREEBASE IN R: A FIRST TUTORIAL

My TreeBASE R package is essentially functional now. Here's a quick tutorial on the kinds of things it can do. Grab the [treebase package here](#), install and load the library into R.

TreeBASE provides two APIs to query the database, one which searches by the metadata associated with different publications (called [OAI-PMH](#)), and another which queries the phylogenies directly (called [Phylo-ws](#)). They have somewhat redundant functions, but for our purposes the second one returns the actual data, while the first returns metadata. A few examples will best illustrate how this all works. We start with some queries of the metadata directly without downloading any trees.

[↓ Keep Reading](#)



MATHJAX THE SMART WAY: CHILD THEMES

May 16, 2011 – 12:54 pm

Adding mathjax by modifying the header.php file in my wordpress theme, as recommended by MathJax website, isn't stable to upgrades of the theme, which simply replace the header.php file with a fresh version. The "correct" way to do this is using child themes, which are pretty simple, even though this got me writing my first ...



Carl Boettiger

@cboettig Davis, CA

Theoretical ecology & evolution, open science, hpc, active learning. <http://www.carlboettiger.info>

<http://www.carlboettiger.info>

By
Carl

DISCLAIMER: NOT A BLOG



Welcome to my open lab notebook. This is the active, permanent record of all my scientific research, standing in place of the traditional bound lab notebook. It is a record of ideas, and intuitions; results and mistakes. Please bear in mind that the notebook is primarily a tool for me to do science, not communicate it. I write my entries with the hope that they are intelligible to my future self; and maybe intelligible to my collaborators and experts in my field. This is not a research blog, where each entry can be read alone and understood by a general audience in an edited and polished form.¹

THURSDAY: FUN WITH DATABASES CONTINUED

May 12, 2011 – 8:32 pm

Dryad Hilmar pointed out the documentation for machine access to Dryad files on the wiki, much nicer than guessing from the XML. (Good thing too, since it's a bit more complicated than I thought). Wiki describes four steps: Get the dryad short-identifier for the datafile look up the METS reference using that identifier parse the ...

WEDNESDAY: TREEBASE

May 11, 2011 – 3:12 pm

TREEBASE PACKAGE: Modified treebase package to return the treebase id in the phylo class as physid, so that I can use the id to query the appropriate meta data. Modified the package with the option to return only max number of trees, try(xpathApply(search_returns, paste("//rdf:li[position()< ", max_trees, "]", sep=""), function(x){ ...

Modified to check for branch ...

Open e-collaboration sites

Log in netid login



Selfish DNA
NESCent

navigation

- NESCent
- Home
- Announcements
- Publications
- Participants
- Meeting Information
- Working Documents
- Discussion Forum
- Links, Bibliography
- Mailing Lists

for editors

- Recent changes
- Wiki Help

help

- IT + General Help
- Wiki Editing Help

browse site

- All Pages
- By Category

page discussion view source history

Main Page

Selfish DNA and the genetic control of vector-borne diseases Catalysis Meeting Wiki

Selfish genetic elements spread and maintain themselves in populations even though they have negative impacts on the fitness of organisms. They are of interest from an applied and a basic evolutionary perspective, and they are being studied from molecular and population dynamics/genetics perspectives. Although there are exceptions, most individual researchers take a single perspective in studying selfish DNA, interact with others who have that perspective, and tend to have only a superficial understanding and appreciation for work on selfish DNA conducted at different levels or with different goals.

There has been recent interest in using selfish genetic elements to drive anti-pathogen genes into disease-vectoring pest populations in order to suppress transmission of human diseases such as dengue and malaria. We feel that the progress of research toward this goal has been hampered by a lack of interdisciplinary interaction. To help remedy this situation we propose to bring together researchers working on selfish DNA whose work is centered at different points along the continuum from basic to applied and from the molecular to population level. We propose to use specific approaches to foster discussion among these researchers that will lead to new approaches for using selfish genetic elements to control vector-borne diseases. We expect that other useful synergies will emerge from these interactions that will have benefits at the basic and applied level. If we are successful, some of the workshop participants will develop collaborative projects or will form working groups.

The Workshop Presentations are listed in the "Publications" section

The User-Friendly simulation programs are listed in the "Working Documents" section

MediaWiki Help if you need it

- User's Guide ↗
- MediaWiki FAQ ↗

Dryad: archiving, finding, and sharing open data



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Dryad is an international repository of data underlying peer-reviewed articles in the basic and applied biosciences. Dryad enables scientists to validate published findings, explore new analysis methodologies, repurpose data for research questions unanticipated by the original authors, and perform synthetic studies. Dryad is governed by a consortium of journals that collaboratively promote data archiving and ensure the sustainability of the repository.

As of Apr 6, 2011, Dryad contains 569 data packages and 1391 data files, associated with articles in 65 journals.

Login

Search Data

Recent Posts from the Dryad Blog 

- How can the Dryad repository help researchers' data management plans?
- Dryad newsletter January 2011
- Best practices for data archiving

Recently Published Data 

Agashe D, Falk JJ, Bolnick DI (2011) Data from: Effects of founding genetic variation on adaptation to a novel resource. <i>Evolution</i> doi:10.5061/dryad.9051
Koenig WD, Walters EL, Haydock J (2011) Data from: Variable helper effects, ecological conditions, and the evolution of cooperative breeding in the acorn woodpecker. <i>The American Naturalist</i> doi:10.5061/dryad.9042
Zhang A, Muster C, Liang H, Zhu C, Crozier R, Wan P, Feng J, Ward R (2011) Data from: A fuzzy set theory based approach to analyze species membership in DNA barcoding. <i>Molecular Ecology</i> doi:10.5061/dryad.9037
Anderson JT, Nuttle T, Saldaña Rojas JS, Pendergast TH, Flecker AS (2011) Data from: Extremely long-distance seed dispersal by an overfished Amazonian frugivore. <i>Proceedings of the Royal Society B</i> doi:10.5061/dryad.9028
DeMita S, Chantret N, Lorida K, Ronfort J, Bataillon T (2011) Data from: Molecular adaptation in flowering and symbiotic recognition pathways: insights from patterns of polymorphism in the legume <i>Medicago truncatula</i> . <i>BMC Evolutionary Biology</i> doi:10.5061/dryad.9031
Dsouli N, Delsuc F, Michaux J, De Stordeur E, Couloux A, Veuille M, Duvallet G (2011) Data from: Phylogenetic analyses of mitochondrial and nuclear data in haematophagous flies support the paraphyly of the genus <i>Stomoxys</i> (Diptera: Muscidae). <i>Infection, Genetics and Evolution</i> doi:10.5061/dryad.9026

- Data archived at publication
- Option for limited-term embargo
- Easy submission process
- Data may be peer reviewed
- Persistent link from paper to data
- Data in public domain (CCZero)
- Data given persistent GUIDs
- Metadata searchable
- API for data exchange
- Capacity for versioning/updates
- Long-term preservation
- Community governance

Dryad: archiving, finding, and sharing open data



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- Long-term preservation
- Community governance

Data from: Towards a worldwide wood economics spectrum

When using this data, please cite the original article:

Chave J, Coomes D, Jansen S, Lewis SL, Swenson NG, Zanne AE (2009) Towards a worldwide wood economics spectrum. *Ecology Letters* 12: 351-366. doi:10.1111/j.1461-0248.2009.01285.x

Additionally, please cite the Dryad data package:

Zanne AE, Lopez-Gonzalez G, Coomes DA, Ilic J, Jansen S, Lewis SL, Miller RB, Swenson NG, Wiemann MC, Chave J (2009) Data from: Towards a worldwide wood economics spectrum. Dryad Digital Repository. doi:10.5061/dryad.234

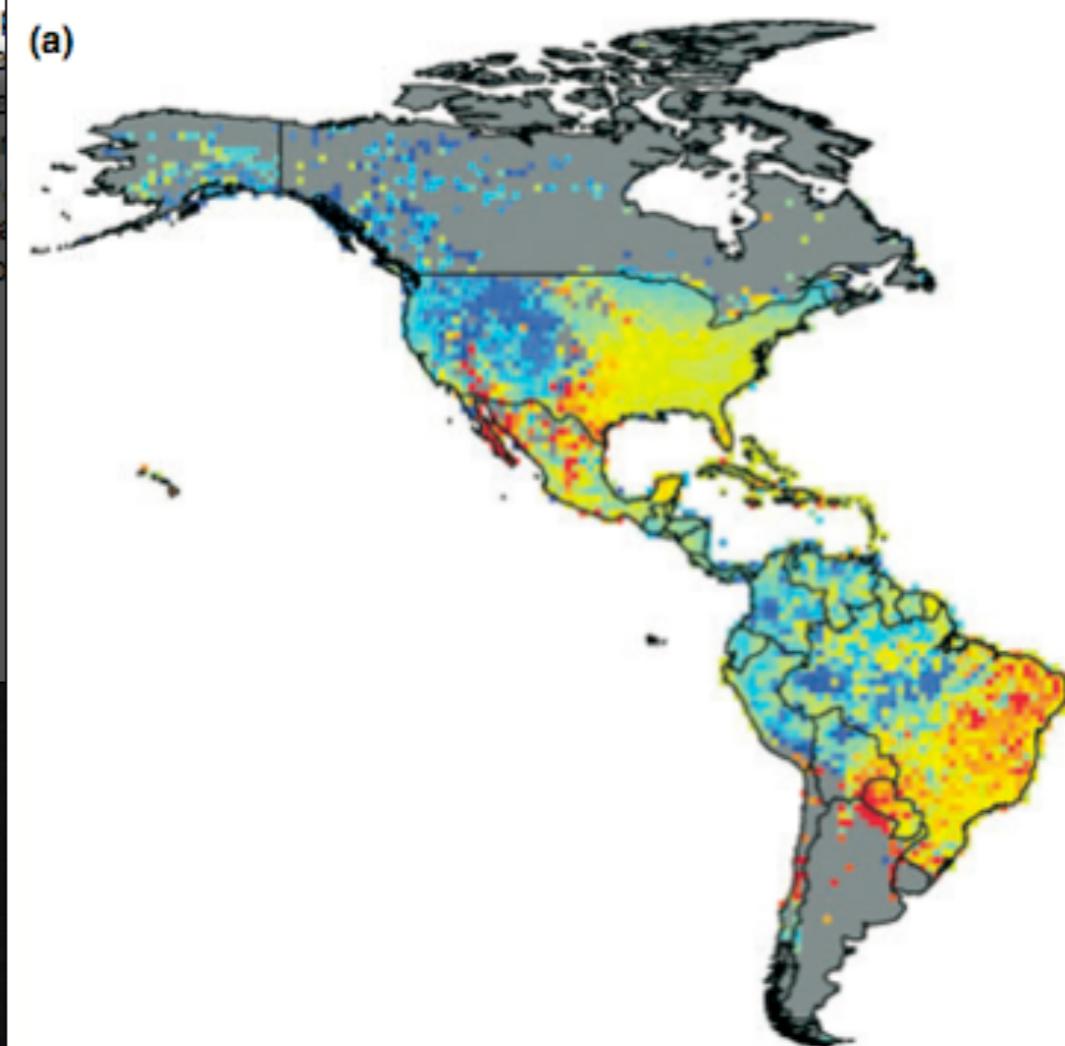
Cite | Share

Dryad Package Identifier	doi:10.5061/dryad.234	307 views
Individual Data Files	Global Wood Density Database	1299 views 612 downloads
Abstract	Wood performs several essential functions in plants, including mechanically supporting aboveground tissue, storing water and other resources, and transporting sap. Woody tissues are likely to face physiological, structural and defensive trade-offs. How a plant optimizes among these competing functions can have major ecological implications, which have been under-appreciated given to leaf function. To draw together our current understanding of wood function, we compiled wood traits, including the largest wood density database to date (8412 taxa), mechanical strength, and clade-specific features such as secondary chemistry. We then show how wood traits are related to trade-offs, and to ecological and demographic plant features (growth form, growth rate, etc.). We find that the manifold that tree species leaf traits cluster around the 'leaf economics spectrum', a concept we then discuss the biogeography, evolution and biogeochemistry of the spectrum, and compare our knowledge of wood functional traits.	
Keywords	evolution functional ecology plant economics trade-offs wood	
Date Deposited	2009-02-04T23:35:24Z	



Amy Zanne

612
downloads



[Home](#)[About TRY](#)[Participants](#)[Database](#)[Contribute Data](#)[Request Data](#)[Projects](#)[Workshops](#)[References](#)[Internal](#)[Contact](#)

How to request data from the TRY database

Data from the TRY database are shared among participants of TRY upon request, on the basis of the intellectual property guidelines for the TRY initiative. Participants are individuals who have either contributed at least 500 plant trait records or formally presented a proposal for a modeling development. The access to data is easy, using the "TRY Proposal Application Form".

[Intellectual Property Guidelines for the TRY Initiative \(pdf\)](#)

[TRY Proposal Application Form \(doc\)](#)

Individuals or groups of individuals that would like to use the TRY database for a scientific project, such as a new modeling development, the testing of hypotheses about links between traits, etc., should submit a proposal to TRY, describing the aims, basic methods and the portion of the database they would require.

Proposals will be considered by the TRY Coordination and Advisory Board. These are not meant to judge the scientific quality of the proposals, but rather to make sure that there is a reasonable link between objectives, expected outputs and data requested; and that the rights of all parts involved are respected.

TRY will give the proponent the list of individuals (including data contributors, data managers and synthesizers, and conceptual contributors, according to each particular case) that will necessarily have to be contacted and consulted about data availability, work allocation, and authorship arrangements. The proponents will then submit a proposal agreement to TRY, approved by all the relevant contributors. TRY will then release the data to the authors of the proposal under the condition of using them only in relation with the project contained in the proposal; and not passing it to third parties.

If you would like to request data from the TRY database, please fill in a TRY Proposal Application Form and send it to [lens.Kattge](#).

- Two-layered process for gaining access to data
 - “Individuals or groups of individuals that would like to use the TRY database for a scientific project [...] should submit a proposal to TRY”
 - “TRY will give the proponent the list of individuals [...] that will necessarily have to be [...] consulted [...]”

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Another model for controlled sharing:

- Data description published
- Data embargoed 1 (or 3) yrs post publication
- Afterwards it is released under CCZero

[Show Full Metadata](#)

At the request of the author, this item is embargoed. The journal editor has set a custom embargo length. Once the associated article is published, the exact release date of the embargo will be shown here.

Data Meirmans et al IntrabioDiv

When using this data, please cite the original article:

Citation is not yet available for this article from Molecular Ecology. It will become available shortly after the article is published.

Additionally, please cite the Dryad data package:

Meirmans P, Goudet J, Consortium I, Gaggiotti O (2011) Data from: Ecology and life-history affect different aspects of the population structure of 27 high-alpine plants. Dryad Digital Repository.
[doi:10.5061/dryad.f3rk4](https://doi.org/10.5061/dryad.f3rk4)

[Cite | Share](#)

[doi:10.5061/dryad.f3rk4/1](https://doi.org/10.5061/dryad.f3rk4/1)

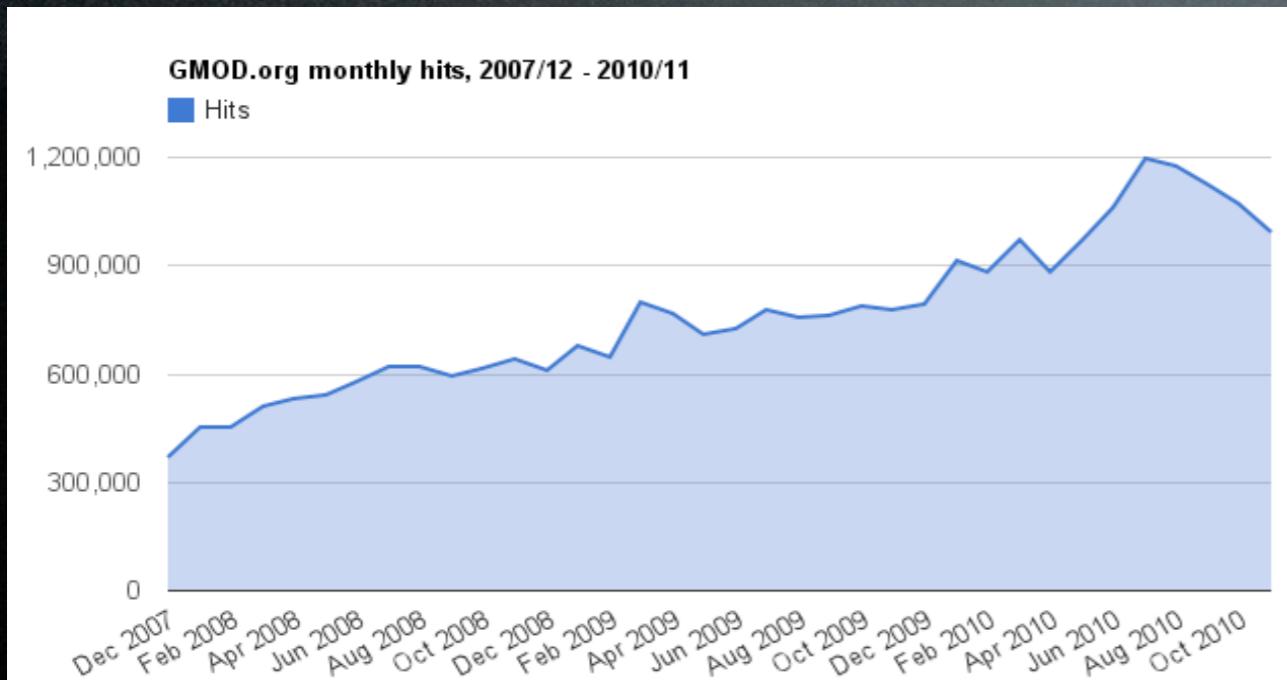
This data package contains the genetic marker data (Amplified Fragment Length Polymorphisms) for 27 high-alpine species from the European Alps, as well as the geographic coordinates of every sampling location. The data has been collected as a part of the European research project IntraBioDiv, lead by Nadir Alvarez, Felix Gugerli, Rolf Holderegger, Riccardo Negrini, Peter Schönswetter, Pierre Taberlet, Conny Thiel-Egenter, and Andreas Tribsch. The IntraBioDiv project was supported by the Commission of the European Union Sustainable Development, Global Change and Ecosystems Programme - GOCE-CT-2003-505376. See the ReadMe file for more information.

[Data from: Ecology and life-history affect different aspects of the population structure of 27 high-alpine plants.](#)

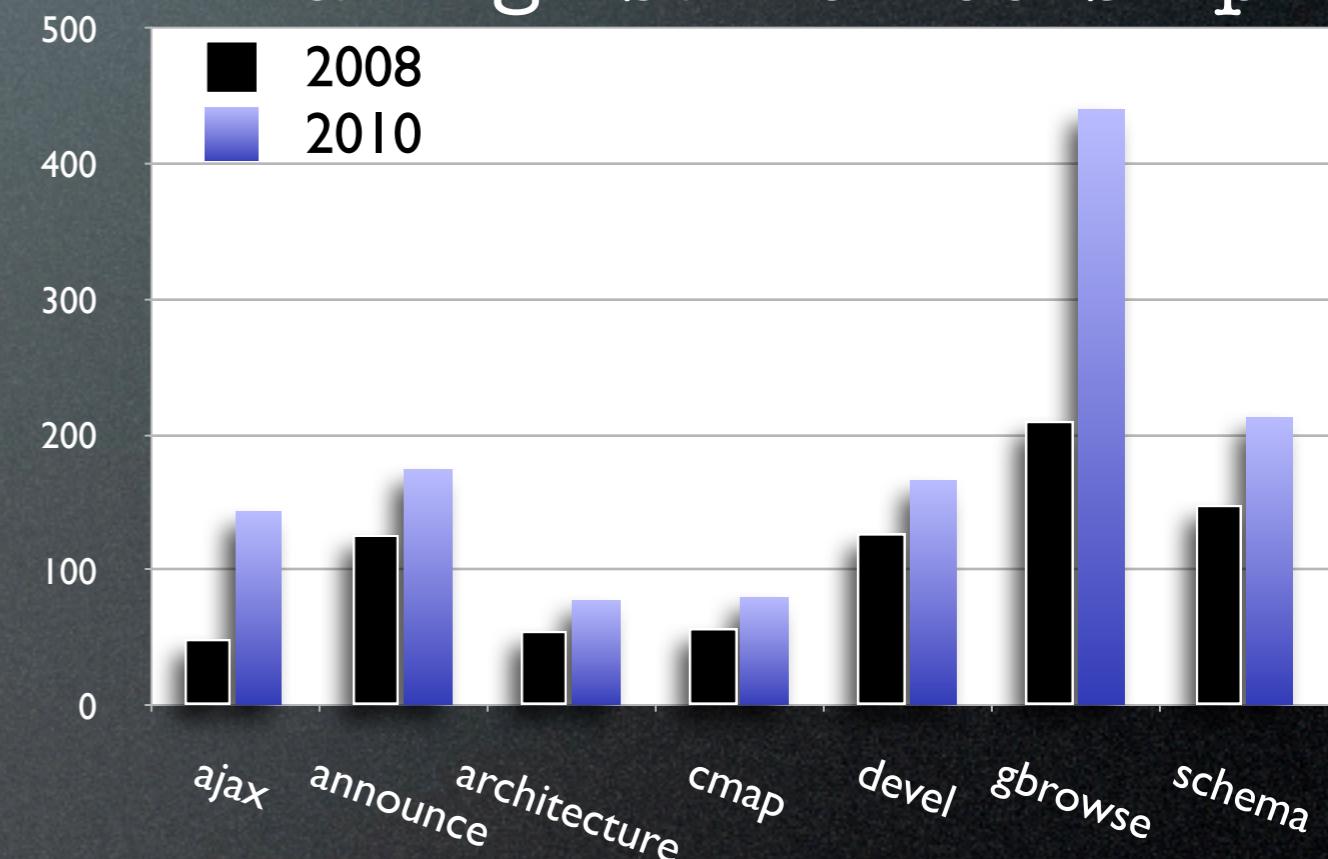
2011-05-03T20:42:22Z

Open Source: The value of community

Web traffic



Mailing list membership



Example: Generic Model Organism Database



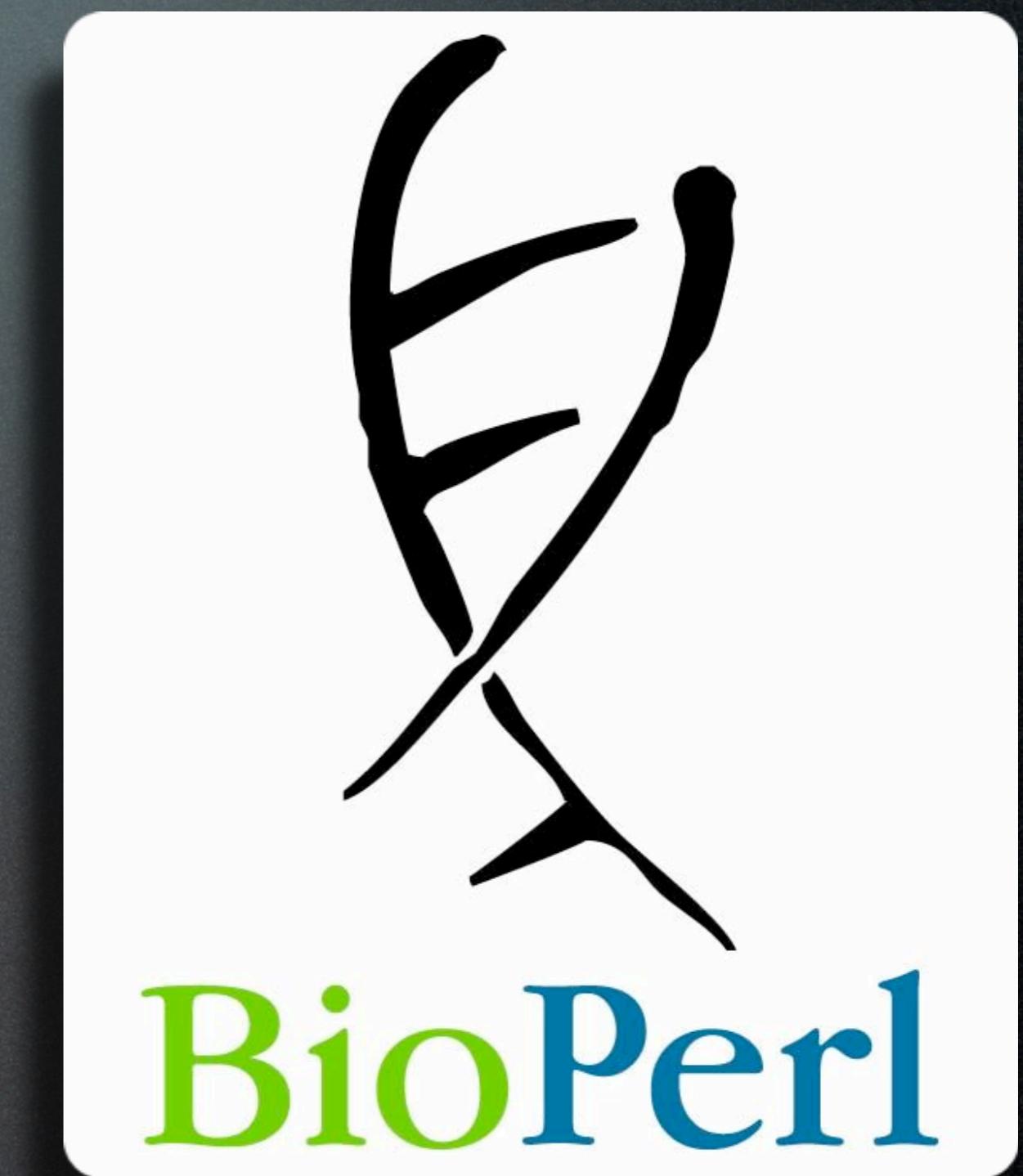
Community participation in Phenoscape

- Anatomy Ontology Contributors: 25
- Taxonomy Ontology Contributors: 11
- Community data annotators: 10
- Workshop Participants: ~75
- Software testing volunteers: 33
- Internship students: 13
- Phenotype Ontology RCN: <http://phenotypercn.org>

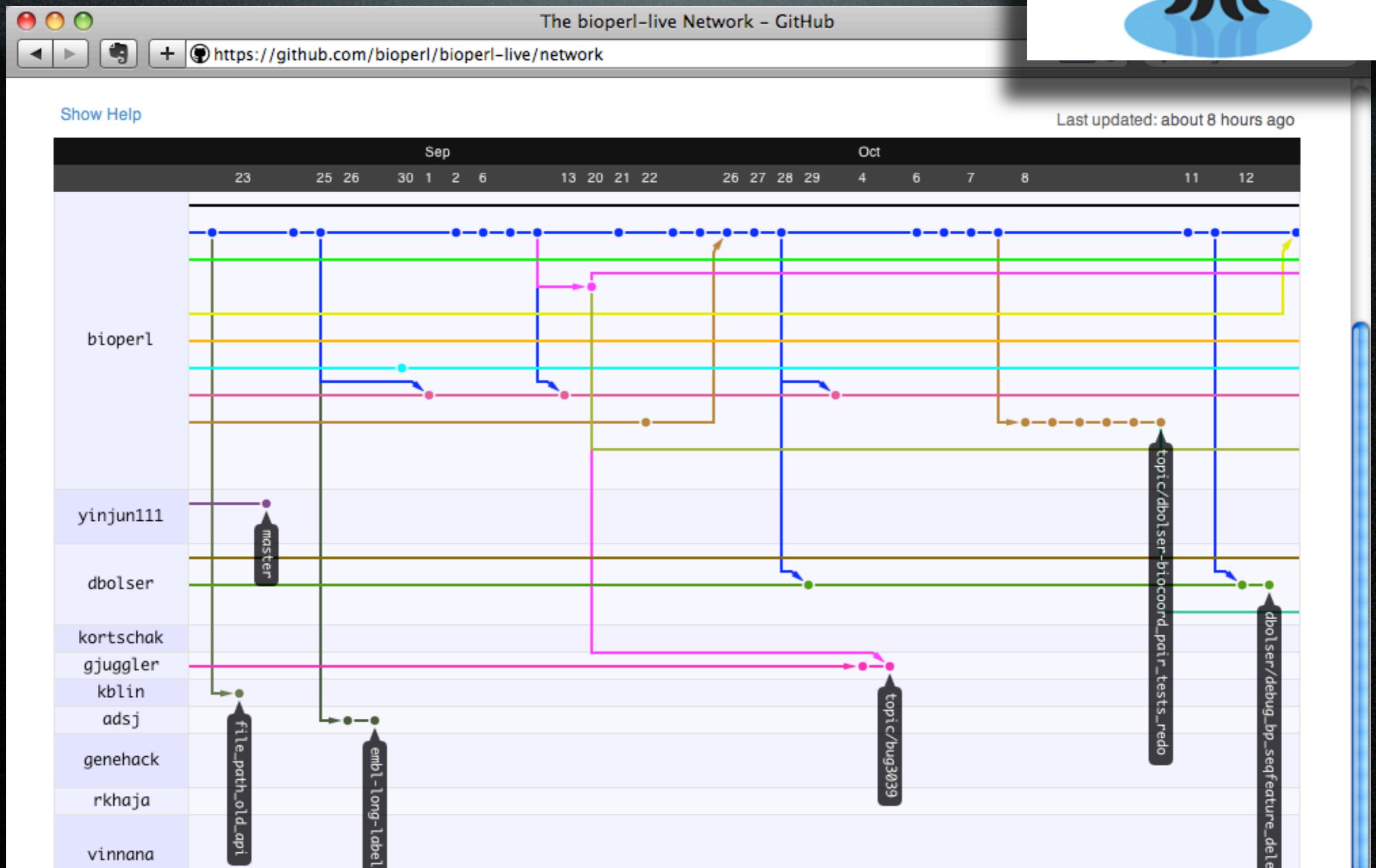


Sustaining informatics resources over the long term

- 875 modules in core, >422,000 lines of code
- Most widely used Perl toolkit in the life sciences
- Active for 16 years
- No direct grant funding
- Continues to recruit new contributors
- Leadership baton passed 5 times, dozens of committers
- Stajich et al (2002) Genome Biology: cited 509x



Open development: Social coding



The Primate Life History Database: a unique shared ecological data resource

Karen B. Strier^{1*}, Jeanne Altmann^{2,11}, Diane K. Brockman³, Anne M. Bronikowski⁴, Marina Cords⁵, Linda M. Fedigan⁶, Hilmar Lapp⁷, Xianhua Liu⁷, William F. Morris⁸, Anne E. Pusey⁹, Tara S. Stoinski¹⁰ and Susan C. Alberts^{8,11}

Introduction



Photo by the Dian Fossey Gorilla Fund International

Primates are highly charismatic and often serve as flagship species in conservation efforts. They are also the closest living relatives of humans, and therefore hold the keys to resolving many questions about human evolution and ecology. However, the slow life histories of primates, combined with their complex social systems, their behavioral plasticity, and the challenging field conditions in which primate researchers must work, have limited comparative analyses of primate mortality and fertility in wild, un provisioned populations. This in turn limits our understanding of population dynamics and of the social and ecological adaptations that have shaped both human and nonhuman primate evolution.

The Primate Life History Database (PLHD) was designed to permit comparative analyses of the evolution of primate life histories. It contains individual-based life history data from wild primate populations that have been collected by eight working group participants/organizations over a minimum of 24 years. Records in the database include mortality and fertility schedules for seven primate taxa. The data are searchable and can be downloaded into csv format, but access to the complete PLHD is currently limited to Working Group members.

This Demo site was created to illustrate how the actual online database works. It was produced by [the Evolutionary Ecology of Primate Life Histories Working Group](#) through the [National Evolutionary Synthesis Center](#). It includes an example dataset, taken from the actual database, to illustrate the graphical user interface.



Photo by Carla B. Possamai©

How to access the demo database

Anybody can use this web interface to search or download Demo data from this subset of examples from the PLHD. However the sample data provided here should not be considered to be representative of the life histories of any of the species or populations included in the PLHD. We do not authorize the use of this small sample for actual analyses of primate life histories; they will be incomplete and any results may be potentially misleading with respect to actual life histories.

Documents

- [Memorandum of Understanding among the PLHD Working Group Members](#).
- [Acknowledgments](#).



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Keyboard shortcuts available

limited The plhdb network graph

This document describes how to use `plhdb` to manage all branches in the network using `plhdb/plhdb` as the reference point. Read our blog post about how it works.

This Day in Life History Database

Show

HOW TO

Anybo

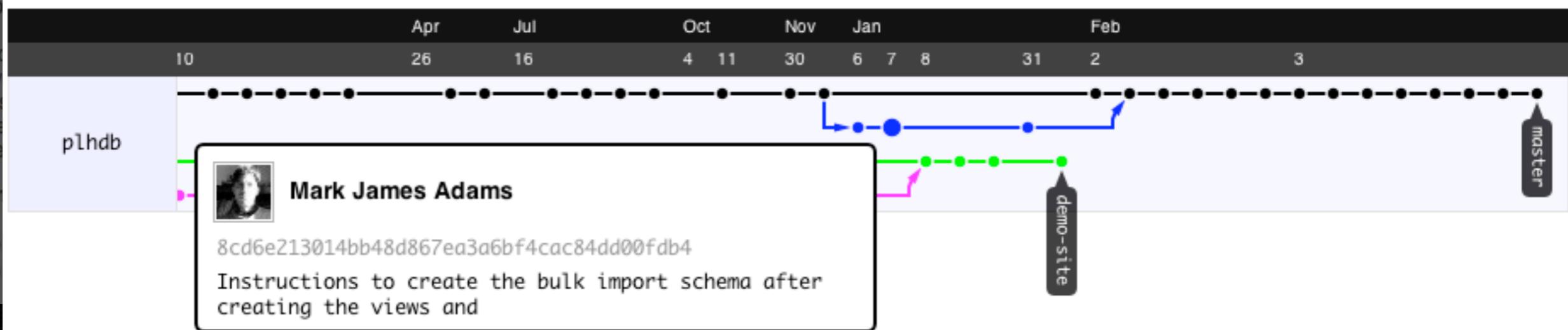
However

species **primate**

histories

Document

Last updated: 4 minutes ago



Adopting open development influenced by incentives



Comparative Methods in R Hackathon, Dec 2007

Picante: R tools for integrating phylogenies and ecology

About Picante

The Picante package provides tools for Phylocom integration, community analyses, null-models, traits and evolution in R.

The package includes functions for analyzing the phylogenetic and trait diversity of ecological communities, comparative analyses, and the display and manipulation of phenotypic and phylogenetic data.

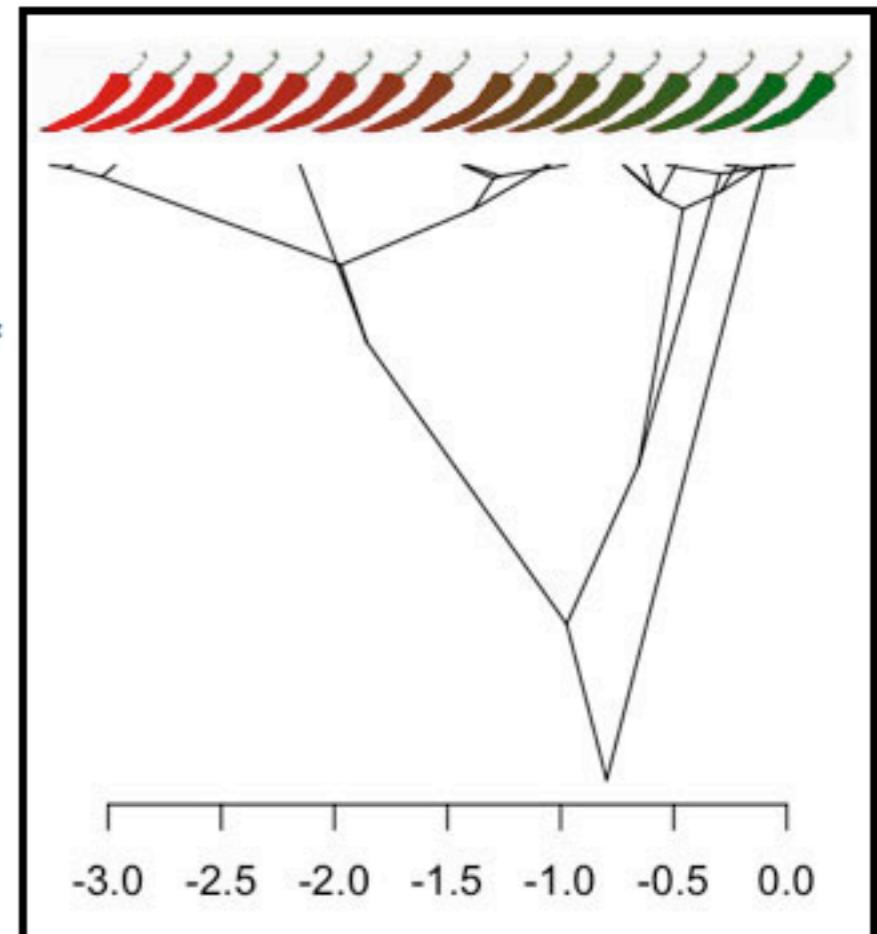
Package maintainer: Steven Kembel

Developers: Peter Cowan, Matthew Helmus, Steven Kembel

Contributors: David Ackerly, Simon Blomberg, Will Cornwell, Peter Cowan, Matthew Helmus, Steven Kembel, Helene Morlon, Cam Webb

Development of picante has been supported by NSERC, NESCent, the Google Summer of Code, and the Gordon and Betty Moore Foundation.

Thanks to Kyle Dexter, Catherine Graham, Nathaniel Hallinan, Nick Matzke, Alain Paquette, Emmanuel Paradis, Juan Parra, Dan Rabosky, and Marten Winter for feedback and bug reports. Thanks to R-Forge for hosting the project.



News

- A manuscript describing Picante has been published in Bioinformatics.
- Picante 1.3 has been released
 - The phylogenetic community dissimilarity (PCD) of Ives and Helmus (2010) is now included in the package.
- Lots of changes and new features in version 1.0
 - Calculate Rao's quadratic entropy (alpha and beta diversity taking phylogenetic structure into account)
 - Added more phylobeta diversity measures (UniFrac, Rao's quadratic entropy)
 - Changed name of randomizeSample to randomizeMatrix for consistency with other R packages



Steve Kembel

Matt Helmus

Summary

- The principles in common are freedom to
 - Reuse
 - Modify and recombine
 - Redistribute
- These are also fundamental to enabling synthetic collaborative science.

Will openness make us
better collaborators?

Will openness make us better collaborators?

Engineering Human Cooperation

Hum Nat (2007) 18:88–108

Does Involuntary Neural Activation Increase Public Goods Contributions?

Terence C. Burnham • Brian Hare

Abstract In a laboratory experiment, we use a public goods game to examine the hypothesis that human subjects use an involuntary eye-detector mechanism for evaluating the level of privacy. Half of our subjects are “watched” by images of a robot presented on their computer screen. The robot—named Kismet and invented at MIT—is constructed from objects that are obviously not human with the exception of its eyes. In our experiment, Kismet produces a significant difference in behavior that is not consistent with existing economic models of preferences, either self- or other-regarding. Subjects who are “watched” by Kismet contribute 29% more to the public good than do subjects in the same setting without Kismet.

Will openness make us better collaborators?

Engineering Human Cooperation
Does Involuntary Neural Activation Increase Public Goods Contributions?

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Cues of being watched enhance cooperation in a real-world setting

Melissa Bateson*, Daniel Nettle and Gilbert Roberts

[+ Author Affiliations](#)

Author for correspondence (melissa.bateson@ncl.ac.uk)

Abstract

We examined the effect of an image of a pair of eyes on contributions to an honesty box used to collect money for drinks in a university coffee room. People paid nearly three times as much for their drinks when eyes were displayed rather than a control image. This finding provides the first evidence from a naturalistic setting of the importance of cues of being watched, and hence reputational concerns, on human cooperative behaviour.

Will openness make us better collaborators?

Engineering Human Cooperation
Does Involuntary Neural Activation Increase Public Goods Contributions?

Terence C. Burnham • Brian Hare

Abstract In a laboratory experiment, we tested the hypothesis that human subjects use cues of being watched to evaluate the level of privacy. Half of the subjects evaluated a robot presented on their computer screen that was identical to Kismet—a robot built at MIT—that is constructed from objects that do not have eyes. In our experiment, Kismet was programmed to make a sound that is not consistent with existing economic models of other-regarding behavior. Subjects who are “watched” contribute more to a public good than do subjects in the same condition who are not watched.



Hum

biology
letters

Cues of being watched enhance cooperation in a real-world setting

Melissa Bateson*, Daniel Nettle and Gilbert Roberts

+ Author Affiliations

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Abstract

We examined the effect of an image of a pair of eyes on contributions to an honesty box used to collect money for drinks in a university coffee room. People paid nearly three times as much for their drinks when eyes were displayed rather than a control image. This finding provides the first evidence from a naturalistic setting of the importance of cues of being watched, and hence

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Original Article

Effects of eye images on everyday cooperative behavior: a field experiment

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Will openness make us better collaborators?

The screenshot shows the header of the Scientific American website. The logo 'SCIENTIFIC AMERICAN' is prominently displayed with a small graphic of three overlapping curved shapes to the right of 'AMERICAN'. To the right of the logo is a badge stating 'Winner of the 2011 National Magazine Award for General Excellence'. Below the logo is a search bar with the placeholder 'Search ScientificAmerican.com' and a magnifying glass icon. A red navigation bar contains links for 'News & Features', 'Blogs', 'Multimedia', 'Education', 'Citizen Science', and 'Topics'. Underneath this is a breadcrumb trail 'Home > Mind Matters >'. The main headline is 'How the Illusion of Being Observed Can Make You a Better Person' by Sander van der Linden, published on May 3, 2011, with 18 comments. The subtext below the headline reads 'Even a poster with eyes on it changes how people behave'.

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How the Illusion of Being Observed Can Make You a Better Person

By Sander van der Linden | May 3, 2011 | 18

Even a poster with eyes on it changes how people behave

Whenever you do a
thing, act as if all the
world were watching.

Thomas Jefferson

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