

The Anyone-Can-Edit Syndrome

Intercreation Stories of Three Featured Articles on Wikipedia

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Abstract

The user-generated wiki encyclopedia Wikipedia was launched in January 2001 by Jimmy Wales and Larry Sanger. Wikipedia has become the world's largest wiki encyclopedia, and behind many of its entries are interesting stories of creation, or rather *intercreation*, since Wikipedia is produced by a large number of contributors. Using the slogan "the free encyclopedia that anyone can edit" (Wikipedia 2013), Wikipedia invites everyone to participate, but the participants do not necessarily represent all kinds of individuals or interests – there might be an imbalance affecting the content as well as the perspective conveyed. As a phenomenon Wikipedia is quite complex, and can be studied from many different angles, for instance through the articles' history and the edits to them.

This paper is based on a study of Featured Articles from the Swedish Wikipedia. Three articles, *Fri vilja* [Free will], *Fjäll* [Fell], and *Edgar Allan Poe*, are chosen from a list of *Featured Articles* that belongs to the subject field *culture*. The articles' development has been followed from their very first versions in 2003/2004 to edits made at the end of 2012.

The aim is to examine the creation, or *intercreation*, processes of the articles, and the collaborative production. The data come from non-article material such as revision history pages, article material, and some complementary statistics. Principally the study has a qualitative approach, but with some quantitative elements.

Keywords: Wikipedia, collaboration, intercreation, produser, experts, front figures

Introduction

In its second decade of existence Wikipedia is still a success story, and more than 40 million users have been involved in its production (Wikimedia 2013). Today, Wikipedia is used and quoted in many different contexts – even by news media and academics. Well established search engines often list hits on Wikipedia among the top ten. Some of Wikipedia's articles have reached a quite high level, even comparable to those in traditional encyclopedias (Giles 2005). These articles are usually given the status of *Featured Articles* [Utmärkt artikel], implying that they meet Wikipedia's highest criteria for content, format and readability. Over time, Wikipedia has developed guidelines and formalized the Featured Article process in which articles can be nominated, reviewed and approved – or rejected – by the Wikipedia community. In some aspects, the review process is comparable to the peer review of the academic world.

Production and Processes

In non-hierarchical, many-to-many media like Wikipedia, several complex processes of collaboration can be seen, and concepts like *cooperation* and *collaboration* seem insufficient for describing activities like these. Therefore several concepts have been proposed, for instance *intercreation* by the inventor of the World Wide Web, Berners-Lee (2000). Intercreativity is about making things together – about users sharing knowledge.

Every entry has its story – a story about creation, or rather *intercreation* – in which the contributors together construct the article. Shirky (2008) describes how digital social tools enable participants to work together at different levels: the simplest way is just *sharing*, like on the photo sharing website *Flickr*; then comes *cooperation*, whereby the participants' behavior has to be synchronized; and finally, *collaborative production*, which includes collective decisions to be made among the participants. Collaborative production is seen in the editing on Wikipedia.

Understanding Wikipedia requires insight into the conditions of its production. Shirky (2008) explains that an article should be seen as a process and not a product, since it will never be finished. This unfinishedness is one of Wikipedia's characteristics. Hoff-Clausen (2011) further explains that the process behind encyclopedic articles can be understood as a kind of *dialogue*, in which one user presents a statement related to a topic and then the statement can be kept or deleted, modified, adapted or developed by other users who are following the article. Consequently, individual actions are met with collective responses.

Traditional encyclopedias have recognizable producers, distributors and consumers. In wiki encyclopedias, the dividing line between producers and consumers is not as clear. Shirky (2008) explains that on a wiki – as a result of the mass amateurization – individuals have the flexibility to cross back and forth between the two roles of *writer* and *reader*. Bruns (2009) takes this one step further, introducing the concept *produser* as an amalgamation of *producer* and *user*. Produsers do not engage in traditional forms of content production; instead, they are involved in *produsage* – collaborative production whereby they build, extend and improve the content.

Concerning Wikipedia's quality as an encyclopedia, the assumption that new errors will appear less frequently than existing ones will be corrected has proven correct, and on average the articles get better over time (Shirky 2008).

Anyone Can Edit

“Not every member must contribute, but all must believe they are free to contribute and that what they contribute will be appropriately valued”, as Jenkins (2009:6) puts it. According to Bruns (2008), Wikipedia, using the slogan “anyone can edit”, takes the editability so far that it becomes an anathema to the traditional processes of encyclopedic production. The editing process is turned upside-down, or as Shirky (2009) explains it, Wikipedia is moving from the “filter and then publish” model toward one of “publish and then filter”; in the past the filtering was done by publishers, while today it is done by “peers”, which means other contributors no matter their educational level. The high standard on Wikipedia is attained because of, among other things, the support of self-correcting mechanisms of collective revision (Benkler 2006).

Wikipedia has been criticized for being written by amateurs with inadequate knowledge, resulting in the articles being biased and unsupported. According to Keen (2008), the culture of amateurs is undermining the respect for experts' authority and knowledge. Individuals who previously functioned as cultural gatekeepers are now reduced in favor of the amateurs and their infinite number of personal truths. As a consequence, Wikipedia has become a vessel of superficial observations rather than deeper analyses. Hoff-Clausen (2011) accentuates that in a disembodied environment like Wikipedia, users cannot be identified as physical persons and therefore no one can be held accountable for what is said – there is no *source credibility* but rather only *open source credibility*.

Surowiecki (2005) considers the crowd to be an asset, looking upon Wikipedia as a product built on the “wisdom of the crowd”: large groups of diverse individuals are able to make better decisions than small groups of experts. But, to fulfill its potential the crowd has to be decentralized; there must be a way to summarize people's opinions into one shared conclusion, and the people in the crowd must be independent. Criticism of this approach, presented by Reagle (2010), accentuates that the “crowd” is not a colony of ants but rather a community built on a large group of dedicated individuals working together.

The distinction between amateurs and experts is not always clear. The first global Wikipedia survey (conducted by the Wikimedia Foundation and the United Nations University in October/November 2008, with 176,192 respondents from 231 countries categorized into “readers” and “contributors”) showed that many contributors identify themselves as “experts”, especially within technical and scientific fields – in the thematic fields *Mathematics & Logic* and *Technology & Applied Science*, as many as about 90% (Glott, Schmidt and Glosch 2010). The study also revealed that most contributors (almost 87%) are men, and that the average age of the contributors (male and female) is about 26 years – this low age might explain why 70% of the contributors hold, at most, an undergraduate degree as their highest educational level. Glott, Schmidt and Glosch (see also Glott and Glosch 2010) suggest that the small share of women attracted to Wikipedia have a set of preferences and motivations similar to that of male Wikipedians. The imbalance among contributors could restrict Wikipedia's development, and according to Spinellis and Louridas (2008) there are invisible subjective boundaries related to the contributors' interests that will limit its growth, so that Wikipedia comes to reflect its contributors' interests instead of representing some kind of contemporary knowledge.

Instead of looking at Wikipedia as one large community, it could be seen as several smaller ones. Bruns (2008) talks about the *voice of the collective*, referring to the voices of the many communities, or *hives*, around any one entry. In these hives, credible, authoritative voices can be distinguished from vague, uncertain ones coming from less developed projects.

Wenger, McDermott and Snyder (2002) use the concept *communities of practice* to describe how self-selected individuals create, expand and exchange knowledge within a group with unclear boundaries. On Wikipedia, the “members” are held together by passion, commitment and identification with the group and its expertise. Jenkins (2009) has chosen the expression *participatory culture* to describe the community involvement, characterized by having low barriers of engagement, strong support for creation and sharing with others, and some kind of informal mentorship. Further, members should believe that their contributions matter, and should also feel some degree of social connec-

tion with one another. A quite similar expression used by Reagle (2010:47), *collaborative culture*, refers to a “set of assumptions, values, meanings, and actions pertaining to working together within a community”. In the global Wikipedia survey, Glott, Schmidt and Glosch (2010) found two outstanding motives for participating: the wish to share and contribute to knowledge, and the wish to fix the errors one notices.

Research on Article Progression and Featured Articles

Featured Articles are marked with a bronze star, and are supposed to be the very best articles on Wikipedia. Before an article becomes a Featured Article it has to be nominated by someone from Wikipedia’s community – basically anyone – and then read by some self-appointed reviewers who, based on the established criteria, support or oppose the nomination. Objections must include a motivation.

Myers (2010) has studied the history of two articles, *Manchester* and *7 World Trade Center*, in the English language version of Wikipedia; later, both these articles were chosen as Featured Articles. When Myers examined the articles’ first hundred edits (seen on the revision history pages and in different versions of the article) he noted that articles undergo different types of changes, described as *adding information*, *changing the information*, *formatting to fit Wikipedia conventions*, *proofreading*, *vandalism* and *reversion*.

Viégas, Wattenberg, and McKeon (2007) have examined the processes and principles behind the Featured Article procedure. They found that the process on Wikipedia differs from the usual enterprise workflow process: most of the roles in the Featured Article process are filled by self-identified individuals who determine what to do and where their work is needed in this non-hierarchical flow of information.

Gorgeon and Swanson (2011) have analyzed the development (5,970 edits made by 2,956 users) of a single article, the buzzword *Web 2.0*, in the English Wikipedia. Three different periods were identified to describe the lifecycle of the article on Wikipedia: the *germination period* (lasting around six months), in which a small number of registered and anonymous contributors struggled to define the term; followed by the *growth period* (lasting more than two years), in which the article grew in both volume and substance; and finally the *maturation period* in which its growth slowly decreased, as did the number of participants involved. Gorgeon and Swanson also categorized the types of edits performed in the *Web 2.0* article as *vandalism*, *spam* and *copy edit*, from Wikipedia’s own glossary, complemented with some more categories created for the study: *test*, *maintenance*, *restoration*, *challenge*, *challenged*, and *unchallenged*.

Viégas and Wattenberg (2010, also Viégas, Wattenberg and Kushal 2004) have created a visualization technique called *history flow visualization*. Instead of analyzing separate articles, they found an algorithm that could track the movements of large passages as well as changes on the word level, which made it possible to overview all article edits over time.

The Study

This study deals with three articles from the Swedish Wikipedia: *Free will* [Fri vilja], *Fell* [Fjäll], and *Edgar Allan Poe*. The aim is to examine what the creation processes of these articles look like, and how the production of articles can be understood. Further, the contributors’ roles and functions in the process will be approached.

The articles were chosen from a list of Featured Articles (Wikimedia 2011), where they all belong to the subject field *culture*; within this subject field, they have been selected because they deal with quite disparate issues related to the subjects of philosophy, geology and literature. The study will follow the articles' development from their very first versions to the end of 2012.

Material and Method

The main material comes from *non-article material*, like *revision history pages* and *user pages*, but also from *article material* retrieved from *sv.wikipedia.org* complemented with some statistics from *toolsserver.org*. Principally the study has a qualitative approach, but there are some quantitative elements involved as well.

The *revision history page* offers information about the date and time of each edit, the user who executed it, whether the edit was considered minor, the article size in bytes, and sometimes a short description of the edit. To create the graphs in Figures 1, 2 and 3, the data concerning article size and date have been processed in the statistical program IBM SPSS Statistics version 21. A *user page* contains a registered user's personal presentation by which the user can introduce him-/herself. Here, some of the contributors' user pages are included in the material. Besides *registered users* with self-chosen user names, there are *anonymous/IP users*, identifiable by the computer's IP number, and *bots*. The latter are scripts programmed to perform automated, or semi-automated, tasks of a more routine nature, such as creating interlanguage links to corresponding articles in other language versions of Wikipedia.

The wikitext structure makes it possible to follow an article's development over time. All previous versions of the article are linked to the revision history page, and can easily be displayed. Since all these available versions would form a quite comprehensive body of material only some versions have been examined here, principally with the intention to search for critical events in the articles' development and to identify occurrences of vandalism.

Results

To begin with, some basic facts concerning the articles *Free will*, *Fell*, and *Edgar Allan Poe* will be presented in Table 1: the date of the first and last edits, the date and size in bytes at the last edit, and the total number of edits. Further, the table contains information about the number of users, the distribution of different types of users (*registered users*, *anonymous/IP users* and *bots*), the registered user who has made the most edits, the users who have made more than three edits, and finally, the number of interlanguage links.

Table 2 presents some information related to the articles' Featured Article status: The date of the award and the article's size at that time, the user who nominated it, the users supporting the nomination, and the length of time between nomination and award. Featured Articles are considered to be the best articles Wikipedia can offer, and should be well written, comprehensive, objective, illustrated, well researched, and based on reliable sources.

The facts from Tables 1 and 2 will be placed in context in the following stories of creation, or rather *intercreation*, for each article. These stories also include short pres-

Table 1. Basic Facts about the Articles

	<i>Free will [Fri Vilja]</i>	<i>Fell [Fjäll]</i>	<i>Edgar Allan Poe</i>
<i>Date of the first edit</i>	4 September 2004	29 September 2003	1 December 2003
<i>Size and date for the last edit</i>	73,450 bytes 19 December 2012	27,086 bytes 5 December 2012	59,754 bytes 21 December 2012
<i>Number of edits</i>	209	165	457
<i>Number of users</i>	95	86	227
<i>Registered users</i>	46 (48%)	56 (65%)	91 (41%)
<i>Anonymous users</i>	13 (14%)	22 (26%)	84 (37%)
<i>Robots</i>	36 (37%)	8 (9%)	52 (22%)
<i>Most edits done by one registered user</i>	24 edits done by <i>Popperipop</i> (2007-2008)	31 edits done by <i>Svjo</i> (2008-2011)	55 edits done by <i>Nicke L</i> (2005-2008)
<i>Number of registered users with more than three edits</i>	4 users: <i>Popperipop</i> , <i>TKU/Yvww</i> , <i>Huesos</i> and <i>Dnm</i> (0.9% of the registered users).	4 users: <i>Svjo</i> , <i>Lapplänning</i> , <i>Yvww</i> and <i>Ettrig</i> (0.7% of the registered users).	8 users: <i>Nicke L</i> , <i>Gegik</i> , <i>Aleph</i> , <i>B****n</i> , <i>Tournesol</i> , <i>Torvindus</i> , <i>Hedning</i> and <i>Auc</i> (0.9% of the registered users).
<i>Interlanguage links</i>	71	11	100

Table 2. Featured Article, Overview

	<i>Free will [Fri Vilja]</i>	<i>Fell [Fjäll]</i>	<i>Edgar Allan Poe</i>
<i>Featured Article, date</i>	15 May 2008 after 81 edits	15 May 2008 after 80 edits	17 January 2008 after 253 edits
<i>Size of Featured Article</i>	74,313 bytes	28,302 bytes	55,410 bytes
<i>Nominated by</i>	<i>Yvww</i>	<i>Yvww</i>	<i>Yvww</i>
<i>Nomination supported by (at least 5 persons)</i>	<i>D.O.G</i> , <i>Heimvonnar</i> , <i>Ronny</i> , <i>xenus</i> and <i>Ace90</i> .	<i>Jopparn</i> , <i>xenus</i> , <i>NatoX</i> , <i>Ronny</i> , <i>-nothingman-</i> , and <i>Mikael Lindmark</i> .	<i>Popperipop</i> , <i>NatoX</i> , <i>Jaentz</i> , <i>Ace90</i> and <i>Huggorm</i> .
<i>Time of nomination</i>	3 weeks	2 weeks	2 weeks

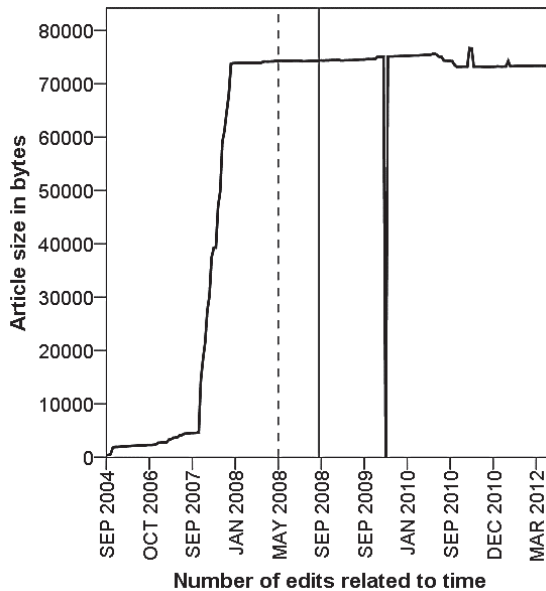
entations of some of their contributors – the descriptions in the indented text are based on the users' own presentations.

1. *Fri vilja* [Free will]

The first article in this study is *Free will*. It was created on 4 September 2004, and was listed as a Featured Article on 15 May 2008 after being nominated for three weeks. As seen in Table 1, at the end of 2012 the article's size was 73,450 bytes after having been edited 209 times. The edits were made by 46 registered users, 13 anonymous/IP users, and 36 bots. The article *Free will* has been provided with 71 interlanguage links.

The originator behind the article's first draft was a user called *TKU* (later known as *Yvww*). The draft contained 56 words (among them five blue links to other entries). It then developed quite slowly, with edits mostly made by bots providing the article with interlanguage links. After two years, the initiator *TKU/Yvww* returned to add more text to the article. *Yvww* edited the article a total of nine times, and became one of its most active editors.

Figure 1. *Article Free will [Fri Vilja]*



Note: Total edits 208 from 29 September 2003, until 19 December 2012. Awarded as a Featured Article (after 81 edits, marked with a dashed line) on 15 May 2008. The first 100 edits are marked with a solid line.

On the user page *Yvwv* mentions having been active on Wikipedia since 2004, and includes some opinions, ideas and projects of special concern in the presentation. *Yvwv* expresses a wish for his/her contributions to remain public domain. Quotes from known and unknown people are also used as part of this personal presentation.

In April 2007, two-and-a-half years after the initial draft of the article, a user called *Huesos* appeared. This user contributed with five edits.

According to the user page *Huesos* is interested in philosophy and history, and does not want to come into conflict with others. There are icons showing several awards he/she has received, such as *best historian*, *best teacher in social studies*, and *most new written articles*.

In July 2007 another user, called *Popperipopp*, began to edit the article.

Popperipopp presents himself as a man. On his user page he tells about his studies in philosophy and history, and says he holds liberal socialistic values. In a diary he has notes on how he extends articles, does translations, searches for statistics, and categorizes and plans his work.

For a while both *Huesos* and *Popperipopp* simply added new facts to the article, but in January 2008 *Popperipopp* expanded it from 4,610 to 73,923 bytes by himself. This great enlargement is shown in Figure 1. *Popperipopp* dominated the scene and played a considerable part in the article's growth and development for ten months. His contributions improved the quality of the article, and in April 2008 *Yvwv* nominated it for the Featured Article award. Three weeks later, when it became a Featured Article,

Popperipopp had already disappeared from the arena. At that point the article seems to have stabilized, and no more radical changes appeared until October 2009 when it was vandalized. A registered user called *Arene* replaced all its content with “JJJJJJjjj[...] jjj Reynolds”. This obvious sabotage was immediately addressed, and the article was restored by the user *Tegel*, who tells on the user page about having a special interest in cleaning up vandalism. The vandalism and the restoration that followed can be identified as a V-shape on the line in Figure 2.

After the vandalism, no major changes were made to the article. Mostly minor edits, such as linguistic corrections and references, were carried out; in many cases the edits involved links and interlanguage links created by bots. Of 46 registered users, four of them (*Popperipopp*, *TKU/Yvww*, *Huesos* and *Dnm*) edited the article more than three times. *TKU/Yvww* was active for the longest period of time, almost four years. The most active bots, *Luckas-bot* and *Xqbot*, contributed through minor edits on eight and seven occasions, respectively. *TXiKiBoT*, with six edits, edited the article over a period of more than three years.

2. *Fjäll* [*Fell*]

The second article chosen for this study is *Fell*, created on 29 September 2003. The article was listed as a Featured Article on 15 May 2008 after being nominated for two weeks.

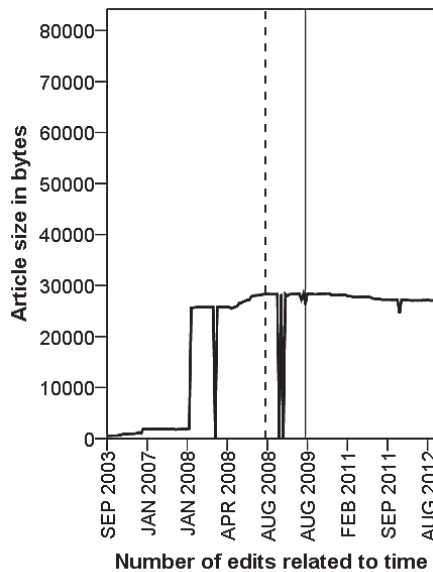
On 5 December 2012 the article’s size was 27,086 bytes, and by then it had been edited 165 times. As seen in Table 1 the edits were made by 56 registered users, 22 anonymous/IP users, and eight bots. The article was linked to 11 corresponding articles in other Wikipedia language versions (Aragonese, Danish, Dutch, English, Finnish, French, German, Norwegian Bokmål and Nynorsk, Sami, and Spanish).

The first version of the article was based on a text from the Swedish encyclopedia *Nordisk Familjebok*. The initiator, the user *BL*, only made one contribution and has not been involved in the process since then. During its first three years, the article grew slowly. On average there was less than one edit per month, and most of these are considered minor edits. The first occurrence of vandalism was in October 2007, when an anonymous user inserted the text (in Swedish): “sausages with two kilograms of bread and ketchup”. The user *Tulpan* restored the article to its previous condition. In March 2007 the user *Lapplänning* entered the scene; first for a smaller edit, but then returning in January 2008 to contribute much more extensively.

In the presentation on the user page *Lapplänning*, earlier called *Helleborus*, talks about being a nature lover with a libertarian left political orientation; the contributions he/she made on Wikipedia often concern issues related to Northern Sweden.

Over a period of 14.5 months, *Lapplänning* expanded the article and made a total of 17 edits. Figure 2 illustrates the large increase in article size. Besides a great deal of new information, some new images and links were added. As references, *Lapplänning* has used sources like the (Swedish) National Encyclopedia [Nationalencycledin], the Swedish Tourist Association [Svenska turistföreningen], and an online article about biodiversity and climate change. Another user, *Swjo*, also edited the article during the same period, principally polishing the text and rearranging the images.

Figure 2. Article Fell [Fjäll]



Note: The graph shows edits and size over time. Total edits 165 from 29 September 2003 until 5 December 2012. Awarded as a Featured Article (after 80 edits, marked with a dashed line) on 15 May 2008. The first 100 edits are marked with a solid line.

On the user page, *Svjo* talks about having a background in technical physics and an interest in the history of science. Besides passing on simple facts, *Svjo* would like the Swedish Wikipedia to offer a good deal of education.

As seen in Figure 2, in April 2008 someone removed all the article’s content. On the article’s revision history page, an anonymous user explained that this edit was based on “facts from my daddy’s work”. After this incident the article was restored, so *Ywv*, like in the article *Free will*, could nominate it for the status of Featured Article. After the nomination, principally only *Lapplänning* and *Ywv* were engaged in improving the article, with *Ywv* contributing some linguistic and content-related changes.

After receiving the award in May 2008, the article remained unmodified for three months. In August, however, an anonymous user inserted some random characters and obscene words into it. The vandalism was soon detected, but the same kind of vandalism occurred several times during the autumn. Obscene words and sentences were not simply inserted into the text; the whole content was removed from the article twice. In Figure 2 the V-shapes on the line indicate the removal of text and the restoration that followed. This particular kind of vandalism is called *blanking* on Wikipedia. Apart from the vandalism, the article had now stabilized.

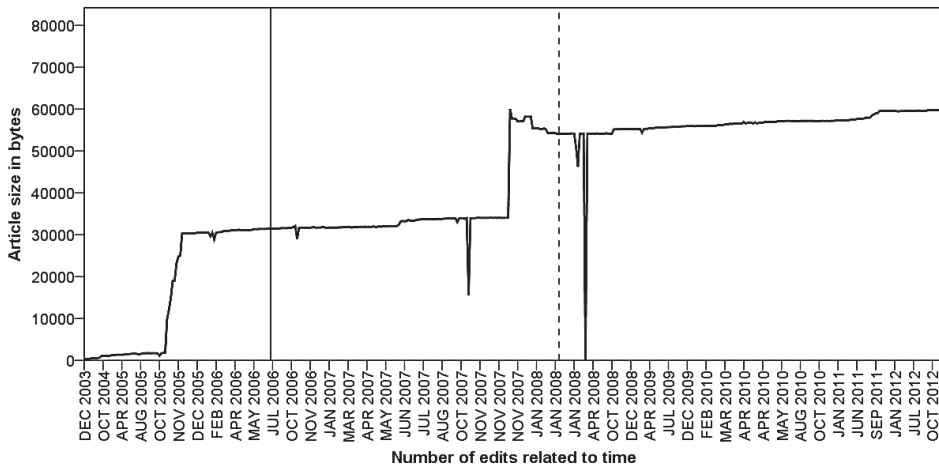
A total of 56 registered users contributed to this article, but only four of them (*Svjo*, *Lapplänning*, *Ywv* and *Ettrig*) edited it more than three times.

3. Edgar Allan Poe

The third article in this study is about the American author *Edgar Allan Poe*. The article was created on 1 December 2007, and was listed as a Featured Article on 3 January 2008 after being nominated for two weeks.

At the end of 2012 the article’s size was 59,754 bytes, after being edited 457 times. As seen in Table 1 these edits were made by 91 registered users, 84 anonymous/IP users, and 52 bots. The article was provided with interlanguage links to corresponding articles in 100 other language versions of Wikipedia. Figure 3 shows how the article size has changed over time.

Figure 3. Article Edgar Allan Poe



Note: The graph shows edits and size over time. Total edits 457 from 1 December 2003 until 21 December 2012. Awarded as a Featured Article (after 253 edits, marked with a dashed line) on 17 January 2008. The first 100 edits are marked with a solid line.

The first version of the article was created by an anonymous user. It consisted of just six words in Swedish, here translated into English: “The father of Gothic horror romances, born in the US in 1809.” An hour later, the user *Max* expanded the text to 42 words, including nine blue links to other entries on Wikipedia. Then, three months passed before anyone else became engaged in the *stub*, and another three months until the next contributor appeared. After a year not much had been done; however, in July 2005 the activity grew more intense, especially when the user called *Nicke L* began editing this still quite rudimentary article. To expand the article *Nicke L* translated text from the corresponding English article, and two great enlargements to the article’s size are visible in Figure 3. On several occasions, *Nicke L* also detected vandalism and other kinds of undesired edits. In total, *Nicke L* made 55 edits during a period of three years and nine months.

Nicke L (also known as *NickeLiltroll*) presents himself on the user page: he has been active on Wikipedia since 2004, and often translates from other language versions. His user page contains information about the many awards he has received for his contributions (these awards, or *barnstars*, are part of the culture

on Wikipedia and allow users to show appreciation for one another, for instance for their efforts or for being generous to others).

In July 2007, the user *Aleph* turned up to make 15 edits. These edits mostly concerned reformulations and choice of words.

On his user page, *Aleph* talks about interests such as literature, science, history of science, movies, and history of entertainment. Further, there is information about *Aleph*, in August 2009, having been blocked from Wikipedia. A link to the attached *user talk page* offers more information about the blocking.

On 3 January 2008 the article *Edgar Allan Poe* was nominated, this time as well, by *Ywv* for the award of Featured Article. After two weeks of nomination, consensus among the nominator and the reviewers was reached and the article was given the status.

In March 2010 another user, *Gegik*, began to edit the article. This user made a total of 17 edits, for instance adding more facts about literary figures who had inspired Edgar Allan Poe as well as about authors who had been inspired by him.

Gegik does not reveal much on the user page; it simply deals with his/her language skills (Swedish as a native language and some skills in English and German).

After *Gegik*'s effort some minor edits were made, principally concerning choice of words.

This article was vandalized almost 50 times. The vandalism included, among other things, adding nonsense or obscene expressions to the article text, and replacing text with nonsense words. As shown in Figure 3, the line in the graph has V-shapes showing that texts have been removed from the article several times. Another time, all the content in the article was replaced with "I'm the best!". Further, there have been cases of misinformation, for instance when Poe's birth year was replaced with an incorrect year.

Eight registered users edited the article more than three times, the most active users being *Nicke L* with 55 edits, *Gegik* with 17 edits, and *Aleph* with 15 edits. The rest made a maximum of six edits each: *B****n*, *Tournesol*, *Torvindus*, *Hedning* and *Auc*. The bots that made the most edits were *RobotQuistnix* and *SieBot*, with eleven and nine minor edits, respectively. Among the anonymous users the most active made eight edits, all of which can be classed as vandalism.

The Development of Articles

When looking at the first hundred edits (marked with a solid line in Figures 1, 2 and 3) to each of the three articles, there are changes similar to what Myers (2010) found in his study: after a tentative start, someone increases the article's size considerably by adding a great deal of information; then comes a period of some contributors mainly trying to format it to fit Wikipedia's conventions, but also correcting facts and linguistic errors – at this point the article size has not changed much. However, in the article *Fell*, three serious situations of vandalism occurred and were followed by reversions to the article.

The periods suggested by Gorgeon and Swanson (2011) can be seen in these articles as well. However, the proposed periods of time, based on a single article, do not make sense here. The *germination period* is much longer, between two and four-and-a-half years. The *growth period*, on the other hand, is remarkably short, just a few days in the

articles *Free will* and *Fell*. *Edgar Allan Poe*'s growth period is about two years, during which the article was significantly increased twice (see Figure 3). In all three cases the enlargements were done by a few single contributors. If the *maturation period* ends when an article attains the status of Featured Article, this period is quite short – just between one and four-and-a-half months. The articles on Wikipedia are supposed to never be finished; consequently, contributors can continue to edit, for instance by working with the content, wording and shaping an article even after it has been appointed a Featured Article. Over time, the article size might decrease as the language becomes more logical and to the point. Changes do not always result in qualitative improvements – an article might even deteriorate to the point that it no longer meets the criteria of Featured Article status.

Gorgeon and Swanson have categorized the various types of edits that made up the article content. Their category *vandalism* can be seen in all three articles in this study. The article *Edgar Allan Poe*, in particular, reveals the existence of conflicting interests and the collision of different agendas: some serious contributors want to create a high quality article, while some less serious characters repeatedly and disrespectfully vandalize their work by inserting nonsense words, obscene expressions, bad language and misinformation, or by simply removing text. When Wattenberg and Viégas (2010), in their *history flow visualization*, first noticed that most of an article was missing, they thought they had a bug in their code, but later discovered that this had been caused by a user who had erased the text. Here, this phenomenon can be seen in the graphs in Figures 1, 2 and 3 when the article size drops dramatically. On Wikipedia there are some individuals, for instance the user *Tegel*, who express on the user page a special concern for cleaning up vandalism.

Experts and Front Figures

The first global Wikipedia Survey states that contributors often see themselves as “experts” (Glott, Schmidt, and Ghosh 2010). This study suggests that the contributors might be regarded as either *specialized experts*, with deep knowledge and/or interest in a particular issue or field, or *generalized experts*, with general knowledge and/or a broad interest related to the creation of the wiki encyclopedia. The expertise does not necessarily come from formal schooling. Here, the contributor *Huesos* personifies the specialized expert, while *Yvww* (also known as *TKU*) corresponds to a generalized expert. *Nicke L* seems to combine these two types. Even though the three articles in the study deal with quite disparate topics, *Nicke L* is involved in all of them. Both *Svjo* and *Yvww* have contributed to two articles. Besides, *Yvww* has nominated all three articles to be awarded the status of Featured Articles. Both *Nicke L* and *Yvww* are placed high on the list of contributors with the most edits on the Swedish Wikipedia, with more than 80 thousand edits each (Wikipedia 2012). On his user page, *Nicke L* initially revealed his real name; this kind of connection to “real” life might indicate responsibility and trust. Most certainly, *Nicke L* and *Yvww* are able to grasp the grand picture, even when working with small details.

On the user page, *Lapplänning* has expressed deep concern for the northern part of Sweden and its unique landscape, which might reinforce the impression of credibility, especially when it comes to aspects like the climate, weather conditions, environment, wildlife and vegetation related to this part of the country. But, as claimed by Hoff-Clausen (2011), it is only through their contributions that users become someone rather

than because of who they are or say they are; their identity on Wikipedia is based on what they have done. Through their contributions, the users will win others' trust and respect.

Every article has its front figure – one person who has made major contributions: *Popperipopp* edited the article *Free will* 24 times, *Svjo* and *Lapplänning* edited *Fell* 31 and 17 times, respectively, and *Nicke L* edited *Edgar Allan Poe* 55 times. During a relatively short period of time, these individuals increased the article's size as well as improved its quality significantly. After having been very active for a period they disappear, perhaps to become involved in other articles or projects. The graphs in Figures 1, 2 and 3 illustrate the striking enlargements in article size – seen as distinct “steps” on the lines. After the award of Featured Article is given the lines become flatter, suggesting that the articles have now stabilized, at least regarding size. The award of Featured Article seems to indicate to users that the article is now “good enough”.

As seen in the study, information is brought into the articles on the Swedish Wikipedia from other Wikipedia language versions, from other encyclopedias, and from a variety of external sources. Being able to show literacy skills, like being able to seek and deal with information, is more vital than possessing expert scholarly knowledge. Some contributors in the study might be perceived as more prominent than others because of their competent, large and/or frequent contributions.

Besides being able to add a great deal of factual information to the article *Free will*, *Popperipopp* obviously has literacy skills, such as finding, understanding and processing relevant information. Other users might make fewer and more limited edits, but nevertheless contribute to the development of both the article and Wikipedia itself.

Shirky (2008) observed that no one is responsible for doing or managing the work on Wikipedia, but yet the processes work. This study might partly contradict this statement; because even if no one is ascribed the formal responsibility, there are individuals who step up to take responsibility, at least for a defined task at a given time.

The Intercreation Aspect

Wikipedia's user-generated articles might give the impression that each article is a collaboratively shaped product. This could be true to some extent. Obviously, many individuals are involved, but this study indicates that a large part of the work is achieved by a small group of individuals, who are not necessarily collaborating with each other or anyone else.

As mentioned earlier, the contributors might interact in many different ways, and do not necessarily have to be present at the same time. Like in the hives Bruns (2008) talked about, the users gather around each entry, creating a collective mind. As seen in the study, some of the voices can be perceived as louder or more governing than the others, but together the hive stakes out the direction, makes decisions and guides the work. The collective's production becomes visible though all the edits – minor as well as major – made by the users, but also through the discussions taking place on different talk pages and in other forums. In this sense Wikipedia is a product of a collective mind, or rather of many collectives' minds, and among the voices that stand out new kinds of gatekeepers are seen.

Major edits might be regarded as the most important for an article's progress, but nevertheless, many small edits could work as binding elements and be of relatively great

importance. The following question might therefore be motivated: Who does the most important work on Wikipedia, the few who contribute through large edits, or the many who contribute through small ones?

“The Anyone-Can-Edit Syndrome”

To sum up, different users contribute in different ways, and do not necessarily cooperate even if they do coproduce the encyclopedia. Considering that the users themselves decide what to do, and that no one distributes the chores, it works amazingly well – probably because of the possibilities to interact and communicate, but also because of the transparency offered by the wiki. Wikipedia’s slogan “anyone can edit” stresses that every single individual has the possibility to be a contributor. However, the global survey conducted by Gosh, Glott and Schmidt (2010) indicated that many individuals and groups are still excluded from participation. Even if Wikipedia’s content reflects more opinions and voices than traditional encyclopedias do, inequalities as well as imbalance among the contributors could restrict the development. This study shows that there are some contributors who hold quite powerful positions – they might have the competence and/or maturity to take on the responsibility, but they may also prevent other voices from being heard. The invisible subjective boundaries that Spinellis and Louridas (2008) referred to would affect the encyclopedic content as well as its perspective. Wikipedia claims that articles should be written from a neutral point of view. However, the meaning of this guiding principle is most likely perceived differently among users, depending on the individual’s experiences and idea of the world. Wikipedia should strive not only to attract more participants, but also to attract a more diverse group of participants. Glott and Gosh (2010: 39) would like to see older users among the contributors, since “they appear to be a resource with neglected potential, as they provide a significant stock of time and expertise that could be tapped for Wikipedia”.

The notion of Wikipedia being a product or process is of great importance, whether the goal is to create a high quality encyclopedia or to engage as many as possible in its creation. A kind of social aspect can be observed in the back-and-forth editing of the three articles here. Struggles between different agendas are seen not only when vandalism occurs, but also in serious contributors’ different edits. If there are some *lone wolves* seen in the articles, there could also be *watchdogs* or *listening dogs* present. The talk pages attached to the articles provide more insight into the issues discussed, and can be used to expand the material in another study.

According to the wiki ideology, the articles on Wikipedia will never be finished; the openness for making changes will always remain. In this study, all the articles might be considered “good enough” at a certain point, but there will be new edits to be made. In the future some specific aspects of the articles, for example regarding *rodents* or *plants* in the fells, can be detached from the article *Fell* to form the basis for new entries. Wikipedia’s unfinishedness, that no one will ever have the last word, is a most interesting phenomenon, and even if an article does not change significantly over time the ongoing editing keeps its content alive.

Can anyone edit Wikipedia, or should anyone be able to edit Wikipedia? For the individual, it is very much about being able to establish a credible voice and become part of the dialogue that creates Wikipedia.

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