# Community, Cooperation, and Conflict in Wikipedia

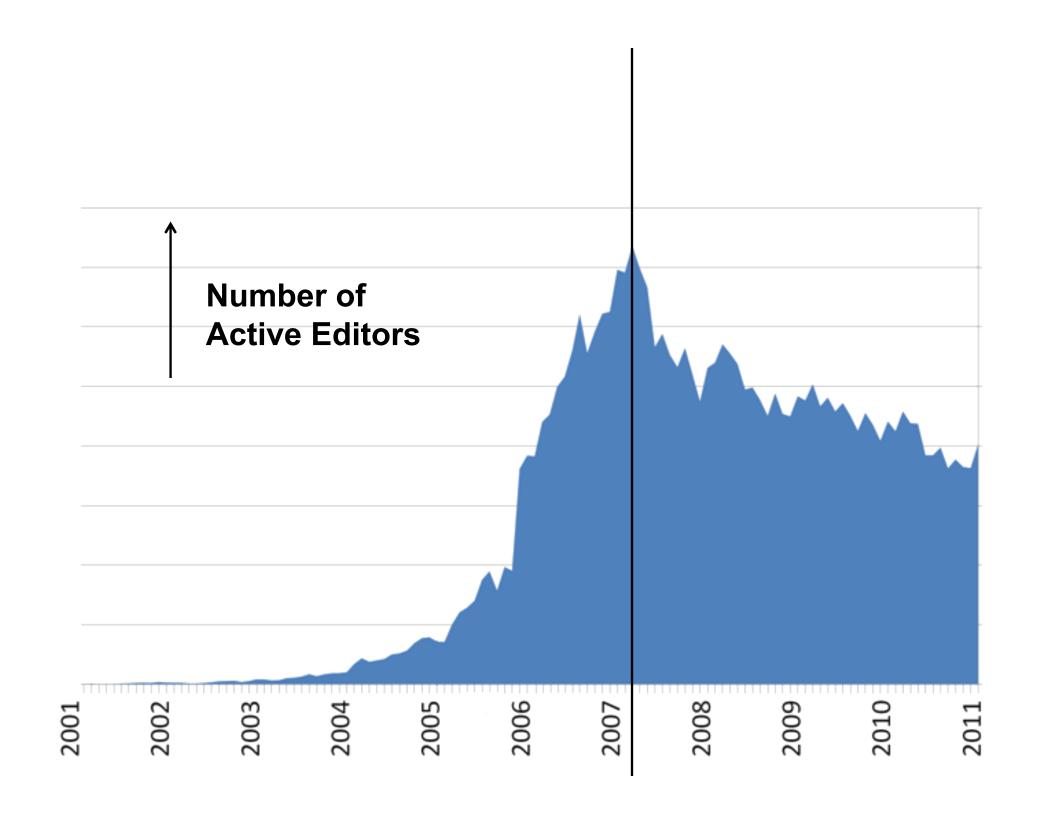
John Riedl

GroupLens Research

University of Minnesota





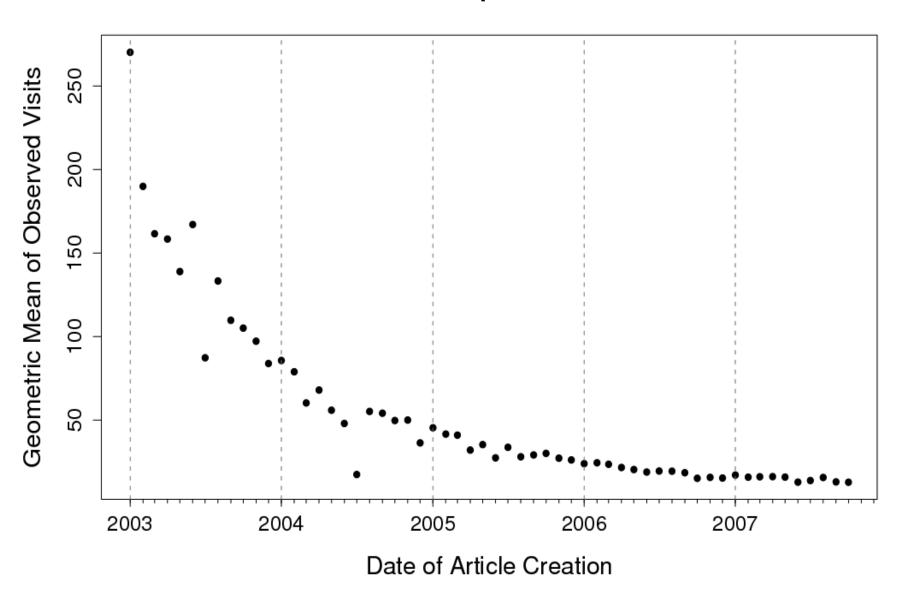


## Vision

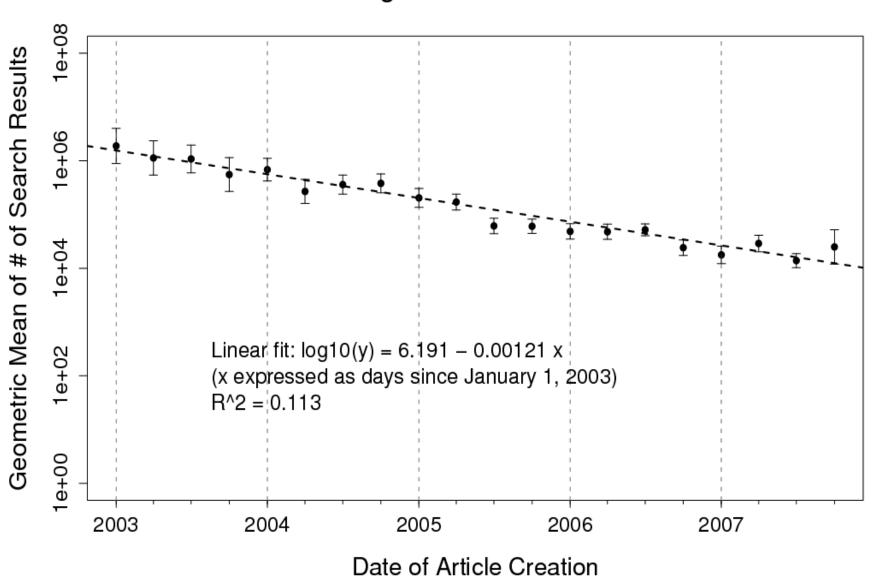
- Community Health
- Humans + Computers
- Synthetic vs. Analytic Research



### **Article Readership vs. Creation Date**



### **Search Engine Test vs. Creation Date**

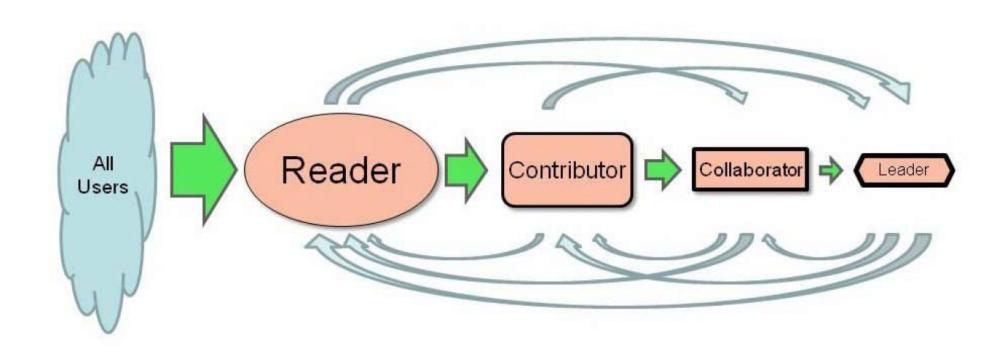




## Community Health

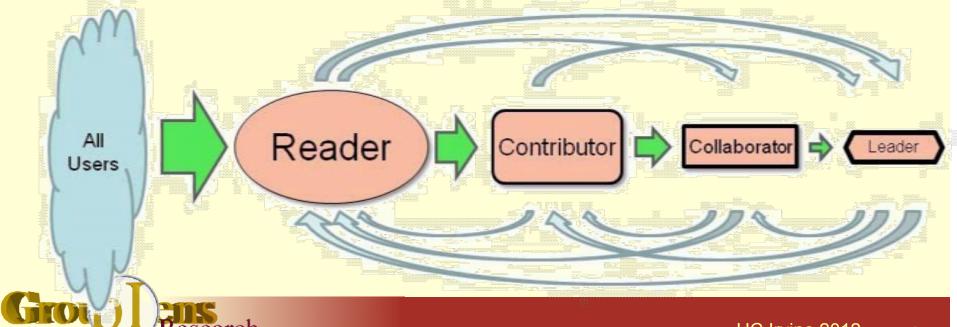
We can tell when a community has failed. Our goal is to know *before* it fails, and to know what to do to prevent failure.







- Reader
- Contributor
- Collaborator
- Leader



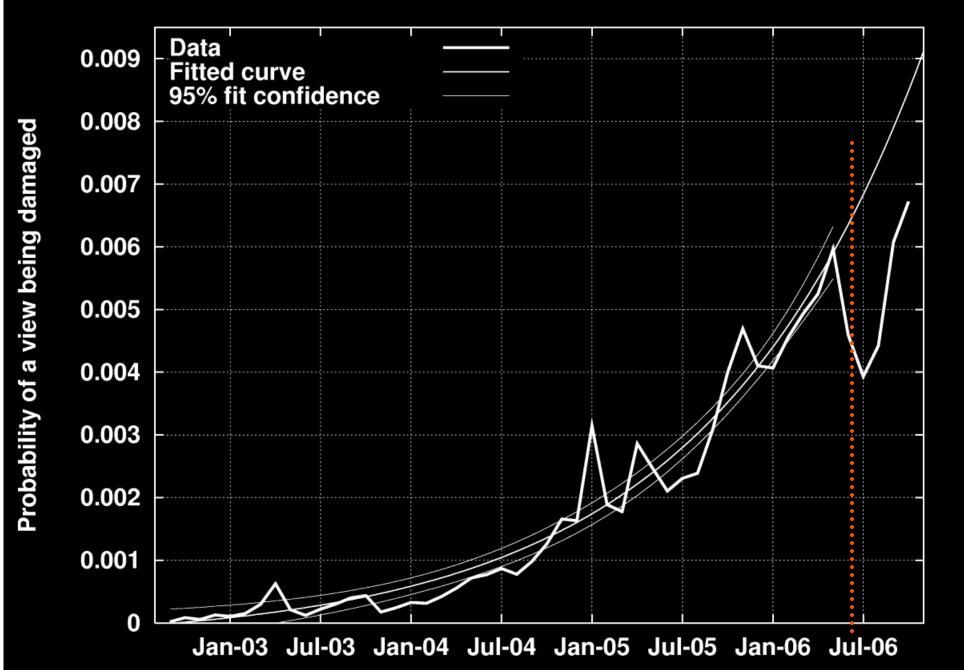
# Creating, Destroying, and Restoring Value in Wikipedia

(Group 2007)

Reid Priedhorsky
Jilin Chen
Shyong (Tony) K. Lam
Katherine Panciera
Loren Terveen
John Riedl









# WP:Clubhouse? An Exploration of Wikipedia's Gender Imbalance

WikiSym 2011

Shyong (Tony) K. LamUniversity of

Minnesota

Anuradha UduwageUniversity of Minnesota

Zhenhua DongNankai University

Shilad Sen

Macalester

College

Pavid R. MusicantCarleton College

oren TerveenUniversity of Minnesota

John RiedlUniversity of Minnesota



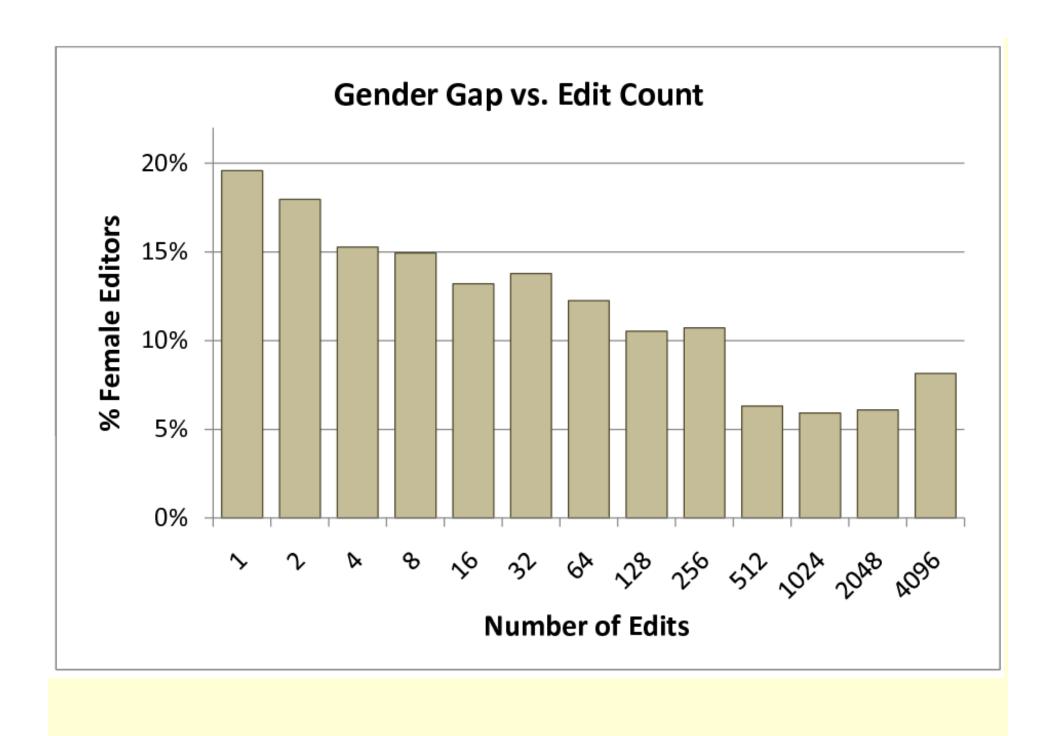
## Gender Gap - Overall

2009 editor cohort - females are...

16% of known-gender editors [1 in 6]

9% of known-gender edits [1 in 11]





## Gender Gap – Historical

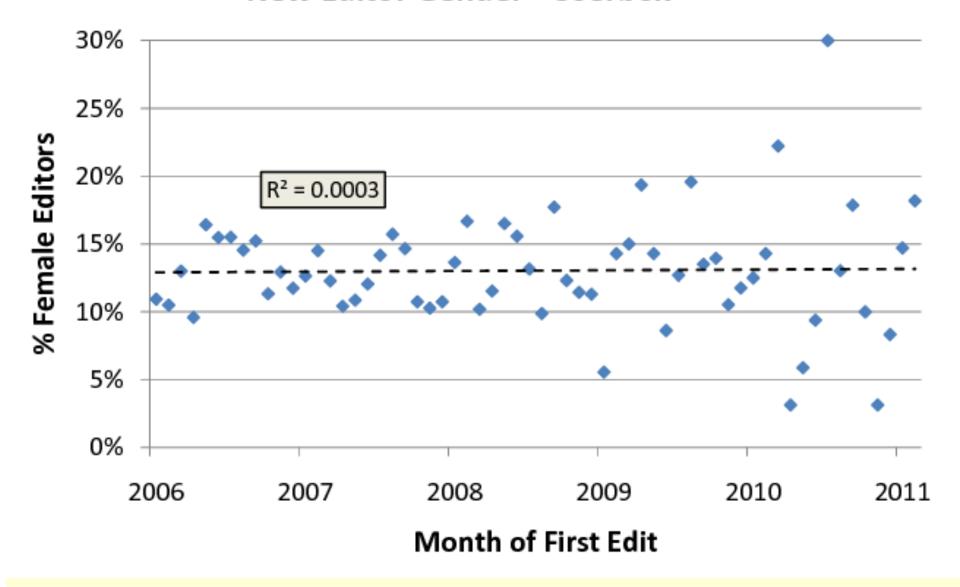
Is Wikipedia's gender gap closing?

Many tech gender gaps are narrowing...
Internet, Smartphones, online games

...and some have reversed... Blogging, Facebook, Twitter

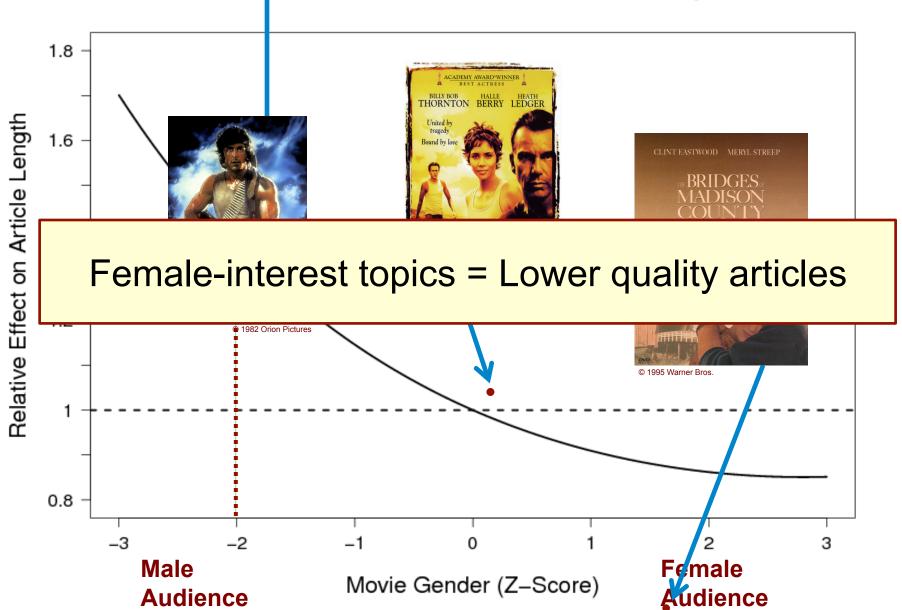


### New Editor Gender - Userbox





### Effect of Movie Gender on Article Length



## Wikimedia Foundation – Vision

"Imagine a world in which every single human being can freely share in the sum of all knowledge. That's our commitment."

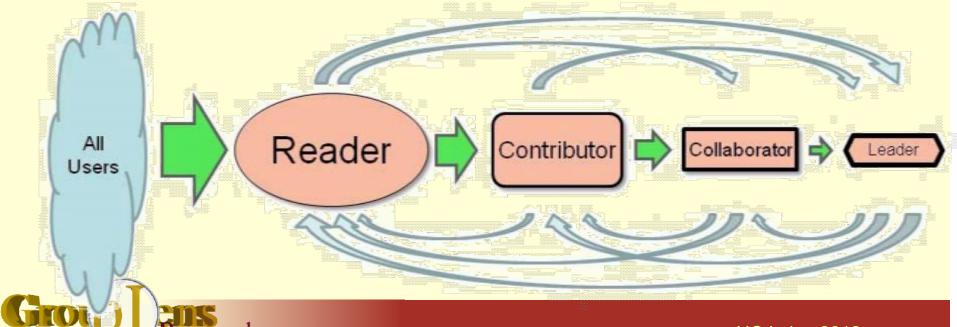


## Collier & Bear, CSCW 2012

- H1: Female editors don't like conflict.
   SUPPORTED
- H2: Female editors have lower confidence. SUPPORTED
- H3: Female contributors prefer to share and collaborate. SUPPORTED
- H4: Female contributors have less time? REVERSED



- Reader
- Contributor
- Collaborator
- Leader

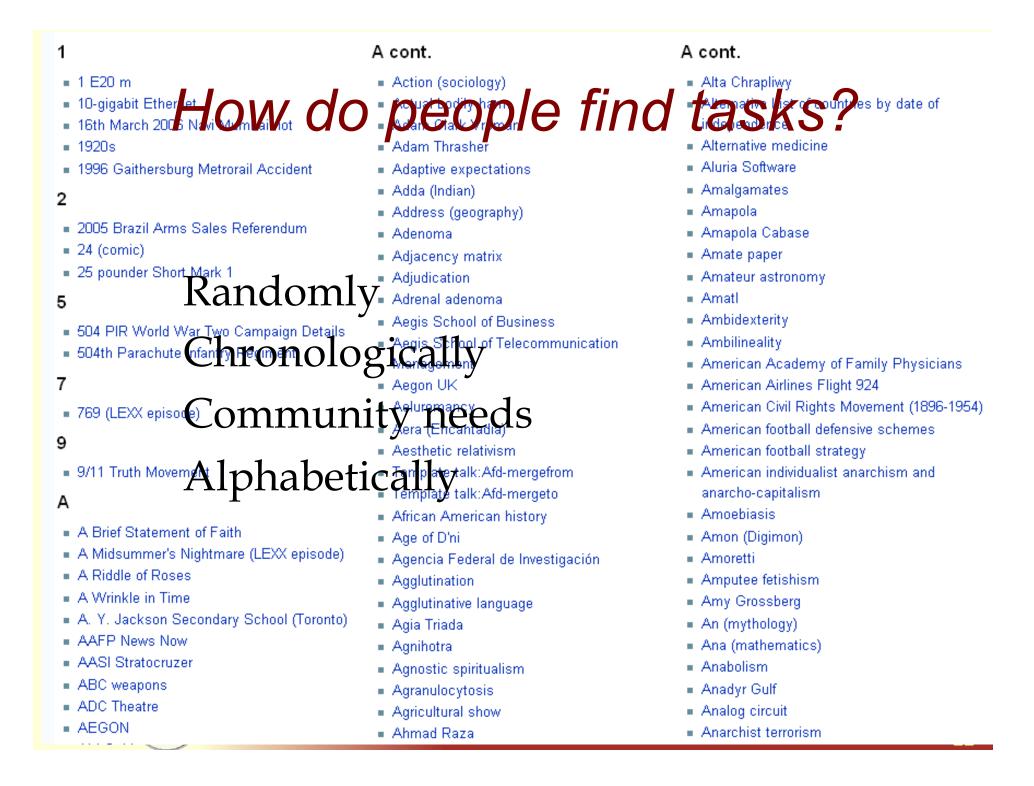


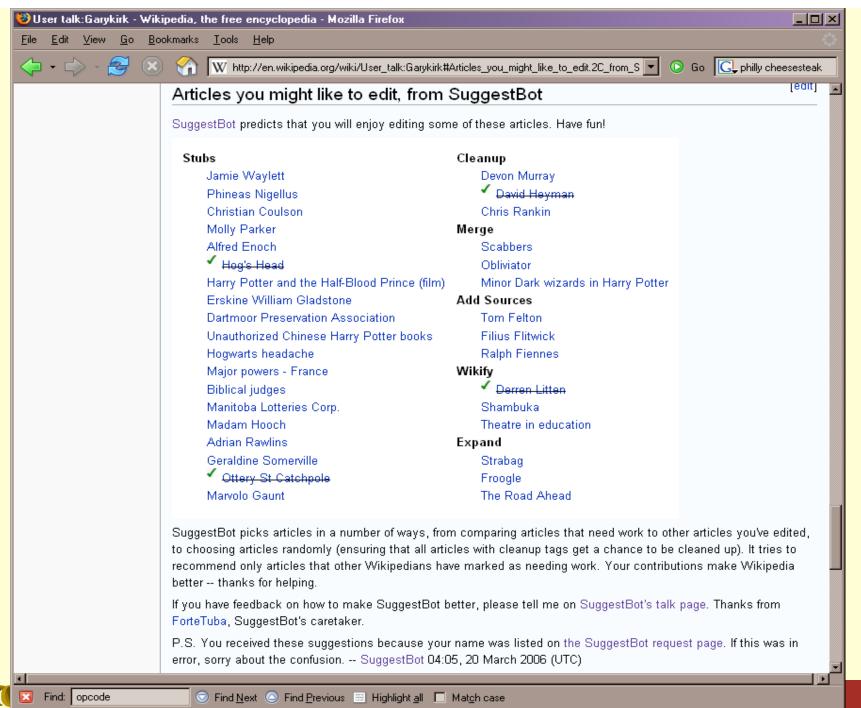
## SuggestBot

Cosley et al., IUI 2007









Done

Adblock

## SuggestBot Results

- Intelligent recommendations 4x more likely to be acted on
- Type of intelligence not as important
- Live on Wikipedia; Join at:
  - o http://en.wikipedia.org/wiki/User:SuggestBot
- SuggestBot 2.0: Balance interest with value



### Articles you might like to edit, from SuggestBot

• <u>SuggestBot</u> predicts that you will enjoy editing some of these articles. Have fun!

#### **Traditional**

#### Stubs

St. Cloud Rail Bridge Raymond E. Baldwin Bridge Boulevard Bridge

#### Readership

#### Stubs



Integral cryptanalysis



#### Quality



★★★ Shirley Holms Halt railway station

★★★ Hart Plain

#### **Both dimensions**

#### Stubs

🖏 ★ 🖈 Scintilla (editing component)



★★★ 14th Airlanding Brigade (United Kingdom)

#### Combined

#### Stubs

💠 💠 💠 Taftan (bread)

🐈 🐈 💎 Rashid Bin Humaid Al Nuaimi

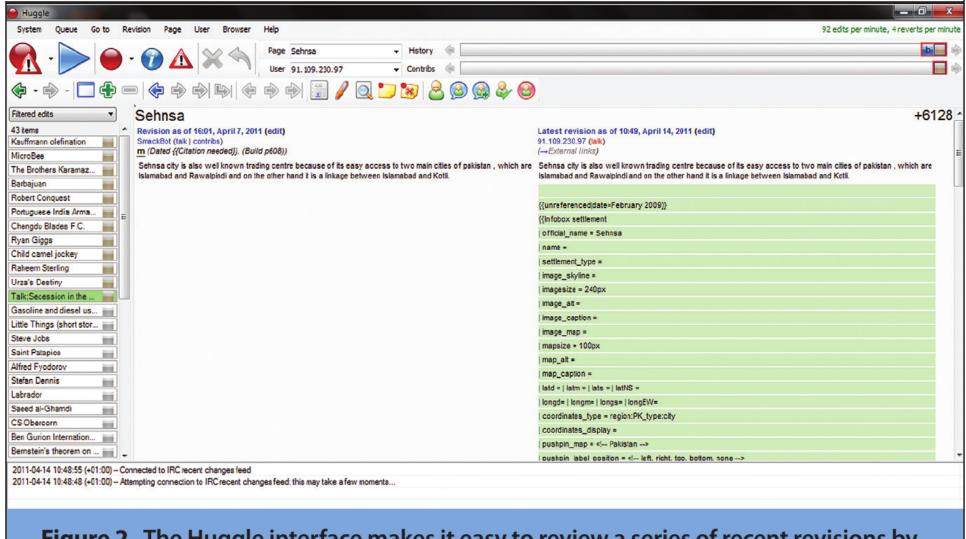
💠 💠 💠 British Gulf International Airlines



## Vision

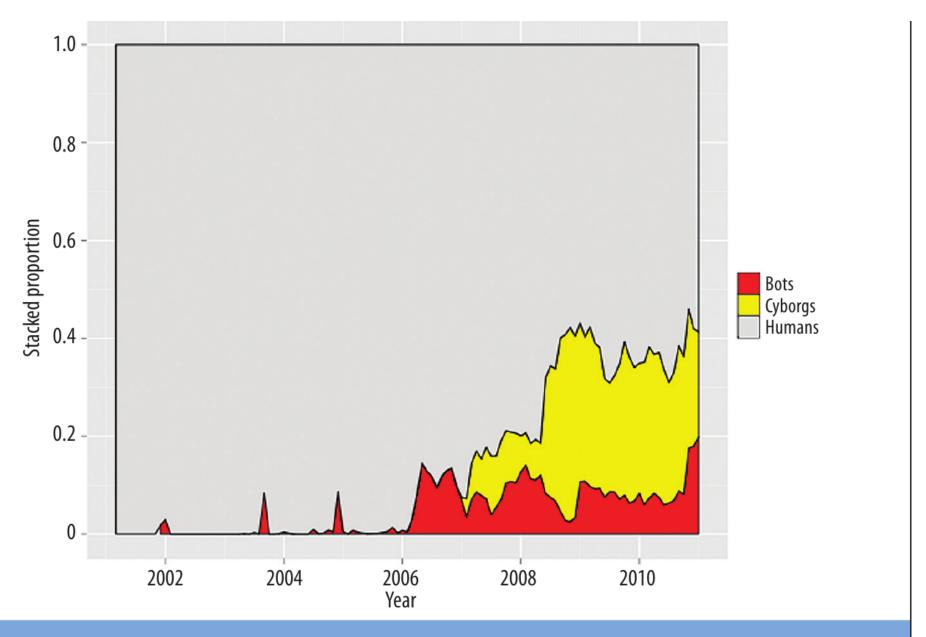
- Community Health
- Humans + Computers
- Synthetic vs. Analytic Research





**Figure 2.** The Huggle interface makes it easy to review a series of recent revisions by filtering them according to the user's preferences.

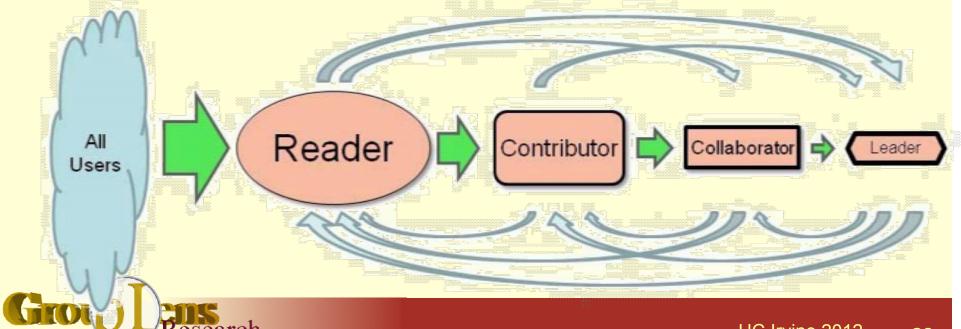




**Figure 1.** Stacked proportion of reverts (rejection of damaging edits) for bots, cyborgs, and human editors on Wikipedia. Bots and cyborgs have been taking over an increasing role in protecting articles from damage since early 2006.

- Reader
- Contributor
- Collaborator

Leader



# He Says, She Says: Conflict and Coordination in Wikipedia

Aniket Kittur, Bongwon Suh, Bryan Pendleton, Ed Chi

CHI 2008



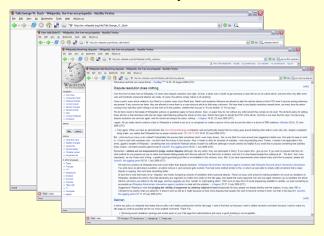


## Types of work

#### Article



Talk, user, procedure



**Direct work** 

Immediately consumable

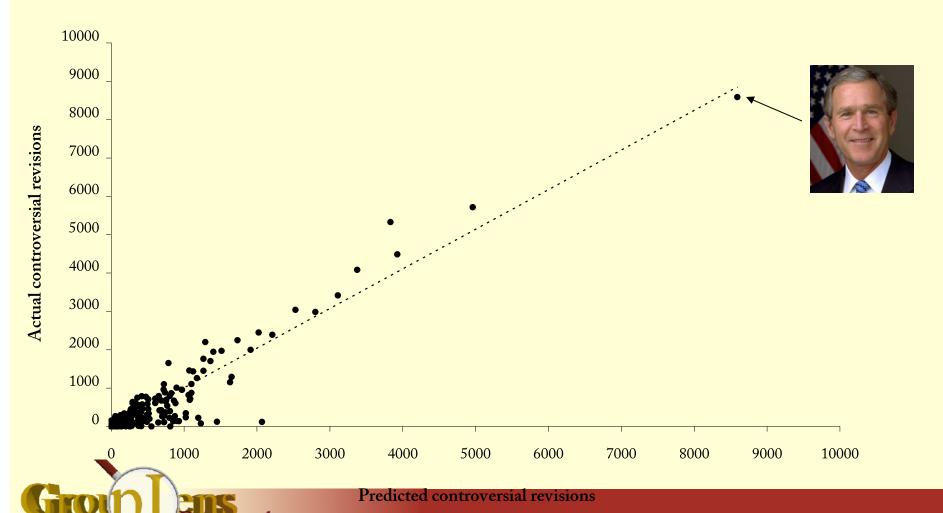
**Indirect work** 

Coordination, conflict





# Machine Learning: Predicting Conflict



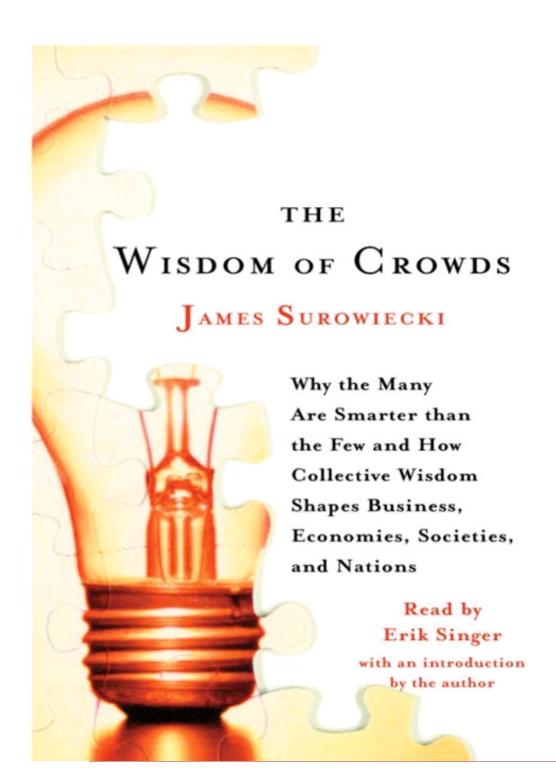
# The Effects of Diversity on Group Productivity and Member Withdrawal in Online Volunteer Groups

Jilin Chen Yuqing Ren John Riedl

CHI 2010







"A diverse collection of independentlydeciding individuals is likely to make certain types of decisions and predictions better than individuals or even experts."



## Newcomers vs. Old-timers

"This user is sick of the bullshit on wikipedia. It is my belief that wikipedia ... is increasingly becoming a place for a small group that is in power to force their views upon the world."



# What is Diversity?

- Difference among individuals on:
  - o Demographic attributes: age, gender, race
  - Informational attributes: tenure, education level, knowledge and interest areas
  - Value attributes: personality, belief



# What is Diversity?

- Difference among individuals on:
  - o Demographic attributes: age, gender, race
  - Informational attributes: tenure, education level, knowledge and interest areas
  - Value attributes: personality, belief



#### Wikipedia:WikiProject Philosophy

From Wikipedia, the free encyclopedia

"WP:WPP" redirects here. For WikiProject Palestine, see WP:PPAL. For WikiProject Palaeontology, see WP:PAL.

Participants Templates Assessment Categories Main Discussion To do Showcase

ARTICLE | CATEGORY | GLOSSARY | INDEX | OUTLINE | PORTAL



Rank	Page	Views	Views (per day average) ▼
1	Albert Einstein	561635	18117
2	Martin Luther King, Jr.	481115	15519
3	Leonardo da Vinci	454987	14677
4	Love	438439	14143
5	Socialism	403647	13020

#### Getting started

· Requests for comment watch 🚱

· Requests for peer review watch @

Main	Discussion	Participants	Templates	Assessment	Categories	To do	Showcase	
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Please add your entry alphabetically by user name (rather than surname). Use the format {{user|yourname}} to automatically add links to your contributions and talk pages.

In addition, if you add {{User WP Philosophy}} to your user page, or any of the other philosophy user boxes, it will add you to Category:WikiProject Philosophy members.

The users in **bold** on this page were active as of April 2006. For past or inactive members, please see this page.

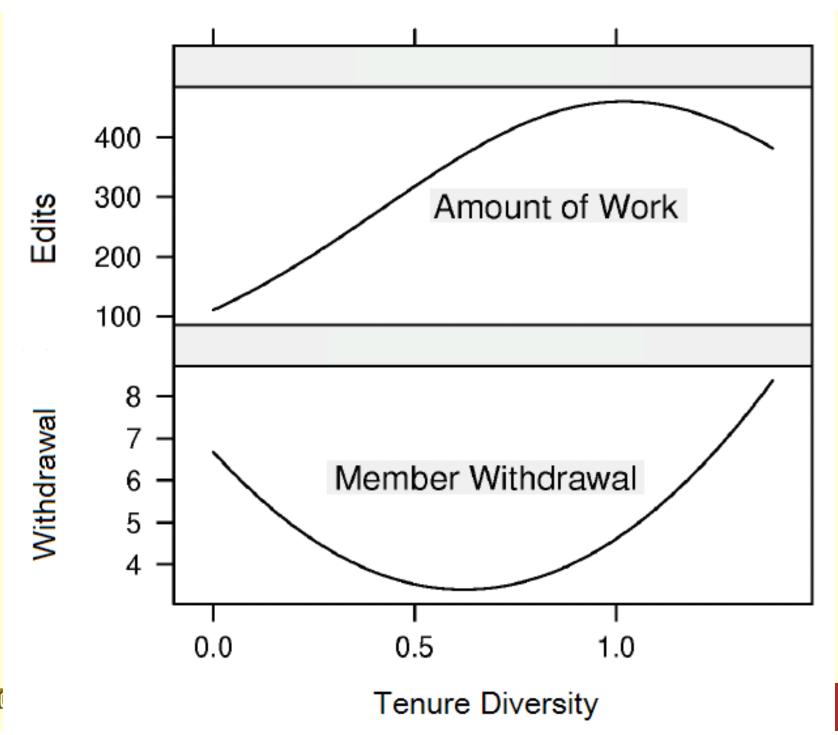
#### Members

- 1.618O (talk · contribs) I'm only an amateur philosopher but I enjoy the topic, especially metaphysics
- Aidis (talk · contribs) Interests: sophism, language, general semantics. B.A. in Philosophy
- Alcmaeonid (talk · contribs) Interests: history of philosophy, esp. the pre-Socratics and the German line of Kant->Schopenhauer->Nietzsche.
- AmaranthineNight (talk · contribs) Interests: Aesthetics (My Knowledge here is VERY limited), Existentialism, and Political Philosophy. Credentials: Undergrad student with a double major in Computer Science and Philosophy.
- Anarchia (talk · contribs) Primary interests: Practical reason and ethics. PhD student and part-time lecturer.
- Arash Eb (talk · contribs) A Very amateur philosopher, a Student and interested in analytic philosophy.
- Baddog144 (talk · contribs) Interests: Mostly metaphysics, and history of philosophy
- Baidurya-rousseau (talk · contribs) Postmodernism, Deconstruction, Existentialism, Nietzsche, Derrida, Giles
   Deleuze, Alain Badieu, Marx, Gayatri Chakravorty Spivack, Marginality, Otherness, Luis Althusser.
- Banno (talk · contribs)
- Beala (talk · contribs) Phil undergrad at Uni of Colorado at Boulder. Trying to help where I can.
- Belicker (talk · contribs) BA in Philosophy, concentration in Aesthetics
- Benapollo (talk · contribs) Recent U.S. college graduate with a B.A. in Philosophy. Current Law student.

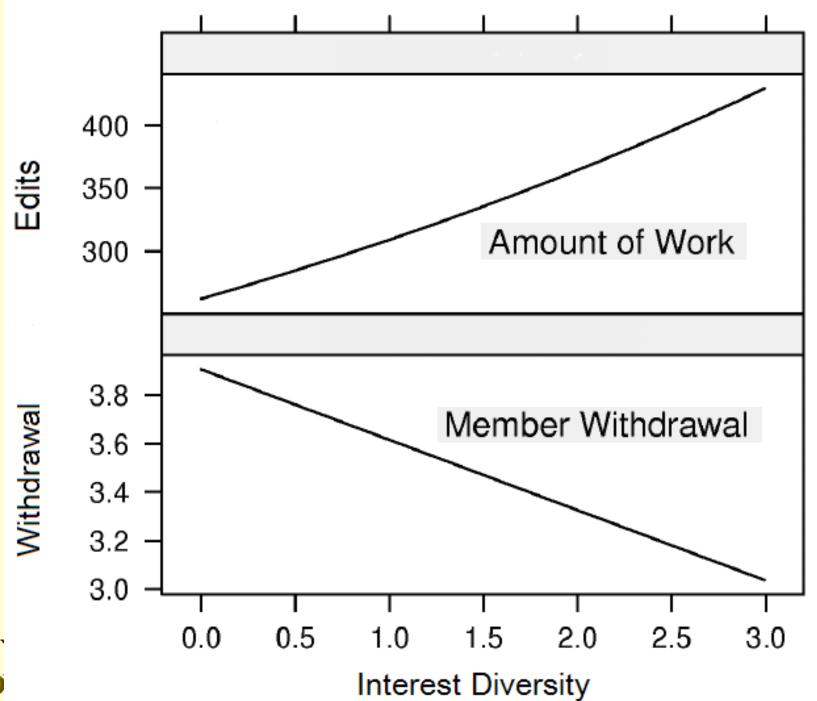
# Analysis Approach

- Hierarchical Linear Model
  - Project quarters within the same project are correlated
- Incremental Approach
  - Start with a null model, and increase its complexity incrementally
  - Ensure that the predictors in the model are useful











#### Future Research

- Direct Manipulation of Group Diversity
  - Is it more beneficial to introduce a newcomer or an old-timer to a particular project?
- Examination of Group Processes
  - O Do members yell at each other more often when the group is too diverse?



# Don't bite the newbies: How Reverts affect the Quantity and Quality of Wikipedia Work

Aaron Halfaker, Niki Kittur and John Riedl WikiSym 2011







Article Discussion

Main page
Contents
Featured content
Current events
Random article
Donate to Wikipedia

▼ Interaction
 Help
 About Wikipedia
 Community portal
 Recent changes
 Contact Wikipedia

▶ Toolbox

Revision h	nistory of WikiSym
From Wikipedia, the f View logs for this pag	ree encyclopedia
- Browse history -	
From year (and ea	arlier): Tag filter:  Deleted only Go
For more help, see I External tools: Revis	ed below, click on its date to view it. Help:Page history and Help:Edit summary. sion history statistics & · Contributors & · Revision history search & · & · Page view statistics &
m = minor edit, →	m current version, (prev) = difference from preceding version, = section edit, ← = automatic edit summary ew (newer 50   older 50) (20   50   100   250   500) revisions
• (cur   prev)	21:21, 17 February 2011 Fkfe (talk   contribs) m (6,746 bytes) (→Overview) undo)  10:22, 17 February 2011 John Vandenberg (talk   contribs) (6,707 bytes) (→Local   "Undo" preview)  "Undo" preview
(cur   prev)      add links to prod	01:38, 17 February 2011 John Vandenberg (talk   contribs) (6,700 bytes) (→Overview:
• (cur   prev) ◎ (undo)	16:27, 16 February 2011 Rich Farmbrough (talk   contribs) (6,495 bytes) (Copyedit.)
• (cur   prev) ◎ (undo)	04:45, 10 January 2011 Fkfe (talk   contribs) (6,463 bytes) (→Overview: added 2011)
• (cur   prev) ◎ (undo)	04:13, 10 January 2011 Fkfe (talk   contribs) (6,346 bytes) (update of conference list)
• (cur   prev)	03:17, 10 January 2011 Fkfe (talk   contribs) (5,524 bytes) (added infobox) (undo)
(cur   prev)      links: Proceeding	09:47, 2 September 2010 Jodi.a.schneider (talk   contribs) (5,289 bytes) (→External gs at ACM Digital Library) (undo)

Read Edit View history

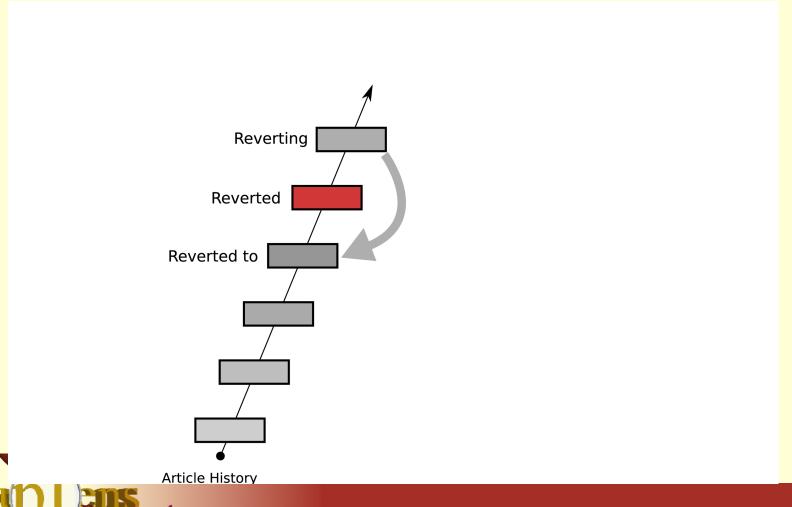
Search

#### Research Question:

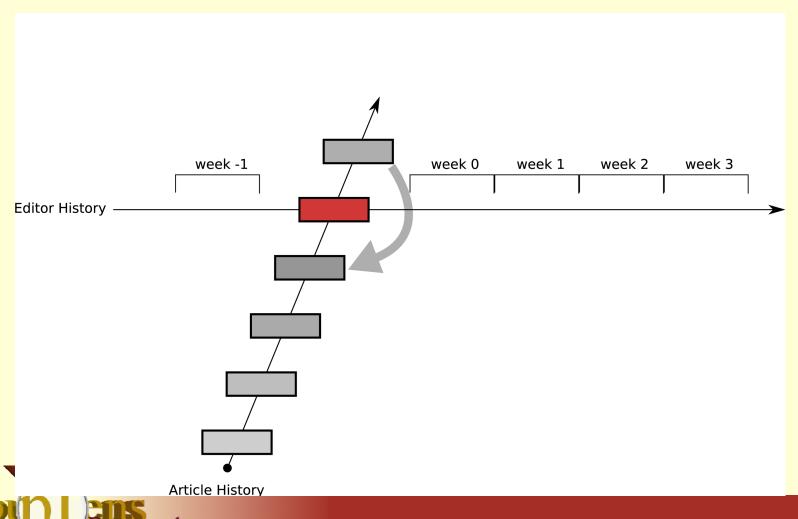
What effect do reverts have on editor activity?



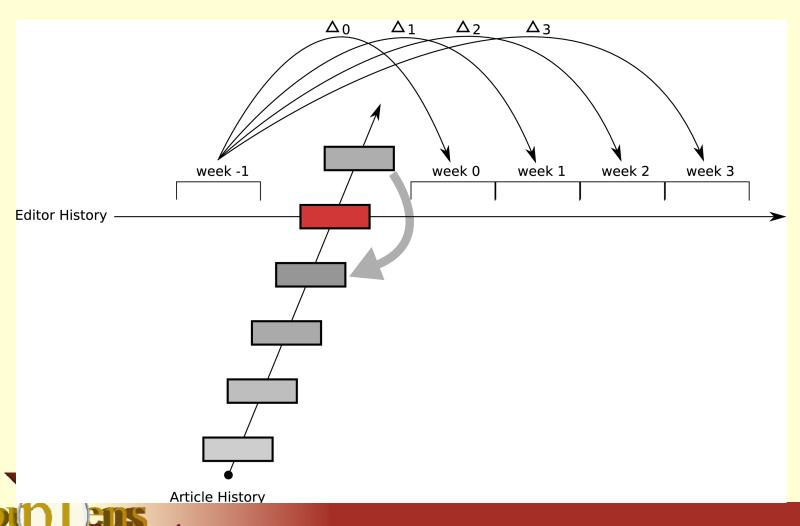
# Measuring Changes: Activity Deltas



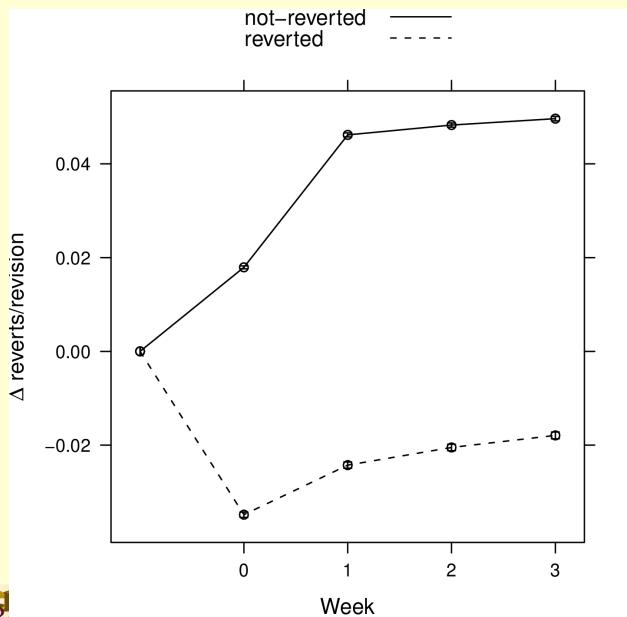
# Measuring Changes: Activity Deltas



# Measuring Changes: Activity Deltas



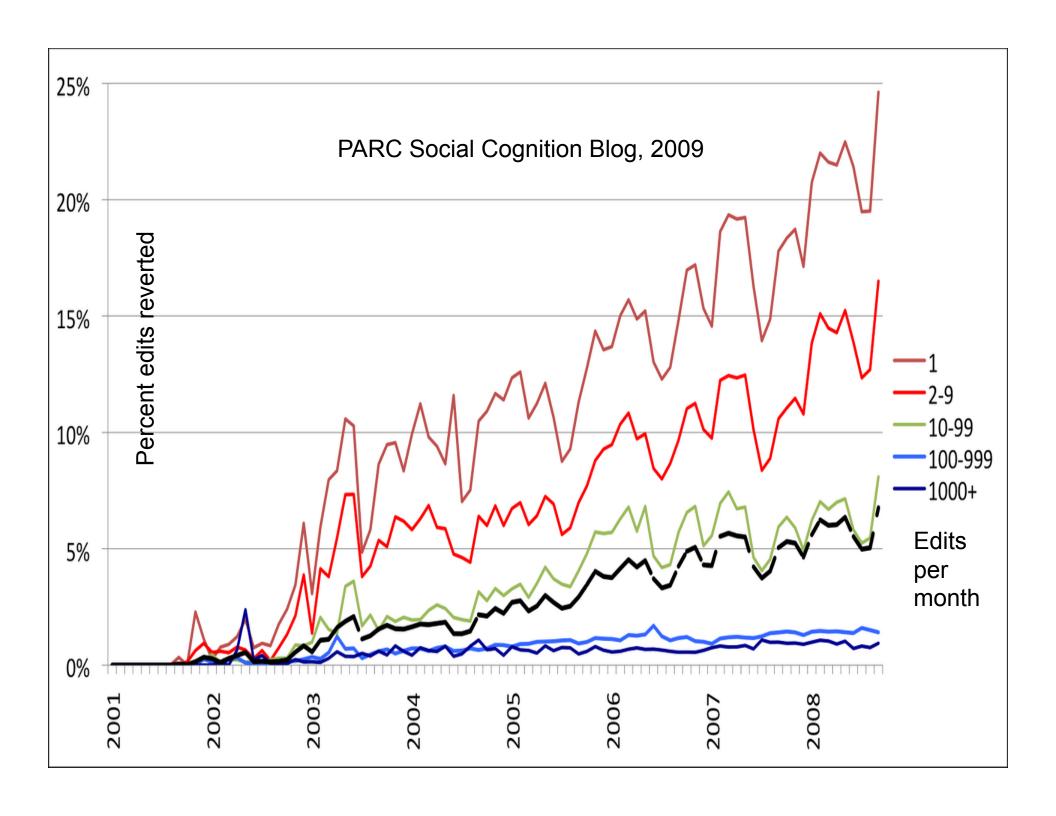
# Effect on Quality of work



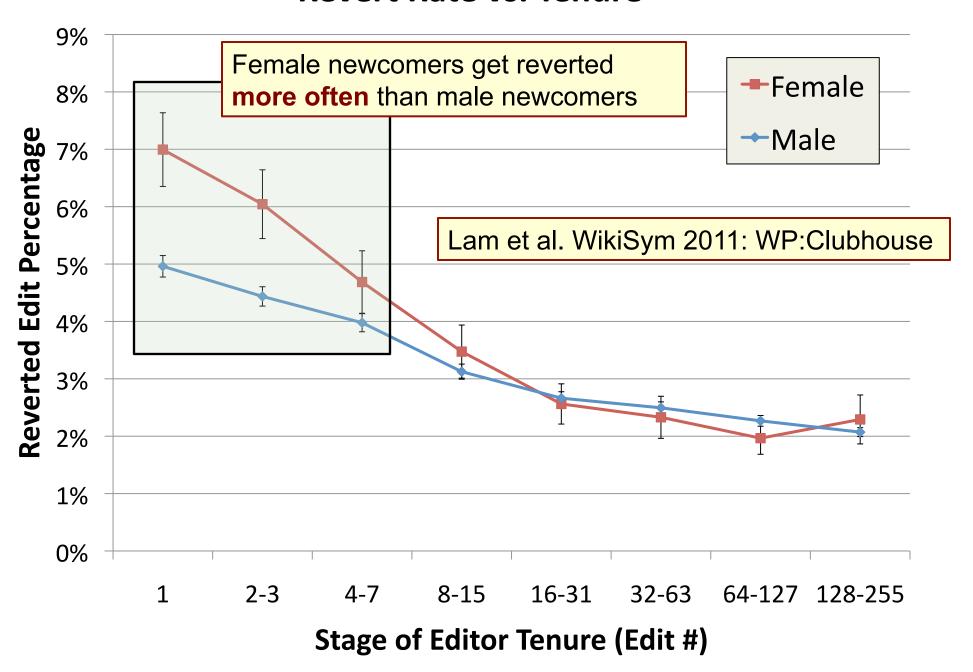


## Summary

- Being reverted predicts:
  - Decreases in quantity of work
  - Increase in quality of work
  - Overall increase in productivity!
- Curmudgeons
  - Being reverted by an old-timer intensifies the decrease in quantity, no change to quality
  - Highly experienced editors should be kept away from newbies.



#### **Revert Rate vs. Tenure**



#### NICE:

#### Social Translucence through UI Intervention

Aaron Halfaker, Bryan Song, D. Alex Stuart, Niki Kittur, John Riedl

WikiSym 2011





#### NICE

- User Interface mod for English Wikipedia
  - Installed by the editor performing the revert
  - Helps an editor revert gently
- Live and available in English Wikipedia
  - http://en.wikipedia.org/wiki/User:EpochFail/NICE



# Reverting Normally

Formed in 1903 as a result of the amalgamation of three clubs from Aberdeen, they rarely challenged for honours until the 1950s, when they won each of the major Scottish trophies under manager [[Dave Halliday]]. This level of success was surpassed in the

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Edit summary (Briefly describe the changes you have made)

Undid revision 451916878 by [[Special:Contributions/WhiskyGolf|WhiskyGolf]] ([[User talk:Whisk

■ This is a minor edit (what's this?)
■ Watch this page

Save page Show preview Show changes Cancel | Editing help (opens in new window)

If you do not want your writing to be edited, used, and redistributed at will, then do not submit it here. All text that you did not write yourself, except brief excerpts, must be available under terms consistent with Wikipedia's Terms of Use before you submit it.

Insert -- '' ""  $^{\circ}$  "  $^{\prime}$   $\approx$   $\neq$   $\leq$   $\geq$   $\pm$  -  $\times$   $\div$   $\sqrt{\leftarrow}$   $\rightarrow$   $\cdot$   $\S$  Sign your posts on talk pages:  $\sim\sim\sim$  Cite your sources: <ref></ref>



# Reverting NICE-ly

Formed in 1903 as a result of the amalgamation of three clubs from Aberdeen, they rarely challenged for honours until the 1950s, when they won each of the major Scottish trophies under manager [[Dave Halliday]]. This level of success was surpassed in the **Note:** You are reverting a new editor. Don't bite. Newbie Analysis suggests that reverting this editor is likely to discourage them from making future Warn contributions. Be Very Nice Normal The form below will allow you to both save your changes to Aberdeen F.C. and post a brief message to WhiskyGolf's talk page explaining the revert. This is your opportunity to help a new user learn the ropes. Message header (This will be posted on WhiskyGolf's talk page) Edit summary (Briefly describe the changes you have made) Message Reverted your revision {{diff2|451916878}} to [[Ab Undid revision 451916878 by [[Special:Contributions/W] Box Explanation (Consider explaining the appropriate Wikipedia Policy) This is a minor edit (what's this?)
Watch this page Save page Show preview Show changes Cancel | Editing help (opens in new window)



## Field Experiment

- Broadcast to forums & mailing lists used by Wikipedians
  - 49 reverting editors
    - Message Box
    - Newbie Warning
    - Message Box + Newbie Warning
    - Control
  - 487 reverted editors



#### Results

- Message Box (easy communication)
  - Newbies: (-) Quality (Sigh!)
  - Non-newbies:
    - (+) Project pages, (+) Communication (+) Quality
- Newbie Warning (social awareness)
  - Newbies: (+) Article work
  - Non-newbies: (+) Quality

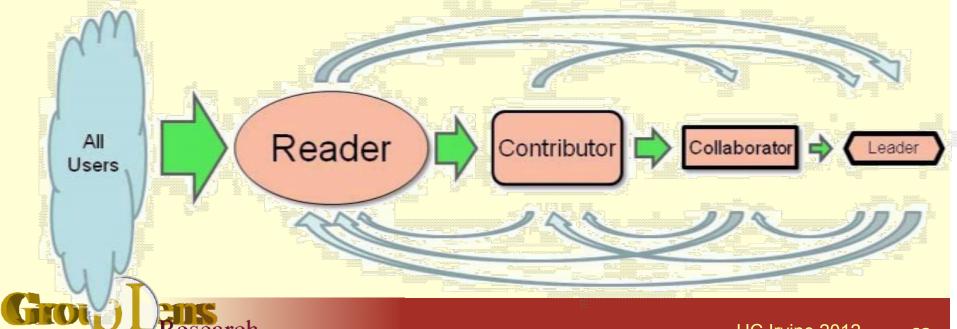


#### Vision

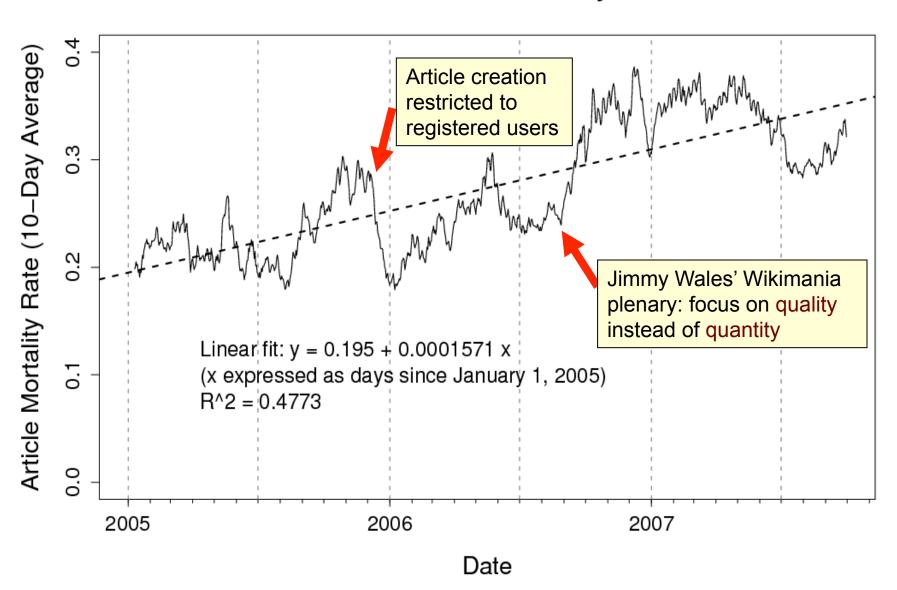
- Community Health
- Humans + Computers
- Synthetic vs. Analytic Research



- Reader
- Contributor
- Collaborator
- Leader



#### **Estimated Article Mortality Rate**



#### Female Leaders

 Females who become Wikipedian are much more likely to become admins



# Reporters in Captivity

- "A journalist is someone who is on no side and a friend of everybody."
- Rohde captured by Taliban, Nov 2008
- Times gets 7 months news embargo
- Wales says "mainstream media did not report", so Wikipedia could embargo
- Christian Science Monitor not mentioned
  - though Rohde won Pulitzer there
- Rohde escapes, June 2009

# The Effects of Group Composition on Decision Quality in a Social Production Community

Shyong (Tony) K. Lam Jawed Karim John Riedl

University of Minnesota Stanford University



**GROUP 2010** 



## Wikipedia Article Deletions

 About 30% of created articles are deleted

Most deletions are uncontroversial

 Disagreements resolved via decision process Articles for Deletion (AfD)



#### Wikipedia: Articles for deletion/Lighthouses in Spain

From Wikipedia, the free encyclopedia

< Wikipedia:Articles for deletion

deletion of the article below. Please do not modify it. Subsequent AfD Deault (Keep or Delete) article's talk page or in a deletion review). No further edits AfD Nomination voie, but it isn't one [edit] Wikipedians call these "!votes" omy listeral!!! 11 Erm. Sorry. Wikipedia is not an indiscriminate list of information. -- Merope 17:42, 20 June 2007 (UTC) Delete Category is there already, no need for a list. Kwsn(Nil) 17:51, 20 June 2007 (UTC) Delete - Per Klysn. Why do we need two pages to do the work of one?--C.Logan 18:00, 20 June 2007 (UTC) quess most of them are listcruft Discussion and debate ated--many of the lighthouses on the list will never have stand-alone <del>o a rist. Also righthouses</del> are prominent geographic landmarks, important in both marine navigation, and human culture. Each one must be unique for identification, and the unique characteristics are often associated with the adjacent settlements, Dhaluza 00:56, 21 June 2007 (UTC) Keep a perfect example of a list that does what a category cannot, show articles that are not yet created. --Dhartung | Talk 04:38, 21 June 2007 (UTC) • Comment III give you that one, but how can the lighthouses be verified? That's a big concern of mine. Kwsn(Nil) 17:21, 22 June 2007 (UTC) map. We don't delete articles because you can't verify it without getting out of your chair. Dhaluza 12:01, 28 June 2007 Look on a (UTC) has been included in the list of Spain-related deletions. -- John Vandenberg 09:16, 21 June 2007 (UTC) Note: This debate Weak keep, nce we're using lists on WP, this one serves its purpose. -- Steve Hart 14:55, 25 June 2007 (UTC) Keep Lighthouses are important features in ocean navigation, and therefore important geographical landmarks, often receiving a pretty ark on maps. Sjakkalle (Checkl) 10:48, 28 June 2007 (UTC)

# Measuring Decision Quality

Computing a believable quality metric is hard Lots of Wikipedia policies

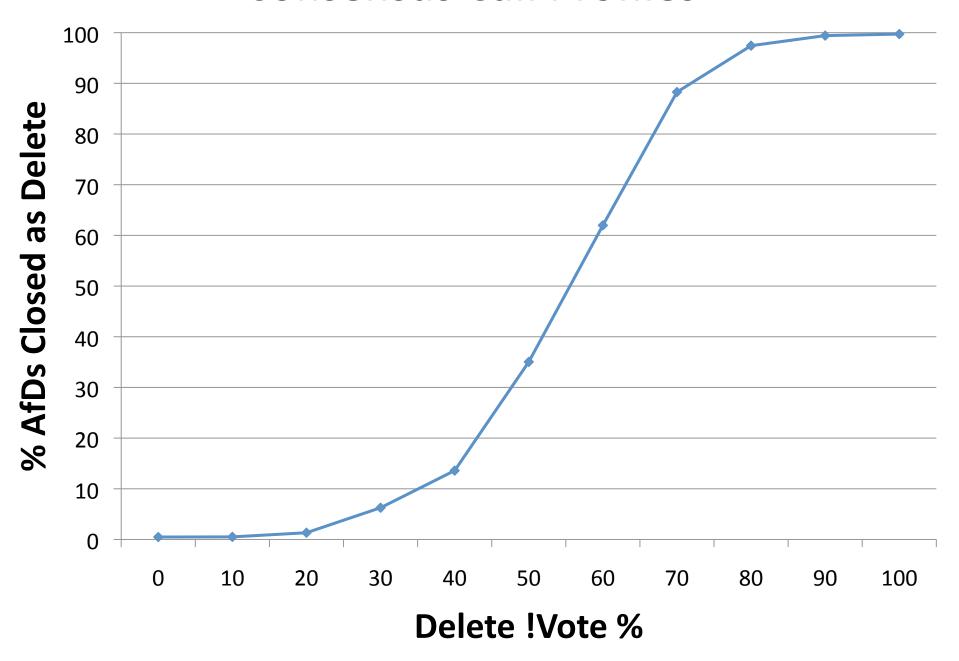
Who are we to judge?

Use implicit community feedback

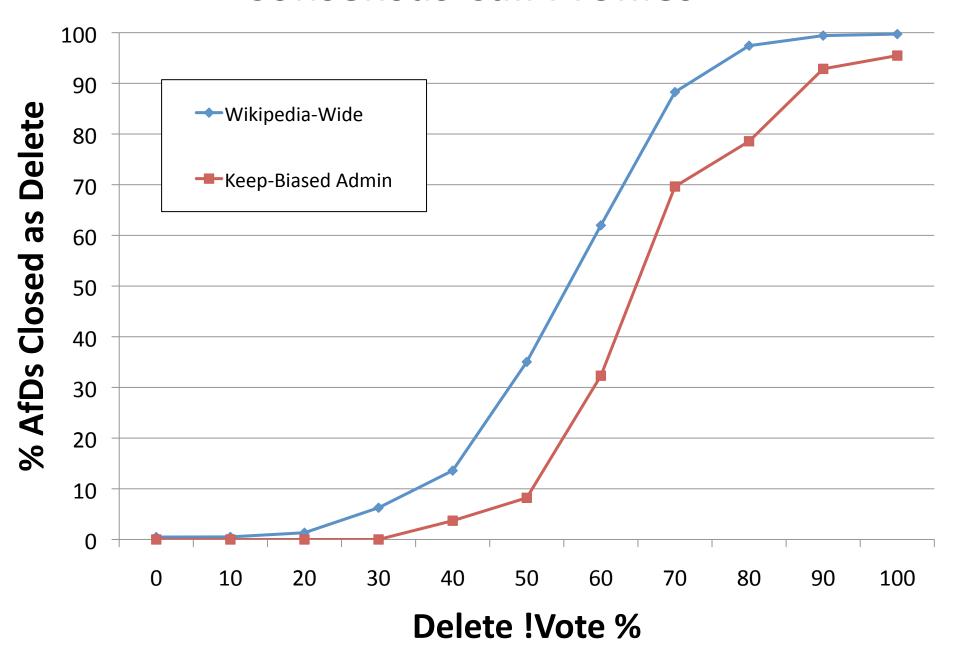
Persistent decision = Good Reversed decision = Bad

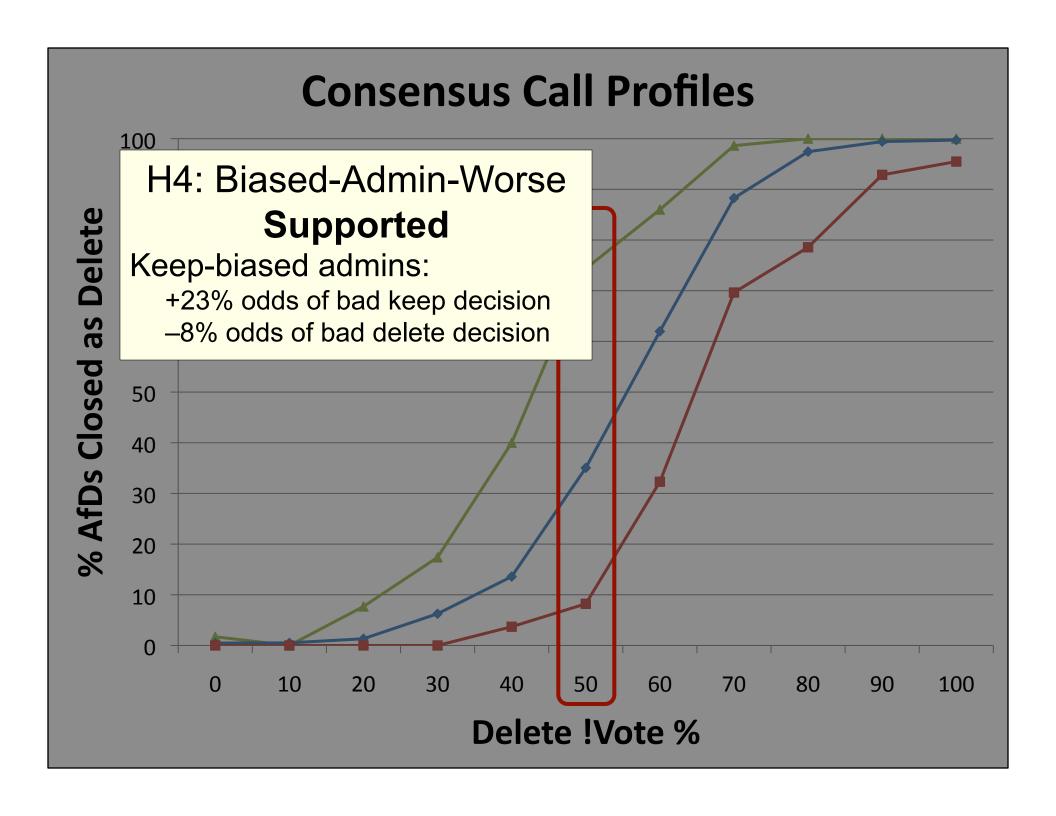
About 4% of decisions are reversed in 1 year

#### **Consensus Call Profiles**



#### **Consensus Call Profiles**





# Result Summary

Factor	Effect on Decision Quality
Size	Bigger → better, diminishing returns
Formation	None in most cases,
	despite apparent recruitment bias
Newcomers	Newcomer participation → worse
Tenure diversity	High diversity → better
Biased admin	Decision with bias → worse
	Decision against bias → better

Diverse

Knowledge

Independent

Fair



#### Future Directions

Build automated tools to detect problems or opportunities for improvement

Explore Wikipedia's possible biases (recruitment, administrative)

Study AfDs qualitatively to understand why



#### Vision

- Community Health
- Humans + Computers
- Synthetic vs. Analytic Research



# Thank you!

#### Acknowledgements

- GroupLens Research
- Wikimedia Foundation
- National Science Foundation
  - o grants: IIS 05-34420, 07-29286, 08-08711, 0968484, and OCI-0943148

John Riedl riedl@umn.edu



# Community, Cooperation, and Conflict in Wikipedia

John Riedl

GroupLens Research

University of Minnesota





### Bit Bucket

