The rise and decline of an open collaboration system:
How Wikipedia's reaction to popularity is causing its decline

...and other SCIENCE with Aaron.
whoami?
whoami?

- Staff Researcher
  - Working with Dario, Oliver & Fabrice on AFTv5
whoami?

- **Staff Researcher**
  - Working with Dario, Oliver & Fabrice on AFTv5
- **PhD Candidate @ UMN**
  - Live in the tundra* & telecommute

---

*Minnesota's mean temperature is similar to SF -- much larger standard deviation.*
whoami?

- Staff Researcher
  - Working with Dario, Oliver & Fabrice on AFTv5
- PhD Candidate @ UMN
  - Live in the tundra* & telecommute
- WSOR intern lead last summer

*Minnesota's mean temperature is similar to SF -- much larger standard deviation.
whoami?

- **Staff Researcher**
  - Working with Dario, Oliver & Fabrice on AFTv5
- **PhD Candidate @ UMN**
  - Live in the tundra* & telecommute
- **WSOR intern lead last summer**
- **Wikipedian**
  - Volunteer on Research:Committee
  - User scripts
  - Gnome

*Minnesota's mean temperature is similar to SF -- much larger standard deviation.
Agenda
Agenda

1. Introduction
Agenda

1. Introduction
2. Recent research (i.e. Rise & Decline)
Agenda

1. Introduction
2. Recent research (i.e. Rise & Decline)
3. Ongoing/future work
Agenda

1. Introduction
2. Recent research (i.e. Rise & Decline)
3. Ongoing/future work

Stop me if you have a quick question.
Agenda

1. Introduction
2. Recent research (i.e. Rise & Decline)
3. Ongoing/future work

Stop me if you have a quick question.

Please wait on discussion.
WSOR11: Templates --> newcomers

First messages sent to new users, by tool and bot used (proportional)

R. S. Geiger, A. Halfaker, M. Pinchuk & S. Walling, Defense Mechanism or Socialization Tactic, Accepted to ICWSM'12
WSOR2011: Reverts predict survival
WSOR11: Confound

- What if newcomers are getting worse?
WSOR11: Confound

- What if newcomers are getting worse?
  - Increased rejection
  - Decreased retention == good!
  - Warning templates == good!
New results: The decline

- **What**: Rejection of good newcomers
- **How**: Tools (huggle) that facilitate rejection
- **Why**: Policy/Guidelines calcified against newcomer input
New results: Rejection & retention

2100 newcomers from 2001-2011

Edit session = First editing experience

Thanks:
- Oliver Keyes
- Maryana Pinchuk
- Steven Walling
- Stuart Geiger

Quality:
1. Vandal
2. Bad-faith
3. Good-faith
4. Golden
New results: Rejection & retention

Consistent quality since 2006  Rising rate of rejection  Decreasing retention
New results: Rejection & retention

Quality newcomers  $\times$  Rejection  =  Decreased retention
New results: Rejection & retention

Logistic regression model: What predicts survival?
- Determines significance (i.e. non-random)
- Compare the amount of effect
- Controls for confounding factors
New results: Rejection & retention

Logistic regression model: What predicts survival?
- Determines significance (i.e. non-random)
- Compare the amount of effect
- Controls for confounding factors

Confounds:
- editor quality
- temporal effects
- investment
- rejection type (reverted, deleted)
- sent a message (e.g. welcomed or warned)
New results: Rejection & retention

Logistic regression model: What predicts survival?
- Determines significance (i.e. non-random)
- Compare the amount of effect
- Controls for confounding factors

Confounds:
- editor quality
- temporal effects
- investment
- rejection type (reverted, deleted)
- sent a message (e.g. welcomed)

Rejection still a significant negative effect!
New results: Wiki-Tools

• **Hypothesis:** Quality control tools like huggle are exacerbating the negative effect of rejection.
New results: Wiki-Tools

**Model:** Significant, negative effect.

- **reverted** (coef: -0.48, p=0.01)
- **reverted-with-tool** (coef: -2.51, p=0.02)
  - 5X MORE BAD*!

* Measured as a decrease in the log-odds of survival
New results: Wiki-Tools

**Model:** Significant, negative effect.

- **reverted** (coef: -0.48, p=0.01)
- **reverted-with-tool** (coef: -2.51, p=0.02)
  - 5.5X MORE BAD*!

* Measured as a decrease in the log-odds of survival

---

**ON THE RISE!**

![Graph showing the proportion reverted with tools over years from 2003 to 2010.](image)
New results: Wiki-Tools

- Are reverting tools like huggle part of the problem?

Yes.

Why?
Bold -> Revert -> Discuss Cycle

1. Bold edit
2. Reverted?
   - No → Discuss
   - Yes → Discuss
3. Discuss
   - No → Reverted?
   - Yes → Consensus?
Bold -> Revert -> Discuss Cycle

1. **Boldly** make the edit you think is right.
2. If you get **reverted**, talk about it on the **discussion** page.
3. Form consensus and move on.
**Bold -> Revert -> Discuss Cycle**

1. **Boldly** make the edit you think is right.
2. If you get **reverted**, talk about it on the **discussion** page.
3. Form consensus and move on.

- **Initiation:** *Reverted* editor posts on talk page
- **Reciprocation:** *Reverting* editor responds
Anarchism and labor rights

I got reverted for adding some information from my textbook. Anarchism is an example of lorem ipsum dolor sit amet git. --Reverted McNewbie (talk|contribs)

You need to cite the pages of the textbook where you get that. Check out {{cite}}. --Reverting McOldbie (talk|contribs)
New results: Wiki-Tools

Yearly BRD reciprocation rates by tool used
New results: Wiki-Tools
New results: Wiki-Tools

Yearly BRD reciprocation rates by tool used

- humans
- hugglers
New results: Wiki-Tools

Yearly BRD reciprocation rates by tool used

- humans
- hugglers
- robots
Sehnsa city is also well-known trading centre because of its easy access to two main cities of Pakistan, which are Islamabad and Rawalpindi and on the other hand it is a linkage between Islamabad and Kotli.
Notice: Someone you reverted wants to ask you why!

Click here to tell them they're wrong.
Why are conditions getting so bad for newbies?
Why are conditions getting so bad for newbies?

- Political economist Elinor Ostrom: Rules must be...
  a. well-matched to local circumstances
  b. malleable by the governed individuals
Why are conditions getting so bad for newbies?

- Political economist Elinor Ostrom: Rules must be...
  a. well-matched to local circumstances
  b. malleable by the governed individuals

Policies & Guidelines ~ Rules of governance

Is it getting harder for newbies to affect them?

And what about essays? (less formal norms)
Model: Logistic regression
What predicts rejection?

- Contributions to essays reverted less overall
- Contributing getting harder over time
  - Except for essays
- Younger editors reverted more
  - Except for essays

All reported effects are statistically significant.
**Model: Logistic regression**

What predicts rejection?

- Contributions to essays reverted less overall
- Contributing getting harder over time
  - Except for essays
- Younger editors reverted more
  - Except for essays

All reported effects are statistically significant.
Summary!
Summary!

- Reverts scare away newbies
  - Good newbies are getting reverted more
Summary!

- Reverts scare away newbies
  - Good newbies are getting reverted more
- Huggle reverts are worse
  - Tool users don't discuss their reverts
Summary!

- Reverts scare away newbies
  - Good newbies are getting reverted more
- Huggle reverts are worse
  - Tool users don't discuss their reverts
- Newbies can't affect the rules that govern them
  - They seem to have turned to essays, but essays don't carry the same weight.
So what?

- Can't stop reverting bad edits - Quality
So what?

- Can't stop reverting bad edits - Quality
- Can't stop using tools - Efficiency
So what?

- Can't stop reverting bad edits - Quality
- Can't stop using tools - Efficiency
- Can't open up policy - Consistency
So what?

- Can't stop reverting bad edits - Quality
- Can't stop using tools - Efficiency
- Can't open up policy - Consistency

- **Huggle**
  - **Snuggle**
    - If we know how to find bad new users, we know how to find the good ones too.
What's next?

● Experimental interfaces
  ○ Mr. Clean [http://en.wikipedia.org/wiki/User:EpochFail/MrClean/Sandbox]

● Blurring the divide between reader and editor
  ○ Readers have value (AFTv5)
    ■ Informs value of visual editor
  ○ Building tools for readers:
    ■ History - Reading list - Watchlist

● Community health
  ○ Predict future declines
  ○ Survival models - Needs a visualization
Thanks!

Aaron Halfaker

aaron.halfaker@gmail.com

User:EpochFail