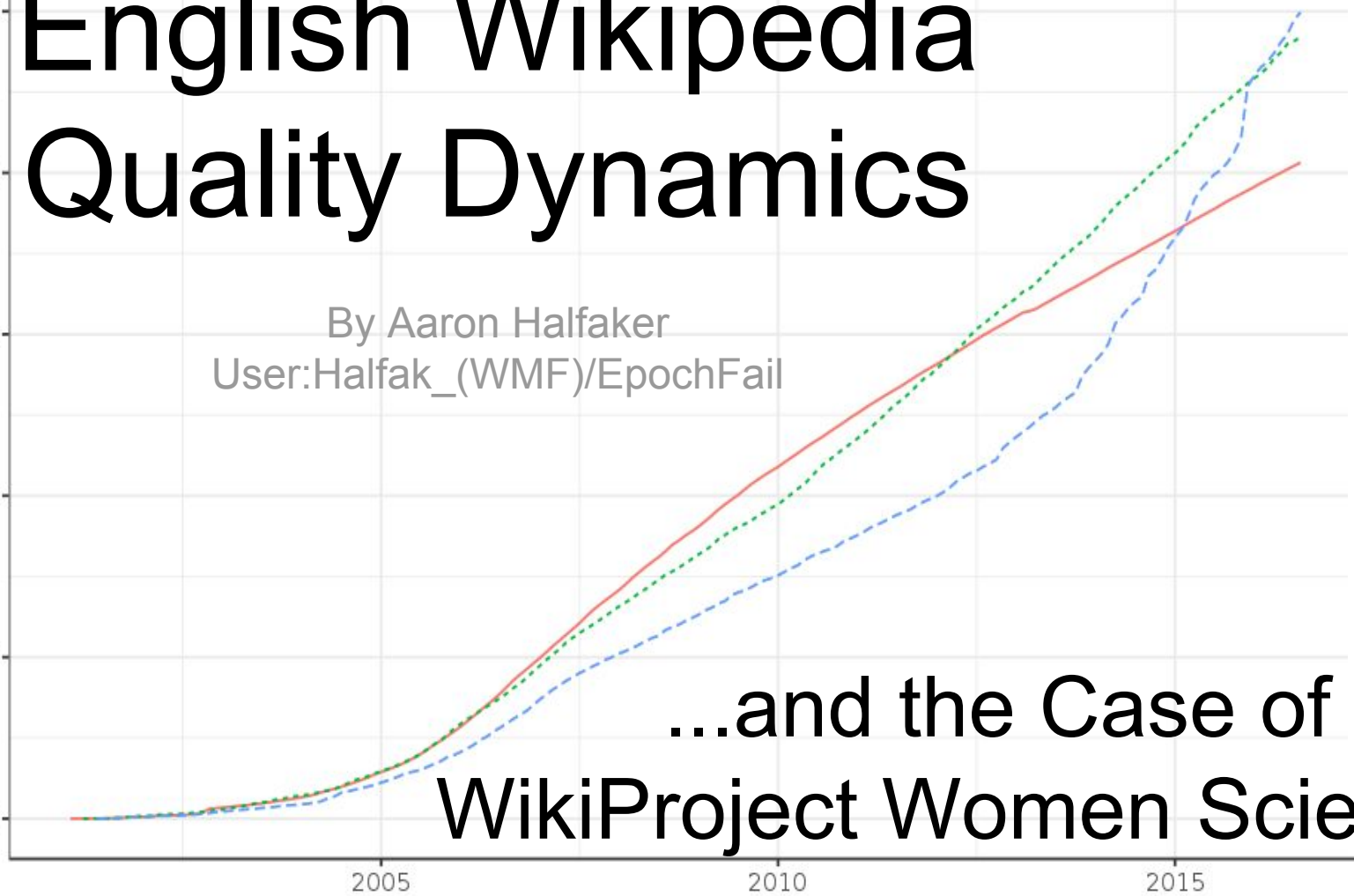


English Wikipedia Quality Dynamics

By Aaron Halfaker
User:Halfak_(WMF)/EpochFail



group

— all wiki

⋯ visual arts

- - women scientists

...and the Case of
WikiProject Women Scientists

Aaron Halfaker

Principal Research Scientist, Wikimedia Foundation

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



About me

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

My work

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

See [The Rise and Decline](#) for an example of my research and [Revision scoring as a service](#) for an example of an experimental technology I'm actively working on.

Contact me

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

iD

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

Aaron Halfaker

Principal Research Scientist, Wikimedia Foundation

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

Measure what you can.



About me

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

My work

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

See [The Rise and Decline](#) for an example of my research and [Revision scoring as a service](#) for an example of an experimental technology I'm actively working on.

Contact me

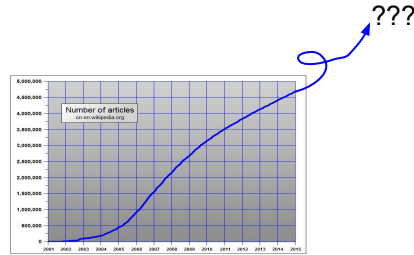
- E-mail: ahalfaker@wikimedia.org
- Website: <http://halfaker.info>
- Twitter: <http://twitter.com/halfak>
- On IRC, I go by "halfak".

iD

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

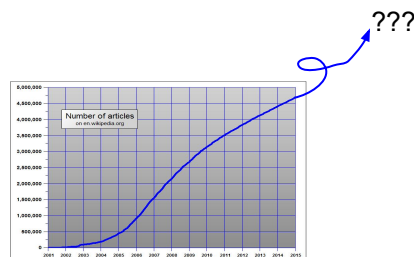
Outline

1. When will Wikipedia be done?

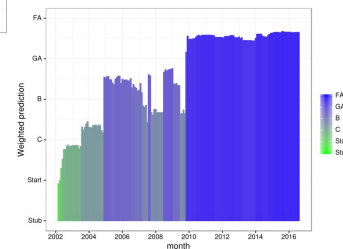
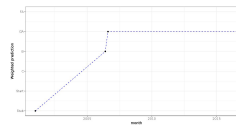


Outline

1. When will Wikipedia be done?

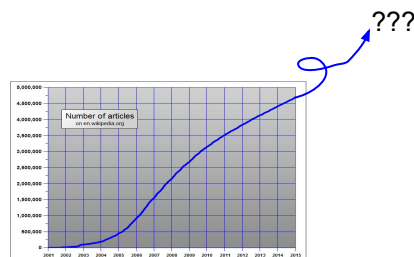


2. Modeling quality in Wikipedia

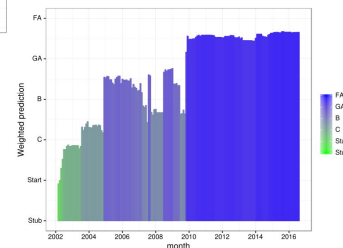
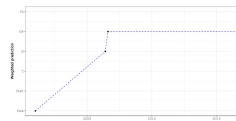


Outline

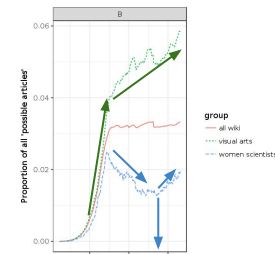
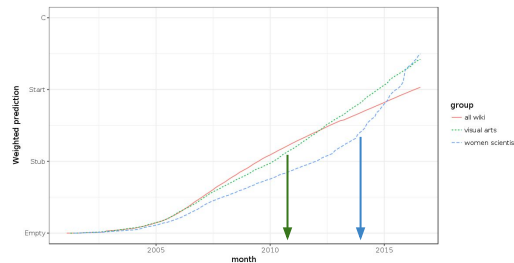
1. When will Wikipedia be done?



2. Modeling quality in Wikipedia



3. Applied the measurement



Part 1

When will Wikipedia be done?

Wikipedia:Wikipedia is a work in progress

From Wikipedia, the free encyclopedia

See also *Wikipedia:Work in progress (disambiguation)* and *meta:Eventualism*.

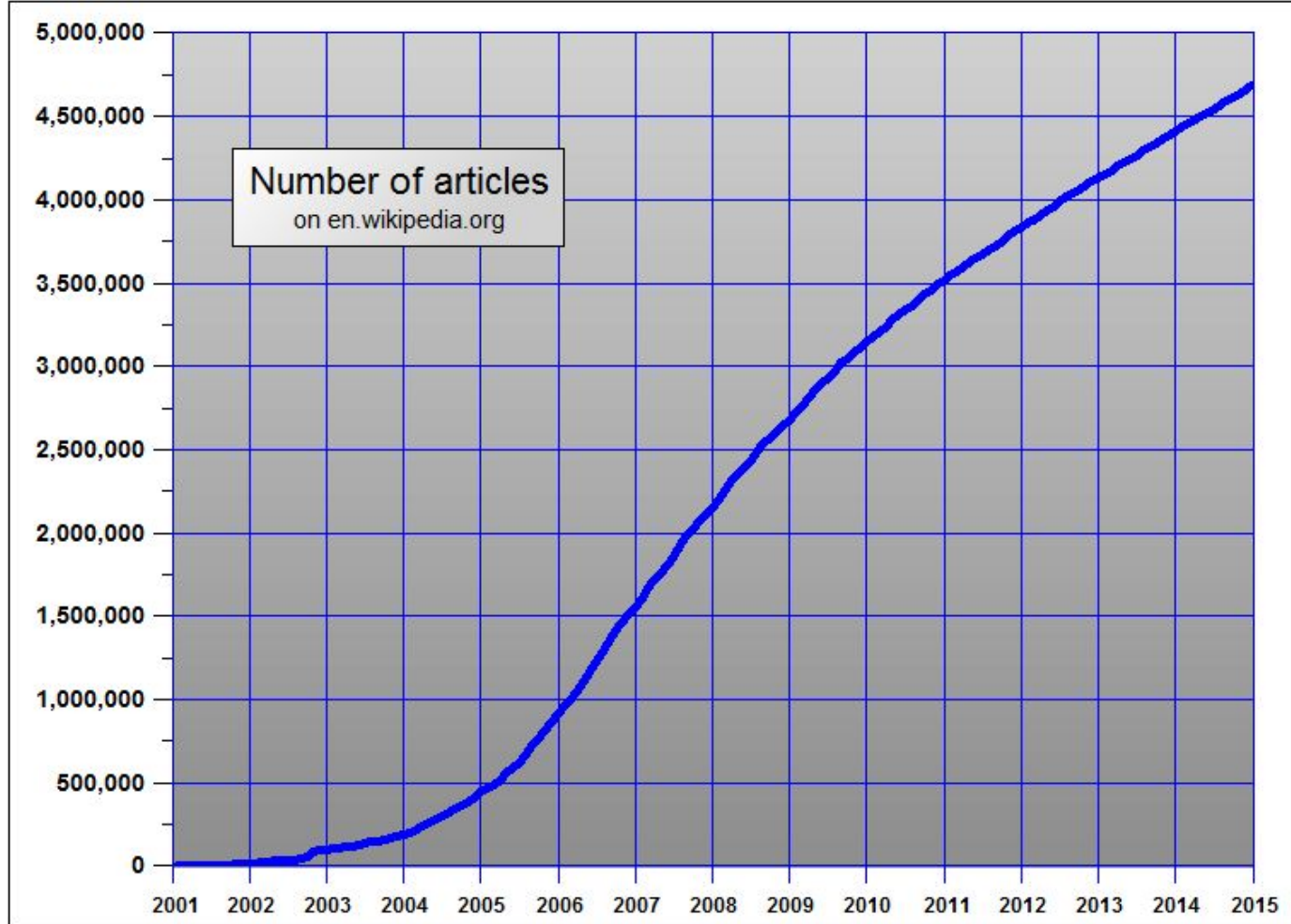
Wikipedia is, by number of articles, the largest encyclopedia ever to exist. It contains a lot of information, and has been edited and viewed by millions of people, many of whom have found it useful. Unfortunately, much of it could be a lot better. Many people have eagerly pointed this out—often failing to give weight to the notion that it has been created entirely by volunteers, from nothing, in just thirteen years—and some have even suggested that the Web would be better off without it. However, in airing their complaints, they frequently miss out one crucial detail: **Wikipedia is not finished**. Not even close. In fact, we're barely getting started.

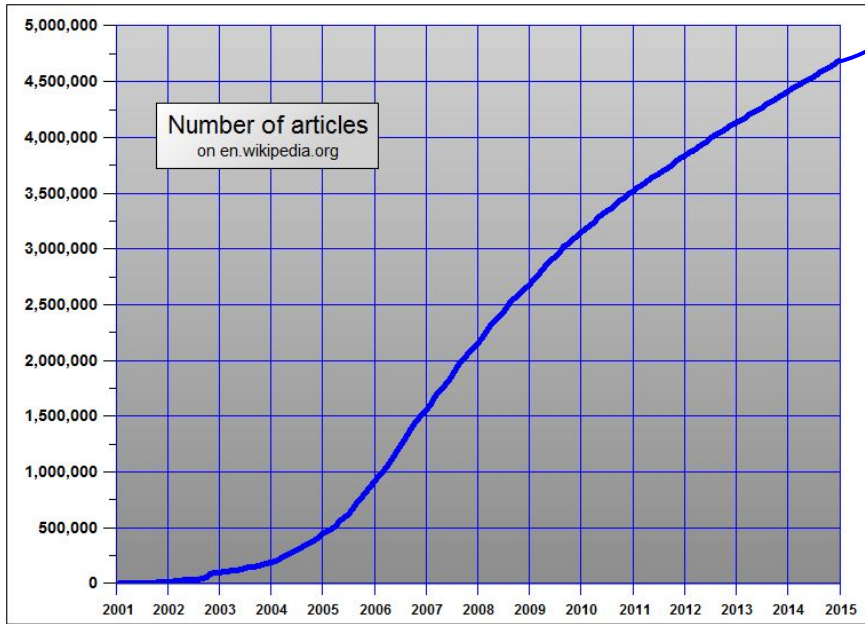
In its very early days, Wikipedia went through several major software changes. Existing wiki software was not designed for writing encyclopedias, and developing the first version of [MediaWiki](#) took time. As a result, much of the earliest page histories have been lost, and while the history of [some pages](#) is preserved right back to January 2001, other pages which are equally old have no information from before 2002. It is possible to see Wikipedia as it looked in its entirety in December 2001, as a read-only copy of the pages at that time is hosted at nostalgia.wikipedia.org. To really demonstrate the point, though, it is necessary to go back even further.

https://en.wikipedia.org/wiki/Wikipedia:Wikipedia_is_a_work_in_progress (CC-BY-SA 3.0)

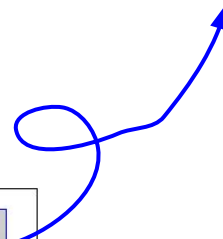


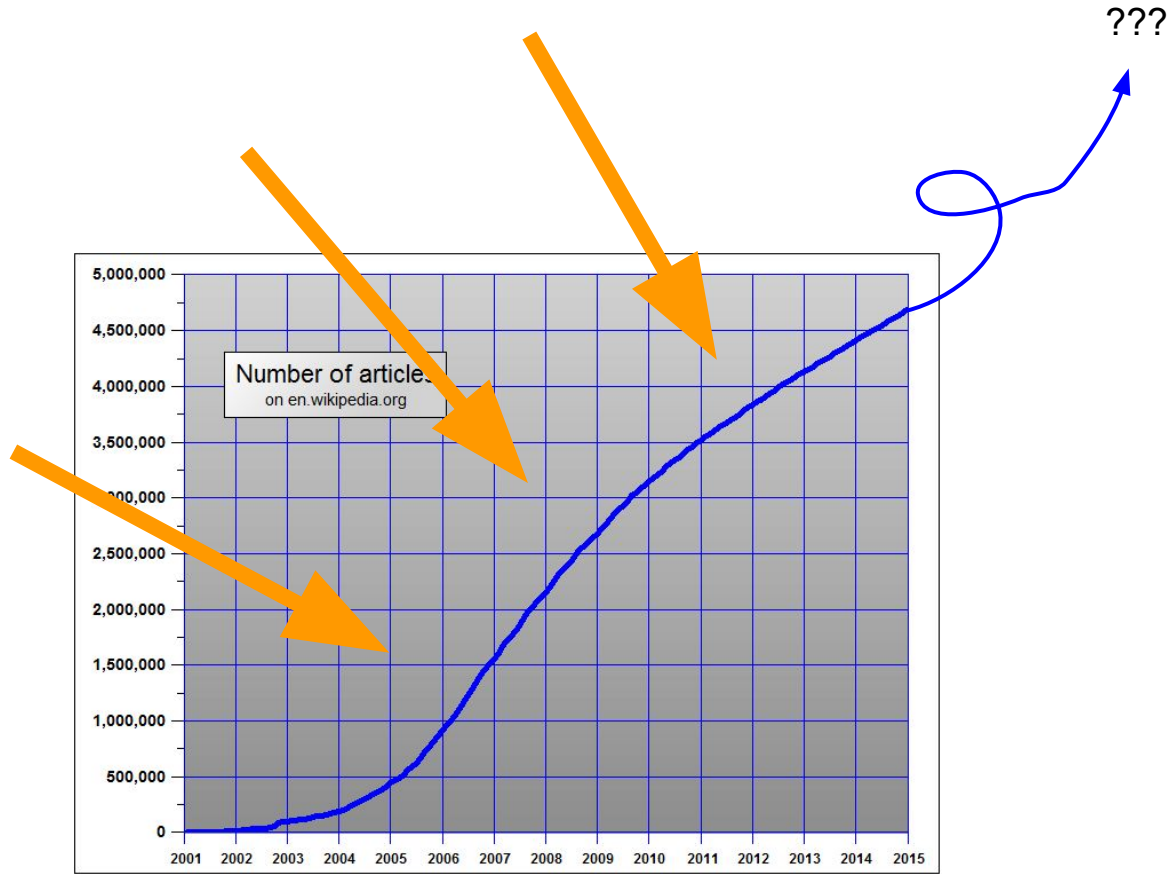
The Wikipedia logo. See that ↗ big hole in the top? That's there for a reason, and that reason is it is not finished. It's *not just* to make it look like the [Second Death Star](#).





???





Nelle Morton

A *start-class* article from Wikipedia, the free encyclopedia

Nelle Morton (?–July 1987) was a feminist activist, civil rights leader, and professor. She taught at [Drew University](#), and after she retired in 1970, wrote essays on feminist theory. In 1985, she published *The Journey is Home*, a collection of her essays discussing feminism, spirituality, religion, and intersectionality.^[1]

References

- ↑ Keller, Catherine (Fall 1988). "Goddess, Ear, and Metaphor: On the Journey of Nelle Morton"[↗](#). *Journal of Feminist Studies in Religion*. **4** (2): 51–67. (subscription required ([help](#))).

https://en.wikipedia.org/w/index.php?title=Nelle_Morton&oldid=687691638 (CC-BY-SA 3.0)

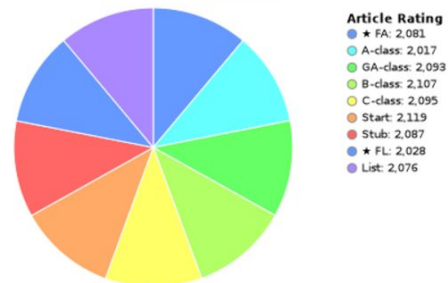
Wikipedia:Version 1.0 Editorial Team/Statistics

From Wikipedia, the free encyclopedia
 < Wikipedia:Version 1.0 Editorial Team

Class	Criteria	Reader's experience
★ FA	The article has attained featured article status by passing an official review. More detailed criteria [show]	Professional, outstanding, and thorough; a definitive source for encyclopedic information.
ⓘ A	The article is well organized and essentially complete, having been reviewed by impartial reviewers from this WikiProject or elsewhere. Good article status is not a requirement for A-Class. More detailed criteria [show]	Very useful to readers. A fairly complete treatment of the subject. A non-expert in the subject would typically find nothing wanting.
⊕ GA	The article has attained good article status by passing an official review. More detailed criteria [show]	Useful to nearly all readers, with no obvious problems; approaching (but not equalling) the quality of a professional encyclopedia.
B	The article is mostly complete and without major problems, but requires some further work to reach good article standards . More detailed criteria [show]	Readers are not left wanting, although the content may not be complete enough to satisfy a serious student or researcher.
C	The article is substantial, but is still missing important content or contains much irrelevant material. The article should have some references to reliable sources, but may still have significant problems or require substantial cleanup . More detailed criteria [show]	Useful to a casual reader, but would not provide a complete picture for even a moderately detailed study.
Start	An article that is developing, but which is quite incomplete. It might or might not cite adequate reliable sources. More detailed criteria [show]	Provides some meaningful content, but most readers will need more.
Stub	A very basic description of the topic. However, all very-bad-quality articles will fall into this category. More detailed criteria [show]	Provides very little meaningful content; may be little more than a dictionary definition. Readers probably see insufficiently developed features of the topic and may not see how the features of the topic are significant.

All rated articles by quality and importance						
Quality	Importance					Total
	Top	High	Mid	Low	???	
★ FA	1,168	1,793	1,697	1,044	191	5,893
★ FL	141	561	650	600	116	2,068
ⓘ A	216	424	577	365	77	1,659
⊕ GA	2,059	4,695	9,173	9,872	1,687	27,486
B	11,951	22,639	34,618	27,432	13,619	110,259
C	10,127	29,141	64,890	89,320	42,720	236,198
Start	17,105	75,083	302,452	770,461	288,260	1,453,361
Stub	4,214	30,501	224,407	1,827,987	836,433	2,923,542
List	2,980	11,075	33,668	91,122	60,902	199,747
Assessed	49,961	175,912	672,132	2,818,203	1,244,005	4,960,213
Unassessed	138	409	1,790	16,329	518,042	536,708
Total	50,099	176,321	673,922	2,834,532	1,762,047	5,496,921

About this table



About this pie chart

https://en.wikipedia.org/wiki/Wikipedia:Version_1.0_Editorial_Team (CC-BY-SA 3.0)

https://en.wikipedia.org/wiki/Wikipedia:Version_1.0_Editorial_Team/Statistics (CC-BY-SA 3.0)

A *good article* from Wikipedia, the free encyclopedia

"Biological science" redirects here. It is not to be confused with [life science](#).

For other uses, see [Biology \(disambiguation\)](#).

Biology is a [natural science](#) concerned with the study of [life](#) and living [organisms](#), including their structure, function, growth, [evolution](#), distribution, identification and [taxonomy](#).^[1] Modern biology is a vast and eclectic field, composed of many [branches and subdisciplines](#).^[*clarification needed*] However, despite the broad scope of biology, there are certain general and unifying concepts within it that govern all study and research, consolidating it into single, coherent field. In general, biology recognizes the [cell](#) as the basic unit of life, [genes](#) as the basic unit of [heredity](#), and [evolution](#) as the engine that propels the synthesis and creation of new [species](#). It is also understood today that all the organisms survive by consuming and transforming [energy](#) and by [regulating](#) their internal environment to maintain a stable and vital condition known as [homeostasis](#).

Sub-disciplines of biology are defined by the scale at which organisms are studied, the kinds of organisms studied, and the methods used to study them: [biochemistry](#) examines the rudimentary chemistry of life; [molecular biology](#) studies the complex interactions among biological [molecules](#); [botany](#) studies the biology of plants; [cellular biology](#)



Biology deals with the study of the many living [organisms](#).

- top: [E. coli](#) bacteria and [gazelle](#)
- bottom: [Goliath beetle](#) and [tree fern](#)

A *good article* from Wikipedia, the free encyclopedia

"Biological science" redirects here. It is not to be confused with life science.

For other uses, see [Biology \(disambiguation\)](#).

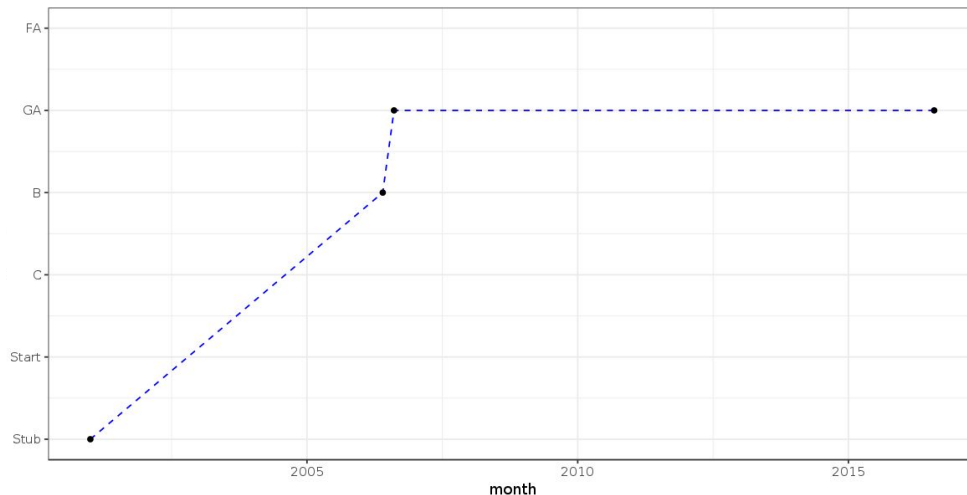
Biology is a [natural science](#) concerned with the study of [life](#) and living [organisms](#), including their structure, function, growth, [evolution](#), distribution, identification and [taxonomy](#).^[1] Modern biology is a vast and eclectic field, composed of many [branches and subdisciplines](#).^[clarification needed] However, despite the broad scope of biology, there are certain general and unifying concepts within it that govern all study and research, consolidating it into single, coherent field. In general, biology recognizes the [cell](#) as the basic unit of life, [genes](#) as the basic unit of [heredity](#), and [evolution](#) as the engine that propels the synthesis and creation of new [species](#). It is also understood today that all the organisms survive by consuming and transforming [energy](#) and by [regulating](#) their internal environment to maintain a stable and vital condition known as [homeostasis](#).



Biology deals with the study of the many living [organisms](#).

- top: [E. coli](#) bacteria and [gazelle](#)
- bottom: [Goliath beetle](#) and [tree fern](#)

Sub-disciplines of biology are defined by the scale at which organisms are studied, the kinds of organisms studied, and the methods used to study them: [biochemistry](#) examines the rudimentary chemistry of life; [molecular biology](#) studies the complex interactions among biological [molecules](#); [botany](#) studies the biology of plants; [cellular biology](#)



A *good article* from Wikipedia, the free encyclopedia

"Biological science" redirects here. It is not to be confused with life science.

For other uses, see [Biology \(disambiguation\)](#).

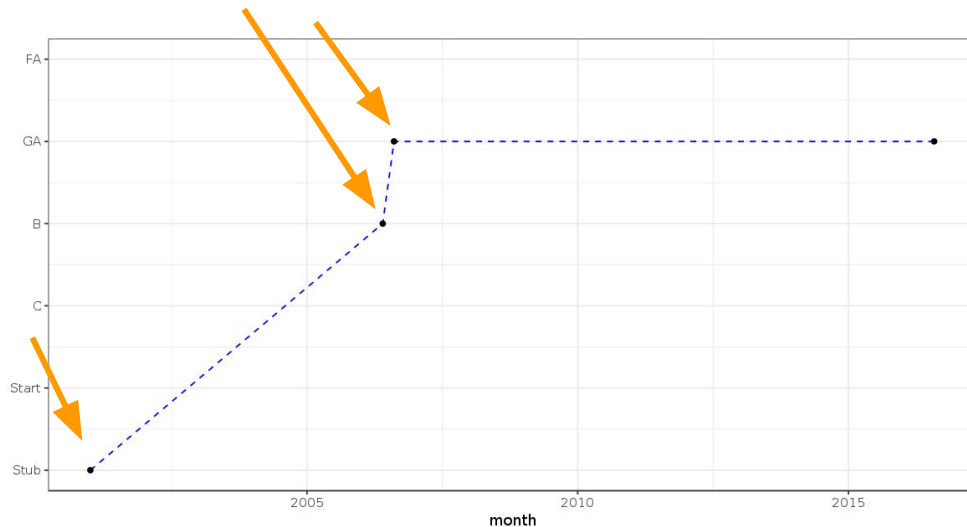
Biology is a [natural science](#) concerned with the study of [life](#) and living [organisms](#), including their structure, function, growth, [evolution](#), distribution, identification and [taxonomy](#).^[1] Modern biology is a vast and eclectic field, composed of many [branches and subdisciplines](#).^[clarification needed] However, despite the broad scope of biology, there are certain general and unifying concepts within it that govern all study and research, consolidating it into single, coherent field. In general, biology recognizes the [cell](#) as the basic unit of life, [genes](#) as the basic unit of [heredity](#), and [evolution](#) as the engine that propels the synthesis and creation of new [species](#). It is also understood today that all the organisms survive by consuming and transforming [energy](#) and by [regulating](#) their internal environment to maintain a stable and vital condition known as [homeostasis](#).



Biology deals with the study of the many living organisms.

- top: *E. coli* bacteria and gazelle
- bottom: Goliath beetle and tree fern

Sub-disciplines of biology are defined by the scale at which organisms are studied, the kinds of organisms studied, and the methods used to study them: [biochemistry](#) examines the rudimentary chemistry of life; [molecular biology](#) studies the complex interactions among biological [molecules](#); [botany](#) studies the biology of plants; [cellular biology](#)



Biology



A *good article* from Wikipedia, the free encyclopedia

"*Biological science*" redirects here. It is not to be confused with *life science*.

For other uses, see *Biology (disambiguation)*.

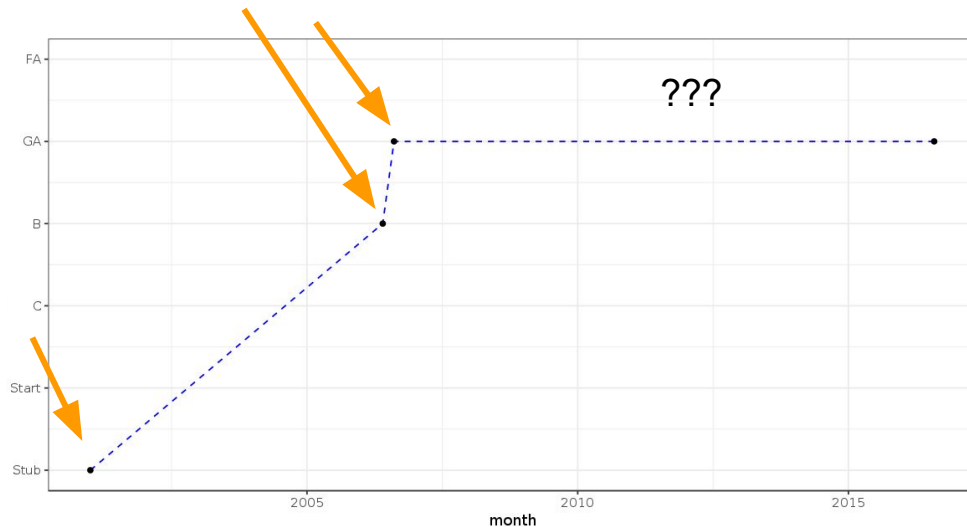
Biology is a **natural science** concerned with the study of **life** and living **organisms**, including their structure, function, growth, **evolution**, distribution, identification and **taxonomy**.^[1] Modern biology is a vast and eclectic field, composed of many **branches and subdisciplines**.^[clarification needed] However, despite the broad scope of biology, there are certain general and unifying concepts within it that govern all study and research, consolidating it into single, coherent field. In general, biology recognizes the **cell** as the basic unit of life, **genes** as the basic unit of **heredity**, and **evolution** as the engine that propels the synthesis and creation of new **species**. It is also understood today that all the organisms survive by consuming and transforming **energy** and by **regulating** their internal environment to maintain a stable and vital condition known as **homeostasis**.



Biology deals with the study of the many living **organisms**.

- top: *E. coli* bacteria and gazelle
- bottom: Goliath beetle and tree fern

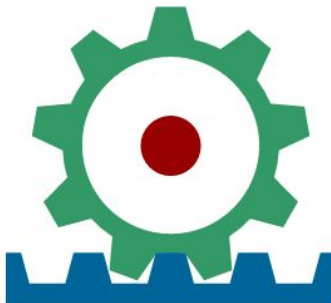
Sub-disciplines of biology are defined by the scale at which organisms are studied, the kinds of organisms studied, and the methods used to study them: **biochemistry** examines the rudimentary chemistry of life; **molecular biology** studies the complex interactions among biological **molecules**; **botany** studies the biology of plants; **cellular biology**



Part 2

Modeling quality

The Objective Revision Evaluation Service (ORES) is a web service that provides machine learning as a service for Wikimedia Projects. The system is designed to help automate critical wiki-work -- for example, vandalism detection and removal. This service is developed as part of the [Revision scoring as a service](#) research project.



Scores API

ORES is intended to be used as a source of information by tool developers. To access ORES, scores, a simple RESTful API is provided. There are two versions of the scoring API that differ slightly in their behavior. Version 2 provides access to model info in a scoring request. Version 1 is preserved for backwards compatibility.

Version 2 (docs)

The current end recommended version of the API.

Accessible via [/v2/scores/](#).

Version 1 (docs)

Preserved for backwards compatibility -- this version of the API implements ORES original behavior.

Accessible via [/scores/](#) and [/v1/scores/](#).

Reference scoring user interface

ORES provides a simple user interface for obtaining scores. See [/ui/](#).

On-wiki documentation

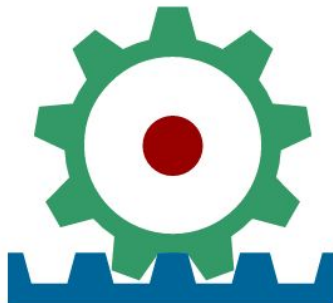
To read more about the service and the models available, see:

https://meta.wikimedia.org/wiki/Objective_Revision_Evaluation_Service

Privacy policy

See the Wikimedia policy here: https://wikimediafoundation.org/wiki/Privacy_policy

The Objective Revision Evaluation Service (ORES) is a web service that provides machine learning as a service for Wikimedia Projects. The system is designed to help automate critical wiki-work -- for example, vandalism detection and removal. This service is developed as part of the [Revision scoring as a service](#) research project.



Scores API

ORES is intended to be used as a source of information by tool developers. To access ORES, scores, a simple RESTful API is provided. There are two versions of the scoring API that differ slightly in their behavior. Version 2 provides access to model info in a scoring request. Version 1 is preserved for backwards compatibility.

Version 2 (docs)

The current end recommended version of the API.

Accessible via [/v2/scores/](#).

Version 1 (docs)

Preserved for backwards compatibility -- this version of the API implements ORES original behavior.

Accessible via [/scores/](#) and [/v1/scores/](#).

Reference scoring user interface

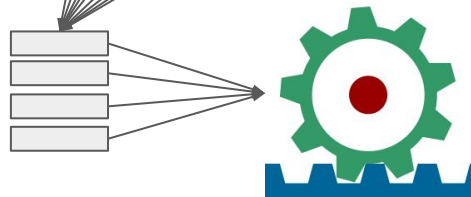
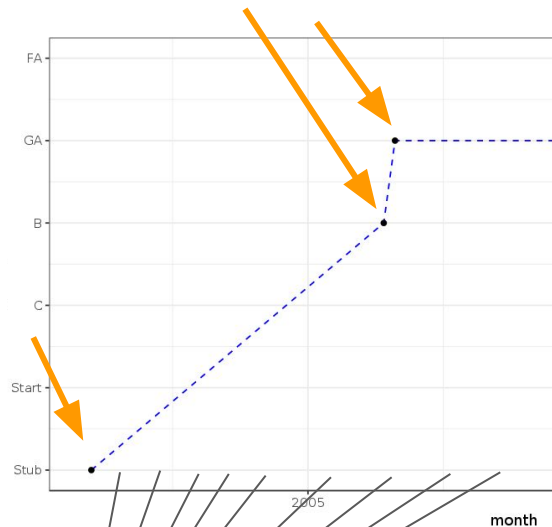
ORES provides a simple user interface for obtaining scores. See [/ui/](#).

On-wiki documentation

To read more about the service and the models available, see: https://meta.wikimedia.org/wiki/Objective_Revision_Evaluation_Service

Privacy policy

See the Wikimedia policy here: https://wikimediafoundation.org/wiki/Privacy_policy



The Objective Revision Evaluation Service (ORES) is a web service that provides machine learning as a service for Wikimedia Projects. The system is designed to help automate critical wiki-work -- for example, vandalism detection and removal. This service is developed as part of the [Revision scoring as a service](#) research project.



Scores API

ORES is intended to be used as a source of information by tool developers. To access ORES, scores, a simple RESTful API is provided. There are two versions of the scoring API that differ slightly in their behavior. Version 2 provides access to model info in a scoring request. Version 1 is preserved for backwards compatibility.

Version 2 (docs)

The current end recommended version of the API.

Accessible via [/v2/scores/](#).

Version 1 (docs)

Preserved for backwards compatibility -- this version of the API implements ORES original behavior.

Accessible via [/scores/](#) and [/v1/scores/](#).

Reference scoring user interface

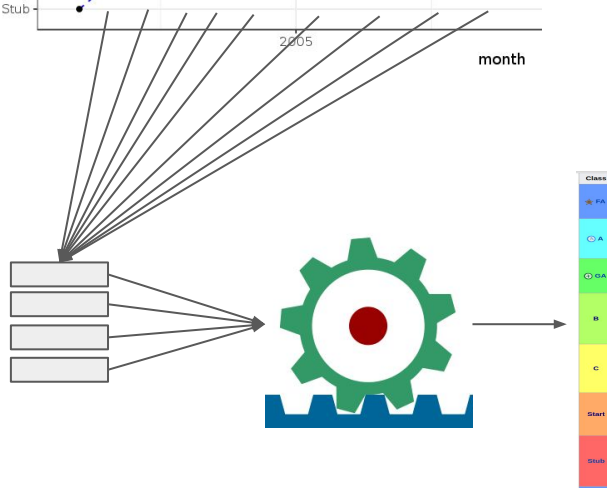
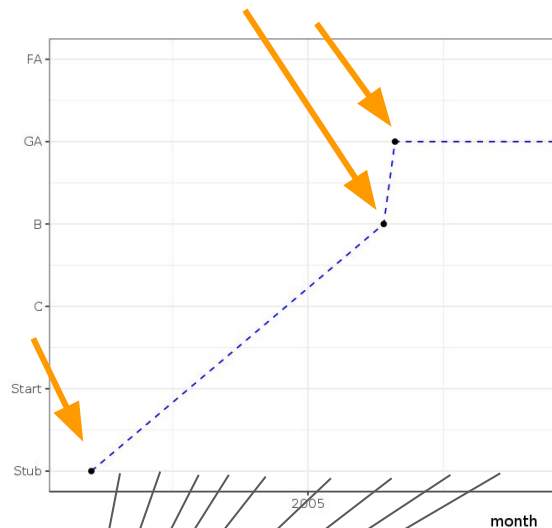
ORES provides a simple user interface for obtaining scores. See [/ui/](#).

On-wiki documentation

To read more about the service and the models available, see: https://meta.wikimedia.org/wiki/Objective_Revision_Evaluation_Service

Privacy policy

See the Wikimedia policy here: https://wikimediafoundation.org/wiki/Privacy_policy



Thanks to Dr. Warncke-Wang [[[User:Nettrom](#)]]

References

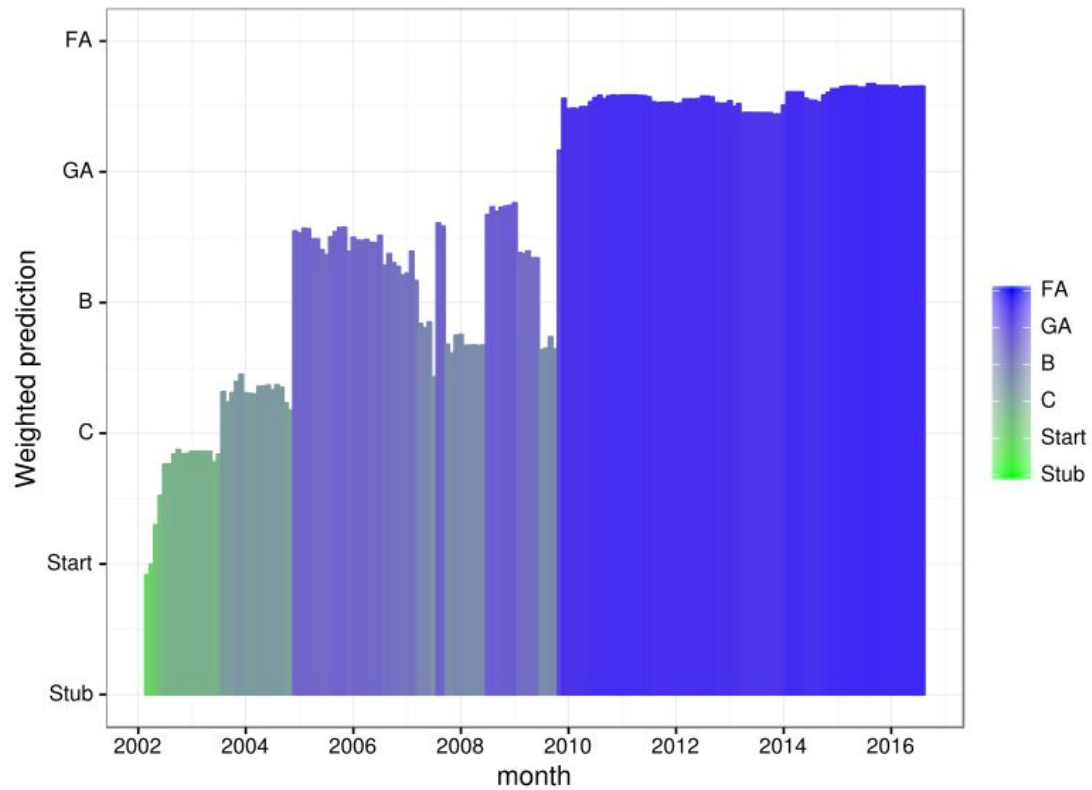
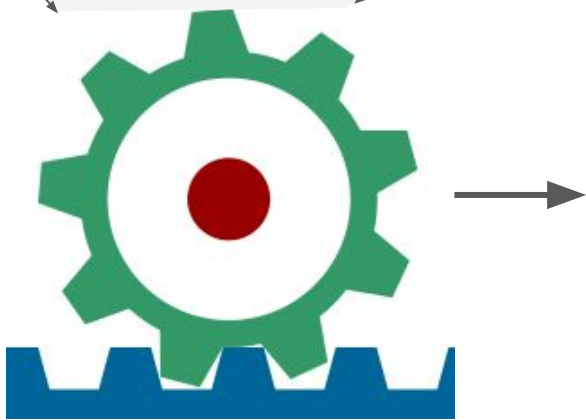
1. Warncke-Wang, M., Cosley, D., & Riedl, J. (2013, August). Tell me more: an actionable quality model for Wikipedia. In *Proceedings of the 9th International Symposium on Open Collaboration* (p. 8). ACM.
2. Warncke-Wang, M., Ayukaev, V. R., Hecht, B., & Terveen, L. G. (2015, February). The success and failure of quality improvement projects in peer production communities. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing* (pp. 743-756). ACM.

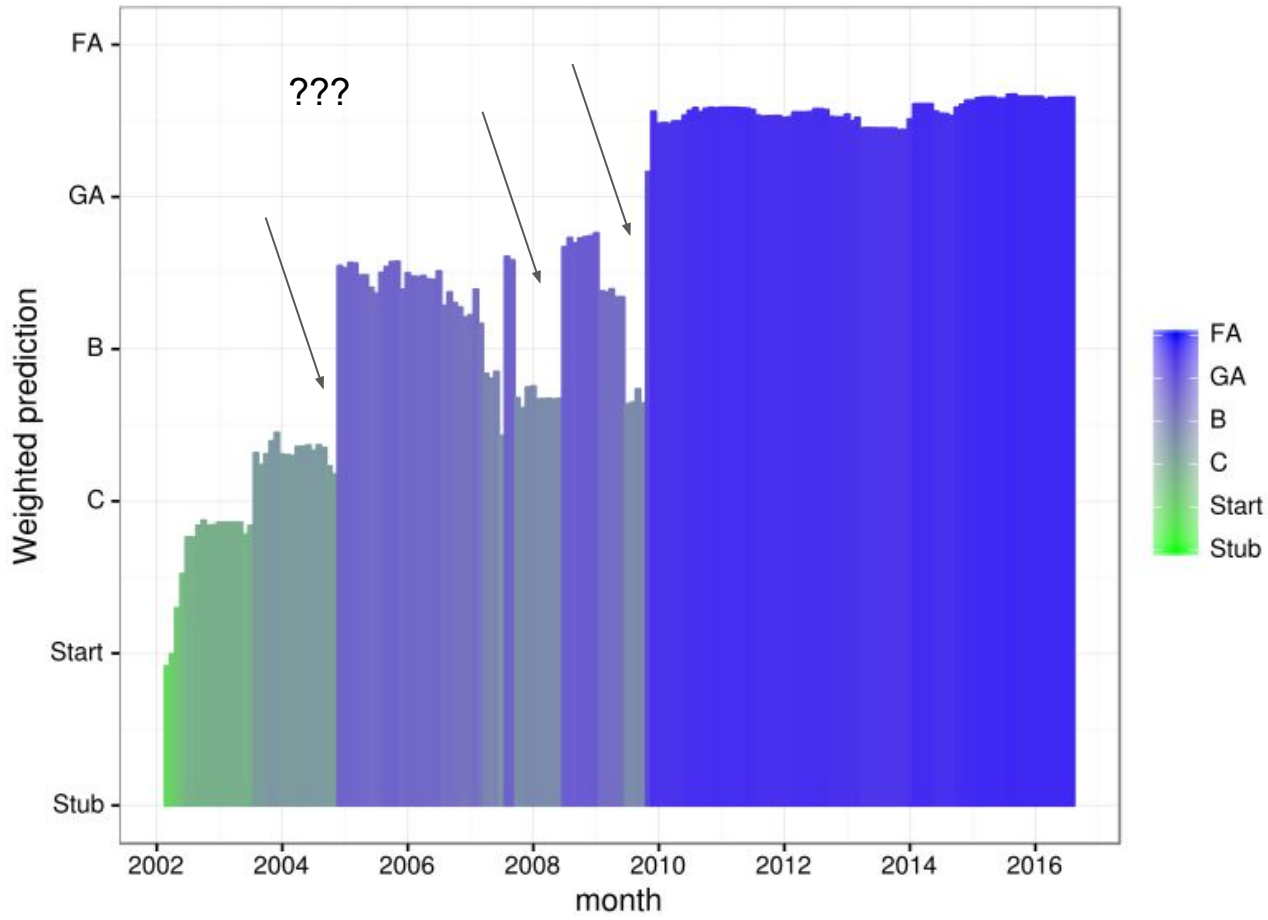
Thanks to Dr. Warncke-Wang [[[User:Nettrom](#)]]

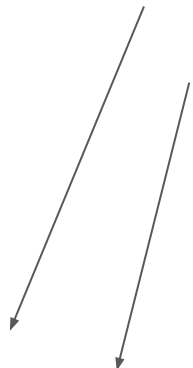
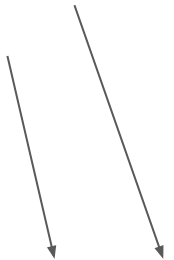
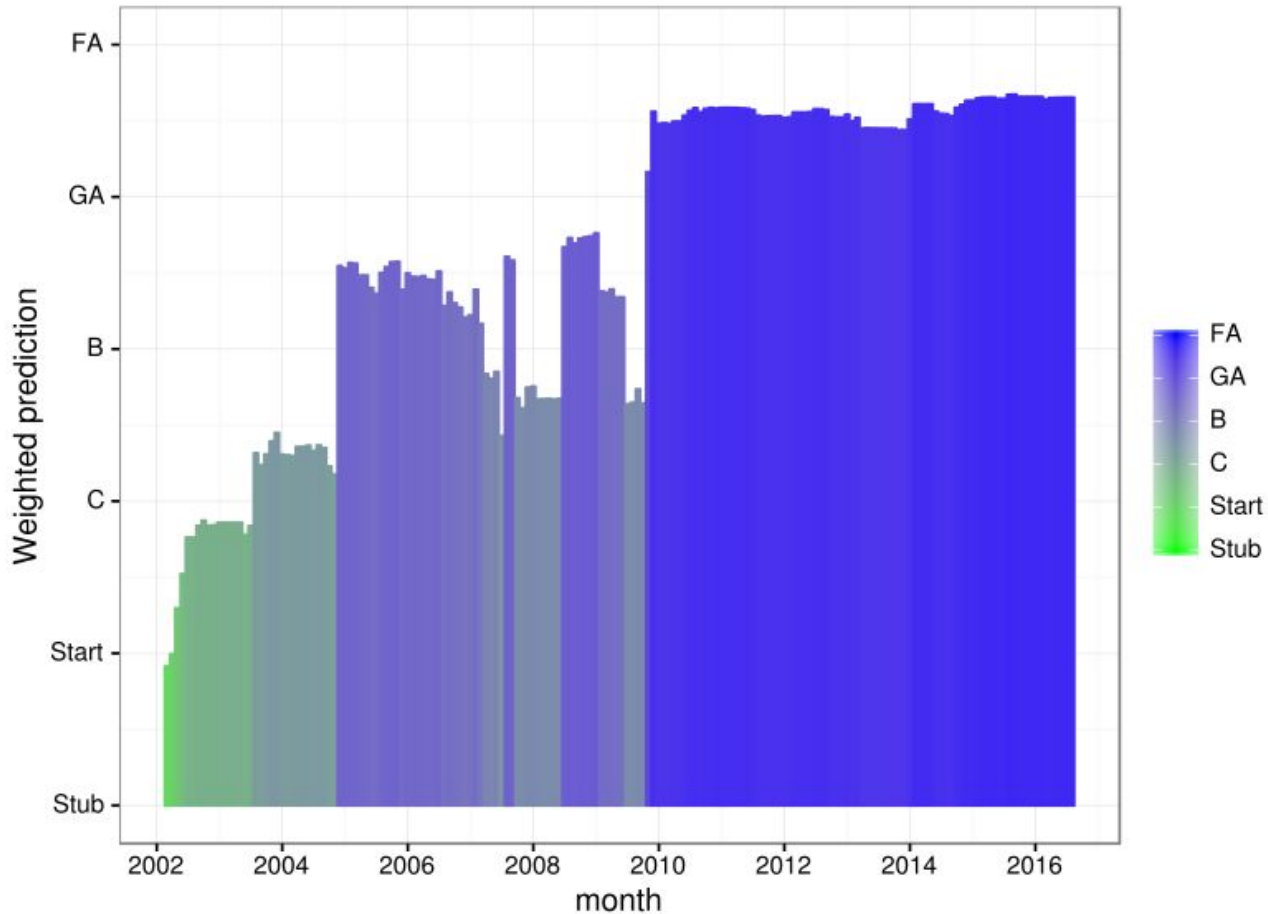
References

1. Warncke-Wang, M., Cosley, D., & Riedl, J. (2013, August). Tell me more: an actionable quality model for Wikipedia. In *Proceedings of the 9th International Symposium on Open Collaboration* (p. 8). ACM.
2. Warncke-Wang, M., Ayukaev, V. R., Hecht, B., & Terveen, L. G. (2015, February). The success and failure of quality improvement projects in peer production communities. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing* (pp. 743-756). ACM.

Congrats Dr. Nettrom!







Cool, right?

Part 3

Quality trends

- All of Wikipedia

- WikiProject Women Scientists

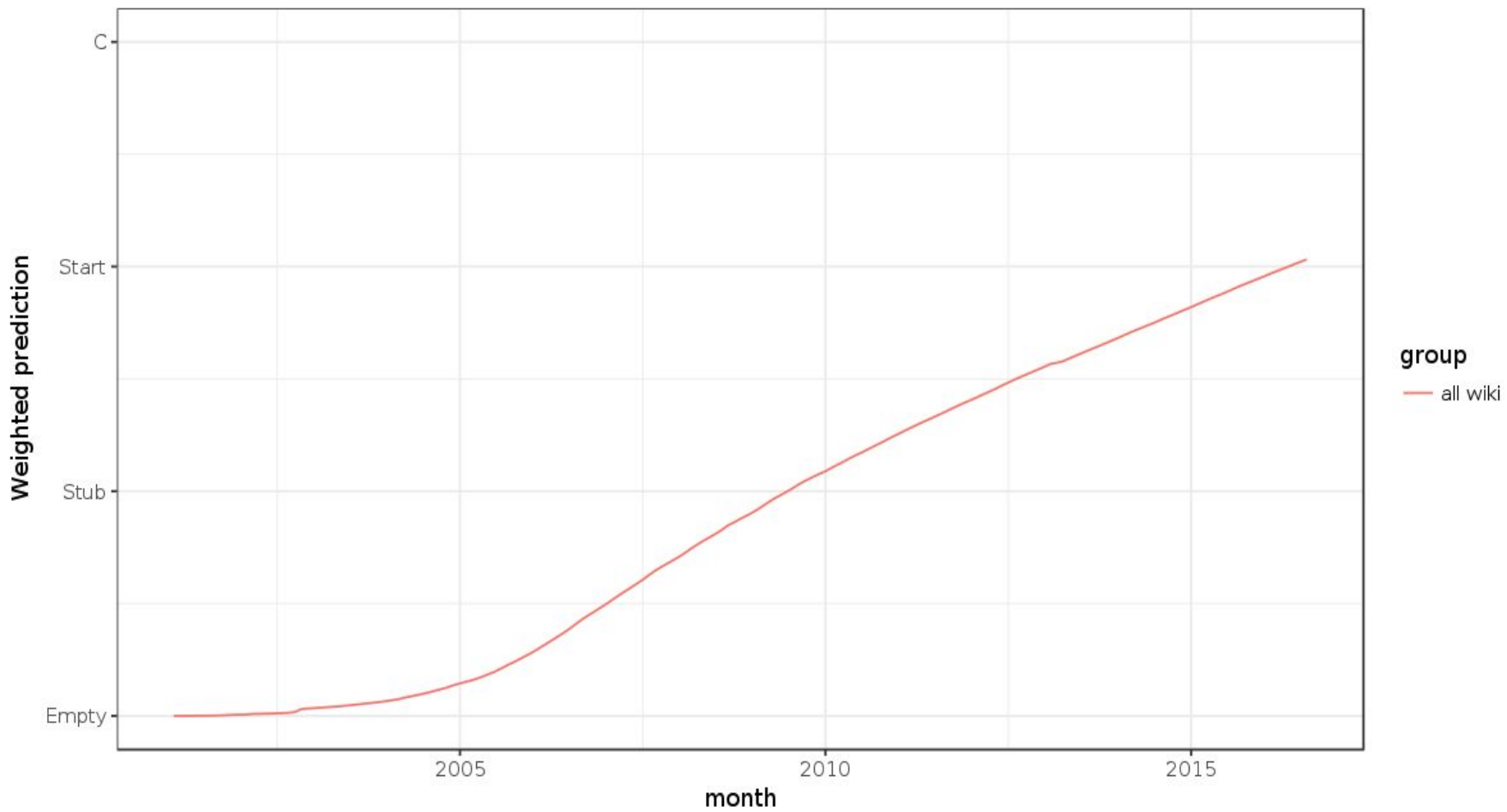
`{{WikiProject Women scientists|...}}`

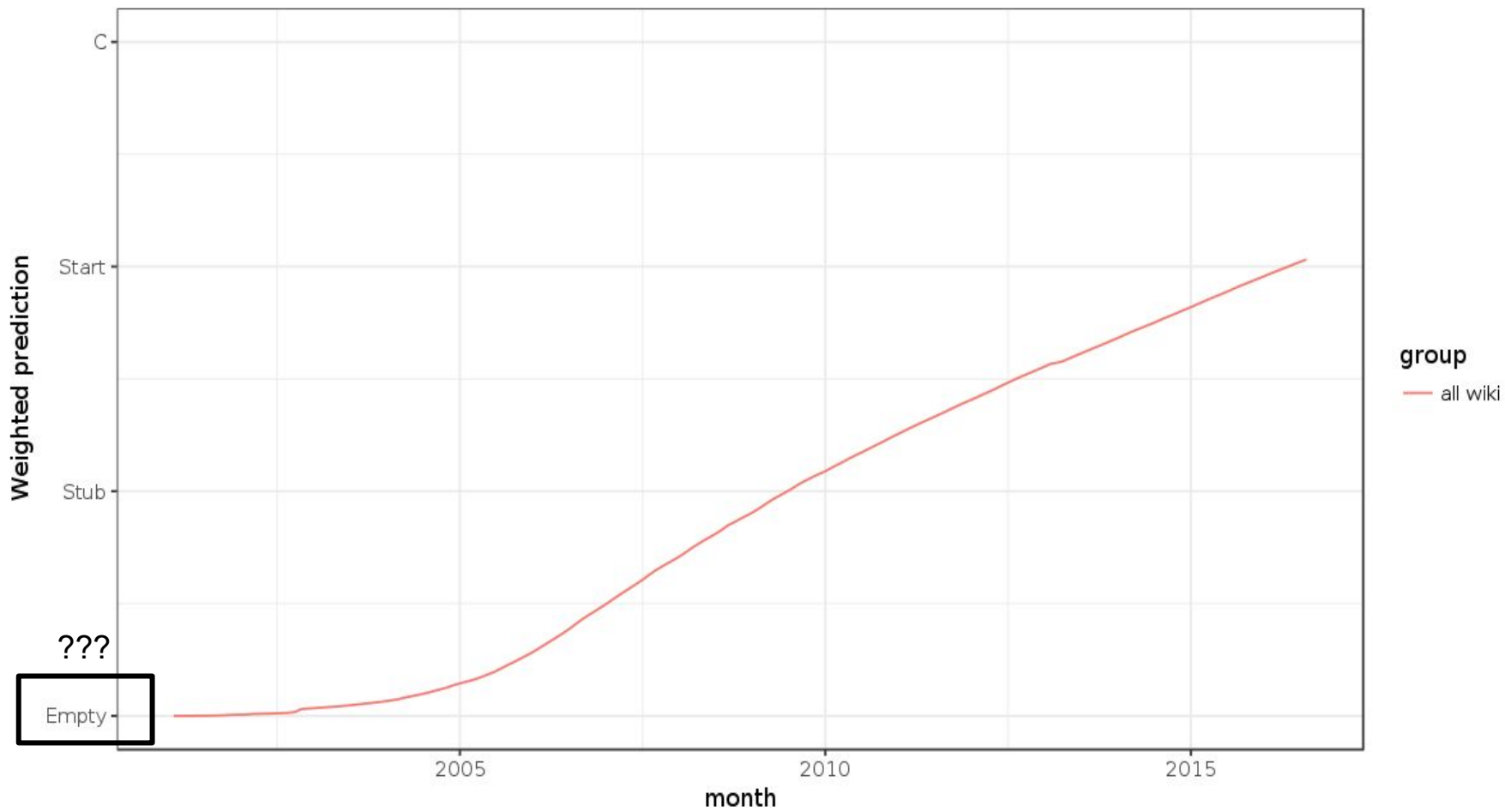
WikiProject Women scientists (Rated GA-class, Top-importance) [\[show\]](#)

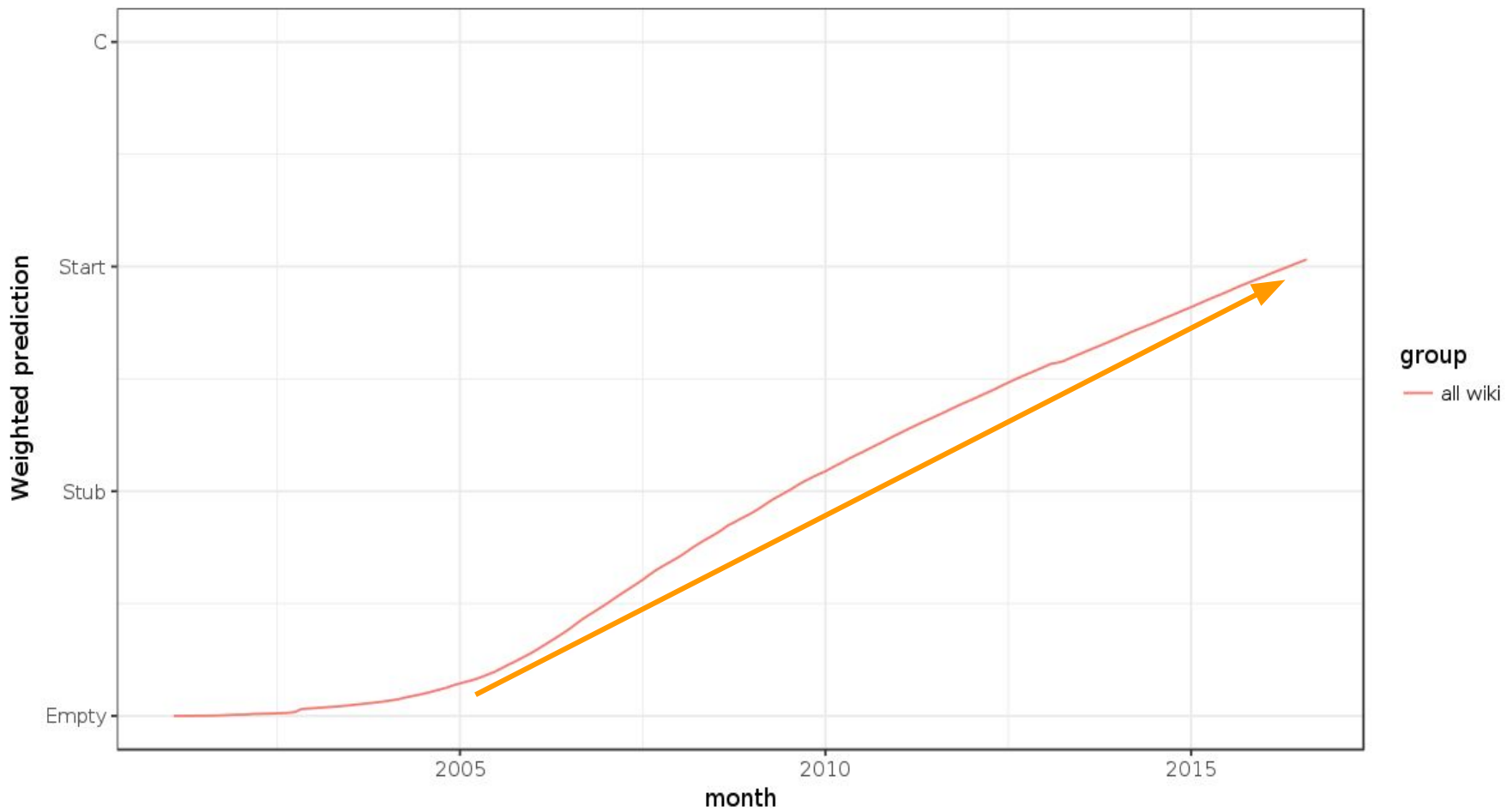
- WikiProject Visual Arts

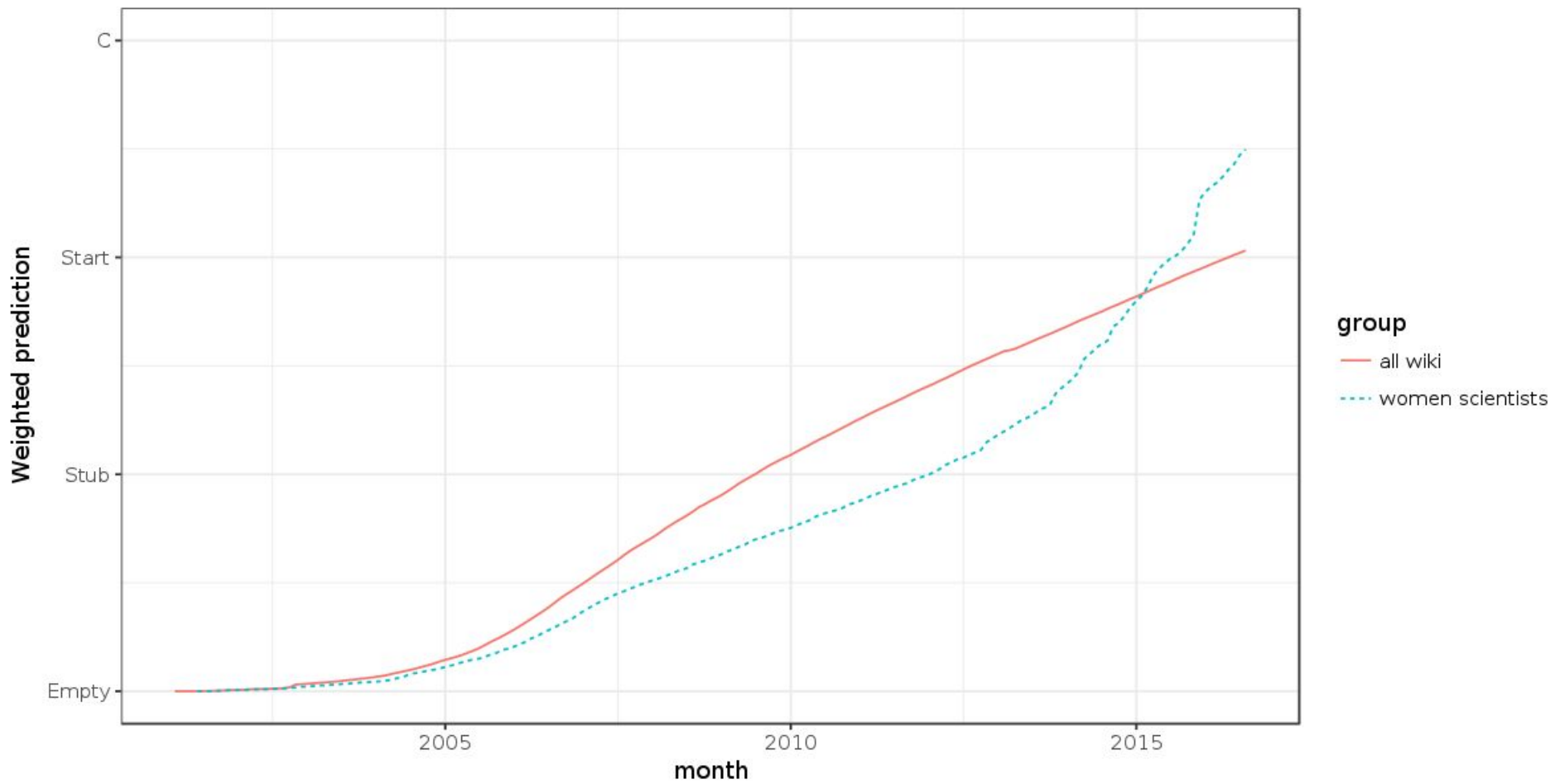
`{{WikiProject Visual arts|...}}`

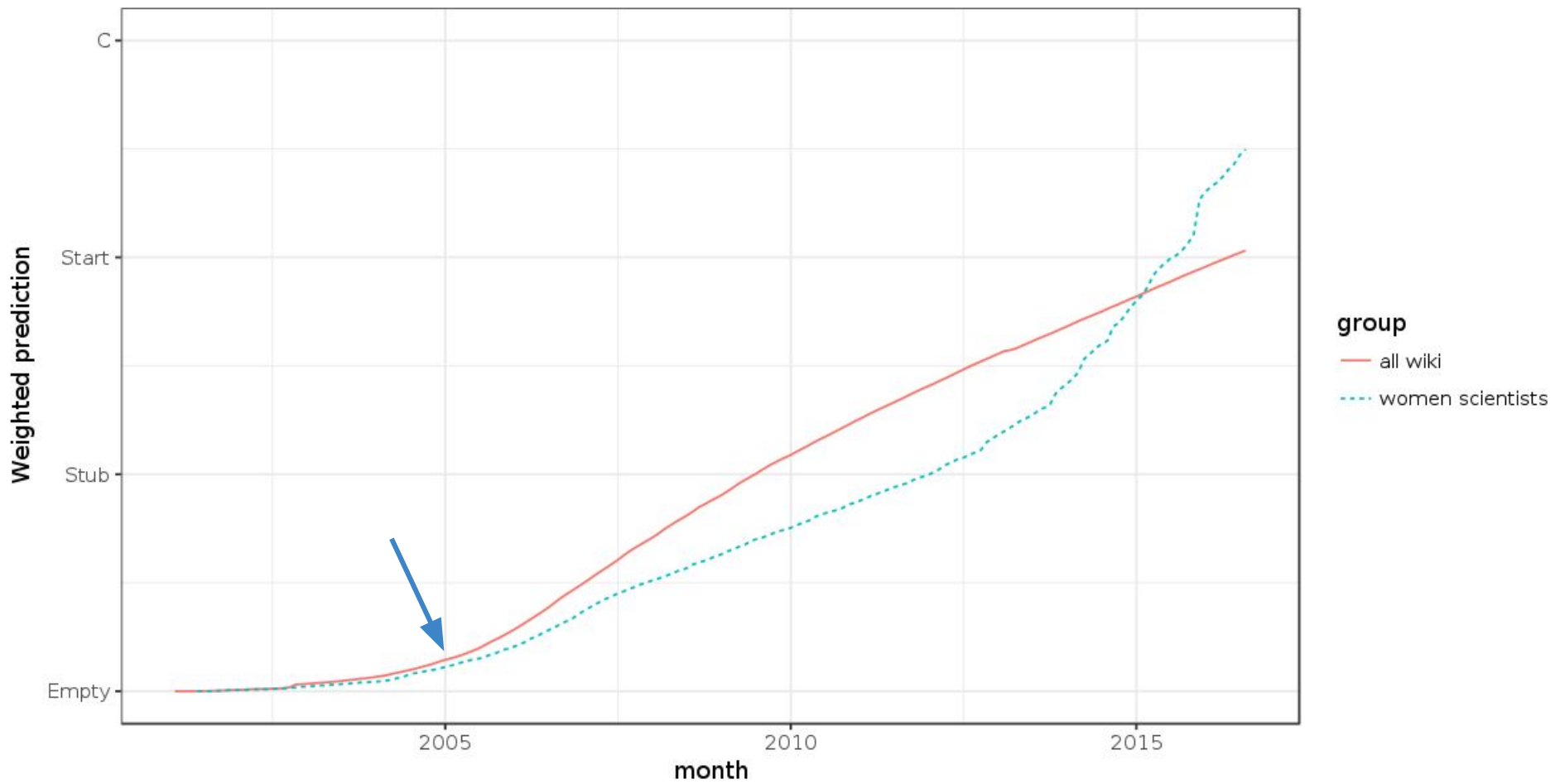
WikiProject Visual arts (Rated FA-class) [\[show\]](#)

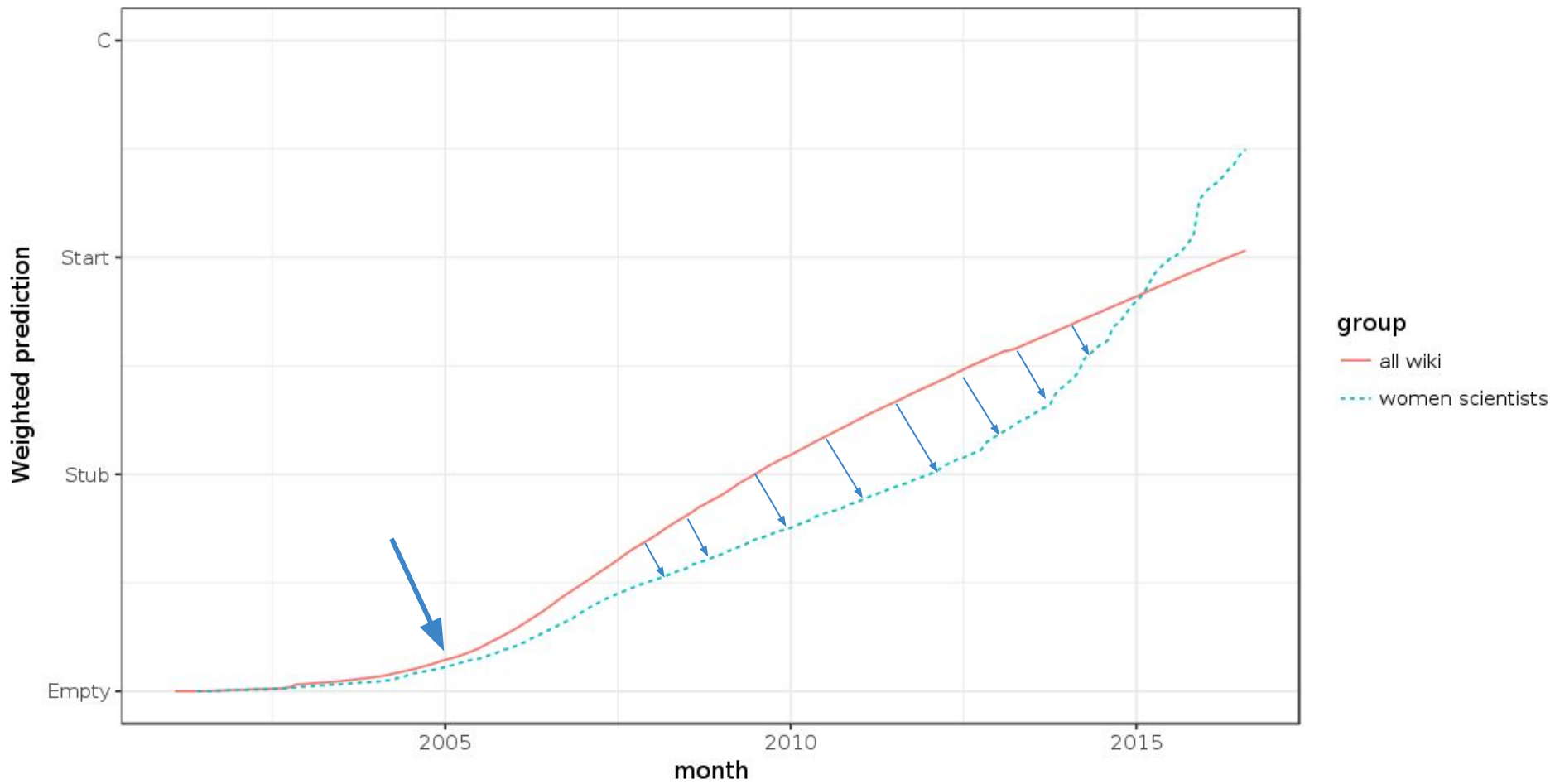


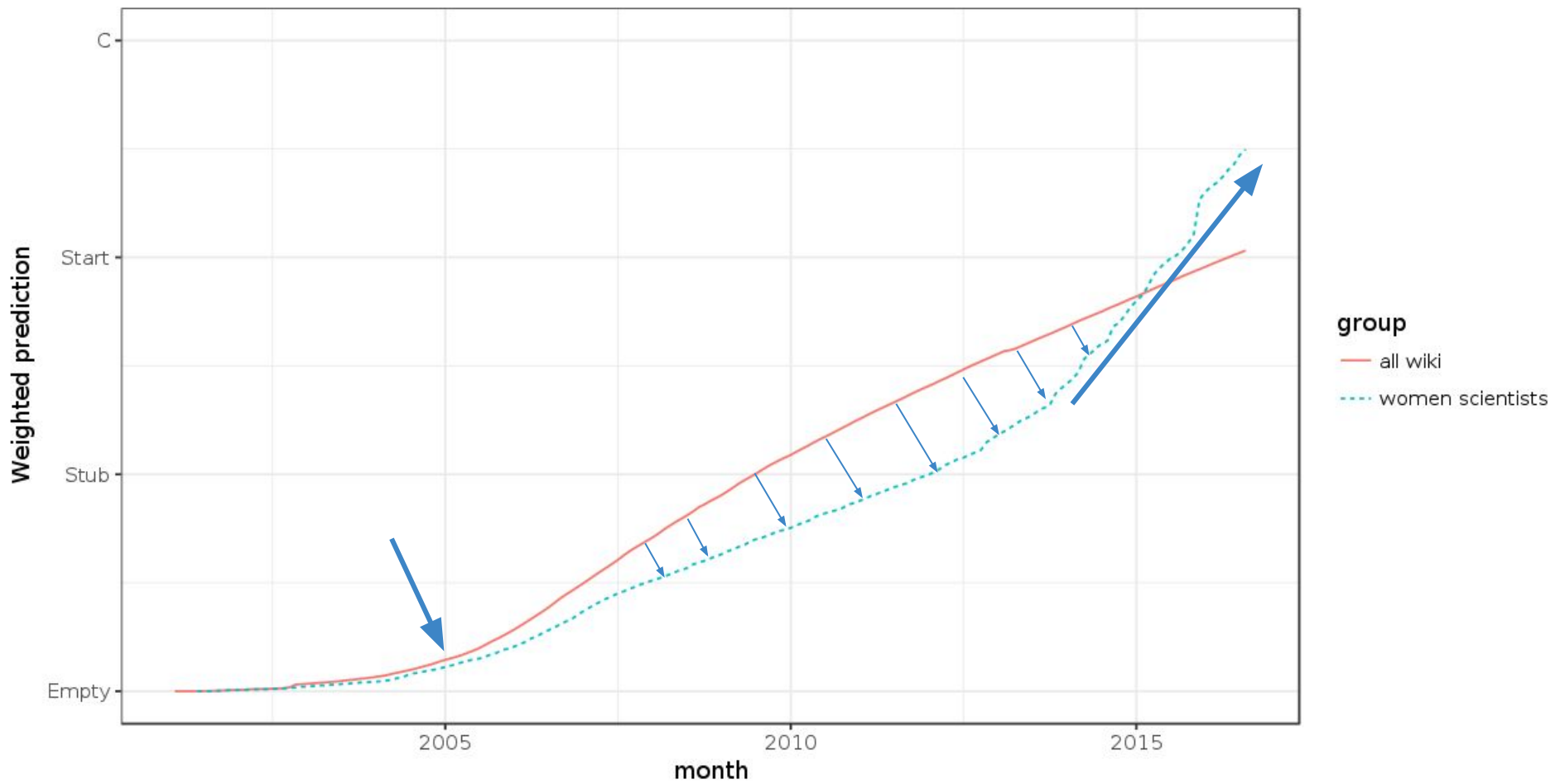


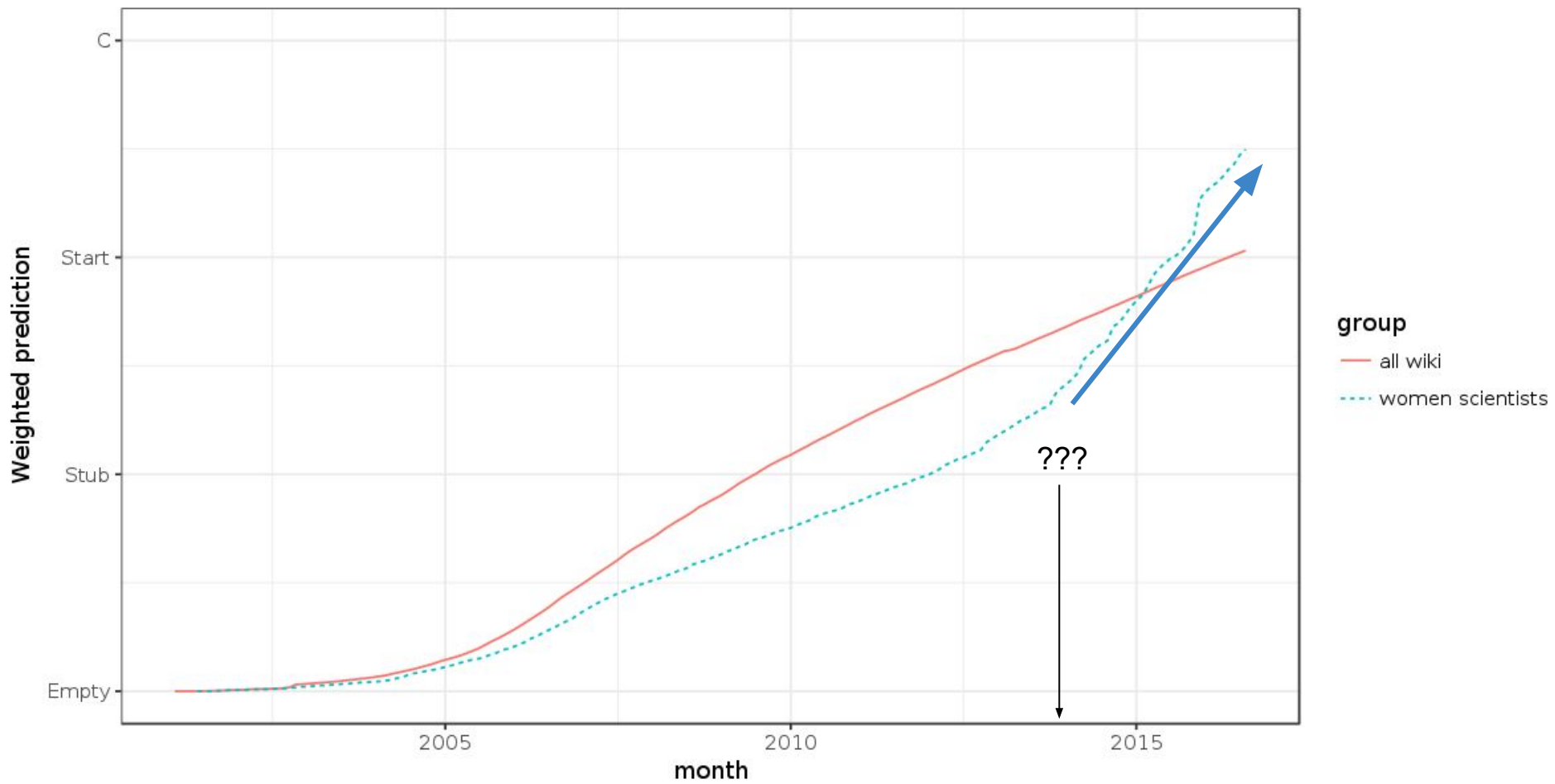


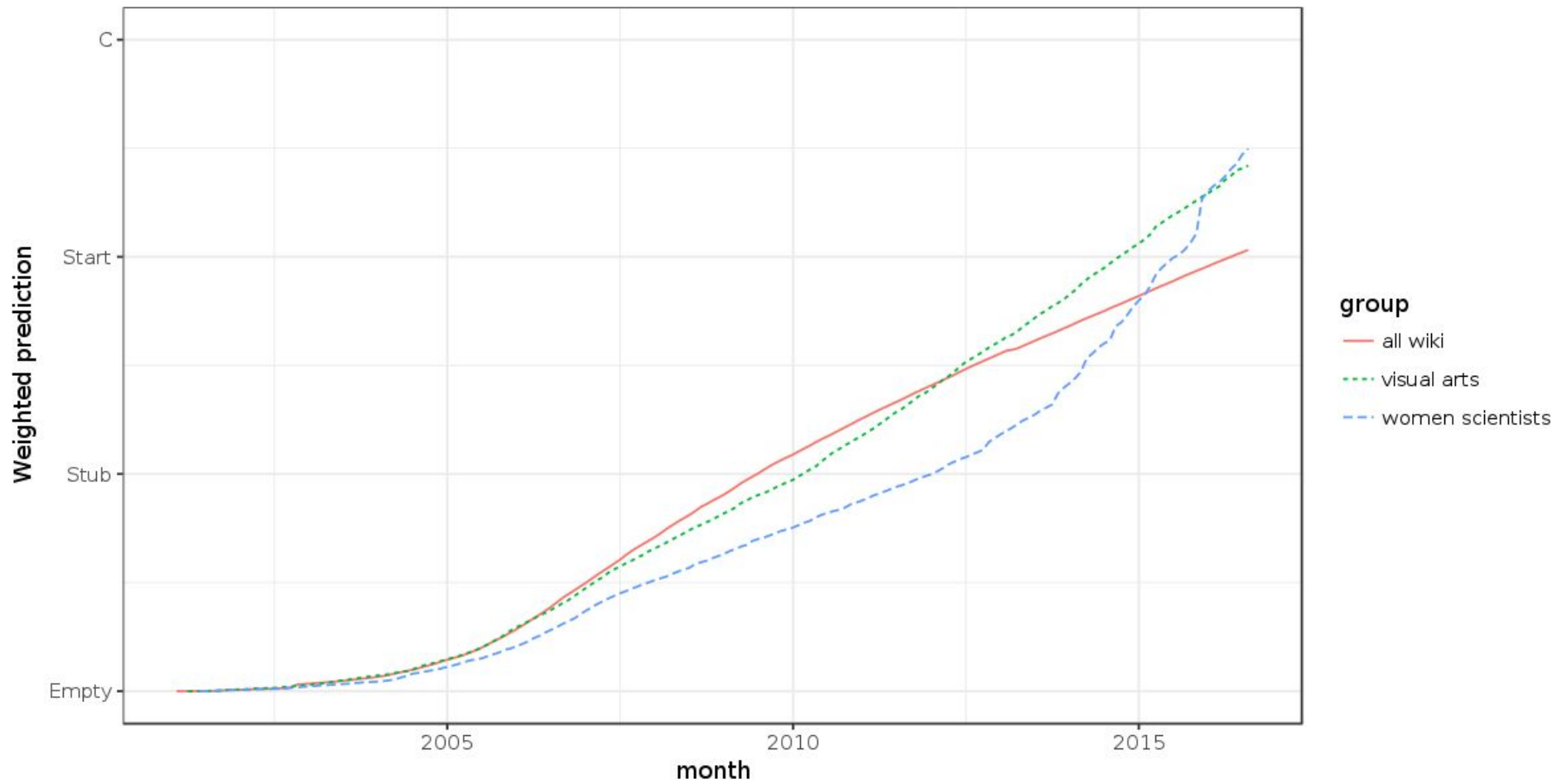


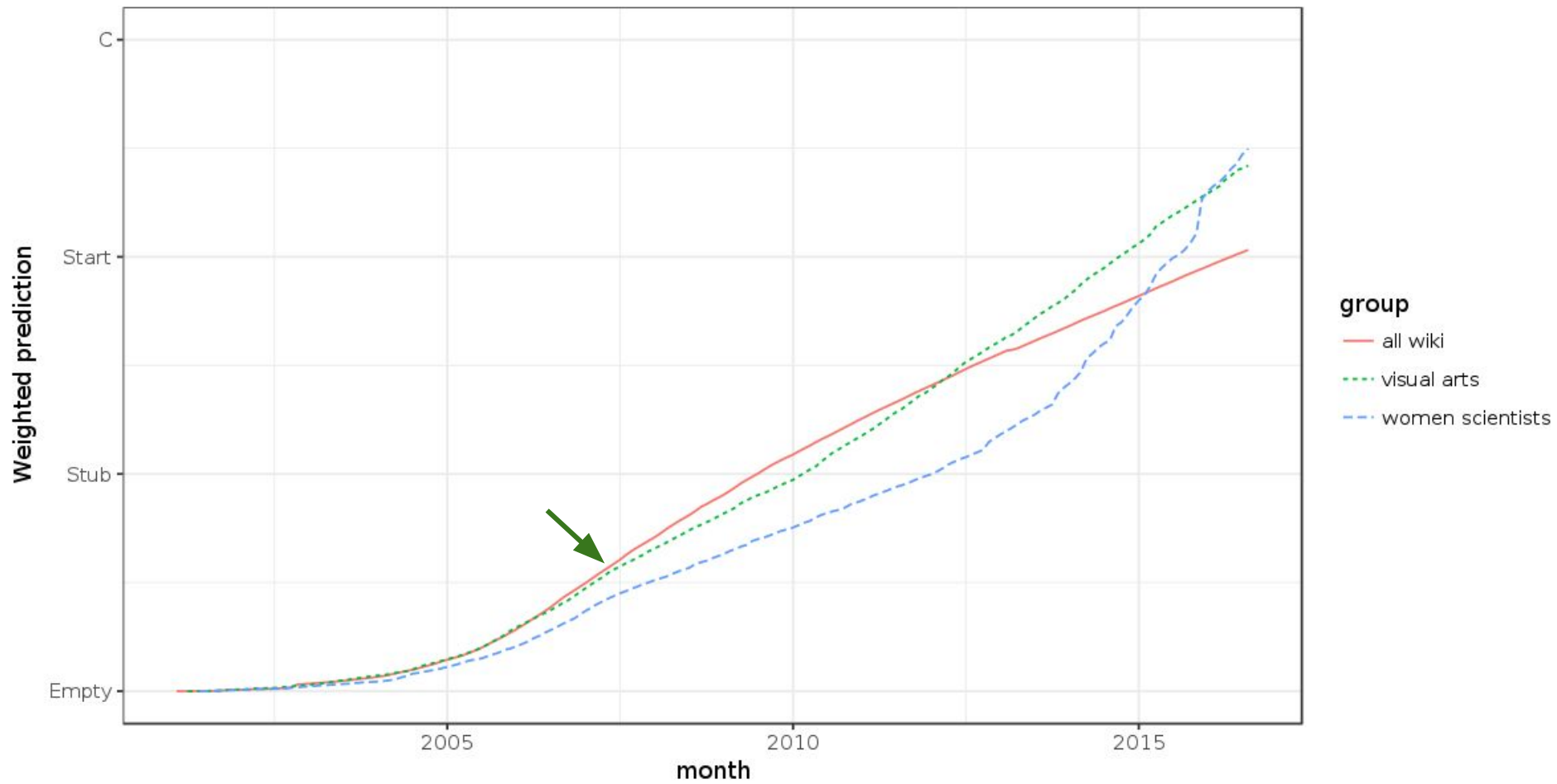


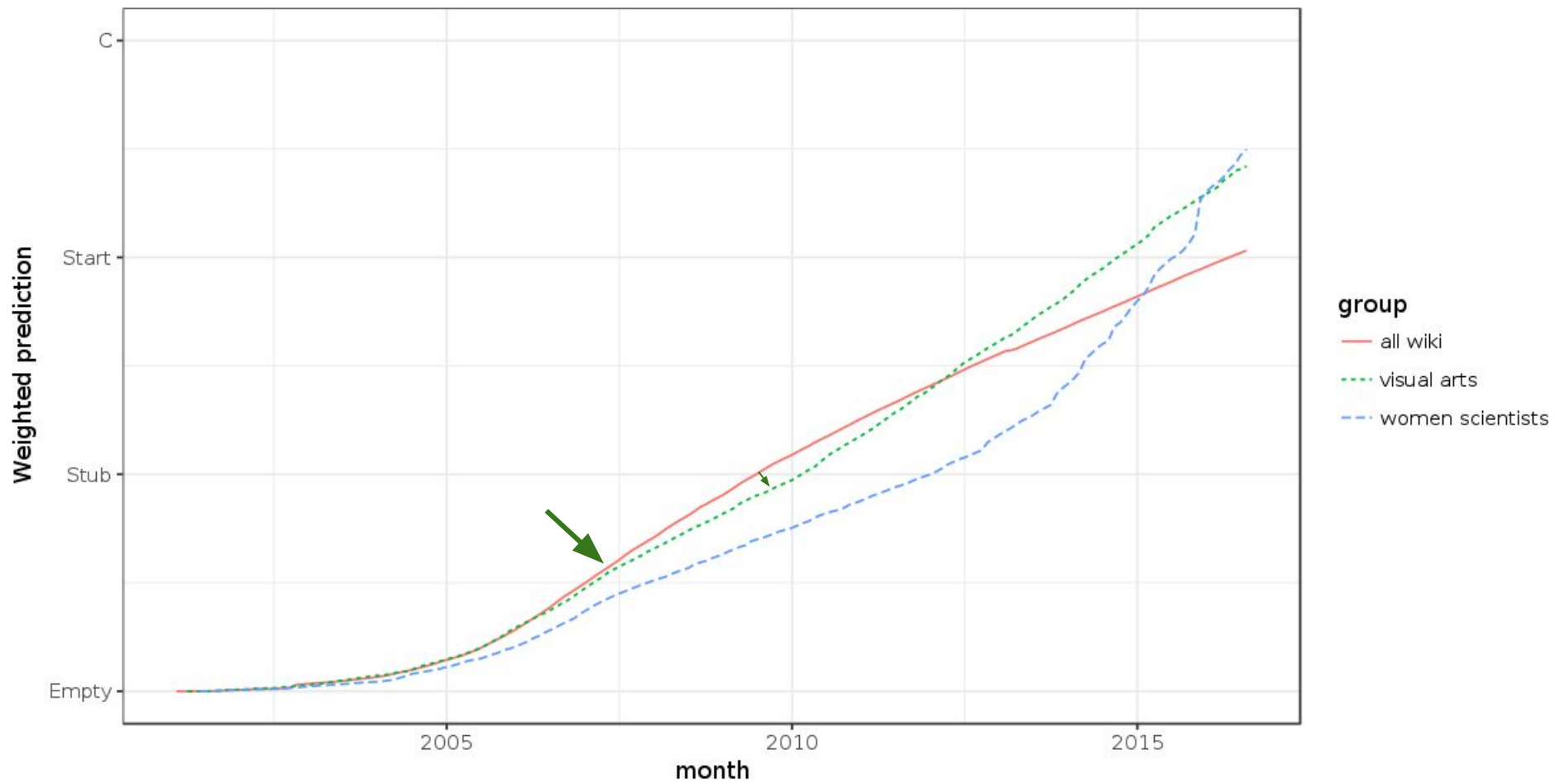


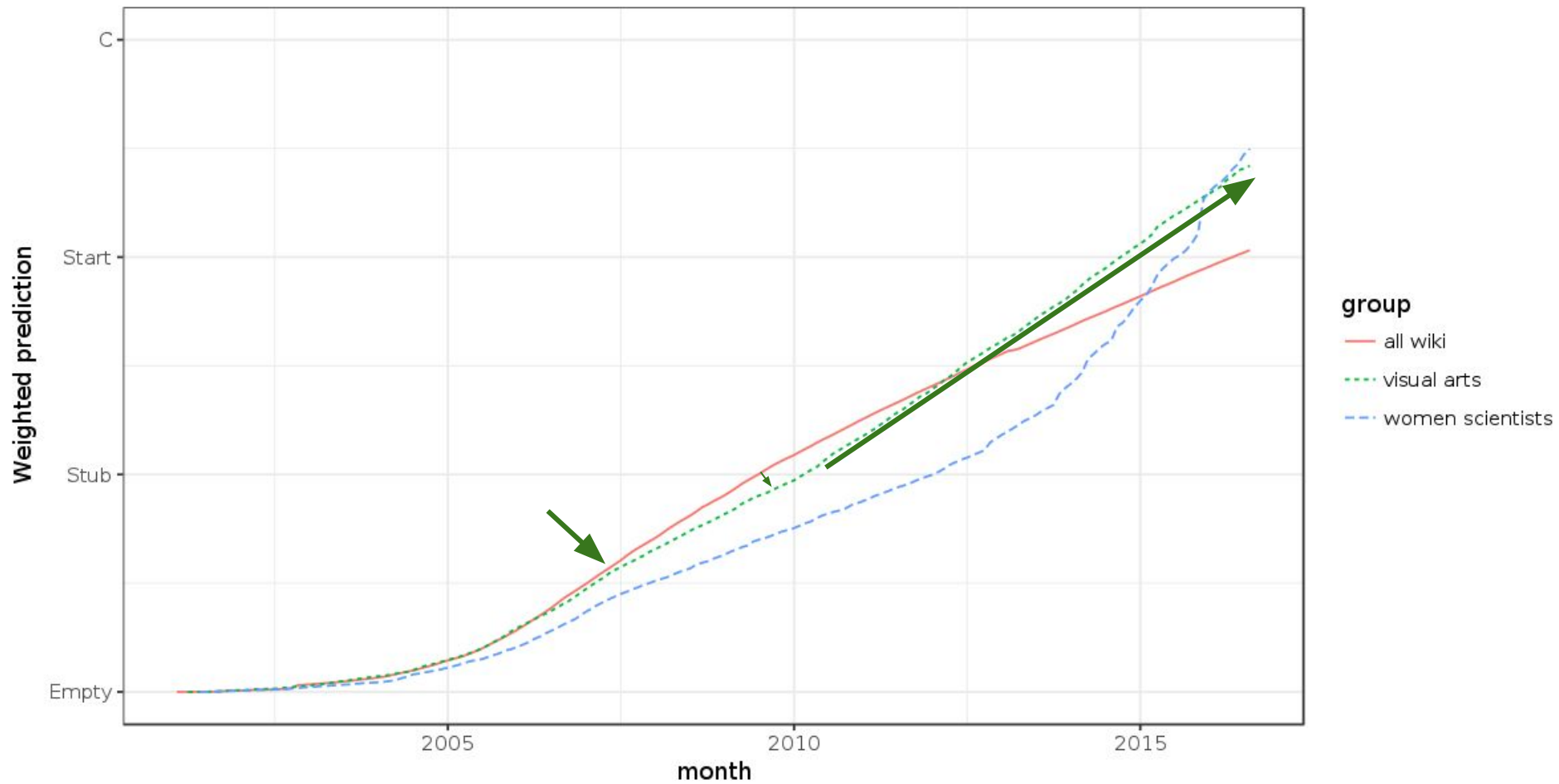


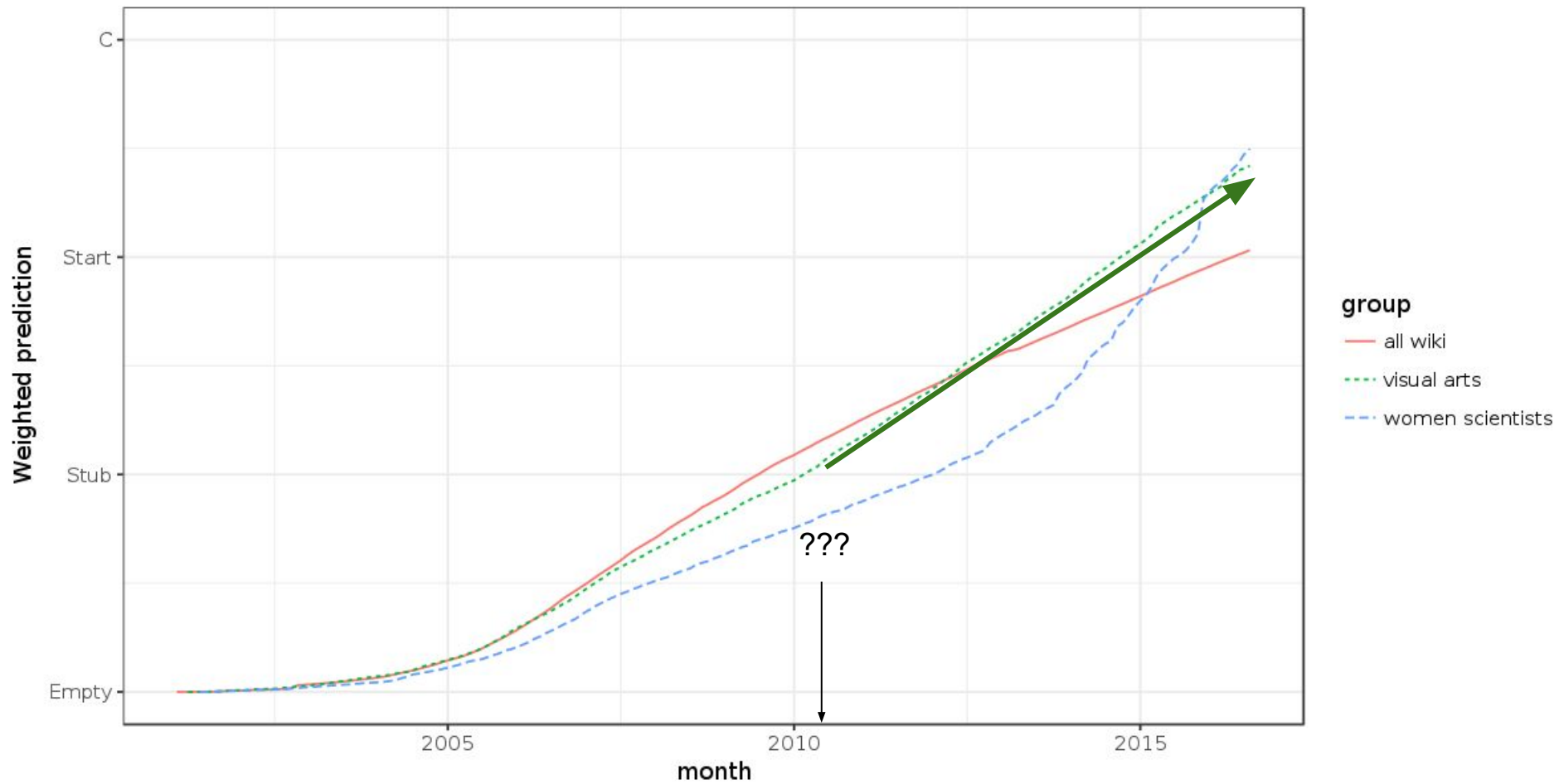








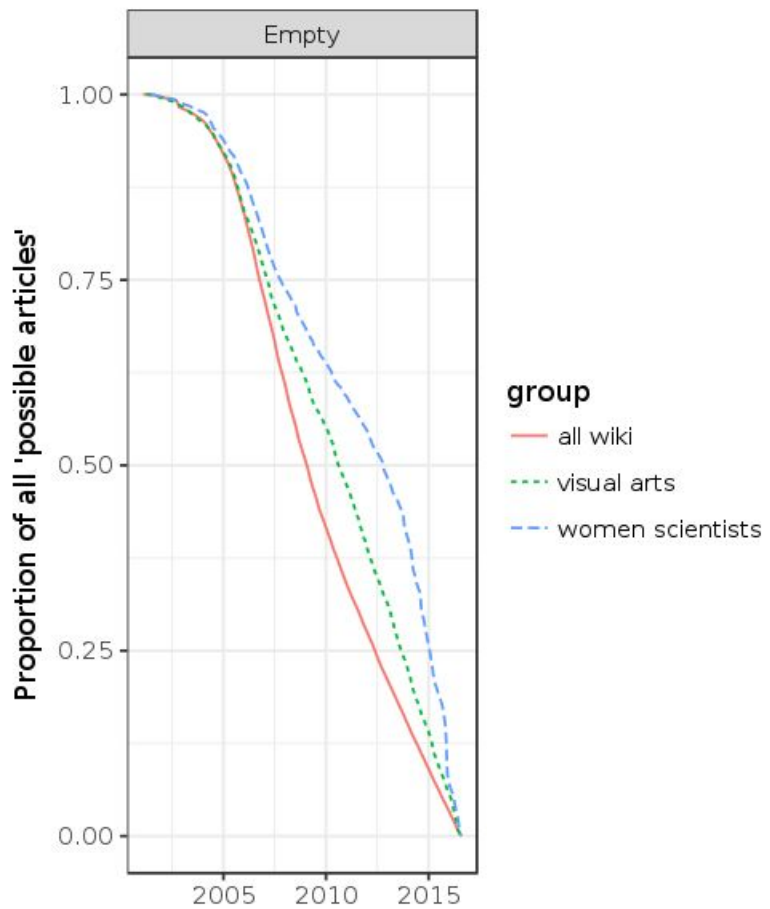


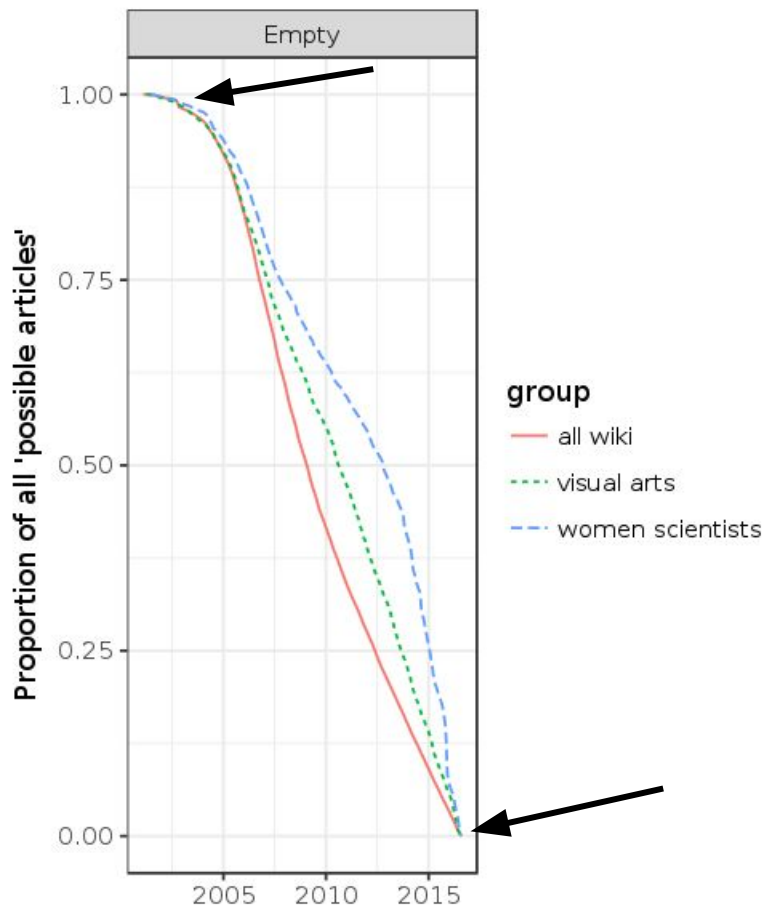


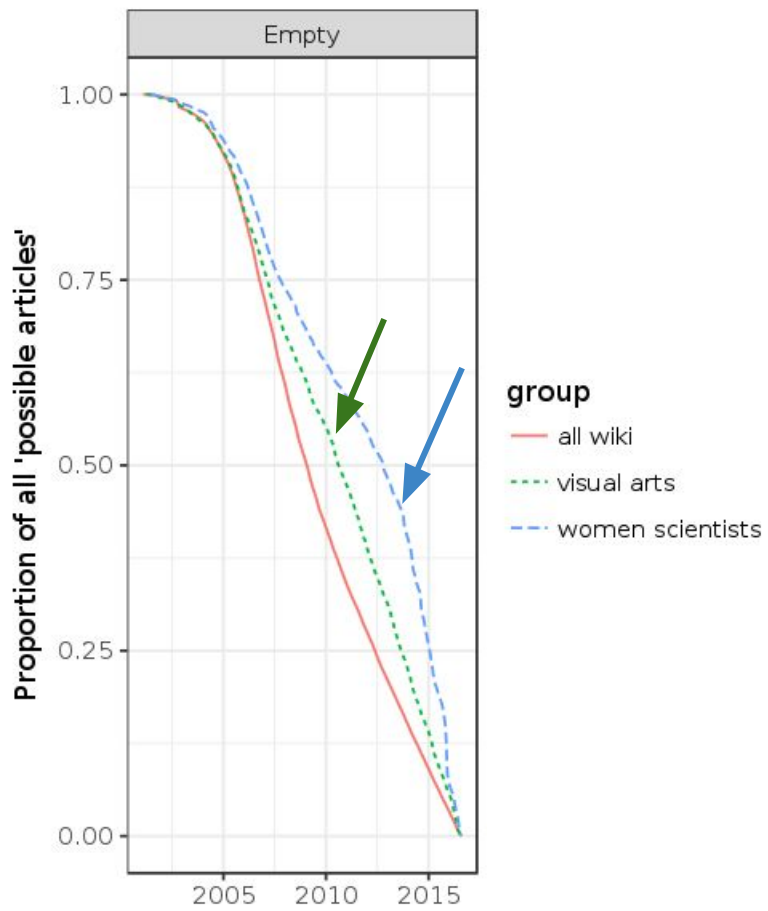
Empty \rightarrow Stub?

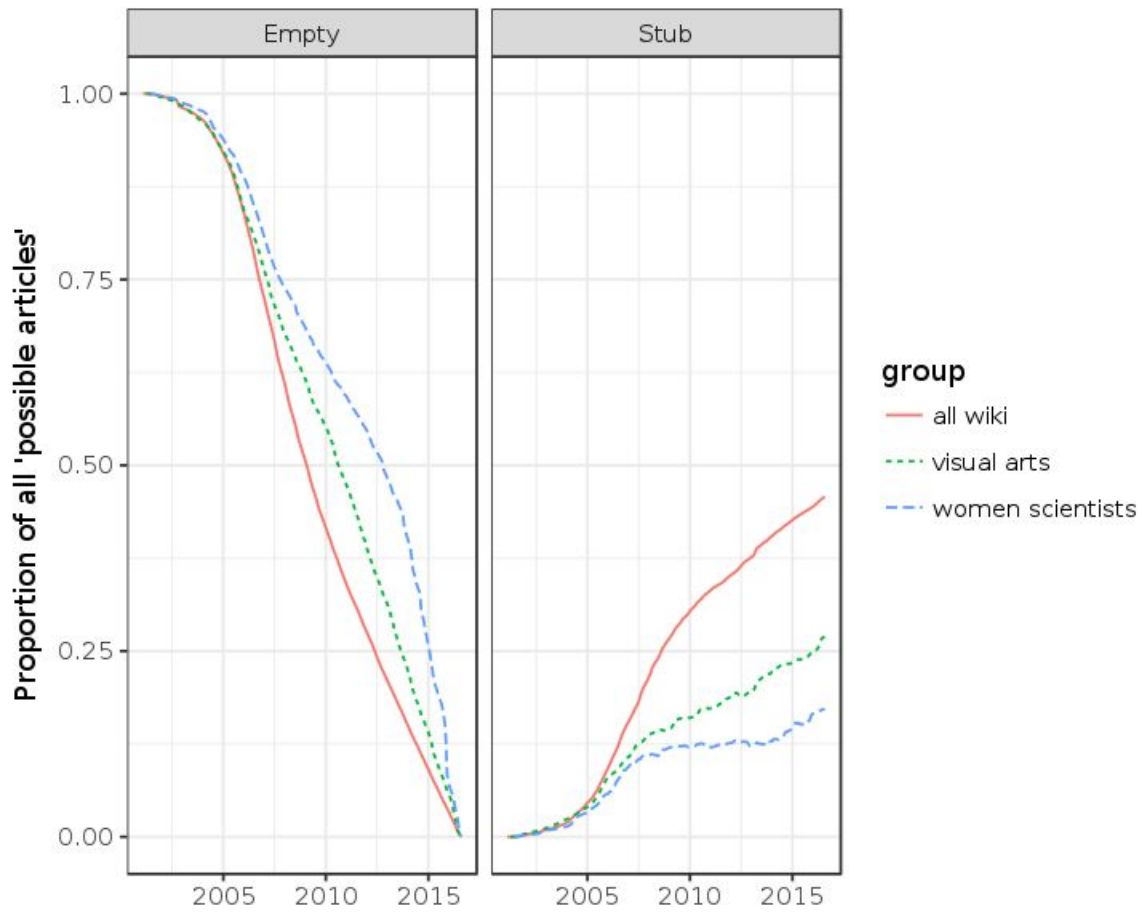
Stub \rightarrow FA?

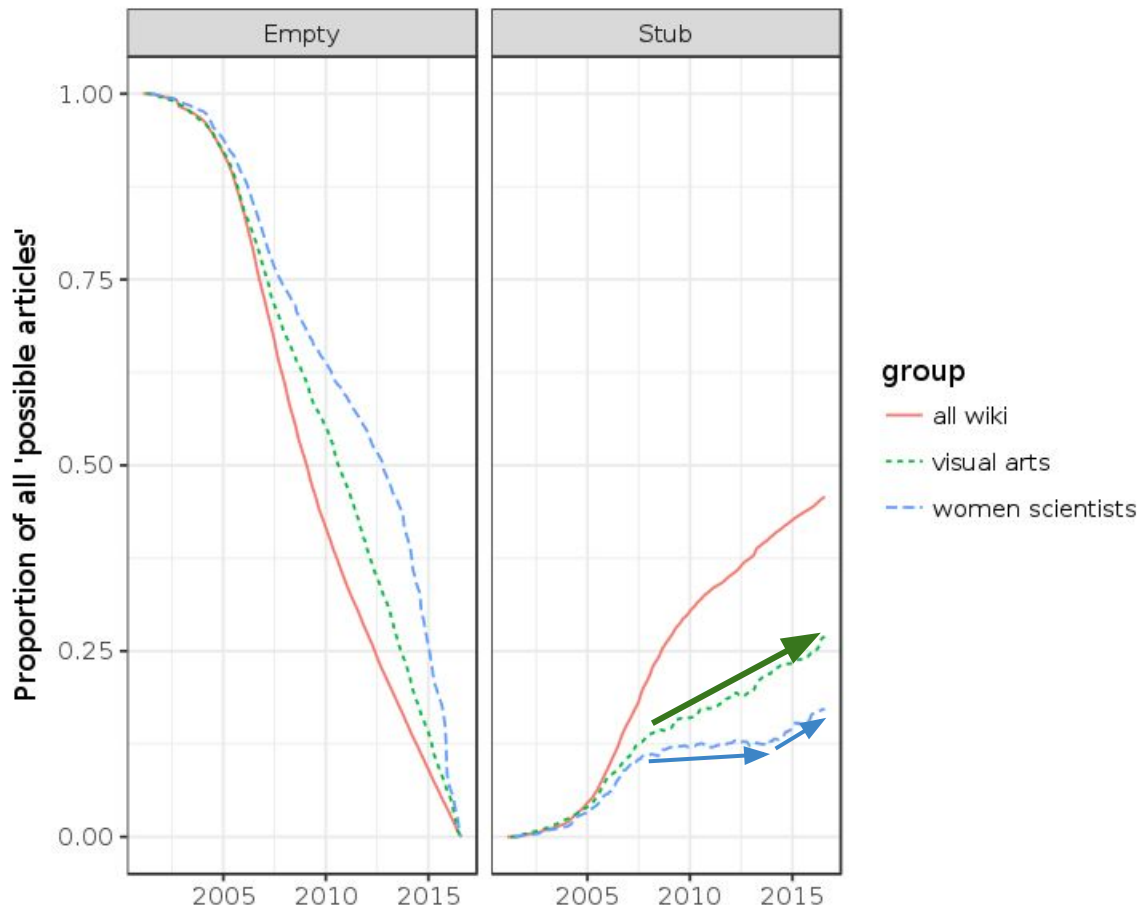
Start \rightarrow C?

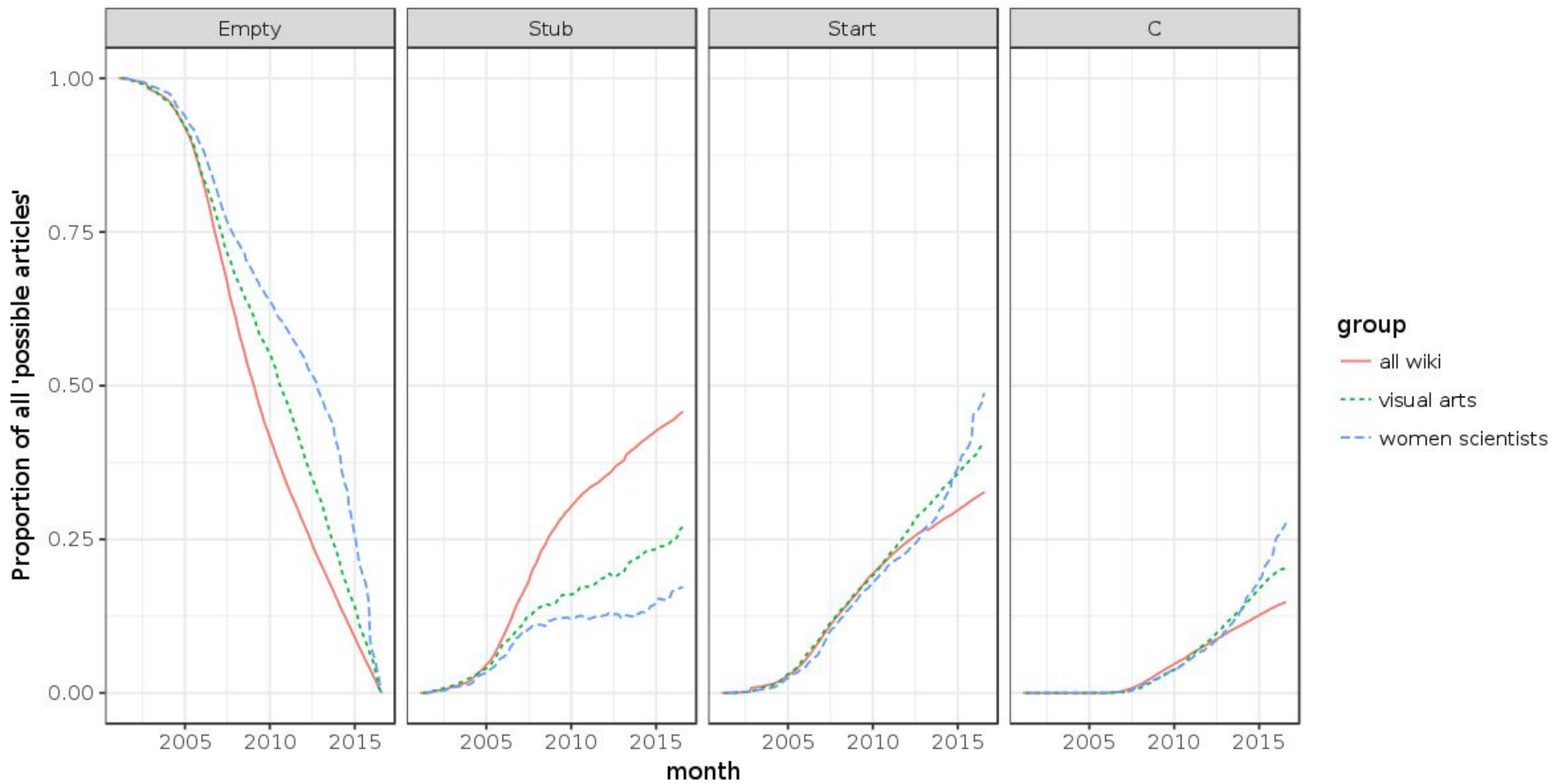


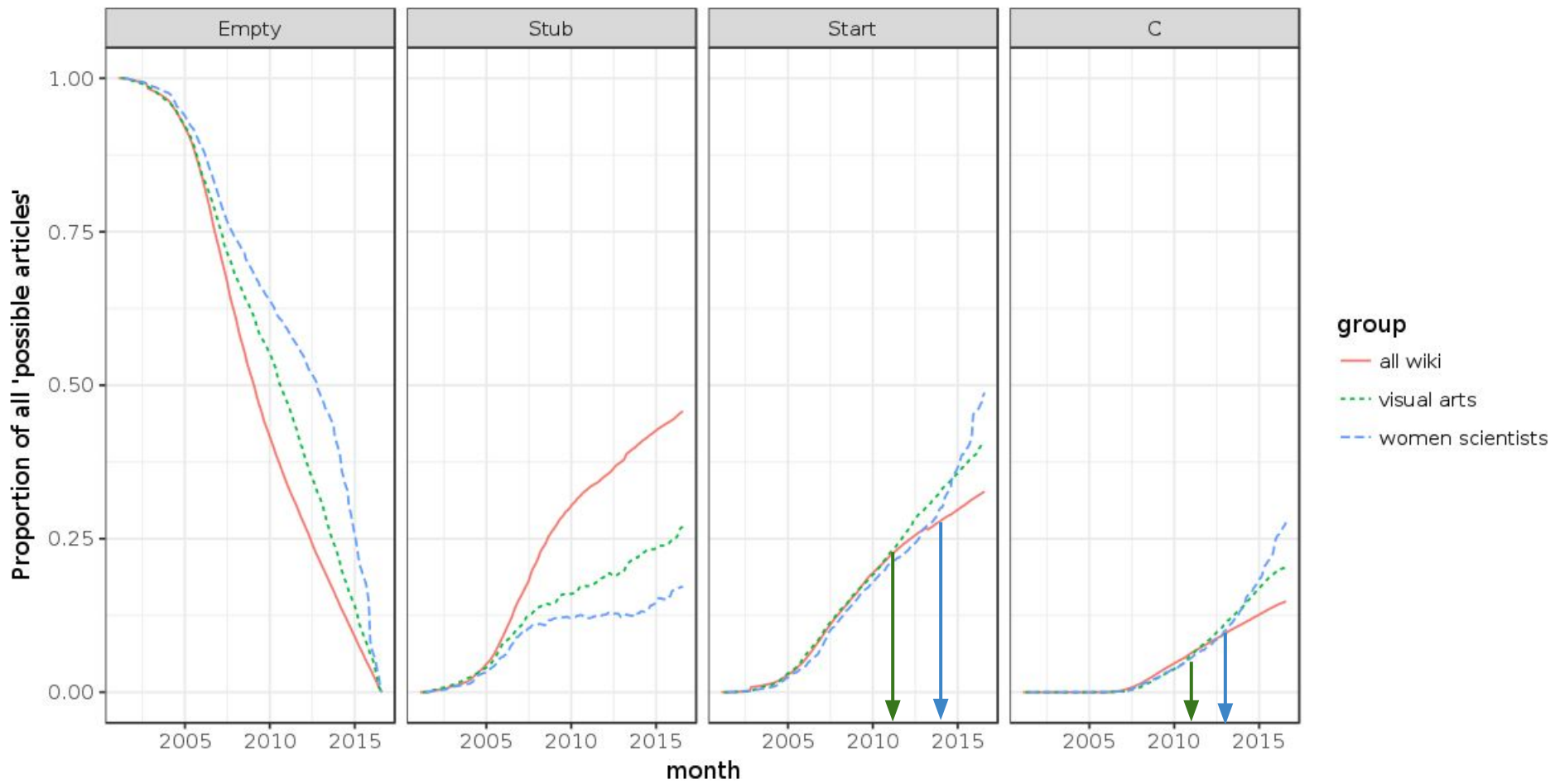


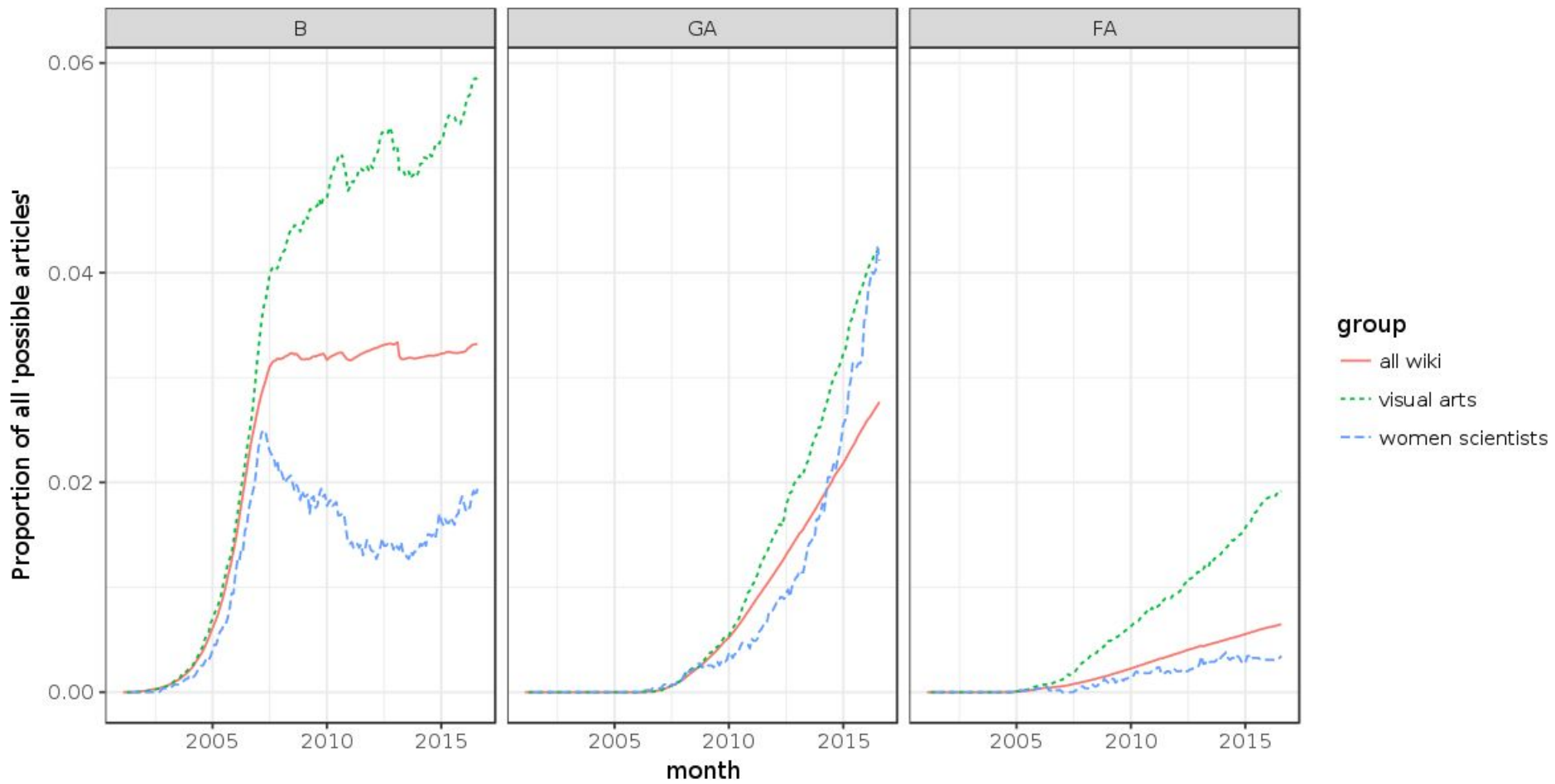


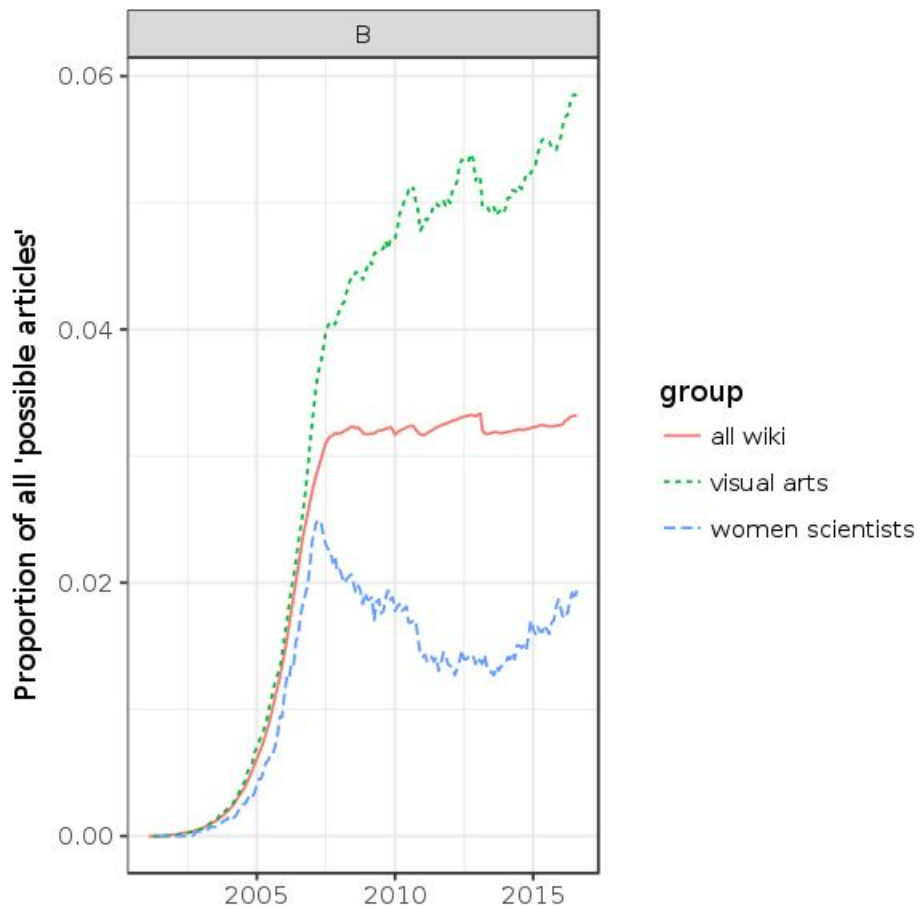


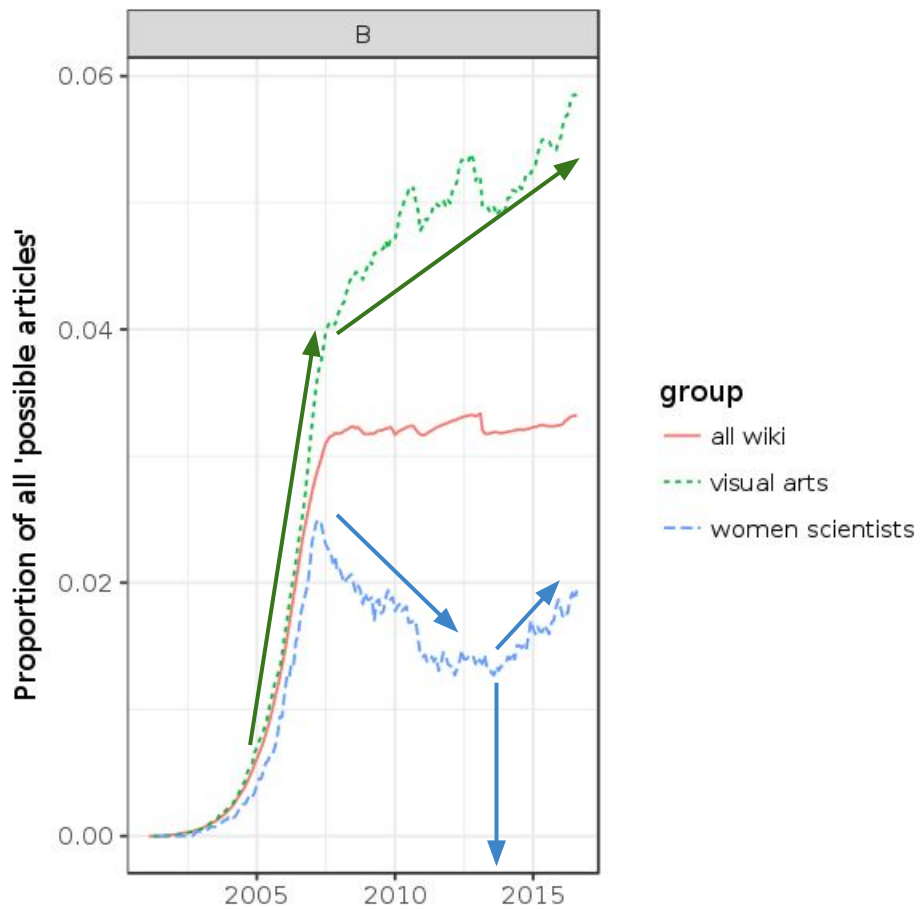


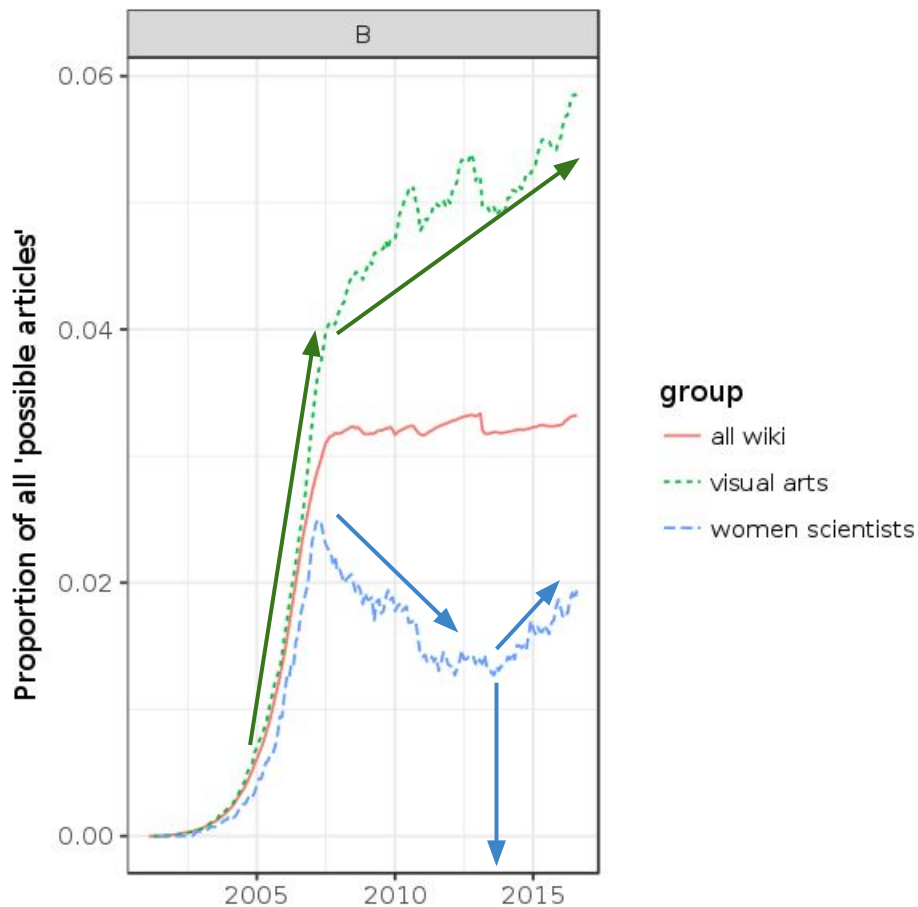








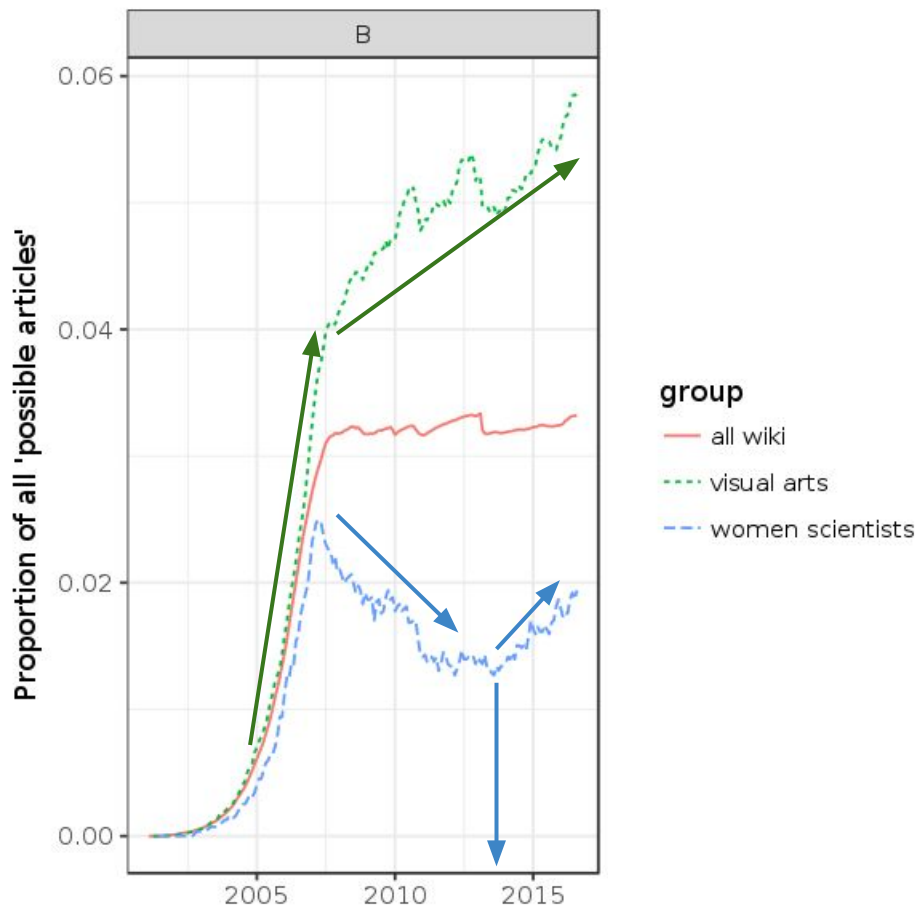




What's up with B class anyway?

- C ~ B?
- B → GA?
- Something else?'

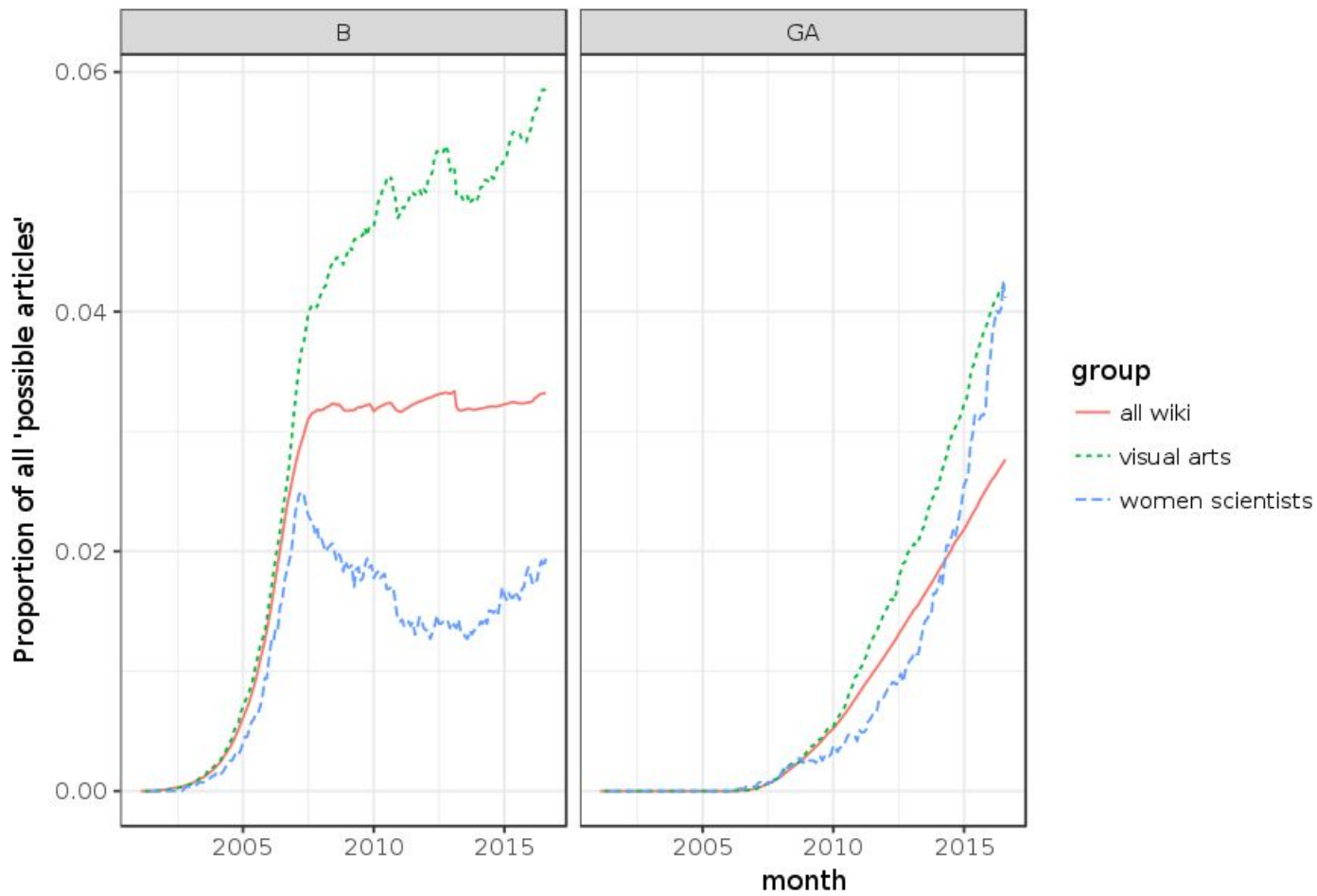
Why the switch in mid-2007?



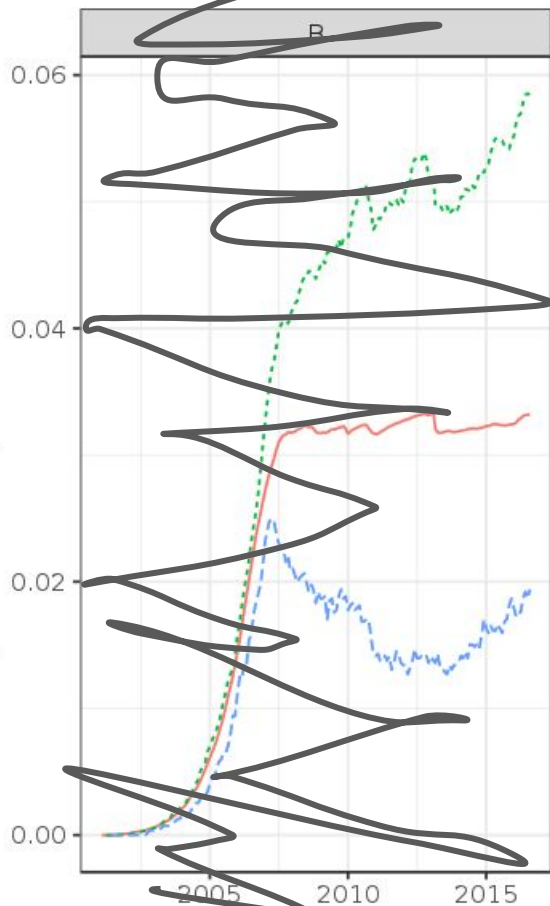
What's up with B class anyway?

- C ~ B?
- B → GA?
- Something else?'

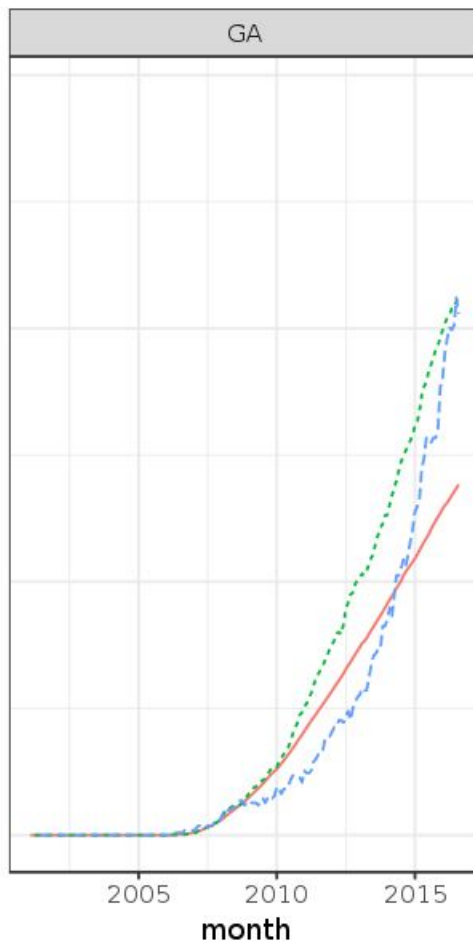
Why the switch in mid-2007?



Proportion of all 'possible articles'



GA

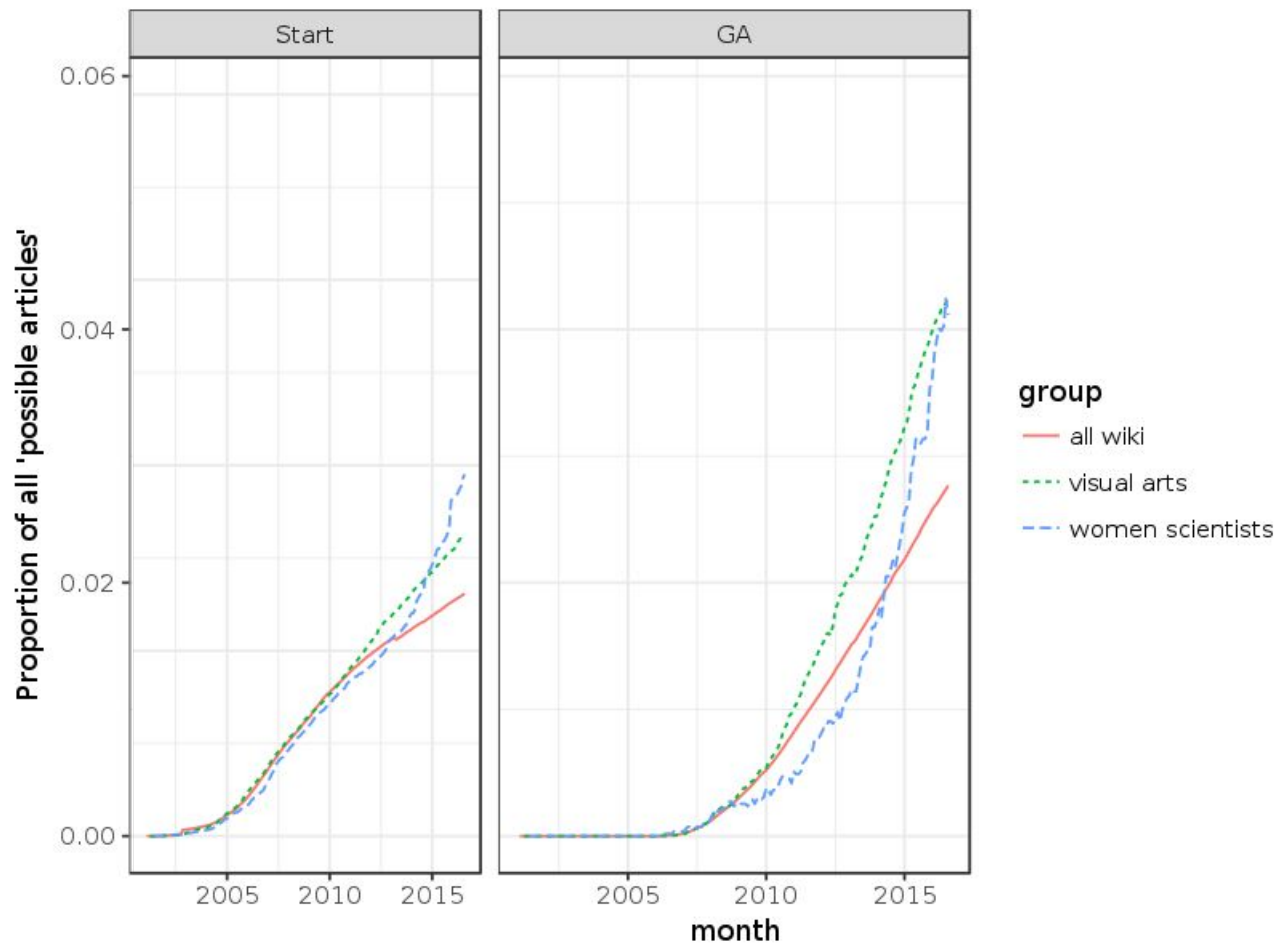


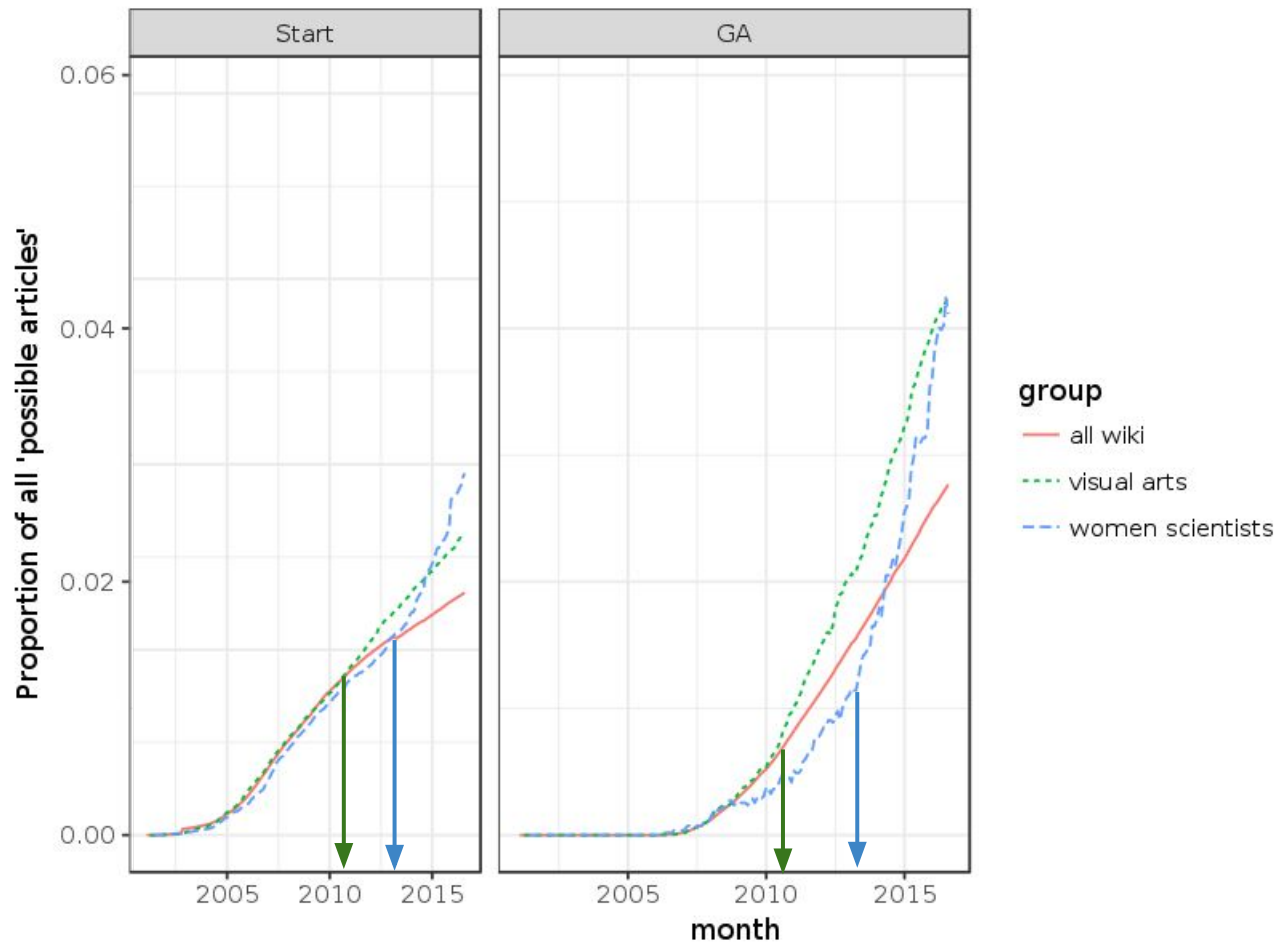
group

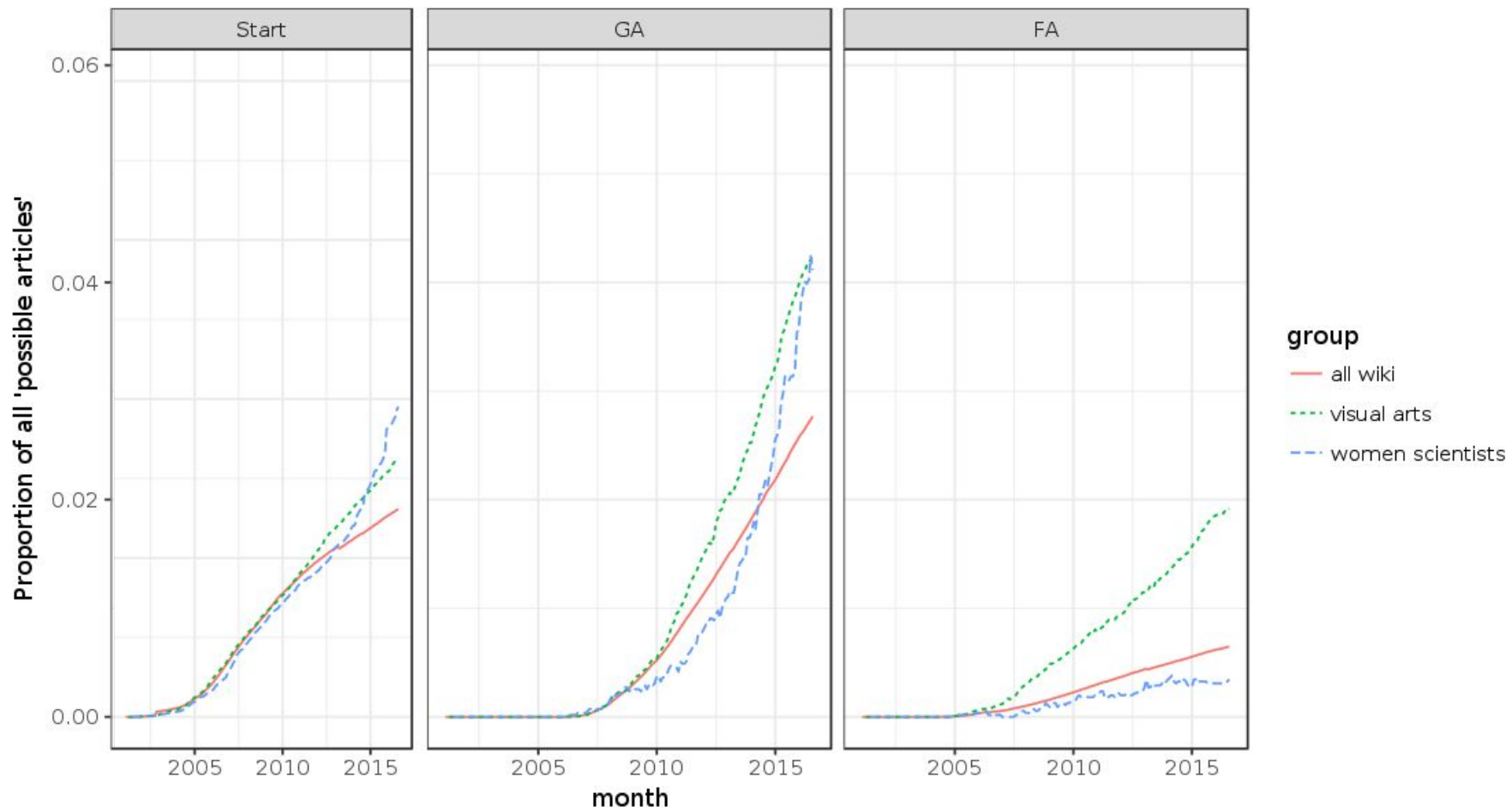
— all wiki

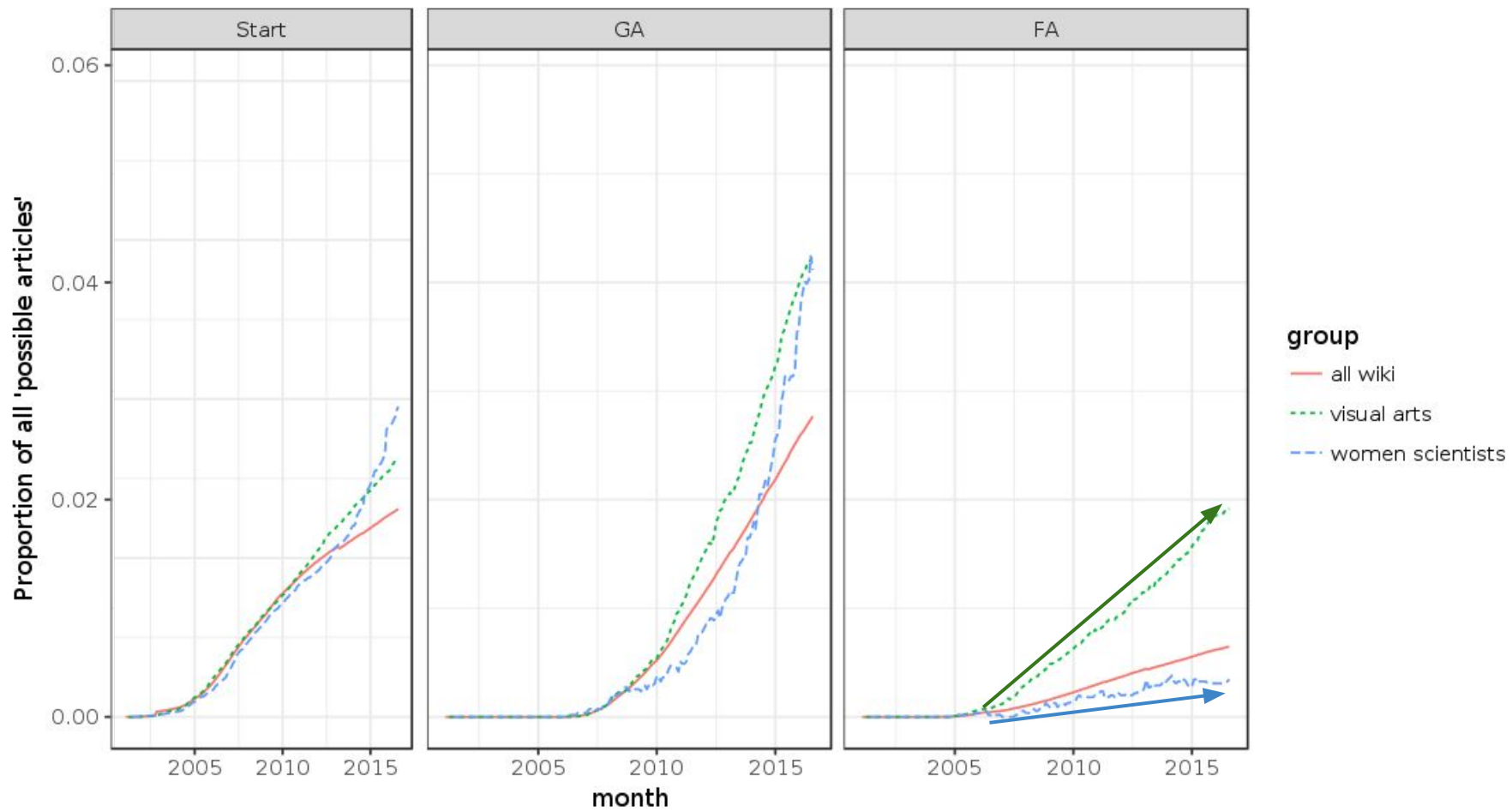
- - - visual arts

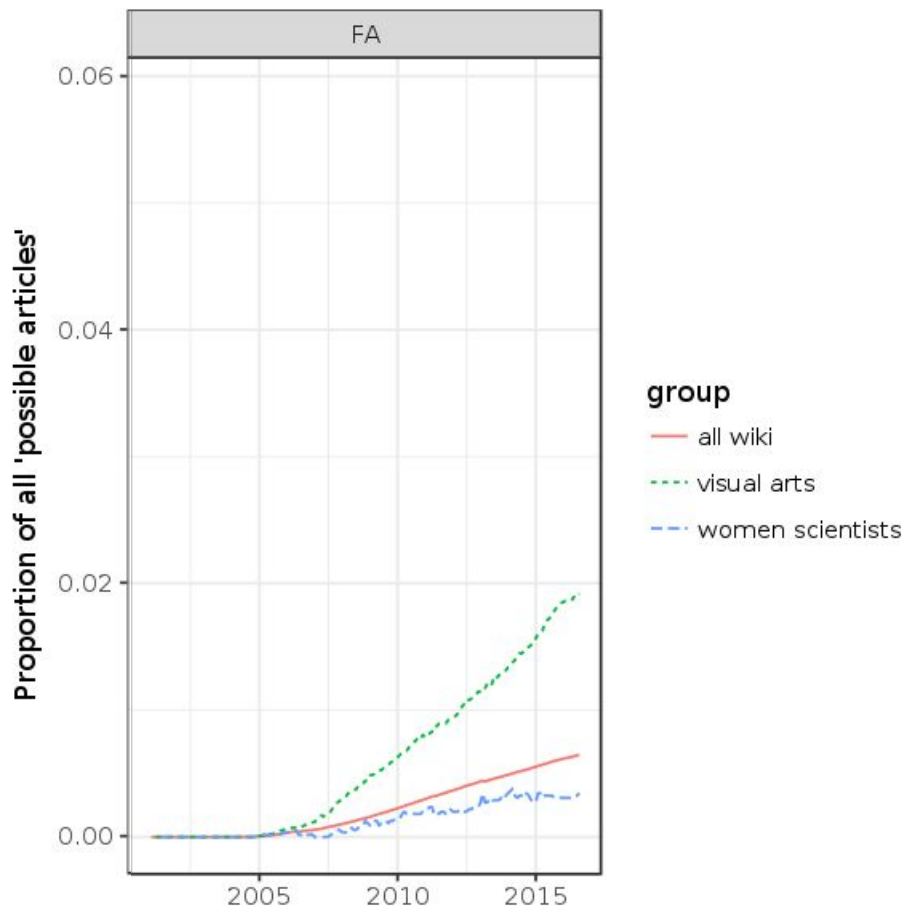
- - - women scientists



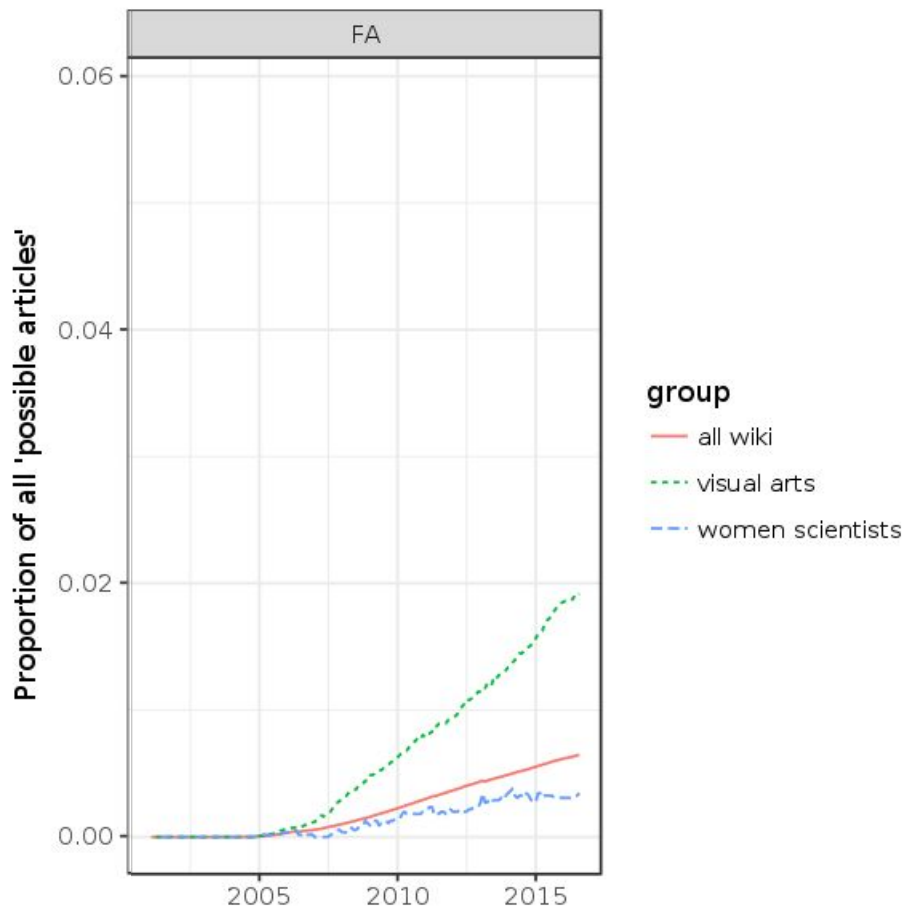








Could this be real?



Could this be real?

Assessments:

Women scientists: $7/5873 = 0.1\%$

Visual arts: $104/37726 = 0.3\%$

All wiki: $5893/5497335 = 0.1\%$

ORES model:

Women scientists: $19/5517 = 0.4\%$

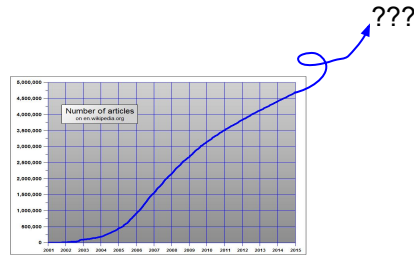
Visual arts: $585/30476 = 1.9\%$

All wiki: $33718/5206553 = 0.7\%$

Summary!

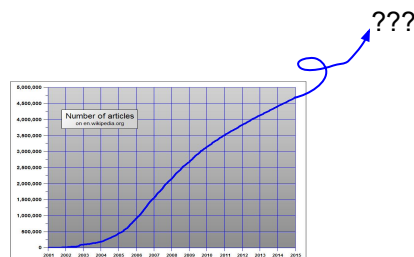
Summary!

1. When will Wikipedia be done?

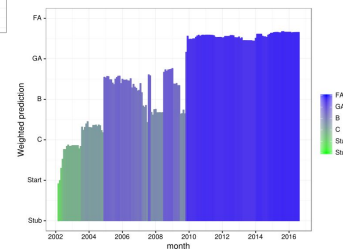
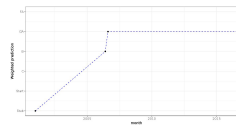


Summary!

1. When will Wikipedia be done?

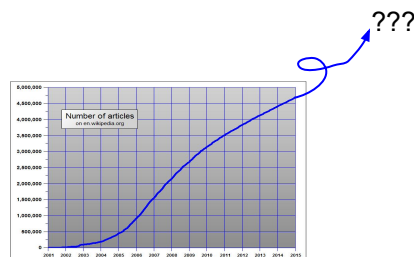


2. Modeling quality in Wikipedia

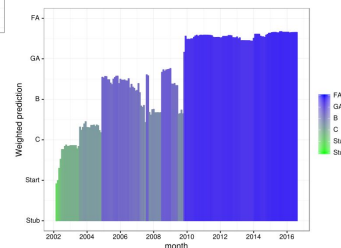
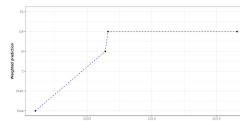


Summary!

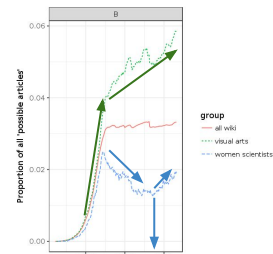
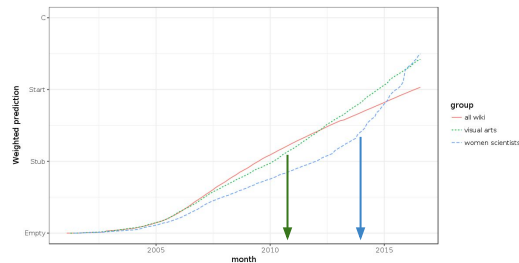
1. When will Wikipedia be done?



2. Modeling quality in Wikipedia



3. Applied the measurement



Read all about it on Meta!

[\[:m:Research:Quality dynamics of English Wikipedia\]](#)

Read all about it on Meta!

[\[:m:Research:Quality dynamics of English Wikipedia\]](#)

.... It's a work in progress.

- More cross-sections
- Intersect with Importance assessments & pageviews

Research talk:Quality dynamics of English Wikipedia

Discussion [\[edit \]](#) [Add topic \]](#)



Work log

[\[refresh list \]](#)

- [Quality dynamics of English Wikipedia/Work log/2016-12-19](#)
- [Quality dynamics of English Wikipedia/Work log/2016-11-19](#)

Research talk:Quality dynamics c

[New log entry](#)

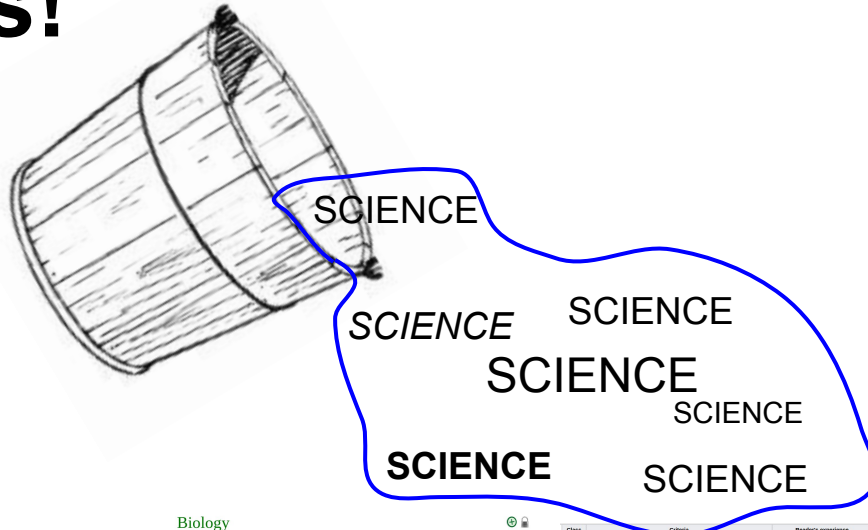
This page was last modified on 19 November 2016, at 19:33.

Text is available under the [Creative Commons Attribution-ShareAlike License](#); additional terms may apply. See [Terms of Use](#) for details.

[Privacy policy](#) [About Meta](#) [Disclaimers](#) [Developers](#) [Cookie statement](#) [Mobile view](#)



Thanks!



Props to my collaborator

- User:Nettrom

Aaron Halfaker

ahalfaker@wikimedia.org

enwp.org/User:EpochFail

<https://twitter.com/halfak>

Biology

A good article from Wikipedia, the free encyclopedia

"Biological science" redirects here. It is not to be confused with life science.

For other uses, see *Biology* (disambiguation).

Biology is a natural science concerned with the study of life and living organisms, including their structure, function, growth, evolution, distribution, identification and taxonomy.^[H] Modern biology is a vast and eclectic field, composed of many branches and subdisciplines.^[citation needed] However, despite the broad scope of biology, there are certain general and unifying concepts within it that govern all study and research, consolidating it into single, coherent field. In general, biology recognizes the cell as the basic unit of life, genes as the basic unit of heredity, and evolution as the engine that propels the synthesis and creation of new species. It is also understood today that all the organisms survive by consuming and transforming energy and by regulating their internal environment to maintain a stable and vital condition known as homeostasis.

Sub-disciplines of biology are defined by the scale at which organisms are studied, the kinds of organisms studied, and the methods used to study them: biochemistry examines the rudimentary chemistry of life; molecular biology studies the complex interactions among biological molecules; botany studies the biology of plants; cellular biology



Biology deals with the study of the many living organisms.
• top: E. coli bacteria and gazelle
• bottom: Goliath beetle and tree fern

Class	Criteria	Reader's experience
FA	The article has attained featured article status by passing an official review. More detailed criteria [show]	Professional, outstanding, and thorough, a definite source for encyclopedia information.
A	The article is well organized and essentially complete, having been reviewed by regular reviewers from the WikiProject or elsewhere. Good article status is not a requirement for A-Class. More detailed criteria [show]	Very useful to readers. A fully complete treatment of the subject. A fair expert on the subject would typically find nothing wrong.
B	The article has attained good article status by passing an official review. More detailed criteria [show]	Useful to many all readers, with no obvious problems, approaching but not meeting the quality of a professional encyclopedia.
C	The article is mostly complete and without major problems, but requires some further work to reach good article standards. More detailed criteria [show]	Readers are not left wanting, although the content may not be complete enough to satisfy a serious reader or researcher.
D	The article is substantial, but it still missing important content or contains much incorrect material. The article should have some references to reliable sources, but may still have significant problems or require substantial cleanup. More detailed criteria [show]	Useful to a casual reader, but would not provide a complete picture for even a moderately detailed study.
Start	An article that is developing, but which is quite incomplete. It might or might not cite adequate reliable sources. More detailed criteria [show]	Provides some meaningful context, but most readers will need more.
Stub	A very basic description of the topic. However, all very-lead-quality articles will fall into this category. More detailed criteria [show]	Provides very little meaningful context; may be little more than a dictionary definition. Readers probably only infrequently developed because of the topic and may not have the features of the topic are significant.