WikiLetters
Systematic Review
(v.1.0.1)
Integration amongst complementary services likely to support better science
Agenda

1. The problem?
2. Friends in the wiki-world advancing Reviews
3. Literature Review (LR) and Systematic Review (SR)
4. Wiki-ecosystems that may support Science.
5. The WikiLetters Systematic Review (WLSR)
Challenges to be addressed

SRs are meant to be highly reproducible, but yet humans curate each article (humans bias?).

Traditional Reviews
humans make decisions, user ends search when they like / (get bored?).

Traditional Systematic Reviews (TSR)
humans share their method for selecting articles, but selection is yet very much up to their individual taste. 
TSR is a consensus between ~3-4 humans.
Acknowledging SR Friends in the wiki-world

1. Both do medicine; AR does other academic fields.
2. Both organize wiki events and have Wikimedians in Residence.

**Note:** Reviews suit encyclopedias like *Wikipedia*. 
Literature reviews are summaries of research & Systematic Reviews are systematic steps to produce summaries of research
Systematic review

From Wikipedia, the free encyclopedia

616 revisions since 2005-10-25 (+8 hours), 287 editors, 160 watchers, 11,859 pageviews in 30 days), created by: 194.225.62.74

For the academic journal, see Systematic Reviews (journal).

Systematic reviews are a type of review that uses repeatable analytical methods to collect secondary data and analyse it. Systematic reviews are a type of evidence synthesis which formulate research questions that are broad or narrow in scope, and identify and synthesize data that directly relate to the systematic review question. While some people might associate 'systematic review' with 'meta-analysis', there are multiple kinds of review which can be defined as 'systematic' which do not involve a meta-analysis. Some systematic

Why are humans still curating each article in a SR? It affects accuracy to achieve the same group of selected articles.

Repeatable? Yes! Accurate? No!
Major steps commonly found in Traditional Systematic Reviews?

1. Submit keywords (get ~1,000 - ~3,000 articles).
2. Assess titles & ~abstract (reduce to ~150 - ~300 articles).
3. Assess full articles (select ~30 - ~80 articles).

**Note:** emotions can be found in these steps, so it is only logical to suppress these emotions.

4. Lastly, to read and summarize selected articles.
Systematic review = more logical, less human

It’s only logical to evolve Systematic Reviews!

How are Wikipedia articles created?

How do Wikipedia articles evolve?

Can Wiki-ecosystems embrace Science via “Living Systematic Reviews” and other means?
Climate change has adversely affected both terrestrial[1] and marine[2] ecosystems, and is expected to impact tundra, mangroves, coral reefs,[3] and caves.[4] Increasing global temperature, more frequent occurrence of extreme weather events, and rising sea levels are some of the effects of climate change that will have the most significant impact. Some of these effects include species decline and extinction, behavior change within ecosystems, increased prevalence of invasive species, increased reliance on non-renewable carbon sources, ocean acidification, disruption of the water cycle, and increased occurrence of natural disasters.
Stats: Climate change and ecosystems

- Traffic: 26,585 views in 2020
- References: 121 (and growing)
- Editors: 162 users (and growing)
- Edits: 351 (and growing)
- Creation: 11 March 2010

Opinion: This is an article with moderate to high traffic and engagement. It influences human thought.
and growing.....


34. Grass flourishes in warmer Antarctic originally from *The Times*, December 2004


98. Albouy, Camille; Delattre, Valentine; Donati, Giulia; Fröhlicher, Thomas L.; Albouy-Boyer, Severine; Rufino, Marta; Pelissier, Loïc; Mouillot, David; Leprieur, Fabien (December 2020). "Global vulnerability of marine mammals to global warming". *Scientific Reports*. 10 (1): 548. [Bibcode:2020NatSR...10..548A](https://doi.org/10.1038/s41598-019-57280-3). ISSN 2045-2322. PMCID 6969058. PMCID 31953496.

Wikipedia and Wiki-ecosystems are becoming platforms for serious research

https://commons.wikimedia.org/wiki/File:Artificial_Intelligence_%26_AI_%26_Machine_Learning_-_30212411048.jpg
Our sincere apologies for potentially missing some projects!
WikiLetters.org follows this wiki-mentality, and supports quality-checked-reviews with Databases:

- WikiLetters.net (Letters of Caveats)
- WikiComments.org (Published Peer-reviewed Comments)
- WikiRetracted.org (Retractions)
- WikiCitingRetracted.org (Citing-Retracted articles)
- WikiErratum.org (Minor corrections)

These Databases can be used for checking quality aspects of manuscripts to be used in a WL-SR, any Wikipedia article.
WLSR aims to interconnect

- Wikipedia (hosting Living-Reviews)
- Wikidata (hosting Meta of pub.)
- WikiCite (feeding Wikidata)
- WikiLetters (checking quality aspects)

Where to use a plot like this?
Appendix!
Supplementary!
WL Systematic Review tool

Tool for identifying sources to cite, at scale

- Helps assessing between ~100 and ~3000 academic articles;
- makes research human-bias-reduced, higher quality, more reproducible and accurate.
Main components of most Systematic Reviews

Projects engaged in gathering literature:
- WikiCite
- WikiProject Zika Corpus
- WikiProject Invasion biology

(1) Process to gather literature
(2) Process to select literature
(3) Process selected literature

This work is currently focusing on this component, but we aim to expand more!!!!

Updating?
Why to cast a net hopefully larger than what you may need?

**Our suggestion:**

1 - Find a SR on a similar topic, and get the total number of articles ($T$);

2 - Multiply this total ($T$) by $\sim 5-10$;

3 - You would consider between $5T$ and $10T$ files to feed the WLSR.

If the net is too small, do we risk **missing** things?
Humans select the keywords

- vulnerability
- coastal
- resilience
- coast
- tsunami
- exposure
- elevation
- hazards
- vulnerable
- hurricane
- erosion
- damage
- natural
- climate

The keyword selection clusters articles to the top rank. But more is needed!

Select words initially used in the queries to find these PDFs.
Select relevant words that may appear in this list.
How to select the Top Rank (TR) articles?

**METHOD-1**  
~0.9 \( HS \leq TR \leq HS \)

**METHOD-2**  
\( TR = \sim 0.9 \times (\text{Total Papers}) \)

**METHOD-3**  
\( TR = \sim 10 \) HS Papers

**Note:** you are welcome to adapt and change the method to define top ranked articles.
How to define the second threshold?

Transformer model used to recalculate the score for each article outside the Top Rank

Threshold at similarity of 0.6. You define!
The basic sequence

1. **Bot** extract all terms from papers;
2. **Human** selects words and method to define the **line of relevance** for top rank;
3. **Bot** reorganizes the **tail** considering the **top rank** chunk;
4. **Human** selects method determining the **line of relevance**.

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Final result example

- **top rank**
- **tail re-adjusted after using transformer model**
- 0.6 similarity (i.e. 60%)

Include these

- yes, also include these 50

Let's not consider these 400+
Features to be further implemented into the score system (quality assessment?)

This is when some Wiki-ecosystems can also support SR, Living-Reviews, Wikipedia, and other platforms...
# Living Systematic Reviews (LSRs) in Wikipedia

Using the main-wiki directory


<table>
<thead>
<tr>
<th>Key-terms related to “Review:Climate_variability_and_change”, of Q98053916 (Q example) key-terms here provided via an <a href="https://www.wikidata.org/wiki/Q29618659">embedded frame</a> or via Qnumber's href</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure containing <a href="https://www.wikidata.org/wiki/Q29618659">WikiCite</a> elements, which are the indexes of scholarly publications relevant to research topic Example of a publication Qnumber: <a href="https://www.wikidata.org/wiki/Q29618659">https://www.wikidata.org/wiki/Q29618659</a></td>
</tr>
</tbody>
</table>

| Traditional reference list expected in any Wikipedia article |

The General Body (GB) comprising General References (GR). This area follows the normal building up process just as any Wikipedia article.
Structure for Living Systematic Reviews (LSRs) in Wikipedia

Key-terms relevant to this LSR

https://commons.wikimedia.org/wiki/File:Foundation-1_word_cloud_small.png

New inf.

References


Q29618659

Href providing the publication information generated by WikiCite in Wikidata
Thanks!

Any questions and suggestions?

Feel free to contact :) 
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● All group to be and keep being updated
Credits

Work members

WLSR (version 1.0.0)


- Andutta, F.P., Driemeier, L., Harari, J., Lopes, M., Mietchen, D., Rasberry, L.

WLSR (version 1.0.1)

https://br.wikimedia.org/wiki/WikiCon_Brasil_2022/Programa/WLSR

- Andutta, F.P., Driemeier, L., Harari, J., Lopes, M., Mietchen, D., Rasberry, L.
- Balliet, D.P., Duenas, M.A., Spadaro, G.

.... to continue
Credits

Special thanks to all the people who made and released these awesome resources for free:

● Wikicommunity
● WikiMovimentoBrasil
● To all supporting this goal
● PPT template by SlidesCarnival