

Links, Wikipedia, and Knowledge Gaps

Isaac Johnson -- Research Scientist -- Wikimedia Foundation

WikiConference North America -- 8 October 2021

Etherpad: <https://etherpad.wikimedia.org/p/wcna2021-4202>

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Modern art (Q38166)

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Artistic works produced during the period extending roughly from the 1860s to the 1970s. From Wikipedia, the free encyclopedia

For other uses, see [Modern art \(disambiguation\)](#). Not to be confused with [contemporary art](#), nor [art moderne](#).

Modern art includes artistic work produced during the period extending roughly from the 1860s to the 1970s, and denotes the styles and [philosophies](#) of the [art](#) produced during that era.^[1] The term is usually associated with art in which the traditions of the past have been thrown aside in a spirit of experimentation.^[2] Modern artists experimented with new ways of seeing and with fresh ideas about the nature of materials and functions of art. A tendency away from the [narrative](#), which was characteristic for the traditional arts, toward [abstraction](#) is characteristic of much modern art. More recent artistic production is often called [contemporary art](#) or [postmodern art](#).

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Modern art



Agenda

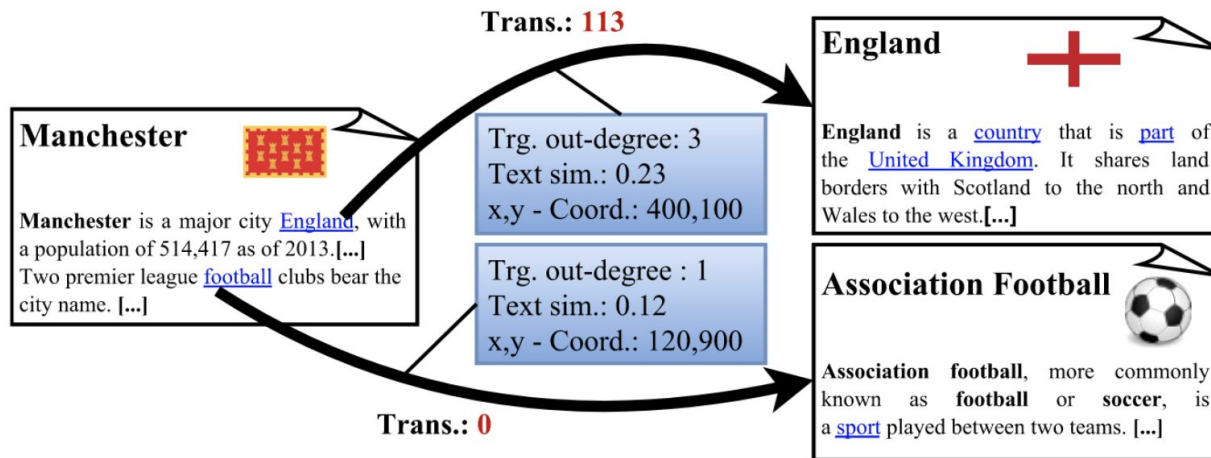
1. What makes a **successful** link?
2. What is the relationship between links and **gender equity**?
3. What is the relationship between links and **machine learning coverage**?
4. What is the relationship between links and **new editors**?

Link Success: Research

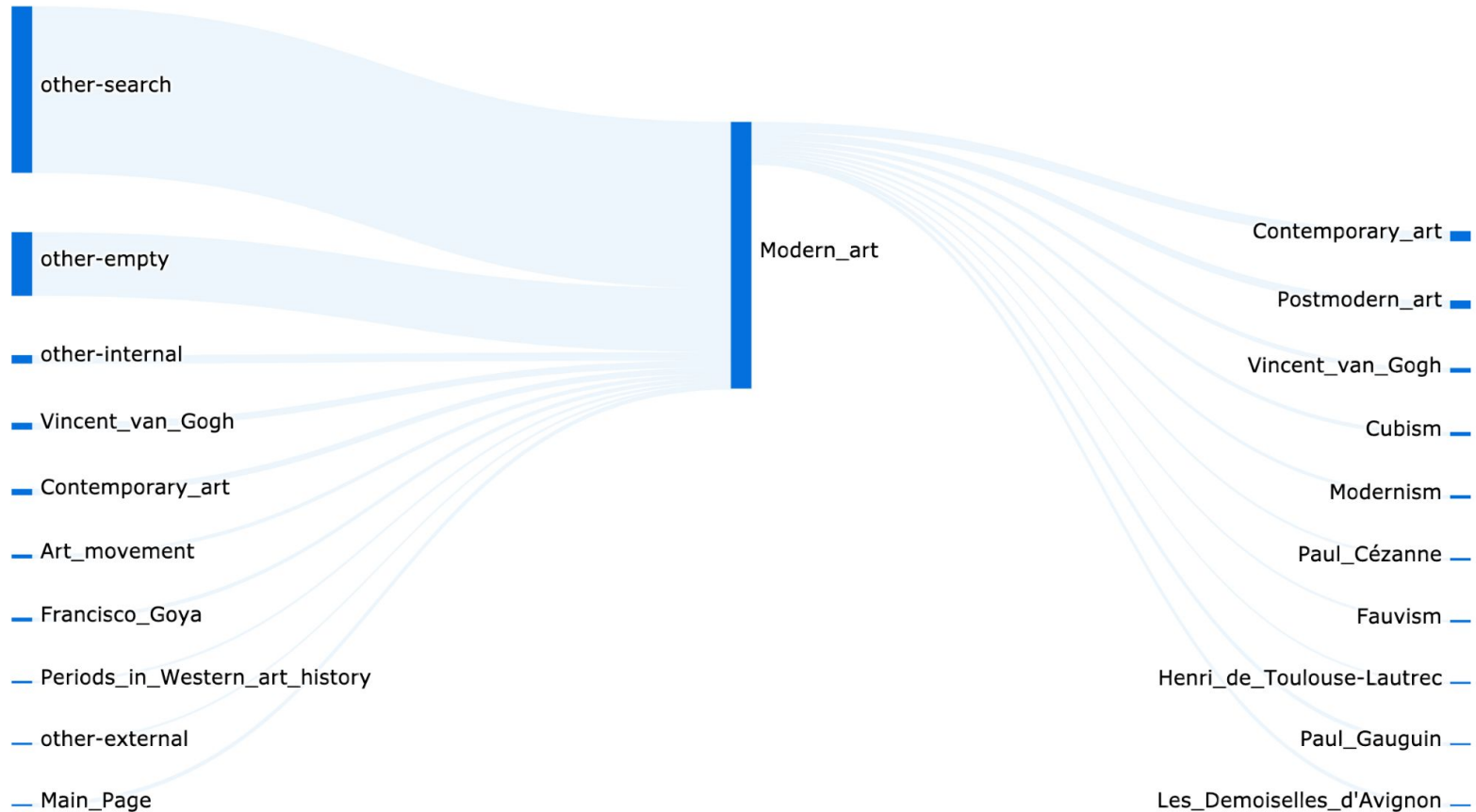
What Makes a Link Successful on Wikipedia?

Dimitar Dimitrov, Philipp Singer, Florian Lemmerich, Markus Strohmaier. WWW 2017. [arXiv]

- About 4% of all links on English Wikipedia are clicked 10+ times per month
- Page placement: top + upper-left (for English as LTR language)
- Centrality: more peripheral articles
- Semantics: topically-similar articles

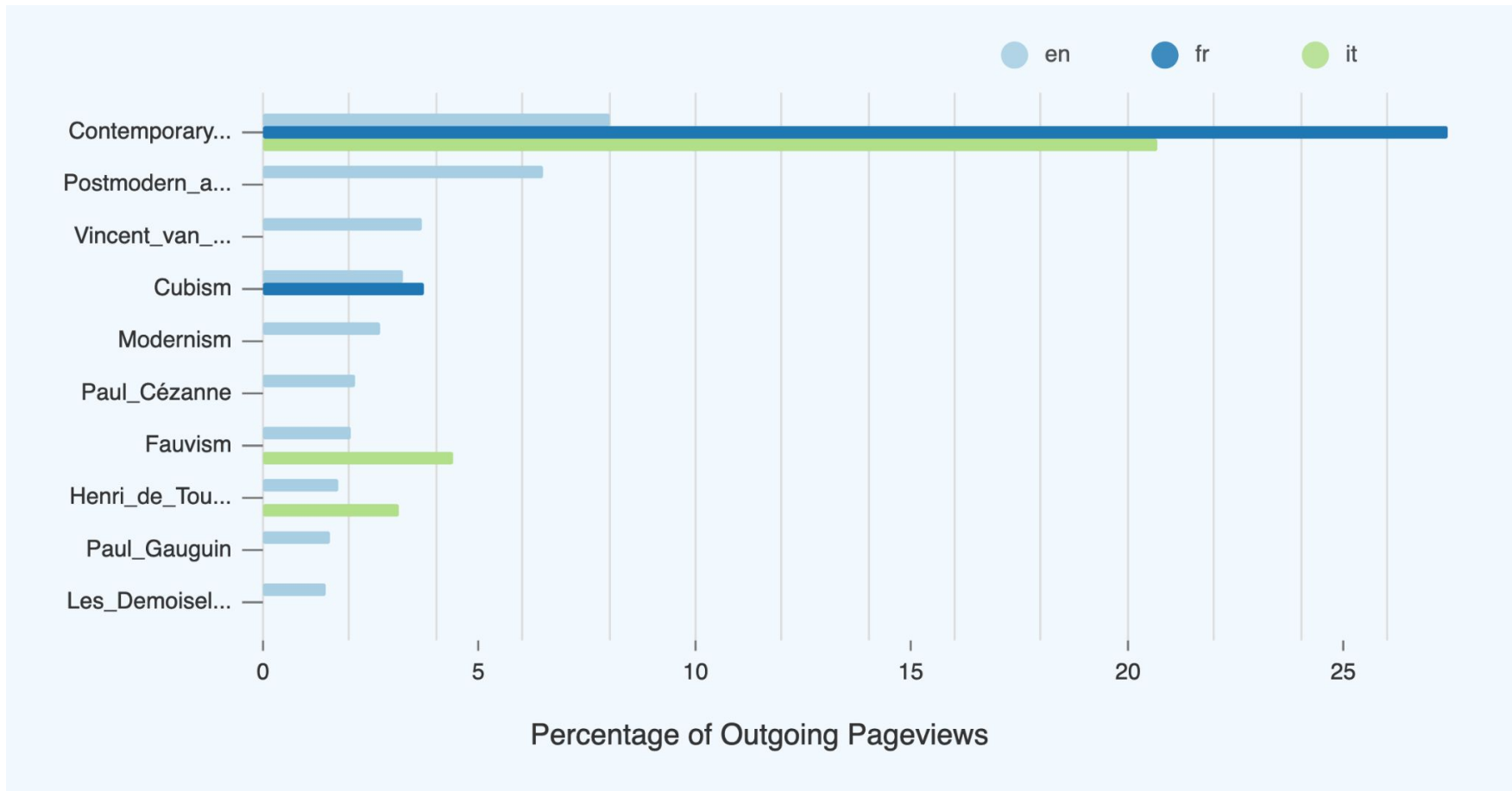


Link Success: Clickstream Data



Explore further: <https://wikinav.toolforge.org/>

Details: <https://techblog.wikimedia.org/2021/09/17/analyzing-the-wikipedia-clickstream-just-got-easier-with-wikinav/>



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Modern art (Q38166)

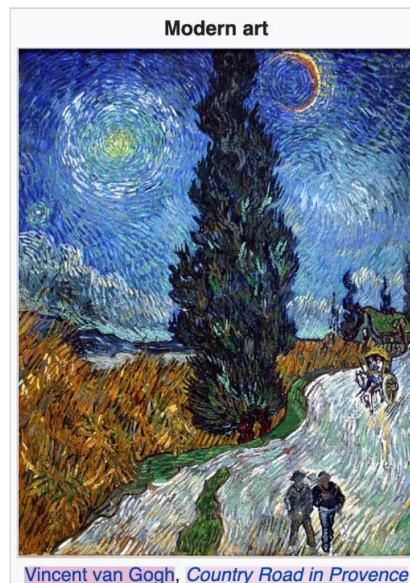
50 languages ▼

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Vincent van Gogh, *Country Road in Provence*

Gender Equity + Links: Research

Women through the glass ceiling: gender asymmetries in Wikipedia

Claudia Wagner, Eduardo Graells-Garrido, David Garcia & Filippo Menczer. EPJ Data Science 2016. [\[pdf\]](#)

- Examined the gender gap through different lenses: content policies, linguistic bias, and structural properties
- Women have lower PageRank values than men

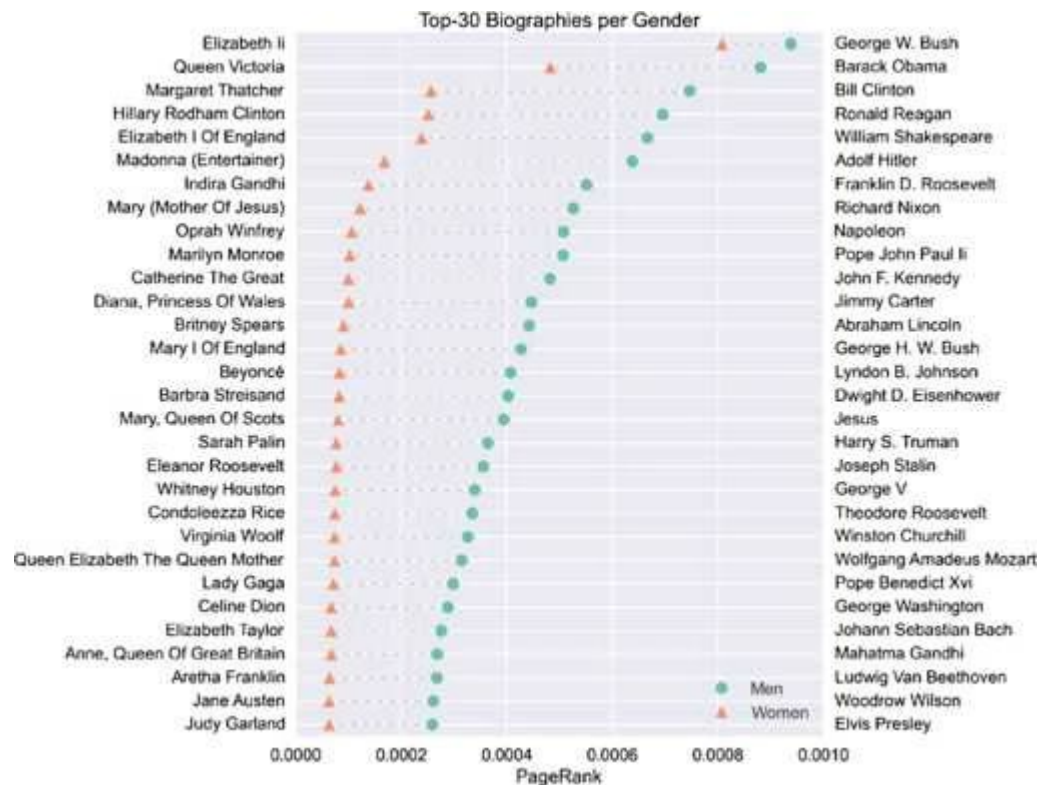
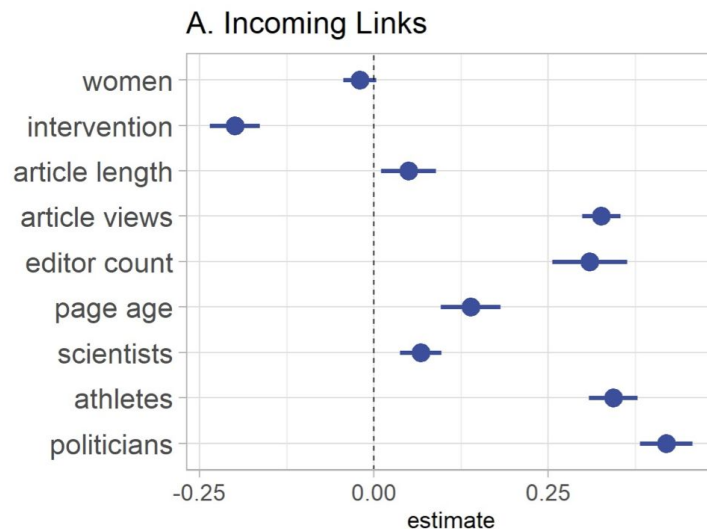


Figure 5. Top 30 biographies sorted by PageRank.

The Gender Divide in Wikipedia: Quantifying and assessing the impact of two feminist interventions

Isabelle Langrock and Sandra González-Bailón. SSRN 2021. [\[pdf\]](#)

- Art+Feminism and 500 Women
Scientists have been very successful at creating content about women on English Wikipedia.
- Less attention has been directed at linking this new content in with the rest of Wikipedia.



For more details, see their presentation at the July 2021 Research Showcase:
https://www.mediawiki.org/wiki/Wikimedia_Research/Showcase#July_2021

Gender Equity + Links: Data

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Modern art (Q38166)

50 languages ▼

Other Genders	0 links	0%	Female	68 links	11%	Male	569 links	89%
			female	68 links	11%	male	569 links	89%

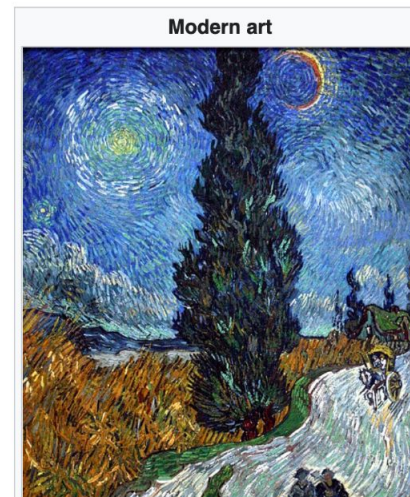
Artistic works produced during the period extending roughly from the 1860s to the 1970s. From Wikipedia, the free encyclopedia

Cs+

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Links + Machine Learning Coverage

Language-agnostic Topic Classification for Wikipedia

Isaac Johnson, Martin Gerlach, Diego Sáez-Trumper. WikiWorkshop 2021. [\[arXiv\]](#)



Input: Wikipedia Article



Machine-learning Model



Visual Arts

Output: Topic Predictions

Article **Talk** Read [Edit source](#) [View history](#) ☆ More ▾

Modern art (Q38166) 🗨️ 50 languages ▾

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Input: **English** Wikipedia
Article



Machine-learning
Model



Visual Arts

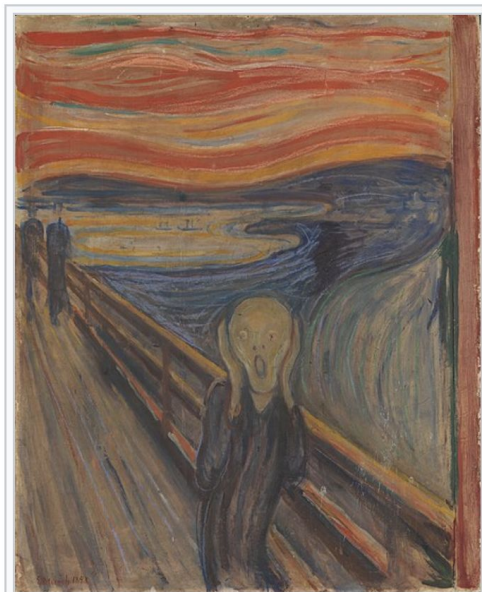
Output: Topic
Predictions

Nghệ thuật hiện đại (Q38166)

Bách khoa toàn thư mở Wikipedia

Nghệ thuật hiện đại (**tiếng Anh**: *modern art*) bao hàm các tác phẩm **nghệ thuật** được sáng tác trong giai đoạn khoảng từ **thập niên 1860** đến **thập niên 1970**, biểu thị các phong cách và **triết lý** của nghệ thuật thời kỳ đó.^[1] Nghệ thuật hiện đại gạt sang một bên các truyền thống quá khứ với một tinh thần thể nghiệm.^[2] Các nghệ sĩ hiện đại thể nghiệm với những cách nhìn mới và với những ý tưởng mới về bản chất vật liệu và các chức năng của nghệ thuật. Nghệ thuật hiện đại có xu hướng xa rời **tính tự sự** (vốn dĩ là đặc trưng của nền nghệ thuật truyền thống) để hướng tới tính **trừu tượng**. Tác phẩm nghệ thuật ra đời trong các năm gần đây thường được gọi là **nghệ thuật đương đại** hoặc **nghệ thuật hậu hiện đại**.

Nghệ thuật hiện đại bắt đầu với di sản hội họa của nhiều họa sĩ như **Vincent van Gogh**, **Paul Cézanne**, **Paul Gauguin**, **Georges Seurat** và **Henri de Toulouse-Lautrec**, tất cả mang tầm vóc quan trọng ảnh hưởng đến sự phát triển của nghệ thuật hiện đại. Vào đầu thế kỷ 20, **Henri Matisse** và một số nghệ sĩ trẻ khác bao gồm các nghệ sĩ tiền lập thể như **Georges**



Bức *Tiếng thét* của **Edvard Munch**, 1893



Input: **Vietnamese**
Wikipedia Article



Machine-learning
Model



???

Output: Topic
Predictions

Modern art (Q38166)

🌐 [50 languages](#) ∨

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Modern art (Q38166)

🌐 50 languages ▾

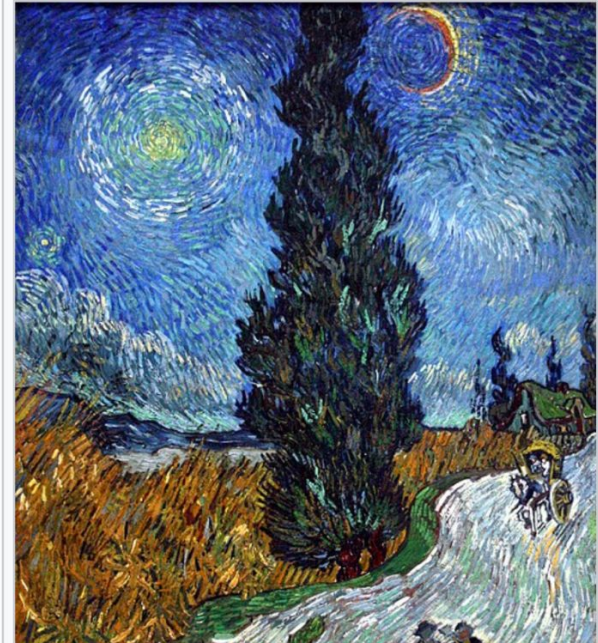
Artistic works produced during the period extending roughly from the 1860s to the 1970s. From Wikipedia, the free encyclopedia

For other uses, see [Q1205723](#). Not to be confused with [Q186030](#), nor [Q928960](#).

Modern art includes artistic work produced during the period extending roughly from the 1860s to the 1970s, and denotes the styles and [Q1743282](#) of the [Q735](#) produced during that era.^[1] The term is usually associated with art in which the traditions of the past have been thrown aside in a spirit of experimentation.^[2] Modern artists experimented with new ways of seeing and with fresh ideas about the nature of materials and functions of art. A tendency away from the [Q1318295](#), which was characteristic for the traditional arts, toward [Q673661](#) is characteristic of much modern art. More recent artistic production is often called [Q186030](#) or [Q3318563](#).

Modern art begins with the heritage of painters like [Q5582](#), [Q35548](#), [Q37693](#), [Q34013](#) and [Q82445](#) all of whom were essential for the development of modern art. At the beginning of the 20th century [Q5589](#) and several other young artists including the [Q3408836](#)

Modern art





Modern art (Q38166)

Artistic works produced during the period ext

For other uses, see [Q1205723](#). Not t

Modern art includes artistic work produc extending roughly from the 1860s to the and [Q1743282](#) of the [Q735](#) produced du usually associated with art in which the t thrown aside in a spirit of experimentatio experimented with new ways of seeing a nature of materials and functions of art. A [Q1318295](#), which was characteristic for t [Q673661](#) is characteristic of much mode production is often called [Q186030](#) or [Q3](#)

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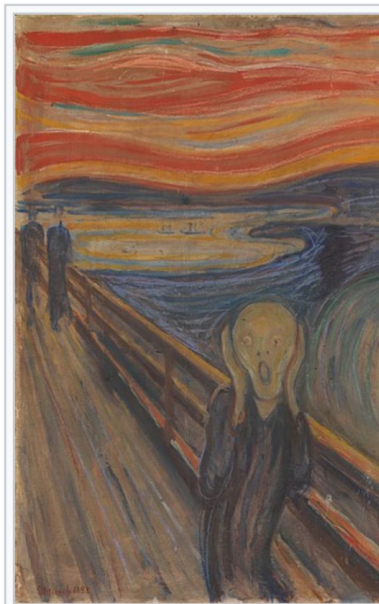


Nghệ thuật hiện đại (Q38166)

Bách khoa toàn thư mở Wikipedia

Nghệ thuật hiện đại ([Q1860](#): *modern art*) bao hàm các tác phẩm [Q735](#) được sáng tác trong giai đoạn khoảng từ [Q39844](#) đến [Q35014](#), biểu thị các phong cách và [Q5891](#) của nghệ thuật thời kỳ đó.^[1] Nghệ thuật hiện đại gạt sang một bên các truyền thống quá khứ với một tinh thần thể nghiệm.^[2] Các nghệ sĩ hiện đại thể nghiệm với những cách nhìn mới và với những ý tưởng mới về bản chất vật liệu và các chức năng của nghệ thuật. Nghệ thuật hiện đại có xu hướng xa rời [Q1318295](#) (vốn dĩ là đặc trưng của nền nghệ thuật truyền thống) để hướng tới tính [Q673661](#). Tác phẩm nghệ thuật ra đời trong các năm gần đây thường được gọi là [Q186030](#) hoặc [Q3318563](#).

Nghệ thuật hiện đại bắt đầu với di sản hội họa của nhiều họa sĩ như [Q5582](#), [Q35548](#), [Q37693](#), [Q34013](#) và [Q82445](#). tất cả mang



Modern art (Q38166)

Artistic works produced during the period ext

For other uses, see [Q1205723](#). Not t

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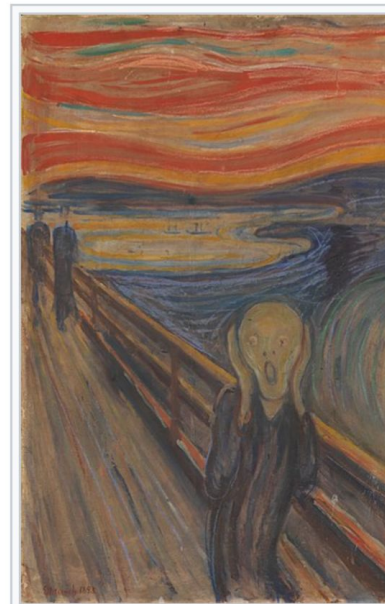
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Input: **Any** Wikipedia Article



Machine-learning
Model



Visual Arts

Output: Topic
Predictions

Links + Newcomers: Add-a-link

A Multilingual Entity Linking System for Wikipedia with a Machine-in-the-Loop Approach

Martin Gerlach, Marshall Miller, Rita Ho, Kosta Harlan, Djellel Difallah. CIKM 2021. [\[arXiv\]](#)

Abstraction (disambiguation)

Topics referred to by the same term. From Wikipedia, the free encyclopedia

Abstraction is a process or result of generalization, removal

Abstraction may also refer to:

- **Abstraction (art)**, art unconcerned with the literal depiction
- **Abstraction (computer science)**, a process of hiding detail
 - **Abstraction layer**, an application of abstraction in computing
 - **Hardware abstraction**, an abstraction layer on top of hardware
- **Abstraction (linguistics)**, use of terms for concepts removed from the real world
- **Abstraction (mathematics)**, a process of removing the details of a concept
 - **Hypostatic abstraction**, a formal operation that transforms a concept into an abstract one
 - **Lambda abstraction**, a definition of an anonymous function
- **Abstraction (sociology)**, a process of considering sociological concepts in general
- **Nucleophilic abstraction**, a nucleophilic attack which causes the abstraction of a proton
- **Water abstraction**, the process of taking water from any source
- **Abstracting electricity**, the crime of diverting electricity from its intended use

See also [\[edit source\]](#)

- **Abstract (disambiguation)**
- **Abstracting service**
- **Abstract art**, a movement in 20th-century Western art



Modern art (Q38166)

Artistic works produced during the period extending roughly from the 1860s to the 1970s. From Wikipedia, the free encyclopedia

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Learn more (Wikimania '21): <https://www.youtube.com/watch?v=ar034Gha24>

Choose a task

< Suggested edits ⓘ

Food and drink Easy

1 of 200 suggestions



Láhevnik síťovaný
Láhevnik síťovaný je v tropech rostoucí strom, méně častěji keř, plodící ovoce o velikosti většího

29 visits (past 60 days)


Add links between articles ⓘ
EASY 3 - 5 minutes
Make words from one article link to another article.

Other users have noted these articles need work. Help make **Wikipedia** better for its **700K readers** each day.

Onboarding: value

Introduction Skip all

1 of 3



Adding links will help people learn faster.

You will decide whether words in one Wikipedia article should link to other Wikipedia articles.

Example sentence

The moon is the only natural satellite that orbits around the Earth.

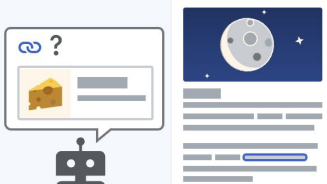
No special knowledge about the article is needed to do this task.

Don't show again >

Onboarding: judgment

Introduction Skip all

2 of 3



Suggested links are machine-generated, and can be incorrect.

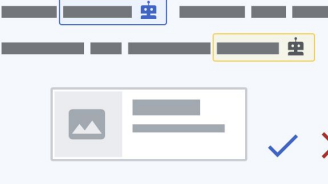
The suggestions might be on words that don't need them, or might link to the wrong article. Use your judgment to decide whether they are right or wrong.

< >

Onboarding: guidelines

Introduction

3 of 3



Guidelines

- Link concepts that a reader might want to learn more about.
- Make sure the link is going to the right article.
- Don't link common words, years, or dates.
- If you're not sure, skip.

< **Get started**


Evaluate the suggestion

Ke zdárnému růstu potřebuje sice tropické **podnebí**, roste však i v místech se studenějším zimním počasím. S nástupem chladného počasí shodí listy a přečká ve stavu vegetačního klidu, dospělé rostliny přežijí i období s krátkodobými teplotami pod 0 °C. Preferuje vlhčí klima, špatně snáší suchý **vzduch**, obvykle prospívá až do **nadmořské výšky** 1200 m. Potřebuje hlubokou a výživnou půdu s dostatkem vlhkosti a dobrou drenáží, nesnáší delší sucho. Na nevyhovujícím stanovišti a v málo výživné půdě plodí slabě

1/7

Text **podnebí**

Should this link to the following article?

 **Podnebí**
termín

Yes No Next

Feedback on algorithm


Všechny části rostliny, nezralé plody i semena, obsahují **alkaloidy**, anonain, liriodeenin, reticulin, které jsou **toxické**. Semena je možno bez

Why is this not a good link?
Your answers improve future suggestions.

- Almost everyone knows what it is
- Linking to wrong article (e.g. linking "moon" to "planet")
- Text should include more or fewer words (e.g. "palm tree" instead of "palm")
- Other

Done

Should this link to the following article?

 **Kůže**
orgán pokrývající tělo obratlovců

Yes No Next

Edit summary

Save your changes Publish

Summary

Suggestion	Linked?
podnebí: Podnebí	<input checked="" type="checkbox"/>
vzduch: Vzduch	<input type="checkbox"/>
stálezelené: Stálezelená rostlina	<input type="checkbox"/>
na dotek: Na dotek	<input checked="" type="checkbox"/>
období sucha: Období sucha	<input checked="" type="checkbox"/>
hnojiv: Hnojivo	<input checked="" type="checkbox"/>
kůže: Kůže	<input checked="" type="checkbox"/>

By saving changes, you agree to the [Terms of Use](#) and agree to release your contribution under the [CC BY-SA 3.0](#) and [GFDL](#) licenses.

Review your changes

Next suggestion

WIKIPEDIA 52

Color Out of Space (film)


Page Discussion

This article's plot summary may be too long or excessively detailed. (February 2020) [Learn more](#)

Color Out of Space is a 2019 American **science fiction cosmic horror** film directed

You've published an edit. Thanks and keep going!

Edit another suggestion:

 **Jonathan Gresham**

Add links between articles

[View more suggested edits](#)

[Close and edit this article again](#)

Takeaways

Overview: Links are awesome and powerful and (I think) underappreciated!

Success: Not all links are equal for readers -- some are much more likely to be clicked

Gender Gap: There are still large structural gaps in how well-incorporated articles about women are to the rest of Wikipedia.

Equitable Machine Learning: Even links that are never clicked can be valuable for building machine-learning models across many languages to aid in editing and other tasks.

Newcomers: Adding links is an excellent newcomer task and may one day help to address some of the structural biases in the coverage of links

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<https://epjdatascience.springeropen.com/articles/10.1140/epjds/s13688-016-0066-4/figures/5> ([CC-BY 4.0](#))
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