

# Working Within Wikipedia: Infrastructures of Knowing and Knowledge Production

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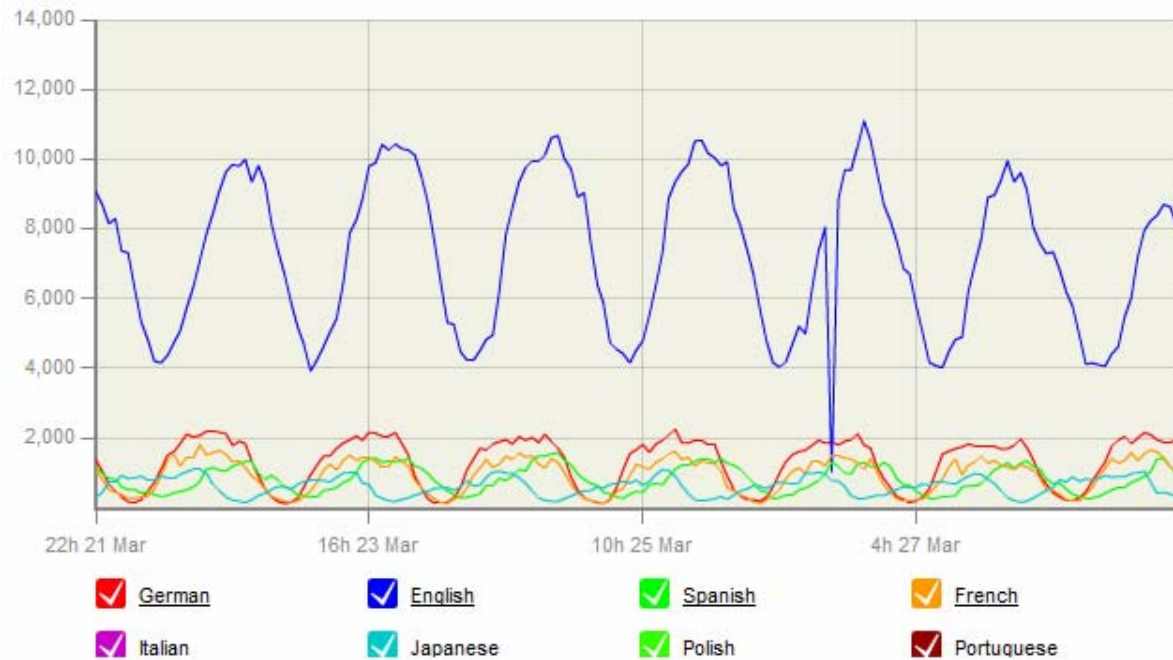
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# Wikipedia Statistics: Edits



## Recent 10 minutes [more](#)

22:50:45 28/3/2009 - 23:00:45 28/3/2009 (UTC) Auto-reloading



## Site statistics

|                |             |
|----------------|-------------|
| Articles       | 2,814,046   |
| Total pages    | 16,253,637  |
| Total edits    | 295,711,523 |
| Uploaded files | 844,465     |
| Accounts       | 9,300,180   |
| Sysops         | 1,634       |

Source: en.wikichecker.org, copyright GNU FDL 1.2 or later

# Wikipedia Statistics: Edits

- Significant number of unique editors
  - 600k to 900k per month
  - Most users are anonymous, make few edits
- How does Wikipedia handle these users?
  - Ignorant of standard practices, policies, rules
  - May have malevolent intent
- Are these users part of the “collective intelligence” or “the wisdom of crowds” ?

# Representations of Wikipedia

- Intentionally anarchistic and disorderly
- Unreliable, prone to vandalism and bias

• Issue is potentially humorous, but not culturally significant

Wikipedia Celebrates 750 Years Of American Independence  
Founding Fathers, Patriots, Mr. T. Honored

July 26, 2006  
Issue 42•30

the ONION



# Representations of Wikipedia

- Populist, relativist, collectivist
- Anti-expert, anti-academic, cult-like
- Issue is very culturally significant



Source: The Simpsons Movie, 20<sup>th</sup> Century Fox, Copyright 2007

# Wikipedia and Science

- “This ‘wisdom of the crowds’ and ‘hive mind’ mentality is a direct assault on the tradition of individualism in scholarship that has been paramount in Western societies” (Goldman 2007)
- “Wikipedia has redefined the commonly accepted use of the word ‘truth.’ ... truth is received truth: the consensus view of a subject” (Garfinkel 2008)
- “*Wikipedia* has created a community of inquirers that are governed by norms very different from those that govern scientists ... [Wikipedians] lack the sorts of incentives that keep science in good working order” (Wray 2009)

# Policies and Procedures in Wikipedia

- Social norms and epistemic standards exist
- Numerous and well-articulated
- Are they enforced? How could they be?

| <a href="#">v</a> · <a href="#">d</a> · <a href="#">e</a> | Key Wikipedia policies and guidelines <a href="#">[hide]</a>  |
|---|---|
| <b>Overview</b>   | <b>Policies and guidelines</b><br><a href="#">List of policies</a> · <a href="#">List of guidelines</a>   |
| <b>Global principles</b>                                  | <a href="#">What Wikipedia is not</a> · <a href="#">Consensus</a> · <a href="#">Dispute resolution</a> · <a href="#">Ignore all rules</a>   |
| <b>Article standards policies</b>                         | <a href="#">Neutral point of view</a> · <a href="#">Verifiability</a> · <a href="#">No original research</a> · <a href="#">Biographies of living persons</a> · <a href="#">Deletion</a>   |
| <b>Behavioral policies</b>                                | <a href="#">Civility</a> · <a href="#">Edit warring</a> · <a href="#">No personal attacks</a> · <a href="#">No legal threats</a> · <a href="#">Ownership of articles</a> · <a href="#">Three-revert rule</a> · <a href="#">Sock-puppetry</a>      |
| <b>Behavioral guidelines</b>                              | <a href="#">Assume good faith</a> · <a href="#">Etiquette</a> · <a href="#">Do not disrupt Wikipedia to illustrate a point</a> · <a href="#">Please do not bite the newcomers</a> · <a href="#">Gaming the system</a>                             |
| <b>Classification guidelines</b>                          | <a href="#">Subpages</a> · <a href="#">Categories, lists, and navigation templates</a> · <a href="#">Lists</a> · <a href="#">Categorization</a> · <a href="#">Template namespace</a>  |
| <b>Content guidelines</b>                                 | <a href="#">Conflict of interest</a> · <a href="#">Do not include copies of primary sources</a> · <a href="#">Disambiguation</a> · <a href="#">Do not create hoaxes</a> · <a href="#">Notability</a> · <a href="#">Patent nonsense</a>            |
| <b>Editing guidelines</b>                                 | <a href="#">Be bold</a> · <a href="#">Build the web</a> · <a href="#">Edit summary</a> · <a href="#">Editing policy</a> · <a href="#">Linking</a> · <a href="#">Signatures</a> · <a href="#">Talk page guidelines</a> · <a href="#">User page</a> |
| <b>Style conventions</b>                                  | <a href="#">Article size</a> · <a href="#">Manual of Style</a> · <a href="#">Naming conventions</a>   |

Source: [http://en.wikipedia.org/wiki/Template:Wikipedia\\_policies\\_and\\_guidelines](http://en.wikipedia.org/wiki/Template:Wikipedia_policies_and_guidelines)

# Knowing and Knowledge Production

- Infrastructures of Knowing
  - Required to evaluate validity/truth of beliefs
  - Epistemic standards, practices, enforcers
- Infrastructures of Knowledge Production
  - Required to make new beliefs with claims to truth/validity
  - Translating reality into statements
- Distinction influenced by F. Blackler (1995) and C. Hutchins (1995)



# Knowing and Knowledge Production

- Non-Encyclopedic knowledge production required for knowing encyclopedically
  - Edit [x] is vandalism/inappropriate - has been or needs to be reverted
  - User [x] is a vandal or problem user - is or needs to be banned
  - Article [x] is disputed or unencyclopedic - needs attention or debate
  - Statement [x] is vague or needs citation

# Laboratory Studies

- Highly empirical studies of science
  - Ethnographic study of laboratories, field sites
  - Historical study of scientific practice
  - Close attention to detail, context, action, situation, and material practices involved in science
  - Question: How are controversies settled?
- Three canonical works:
  - Latour and Woolgar (1979), *Laboratory Life*
  - Shapin and Schaeffer (1985), *Leviathan and the Air-Pump*
  - Latour (1988), *The Pasteurization of France*

# Laboratory Studies

- Question: How is scientific knowledge as a social practice made possible?
  - Not just looking for undue influence from social actors (e.g. politicization of science)
- Epistemic order is produced out of disorder using techniques, practices, and machines
  - Settled controversies are blackboxed, literally:
    - Laboratory machinery stabilizes and reifies theories
    - Mass spectrometer built using physics theories which no longer have to be actively sustained by humans

# Example: Boyle vs. Hobbes

- Controversy detailed in *Leviathan and the Air-Pump*, S. Shapin and S. Schaeffer (1985)
- Dispute over the nature of air and vacuums
- Opponents had different epistemologies:
  - Hobbes: *A priori* philosophical reasoning trumps empirical observations
  - Boyle: Experiments can overturn logical propositions without counter-explanations

# Example: Boyle vs. Hobbes

- Today, we think Boyle was obviously right
- Yet in order to defeat Hobbes, Boyle had to make experimental science possible:
  - Social technology: Royal Society
    - Witnessed experiments and issued reports, allowing authoritatively circulation of experimental findings
  - Literary technology: laboratory reports
    - Enabled controlled, independent replication of experiments and verification of findings
- Result: science could travel on paper via mail

# Knowing in Wikipedia

- Broad research question: How is knowledge production made possible in Wikipedia?
  - Pay close attention to the material practices and technologies at work
  - Not just an explanation of bias or manipulation
- Specific research question: How are epistemic standards maintained in the face of vandals, dissidents, and contradicting interpretations?
  - How is encyclopedic knowing made possible by non-encyclopedic knowledge production?

# Case Study: Blocking a Vandal

- Anonymous users contribute a significant portion (80% to 95%) of all vandalism
- Strong resistance to blocking all anonymous editing
  - Consensus on software features is difficult to produce
- Result: temporary blocking of IP addresses who persistently and knowingly violate policies and procedures
  - Blocks are frequent: 500 to 1000 a day

# Diffs

## The Mirror (album)

From Wikipedia, the free encyclopedia  
([Difference between revisions](#))

**Revision as of 21:32, 19 February 2009 (edit)**

[72.68.228.176 \(Talk\)](#)

([→The Atkins Files Vol. 1](#))

[← Previous edit](#)

**Revision as of 21:33, 19 February 2009 (edit) (undo)**

[72.68.228.176 \(Talk\)](#)

([→Background](#))

[Next edit →](#)

### Line 31:

In an interview with SOHH, Ja Rule commented on the album:

```
{{cquote|The whole industry is so focused on beefin' with each other&nbsp;— it's like the WWE of rap right now. I'm stepping out of the arena. I don't want to be a wrestlin' rapper. Somebody's got to come in and make it positive. You have to make records that make people feel like having a
```

```
- good time. This record is like my confessions, I'm shedding my skins. "The Mirror" is your only real moment of truth. It's the place where everybody can go and be honest with themselves.<ref name=SOHH>
```

```
[http://www.sohh.com/articles/article.php/12396 Ja Rule CD Pushed Back, Rapper Teams Up With Game]</ref>}}
```

==The Atkins Files Vol. 1==

### Line 31:

In an interview with SOHH, Ja Rule commented on the album:

```
{{cquote| hate 50 cent. He's so mean<ref name=SOHH>
```

+

```
[http://www.sohh.com/articles/article.php/12396 Ja Rule CD Pushed Back, Rapper Teams Up With Game]</ref>}}
```

==The Atkins Files Vol. 1==

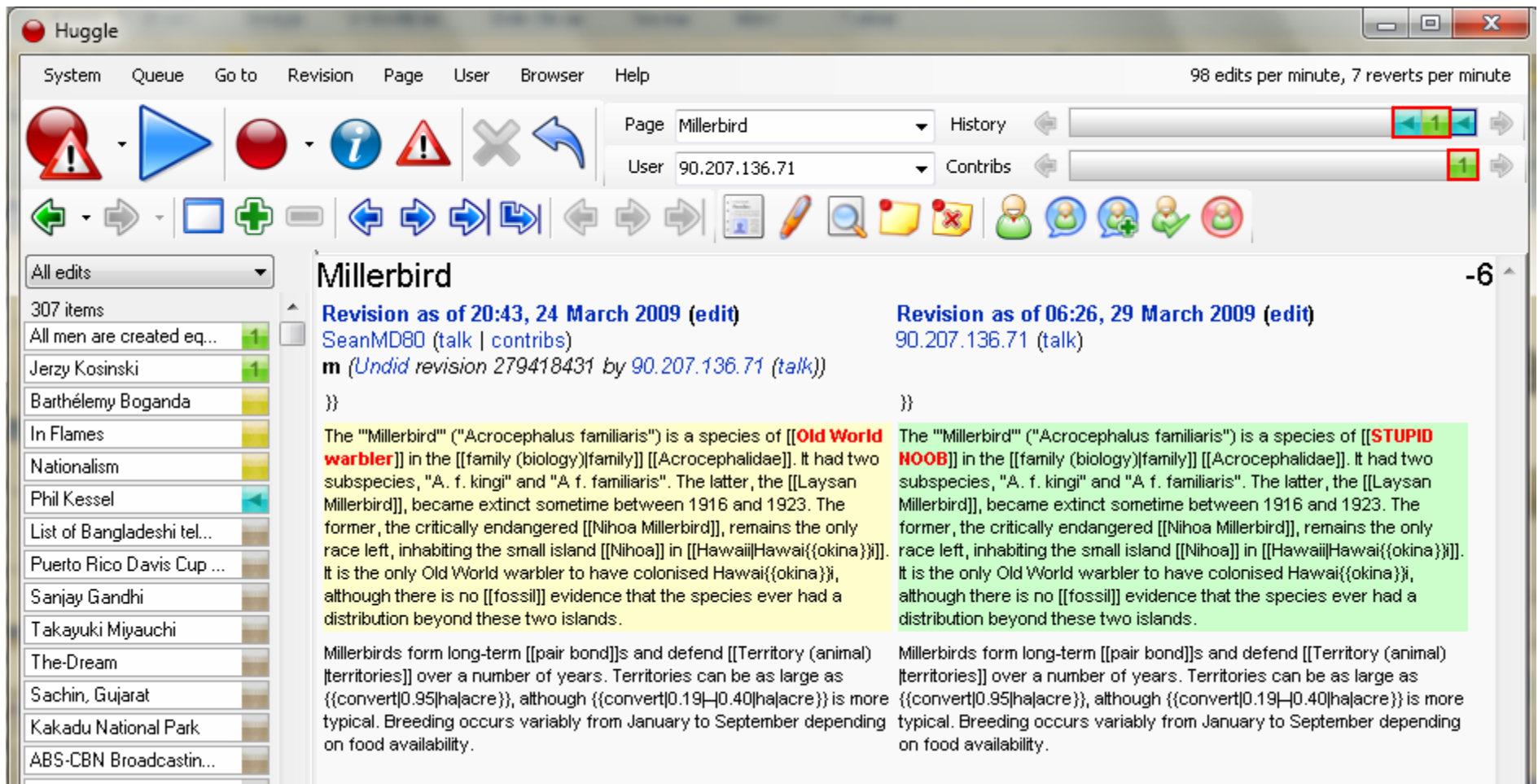
Source: [http://en.wikipedia.org/wiki/User\\_talk:72.68.228.176](http://en.wikipedia.org/wiki/User_talk:72.68.228.176)



# Diffs

- Unique record of a specific edit
  - Before/after information:
    - Username
    - Date and time
    - Article name
  - Highlights changes made, assisting comparison
- Accessible via specific hyperlink
  - “Immutable mobile” that is easily circulated
  - Can be used as evidence

# Vandal Fighting Programs

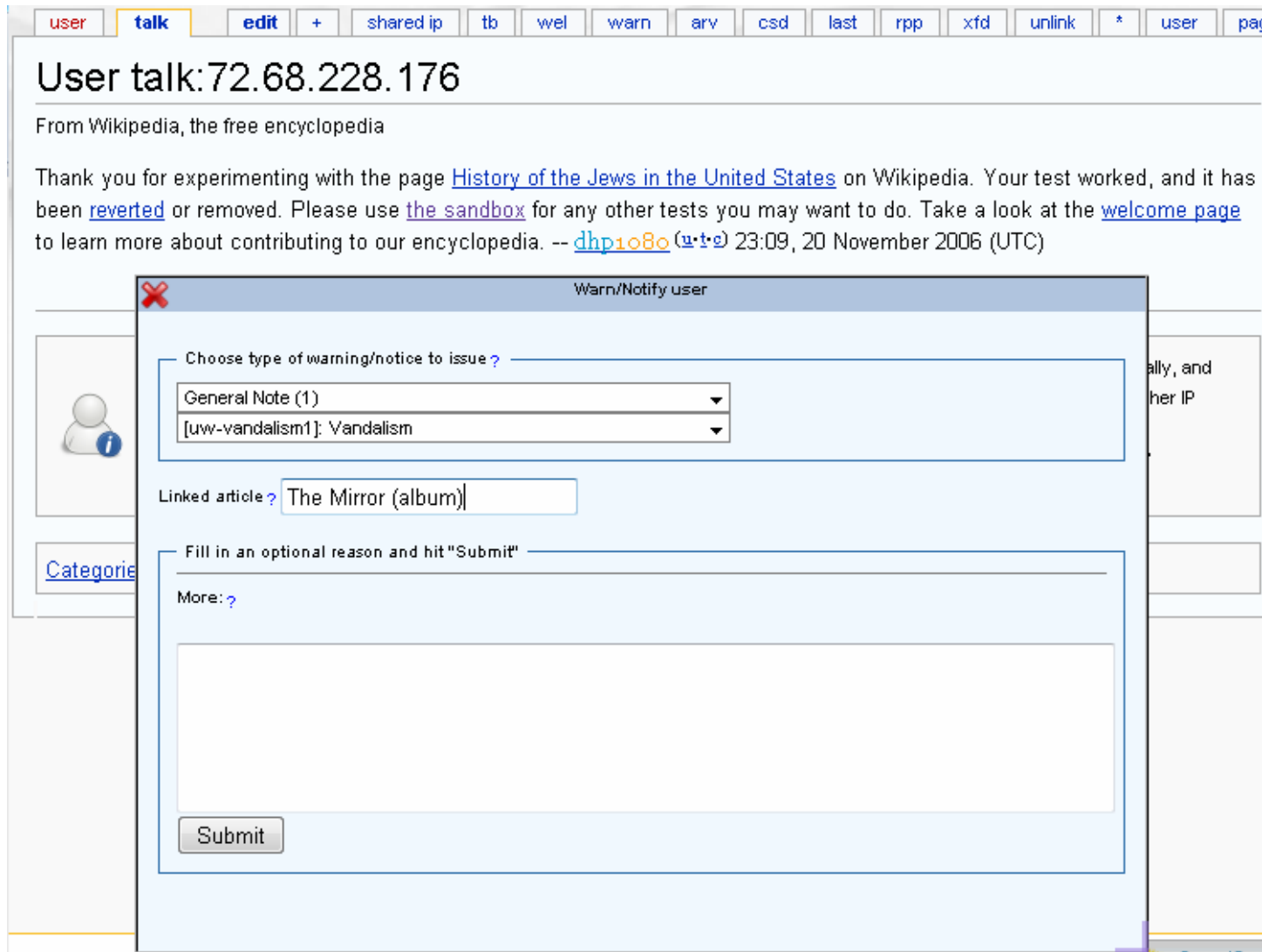


Source: Huggle 0.9.0

# Vandal Fighting Programs

- Allows users to review edits as they happen
- One click revert, advances to next edit
- Queue ranks edits according to:
  - Obscenities, capital letters, gibberish, etc.
  - Massive removal or addition of text or links
  - Previously reverted, warned, or blocked users
  - Misspellings, capitalization and grammatical errors
- Upon reverting edit, can automatically leave warnings for editors via templated messages

# Warning templates / User talk



The screenshot shows a Wikipedia user talk page for IP address 72.68.228.176. The page title is "User talk:72.68.228.176" and it includes a message from a user named dhp1o8o. A Twinkle "Warn/Notify user" dialog box is open, showing options for issuing a warning. The dialog box has a title bar with a red 'X' icon and the text "Warn/Notify user". It contains a dropdown menu for "Choose type of warning/notice to issue" with "General Note (1)" selected, and a second dropdown menu with "[uw-vandalism1]: Vandalism" selected. Below these is a text input field for "Linked article" containing "The Mirror (album)". There is a large text area for "Fill in an optional reason and hit 'Submit'" and a "Submit" button at the bottom.

user talk edit + shared ip tb wel warn arv csd last rpp xfd unlink \* user pag

## User talk:72.68.228.176

From Wikipedia, the free encyclopedia

Thank you for experimenting with the page [History of the Jews in the United States](#) on Wikipedia. Your test worked, and it has been [reverted](#) or removed. Please use [the sandbox](#) for any other tests you may want to do. Take a look at the [welcome page](#) to learn more about contributing to our encyclopedia. -- [dhp1o8o](#) ([u·t·e](#)) 23:09, 20 November 2006 (UTC)

Choose type of warning/notice to issue ?

General Note (1)

[uw-vandalism1]: Vandalism

Linked article ?

Fill in an optional reason and hit "Submit"

More: ?

Source: [http://en.wikipedia.org/wiki/User\\_talk:72.68.228.176](http://en.wikipedia.org/wiki/User_talk:72.68.228.176) using Twinkle

# Warning templates / User talk

## User talk:72.68.228.176


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From Wikipedia, the free encyclopedia

Thank you for experimenting with the page [History of the Jews in the United States](#) on Wikipedia. Your test worked, and it has been [reverted](#) or removed. Please use [the sandbox](#) for any other tests you may want to do. Take a look at the [welcome page](#) to learn more about contributing to our encyclopedia. -- [dhp1080](#) ([u](#)·[t](#)·[o](#)) 23:09, 20 November 2006 (UTC)

## February 2009

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 Welcome to Wikipedia. Although everyone is welcome to make constructive contributions to Wikipedia, at least one of your recent edits, such as the one you made to [The Mirror \(album\)](#), did not appear to be constructive and has been reverted. Please use [the sandbox](#) for any test edits you would like to make, and read the [welcome page](#) to learn more about contributing constructively to this encyclopedia. Thank you. **DiverseMentality** 21:37, 19 February 2009 (UTC)

*If this is a shared [IP address](#), and you didn't make the edit, consider [creating an account](#) for yourself so you can avoid further irrelevant notices.*




This is the discussion page for an IP user, identified by the user's numerical [IP address](#). Some IP addresses change periodically, and may be shared by several users. If you are an IP user, you may [create an account or log in](#) to avoid future confusion with other IP users. Registering also hides your IP address.

[\[WHOIS](#) • [RBLs](#) • [Traceroute](#) • [Geolocate](#) • [Tor check](#) • [Rangeblock finder](#) • [Global Blocks](#)] • [\[RIRs: America](#) • [Europe](#) • [Africa](#) • [Asia-Pacific](#) • [Latin America/Caribbean](#)]

# Warning templates / User talk


February 2009

[\[edit\]](#)

 Welcome to Wikipedia. Although everyone is welcome to make constructive contributions to Wikipedia, at least one of your recent edits, such as the one you made to [The Mirror \(album\)](#), did not appear to be constructive and has been reverted. Please use [the sandbox](#) for any test edits you would like to make, and read the [welcome page](#) to learn more about contributing constructively to this encyclopedia. Thank you.

**DiverseMentality** 21:37, 19 February 2009 (UTC)

*If this is a shared [IP address](#), and you didn't make the edit, consider [creating an account](#) for yourself so you can avoid further irrelevant notices.*

 The [recent edit](#) you made to the page [808s & Heartbreak](#) constitutes [vandalism](#), and has been reverted. Please do not continue to make unconstructive edits to pages; use the [sandbox](#) for testing. Thank you. [J.delanoy](#)<sup>gabs</sup><sub>adds</sub> 21:43, 19 February 2009 (UTC)

 Please stop. If you continue to [vandalize](#) Wikipedia, as you did to [808s & Heartbreak](#), you *will* be [blocked](#) from editing. Your edits have been **automatically** marked as [vandalism](#) and have been **automatically** [reverted](#). **If you believe there has been a mistake and would like to report a false positive, please [report it here](#) and then remove this warning from your talk page.** If your edit was not vandalism, please feel free to make your edit again after reporting it. The following is the log entry regarding this vandalism: [808s & Heartbreak](#) was [changed](#)  by [72.68.228.176](#) ([u](#)) ([t](#)) making a minor change with obscenities on 2009-02-19T21:45:51+00:00 . Thank you. [ClueBot](#) ([talk](#)) 21:46, 19 February 2009 (UTC)

 **This is your last warning.** You will be blocked from editing the next time you vandalize a page, as you did with [this edit](#) to [808s & Heartbreak](#). [Eric Wester](#) ([talk](#) · [contribs](#) · [email](#)) 21:47, 19 February 2009 (UTC)



You have been **temporarily blocked** from editing in accordance with [Wikipedia's blocking policy](#) for [abuse of editing privileges](#). Once the block has expired, you are welcome to [make constructive contributions](#). If you believe this block is unjustified, you may [contest the block](#) by adding the text `{{unblock|Your reason here}}` below, but you should read our [guide to appealing blocks](#) first.

[J.delanoy](#)<sup>gabs</sup><sub>adds</sub> 21:50, 19 February 2009 (UTC)

# Warning templates / User talk

- Used to leave messages for editors
- For vandal fighting, used to record previously confirmed incidents of vandalism
  - Four levels of warnings, codes embedded in templated warning messages
  - Automatically escalated by most VF programs
  - Violation of a fourth-level warning necessary for a block
- Allows multiple users to centralize efforts without explicit coordination

# AIV Queue



This page has a **backlog** that requires the attention of one or more administrators.  
*Please remove this notice when the backlog is cleared.*

## Alerts

---

### Bot-reported

### User-reported

- [68.220.162.11](#) ([talk](#) · [contribs](#) · [deleted contribs](#) · [WHOIS](#) · [RDNS](#) · [trace](#) · [RBLs](#) · [http](#) · [block user](#) · [block log](#) · [Abuse Report](#)) - . Obviously banned user [User:Bambifan101](#). Indicators are editing childrens film and television articles, especially articles related to the Teletubbies, messing around with other users talk archives, and an IP address in the same range as many other blocked socks of this user. more info here: [\[1\]](#) [Beeblebrox](#) ([talk](#)) 21:18, 19 February 2009 (UTC)
  -  This noticeboard is for [persistent vandals and spammers only](#). Consider taking this report to [WP:SPI](#). –[Juliancolton](#) [Tropical Cyclone](#) 21:21, 19 February 2009 (UTC)
- [69.19.14.38](#) ([talk](#) · [contribs](#) · [deleted contribs](#) · [WHOIS](#) · [RDNS](#) · [trace](#) · [RBLs](#) · [http](#) · [block user](#) · [block log](#) · [Abuse Report](#)) - vandalism after final warning [srushe](#) ([talk](#)) 21:28, 19 February 2009 (UTC)
  - **Note:** User is in the category: [Shared IP addresses](#). [HBC AIV helperbot3](#) ([talk](#)) 21:29, 19 February 2009 (UTC)
- [209.250.165.249](#) ([talk](#) · [contribs](#) · [deleted contribs](#) · [WHOIS](#) · [RDNS](#) · [trace](#) · [RBLs](#) · [http](#) · [block user](#) · [block log](#) · [Abuse Report](#)) new user, obvious vandal, but not persistant and hasn't been given warnings. This might not be the right page for me to report it. If not, then what is? [Shaheenjim](#) ([talk](#)) 21:39, 19 February 2009 (UTC)
  -  **Warned** user. [caknuck](#) [is a silly pudding](#) 21:41, 19 February 2009 (UTC)
- [72.68.228.176](#) ([talk](#) · [contribs](#) · [deleted contribs](#) · [WHOIS](#) · [RDNS](#) · [trace](#) · [RBLs](#) · [http](#) · [block user](#) · [block log](#) · [Abuse Report](#)) – vandalism, including [1](#), [2](#), [3](#), [3](#) – [Eric Wester](#) ([talk](#) · [contribs](#) · [email](#)) 21:47, 19 February 2009 (UTC)



# AIV Queue

- Automated editing programs (bots) remove requests that have been fulfilled or expired
  - Also issues notices if queue is backlogged
- Reports of vandalism are issued by editors and bots, reviewed by administrators
- Reports are frequently issued by VF programs
  - Includes diffs of previous vandalism, does not report unless user has violated level four warning

# Infrastructures of Knowing

- Socio-epistemic order is not pre-existing, but must be built and constantly maintained
  - Standards, policies, guidelines, roles, norms, etc. exist, but only have force when they are enforced
  - No invisible hand or “wisdom of the crowd” manipulates Wikipedians in spite of themselves
- Construction of technologies and tools make standards concrete and enforceable
  - Enables distributed yet collective action between otherwise disconnected editors

# Implications for other social media

- Technologies developed are not directly incorporated into the wiki software
  - Instead, programs are built on top of the existing functionality
- What are the implications when software reification is no longer limited to website developers?