The great promise of Wiki Science

Open Problems of Strategic Importance

by Aaron Halfaker

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Aaron Halfaker

Principal Research Scientist, Wikimedia Foundation

Think big. Measure what you can. Build better technologies.

About me

Hi. I'm Aaron Halfaker. I'm a scientist. See projects and publications below. I've been a Wikipedian since 2008. I mostly build tools and run studies, but I make edits where I can. In 2011, I started working with the Wikimedia Foundation as a research scientist. This is my staff account. See my volunteer account, User:EpochFail, for my non-staff work.

My work

My job is to build understanding about and support for the socio-technical fabric of the Wikimedia movement. I tend to focus on our computer mediated spaces (Wikipedia, Commons, Wikidata, Wikisource, etc.) and quality dynamics (patrolling, curation, newcomer training, etc.)

See The Rise and Decline for an example of my research and mw:ORES and mw:JADE for an examples of an experimental technologies I'm actively working on.

Contact me

- E-mail: ahalfaker@wikimedia.org
- Website: http://halfaker.info
- Twitter: http://twitter.com/halfak
- On IRC, I go by "halfak".

iD This user has the **ORCID identifier:** 0000-0001-8907-6367

Sociological history of Wikipedia

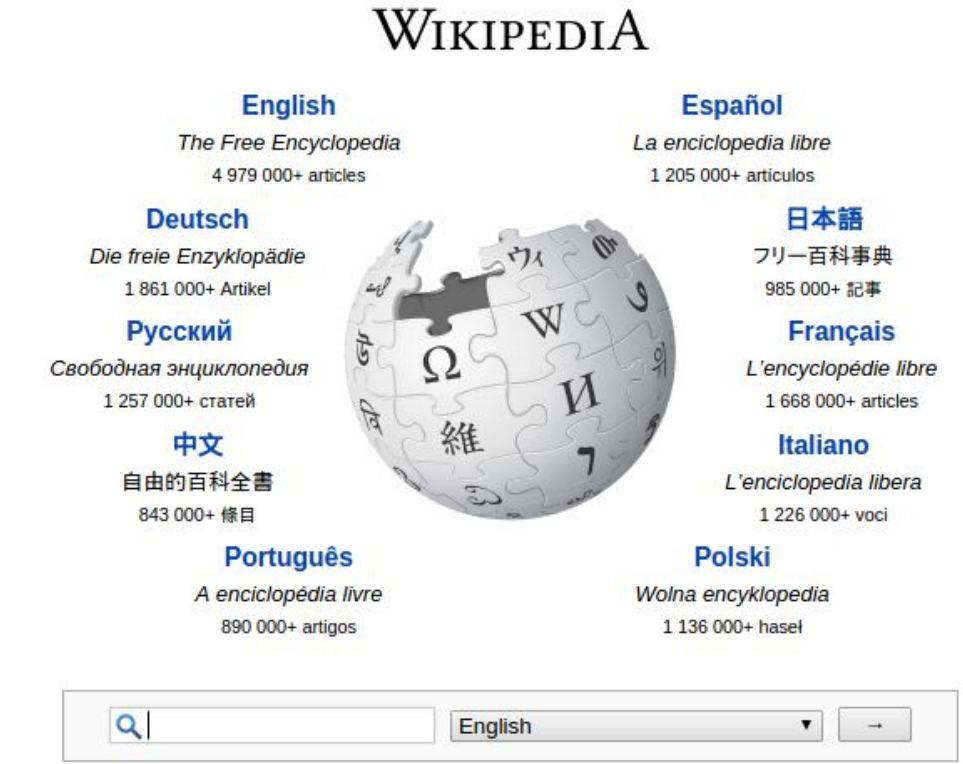
Open data & scholarship

Strategic new research directions

Part 1: Sociological history of Wikipedia

What is Wikipedia?

The world’s largest encyclopedia



~5 million articles in English

List of lists of lists - Wikipedia
https://en.wikipedia.org/wiki/List_of_lists_of_lists

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From Wikipedia, the free encyclopedia

Some articles that consist of a list of things are themselves about lists of things, such as the articles in the ***list of lists of lists*** below.

Contents: [hide] A · B · C · D · E · F · G · H · I · J · K · L · M · N · O · P · Q · R · S · T · U · V · W · X · Y · Z · See also

A [edit]

- Lists of ancient kings
- Lists of A&M Records artists
- Lists of ABC shows
- Lists of African Americans
- Lists of African Union members
- Lists of American football players
- Lists of American television episodes with LGBT themes
- Lists of American writers
- Lists of Americans
- Lists of Armenians
- Lists of atheists
- Lists of Australian rules football leagues
- Lists of Australians
- Lists of abbreviations

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Lists of ancient kings - Wi
https://en.wikipedia.org/wiki/Lists_of_ancient_kings

Lists of ancient kings

From Wikipedia, the free encyclopedia

The following are **lists of ancient kings** of ancient states:

- List of pharaohs
- Abydos King List
- Turin King List
- Karnak king list
- Sumerian King List
- First Babylonian Dynasty
- List of Assyrian kings
- List of Roman emperors
- List of Byzantine emperors
- List of Georgian monarchs
- List of kings of Persia
- Lists of rulers of Greece
- List of Indian monarchs
- List of Chinese monarchs
- List of Hasmonean and Herodian rulers
- Kings of Judah
- Kings of Israel

Categories: King lists | Lists of lists

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List of pharaohs - Wikipec ×
https://en.wikipedia.org/wiki/List_of_pharaohs

List of pharaohs

From Wikipedia, the free encyclopedia

This article **needs additional citations for verification**. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. *(March 2012)*

This article contains a **list of the pharaohs of Ancient Egypt**, from the Early Dynastic Period before 3100 BC through to the end of the Ptolemaic Dynasty, when Egypt became a province of Rome under Augustus Caesar in 30 BC.

Note that the dates given are approximate. The list of pharaohs presented below is based on the conventional chronology of Ancient Egypt, mostly based on the Digital Egypt for Universities database developed by the Petrie Museum of Egyptian Archaeology, but alternative dates taken from other authorities may be indicated separately.

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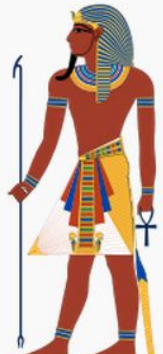
1 Existing primary old lists of pharaohs
2 Legendary period
3 Archaic period
  3.1 Early Dynastic: Upper Egypt
  3.2 First Dynasty
  3.3 Second Dynasty
4 Old Kingdom
  4.1 Third Dynasty
  4.2 Fourth Dynasty
  4.3 Fifth Dynasty
  4.4 Sixth Dynasty
5 First Intermediate Period

Pharaoh of Egypt
FORMER MONARCHY

The Pschent combined the Red Crown of Lower Egypt and the White Crown of Upper Egypt.



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Deutsch

Ptah

From Wikipedia, the free encyclopedia

For the asteroid, see 5011 Ptah.

In Egyptian mythology, **Ptah** (/pəˈtɑː/;[1] Egyptian: *ptḥ*, probably vocalized as *Pitaḥ* in ancient Egyptian)[2] is the demiurge of Memphis, god of craftsmen and architects. In the triad of Memphis, he is the spouse of Sekhmet and the father of Nefertum. He was also regarded as the father of the sage Imhotep.

Contents [hide]

1 Origin and symbolism
2 Representations and hypostases
3 Development of the cult
4 Main places of worship
5 Photos
6 Legacy
7 See also
8 References
9 Literature

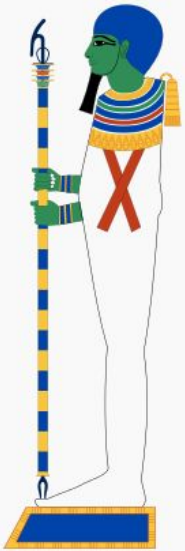
Origin and symbolism [edit]

Ptah is the Creator god par excellence: He is considered the demiurge who existed before all other things, and by his willfulness, *thought* the world. It was first conceived by Thought, and realized by the Word: *Ptah conceives the world by the thought of his heart and gives life through the magic of his Word.* That which Ptah commanded was created, with which the constituents of nature, fauna, and flora, are contained. He also plays a role in the preservation of the world and the permanence of the royal function.

In the Twenty-Fifth Dynasty, the Nubian pharaoh Shabaka would transcribe

Ptah

God of creation, the arts, fertility and of craftsmen



Ptah, in the form of a mummified man, standing on the symbol for Ma'at, holding a scepter or staff that bears the combined ankh-djed-was symbols.

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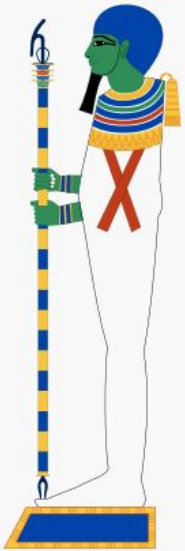


Ptah, in the form of a mummified man, standing on the symbol for Ma'at, holding a scepter or staff that bears the combined ankh-djed-was symbols.

Name in

A wiki

- Anyone can edit
- Shared authorship

Flipped publication model

- publish first
- review later (maybe)

An online community

- ~100k active volunteer editors

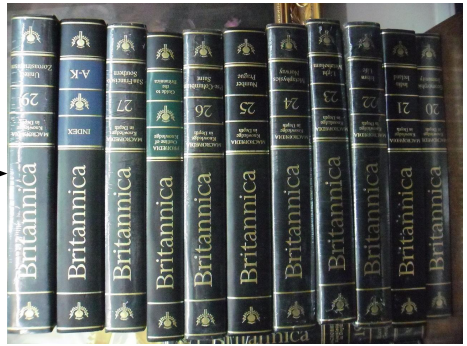
WikiProject Video Games

Village pump sections				
Policy watch To discuss existing and proposed policies	**Technical** watch To discuss technical issues. For wiki software bug reports, use Phabricator	**Proposals** watch To discuss **new** proposals that are not policy-related. See also: perennial proposals and persistent proposals.	**Idea lab** watch To discuss ideas before proposing them to the community and attempt to find solutions to issues	**Miscellaneous** watch To post messages that do not fit into any other category

WikiProject Medicine

A system

Available
Human
Attention

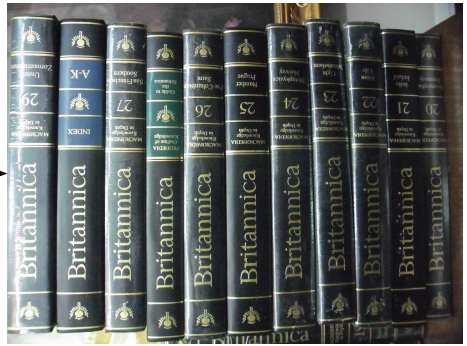


A system

Output

Input

Available
Human
Attention

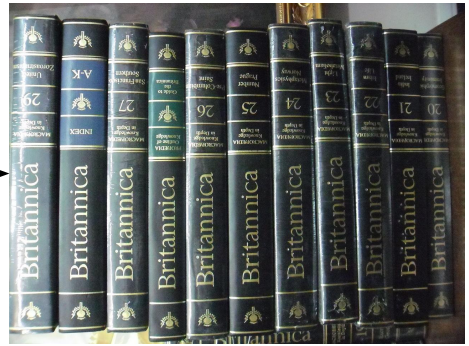


A system

Output

Input

Available
Human
Attention



Socio-technical

Social

Technical

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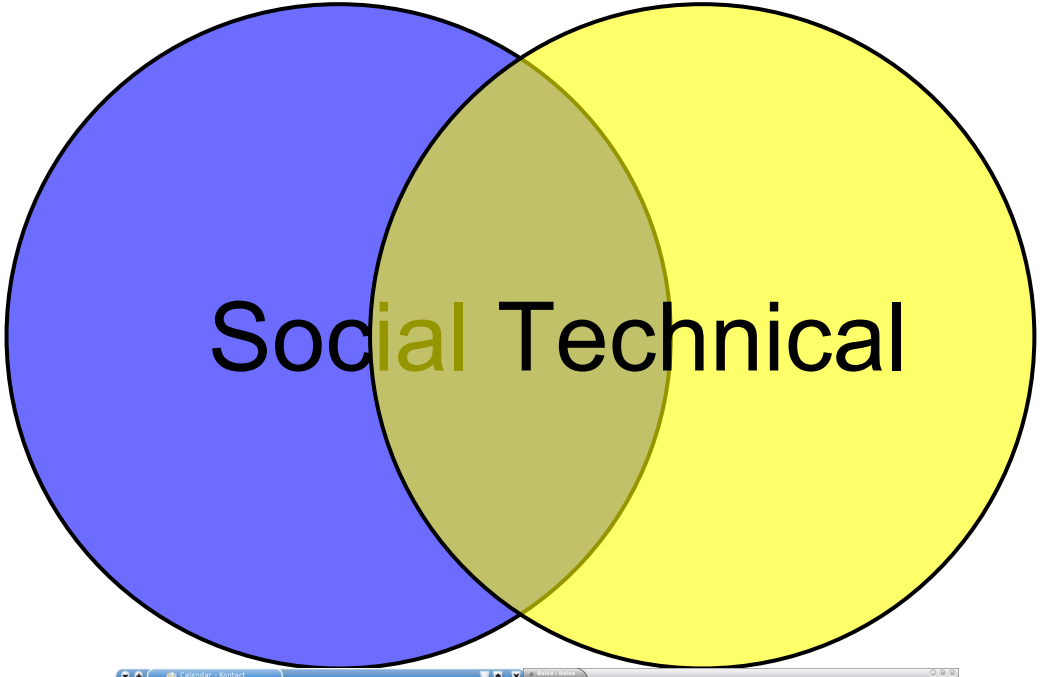
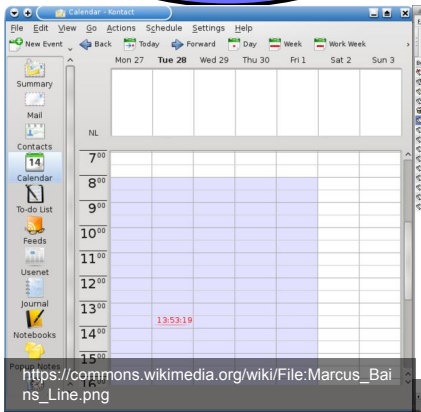
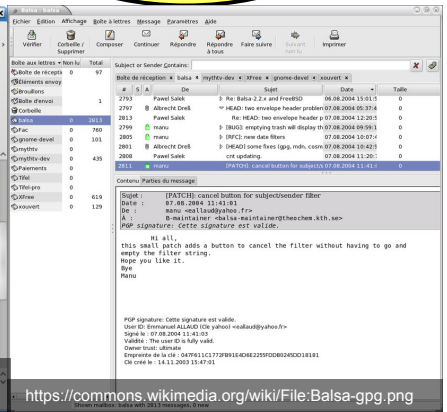
https://commons.wikimedia.org/wiki/File:Commodore_PET_4016,_Google_NY_office_computer_museum.jpg





https://commons.wikimedia.org/wiki/File:Marcus_Bains_Line.png



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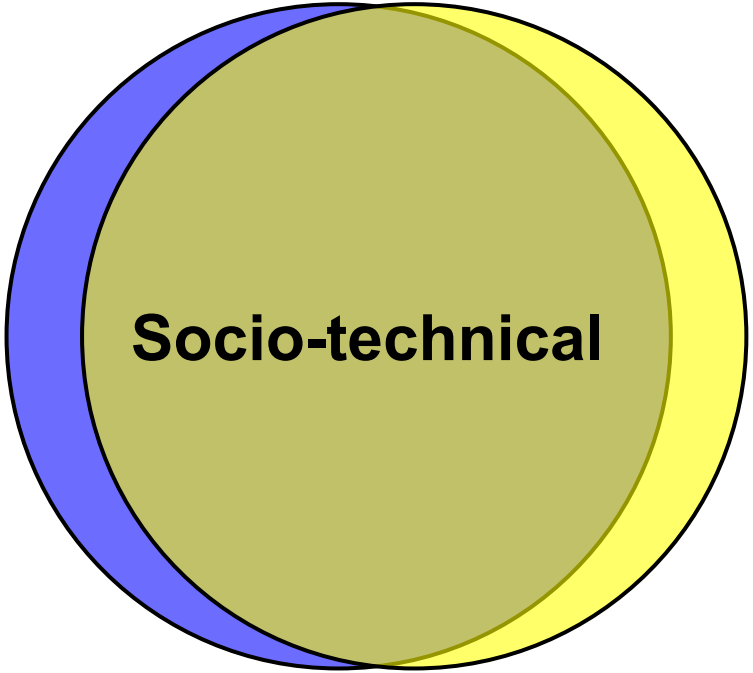
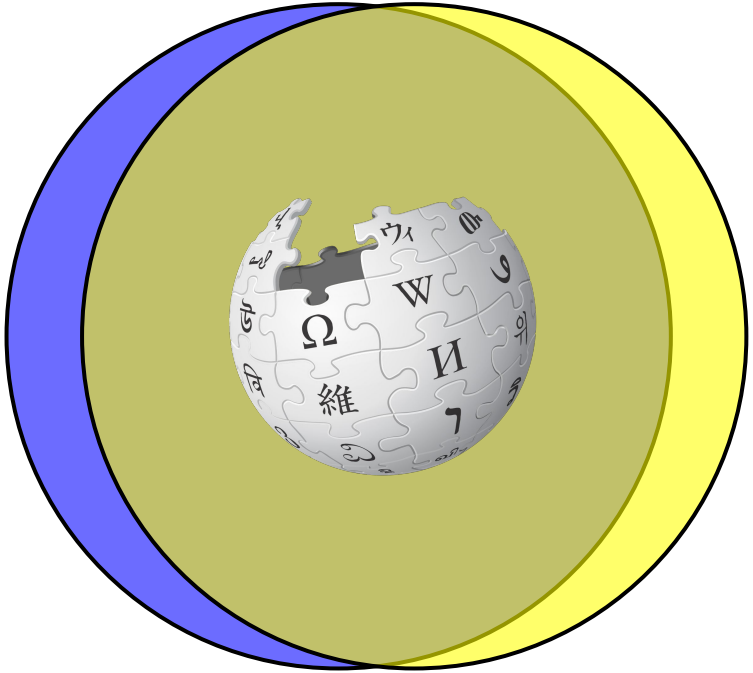
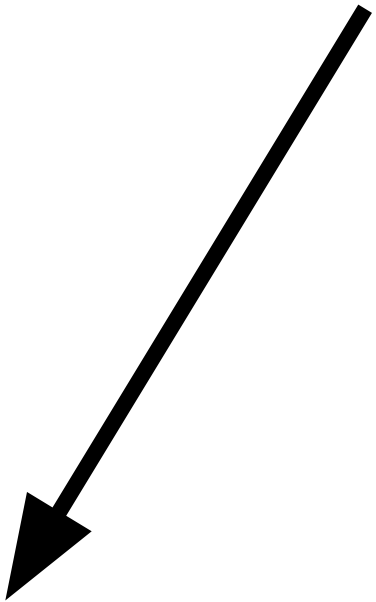
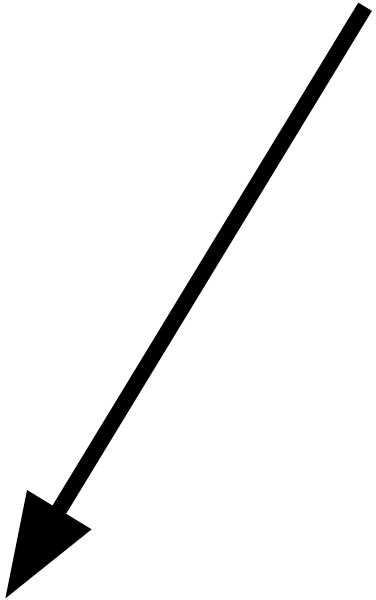

Socio-technical



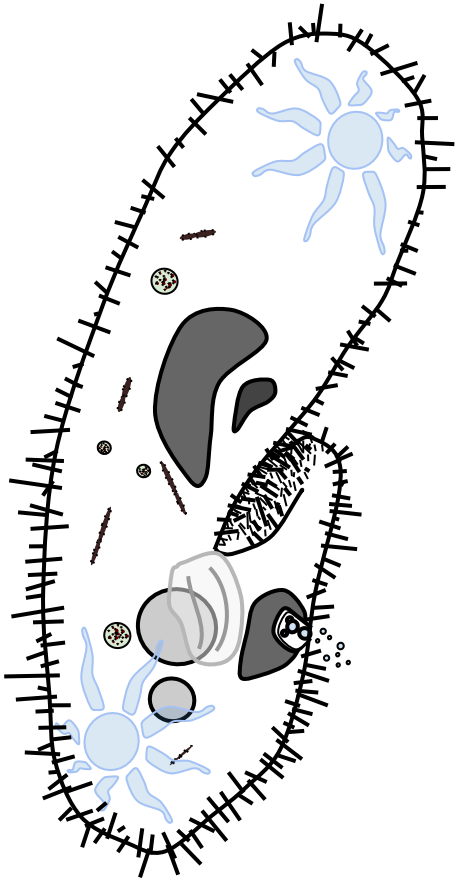
Technologist



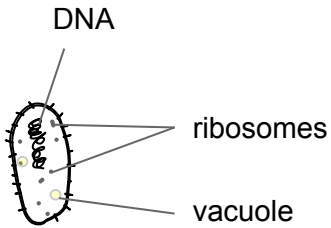
Techno-biologist?



Bacterium



Paramecium



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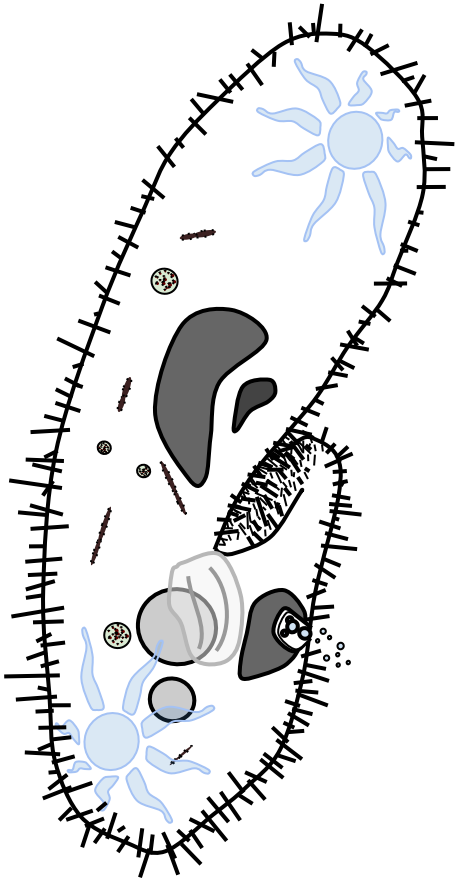
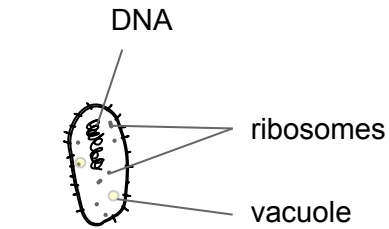


Paramecium



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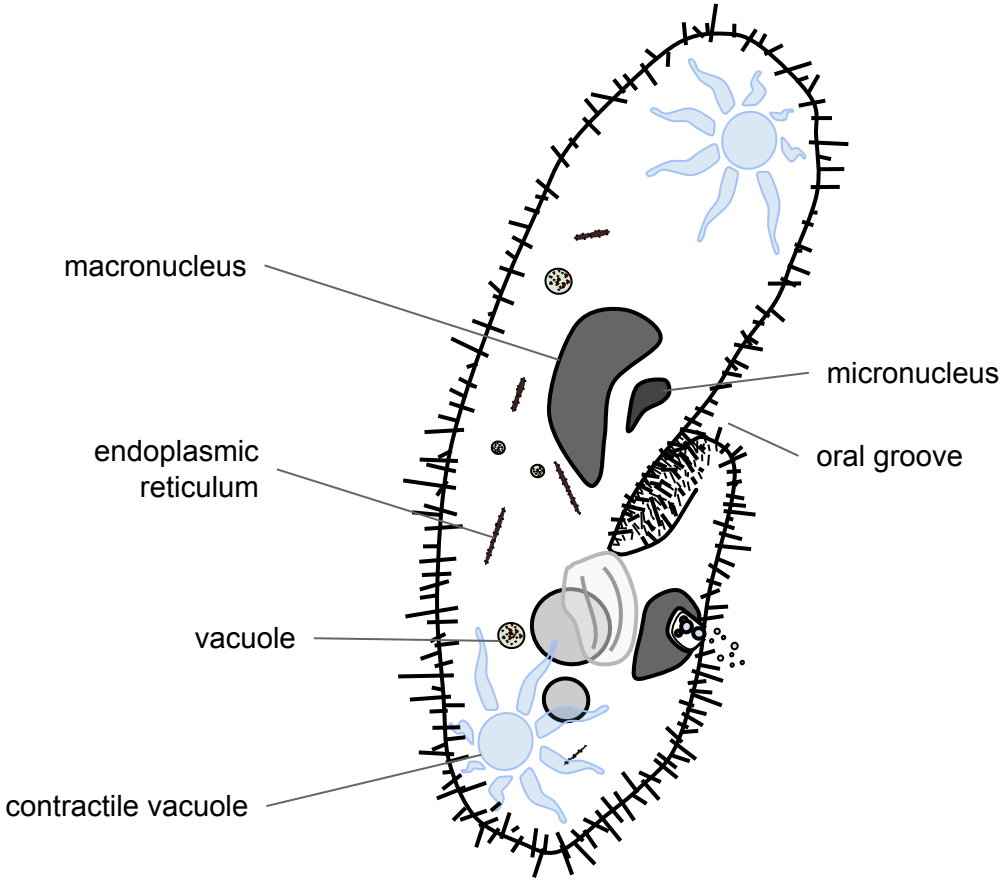
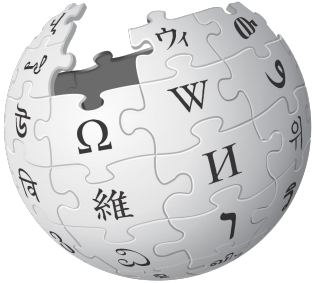
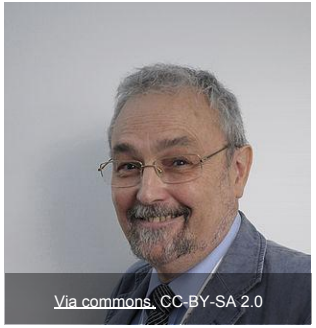


Paramecium

Bacterium

Paramecium

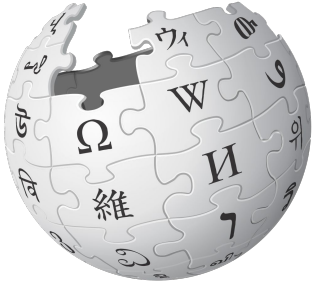




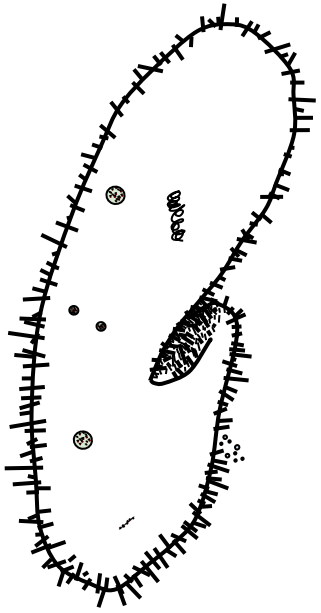
Dunbar's number: ~150

Bacterium

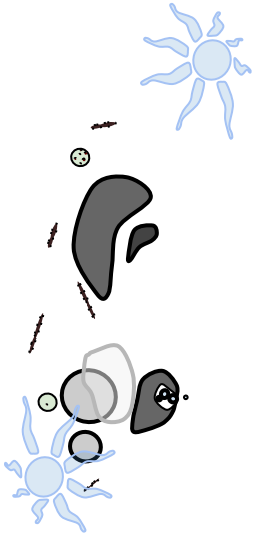
Paramecium



Bacterium



Bare-amecium



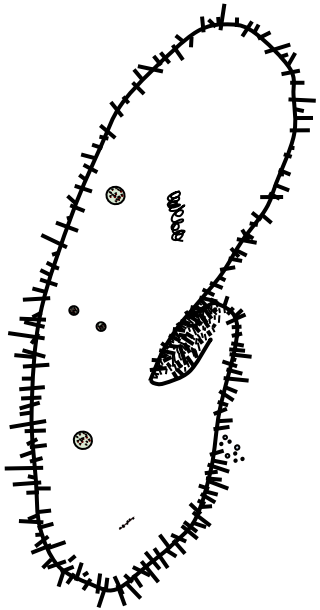
Organelles

Policies & Guidelines

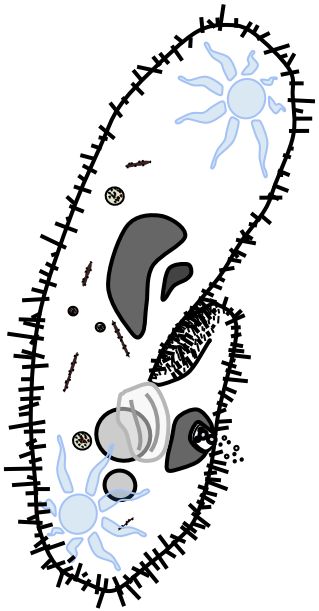
Robots & tools

Paramecium

socio - technical



socio-technical



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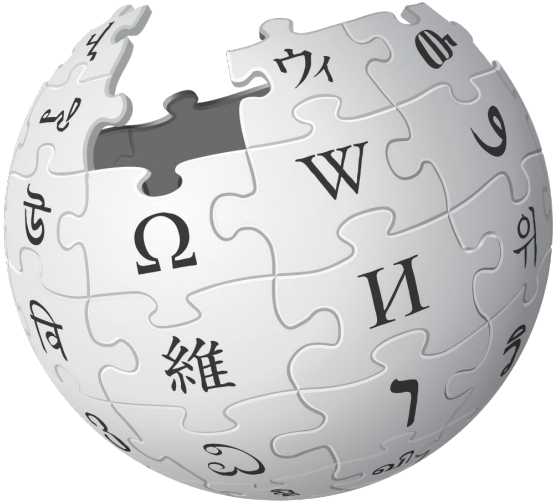
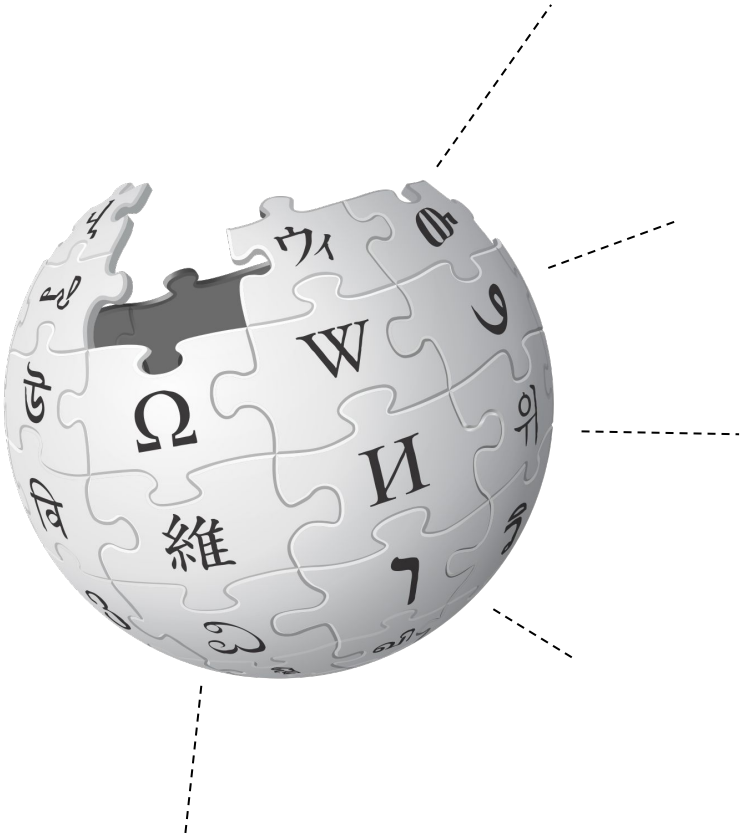


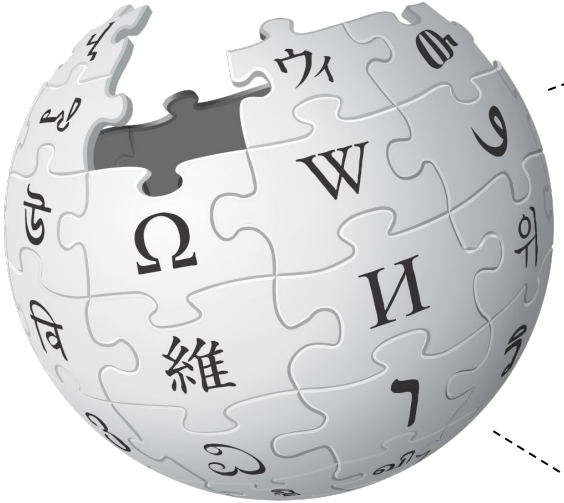
System with specialized
sub-systems

System with specialized
sub-systems



Work allocation

- Identify, prioritize and assign tasks

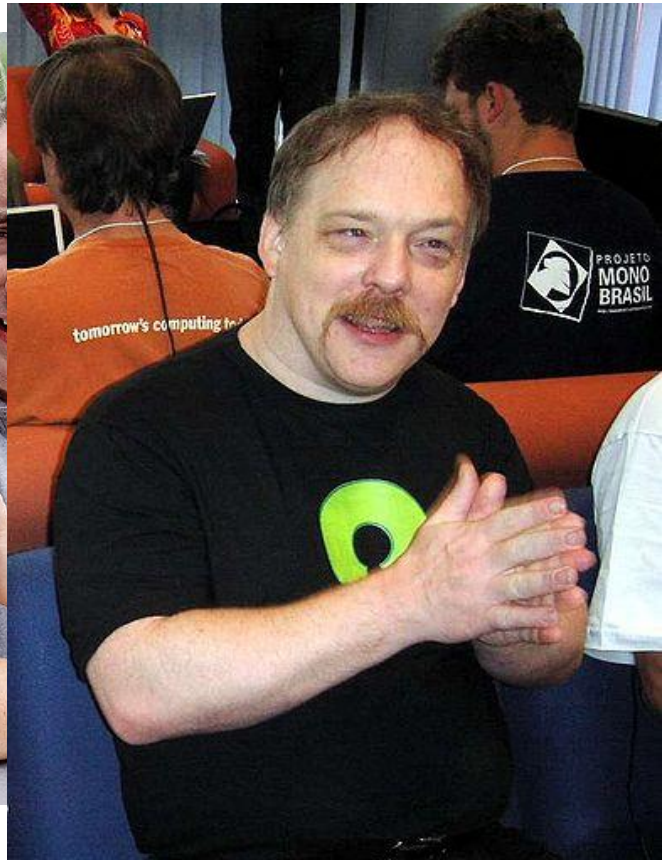


Work allocation

- Largely for free due to Linus’ Law

Linus’s Law?

Linus’s Law?



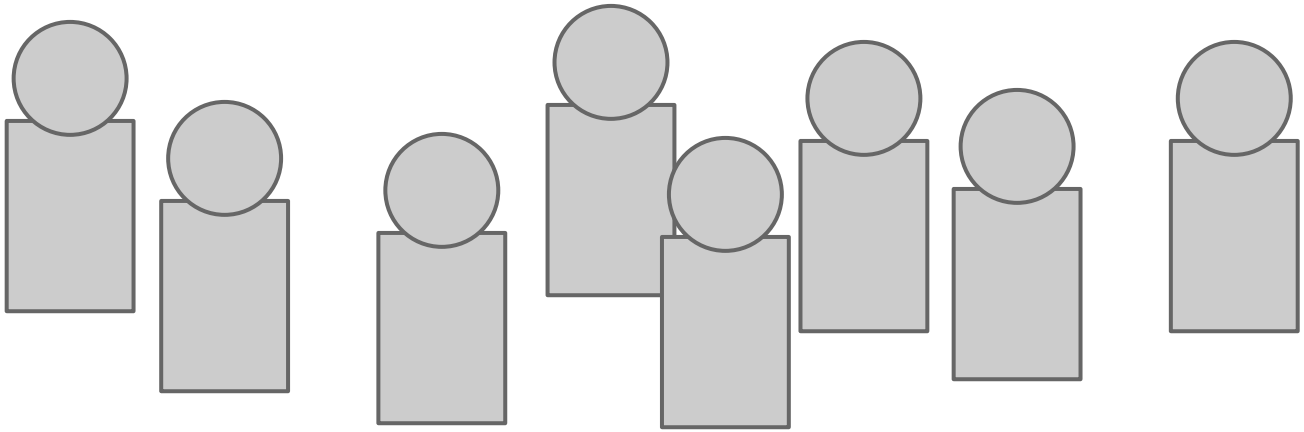
Eric Raymond

Linus’s Law?

“given enough eyeballs, all bugs are shallow”

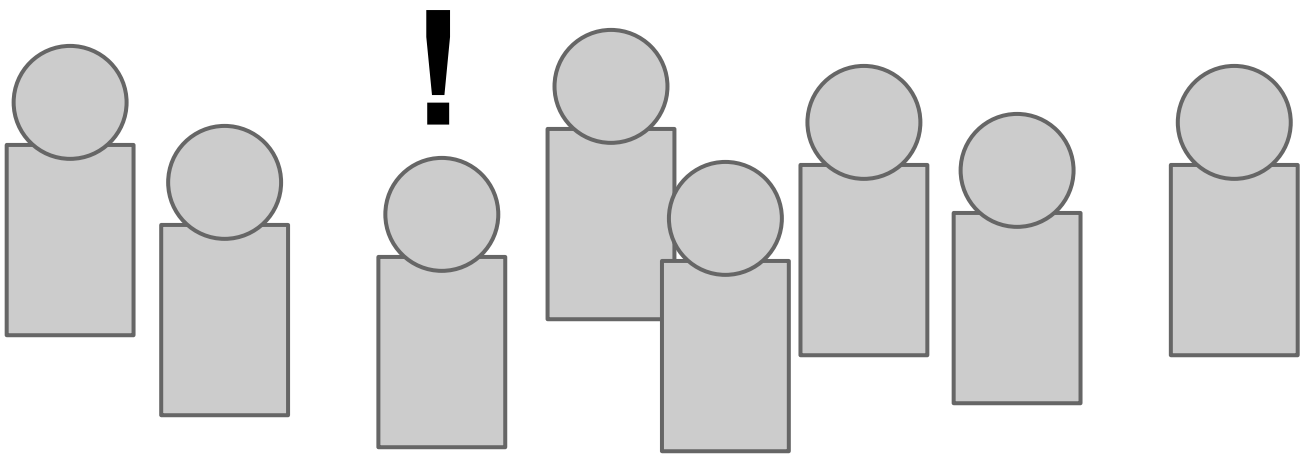
Linus’s Law?

“given enough eyeballs, all bugs are shallow”



Linus's Law?

"given enough eyeballs, all bugs are shallow"

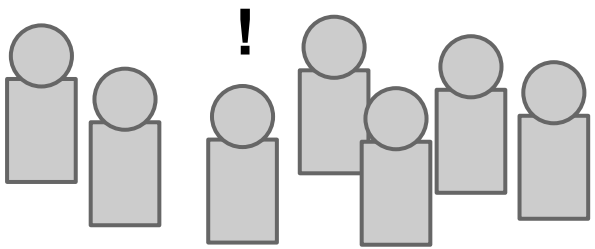


Linus’s Law?

visibility is critical to **open** collaboration

A corollary for Wikipedia

Given that enough people see an incomplete article, all potential contributions to that article will be <u>easy for *someone*</u>.

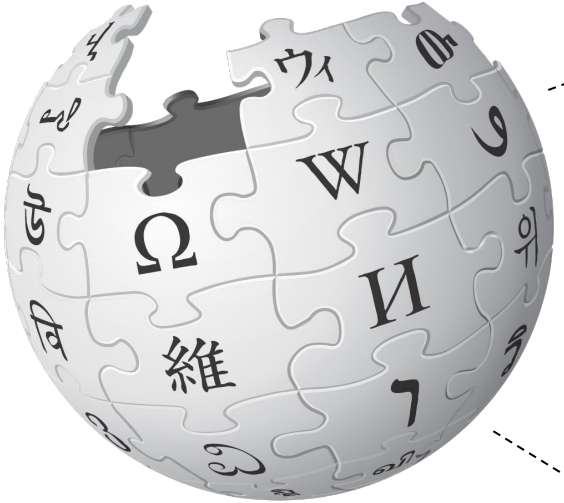


Works in theory -- Stvilia, B., et al. (2008). Information quality work organization in Wikipedia. *JASIST*, *59*(6), 983-1001.

Part of becoming a Wikipedian -- Bryant, S. L., Forte, A., & Bruckman, A. (2005, November). Becoming Wikipedian. GROUP (pp. 1-10). ACM.

We can support visibility with technology -- Cosley, D., et al. (2007, January). SuggestBot: using intelligent task routing to help people find work in wikipedia. IUI (pp. 32-41). ACM.

Bad things happen when we take it away -- Schneider, J., et al. (2014, August). Accept, decline, postpone. OpenSym(p. 26). ACM.



Work allocation

- Identify, prioritize and assign tasks

Regulation of behavior

- Norm formation, propagation and enforcement

wikipedia governance

About 37,400 results (0.07 sec)

Decentralization in **Wikipedia governance** [PDF] from andreaforte.net
A Forte, V Larco, A Bruckman - Journal of Management Information ..., 2009 - ME Sharpe
How does" self-**governance**" happen in **Wikipedia**? Through in-depth interviews with 20 individuals who have held a variety of responsibilities in the English-language **Wikipedia**, we obtained rich descriptions of how various forces produce and regulate social structures **...**
Cited by 107 Related articles All 5 versions Cite Save

[CITATION] Unpacking **Wikipedia governance**: The emergence of a bureaucracy of peers?
A Aaltonen, GF Lanzara - LAEMOS. Buenos Aires. http://www. egosnet. org/jart/ ..., 2010
Cited by 11 Related articles Cite Save

[CITATION] Is something fundamentally wrong with **Wikipedia governance** processes?
M Bauwens - ... -fundamentally-wrong-with-**wikipedia-governance**- ..., 2008
Cited by 6 Related articles Cite Save

Governance, organization, and democracy on the Internet: The iron law and the evolution of **Wikipedia**
P Konieczny - Sociological Forum, 2009 - Wiley Online Library
This study examines whether the Iron Law of Oligarchy exists in **Wikipedia** by analyzing how a key policy of the website regarding verifiability evolved into its current form. The study describes the decision-making processes of **Wikipedia** and shows that there are many **...**

Coordination and beyond: social functions of groups in open content production [PDF] from andreaforte.net
A Forte, N Kittur, V Larco, H Zhu, A Bruckman... - Proceedings of the ..., 2012 - dl.acm.org
... In our first round of interviews, we sought to understand **governance** in **Wikipedia** as a site-wide phenomenon. As such, we interviewed eleven individuals who had been involved in the site for many years, in many different capacities ...
Cited by 13 Related articles All 5 versions Cite Save

Making restitution work: the challenge of building sustainable **governance** and institutional structures in public administration [PDF] from 137.215.9.22
L Schoeman, DJ Fourie - Journal of Public Administration: ..., 2008 - reference.sabinet.co.za
... **Wikipedia**. 2008. **Governance**. Encyclopaedia **Wikipedia**. Available online: http://en.**wikipedia**.org/wiki/**governance** [Accessed 25 February 2008]. **Wikipedia**. 2008. Treaty. Encyclopaedia **Wikipedia**. Available online: http://en.**wikipedia**.org/wiki/treaty [Accessed 25 February 2008]. ...
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Changing **governance** of local economies: Responses of European local production systems
C Crouch, P Le Galès, C Trigilia, H Voelzkow - OUP Catalogue, 2004 - ideas.repec.org
... specialized manufacturing among small and medium-sized enterprises (SMEs) in France, Germany, Italy, and the United Kingdom, the authors find patterns of economic **governance** far more ... This item is not listed on **Wikipedia**, on a reading list or among the top items on IDEAS. ...
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Foundations of service science management and business [PDF] from cluteonline.com
H Katzan - Journal of Service Science (JSS), 2011 - journals.cluteonline.com
... The development of a service context involves the asking of tough questions to examine the strategic goal and objectives of a service organization in order 9 Adapted from the **Wikipedia** articles on strategy and corporate **governance**. Page 9. ...
Cited by 6 Related articles All 5 versions Cite Save

Building semantic kernels for text classification using **wikipedia** [PDF] from edudocs.ru
P Wang, C Domeniconi - Proceedings of the 14th ACM SIGKDD ..., 2008 - dl.acm.org
... Chief executive officer Shareholder Fiduciary Corporate **governance** Corporation Boards of directors Build Thesaurus from **Wikipedia** Ambiguous Concepts: Puma Puma (Car) "Felidae" Category "Puma" "Cougar" "Mountain Lion" "Ford Vehicles" Category "Puma (Car)" ...
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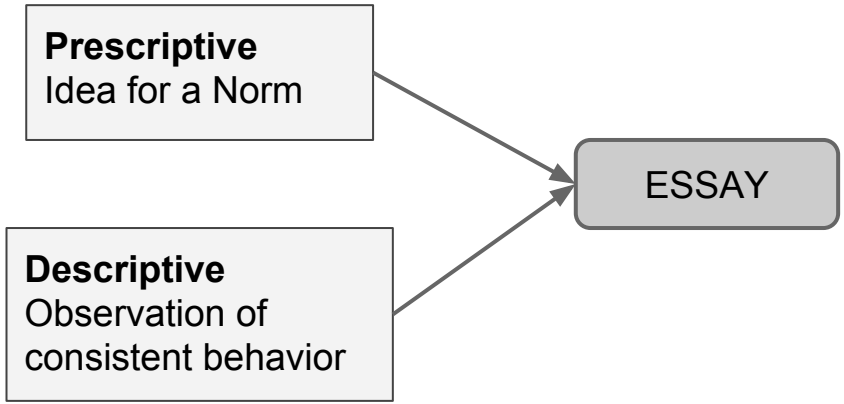
Prescriptive
Idea for a Norm

Descriptive
Observation of consistent behavior


Prescriptive
Idea for a Norm
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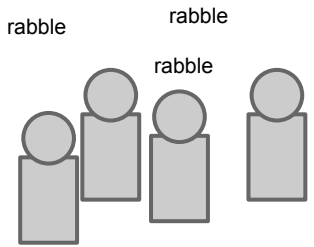
ESSAY

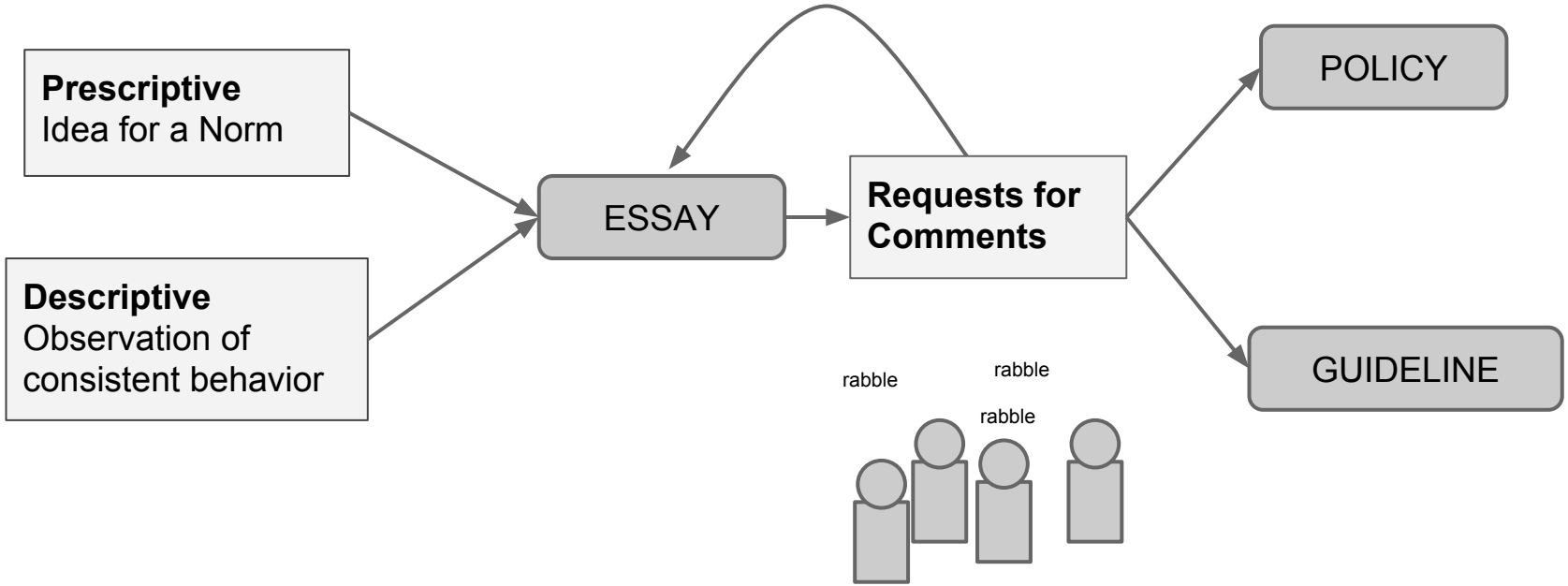
Prescriptive
Idea for a Norm

Descriptive
Observation of consistent behavior

ESSAY

Requests for Comments




Prescriptive
Idea for a Norm
Descriptive
Observation of consistent behavior
ESSAY
Requests for Comments
POLICY
GUIDELINE
rabble
rabble
rabble

Informal

Formalized

Morgan, J. T., & Zachry, M. (2010, November). Negotiating with angry mastodons: the wikipedia policy environment as genre ecology. In *Proceedings of the 16th ACM international conference on Supporting group work* (pp. 165-168). ACM.

POLICY

Halfaker, A., Geiger, R. S., Morgan, J. T., & Riedl, J. (2012). The rise and decline of an open collaboration system: How Wikipedia's reaction to popularity is causing its decline. *American Behavioral Scientist*, 0002764212469365.

ESSAY

GUIDELINE

Informal

Wikipedia:Don't stuff beans up your nose

From Wikipedia, the free encyclopedia

This essay contains the advice or opinions of one or more Wikipedia contributors on Wikipedia:Behavioral policy. Essays are *not* Wikipedia policies or guidelines. Some essays represent widespread norms; others only represent minority viewpoints.

Formalized

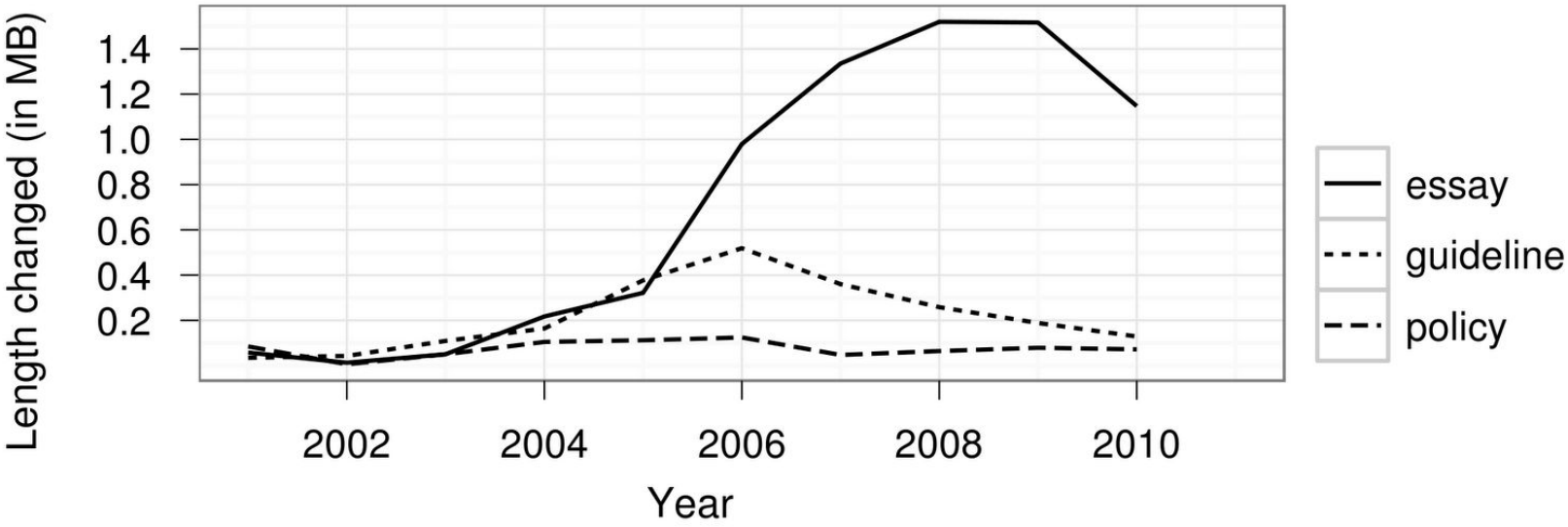
Wikipedia:Verifiability

From Wikipedia, the free encyclopedia

To discuss particular sources, see the reliable sources r
see WP:VAND. For the default Wikipedia skin, see WP:

This page documents an English Wikipedia policy, a widely accepted standard that all editors should normally follow. Changes made to it should reflect consensus.

Growth of regulations



Halfaker, A., Geiger, R. S., Morgan, J. T., & Riedl, J. (2012). The rise and decline of an open collaboration system: How Wikipedia's reaction to popularity is causing its decline. *American Behavioral Scientist*, 0002764212469365.

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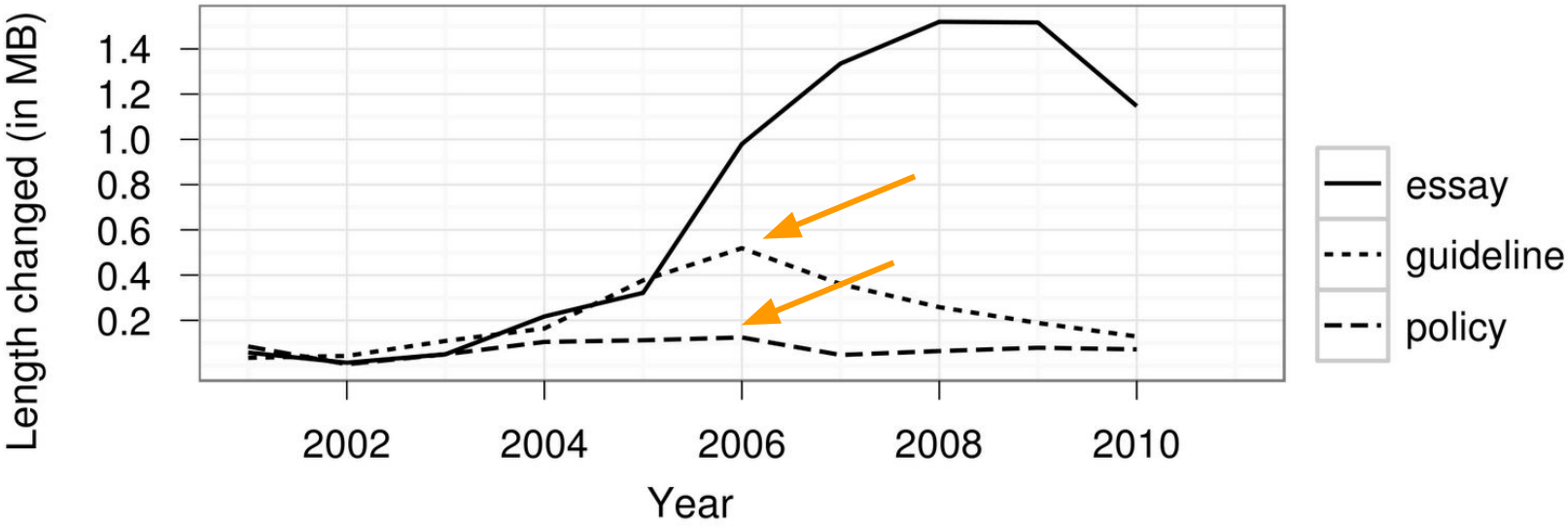

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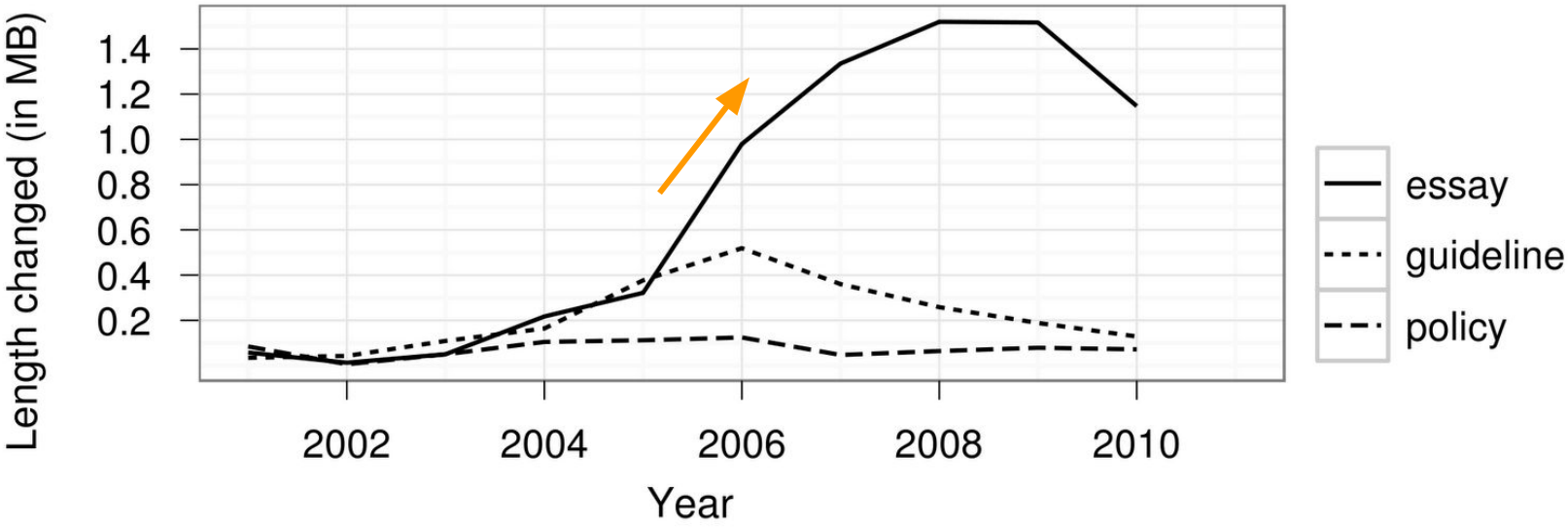
Growth of regulations



Halfaker, A., Geiger, R. S., Morgan, J. T., & Riedl, J. (2012). The rise and decline of an open collaboration system: How Wikipedia's reaction to popularity is causing its decline. *American Behavioral Scientist*, 0002764212469365.

Citation distribution

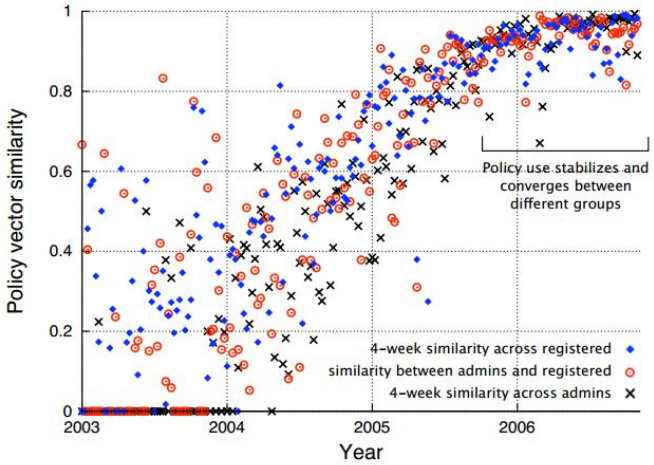


Figure 8: Policy vector similarities for admin and registered users are converging to 1, indicating that the two user groups are becoming similar in their policy citations. The convergence of similarities of policy vectors 4 weeks apart within each population indicates stability within user classes.

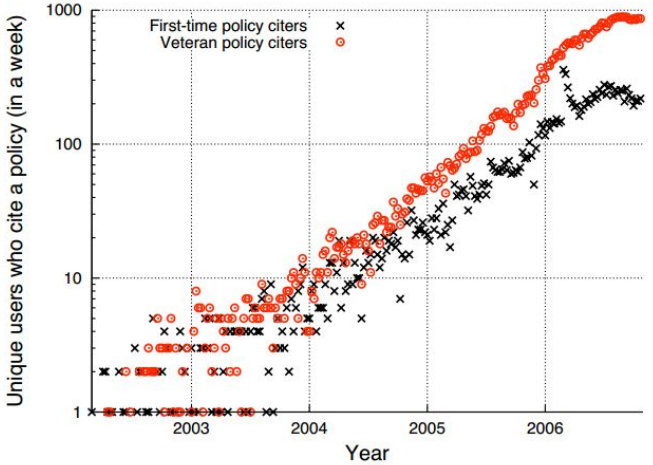
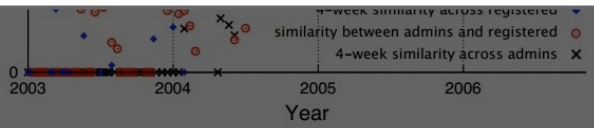


Figure 9: On average, unique users who cite policy for the first time account for over 10% of all unique users who cite a policy in a week. The high percentage indicates that participation in Wikipedia's governance structure is inclusionary.

Beschastnikh, I., Kriplean, T., & McDonald, D. W. (2008, March). **Wikipedian Self-Governance in Action**: Motivating the Policy Lens. In ICWSM.

Citation distribution

"Wikipedia's governance structure is inclusionary"



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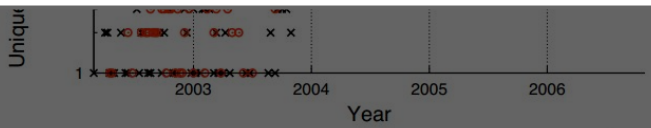

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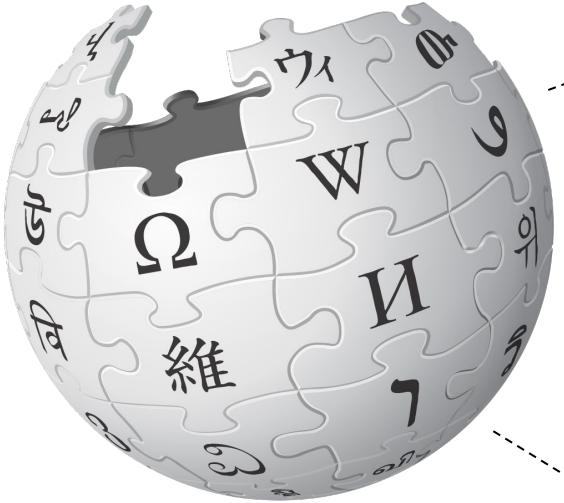


Work allocation

- Identify, prioritize and assign tasks

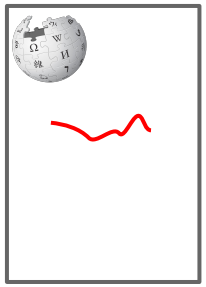
Regulation of behavior

- Norm formation, propagation and enforcement

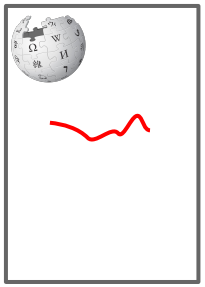
Quality control

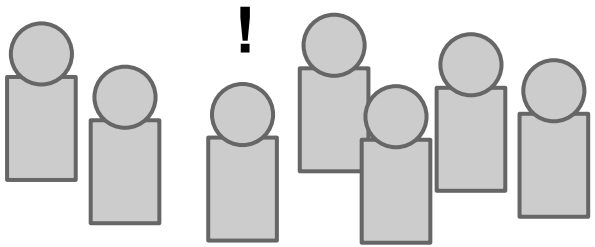
- Identify and remove damage

Quality control

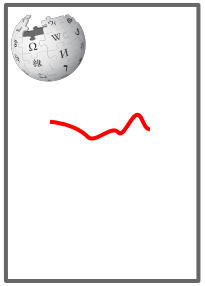


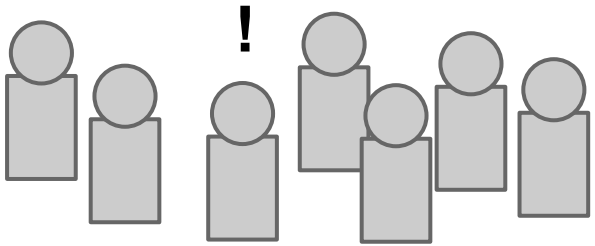
Quality control



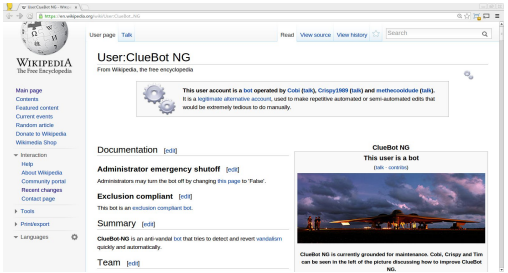


Quality control





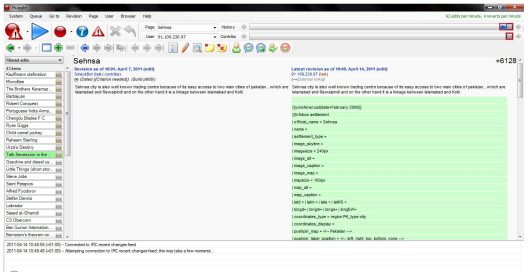
Fully automated



Machine learning

- Fast (~ 5 seconds)[1]
- No human effort
- *Only obvious vandalism*

Semi automated



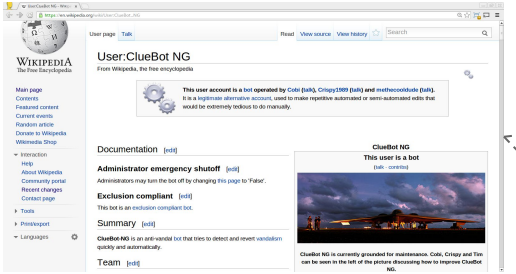
Human computation

- Still pretty fast (~ 30 seconds)[1]
- Minimizes human effort
- <u>Humans catch most vandalism at a glance</u>

1. R. Stuart Geiger & Aaron Halfaker. **When the Levee Breaks** (2013). *WikiSym*.

Quality control

Fully automated



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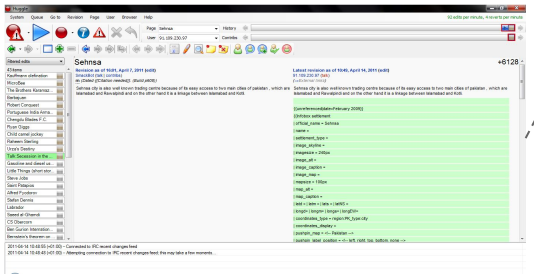
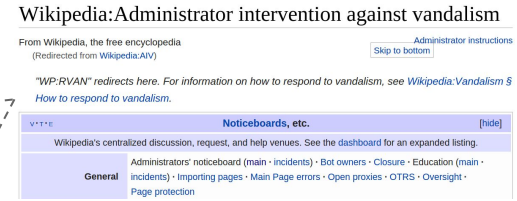
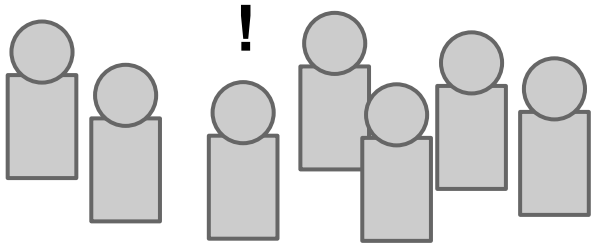


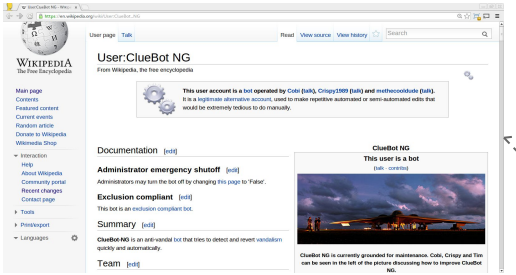
Banning (Admins)





Quality control

Fully automated



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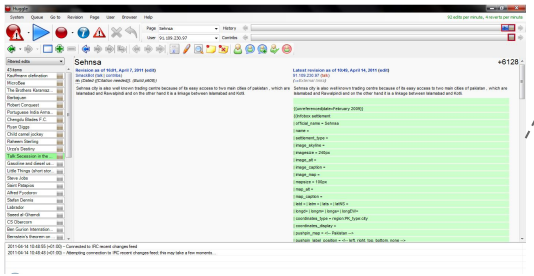
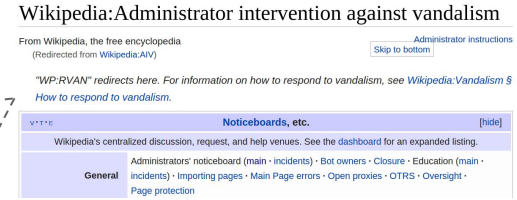
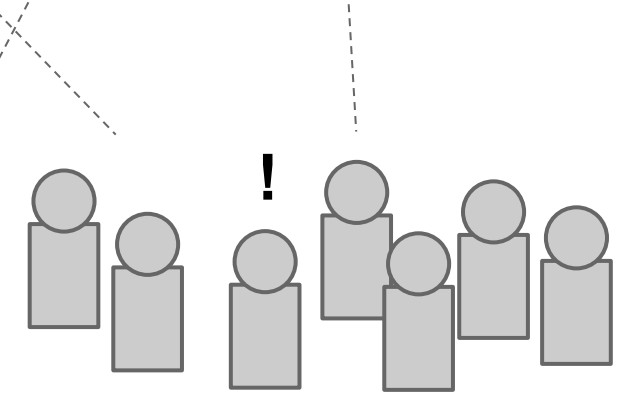


Banning (Admins)





Innate

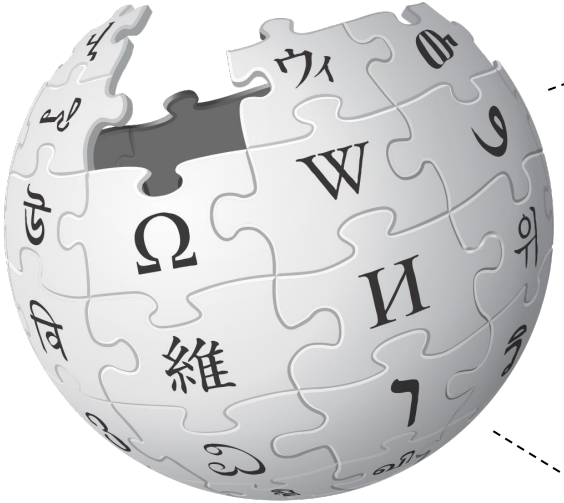
- Fast
- General
- Local

Adaptive

- Slow
- Specific
- Global

Halfaker, A. & Riedl, J. (2012) Bots and Cyborgs, *IEEE Computing* 45(3) (p. 79-82)

Geiger, R. S., & Ribes, D. (2010, February). The work of sustaining order in wikipedia: the banning of a vandal. CSCW (pp. 117-126). ACM.



Work allocation

- Identify, prioritize and assign tasks

Regulation of behavior

- Norm formation, propagation and enforcement

Quality control

- Identify and remove damage

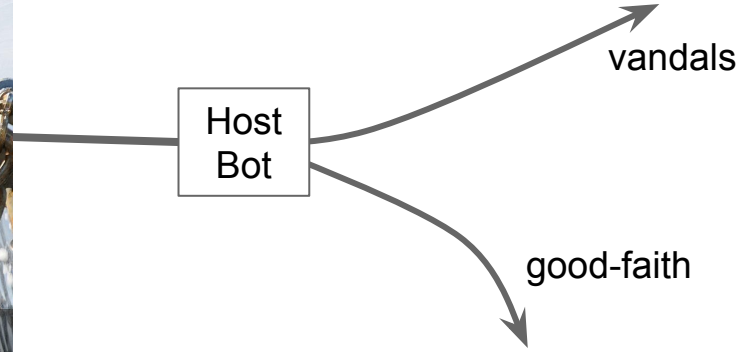
Community management

- Newcomer socialization, dispute mediation & training

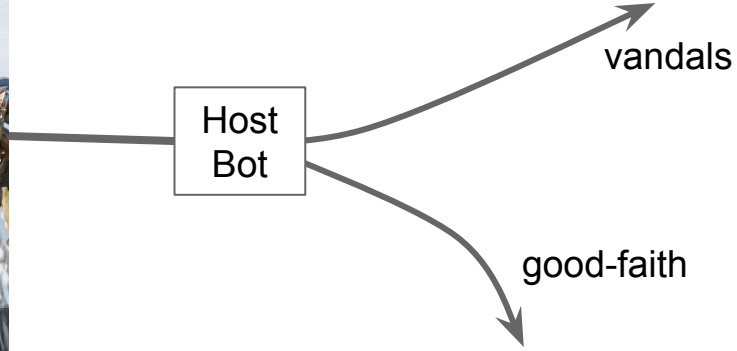
https://commons.wikimedia.org/wiki/File:Flickr_-_Official_U.S._Navy_Imagery_-_Sailor%27s_daughter_operates_a_fire_hose_with_crew_member_assistance..jpg

6,000 newcomers per day

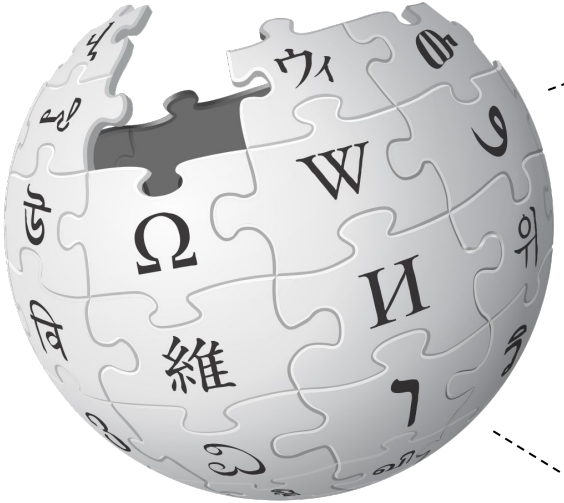
https://commons.wikimedia.org/wiki/File:Flickr_-_Official_U.S._Navy_Imagery_-_Sailor%27s_daughter_operates_a_fire_hose_with_crew_member_assistance..jpg



6,000 newcomers per day



6,000 newcomers per day



Work allocation

- Identify, prioritize and assign tasks

Regulation of behavior

- Form, propagate and enforce norms

Quality control

- Identify and remove damage

Community management

- Socialize & train newcomers; mediate disputes

Reflection (Adaptation)

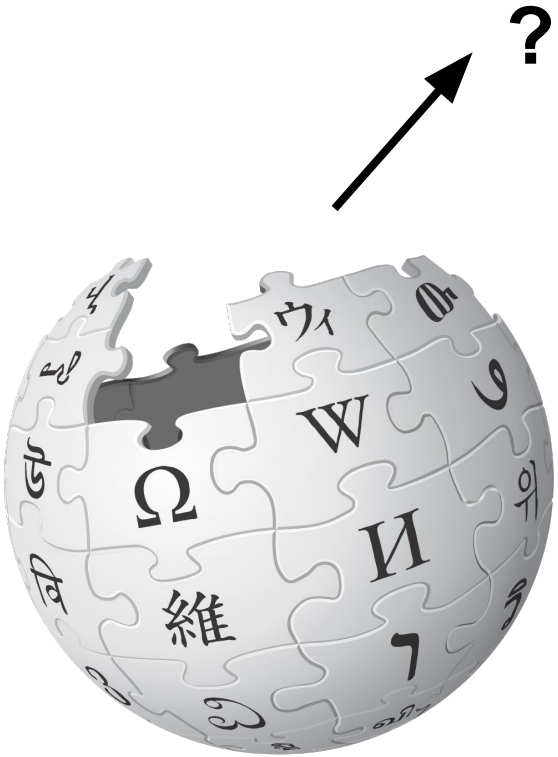
- Where are we going? Where do we want to go? How do we want to get there?

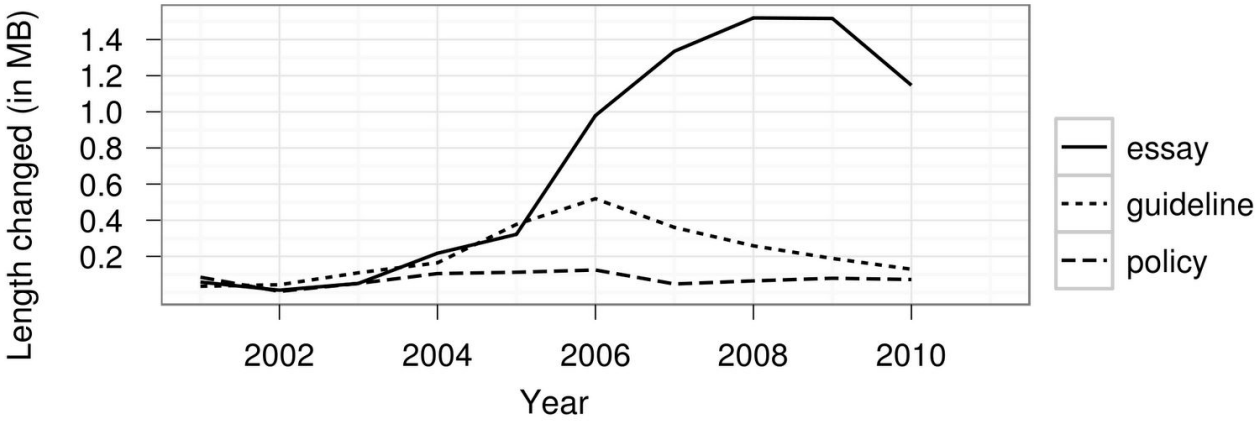
Reflection (Adaptation)

Where *are* we going?

Where do we *want* to go?

How do we get there?

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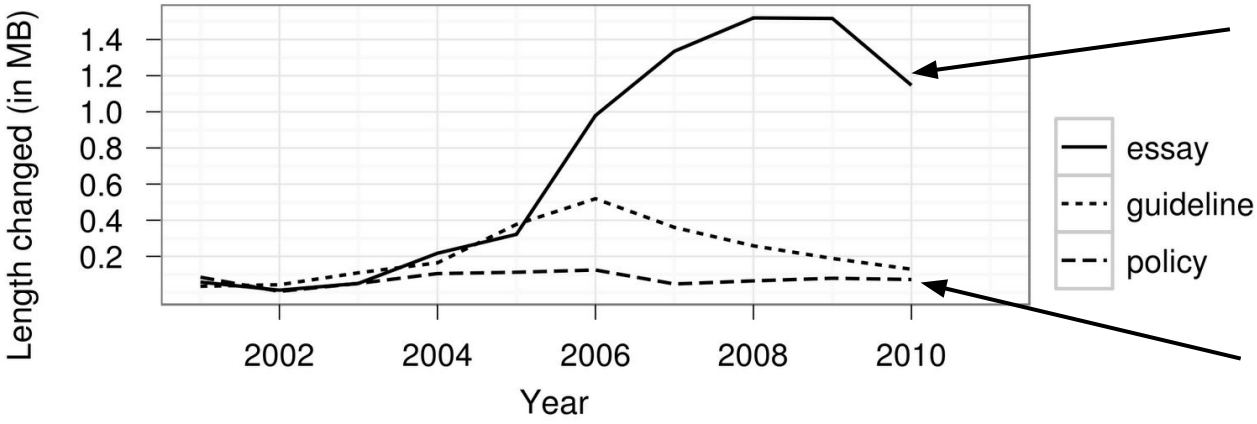
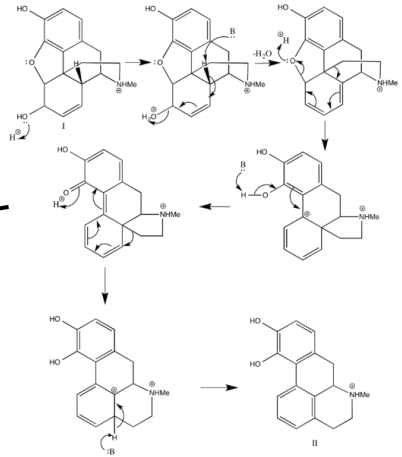


Reflection

Adaptation



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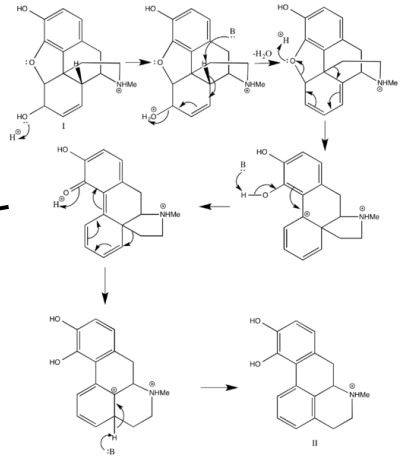

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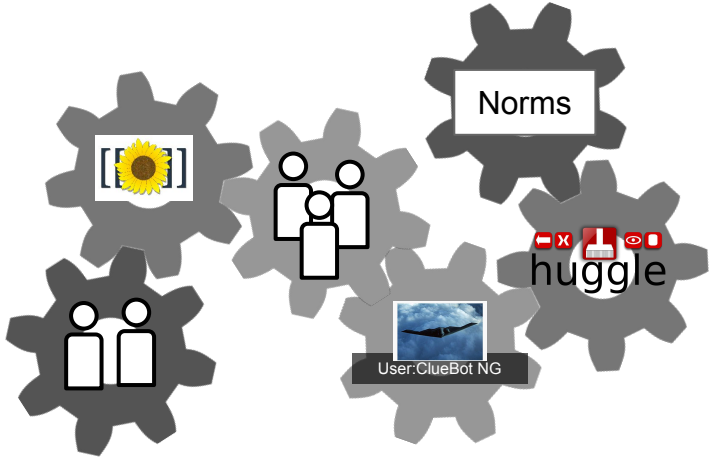

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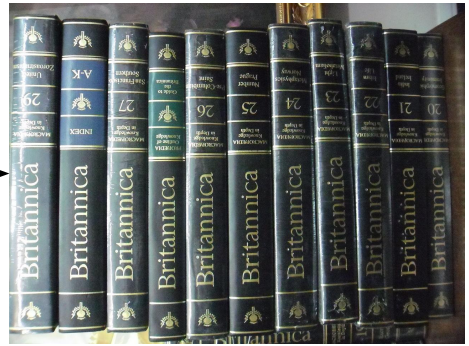
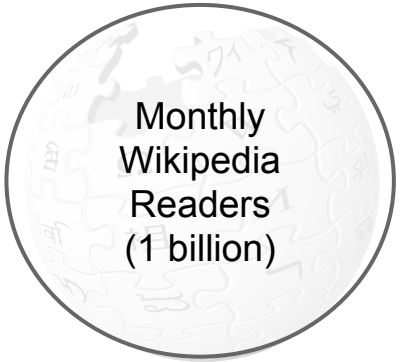
Available
Human
Attention



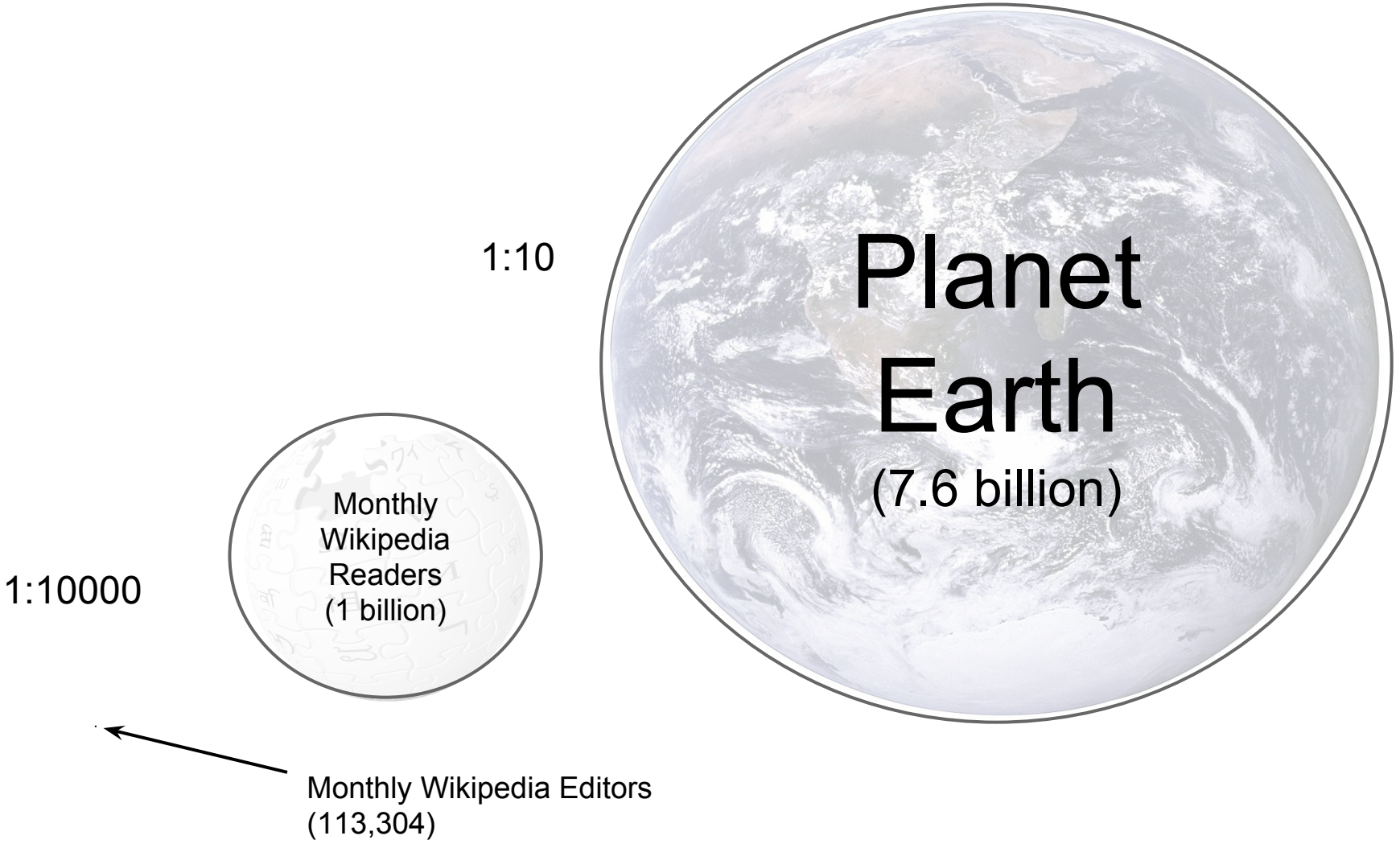
Part 2: Open data and scholarship

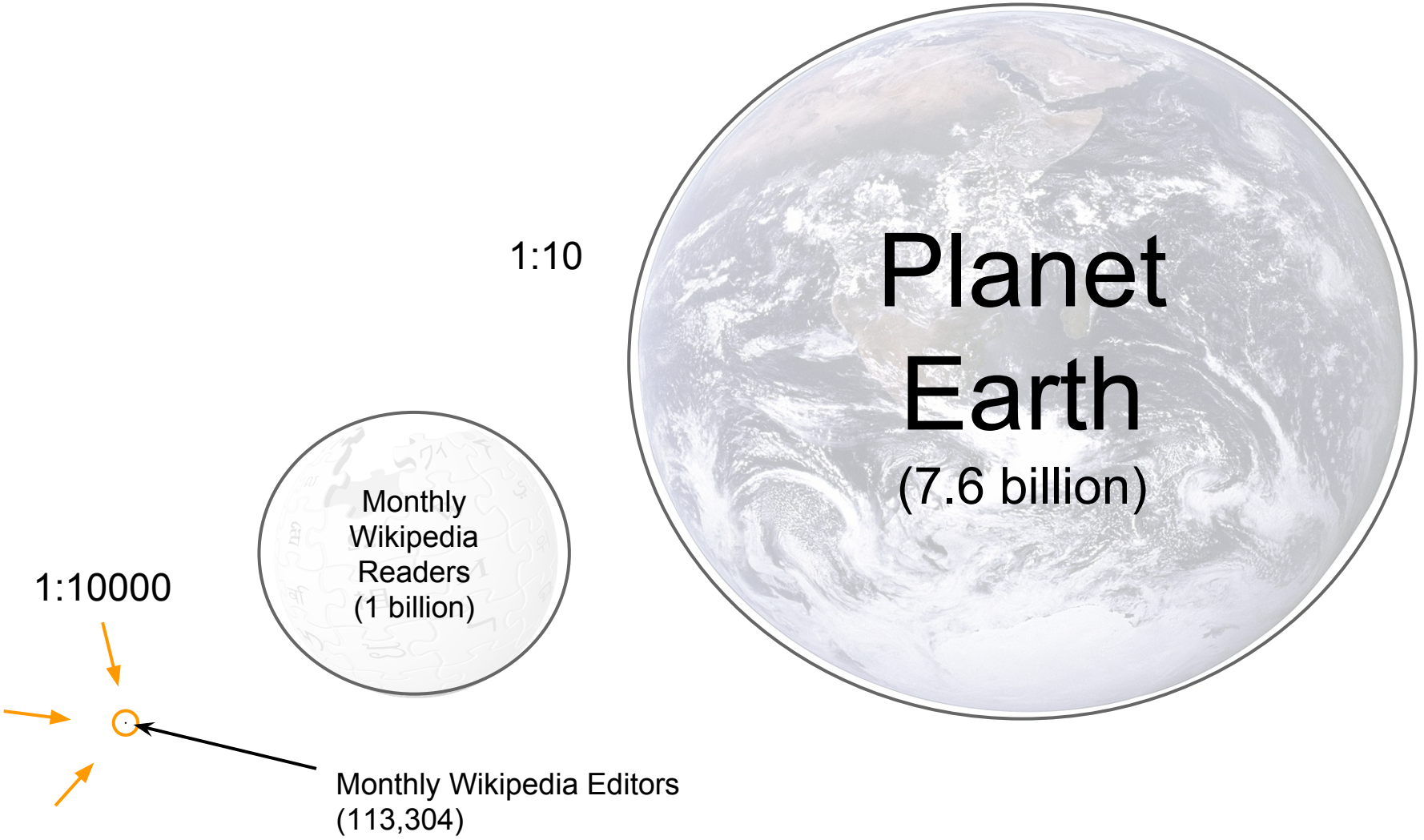
Planet
Earth
(7.6 billion)

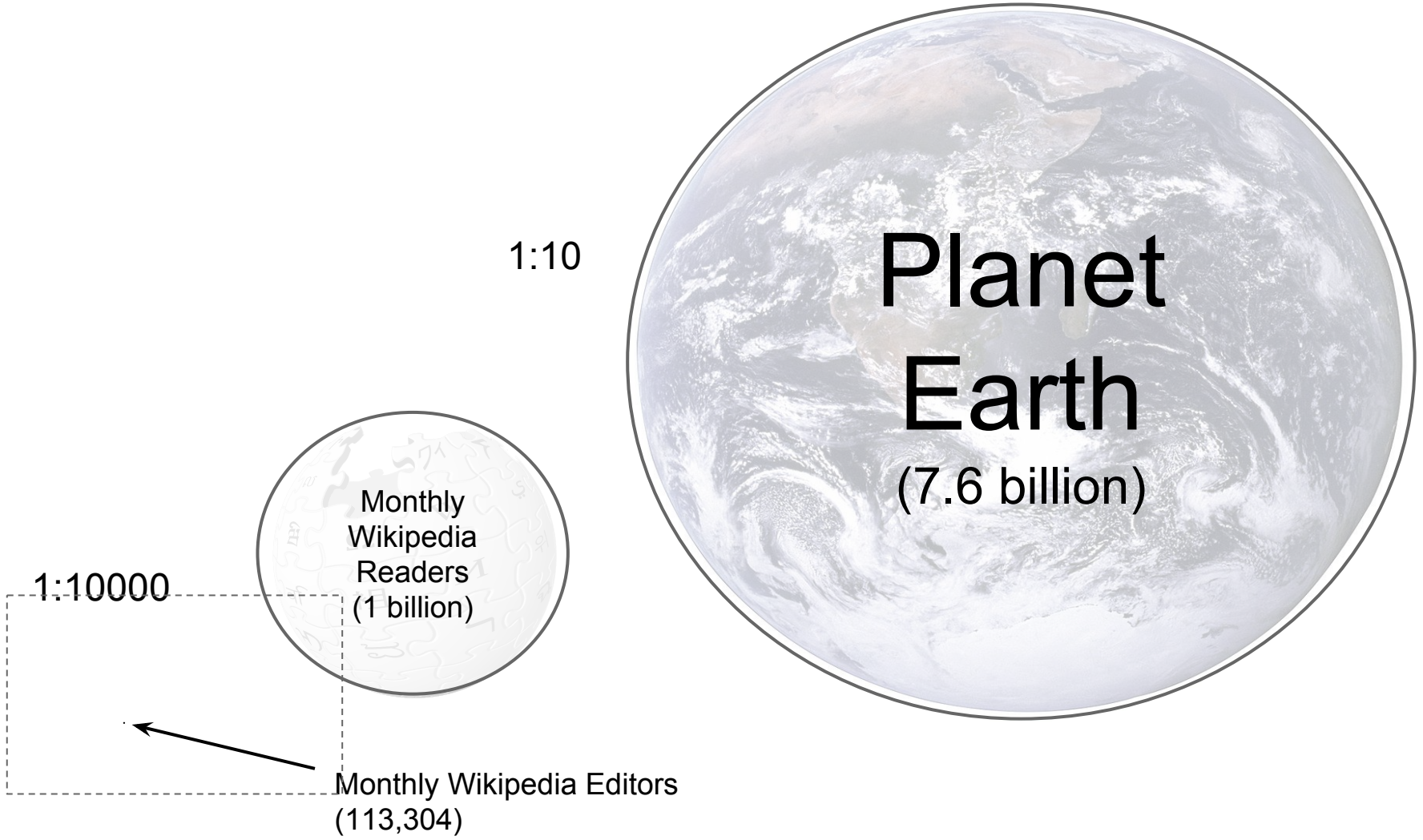

Monthly
Wikipedia
Readers
(1 billion)

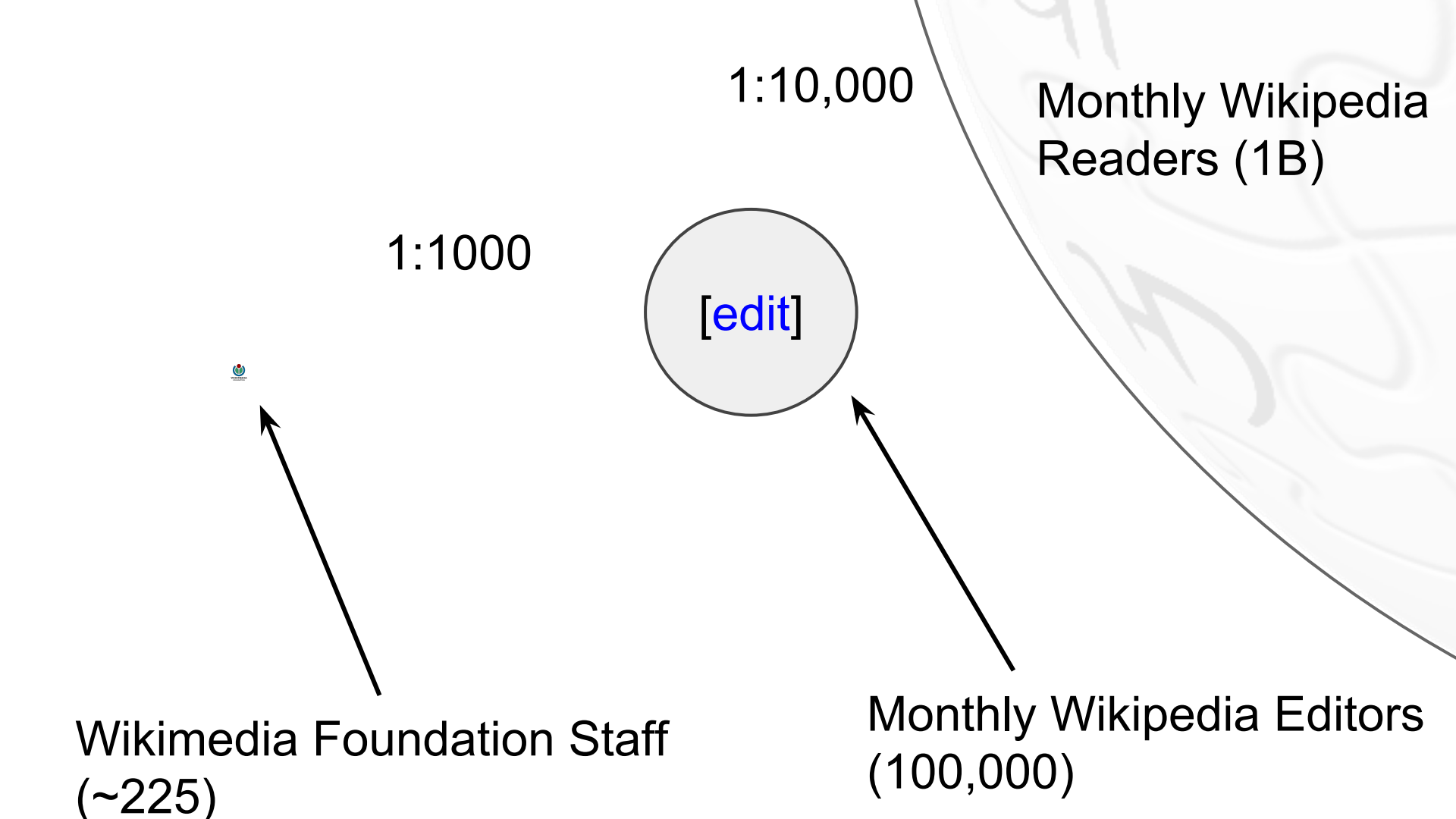
1:10

Planet
Earth
(7.6 billion)


1:10
Planet
Earth
(7.6 billion)
1:10000
Monthly
Wikipedia
Readers
(1 billion)
Monthly Wikipedia Editors
(113,304)


1:10
Planet Earth
(7.6 billion)
Monthly Wikipedia Readers (1 billion)
1:10000
Monthly Wikipedia Editors (113,304)


1:10
Planet
Earth
(7.6 billion)
Monthly
Wikipedia
Readers
(1 billion)
1:10000
Monthly Wikipedia Editors
(113,304)


1:10,000
Monthly Wikipedia Readers (1B)
1:1000
[edit]
Wikimedia Foundation Staff (~225)
Monthly Wikipedia Editors (100,000)

Team [[]] edit

Jonathan Morgan
Senior Design Researcher

Miriam Redi
Research Scientist

Diego Saez-Trumper
Research Scientist

Dario Taraborelli
Director, Head of Research

Leila Zia
Senior Research Scientist

Wikimedia Research

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Director, Head of Research

Leila Zia
Senior Research Scientist

Wikimedia Research

SCORING PLATFORM TEAM

Team [[]] edit

Aaron Halfaker
Principal Research Scientist
Team Lead

Amir Sarabadani
Software Engineer (WMDE)

People directory

Search by name

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ALL A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

1 - 60 of 1953 researchers

Research areas +

Rif A. Saurous

RESEARCH AREA(S)

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Martín Abadi

RESEARCH AREA(S)

Algorithms and Theory

D E F G H I J K L M N O P Q R S T U V W X Y Z

1 - 60 of 1953 researchers

Saurous

CH AREA(S)

Intelligence

Martín Abadi

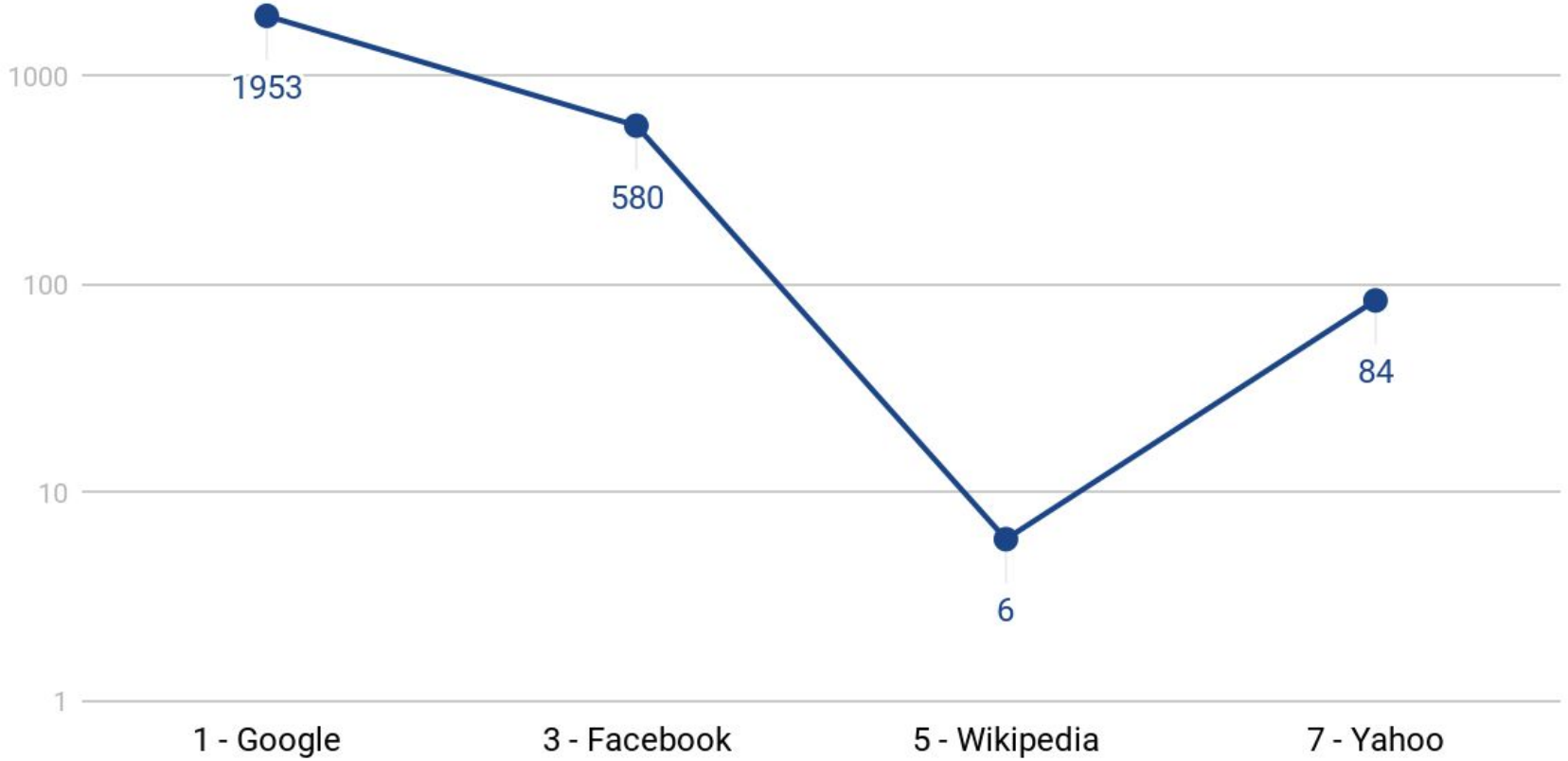
RESEARCH AREA(S)

Algorithms and Theory

- Google research: 1953 (Alexa #1)
- Facebook research: 580 (Alexa #3)
- **Wikimedia research: 6** (Alexa #5)
- Yahoo Research: 84 (Alexa #7)

https://www.alexa.com/topsites (Gathered: 2019-03-08)

Researchers per alexa rank



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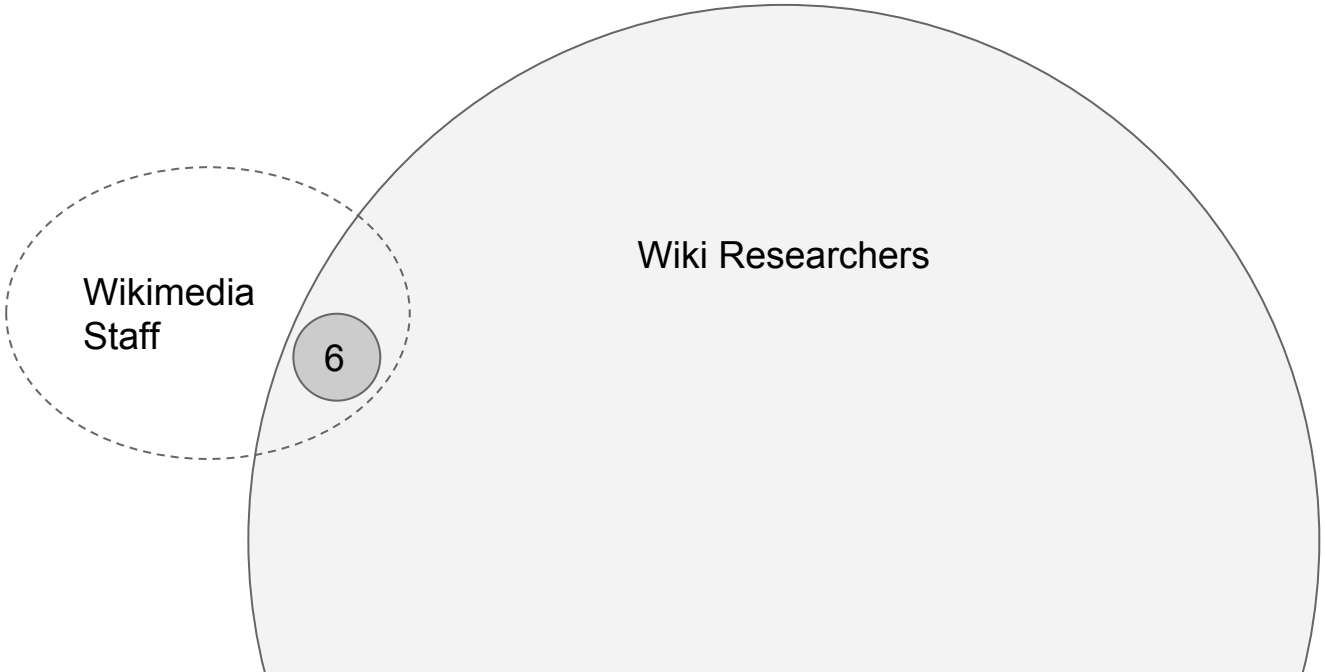
… but Wikipedia is a volunteer organization.

… but Wikipedia is a volunteer organization.



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wikipedia R kraut

Robert E. Kraut

Human-Computer Interaction Instititute, Carnegie Mellon University
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Social computing computer-supported cooper… Human-Computer Inte
Online communities Interpersonal communicat

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Harnessing the wisdom of crowds in **wikipedia**: quality through coordination

A Kittur, RE **Kraut** - Proceedings of the 2008 ACM conference on …, 2008 - dl.acm.org

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Mopping up: modeling **wikipedia** promotion decisions

M Burke, **R Kraut** - Proceedings of the 2008 ACM conference on …, 2008 - dl.acm.org

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A Kittur, RE **Kraut** - Proceedings of the 2010 ACM conference on …, 2010 - dl.acm.org

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Socialization tactics in **wikipedia** and their effects

B Choi, K Alexander, RE **Kraut**, JM Levine - Proceedings of the 2010 …, 2010 - dl.acm.org

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Decentralization in **Wikipedia** governance

A **Forte**, V Larco, A Bruckman - Journal of Management Information …, 2009 - Taylor & Francis
How does" self-governance" happen in Wikipedia? Through in-depth interviews with 20 individuals who have held a variety of responsibilities in the English-language Wikipedia, we obtained rich descriptions of how various forces produce and regulate social structures …
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From **Wikipedia** to the classroom: Exploring online publication and learning

A **Forte**, A Bruckman - Proceedings of the 7th international conference on …, 2006 - dl.acm.org
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A **Forte**, A Bruckman - Proceedings of the 2007 international symposium …, 2007 - dl.acm.org
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On the inequality of contributions to **Wikipedia**

F **Ortega**, JM Gonzalez-Barahona… - Proceedings of the 41st …, 2008 - ieeexplore.ieee.org
Wikipedia is one of the most successful examples of massive collaborative content development. However, many of the mechanisms and procedures that it uses are still unknown in detail. For instance, how equal (or unequal) are the contributions to it has been …
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Functional roles and career paths in **Wikipedia**

O Arazy, F **Ortega**, O Nov, L Yeo, A Balila - Proceedings of the 18th ACM …, 2015 - dl.acm.org
An understanding of participation dynamics within online production communities requires an examination of the roles assumed by participants. Recent studies have established that the organizational structure of such communities is not flat; rather, participants can take on a …
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The [**Wikipedia**] World is Not Flat: on the organizational structure of online production communities

O Arazy, O Nov, F **Ortega** - 2014 - aisel.aisnet.org
The creation and maintenance of online production communities depend on the complex ecology created by the interaction of social roles, and these roles are essential for the governance of the community. This study investigates the organizational structure of one of …
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Heather Ford

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School of Arts and Media, University of New South Wales
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User:Pine

User:Ziko

Hello, I am Ziko van Dijk, a German who lives in the Netherlands. Since 2003 I have a Wikipedia account, and in 2008 I joined Wikimedia organisations.

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Assistant Professor, University of Washington
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Hello, I am Ziko van Dijk, a German who lives in the Netherlands. Since 2003 I have a Wikipedia account, and in 2008 I joined Wikimedia organisations.

Daniel Mietchen

University of Virginia
Verified email at virginia.edu - Homepage

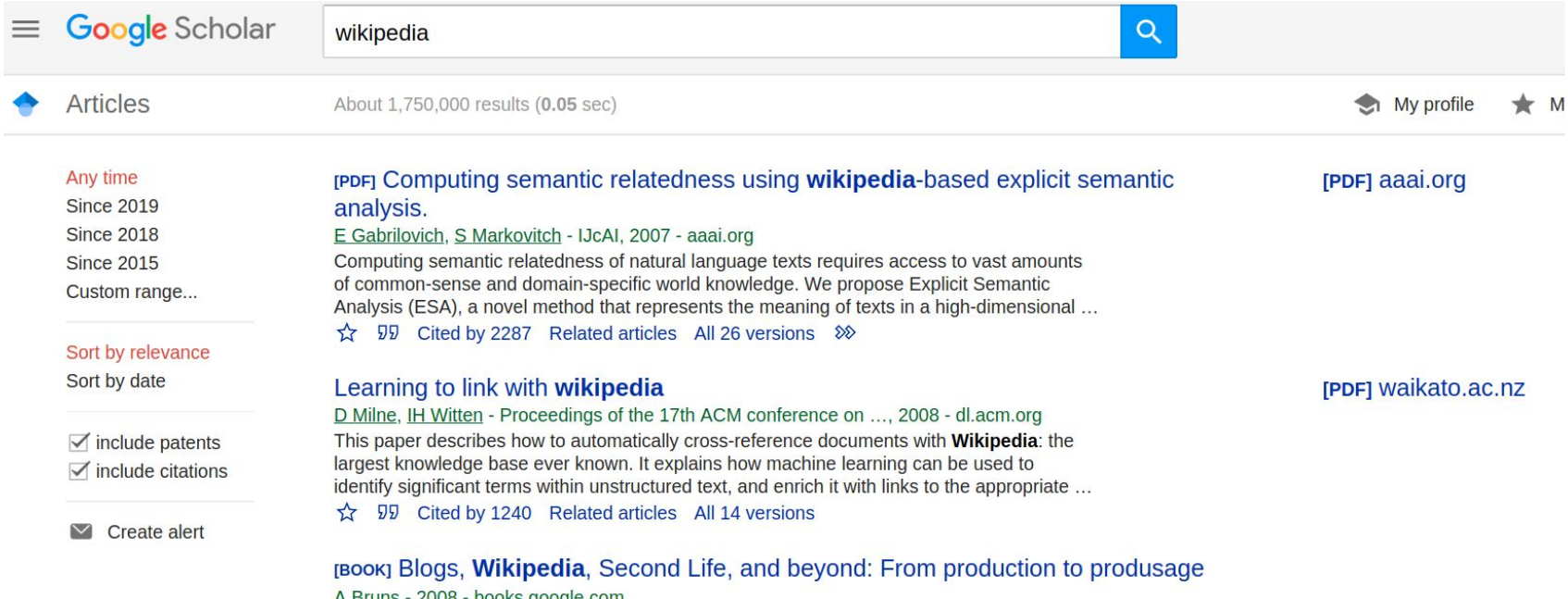
Web-based collaborative sc…

Andy Mabbett (ORCID: 0000-0001-5882-6823)

None
Verified email at pigsonthewing.org.uk - Homepage

Wikipedia Wikidata open content OpenStreetMap Pink Floyd

… in the end, we might rival Google Research.



Why is Wikipedia so interesting?

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1. **Huge.** Alexa #5. Read by 1/10th of the planet. Trusted source of information.

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2. **Weird.** Flips publication model. Decentralized governance. Shouldn't have worked at all.

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1. **Huge.** Alexa #5. Read by 1/10th of the planet. Trusted source of information.
2. **Weird.** Flips publication model. Decentralized governance. Shouldn't have worked at all.
3. **Open.** Datasets, proposals, and initiatives are made freely available.

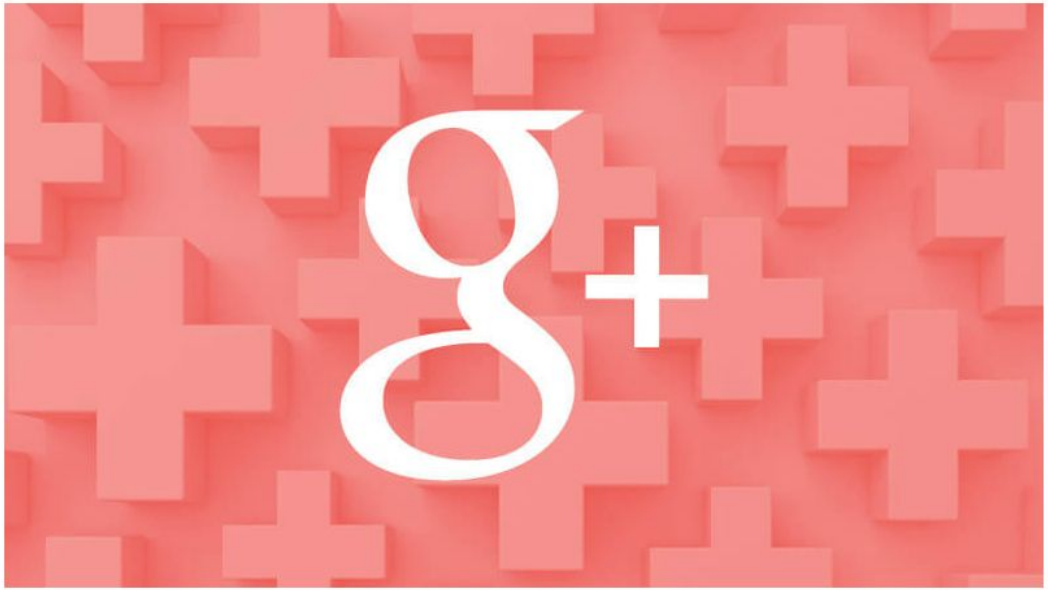
Story time

Why isn’t anyone looking at Google Plus?

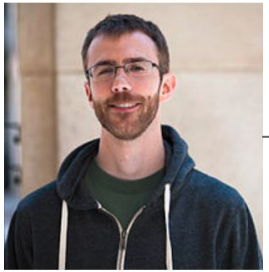
Google to close Google+ after 7 years: A look back at the impact it once had on Google search

This should come as no surprise, Google is closing down Google+ over lack of use and security issues.

Barry Schwartz on October 8, 2018 at 2:48 pm



Just about seven years ago, Google launched its own social networking site named Google+. On Monday, Google announced it will be closing down the consumer version of Google+ in the coming months as it disclosed a privacy bug.



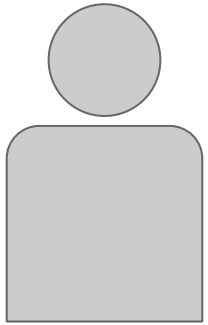
Google
Research

Wikipedia Research

Wikipedia Research

2008 2010 2012 2014 2016 2018

So much great research out there about Wikipedia



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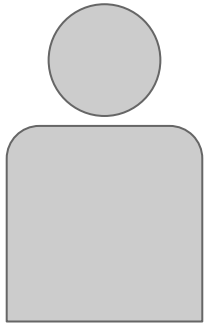
So much great research out there about Wikipedia

Who cares about that? Why don’t people study Google Plus?



Manager

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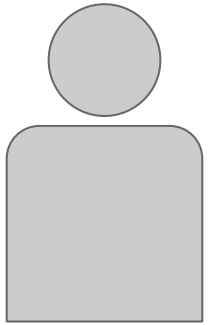

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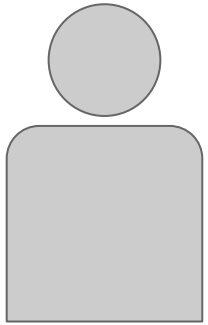


Manager

datasets

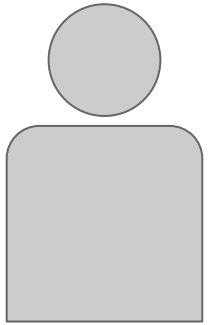
APIs

openness

benefits humanity

So much great research out there about Wikipedia

Who cares about that? Why don't people study Google Plus?



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datasets

APIs

openness

benefits humanity

walled garden

publishing embargo

benefits google

+

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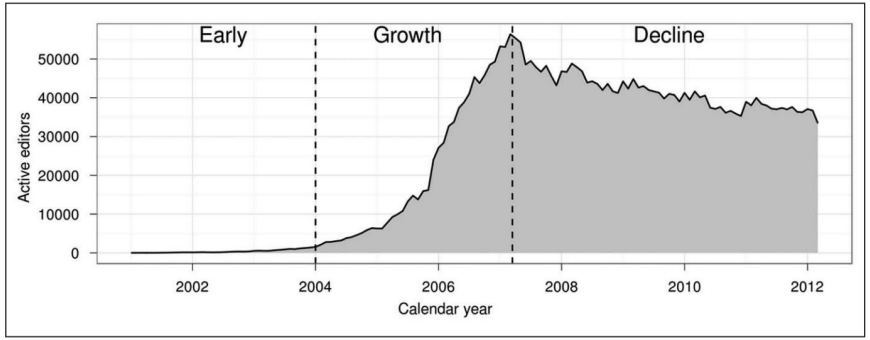

Figure 2. The English Wikipedia's editor decline.
The number of active, registered editors (≥5 edits per month) is plotted over time.

Halfaker, A., Geiger, R. S., Morgan, J. T., & Riedl, J. (2013). The rise and decline of an open collaboration system: How Wikipedia's reaction to popularity is causing its decline. American Behavioral Scientist, 57(5), 664-688.

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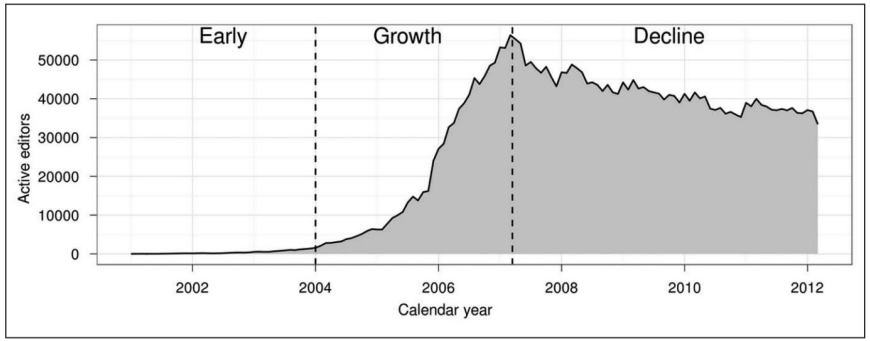

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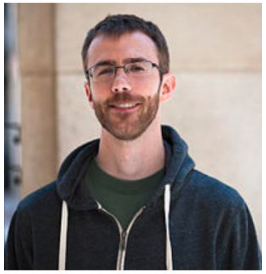

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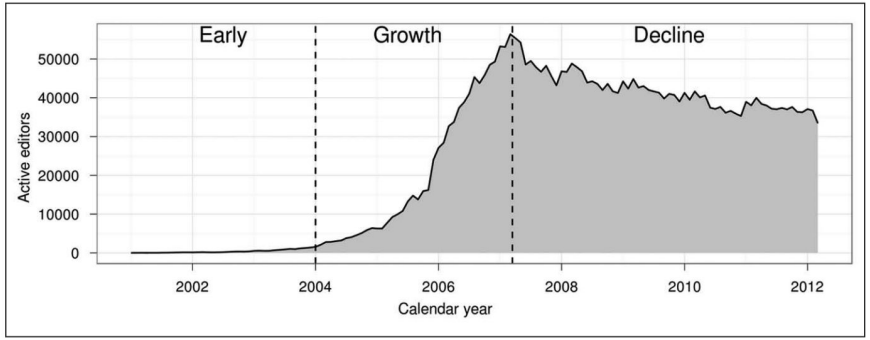

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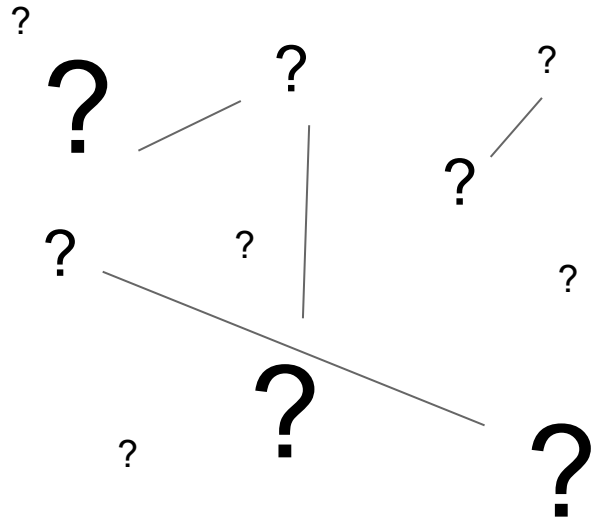

Halfaker, A., Geiger, R. S., Morgan, J. T., & Riedl, J. (2013). The rise and decline of an open collaboration system: How Wikipedia's reaction to popularity is causing its decline. American Behavioral Scientist, 57(5), 664-688.

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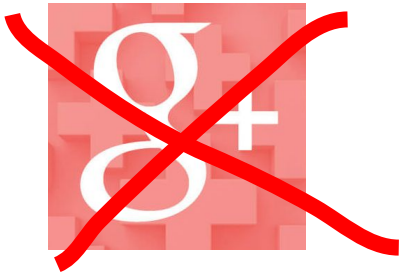

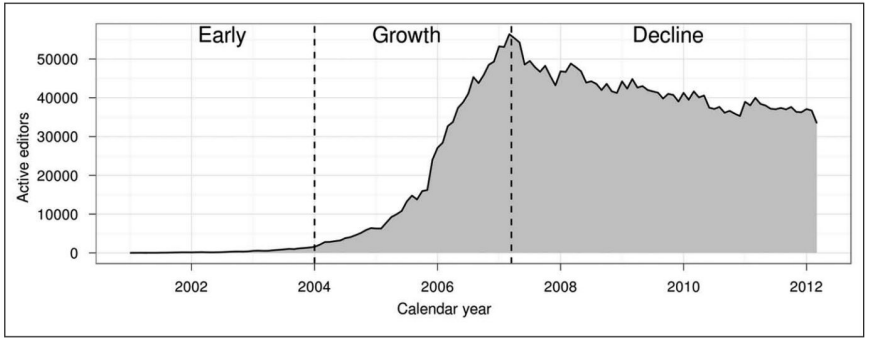

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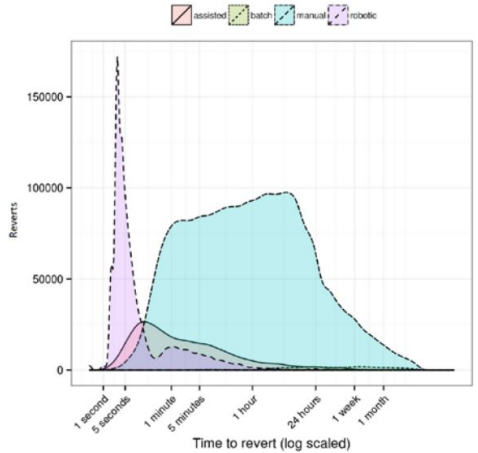

Figure 2: Histogram of time-to-revert during a normal month (January 2011), separated by different editing technologies.

Geiger, R. S., & Halfaker, A. (2013, August). When the levee breaks: without bots, what happens to Wikipedia's quality control processes? **OpenSym** (p. 6). ACM.

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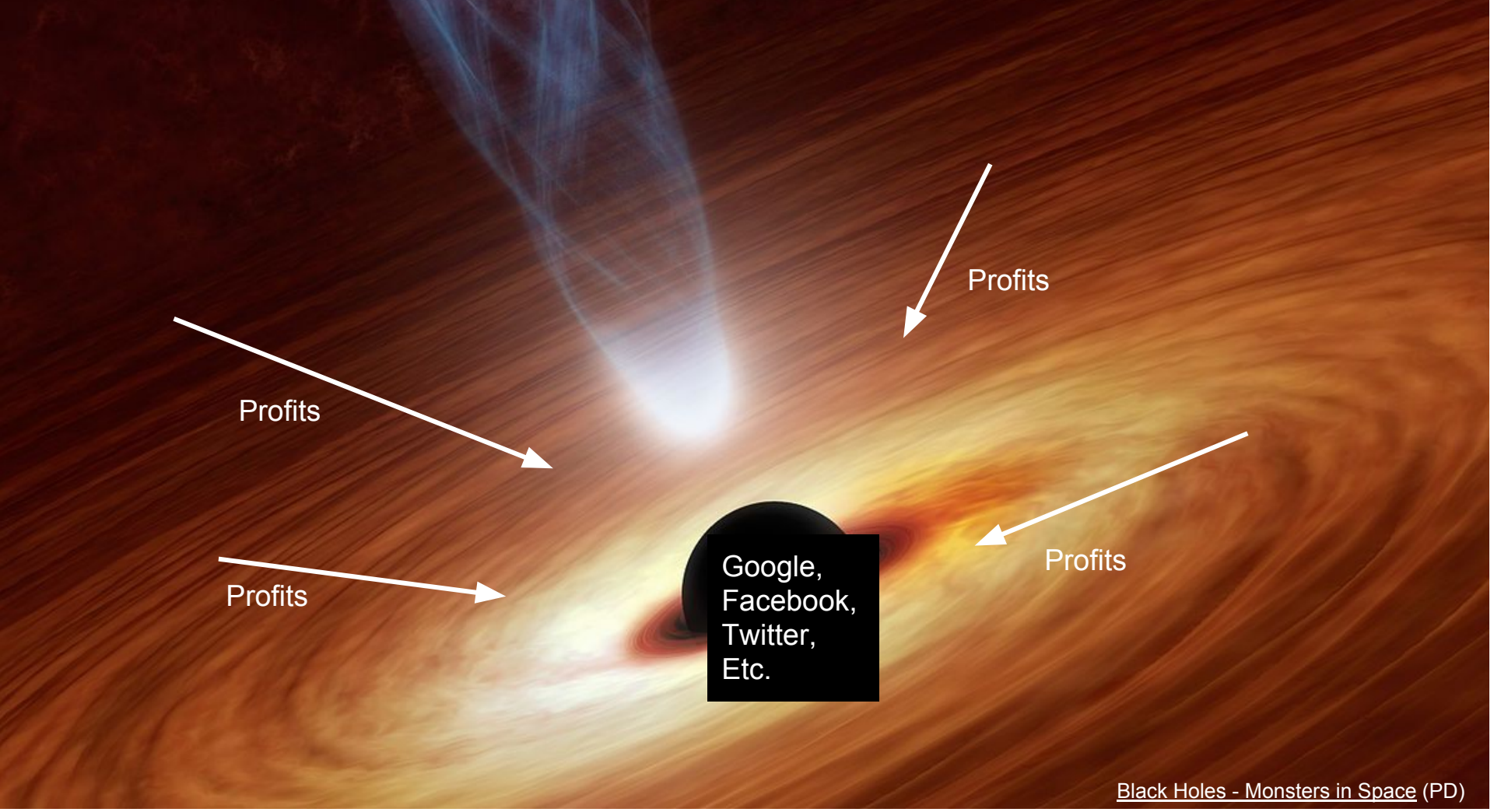
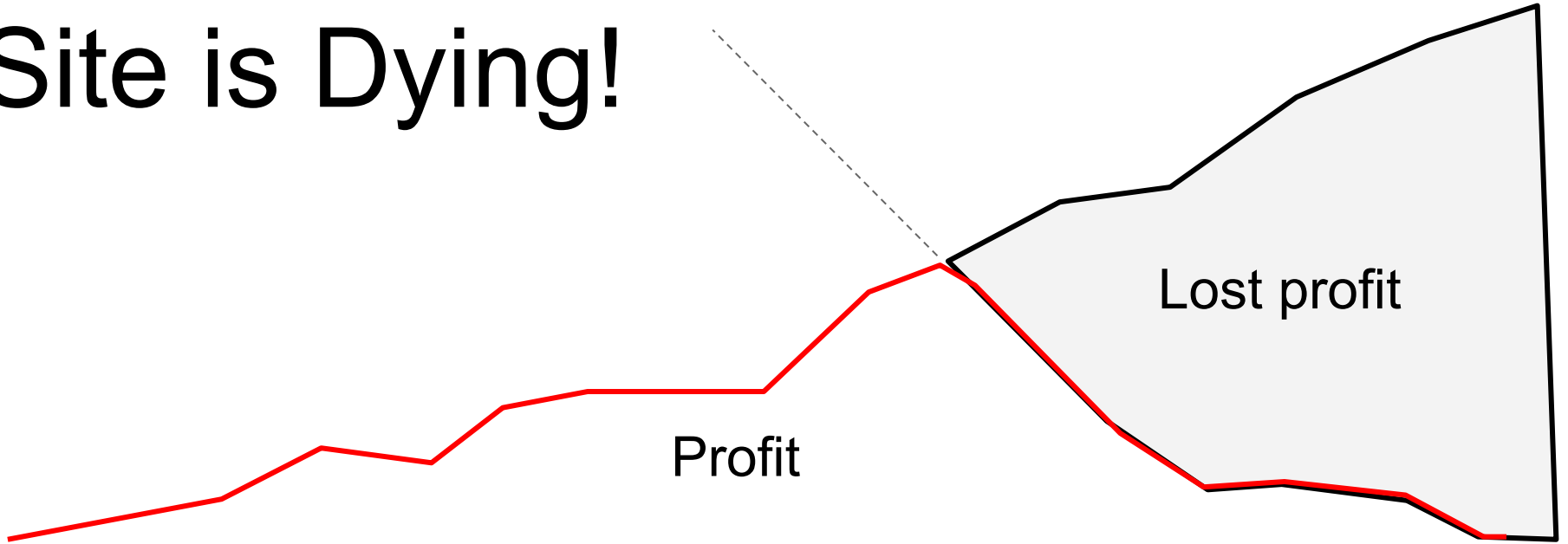
Black Holes - Monsters in Space (PD)



Black Holes - Monsters in Space (PD)

Breaking News: Google's Social Site is Dying!



MIT Technology Review

Topics+

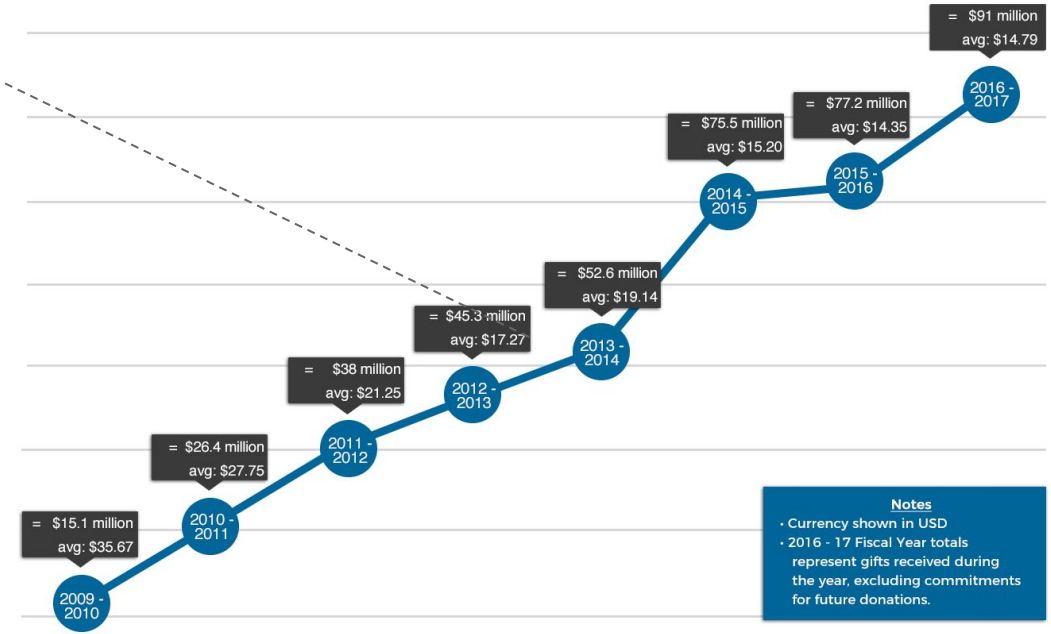
Intelligent Machines

The Decline of Wikipedia

The community that built the largest encyclopedia in history is shrinking, even as more people and Internet services depend on it than ever. Can it be revived, or is this the end of the Web's idealistic era?

by Tom Simonite October 22, 2013

Donation Totals by Fiscal Year and Average Gift Size



Part 3: Strategic new research directions

3 key areas

- Gaps in representation and content
- Growth in newcomer retention
- 3rd party re-use

NCI_swiss_cheese (PD)

[[en:Harrods]] (CC-BY-SA 4.0)

Amazon_Echo_Plus_02 by Asivechowdhury (CC-BY-SA 4.0)

Who does contribute to Wikipedia?

Further information: Wikipedia community and Wikipedia:Wikipedians

The English Wikipedia currently has 35,863,255 users who have registered a username. An unknown but relatively large number of unregistered Wikipedians also contribute to the site. About 250,000 new accounts are created every month. About 300,000 editors have edited Wikipedia more than 10 times. 140,065 have performed an edit within the last 30 days.

> The type of people who were drawn to writing an encyclopedia for fun tend to be pretty smart people.
>
> — Jimmy Wales · Founder of Wikipedia, July 2005 -TEDGlobal conference

Contributions come from diverse demographic and ethnographic segments:

- **Mid-20s males** and **retired males** - are the largest demographics[*citation needed*]
- **10% - 20% women of various ages** - significant underrepresentation acknowledged by Gender bias on Wikipedia and Gender gap
- **Students** (e.g., in the context of a course)
- **Enthusiasts** (e.g., people with interest in a particular subject, like butterflies)
- **Insiders** (e.g., people who work for an organization, such as the Sierra Club)
- **Dabblers** (e.g., people who see some problem with an article and want to help)
- **Scholars** (e.g., researchers who want to use Wikipedia as an additional dissemination platform)
- **Archivists** (e.g., people who work or volunteer at a museum, archive, or library wanting to contribute artifacts, like 18th-century paintings)
- **Marketers** (e.g., individuals, staff, members, or a PR firm seeking to promote a product, service or brand)
- **Evildoers** (e.g., spammers, vandals).

Many people in the Wikipedia community are conscious that the demographics of who edits the site can lead to systemic bias in the content of the site and there are efforts to remedy these biases.

Gender

84 / 100

The 2013 study **The Wikipedia Gender Gap Revisited** measured gender bias in survey completion and estimated that as of 2008, 84% of English Wikipedia editors were male. In the worldwide **Wikipedia Editor Survey 2011** of all the Wikipedias, 91% of respondents were male.

Nationality

The greatest number, or plurality, of editors (20%) reside in the United States, followed by Germany (12%) and Russia (7%). The only country not in Europe or North America in the top 10, is India (3%).

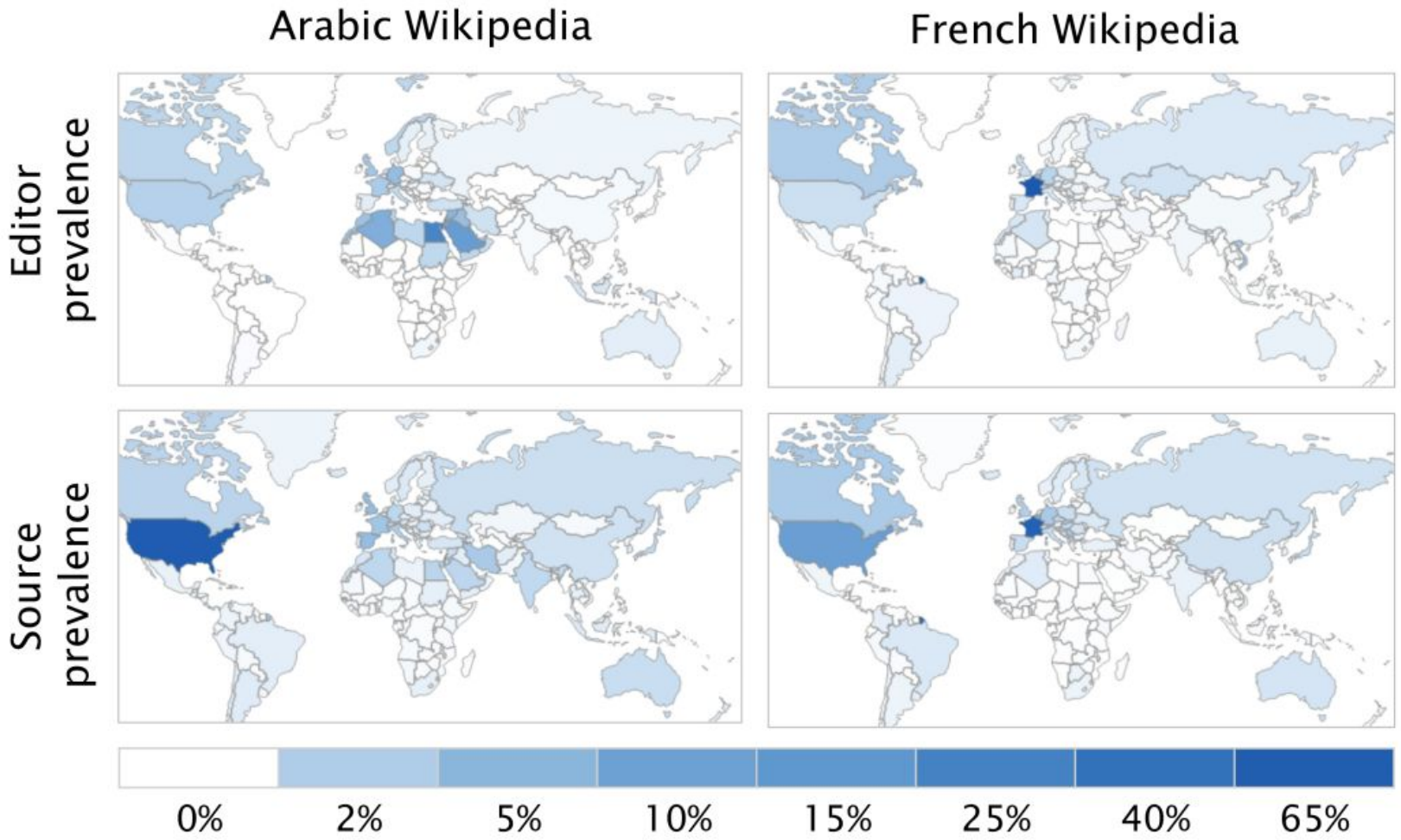
Age distribution

13 / 100

Gaps in representation

- Mostly Male
- Mostly from North America and Western Europe
- Mostly citing English Language sources

Sen, S. W., Ford, H., Musicant, D. R., Graham, M., Keyes, O. S., & Hecht, B. (2015, April). Barriers to the localness of volunteered geographic information. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (pp. 197-206). ACM. pdf



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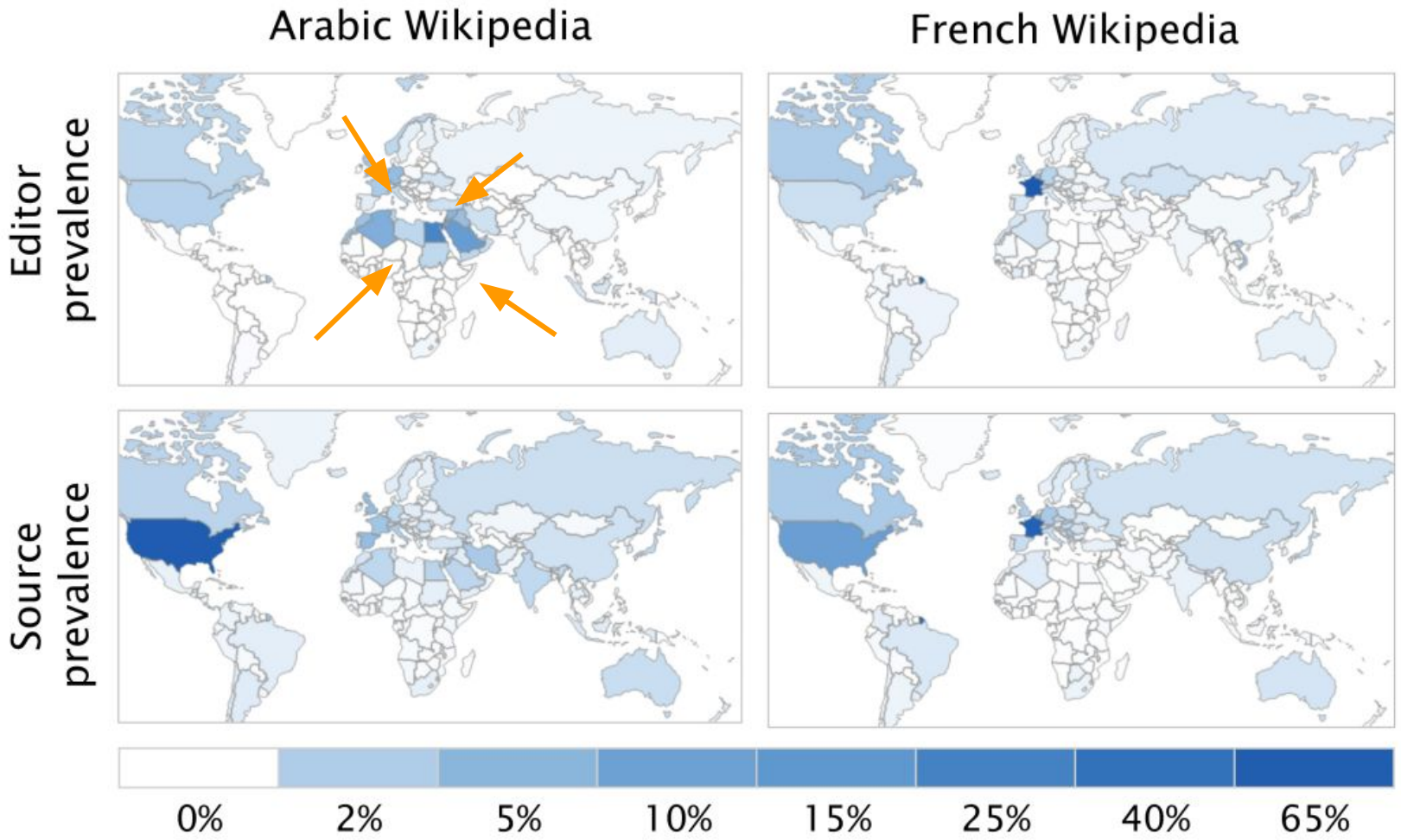

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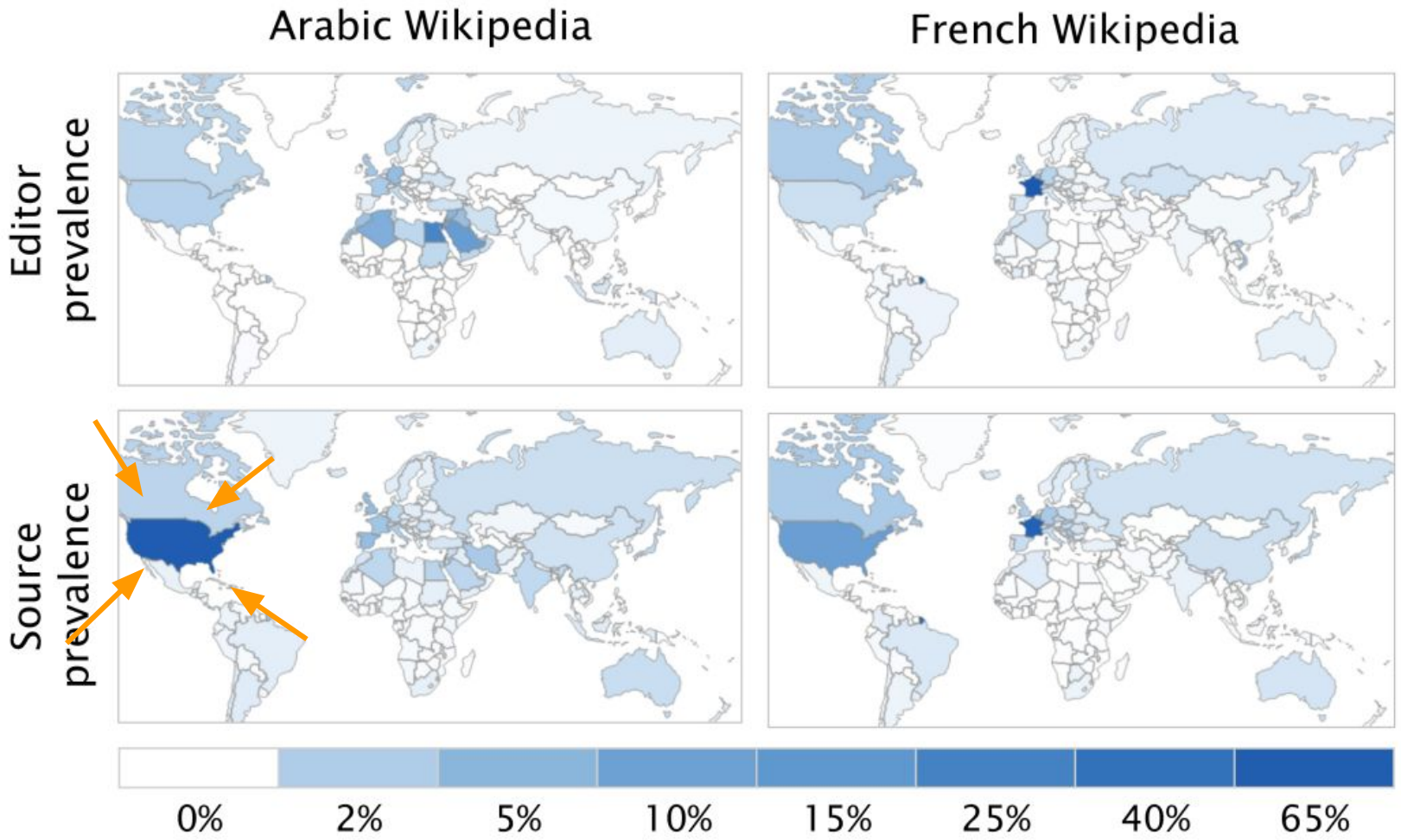

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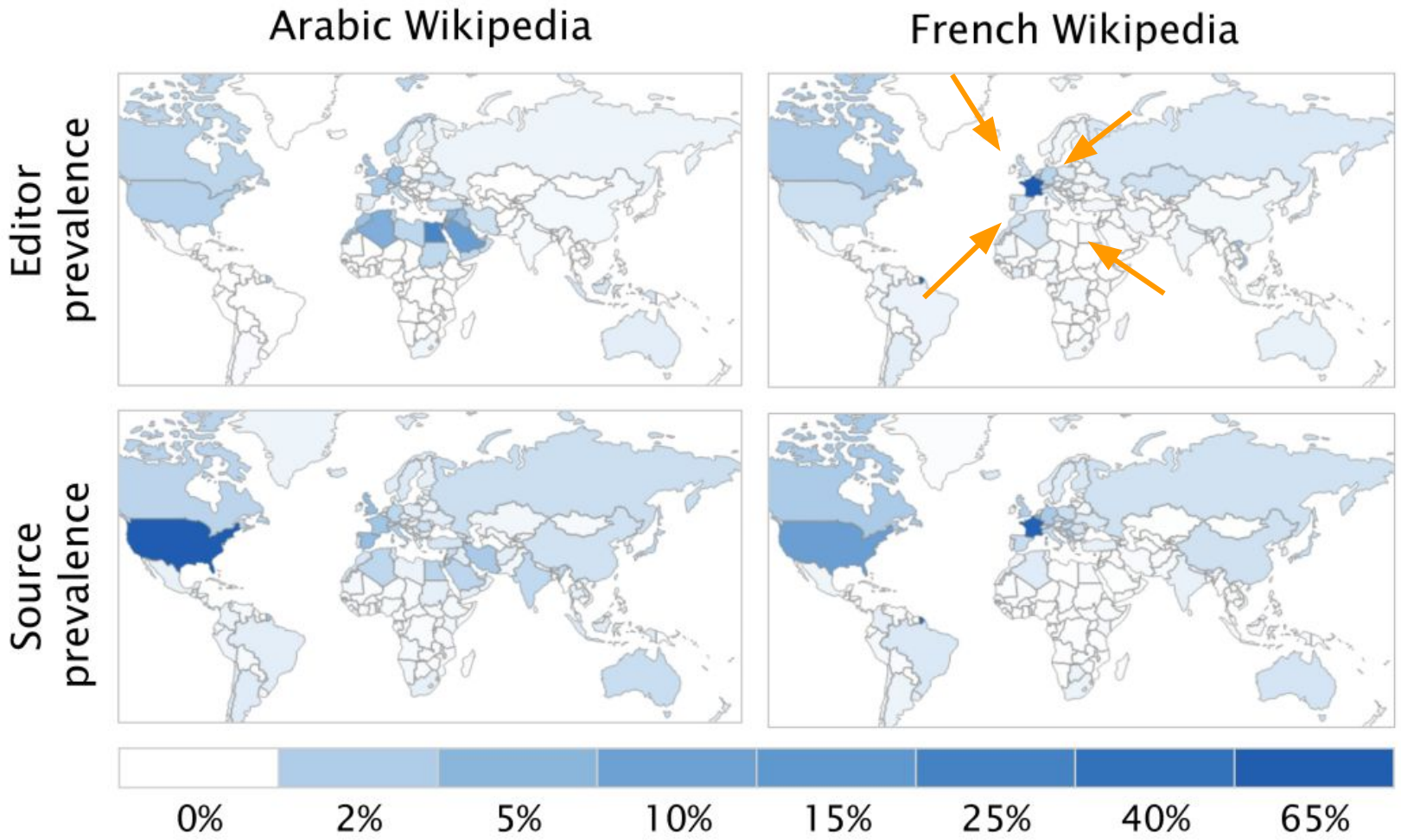

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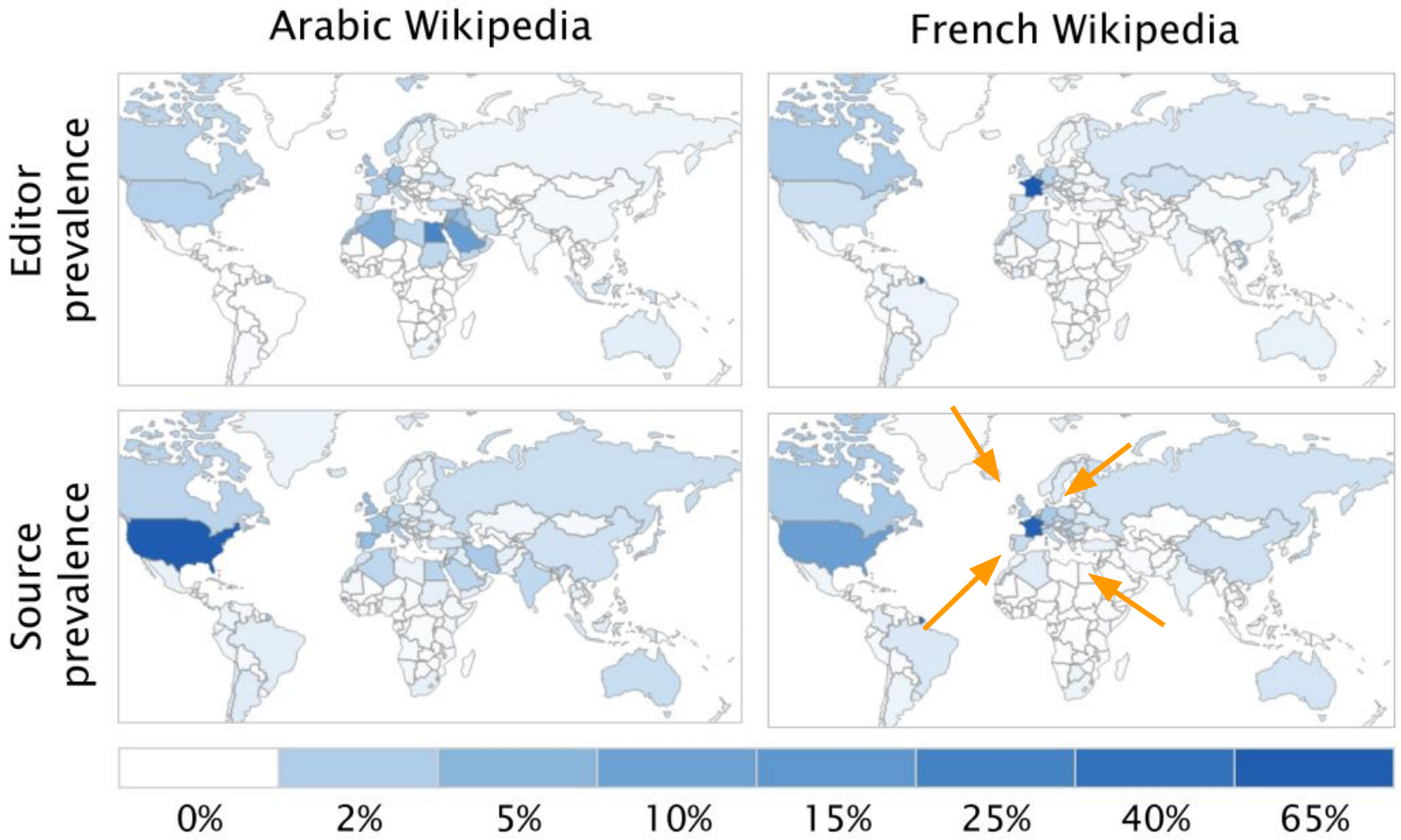

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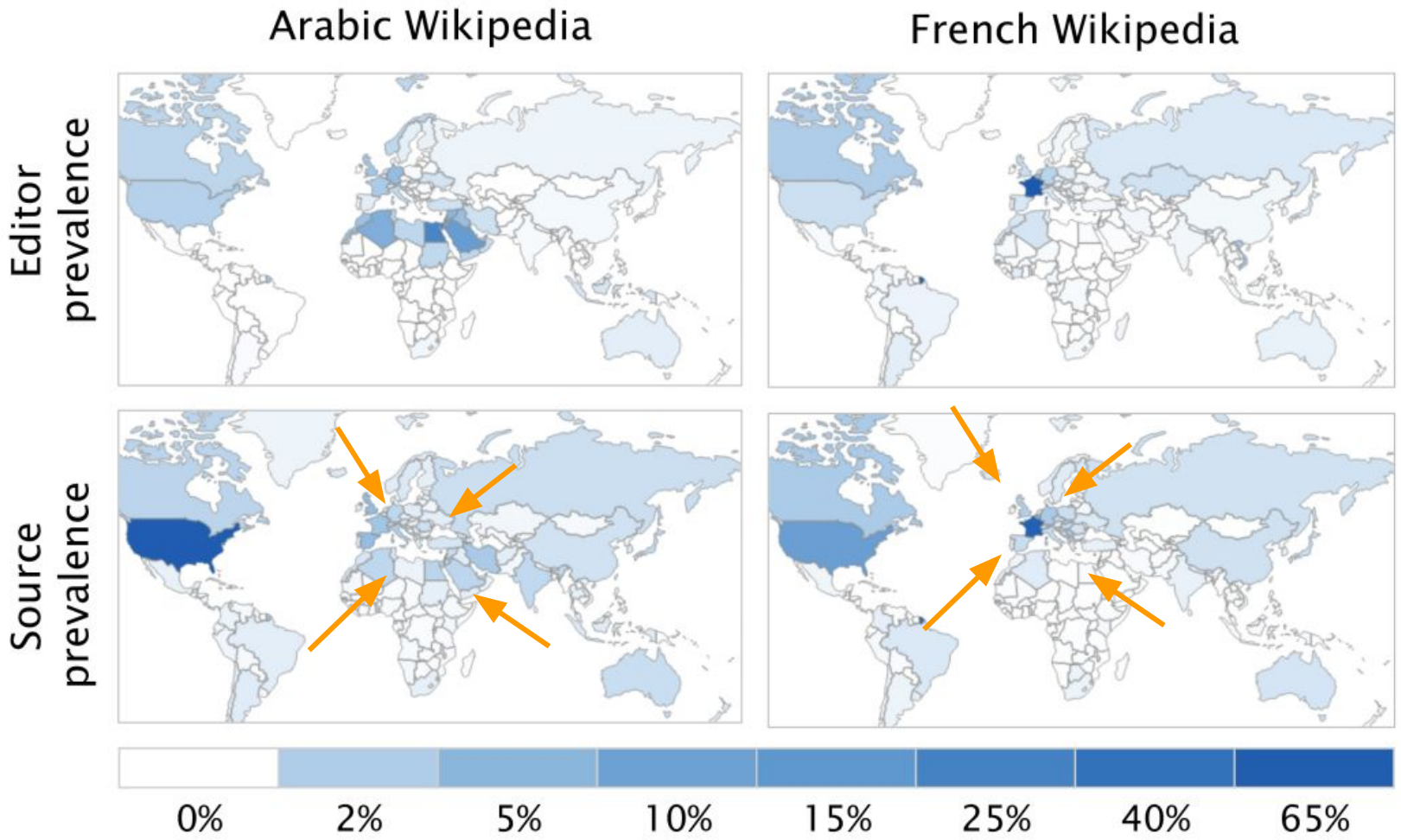

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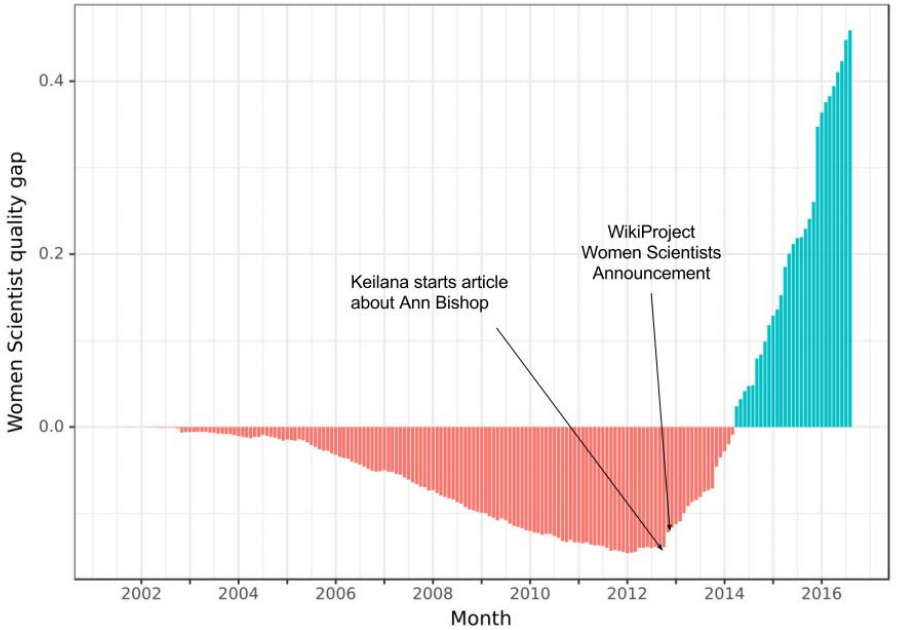
How a feminist stood up to trolls and measurably changed Wikipedia's coverage of women scientists

By Jeff Elder, Wikimedia Foundation
Ed Erhart, Wikimedia Foundation
March 7th, 2017

Did the efforts of Emily Temple-Wood ("Keilana") and other editors really make a difference in Wikipedia's coverage of women scientists—especially given the vast expanse of an encyclopedia that has 5.4 million articles in English alone? The answer, one year after the headlines, is an unequivocal yes.

Emily Temple-Wood. Photo by Victor Grigas/Wikimedia Foundation, CC BY-SA 3.0.

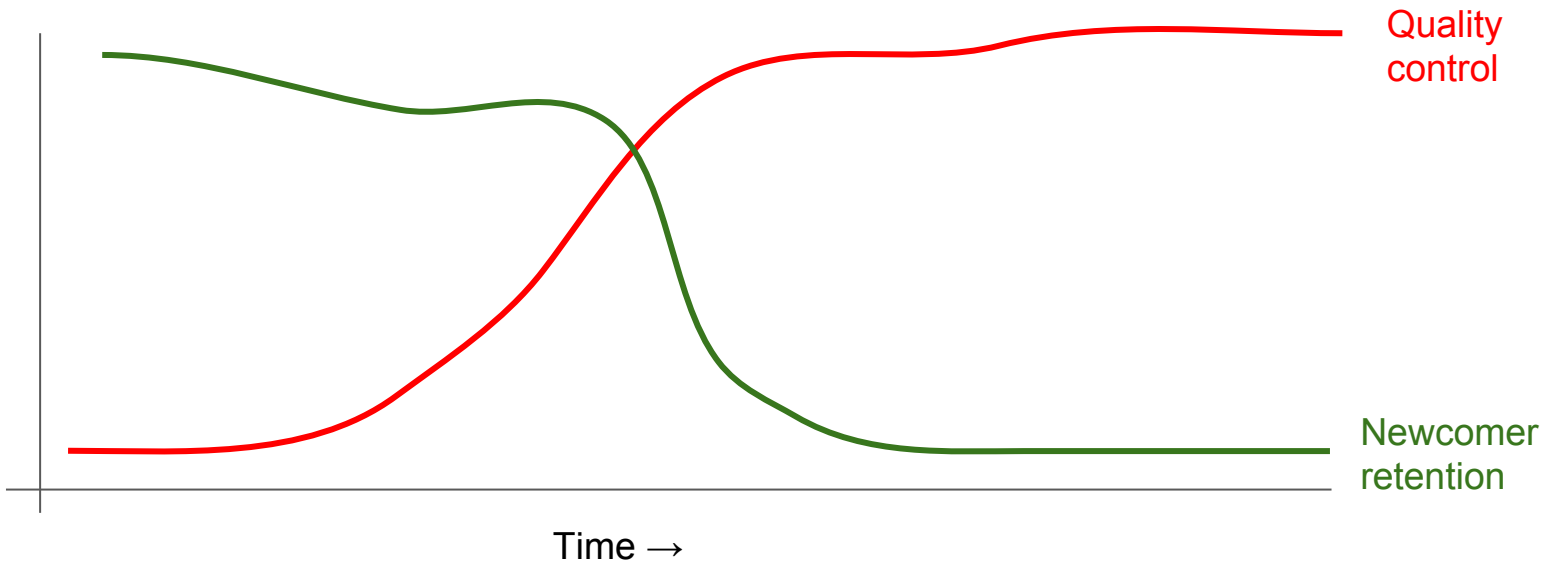


(a) The difference in *mean weighted sum* quality predictions for all wiki and articles about Women Scientists is plotted over time. Note the transition from red to blue represents the switch from a gap to a surplus. Important dates for User:Keilana's initiatives are annotated with arrows.

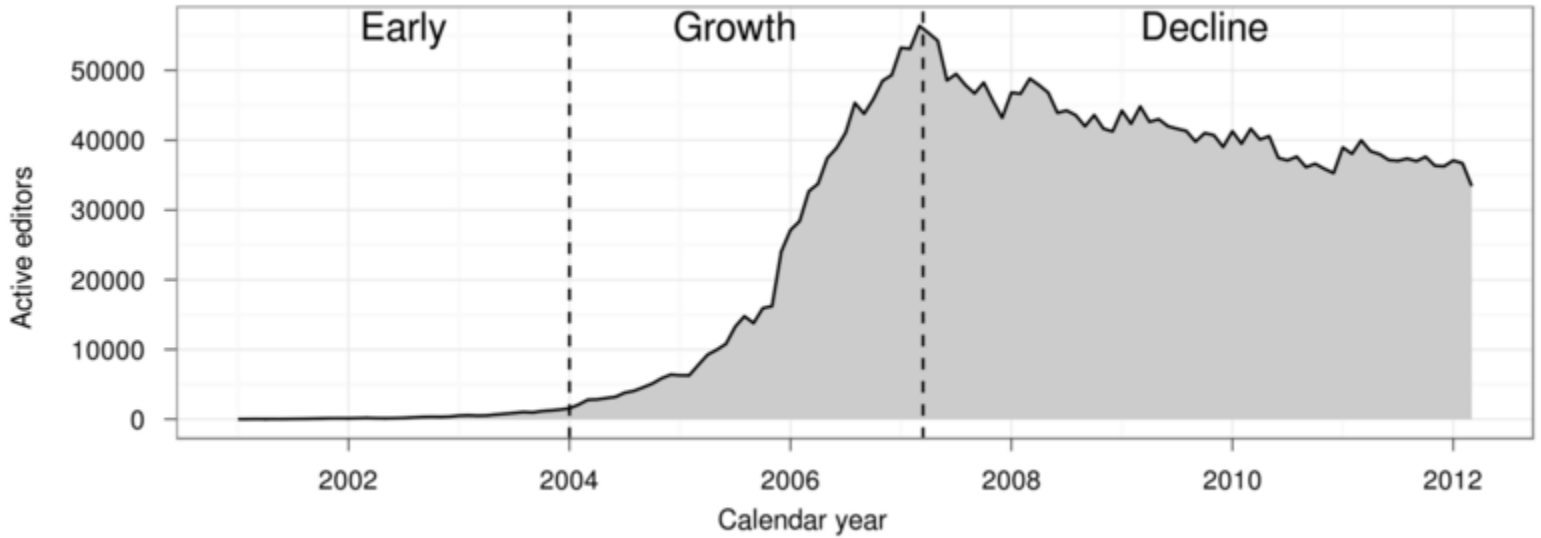
Halfaker, A. (2017, August). Interpolating quality dynamics in wikipedia and demonstrating the keilana effect. In *Proceedings of the 13th International Symposium on Open Collaboration* (p. 19). ACM.

What other content areas are under-developed?

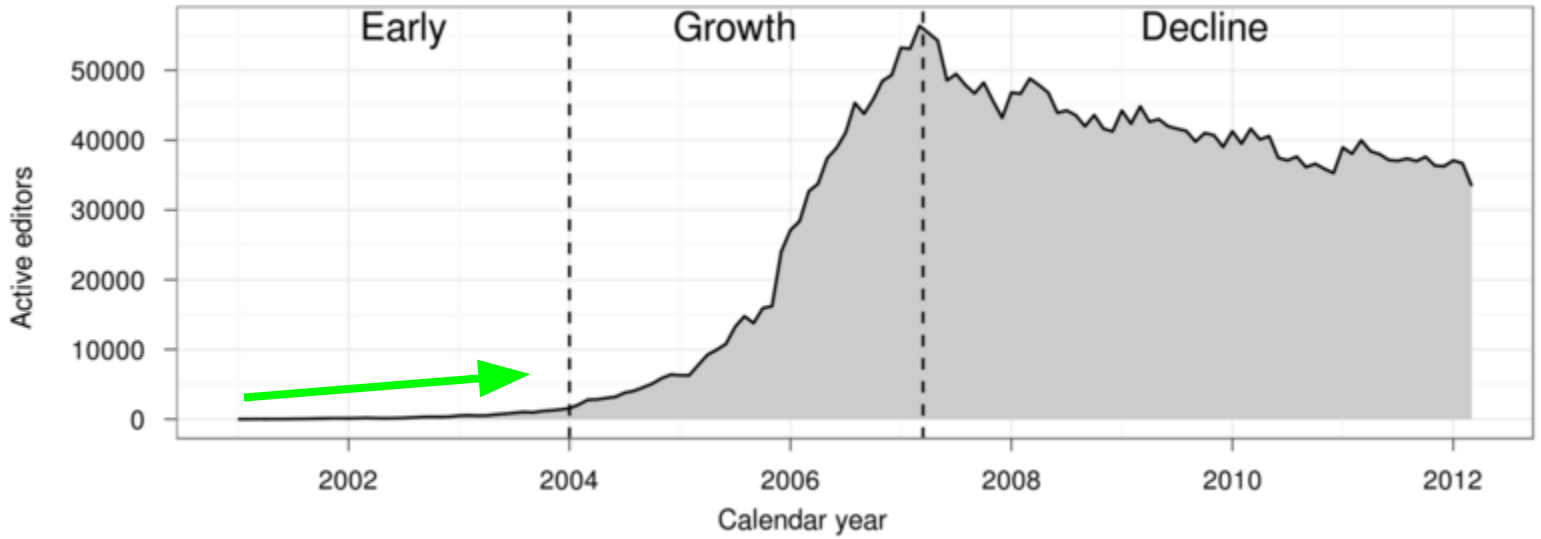
Newcomer retention



TeBlunthuis, N., Shaw, A., & Hill, B. M. (2018, April). Revisiting The Rise and Decline in a Population of Peer Production Projects. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (p. 355). ACM.



- [:m:Research:The_Rise_and_Decline]
- Halfaker, A., Geiger, R. S., Morgan, J. T., & Riedl, J. (2012). The rise and decline of an open collaboration system: How Wikipedia's reaction to popularity is causing its decline. *American Behavioral Scientist*, 0002764212469365.


Early
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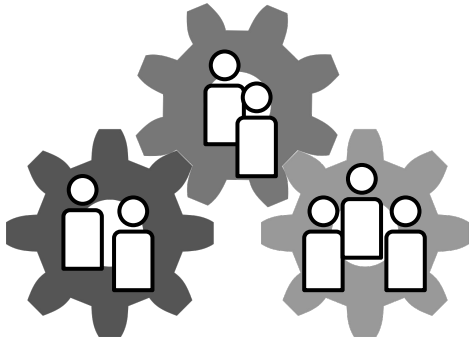

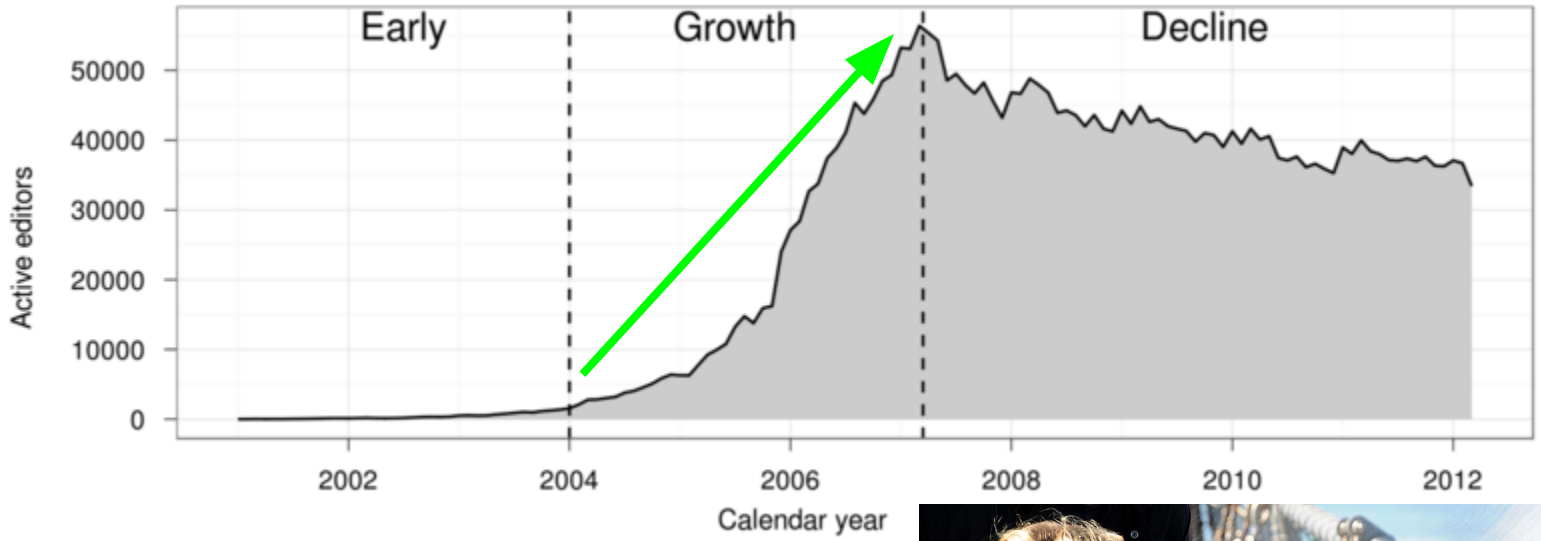
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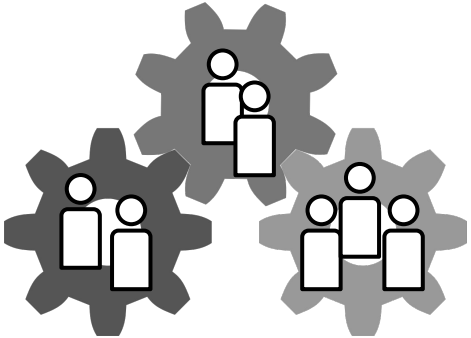

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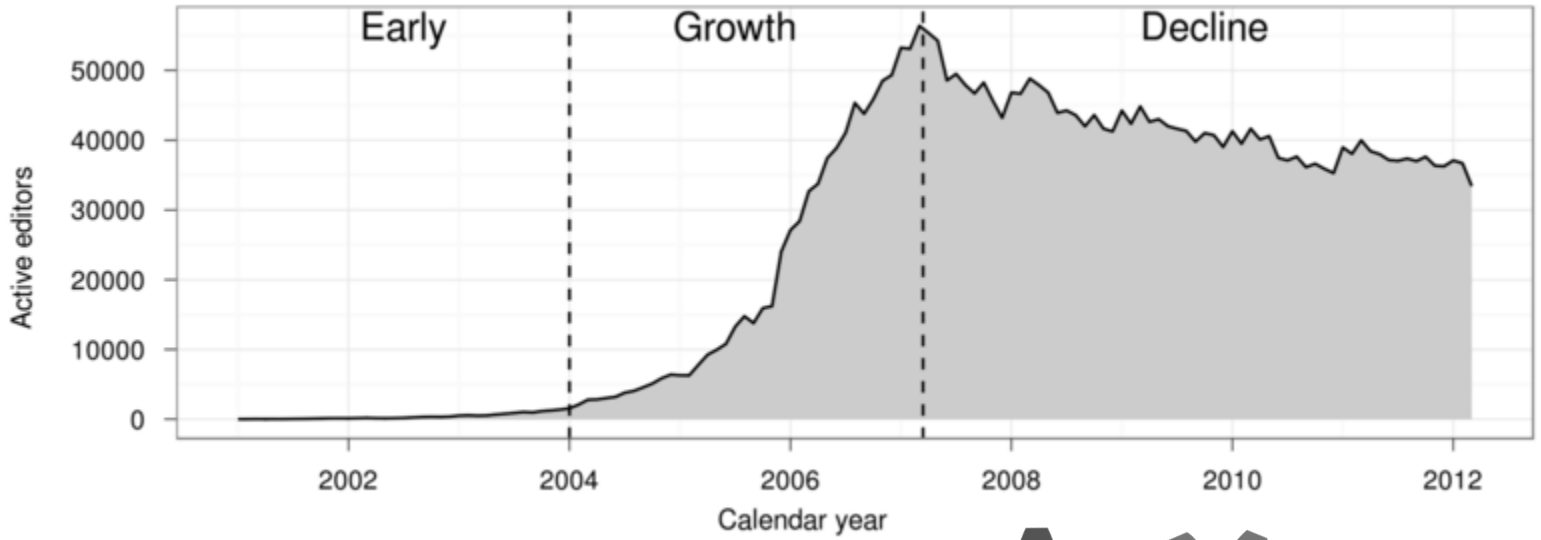
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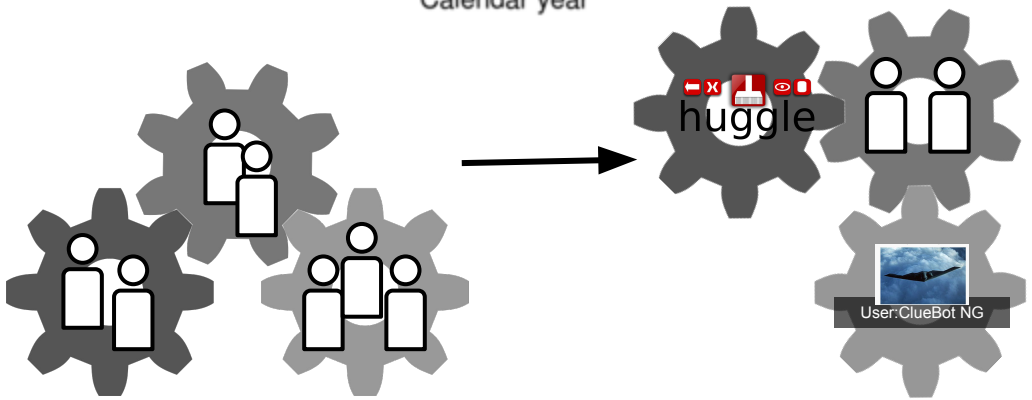
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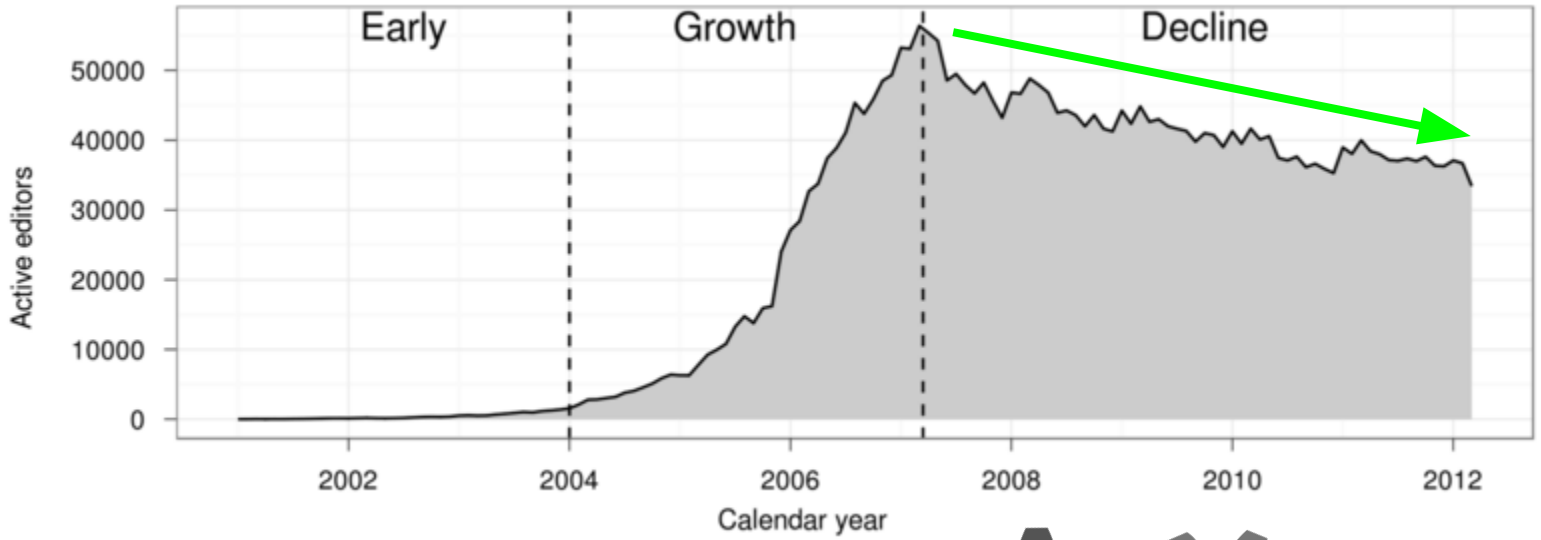
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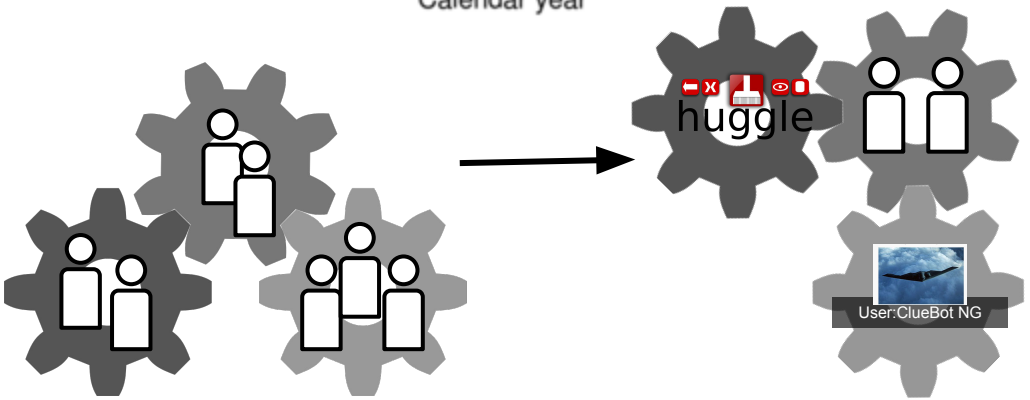
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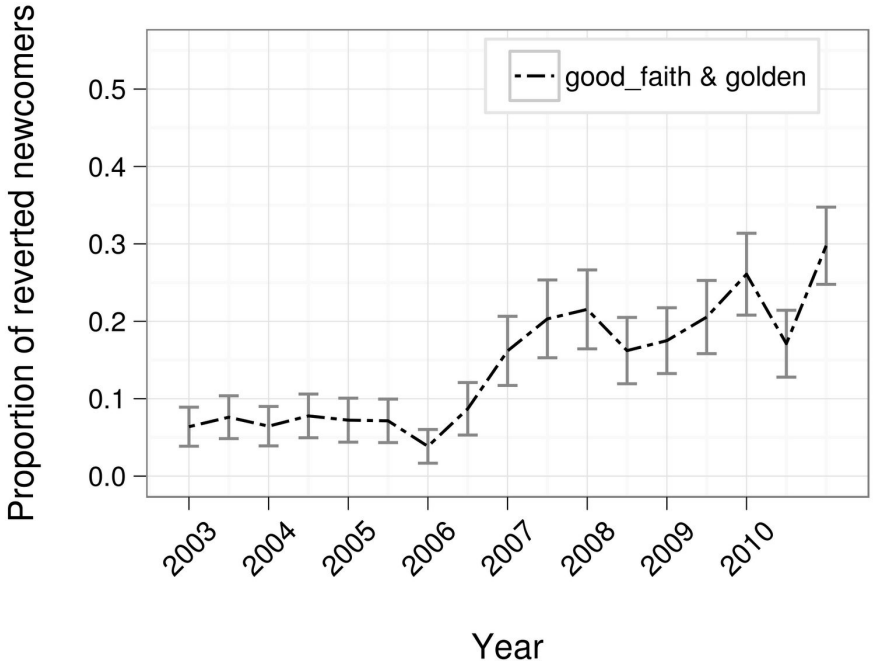
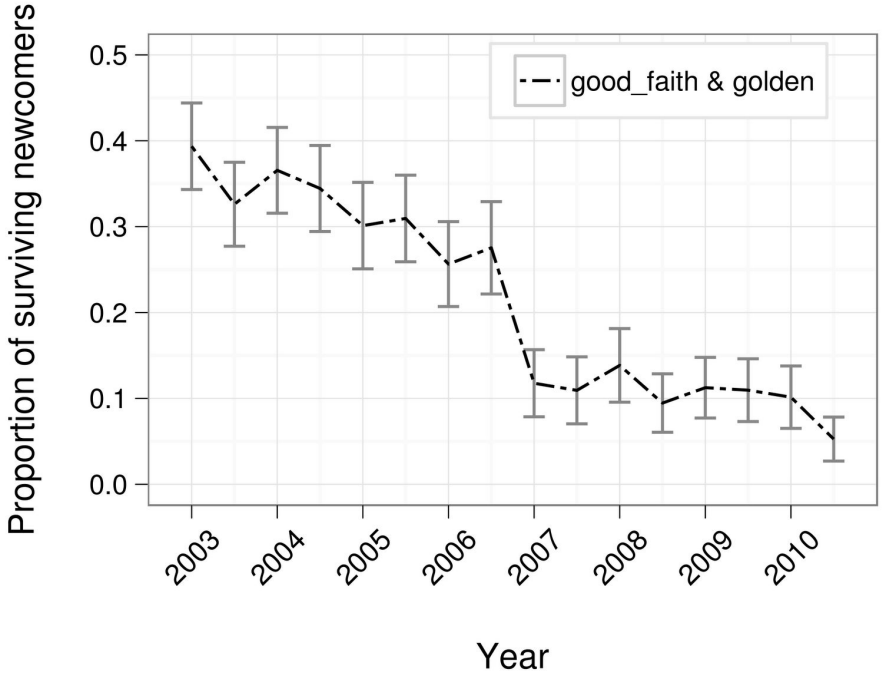
User:ClueBot NG

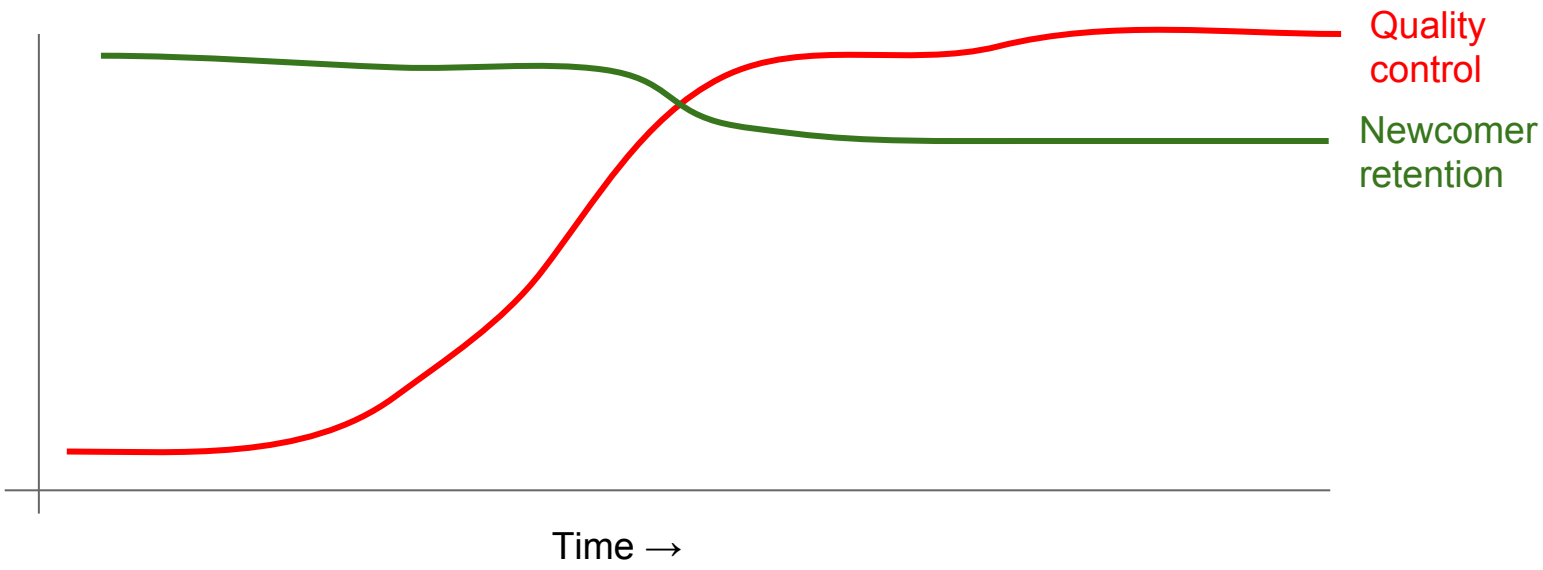
Quality control



Newcomer retention



How do we have both?



3rd party re-use

How long do goats live

All | Images | News | Videos | Maps | More | Settings | Tools

About 77,900,000 results (0.59 seconds)

Goat / Lifespan

15 – 18 years

People also search for

Cattle
18 – 22 years

Sheep
10 – 12 years

Horse
25 – 30 years

Feedback

People also ask

Goat

Animal

The domestic goat or simply goat is a subspecies of C. aegagrus domesticated from the wild goat of Southwest Asia and Eastern Europe. The goat is a member of the animal family Bovidae and the goat—antelope subfamily Caprinae, meaning it is closely related to the sheep. There are over 300 distinct breeds of goat. Wikipedia

Gestation period: 150 days

Mass: 20 – 140 kg (Adult)

Height: 41 – 58 cm (Adult, At Shoulder)

Order: Artiodactyla

Family: Bovidae

Did you know: Official statistics on goat meat and milk greatly underestimate production since many goats are raised for personal family use. encyclopedia.com

How long do goats live

All Images News Videos Maps More Settings Tools

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How long do goats live?

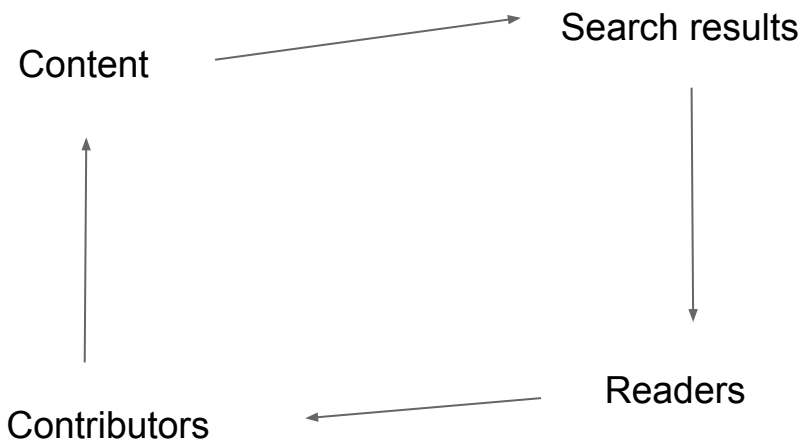
According to Wikipedia, goats can live 15 - 18 years

- Amazing! Wikipedia is *open licensed* for exactly this reason.

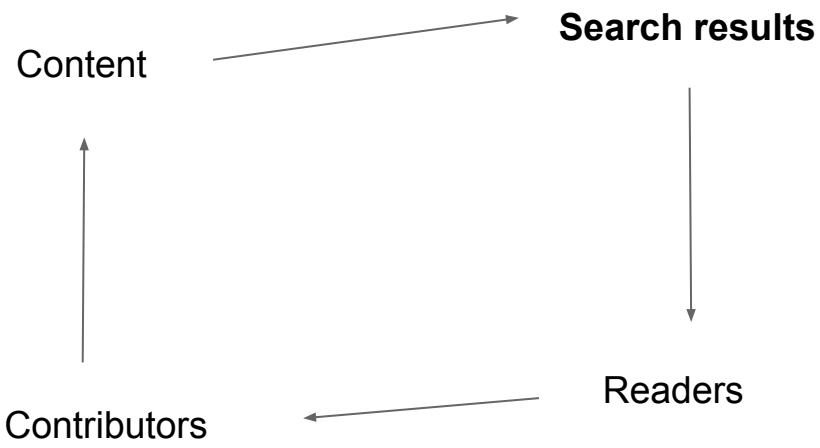
- Amazing! Wikipedia is *open licensed* for exactly this reason.

- But! 2 problems:
  - Ecosystem
  - Tracking usage

Eco system



Eco system



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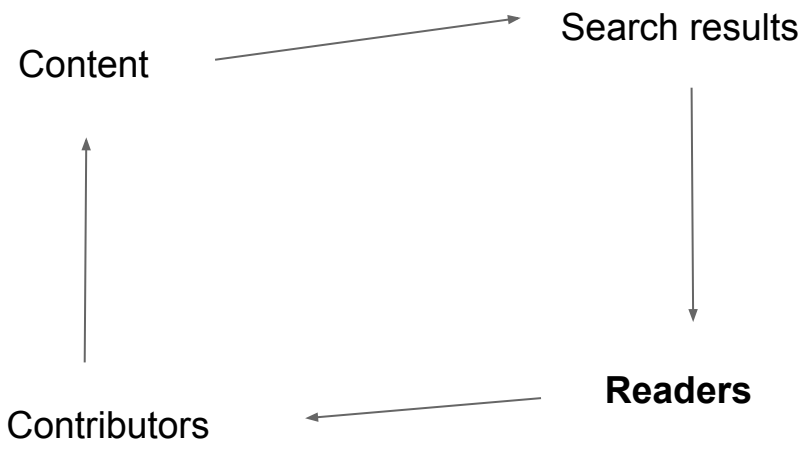

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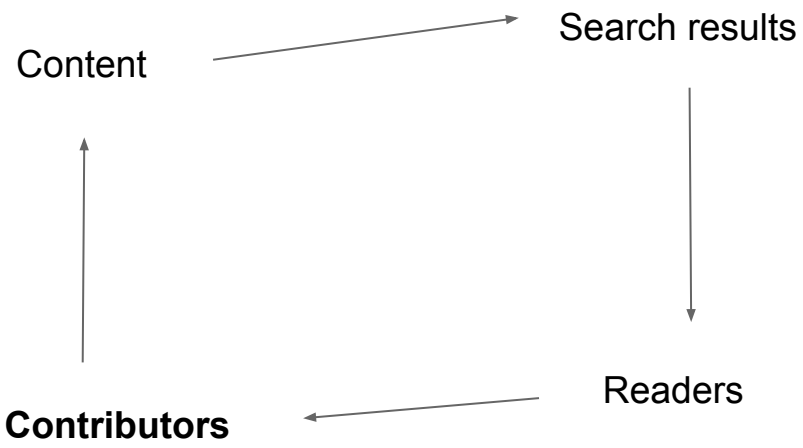

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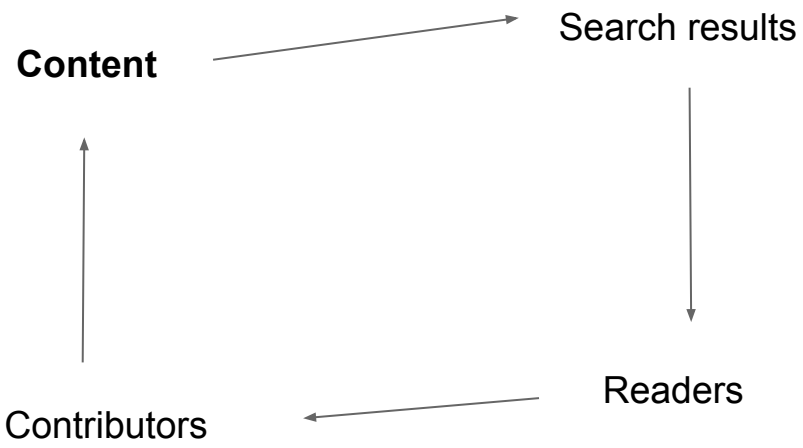

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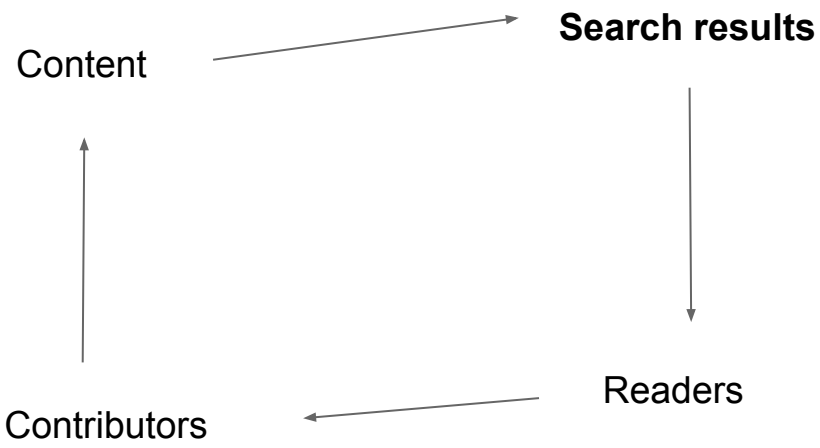
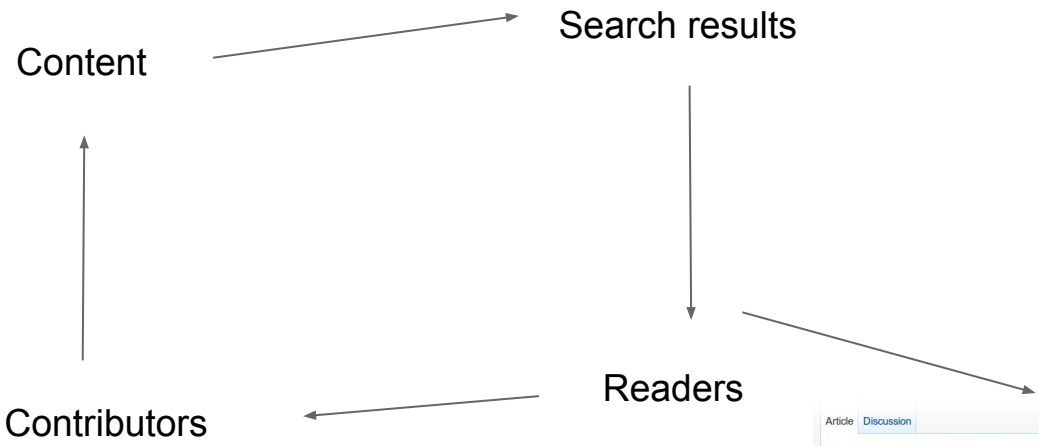


Eco system


Content
Search results
Readers
Contributors

New features
Log in / create account
Article
Discussion
Read
Edit
View history
Search
Please read:
A personal appeal from
Wikipedia founder Jimmy Wales
Fundraising
From Wikipedia, the free encyclopedia
"Contributions" redirects here. For information about the Wikipedia user contributions log, see Help:User contributions.
Fundraising or fund raising (also development) is the process of soliciting and gathering contributions as money or other resources, by requesting donations from individuals, businesses, charitable foundations, or governmental agencies (see also crowd funding). Although fundraising typically refers to efforts to gather money for non-profit organizations, it is sometimes used to refer to the identification and solicitation of investors or other sources of capital for for-profit enterprises.

Eco system

Content → Search results

With the Knowledge panel

- Users are 50% less likely to click a Wikipedia link
- Users are 5X as likely to assume the information *comes from* Google.

McMahon, C., Johnson, I., & Hecht, B. (2017, May). The substantial interdependence of wikipedia and google: A case study on the relationship between peer production communities and information technologies. In *Eleventh International AAAI Conference on Web and Social Media*.

Tracking usage

Views/Day	Quality	Title	Content	Headings	Images	Links	Sources	Tagged with...
37	★★★	Eltham College (talk)	X		X		X	Add sources
19	★★★	Good to See You Again, Alice Cooper (talk)	X	X			X	Add sources
388	★★★	Fender Jazzmaster (talk)	X		X		X	Add sources
18	★★★	School's Out and Other Hits (talk)	X	X	X		X	Add sources
47	★★★	Live at Montreux (Alice Cooper album) (talk)	X	X			X	Add sources
12	★★★	I Am the Future (talk)	X	X			X	Add sources
16,246	★★★	Bob Marley (talk)						Cleanup
1,987	★★★	Eddie Van Halen (talk)					X	Cleanup
468	★★★	Dorian mode (talk)	X				X	Cleanup
187	★★★	Teisco (talk)	X			X	X	Expand
2,174	★★★	Kon-Tiki (talk)	X				X	Expand
15	★★★	Ibanez PGM (talk)	X	X	X	X	X	Expand

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18	★★★	School's Out and Other Hits (talk)	X	X	X		X	Add sources
47	★★★	Live at Montreux (Alice Cooper album) (talk)	X	X			X	Add sources
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468	★★★	Dorian mode (talk)	X				X	Cleanup
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2,174	★★★	Kon-Tiki (talk)	X				X	Expand
15	★★★	Ibanez PGM (talk)	X	X	X	X	X	Expand

Resources

https://upload.wikimedia.org/wikipedia/commons/d/d0/Wikimedia_Public_Research_Resources.pdf

https://quarry.wmflabs.org

https://paws.wmflabs.org

https://ores.wikimedia.org/v3/scores/enwiki/518733419/articlequality

https://github.com/wikimedia-research/iwsc-2017-workshop